Appendix I
Synchro Analysis Results

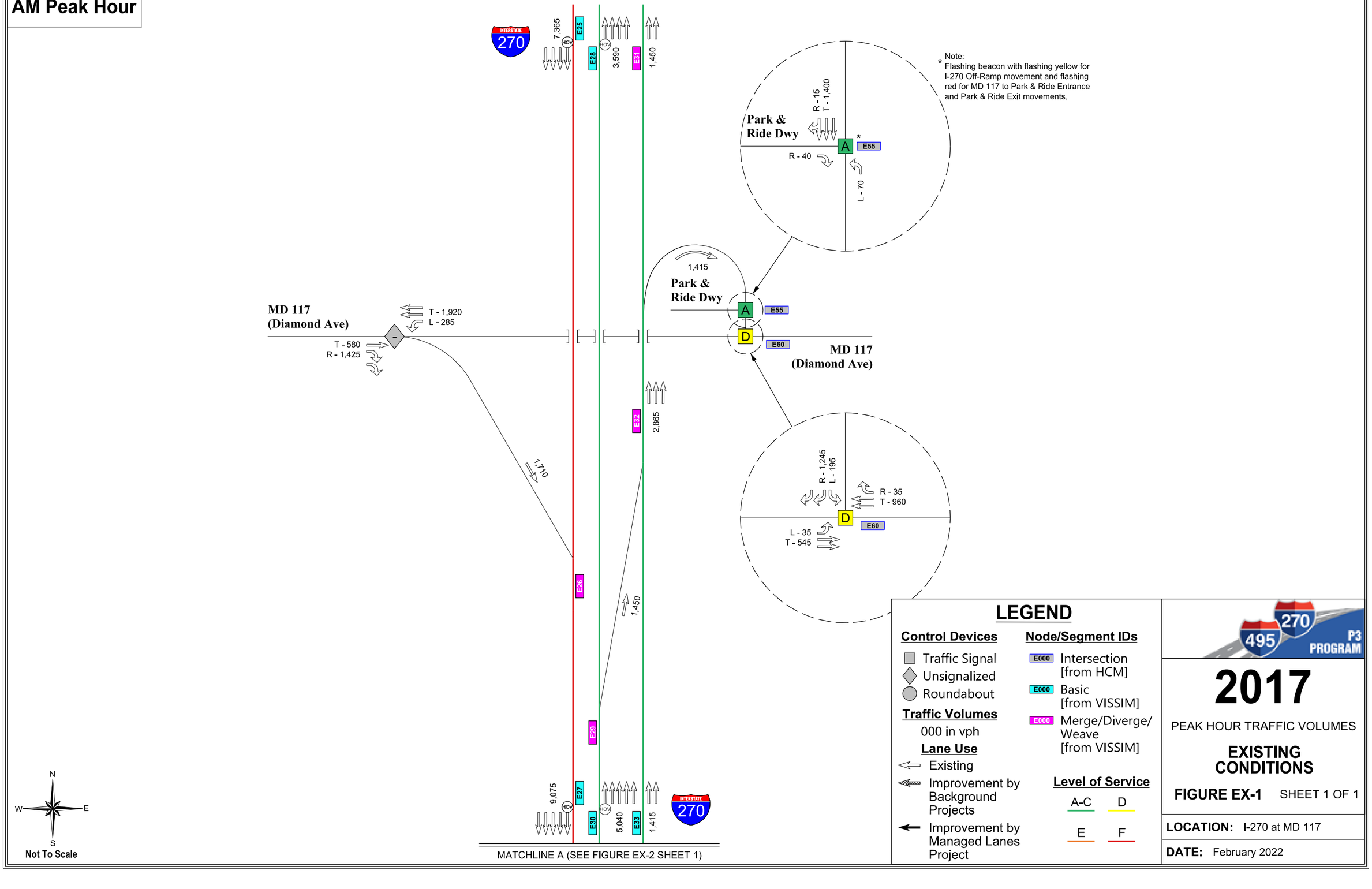
APPENDIX I

- Graphics
    - 2017 Existing Conditions
    - 2027 No Build Conditions
    - 2027 Preferred Alternative
    - 2045 No Build Conditions
    - 2045 Preferred Alternative
- Synchro Analysis Output Tables
    - 2017 Existing Conditions
    - 2027 No Build Conditions
    - 2027 Preferred Alternative
    - 2045 No Build Conditions
    - 2045 Preferred Alternative
- Synchro Analysis Summary
- Synchro Analysis Outputs
    - 2017 Existing Conditions
    - 2027 No Build Conditions
    - 2027 Preferred Alternative
    - 2045 No Build Conditions
    - 2045 Preferred Alternative

*Navigate to desired section by clicking on respective alternative above

2017 EXISTING CONDITIONS GRAPHICS

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

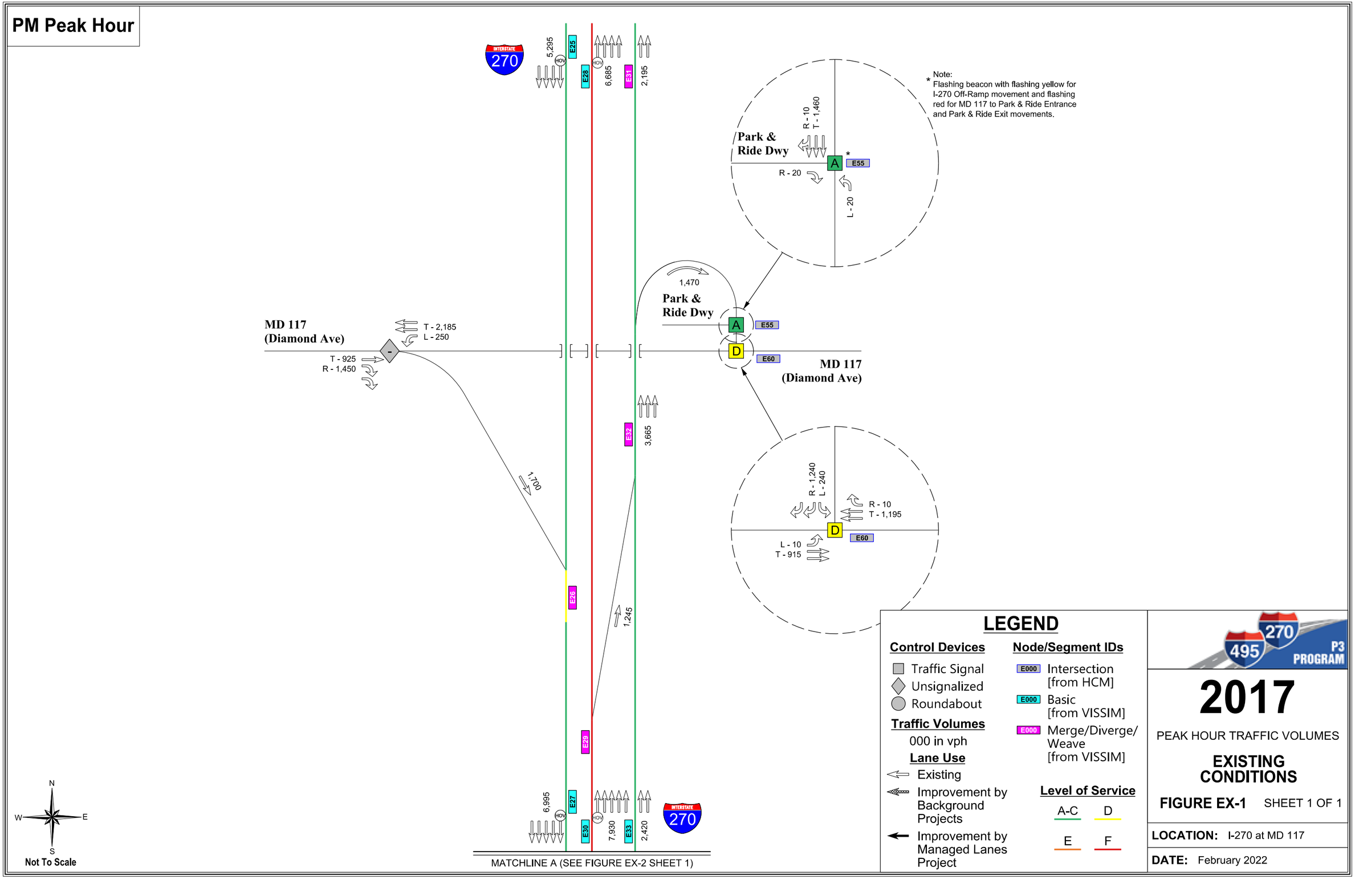
EXISTING CONDITIONS

FIGURE EX-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

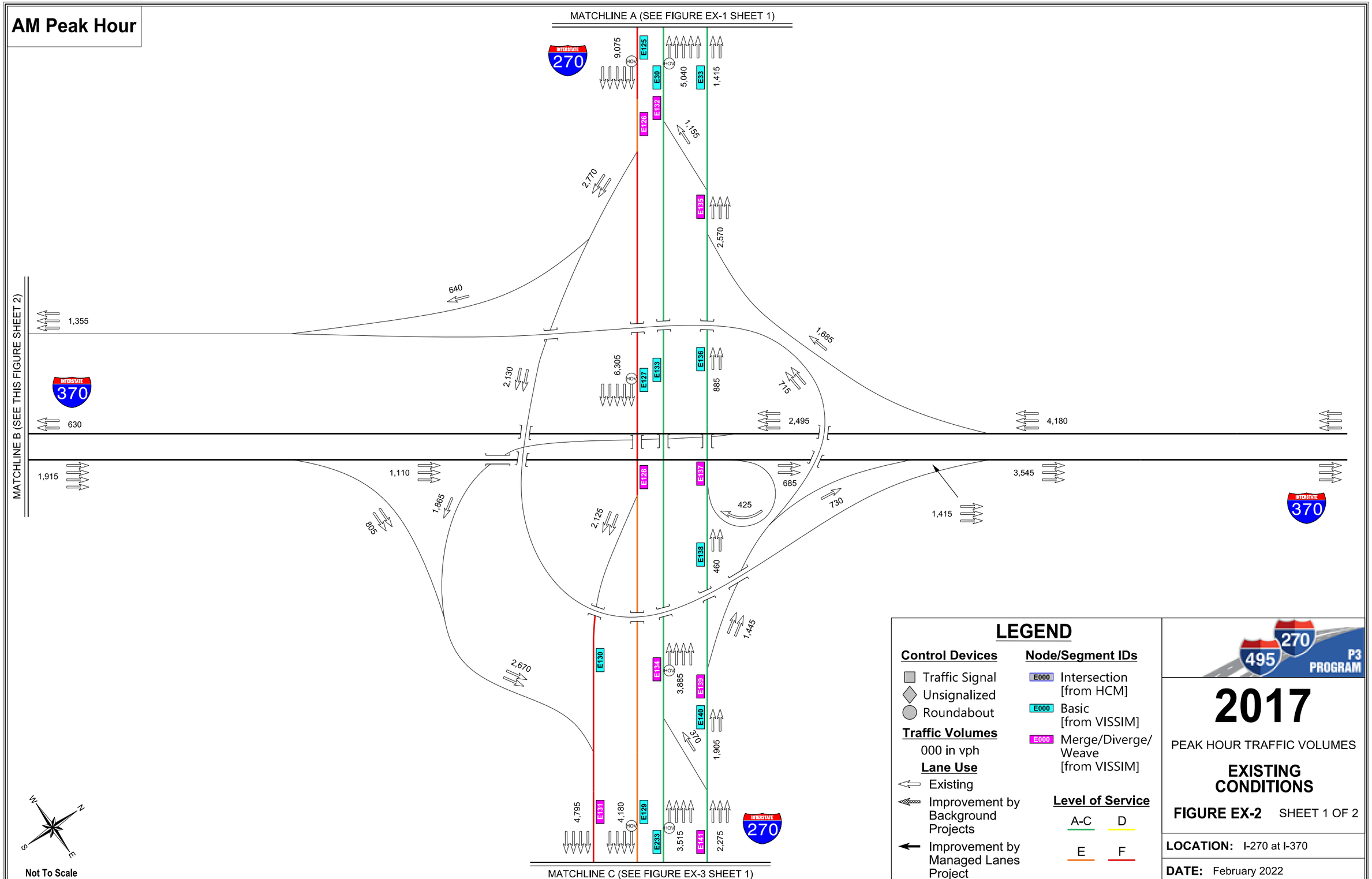
EXISTING CONDITIONS

FIGURE EX-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

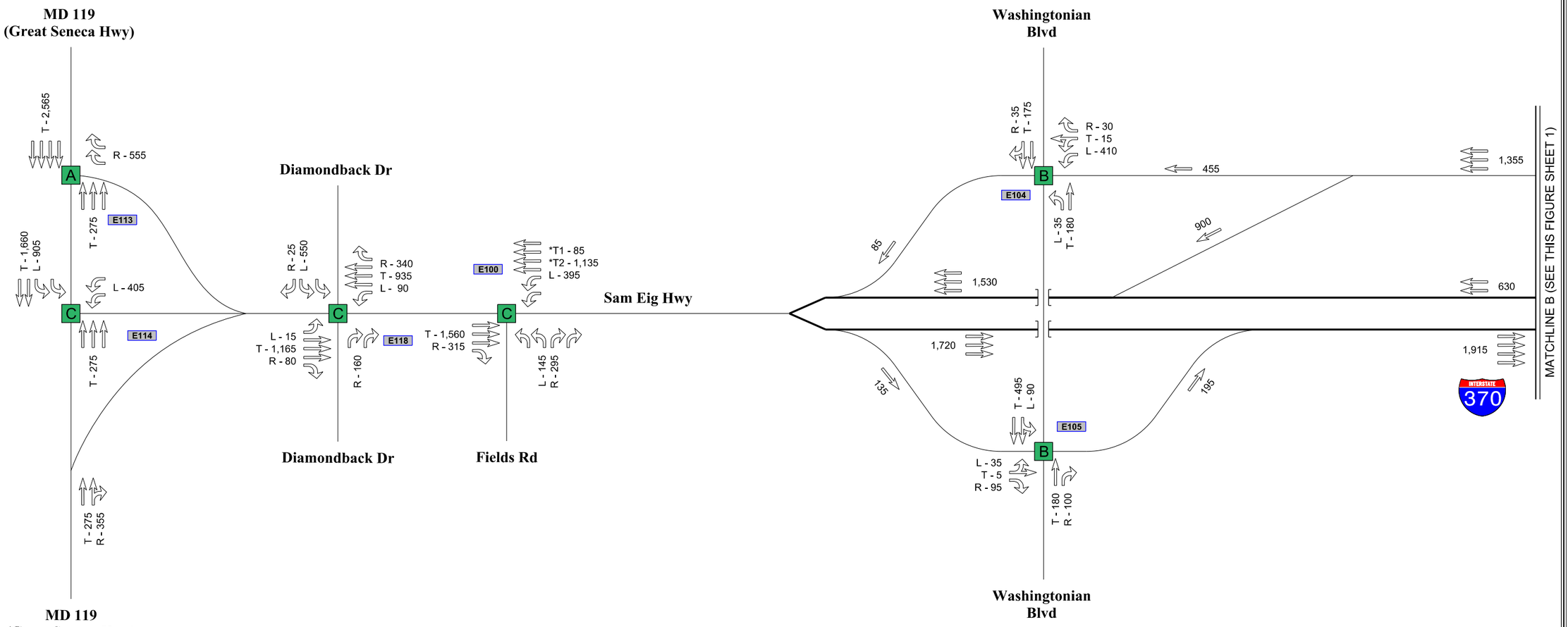
EXISTING CONDITIONS

FIGURE EX-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

I-495 & I-270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

FIGURE EX-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

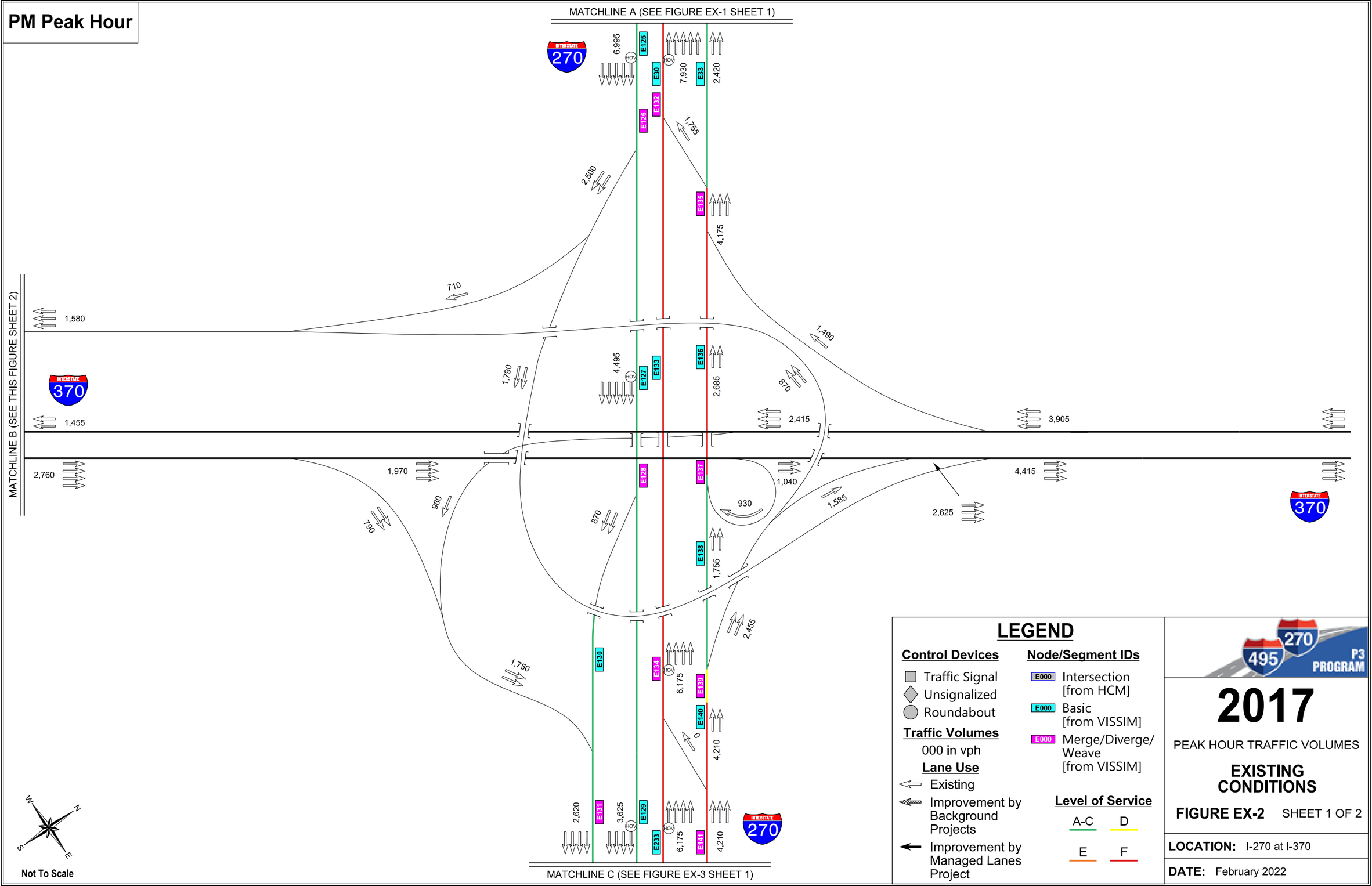
DATE: February 2022

PM Peak Hour

MATCHLINE A (SEE FIGURE EX-1 SHEET 1)

MATCHLINE B (SEE THIS FIGURE SHEET 2)

MATCHLINE C (SEE FIGURE EX-3 SHEET 1)



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

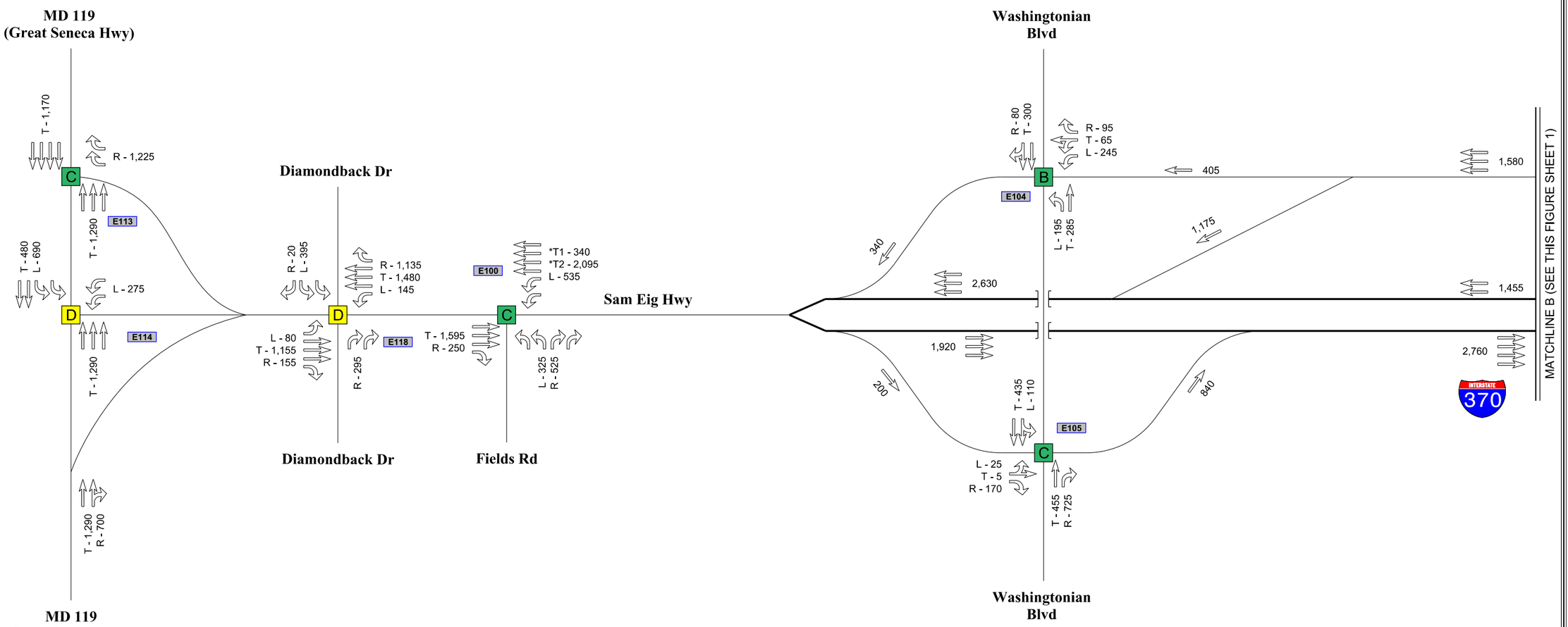
EXISTING CONDITIONS

FIGURE EX-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

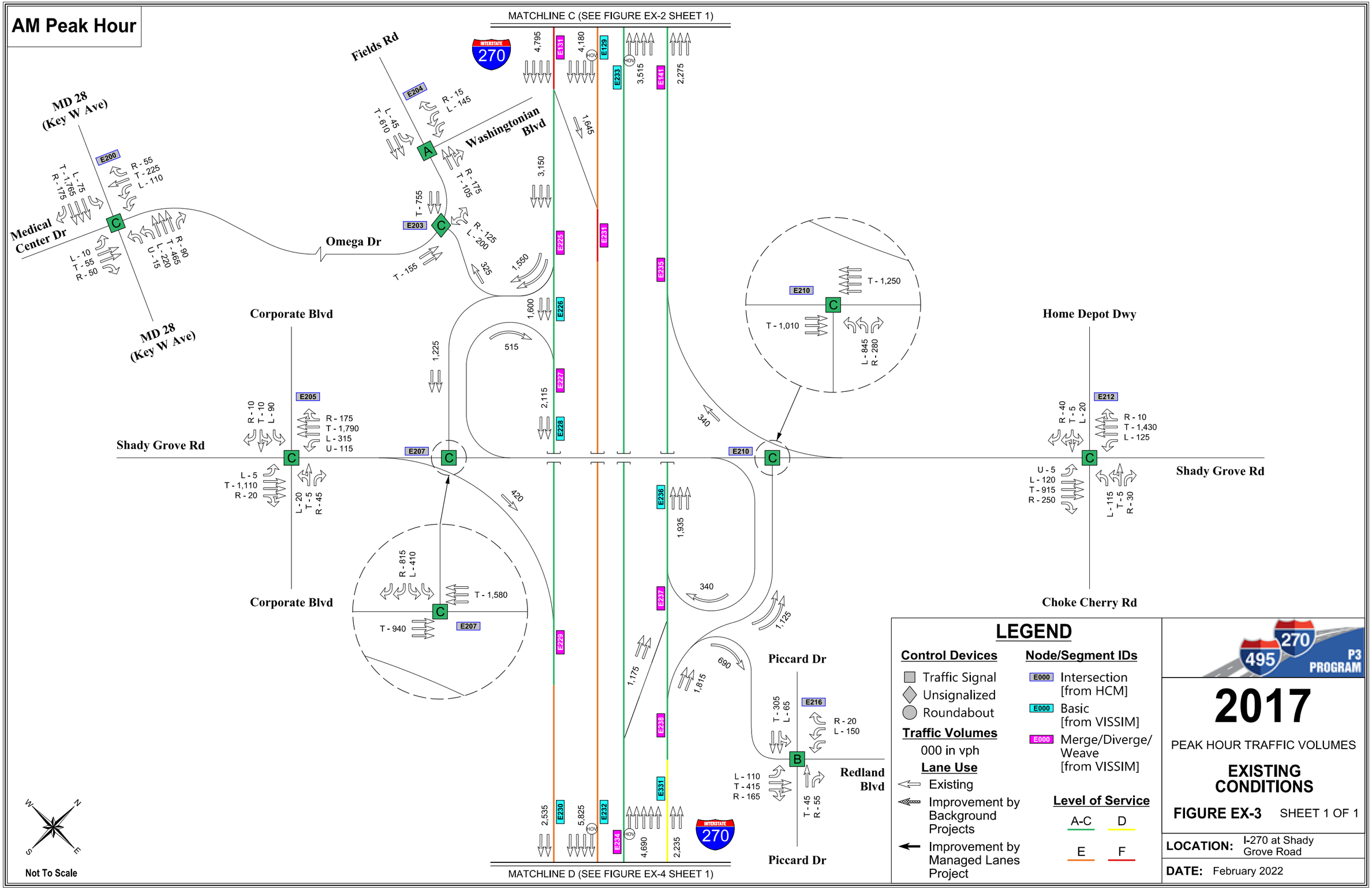
FIGURE EX-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour

MATCHLINE C (SEE FIGURE EX-2 SHEET 1)



MATCHLINE D (SEE FIGURE EX-4 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

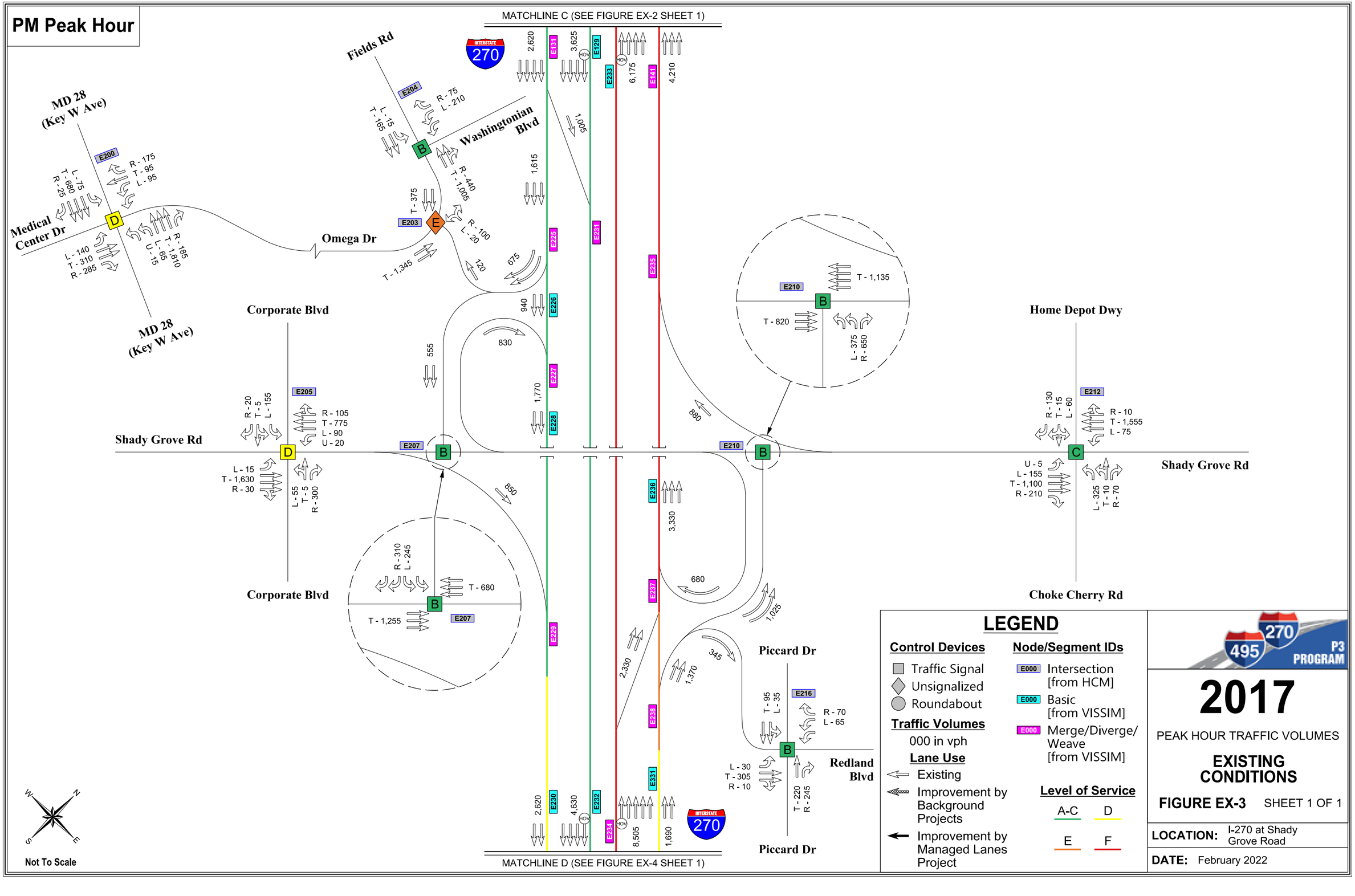
FIGURE EX-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

PM Peak Hour

MATCHLINE C (SEE FIGURE EX-2 SHEET 1)



MATCHLINE D (SEE FIGURE EX-4 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

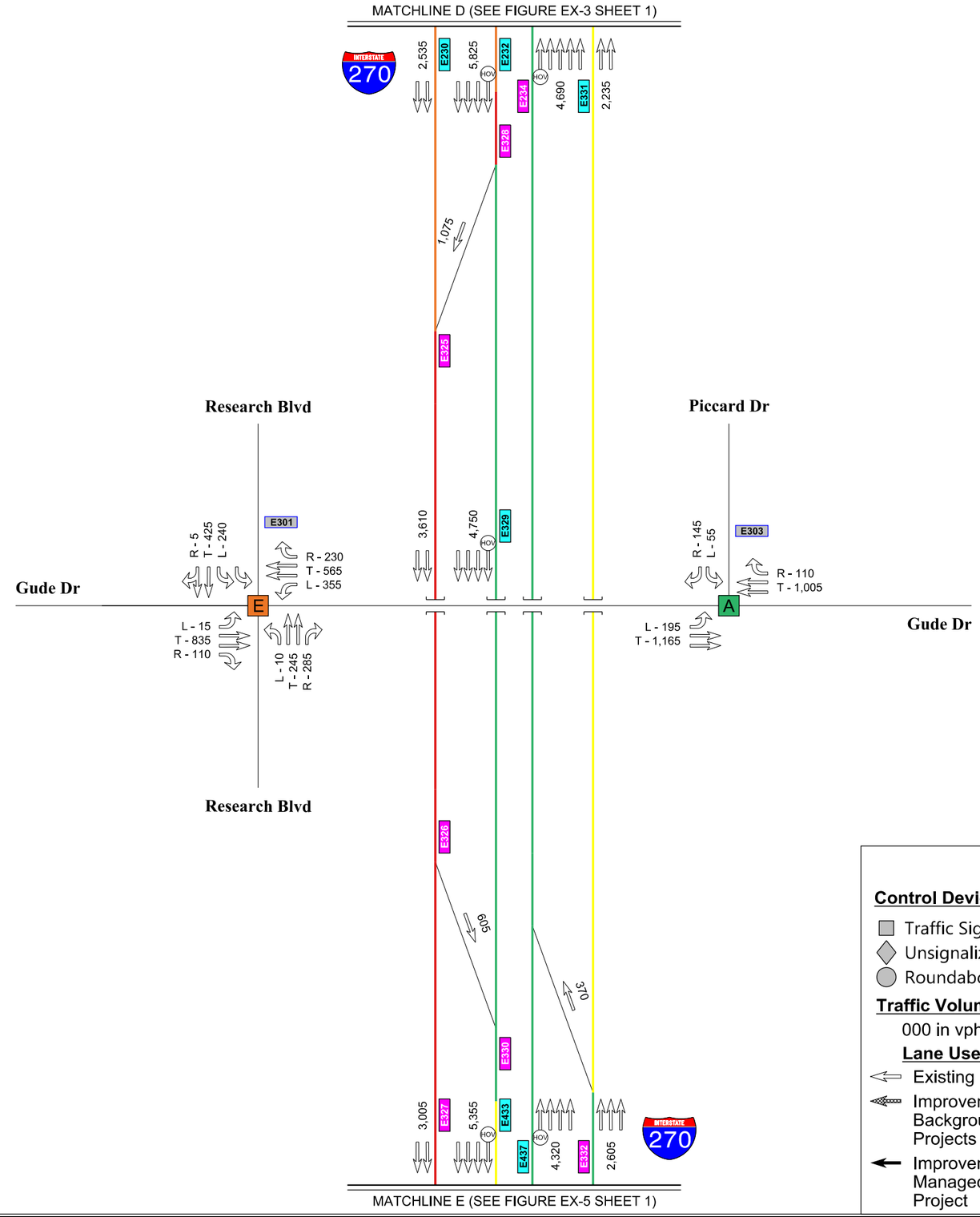
EXISTING CONDITIONS

FIGURE EX-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

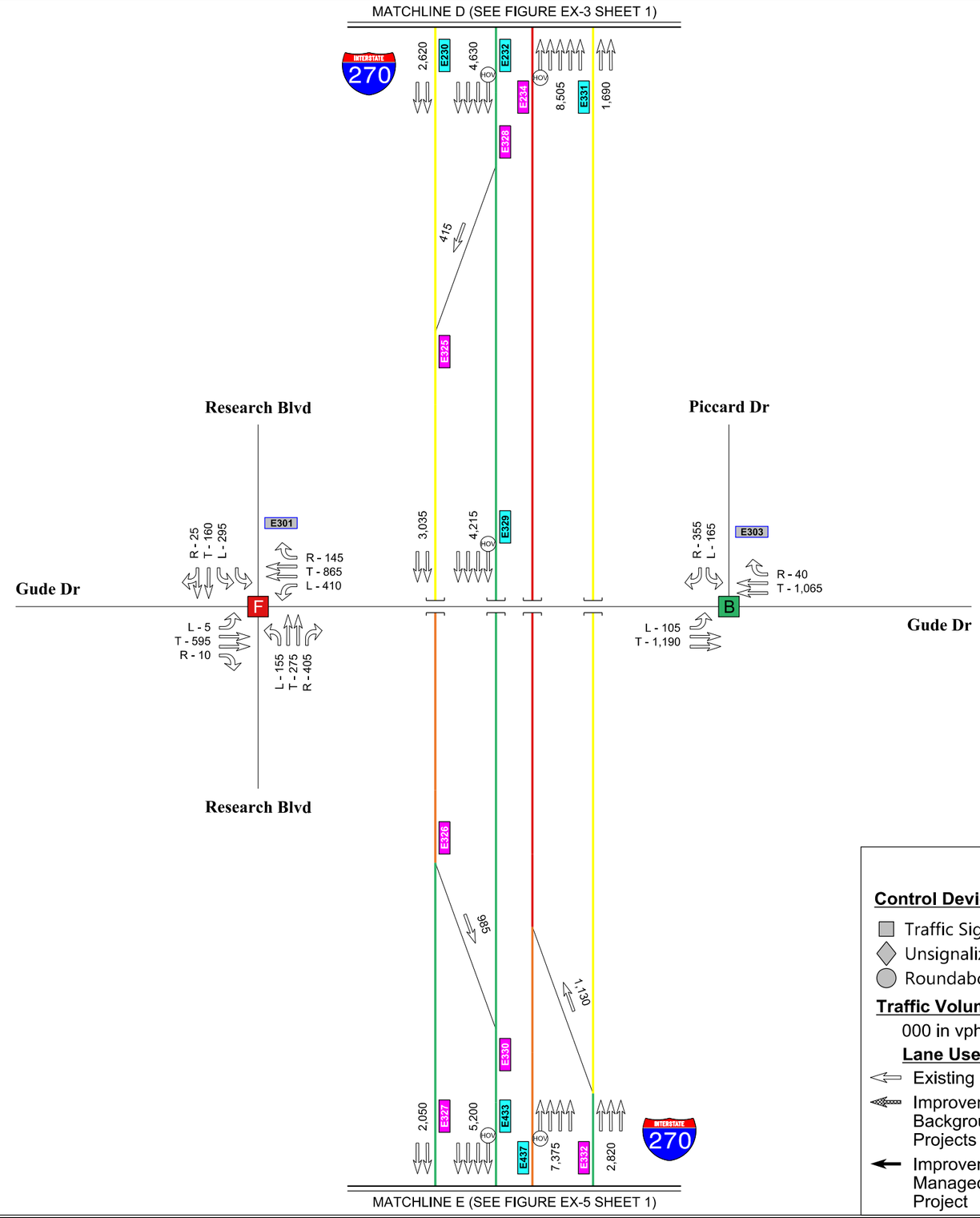
EXISTING CONDITIONS

FIGURE EX-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

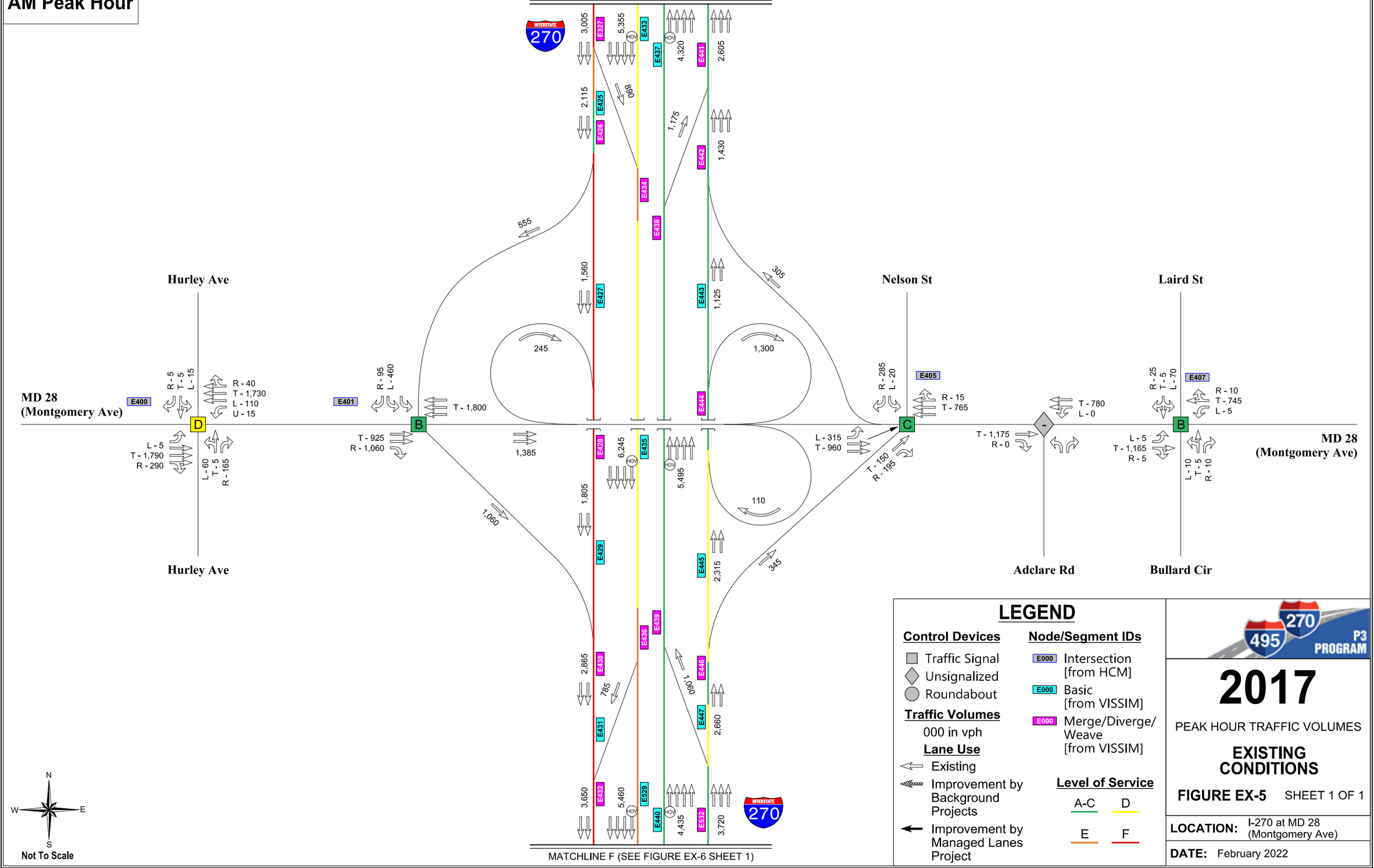
FIGURE EX-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

AM Peak Hour

MATCHLINE E (SEE FIGURE EX-4 SHEET 1)



MATCHLINE F (SEE FIGURE EX-6 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

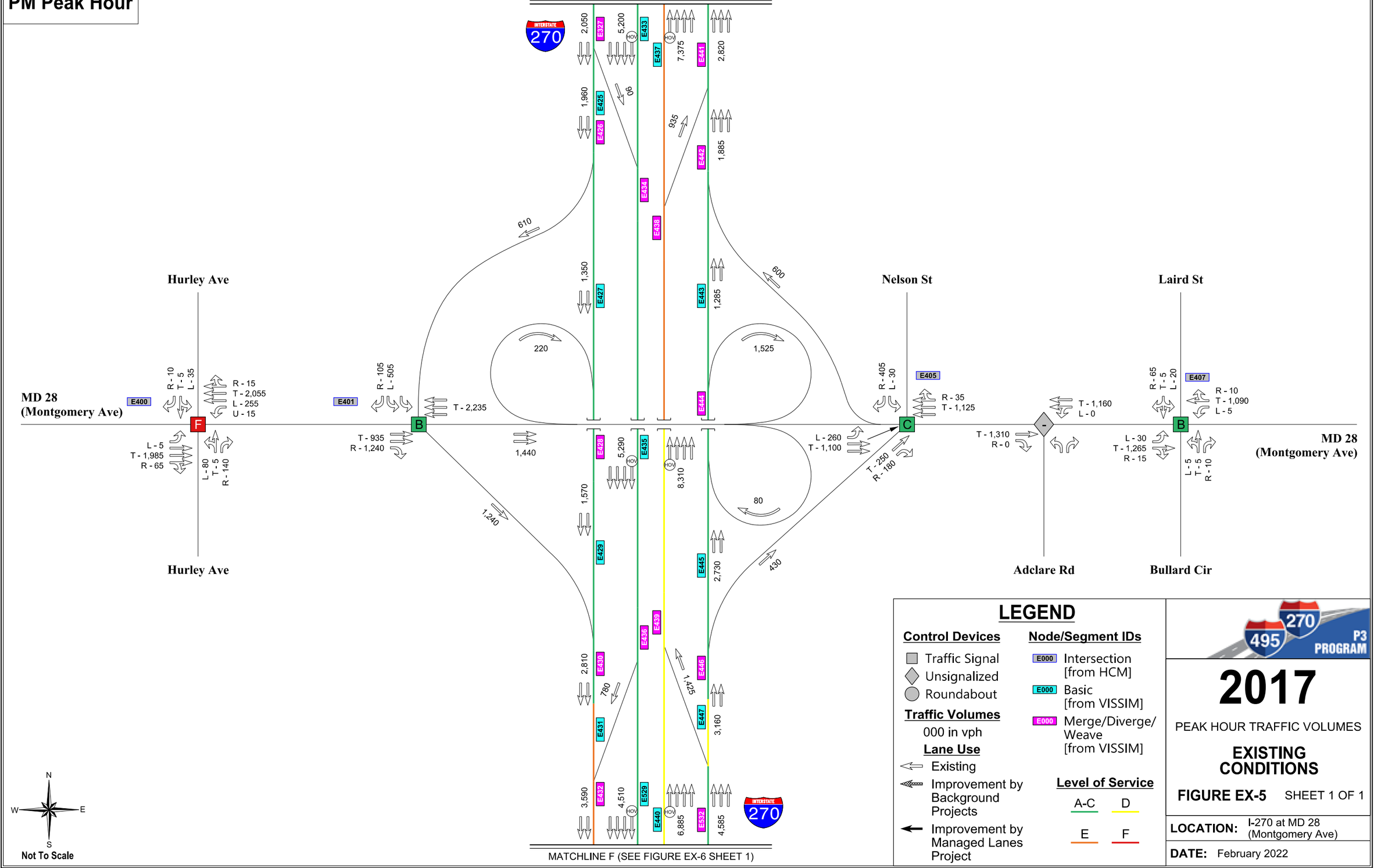
FIGURE EX-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

PM Peak Hour

MATCHLINE E (SEE FIGURE EX-4 SHEET 1)



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

N W E S

Not To Scale

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

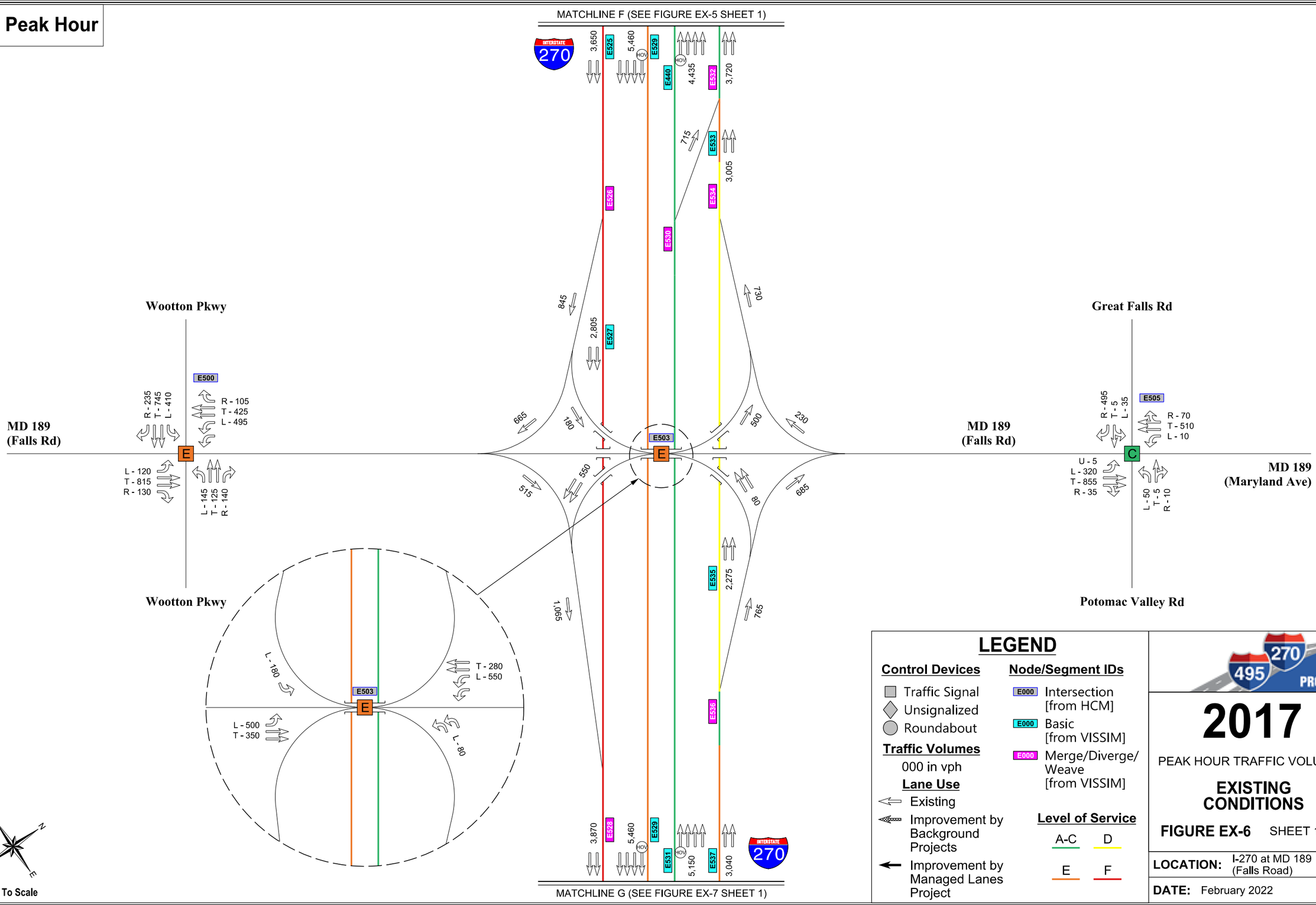
EXISTING CONDITIONS

FIGURE EX-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

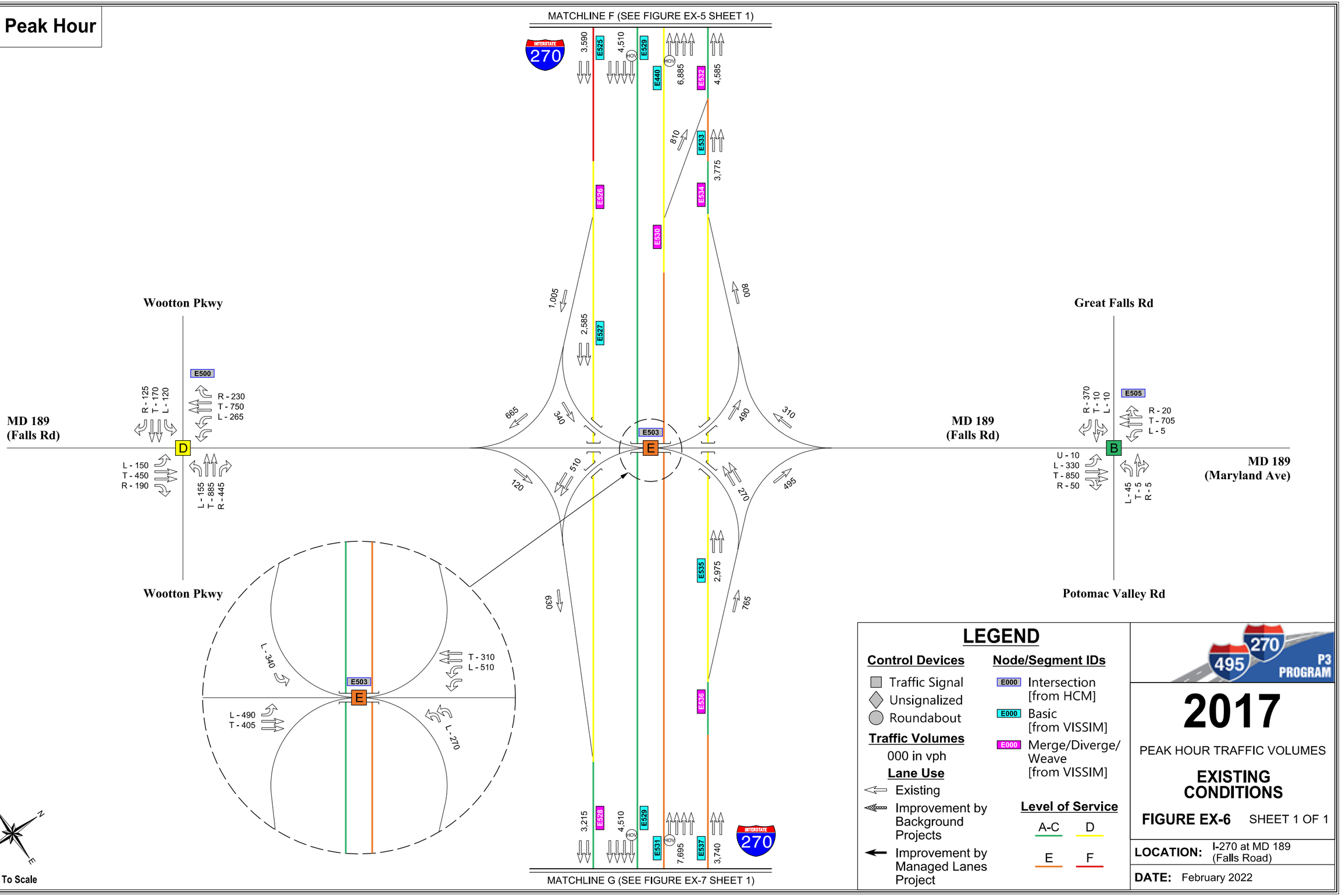
EXISTING CONDITIONS

FIGURE EX-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

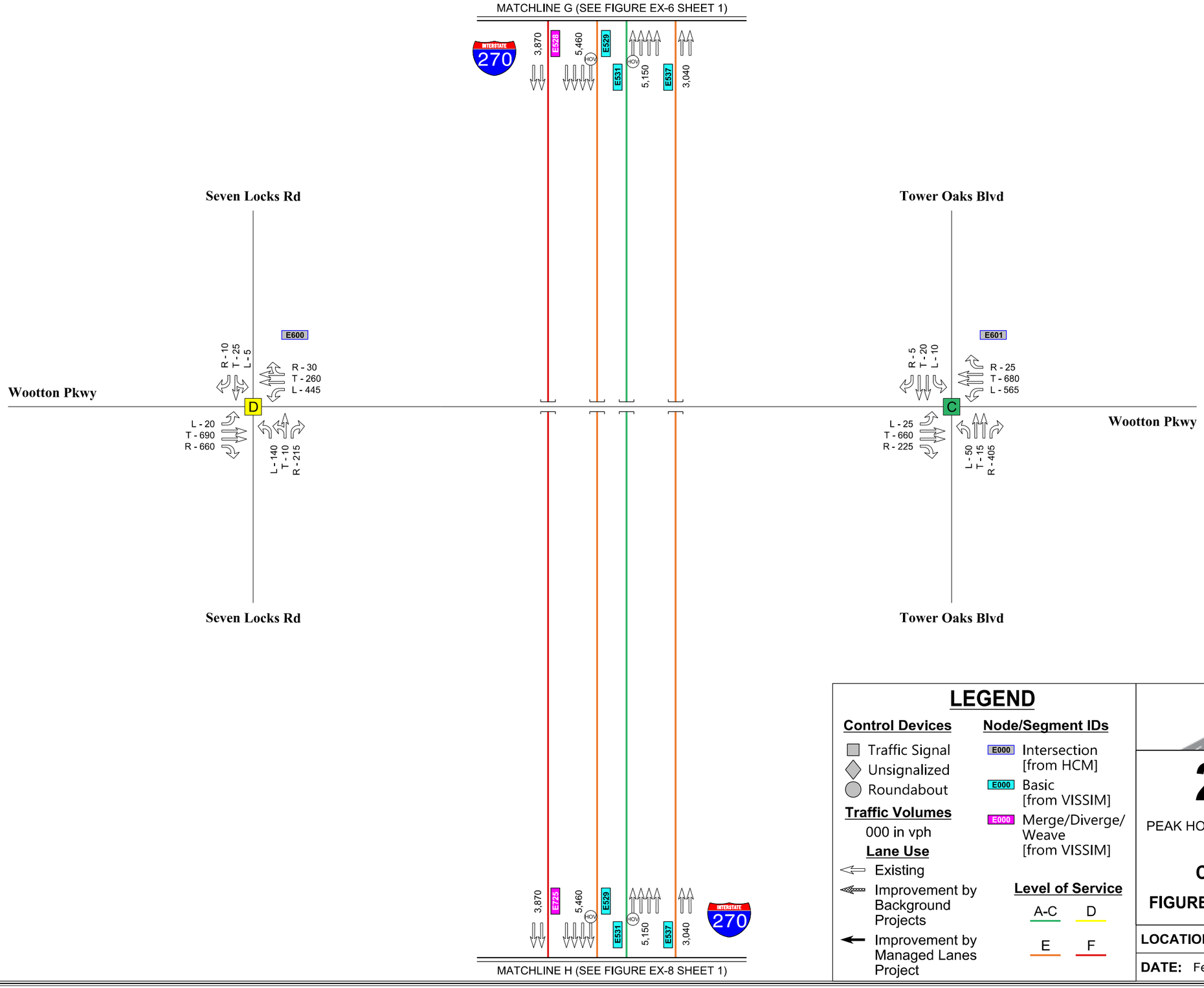
EXISTING CONDITIONS

FIGURE EX-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

AM Peak Hour



N
W E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

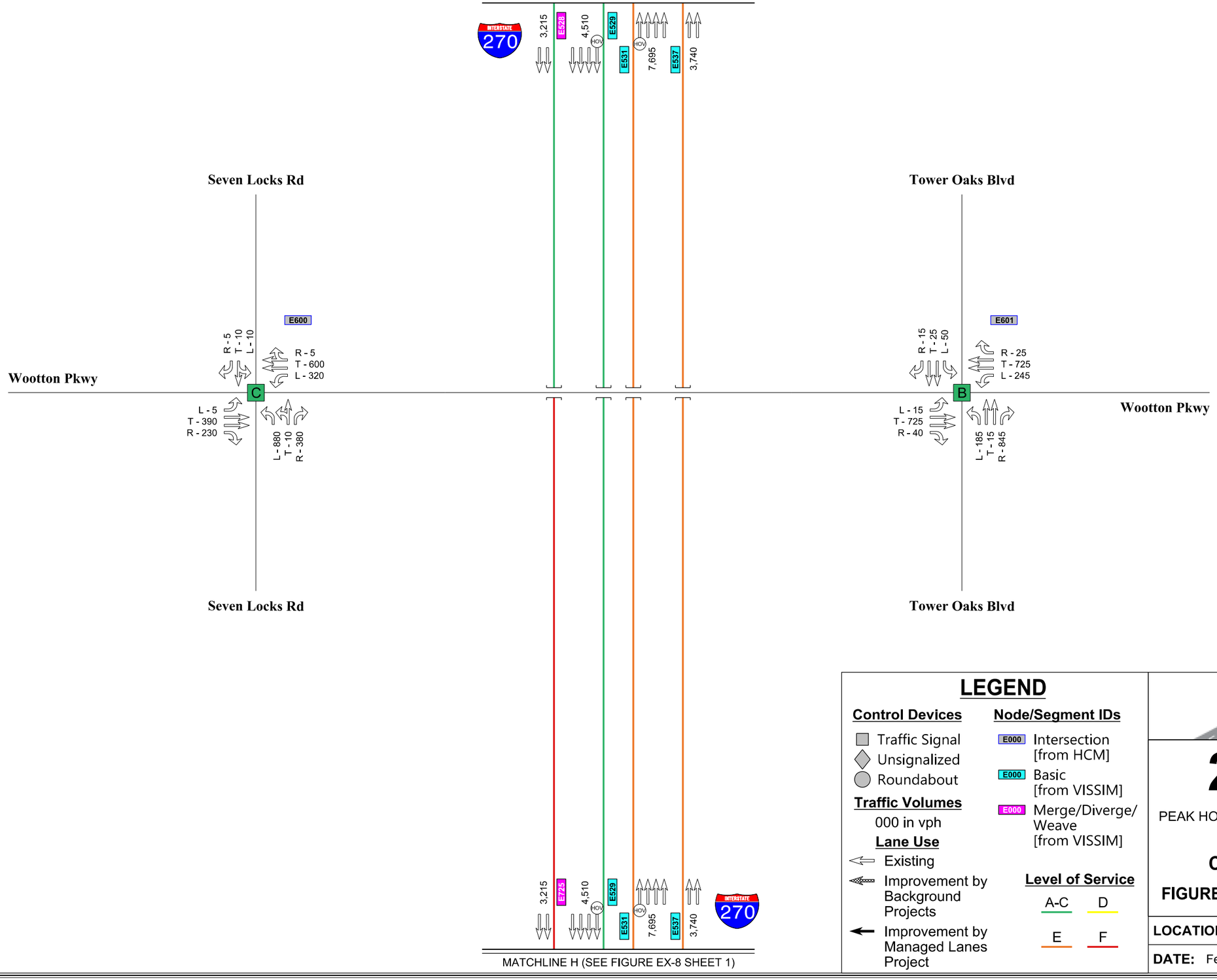
FIGURE EX-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

PM Peak Hour

MATCHLINE G (SEE FIGURE EX-6 SHEET 1)



MATCHLINE H (SEE FIGURE EX-8 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

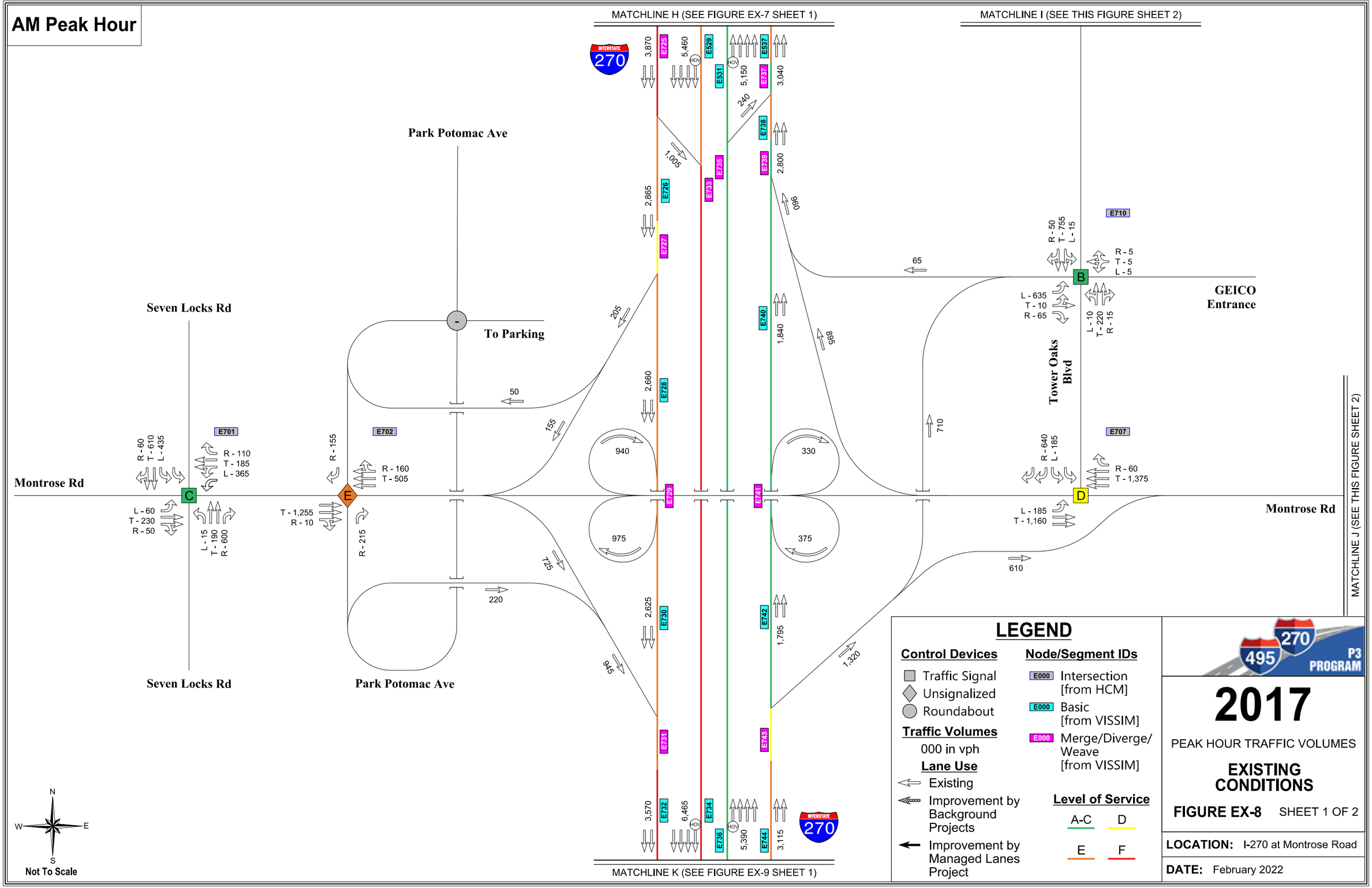
EXISTING CONDITIONS

FIGURE EX-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
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- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

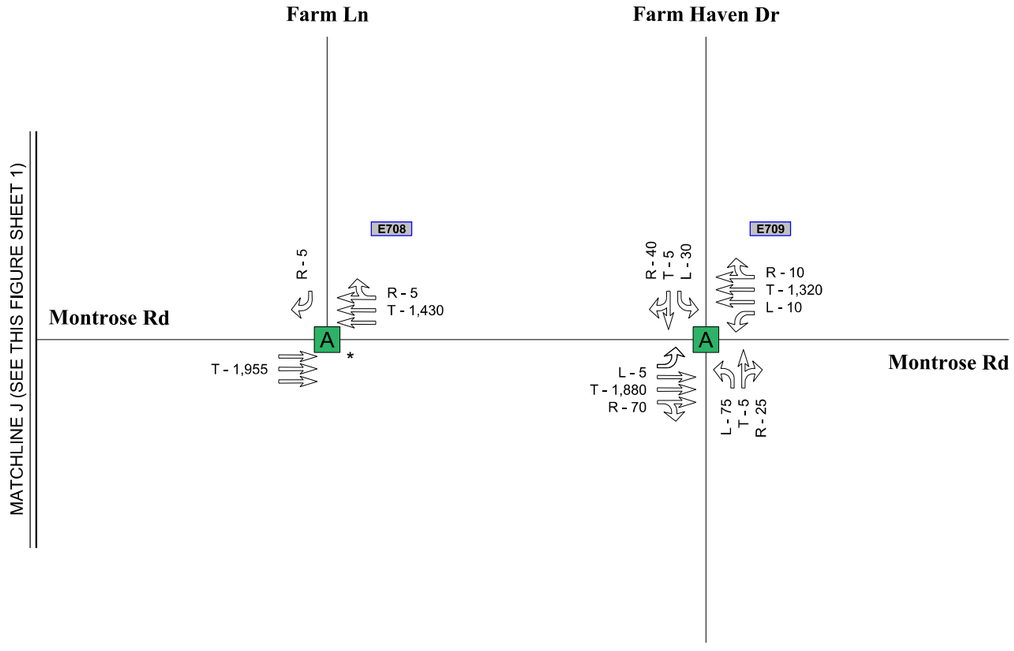
EXISTING CONDITIONS

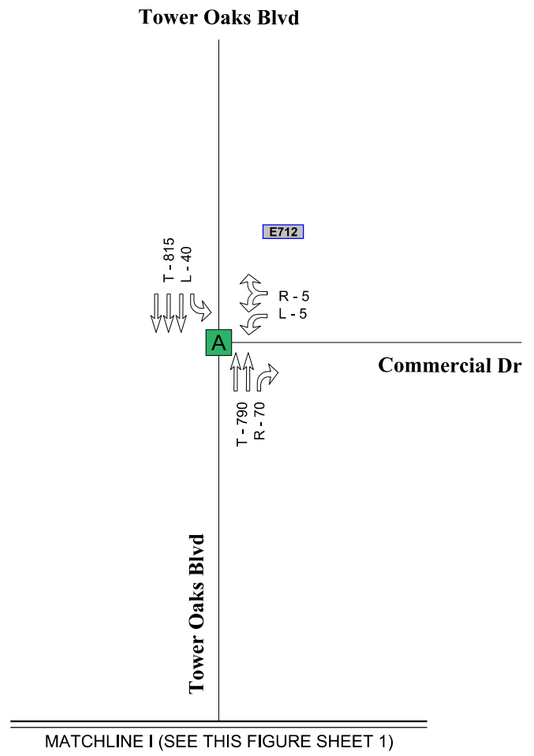
FIGURE EX-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour





N
W E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
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- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

FIGURE EX-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour

MATCHLINE H (SEE FIGURE EX-7 SHEET 1)

MATCHLINE I (SEE THIS FIGURE SHEET 2)

MATCHLINE J (SEE THIS FIGURE SHEET 2)

MATCHLINE K (SEE FIGURE EX-9 SHEET 1)

INTERSTATE 270

Park Potomac Ave

Seven Locks Rd

Montrose Rd

Tower Oaks Blvd

GEICO Entrance

To Parking

Seven Locks Rd

Park Potomac Ave

Montrose Rd

Tower Oaks Blvd

GEICO Entrance

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

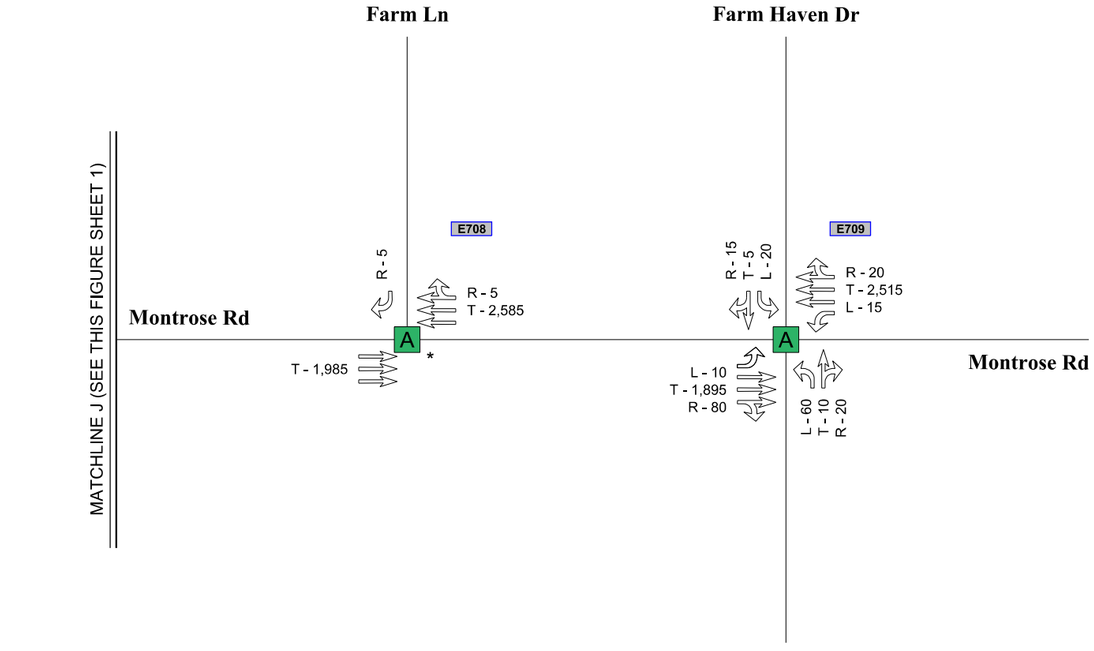
EXISTING CONDITIONS

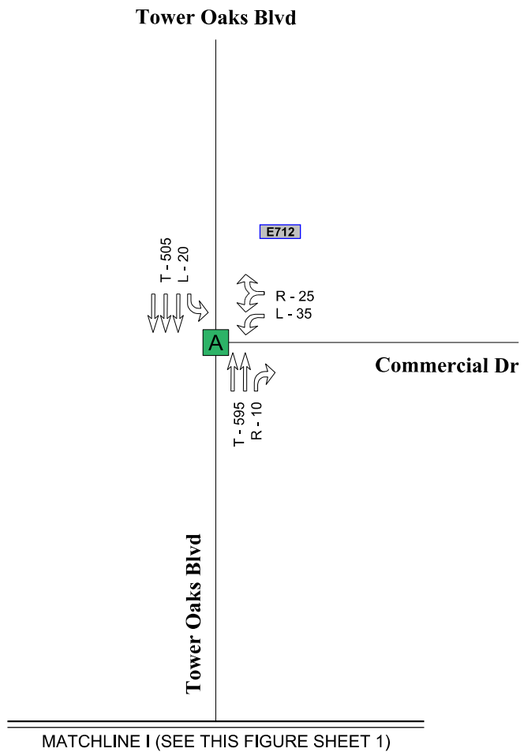
FIGURE EX-8 SHEET 1 OF 2

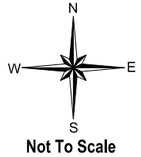
LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour







*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
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Node/Segment IDs
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- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

270 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

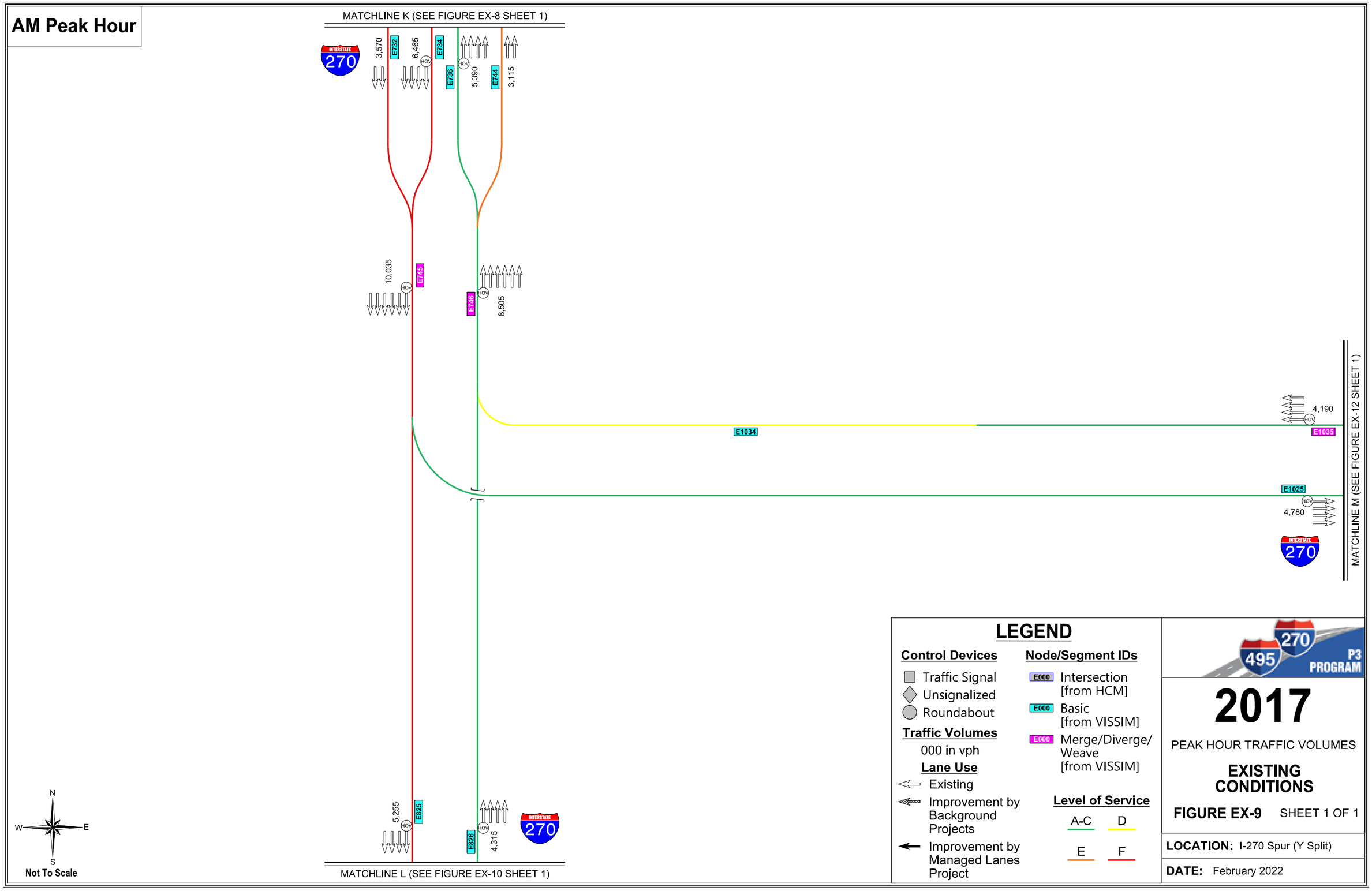
EXISTING CONDITIONS

FIGURE EX-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

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- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

495 270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

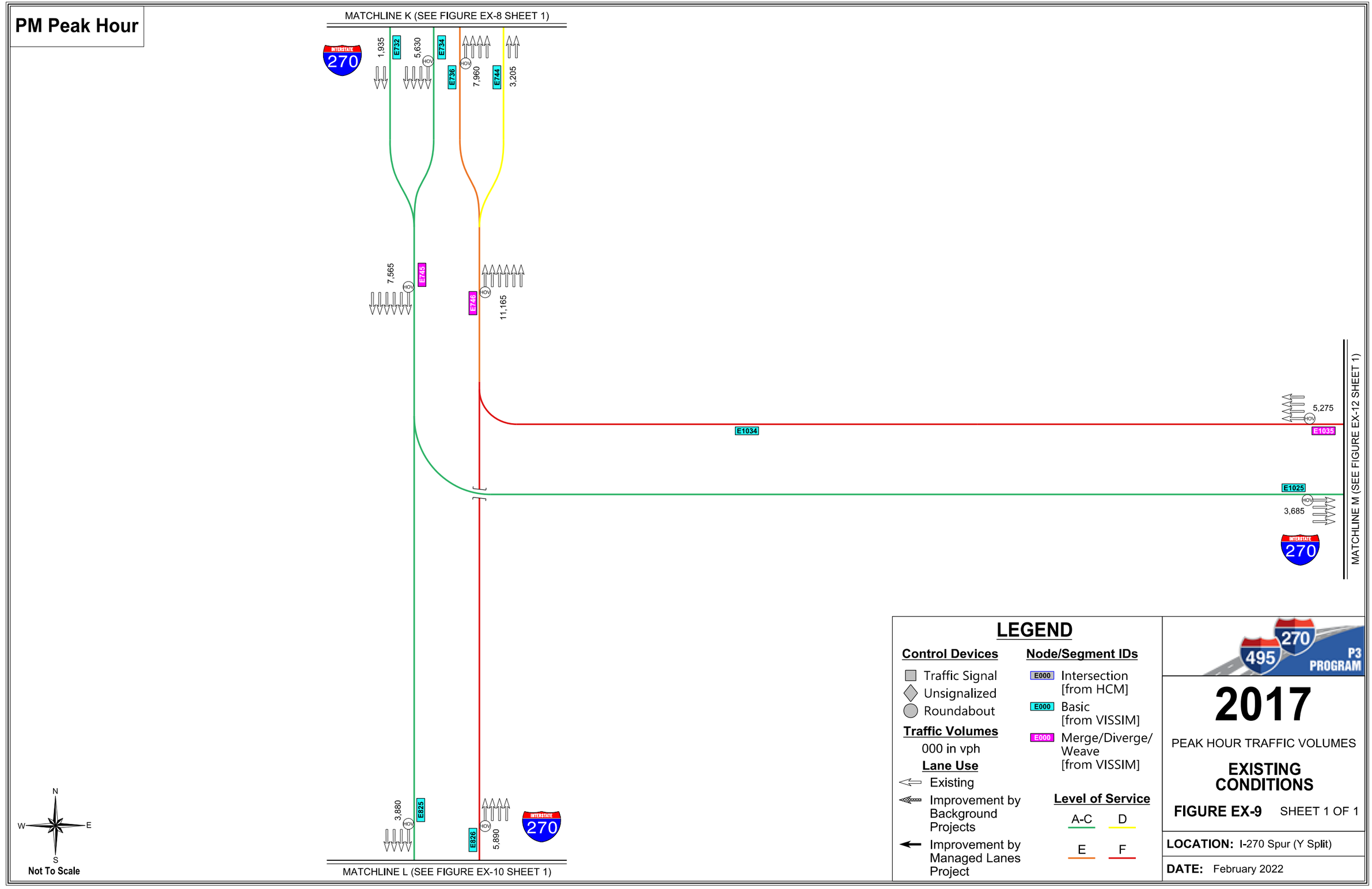
EXISTING CONDITIONS

FIGURE EX-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C | D | E | F

495 270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

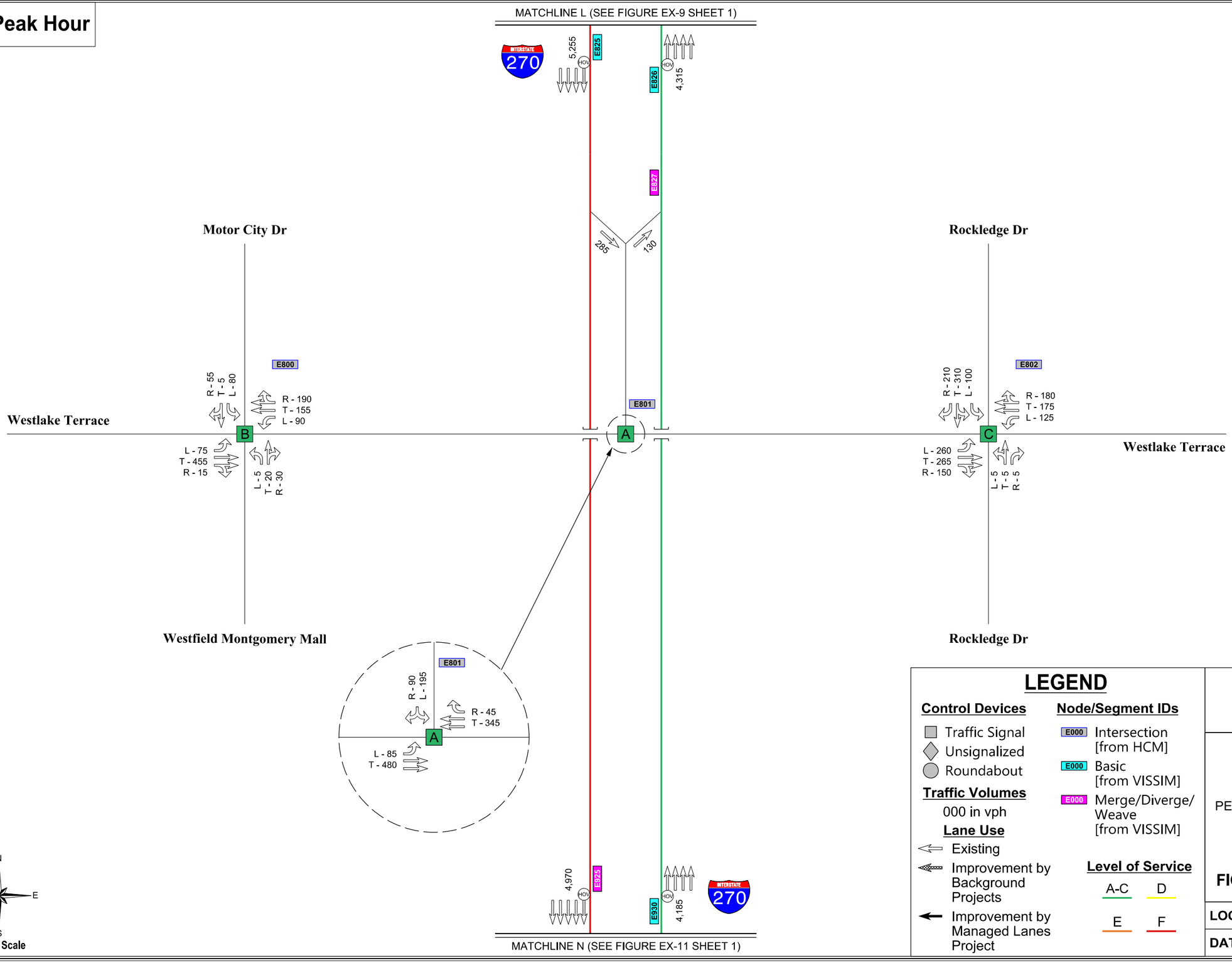
EXISTING CONDITIONS

FIGURE EX-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

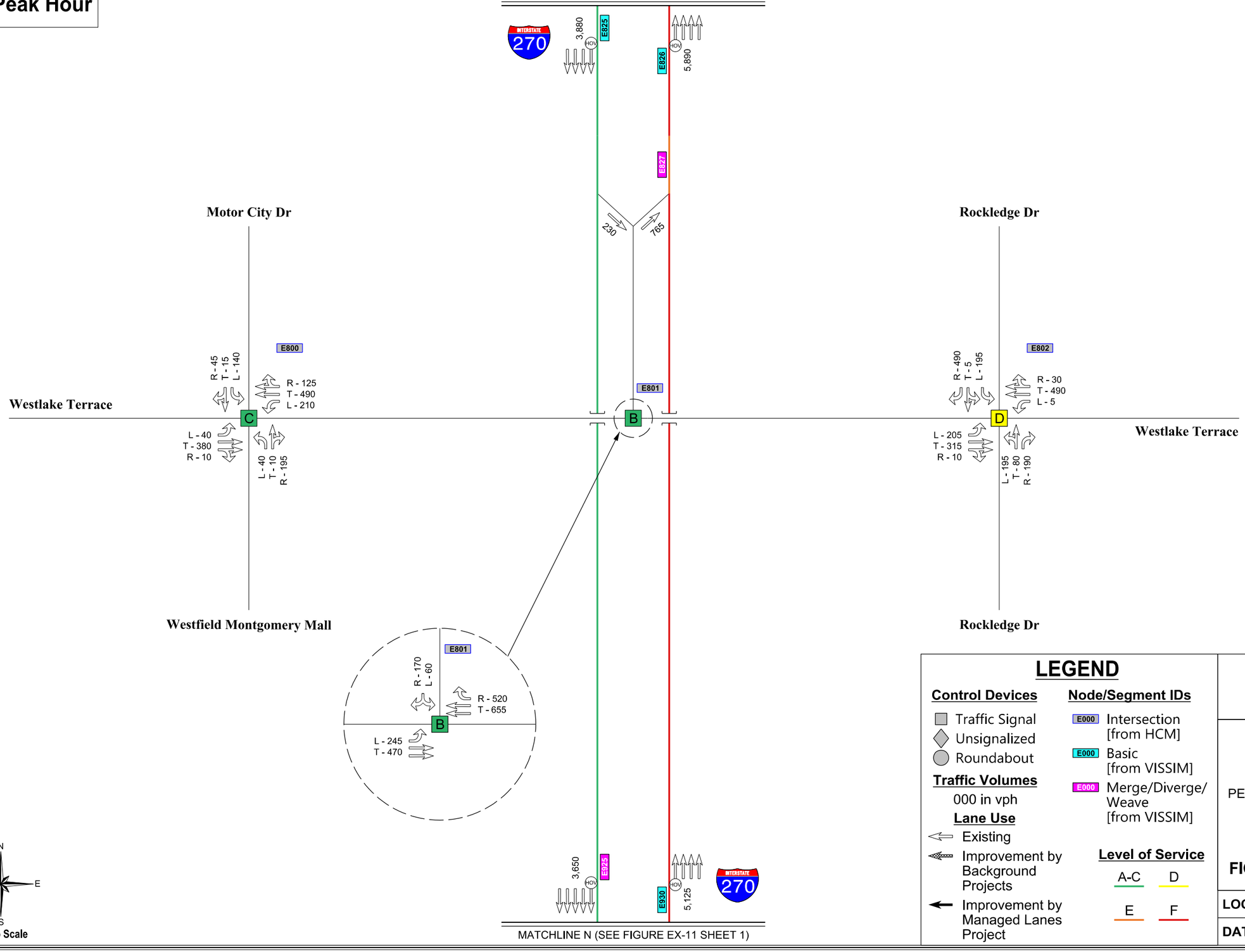
FIGURE EX-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

PM Peak Hour

MATCHLINE L (SEE FIGURE EX-9 SHEET 1)



MATCHLINE N (SEE FIGURE EX-11 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

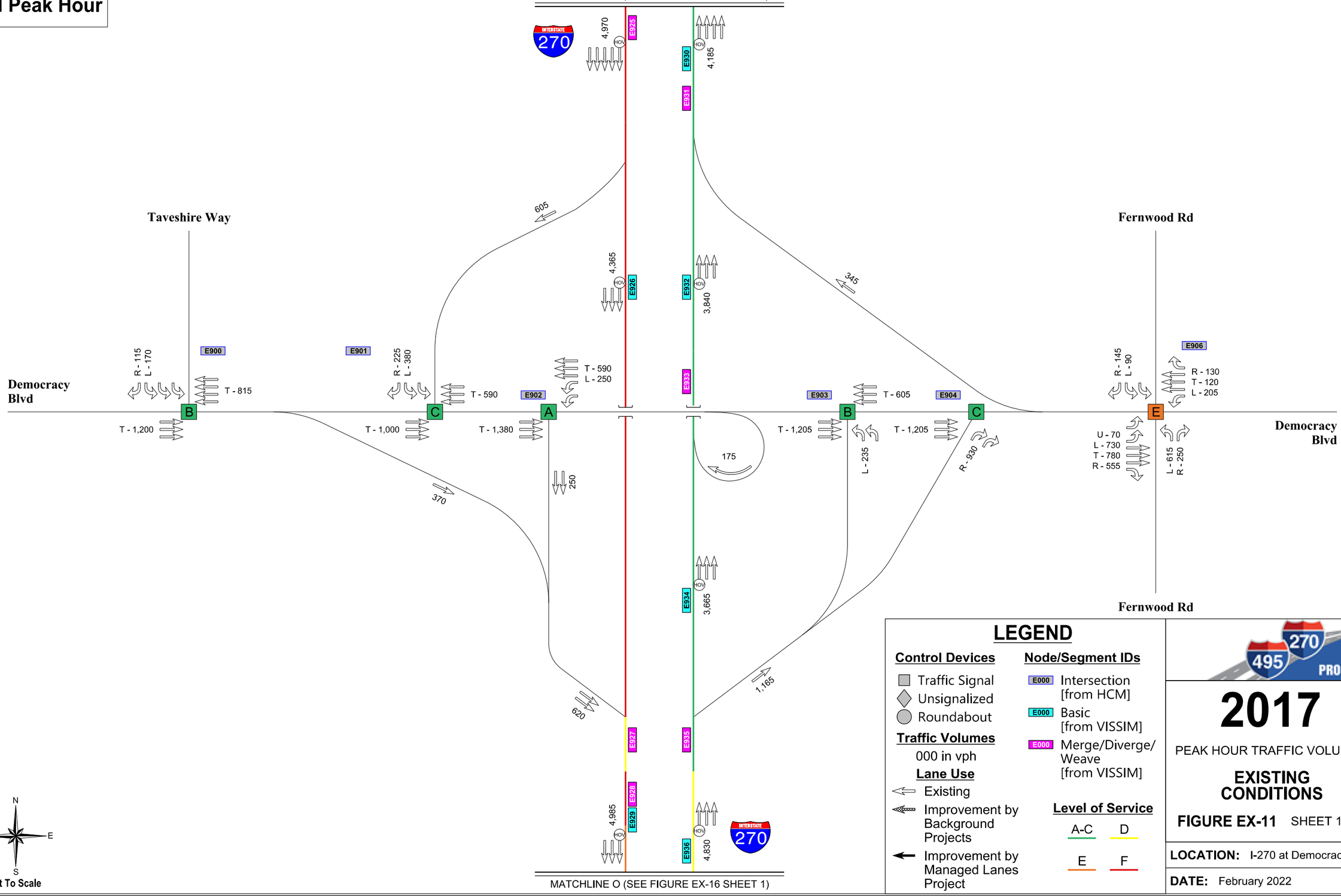
FIGURE EX-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

AM Peak Hour

MATCHLINE N (SEE FIGURE EX-10 SHEET 1)



MATCHLINE O (SEE FIGURE EX-16 SHEET 1)

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

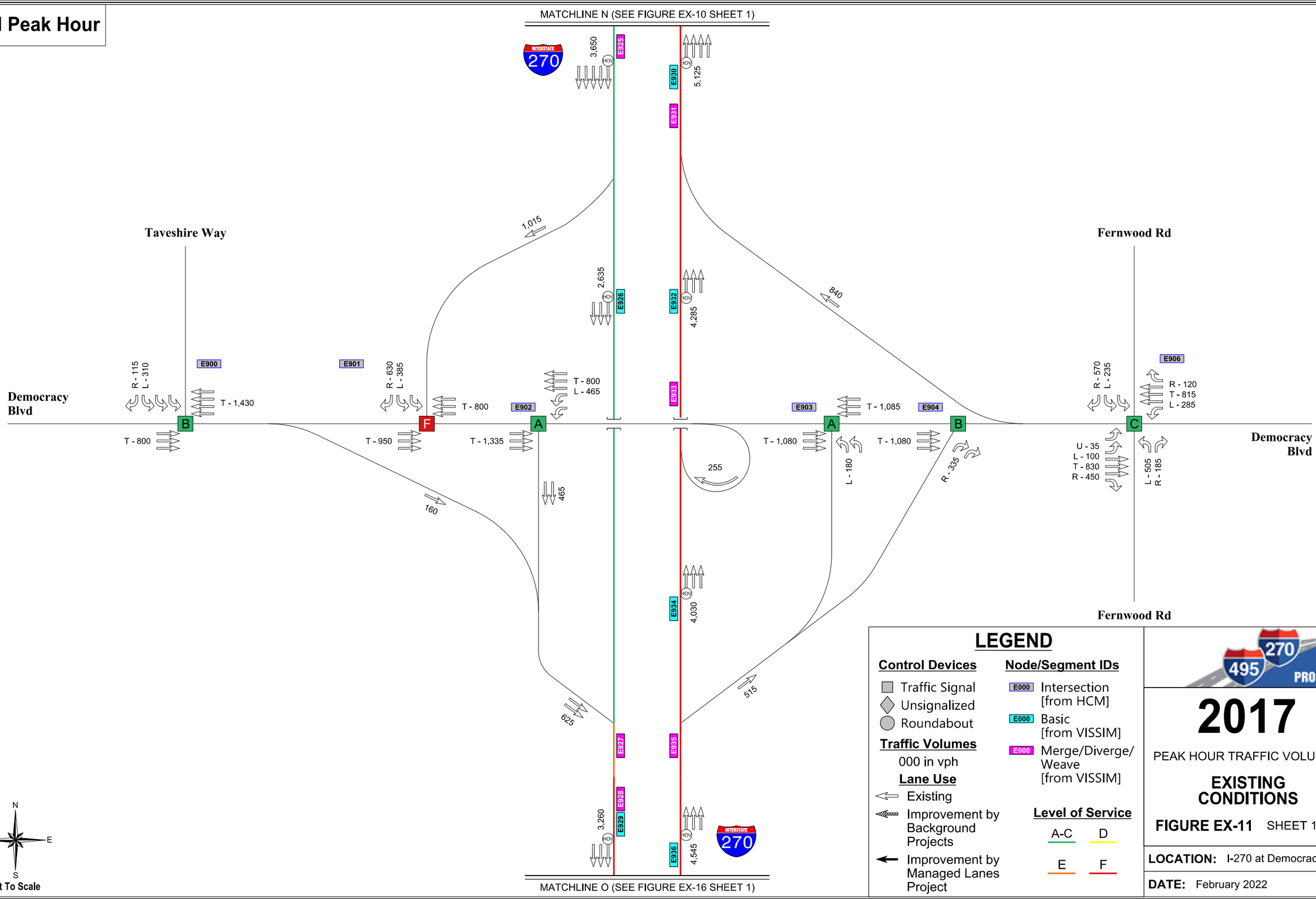
FIGURE EX-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

PM Peak Hour

MATCHLINE N (SEE FIGURE EX-10 SHEET 1)



MATCHLINE O (SEE FIGURE EX-16 SHEET 1)

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

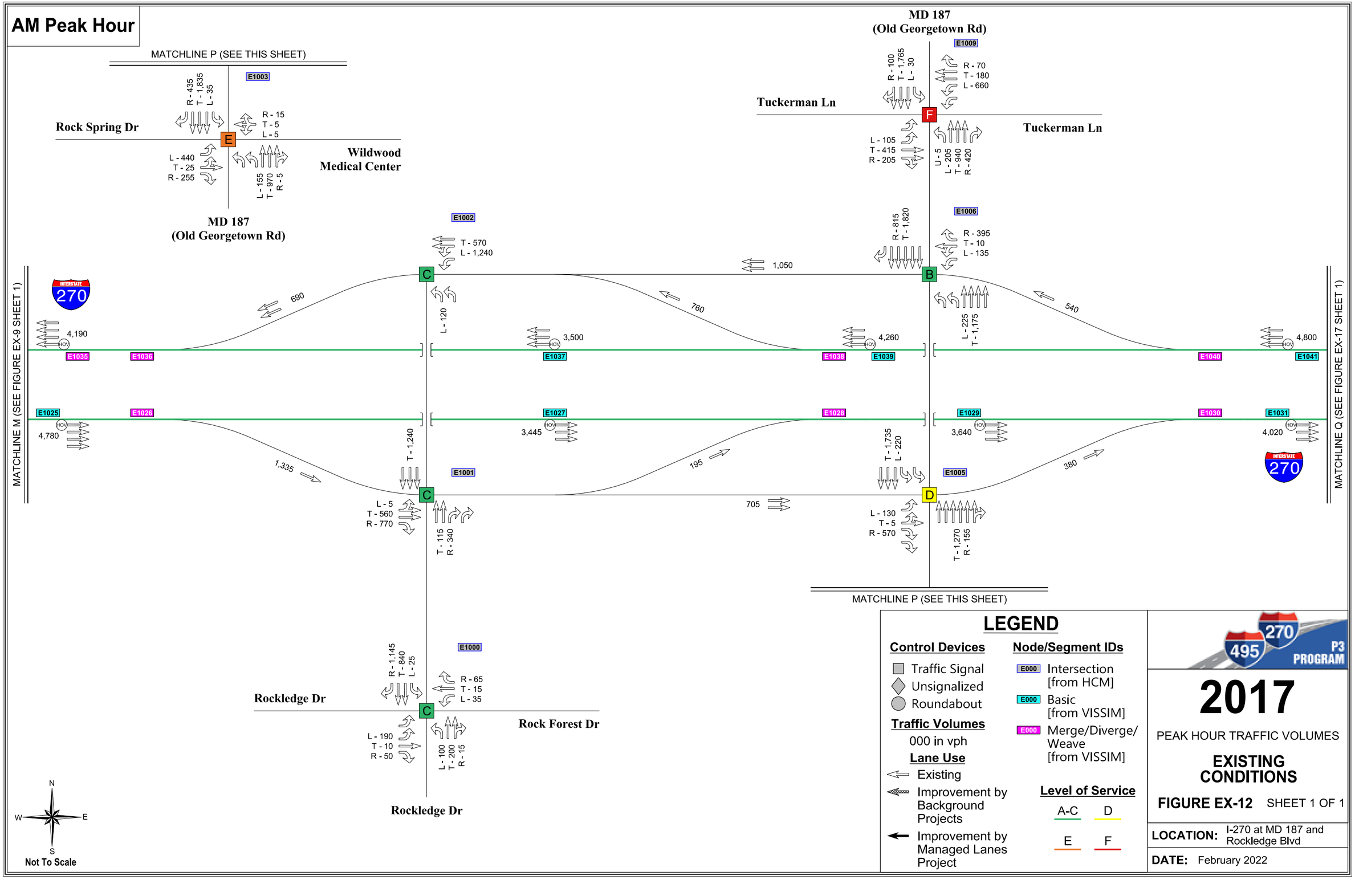
EXISTING CONDITIONS

FIGURE EX-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

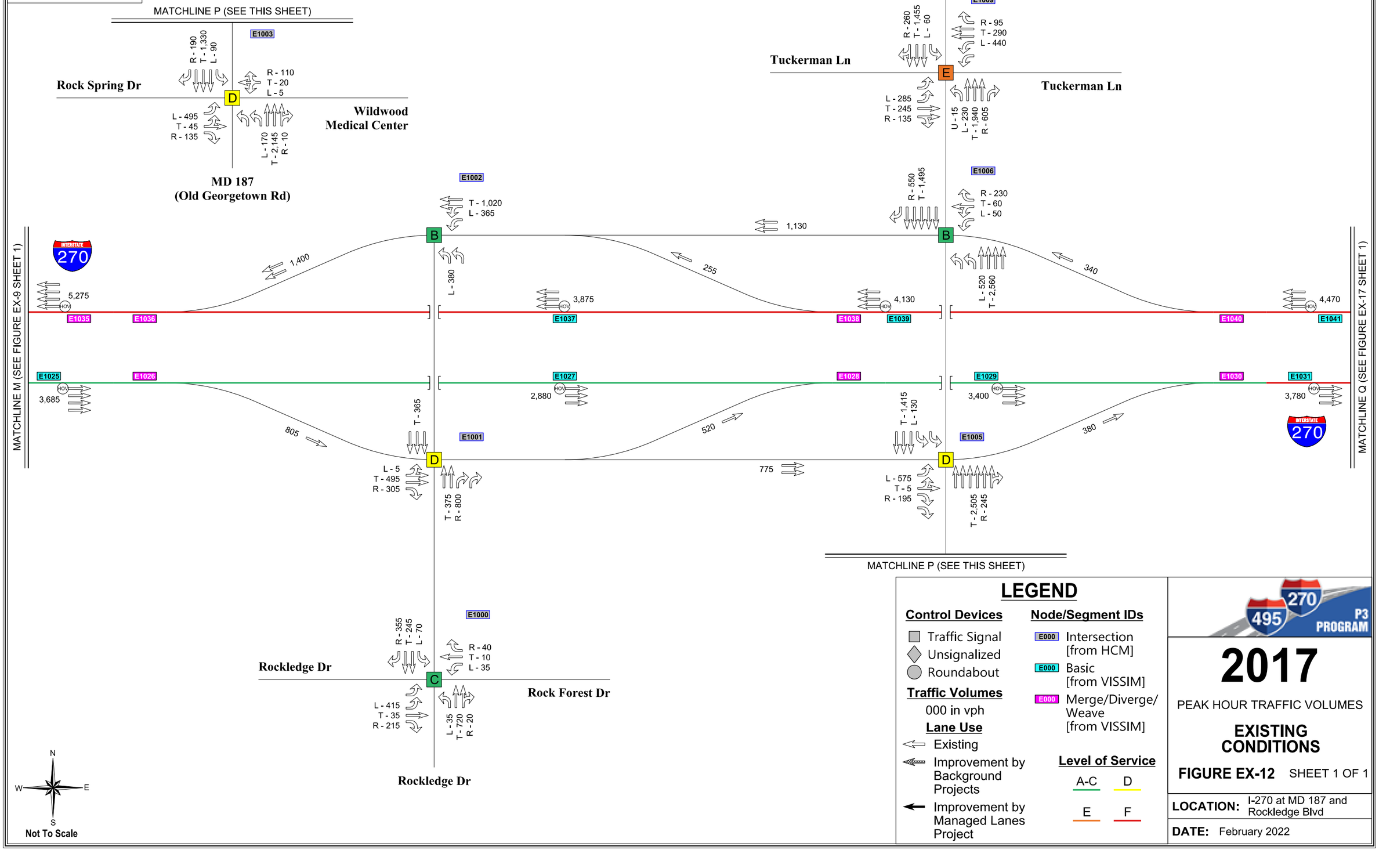
EXISTING CONDITIONS

FIGURE EX-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

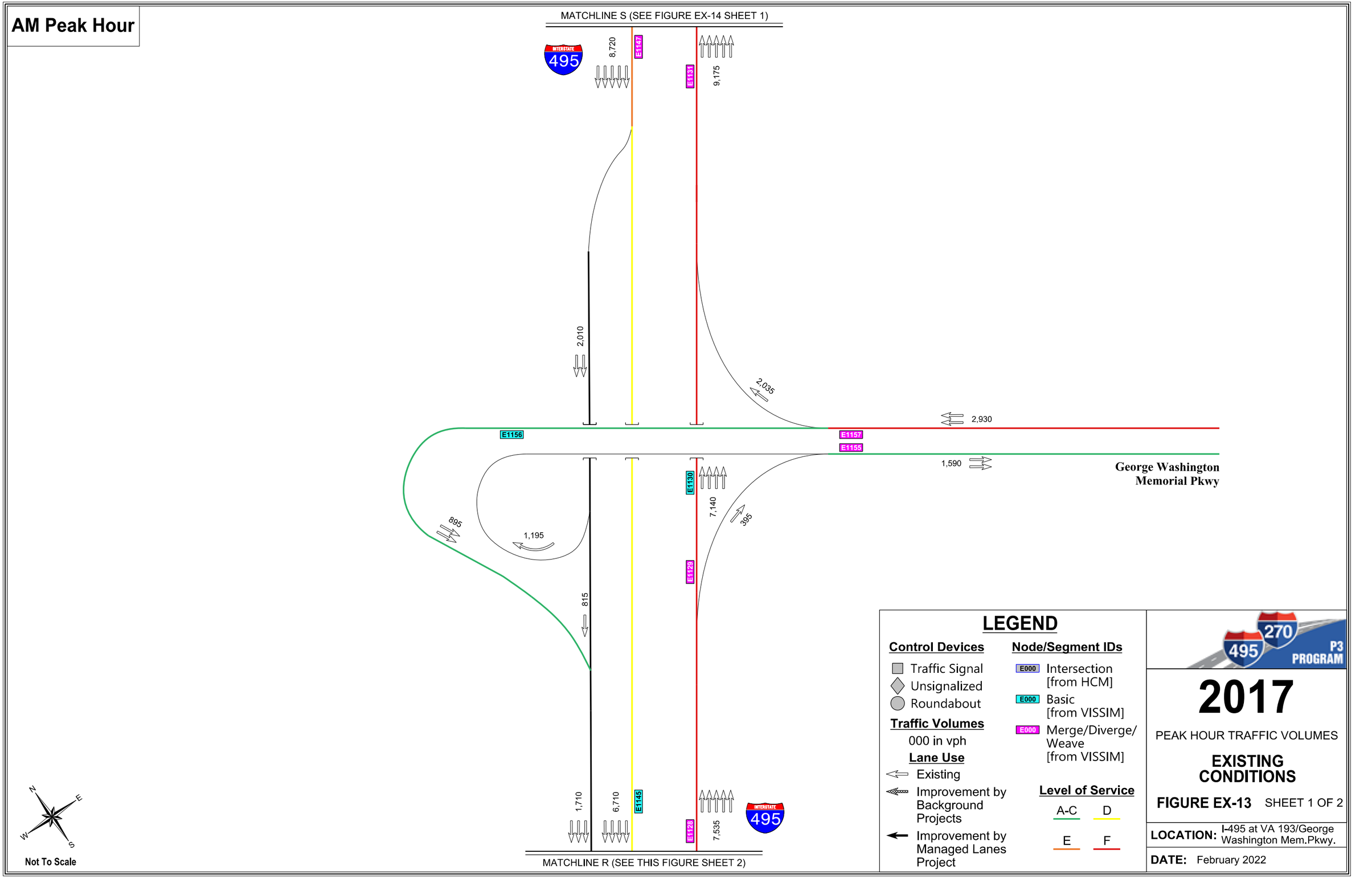
EXISTING CONDITIONS

FIGURE EX-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

Not To Scale

495 270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

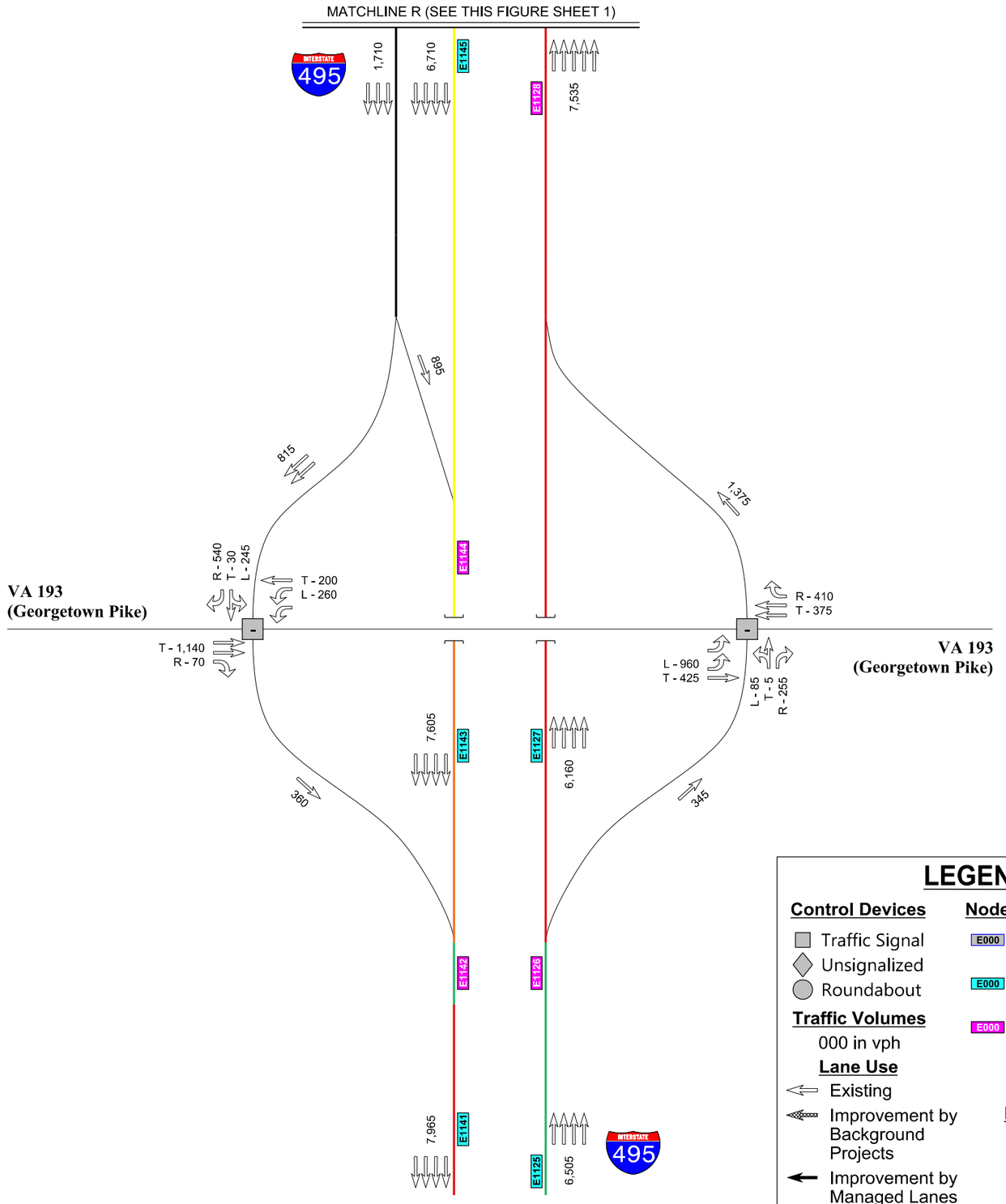
EXISTING CONDITIONS

FIGURE EX-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

495 270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

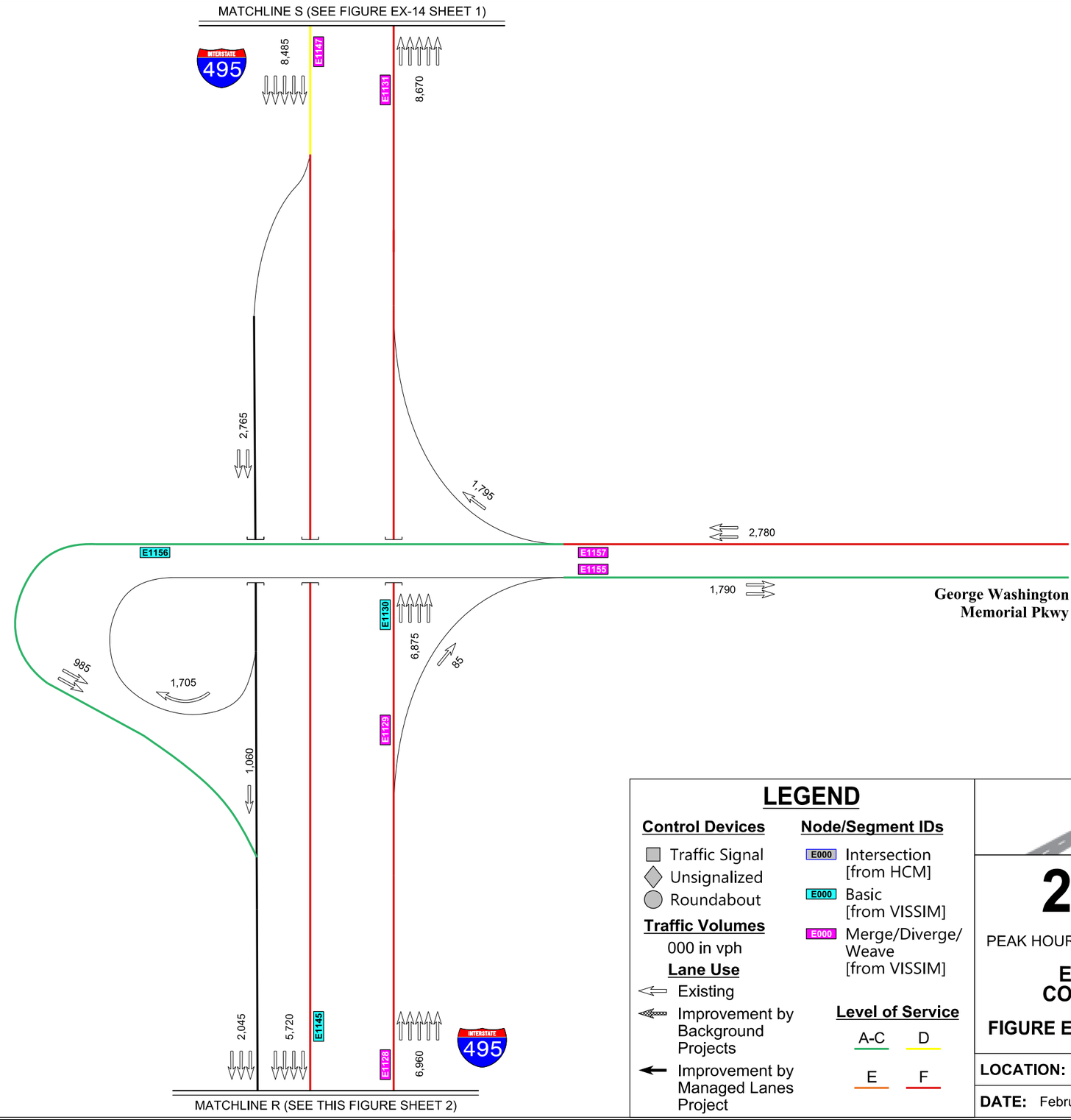
EXISTING CONDITIONS

FIGURE EX-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

495 270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

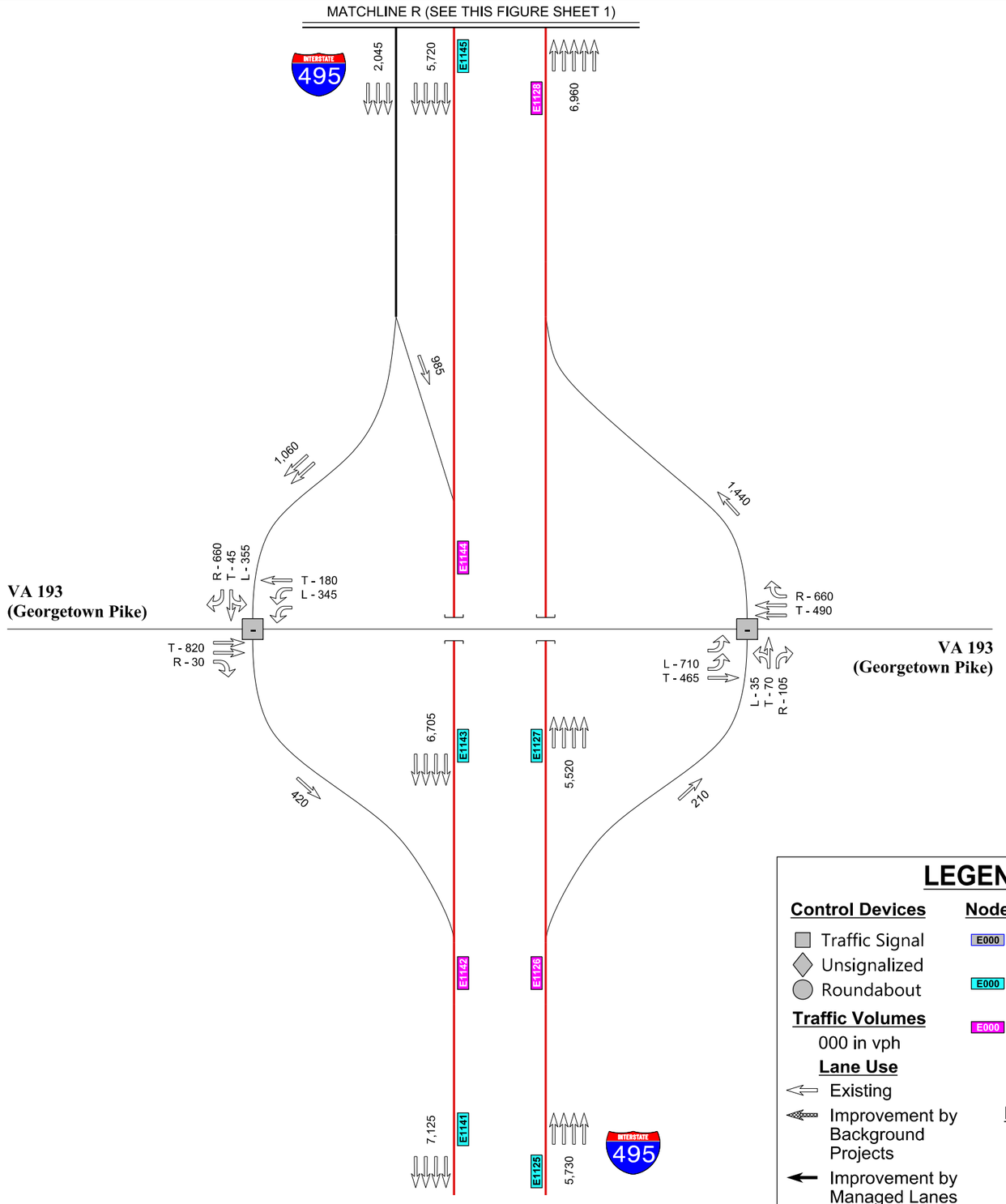
EXISTING CONDITIONS

FIGURE EX-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

FIGURE EX-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour

MATCHLINE U (SEE FIGURE EX-15 SHEET 1)

MATCHLINE T (SEE THIS SHEET)

MATCHLINE T (SEE THIS SHEET)

MATCHLINE S (SEE FIGURE EX-13 SHEET 1)

INTERSTATE 495

Carderock

Clara Barton Pkwy

Clara Barton Access Rd

E1150 7,700

E1135 8,545

E1149

E1159 120 200

E1160 0 560

E1134

E1148 7,580

115 200

E1133 8,430

580 545

E1161

320 1,380

E1158 695 685 1,140

745

560 1,230

320 1,380

E1142 8,720

E1131 9,175

N W E S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

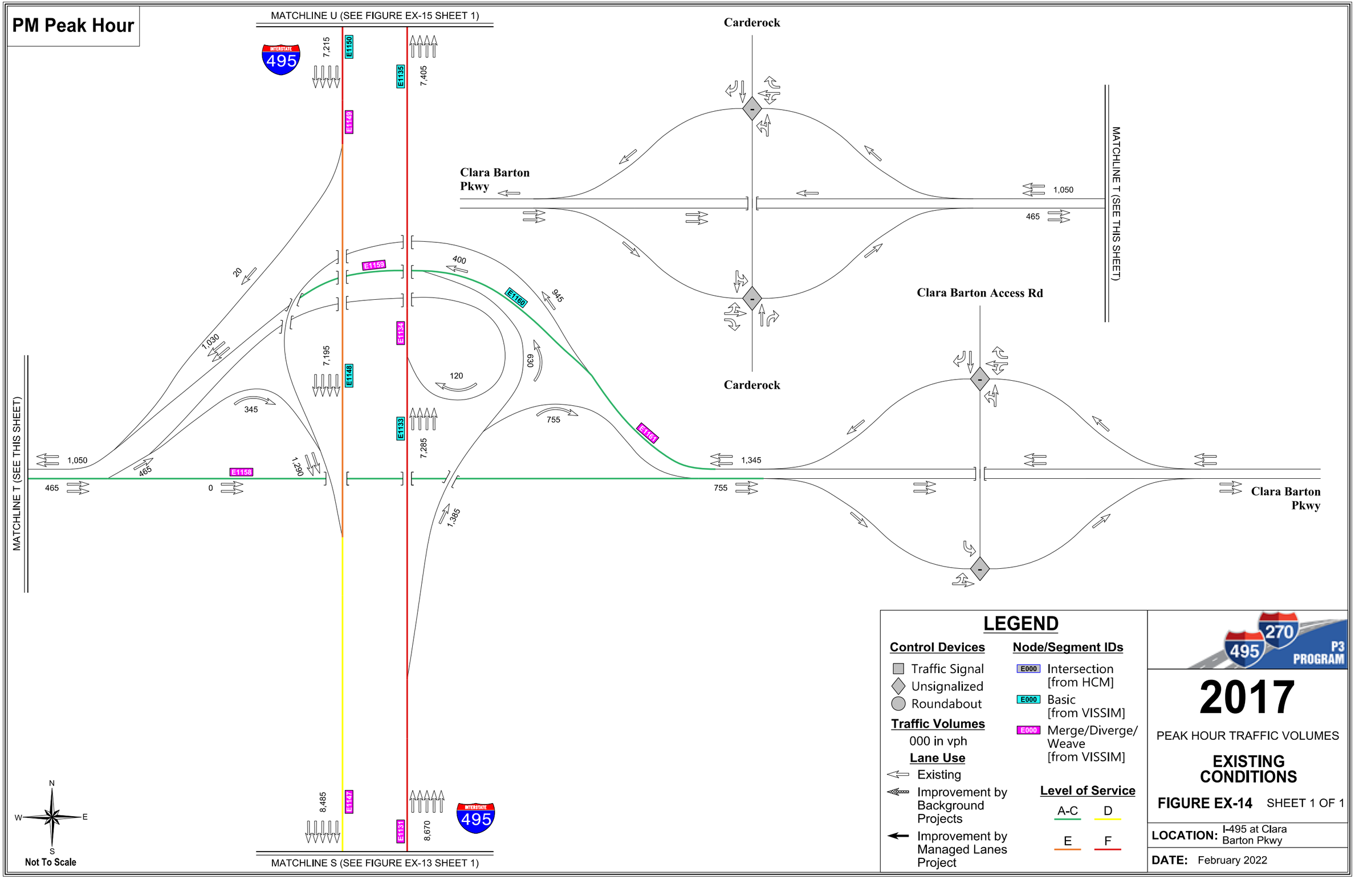
EXISTING CONDITIONS

FIGURE EX-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

495 270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

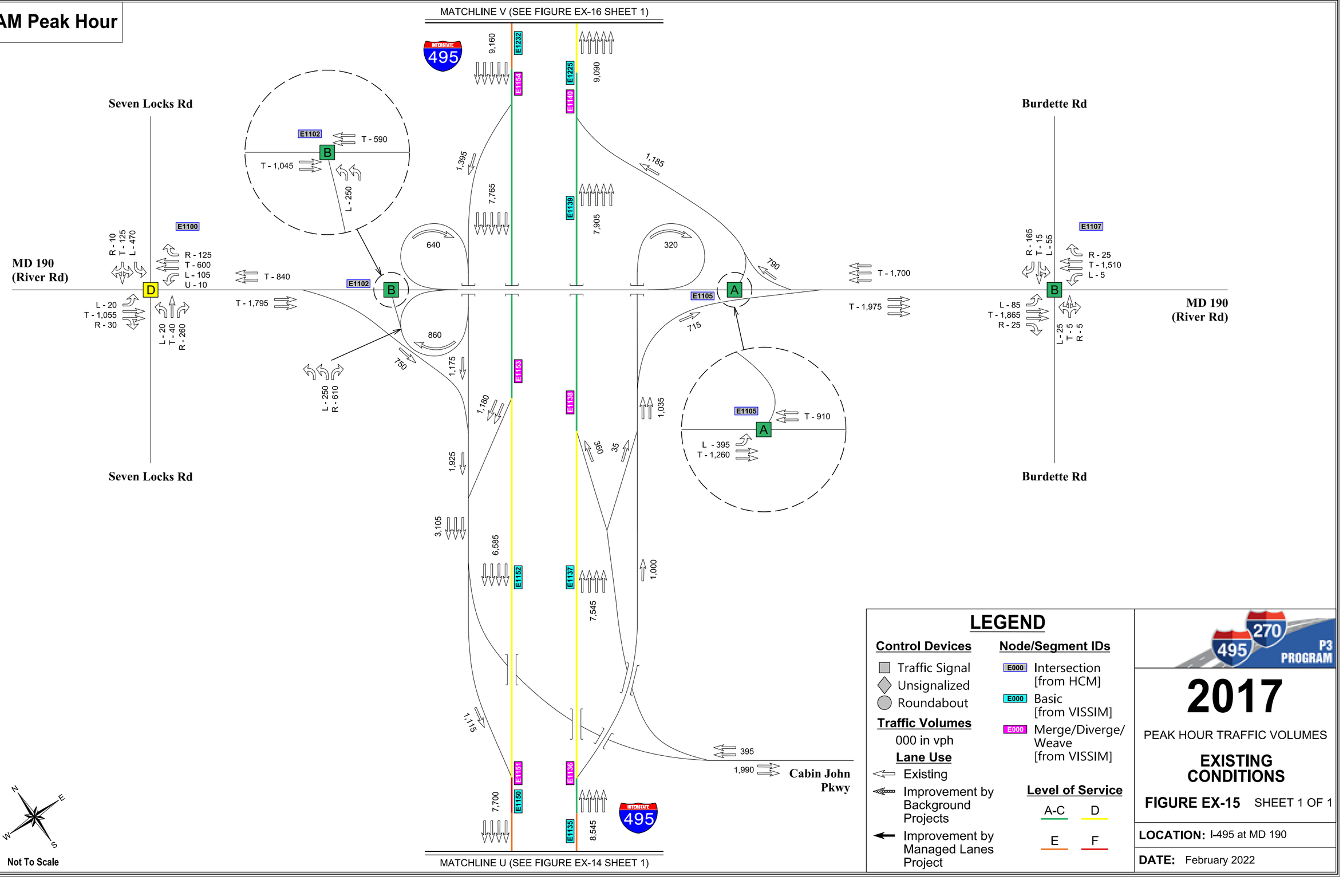
EXISTING CONDITIONS

FIGURE EX-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

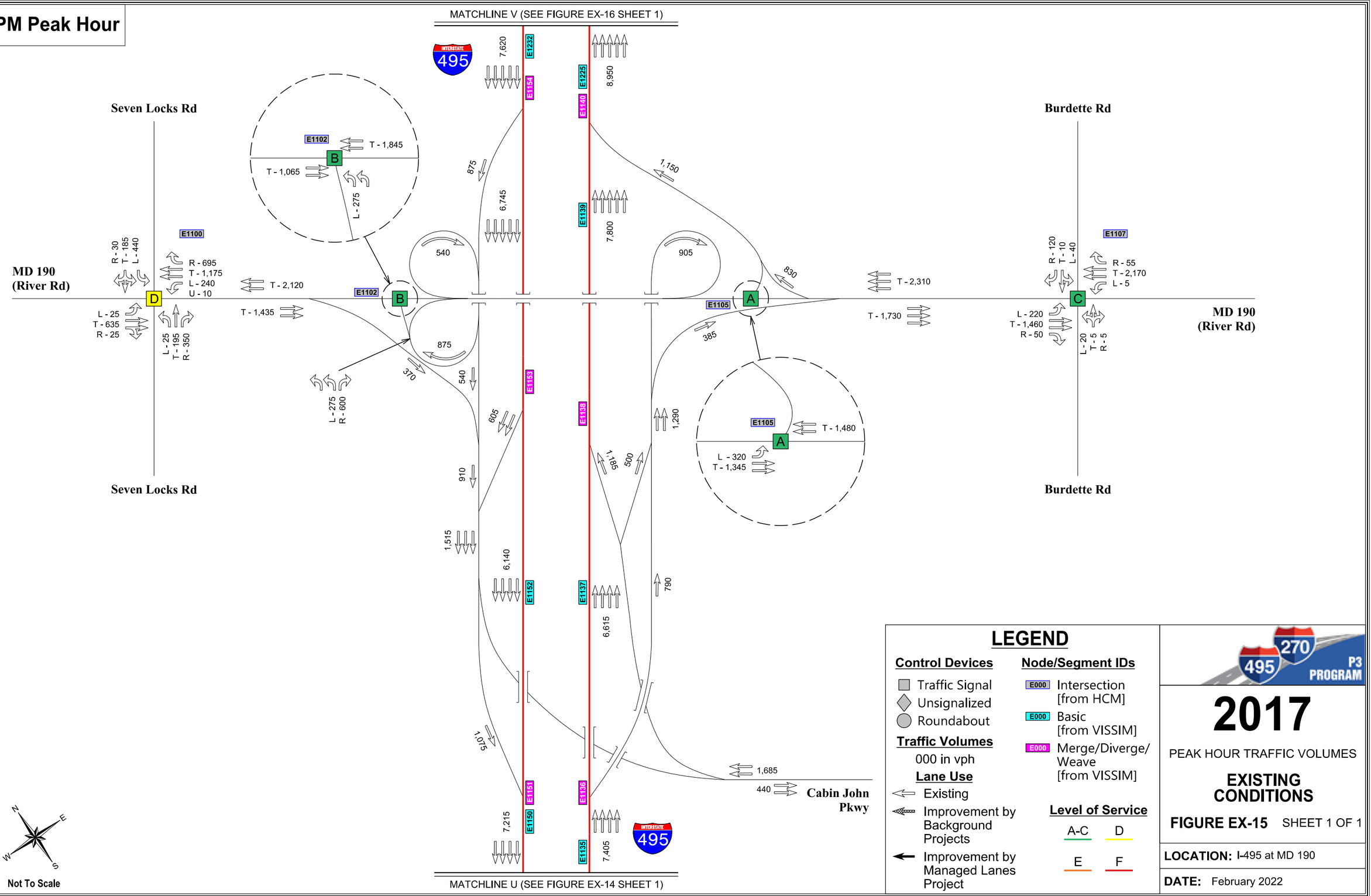
EXISTING CONDITIONS

FIGURE EX-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2017

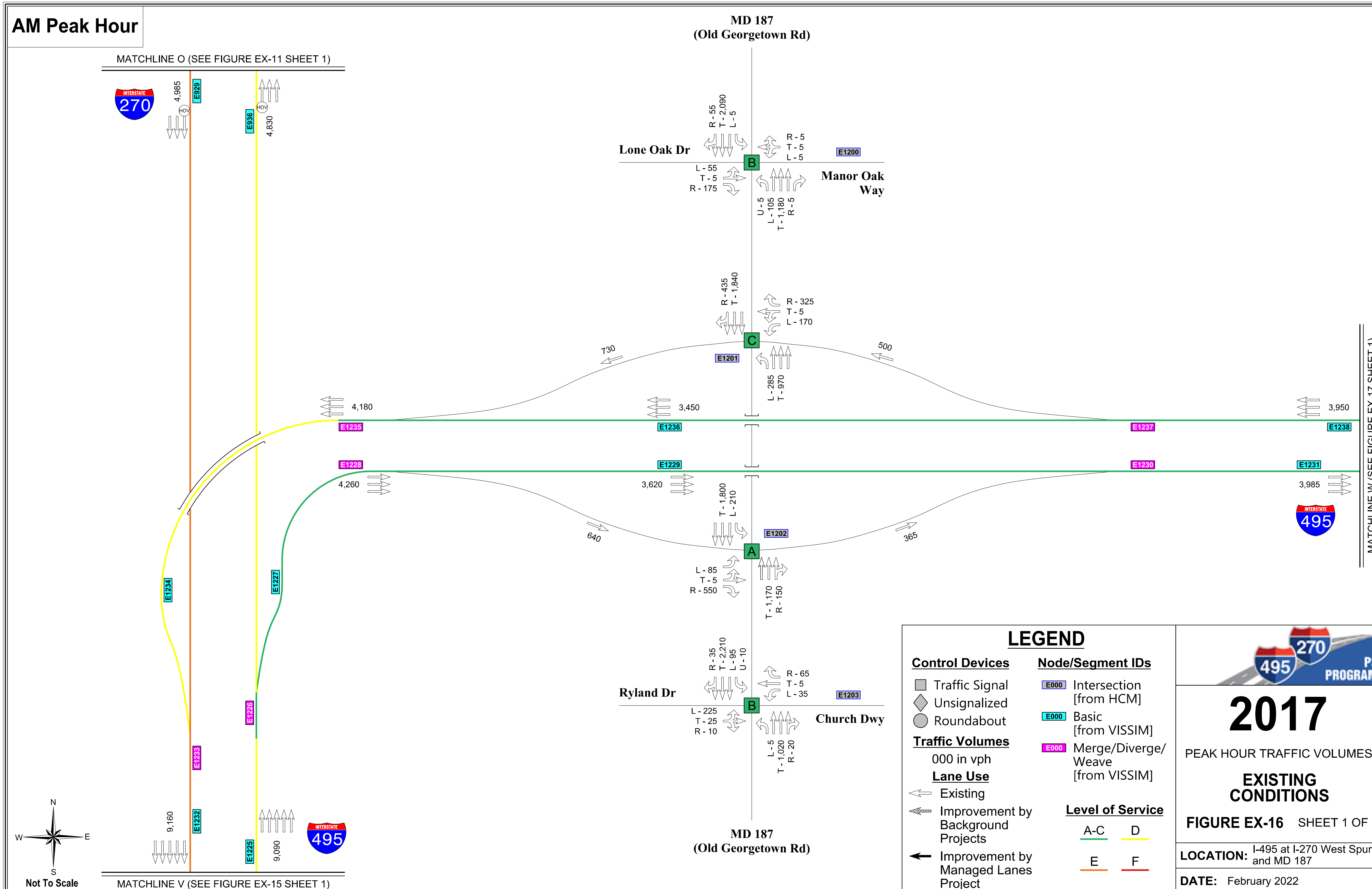
PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

FIGURE EX-15 SHEET 1 OF 1

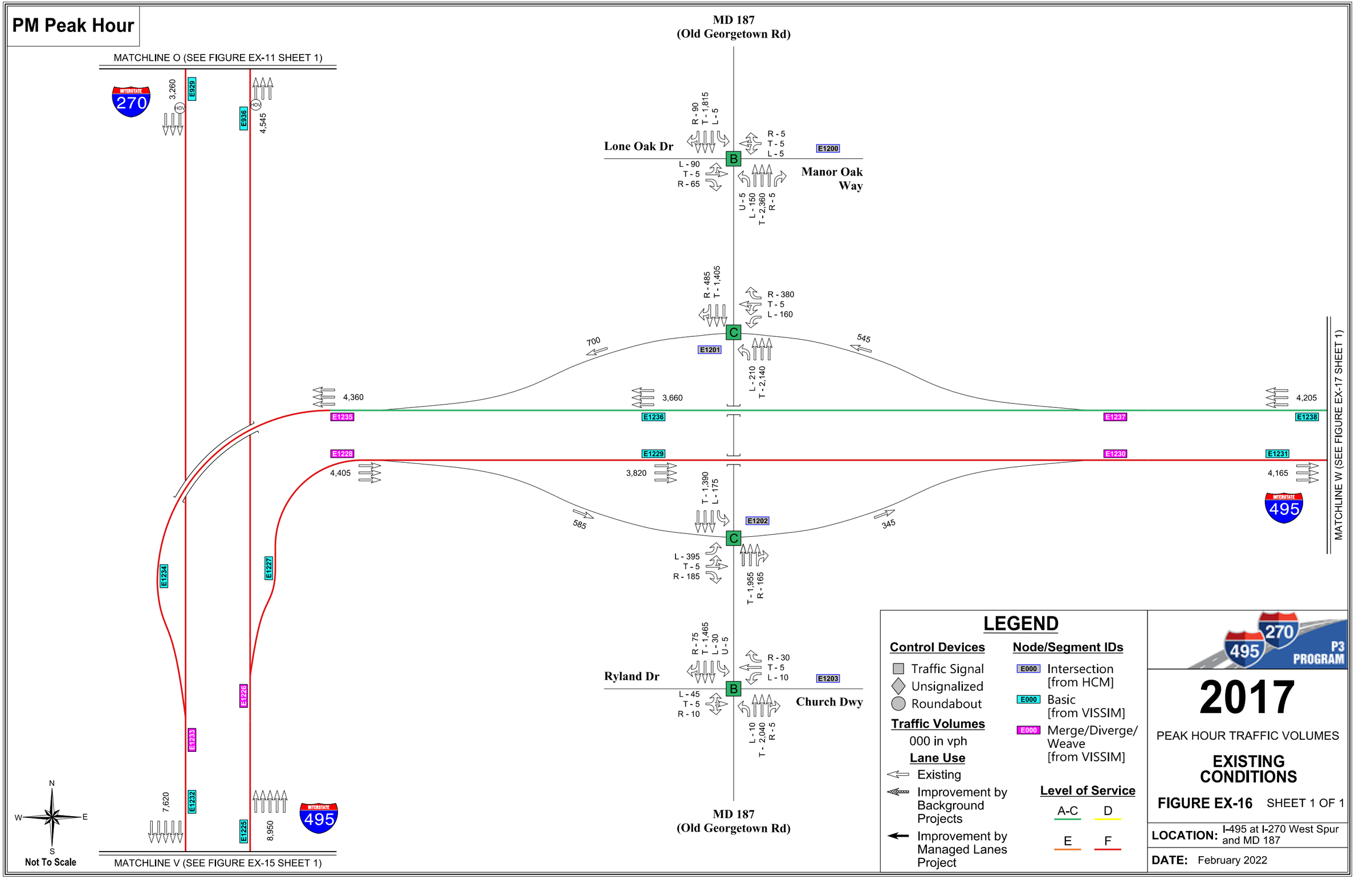
LOCATION: I-495 at MD 190

DATE: February 2022



AM Peak Hour
MD 187
(Old Georgetown Rd)
MATCHLINE O (SEE FIGURE EX-11 SHEET 1)
INTERSTATE 270
4,985
E929
HOV
E936
4,830
Lone Oak Dr
R - 55
T - 2,090
L - 5
R - 5
T - 5
L - 5
E1200
B
L - 55
T - 5
R - 175
Manor Oak Way
U - 5
L - 105
T - 1,180
R - 5
R - 435
T - 1,840
R - 325
T - 5
L - 170
C
730
500
E1201
L - 285
T - 970
4,180
3,450
3,950
E1235
E1236
E1237
E1238
E1228
E1229
E1230
E1231
4,260
3,620
3,985
T - 1,800
L - 210
E1202
INTERSTATE 495
640
365
A
L - 85
T - 5
R - 550
T - 1,170
R - 150
E1234
E1227
MATCHLINE W (SEE FIGURE EX-17 SHEET 1)
R - 35
T - 2,210
L - 95
U - 10
R - 65
T - 5
L - 35
Ryland Dr
E1203
B
L - 225
T - 25
R - 10
Church Dwy
L - 5
T - 1,020
R - 20
E1226
E1233
E1232
9,160
E1225
9,090
INTERSTATE 495
N
W
E
S
Not To Scale
MD 187
(Old Georgetown Rd)
MATCHLINE V (SEE FIGURE EX-15 SHEET 1)
LEGEND
Control Devices
Traffic Signal
Unsignalized
Roundabout
Traffic Volumes
000 in vph
Lane Use
Existing
Improvement by Background Projects
Improvement by Managed Lanes Project
Node/Segment IDs
E000 Intersection [from HCM]
E000 Basic [from VISSIM]
E000 Merge/Diverge/ Weave [from VISSIM]
Level of Service
A-C
D
E
F
495 270 P3 PROGRAM
2017
PEAK HOUR TRAFFIC VOLUMES
EXISTING CONDITIONS
FIGURE EX-16
SHEET 1 OF 1
LOCATION: I-495 at I-270 West Spur and MD 187
DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

FIGURE EX-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

AM Peak Hour

MATCHLINE Q (SEE FIGURE EX-12 SHEET 1)

MATCHLINE W (SEE FIGURE EX-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

MD 355 (Rockville Pike)

Grosvenor Ln E1300

Grosvenor Ln

Alta Vista Rd E1310

Bellevue Dr

MD 355 (Rockville Pike)

Pooks Hill Rd E1309

INTERSTATE 270

INTERSTATE 495

E1041 4,800

E1031 4,020

E1238 3,950

E1231 3,985

E1325

E1326 3,515

E1327

E1307

E1044

E1037

E1033

E1043 4,065

E1331 2,625

E1332 1,195

E1333 1,065

E1334 7,620

E1328

E1329

E1330

E1425 7,635

E1432 8,575

D

C

B

-

R - 120
T - 2,085

R - 105
T - 110
L - 595

R - 730

L - 110
R - 215

T - 1,125

T - 80
R - 440

R - 520
T - 1,125

735

955

L - 735
T - 690

T - 1,830
L - 1,065

395

6,340

L - 395
T - 1,425

230

7,405

T - 3,025

470

R - 470

T - 1,820
R - 230

R - 115
T - 3,380

L - 430
R - 165

L - 45
T - 1,620

R - 90
T - 3,155
L - 5
U - 295

R - 10
T - 5
L - 5

L - 60
T - 5
R - 20

T - 1,300
R - 5

N
W E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

FIGURE EX-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

PM Peak Hour

MATCHLINE Q (SEE FIGURE EX-12 SHEET 1)

MATCHLINE W (SEE FIGURE EX-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

MD 355 (Rockville Pike)

Grosvenor Ln E1300

R - 125, T - 1,570

R - 135, T - 135, L - 220

R - 400

L - 150, R - 170

T - 1,735

T - 90, R - 800

Grosvenor Ln

R - 890, T - 1,795

1,135

1,020

L - 1,135, T - 1,605

Alta Vista Rd E1310

R - 125, T - 1,790, L - 5, U - 230

L - 85, T - 5, R - 15

R - 5, T - 5, L - 10

U - 5, L - 10, T - 2,855, R - 5

Bellevue Dr

MD 355 (Rockville Pike)

INTERSTATE 270

4,470 HOV E1041

E1031 3,780 HOV

E1042

E1037

E1033

E1043 3,335

920

2,860

E1044

T - 1,120, L - 840

INTERSTATE 495

4,205 E1238

E1331

E1332

E1333

7,230

E1334

8,250 E1432

E1231 4,165

E1325

E1326 3,840

E1327

840

310

6,700

E1328

E1329

E1330

E1425 7,835

INTERSTATE 495

L - 310, T - 2,740

295

7,540

T - 2,040

325

B E1307

R - 325

T - 3,050, R - 295

R - 285, T - 2,080

Pooks Hill Rd E1309

B

L - 235, R - 70

L - 65, T - 3,110

N W E S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- E000 Intersection [from HCM]
- E000 Basic [from VISSIM]
- E000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

INTERSTATE 270 INTERSTATE 495 P3 PROGRAM

2017

PEAK HOUR TRAFFIC VOLUMES

EXISTING CONDITIONS

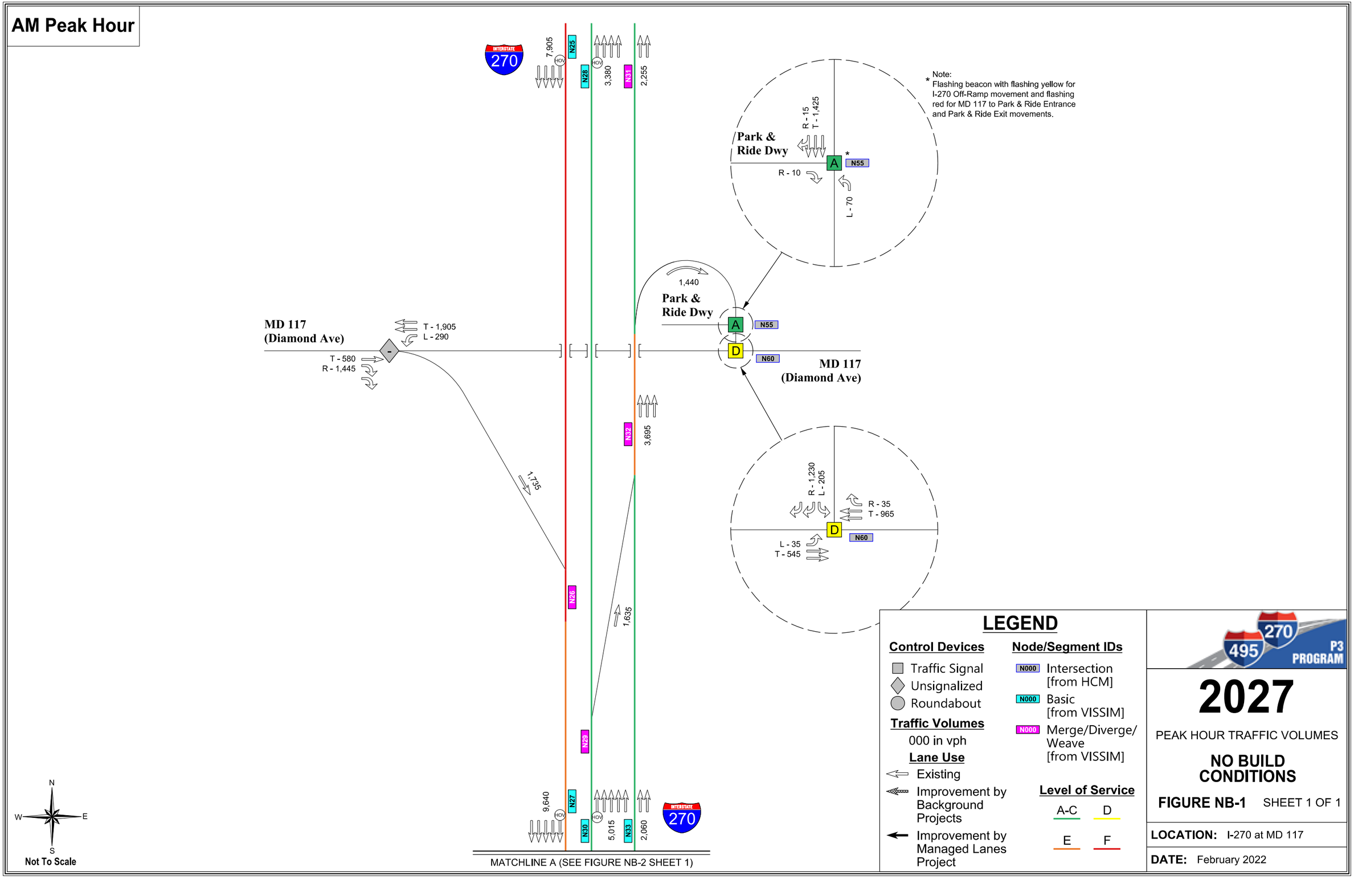
FIGURE EX-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

2027 NO BUILD CONDITIONS GRAPHICS

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

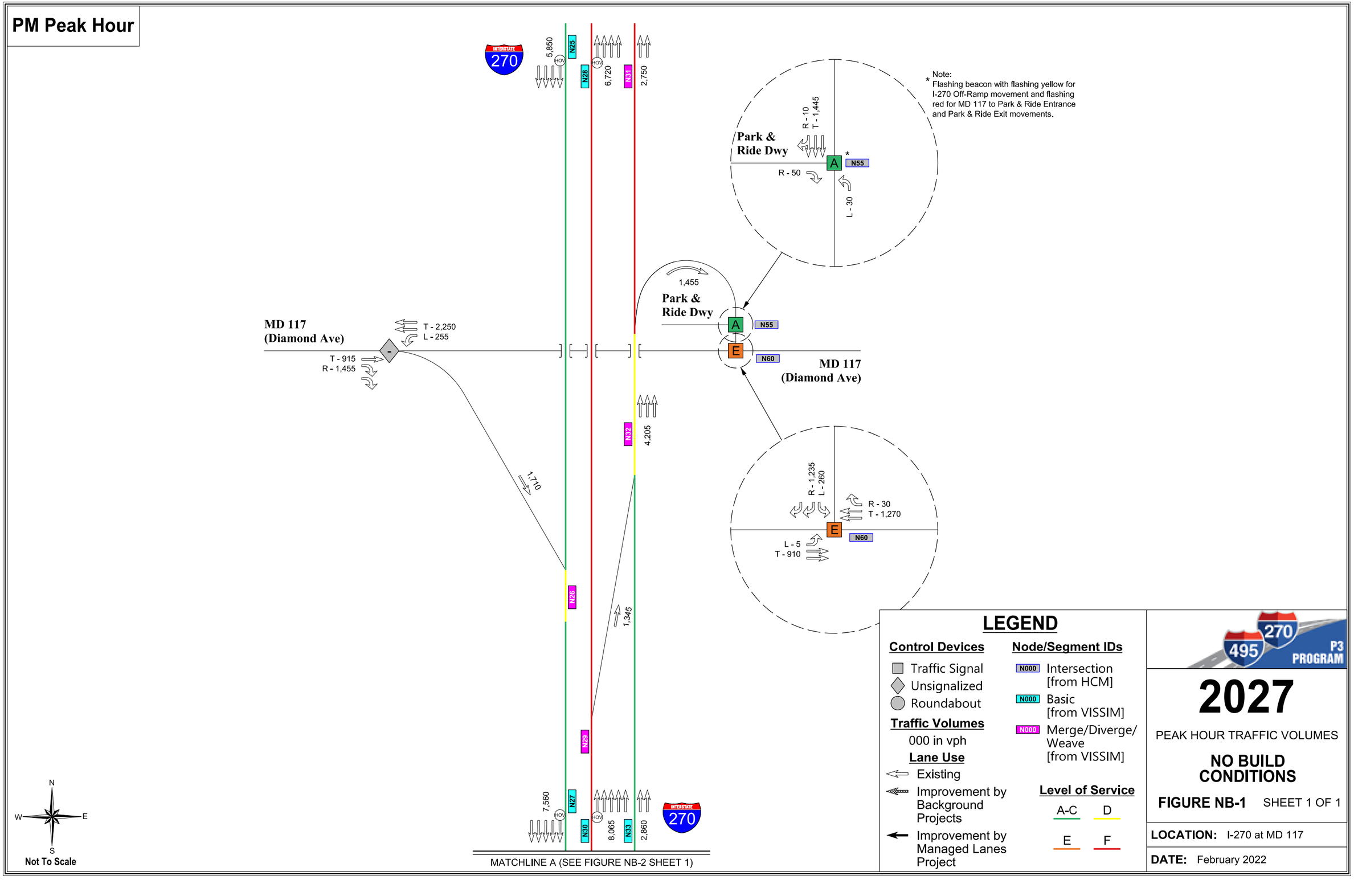
NO BUILD CONDITIONS

FIGURE NB-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

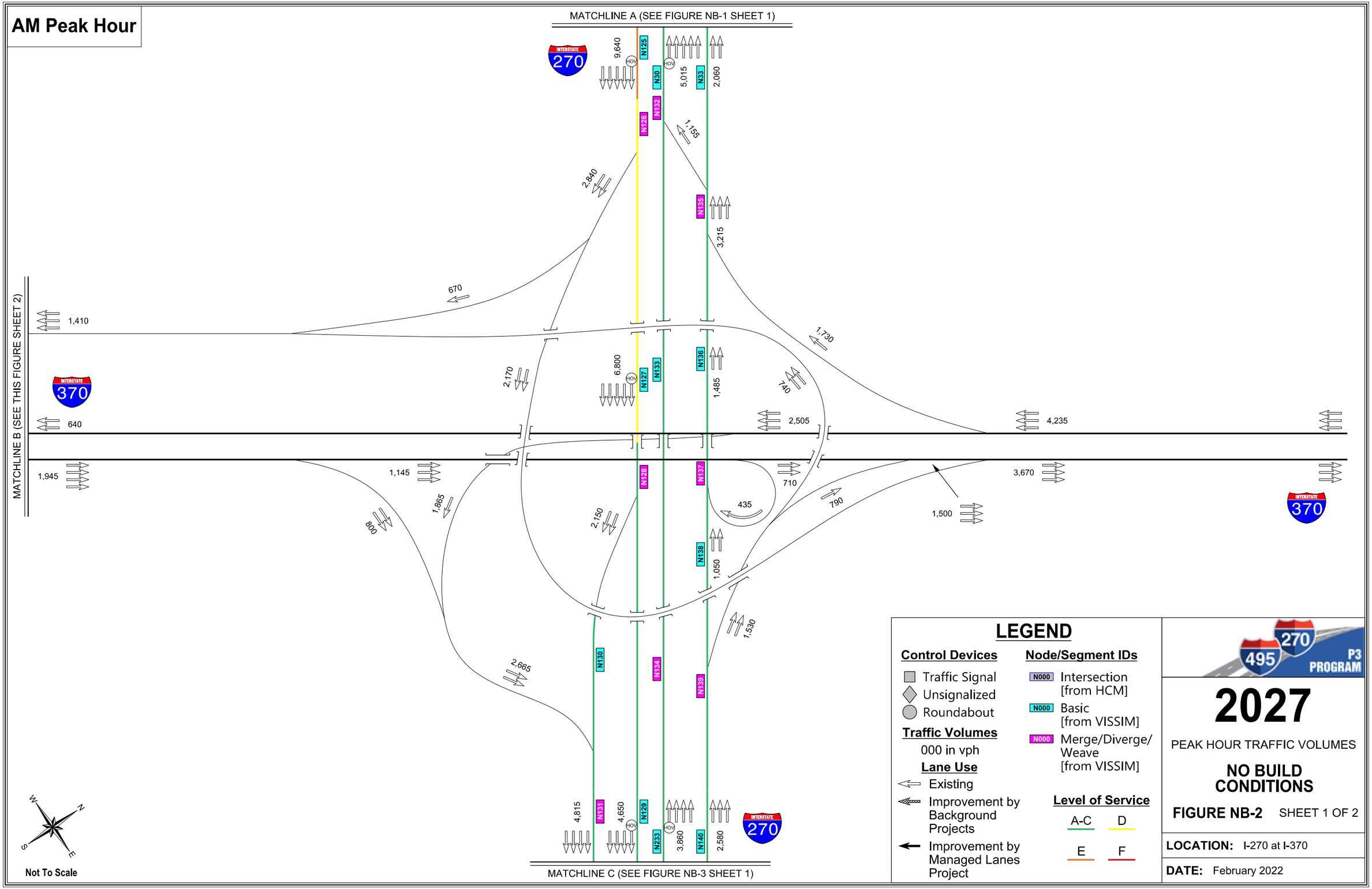
NO BUILD CONDITIONS

FIGURE NB-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

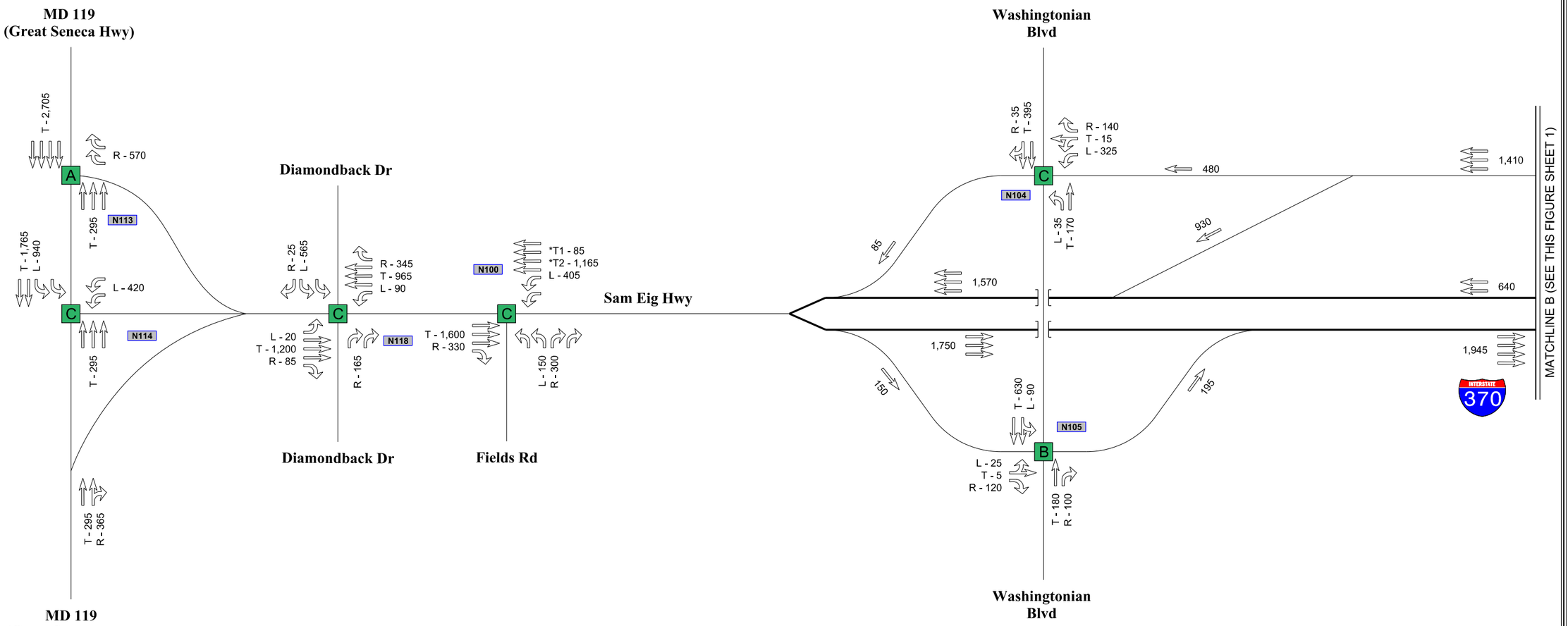
NO BUILD CONDITIONS

FIGURE NB-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

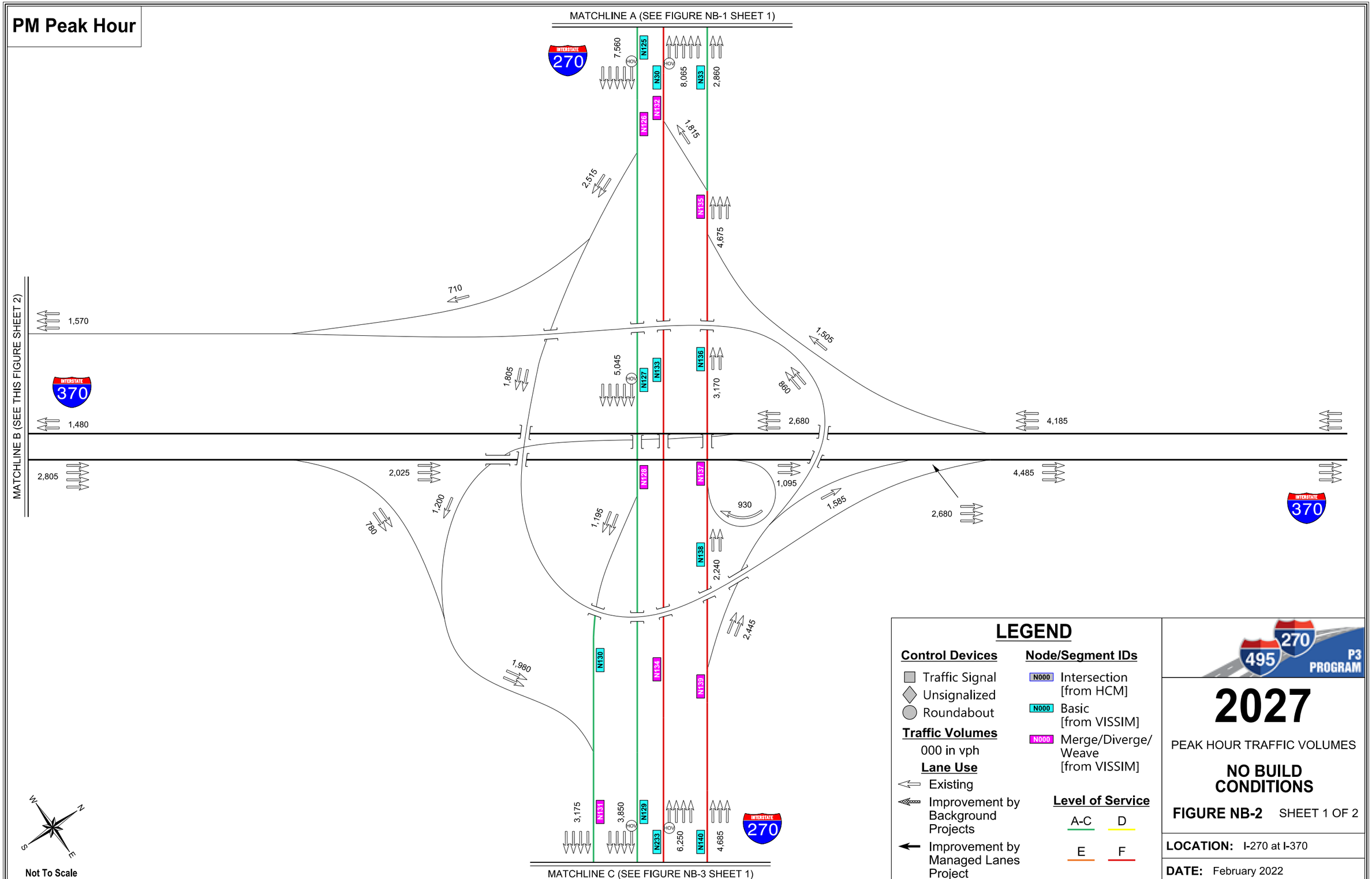
NO BUILD CONDITIONS

FIGURE NB-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

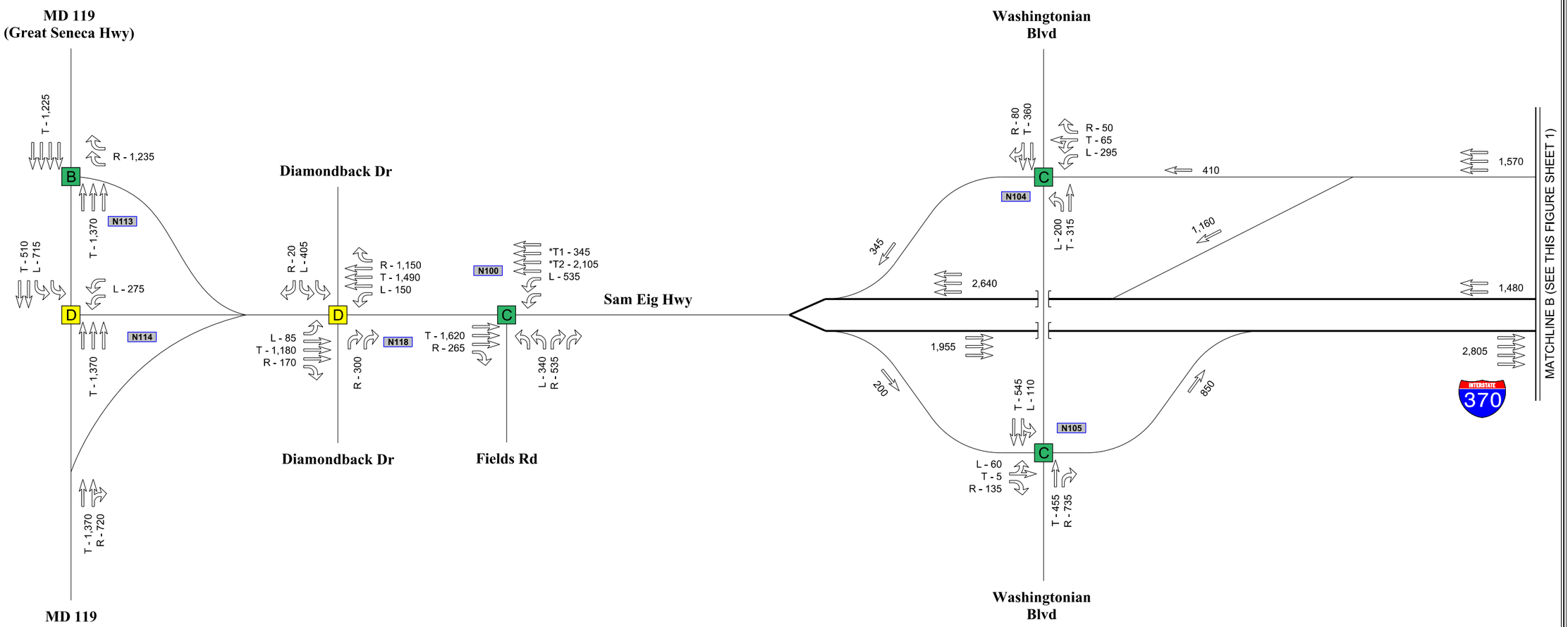
NO BUILD CONDITIONS

FIGURE NB-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

I-270 / I-495 P3 PROGRAM

2027

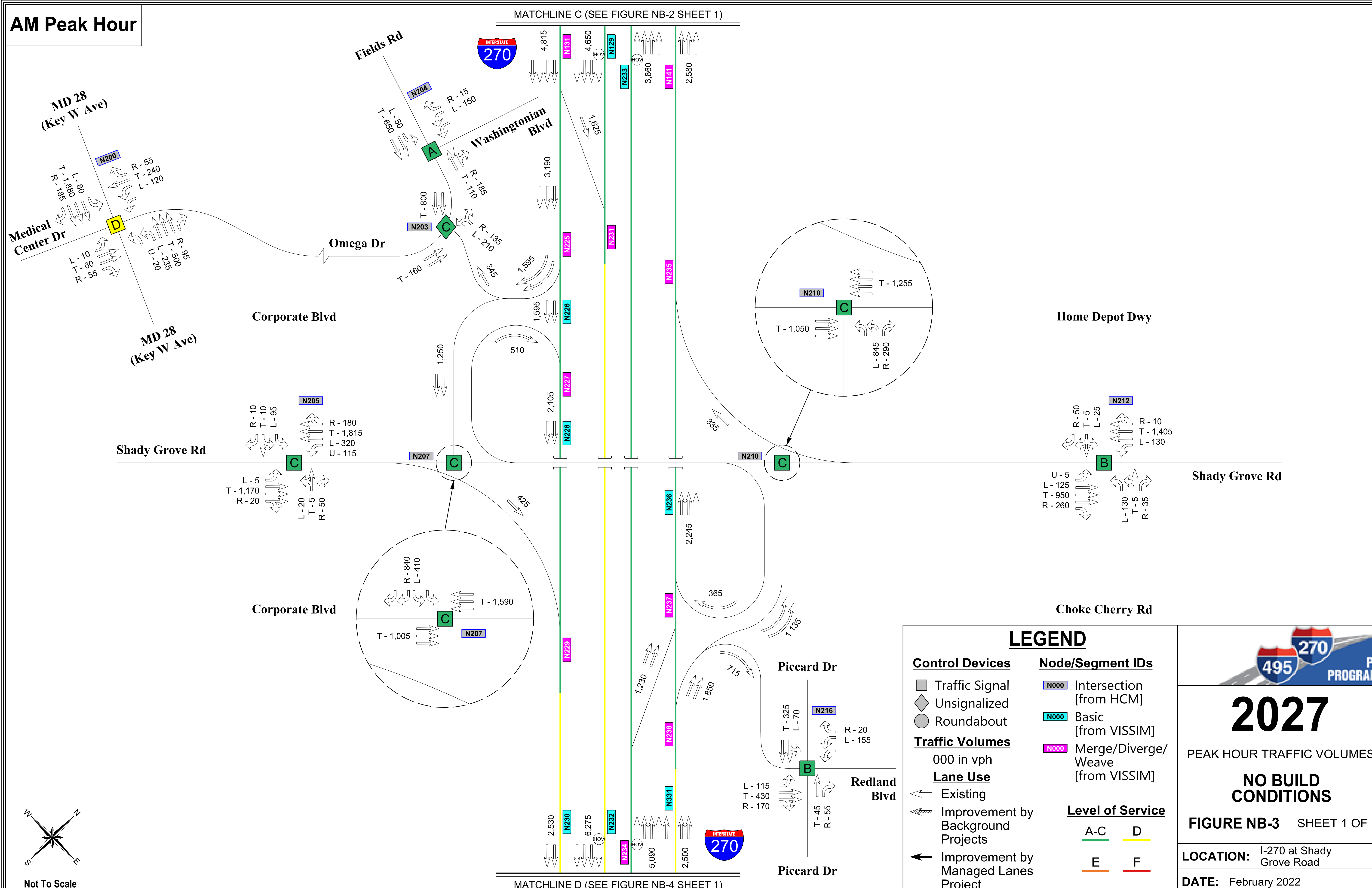
PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022



2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

PM Peak Hour

MATCHLINE C (SEE FIGURE NB-2 SHEET 1)

MATCHLINE D (SEE FIGURE NB-4 SHEET 1)

Fields Rd

MD 28 (Key W Ave)

MD 28 (Key W Ave)

Medical Center Dr

Omega Dr

Washingtonian Blvd

Corporate Blvd

Corporate Blvd

Shady Grove Rd

Shady Grove Rd

Home Depot Dwy

Choke Cherry Rd

Piccard Dr

Piccard Dr

Redland Blvd

INTERSTATE 270

HOV

N200 R - 185 T - 100 L - 100 | L - 80 T - 730 R - 30 | L - 150 T - 330 R - 305 | T - 1,930 U - 20 L - 70 | R - 195

N203 T - 395 | R - 115 L - 20 | T - 1,420 | 135 | 730

N204 L - 20 T - 175 | R - 80 L - 220

N205 R - 20 T - 5 L - 160 | R - 105 T - 795 L - 95 U - 25 | L - 15 T - 1,665 R - 30 | L - 60 T - 5 R - 310

N207 T - 685 | R - 335 L - 260 | T - 1,305

N210 T - 1,145 | T - 860 | L - 370 R - 685

N212 R - 150 T - 20 L - 75 | R - 10 T - 1,545 L - 80 | U - 5 L - 160 T - 1,155 R - 225 | L - 385 T - 10 R - 85

N216 T - 100 L - 40 | R - 75 L - 65 | L - 35 T - 320 R - 15 | T - 235 R - 260

N225 2,035 | 1,305

N226 595 | 830

N227 2,135

N228 940

N229 2,640 | 1,425 | 370

N230 2,990

N231 1,140

N232 4,990

N233 6,250

N234 8,890

N235 1,825

N236 855 | 3,745

N237 705 | 1,055

N238

N331

N129 3,850

N131 3,175

N141 4,685

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C | D | E | F

I-270 / 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

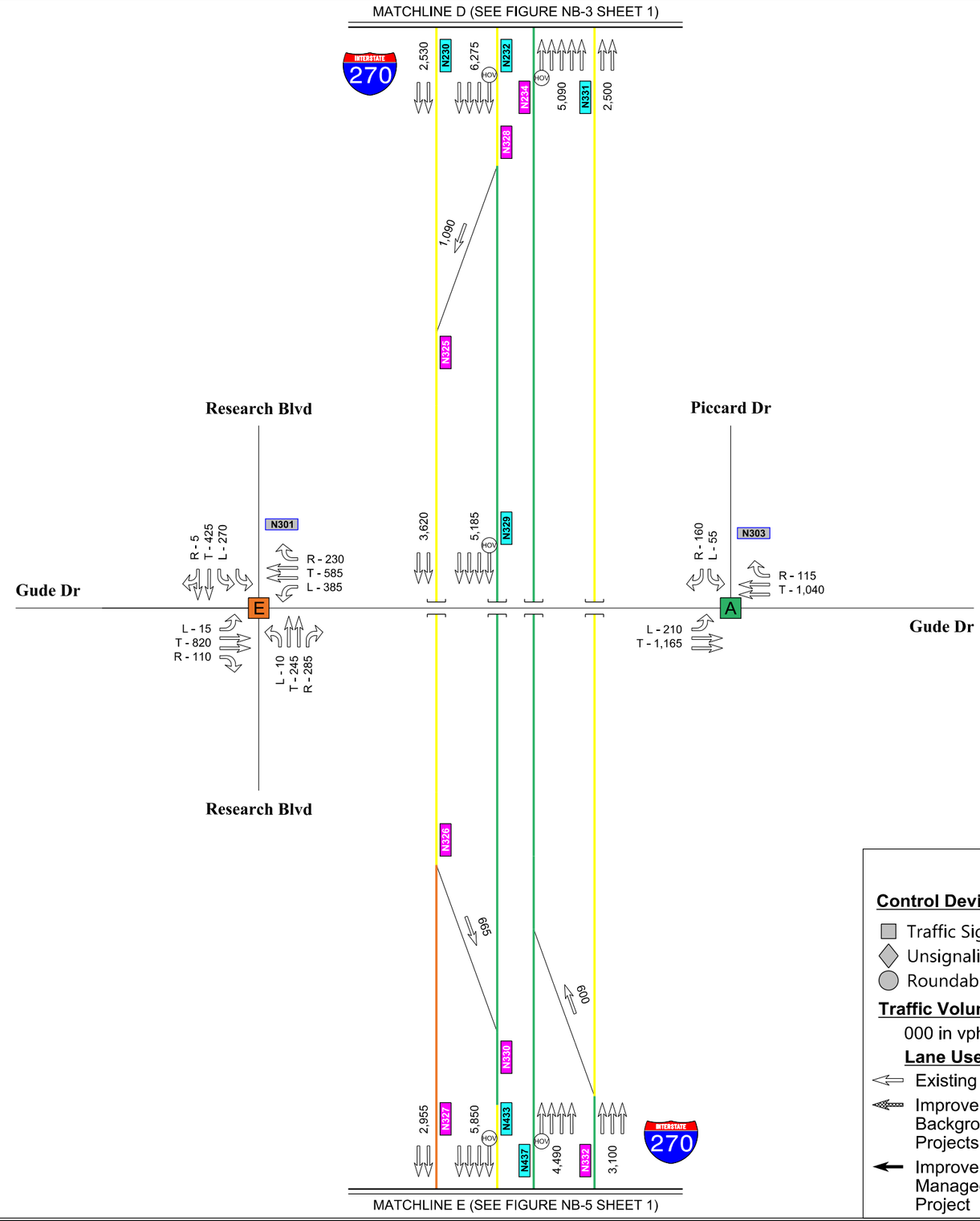
NO BUILD CONDITIONS

FIGURE NB-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

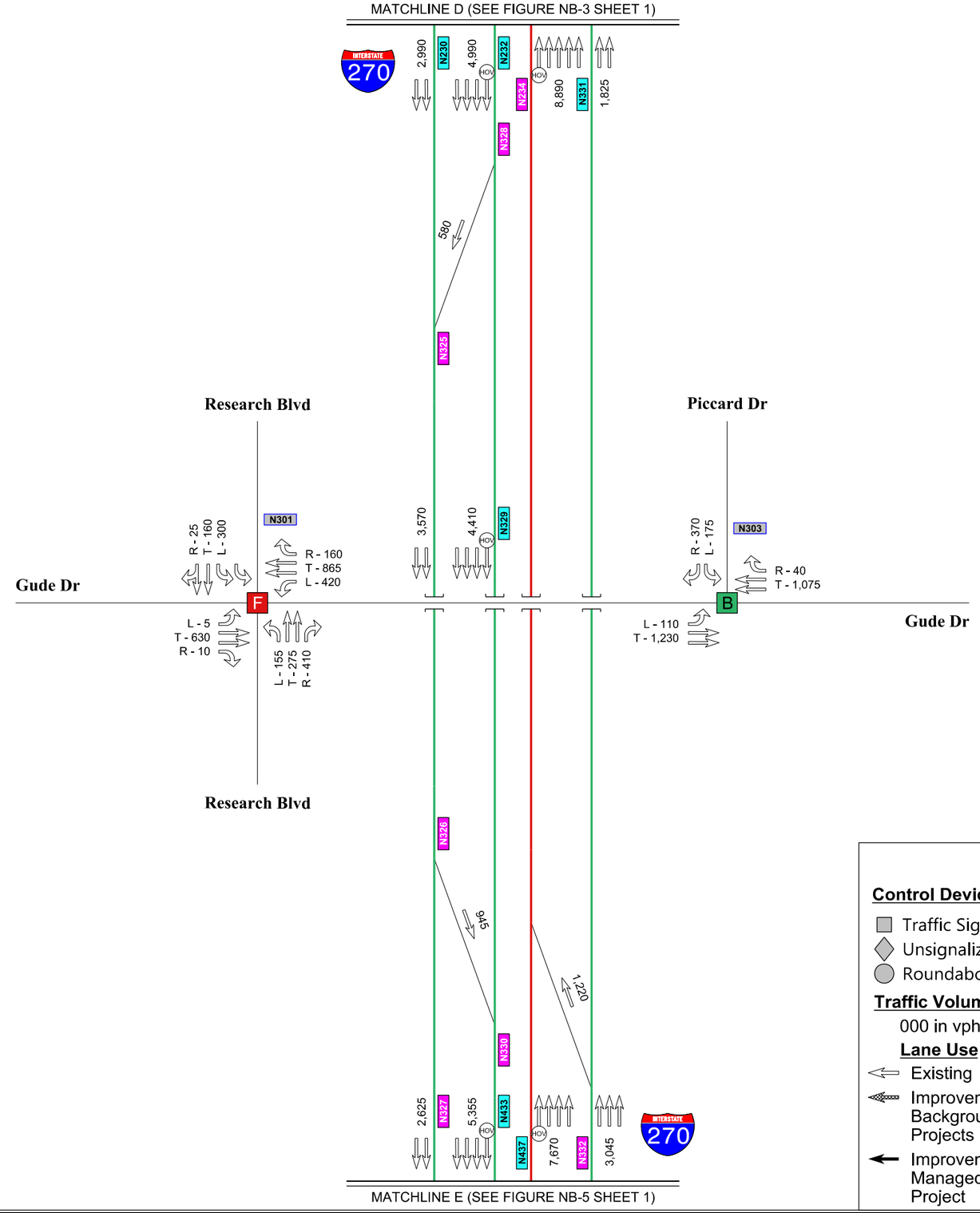
FIGURE NB-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

PM Peak Hour

MATCHLINE D (SEE FIGURE NB-3 SHEET 1)



MATCHLINE E (SEE FIGURE NB-5 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

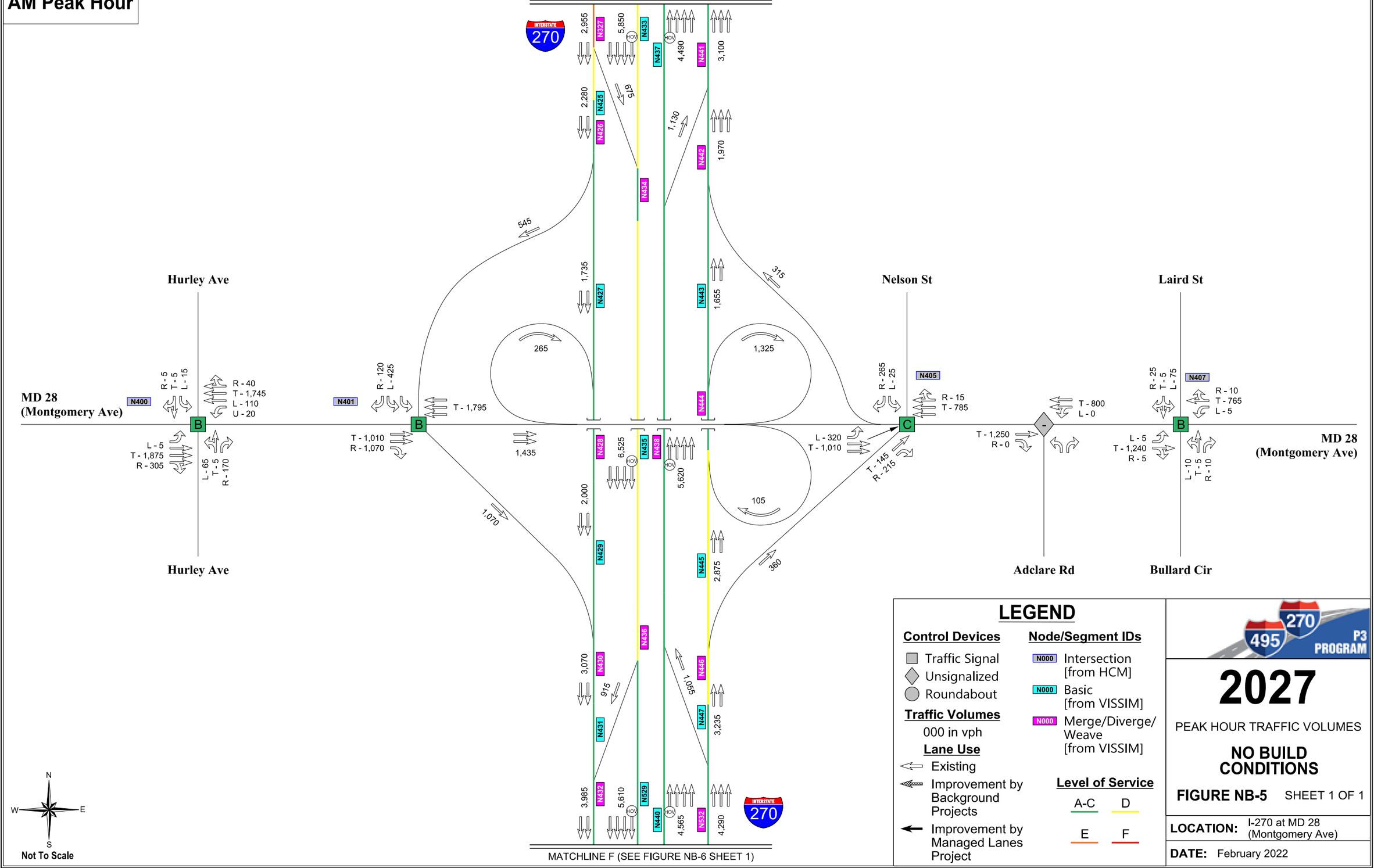
FIGURE NB-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

AM Peak Hour

MATCHLINE E (SEE FIGURE NB-4 SHEET 1)



MATCHLINE F (SEE FIGURE NB-6 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

PM Peak Hour

MATCHLINE E (SEE FIGURE NB-4 SHEET 1)

MATCHLINE F (SEE FIGURE NB-6 SHEET 1)

INTERSTATE 270

MD 28 (Montgomery Ave)

Hurley Ave

Nelson St

Laird St

Adclare Rd

Bullard Cir

N400 R - 10, T - 5, L - 35; R - 15, T - 2,160, L - 265, U - 20; L - 5, T - 2,010, R - 70; L - 85, T - 5, R - 140

N401 R - 155, L - 505; T - 2,305; T - 940, R - 1,265

N405 R - 415, L - 30; R - 35, T - 1,145; L - 220, T - 1,125; T - 275, R - 175

N407 R - 65, T - 5, L - 20; R - 10, T - 1,110, L - 5; T - 1,180, L - 0; T - 1,330, R - 0; L - 30, T - 1,285, R - 15; L - 5, T - 5, R - 10

N425 2,580; N426 2,625; N427 1,920; N428 4,345; N429 2,140; N430 3,405; N431 1,265; N432 4,345; N433 5,355 (HOV); N434 45; N435 5,400 (HOV); N436 940; N437 7,670 (HOV); N438 8,735 (HOV); N440 7,185; N441 3,045; N442 1,980; N443 1,370; N444 660; N445 2,845; N446 1,560; N447 3,295; N529 4,460 (HOV); N532 4,845; 1,065; 610; 220; 1,575; 1,445; 100; 450

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/Weave [from VISSIM]

Level of Service
A-C, D, E, F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

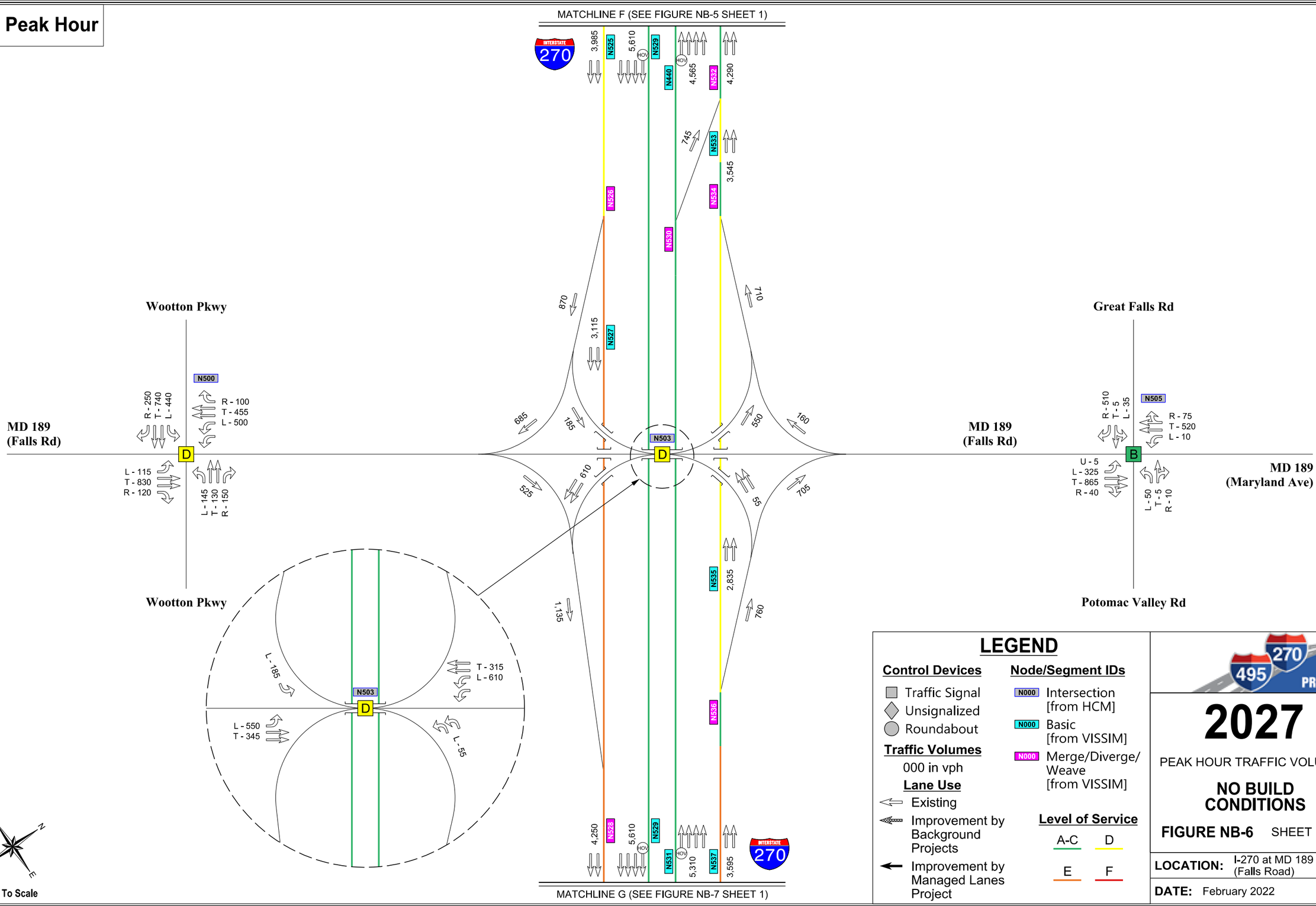
NO BUILD CONDITIONS

FIGURE NB-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

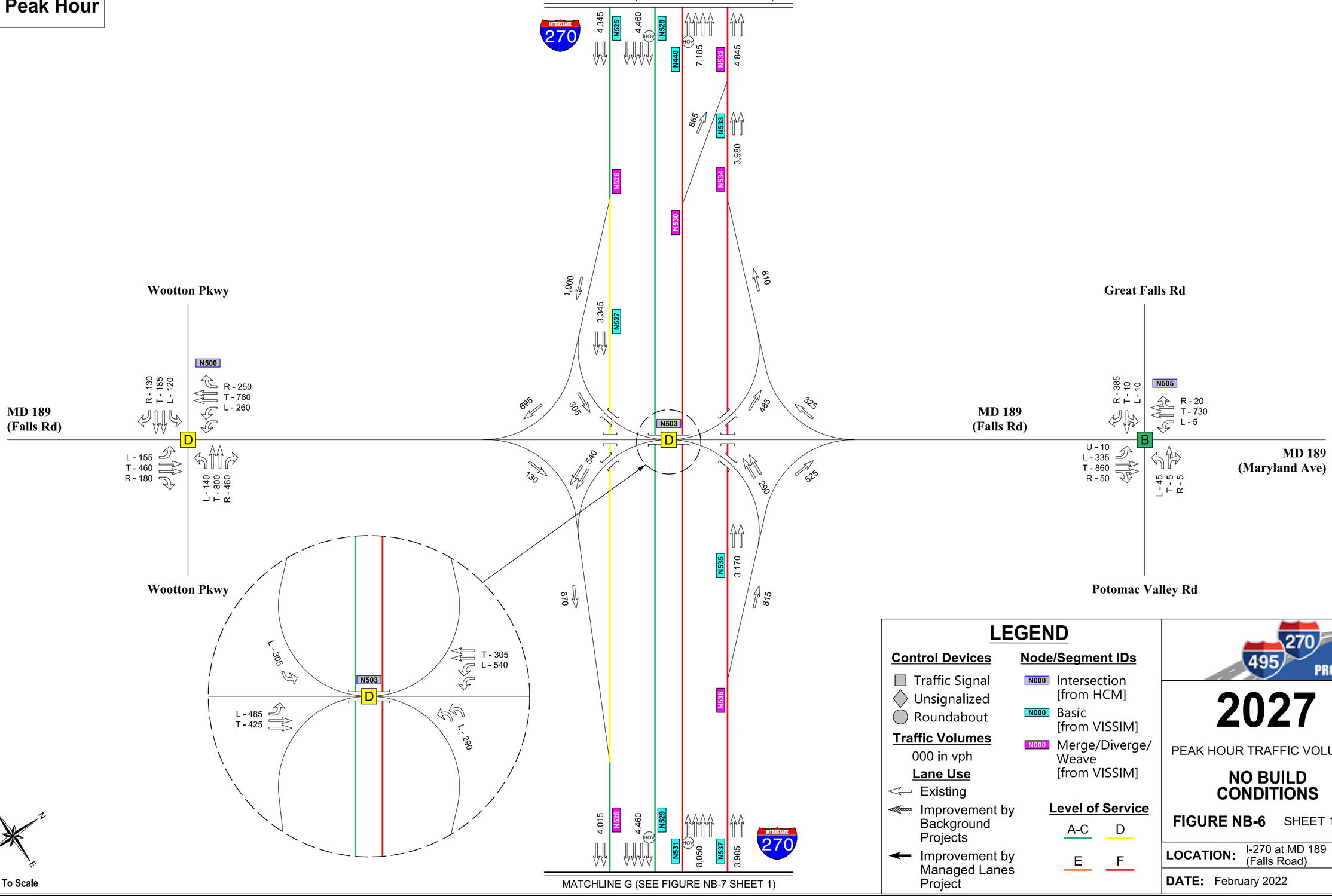
FIGURE NB-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

PM Peak Hour

MATCHLINE F (SEE FIGURE NB-5 SHEET 1)



Not To Scale

MATCHLINE G (SEE FIGURE NB-7 SHEET 1)

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / MD 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

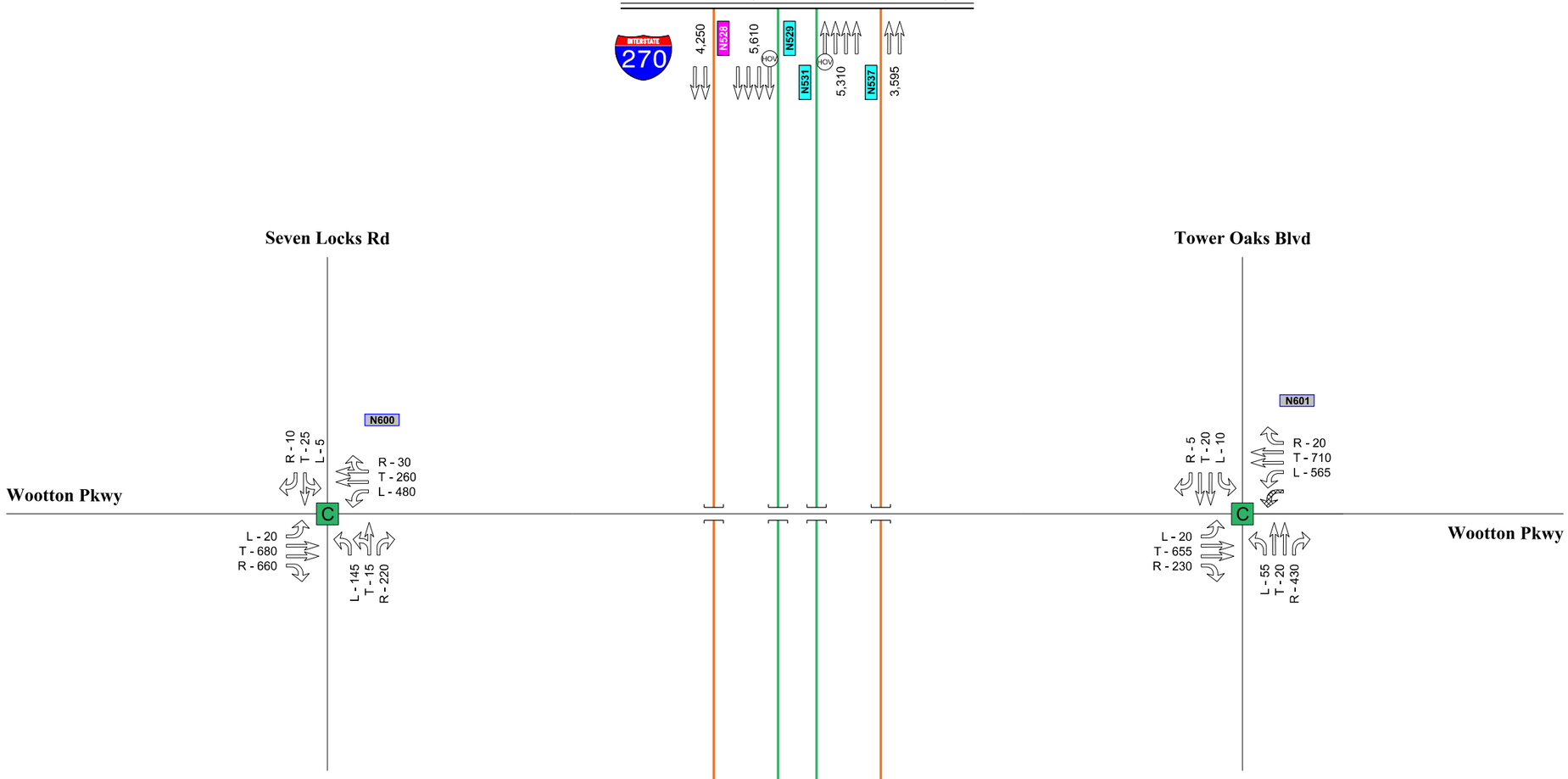
FIGURE NB-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

AM Peak Hour

MATCHLINE G (SEE FIGURE NB-6 SHEET 1)



MATCHLINE H (SEE FIGURE NB-8 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

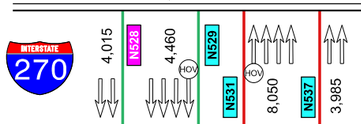
FIGURE NB-7 SHEET 1 OF 1

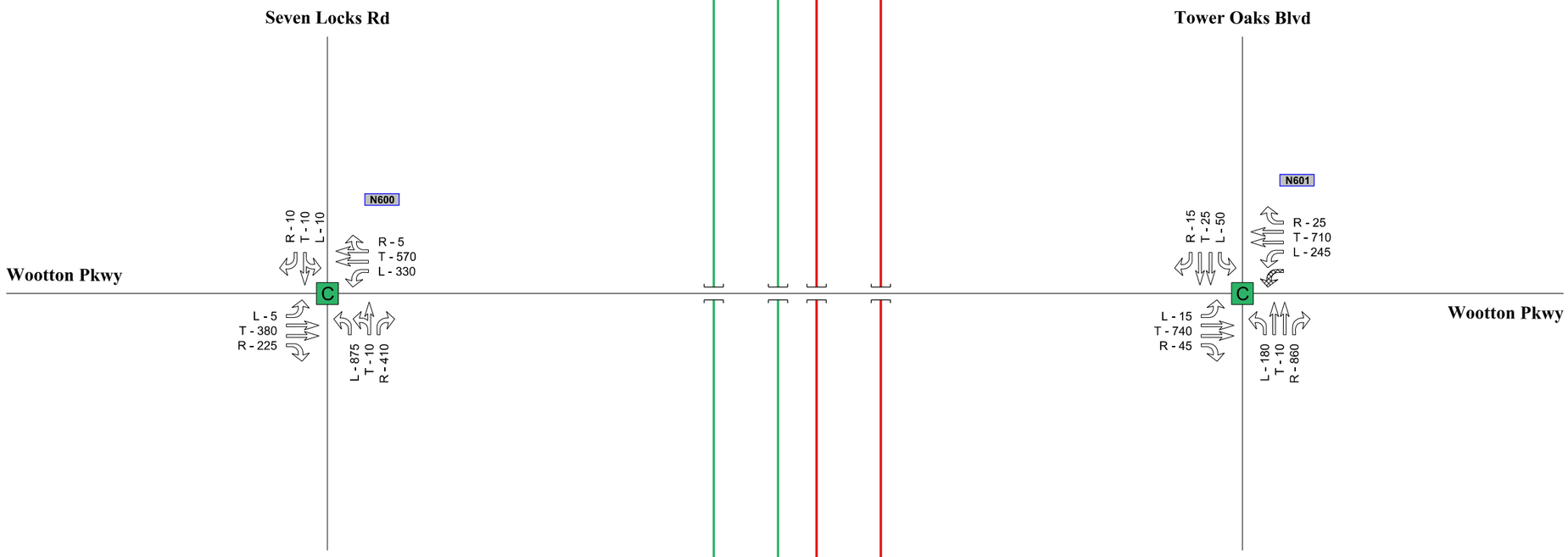
LOCATION: I-270 at Wootton Parkway

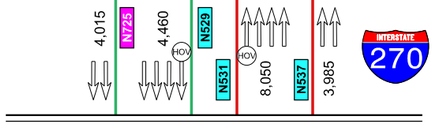
DATE: February 2022

PM Peak Hour

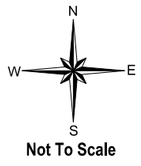
MATCHLINE G (SEE FIGURE NB-6 SHEET 1)







MATCHLINE H (SEE FIGURE NB-8 SHEET 1)



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

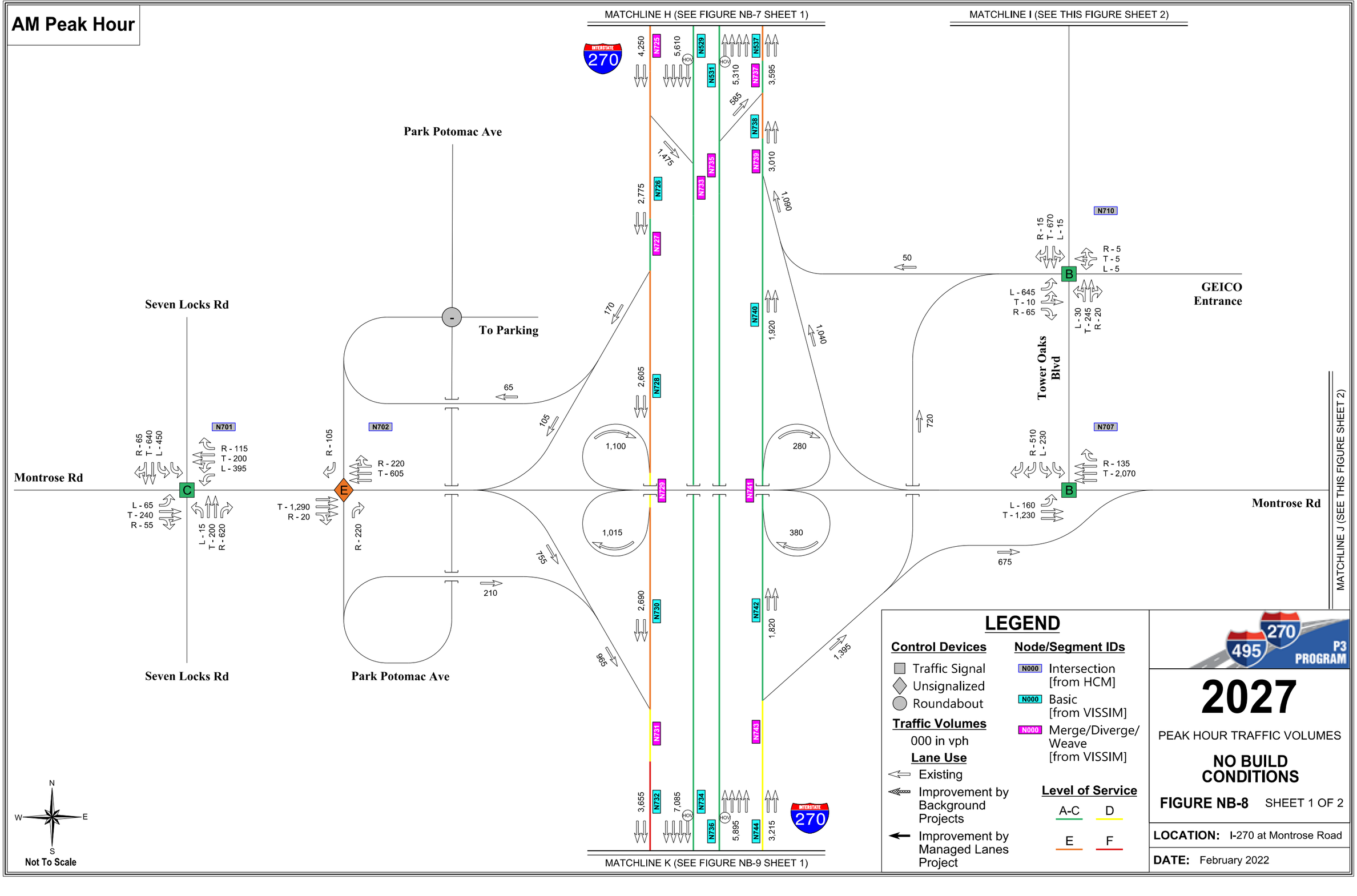
NO BUILD CONDITIONS

FIGURE NB-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C | D | E | F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

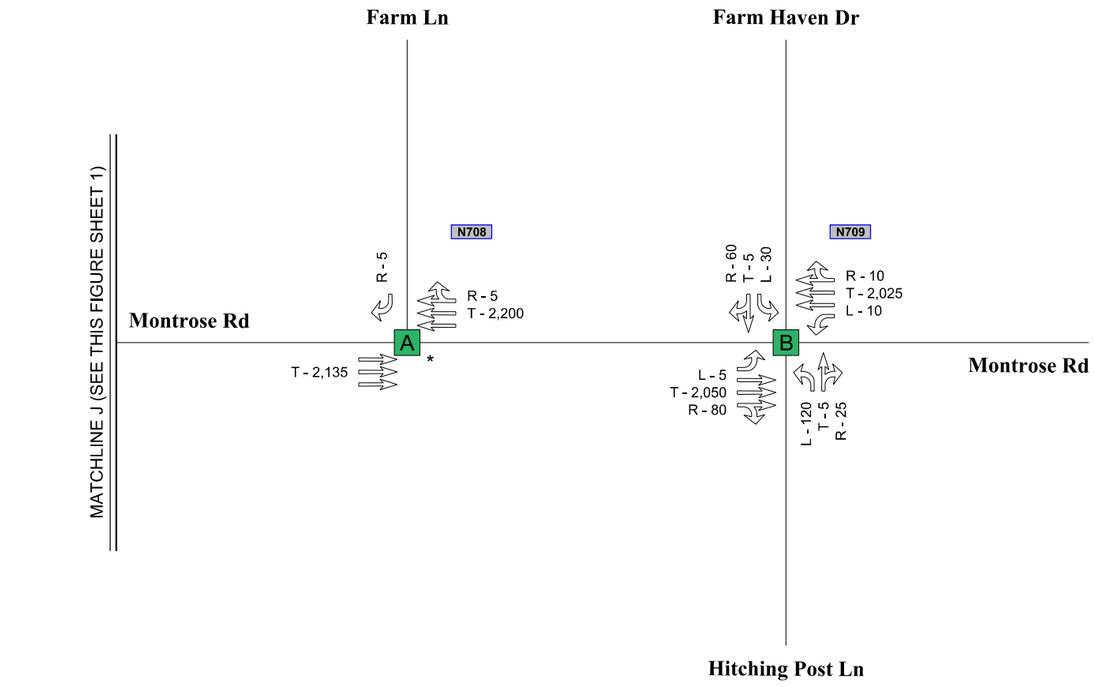
NO BUILD CONDITIONS

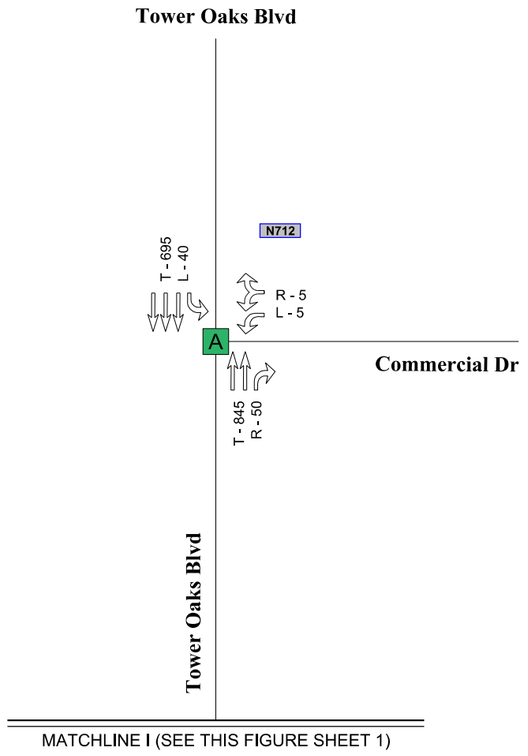
FIGURE NB-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour





N
W E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-495 I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour

MATCHLINE H (SEE FIGURE NB-7 SHEET 1)

MATCHLINE I (SEE THIS FIGURE SHEET 2)

MATCHLINE J (SEE THIS FIGURE SHEET 2)

MATCHLINE K (SEE FIGURE NB-9 SHEET 1)

Park Potomac Ave

Seven Locks Rd

Montrose Rd

To Parking

GEICO Entrance

Tower Oaks Blvd

Seven Locks Rd

Park Potomac Ave

Montrose Rd

INTERSTATE 270

HOV

N725 4,015
N726 2,490
N727
N728 2,065
N729
N730 1,685
N731
N732 2,245
N733
N734 5,985
N735
N736
N737 8,050
N738 420
N739 3,565
N740 2,155
N741
N742 2,210
N743
N744 8,470
N745 3,295
N529 4,460
N531
N537 3,985
1,525
1,410
1,125
1,085
425
90
335
705
1,085
305
255
560
390
335
550
285
535

N701
R - 85
T - 385
L - 175
R - 515
T - 610
L - 710
L - 65
T - 350
R - 35
L - 70
T - 590
R - 535

N702
R - 185
R - 195
T - 1,650
T - 1,040
R - 20
R - 125

N710
R - 175
T - 370
L - 5
R - 10
T - 15
L - 10
L - 525
T - 5
R - 20
L - 95
T - 175
R - 5

N707
R - 270
L - 130
R - 190
T - 2,680
L - 85
T - 1,525

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

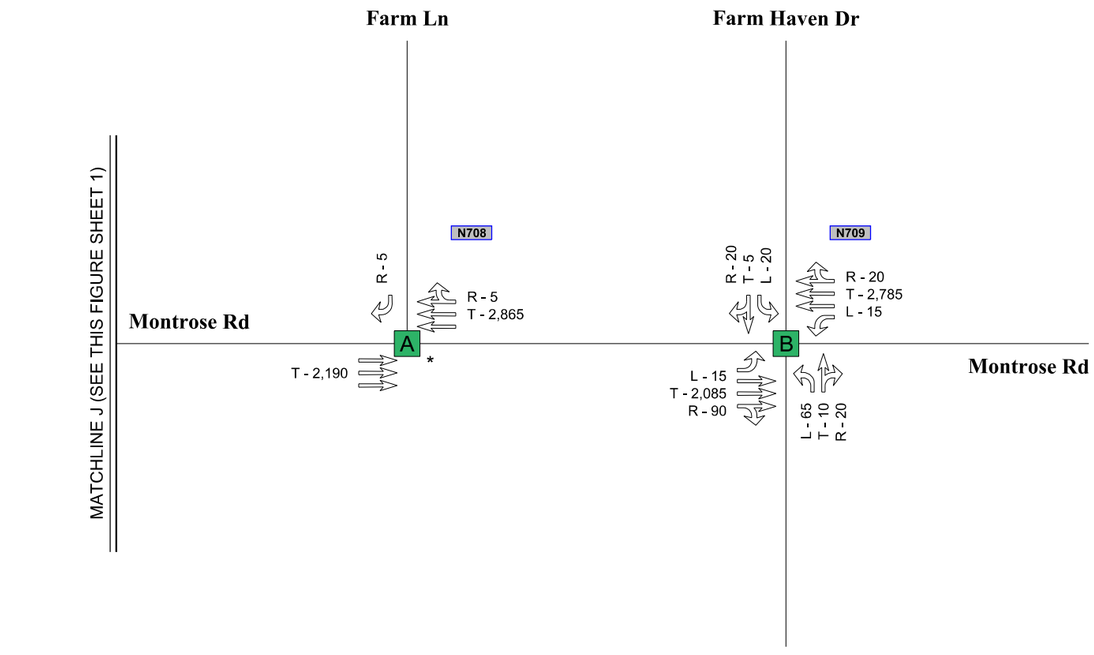
NO BUILD CONDITIONS

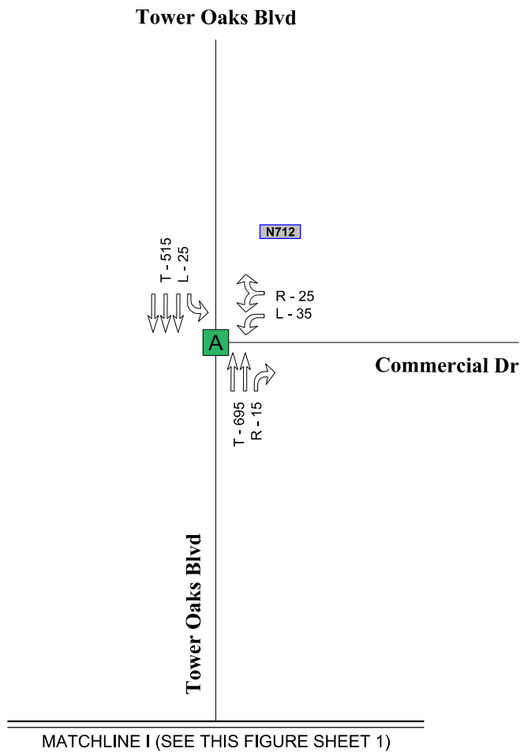
FIGURE NB-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour





N
W E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

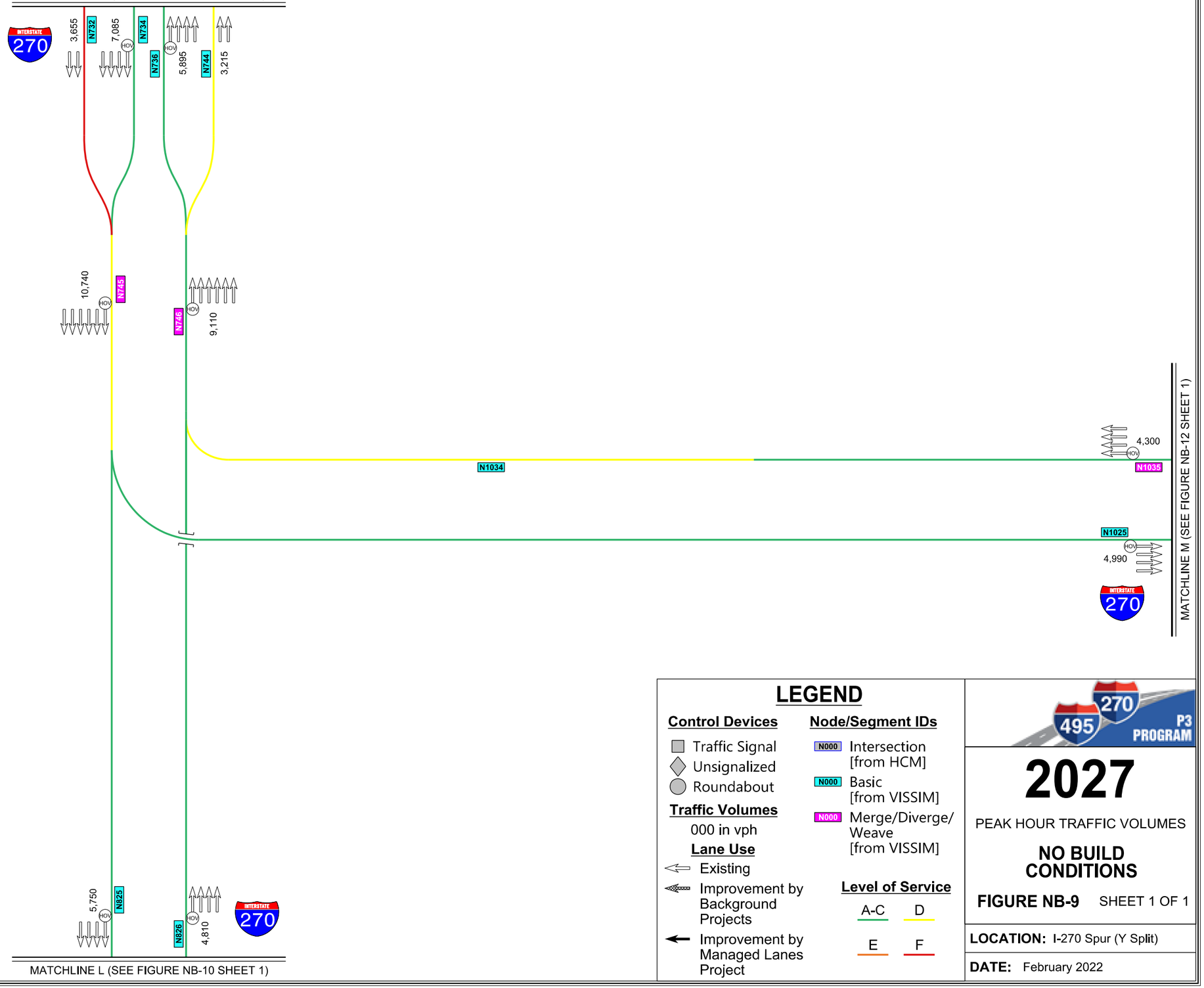
FIGURE NB-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour

MATCHLINE K (SEE FIGURE NB-8 SHEET 1)



MATCHLINE L (SEE FIGURE NB-10 SHEET 1)

MATCHLINE M (SEE FIGURE NB-12 SHEET 1)

N
W E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

PM Peak Hour

MATCHLINE K (SEE FIGURE NB-8 SHEET 1)

MATCHLINE L (SEE FIGURE NB-10 SHEET 1)

N
W E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

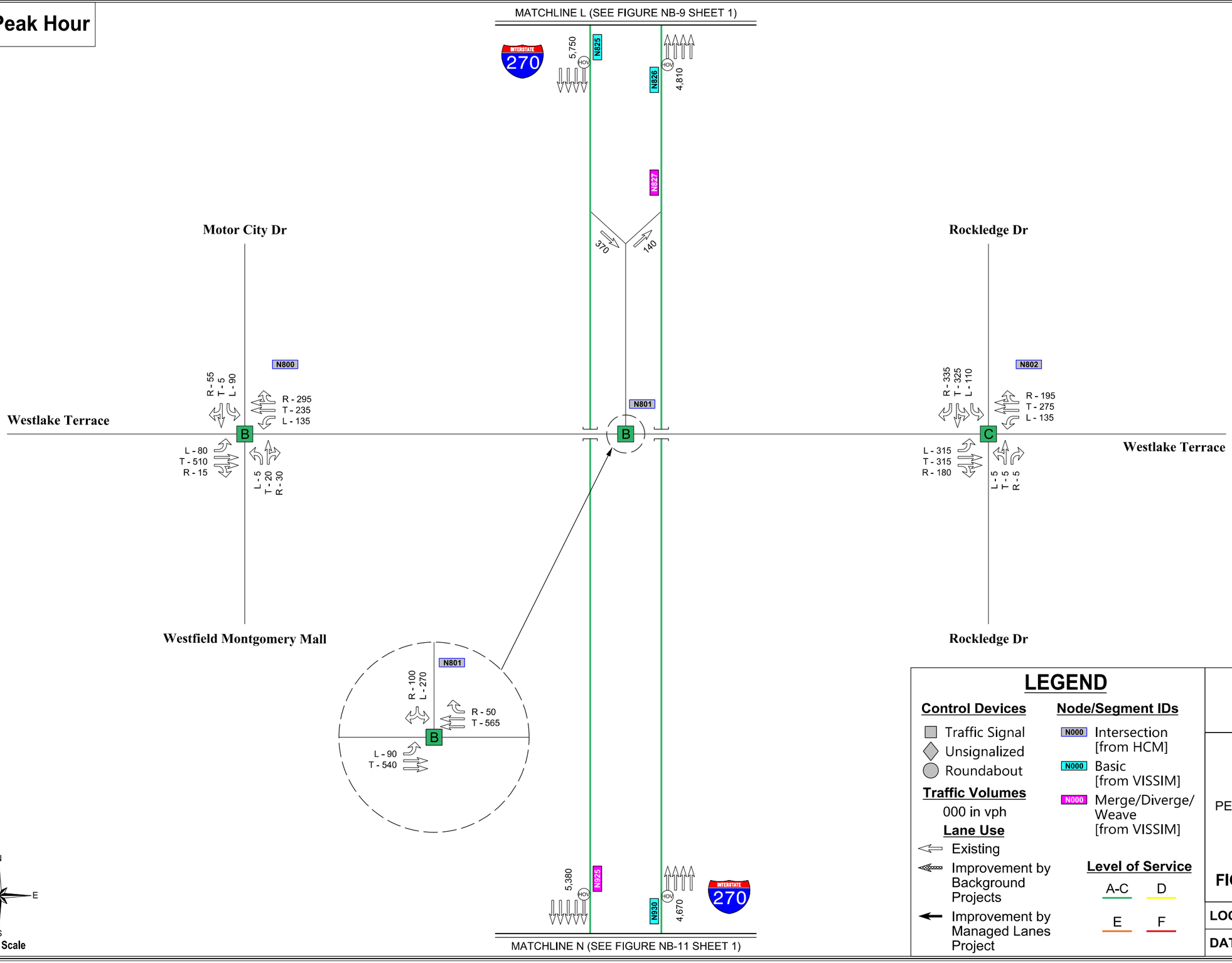
NO BUILD CONDITIONS

FIGURE NB-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

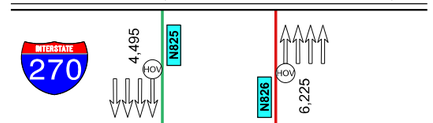
FIGURE NB-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

PM Peak Hour

MATCHLINE L (SEE FIGURE NB-9 SHEET 1)



Motor City Dr

N800

R - 45
T - 15
L - 195

R - 130
T - 510
L - 215

Westlake Terrace

C

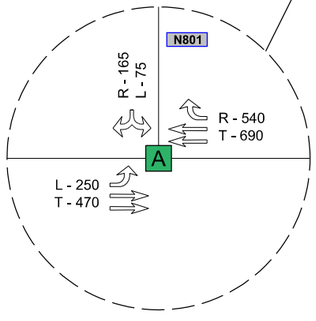
L - 40
T - 330
R - 10

L - 40
T - 10
R - 195

Westfield Montgomery Mall

N801

A



Rockledge Dr

N802

R - 515
T - 5
L - 205

R - 30
T - 510
L - 5

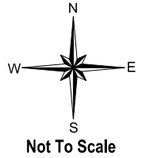
D

Westlake Terrace

L - 210
T - 325
R - 10

L - 205
T - 85
R - 200

Rockledge Dr



Not To Scale

MATCHLINE N (SEE FIGURE NB-11 SHEET 1)

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C | D | E | F

495 270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

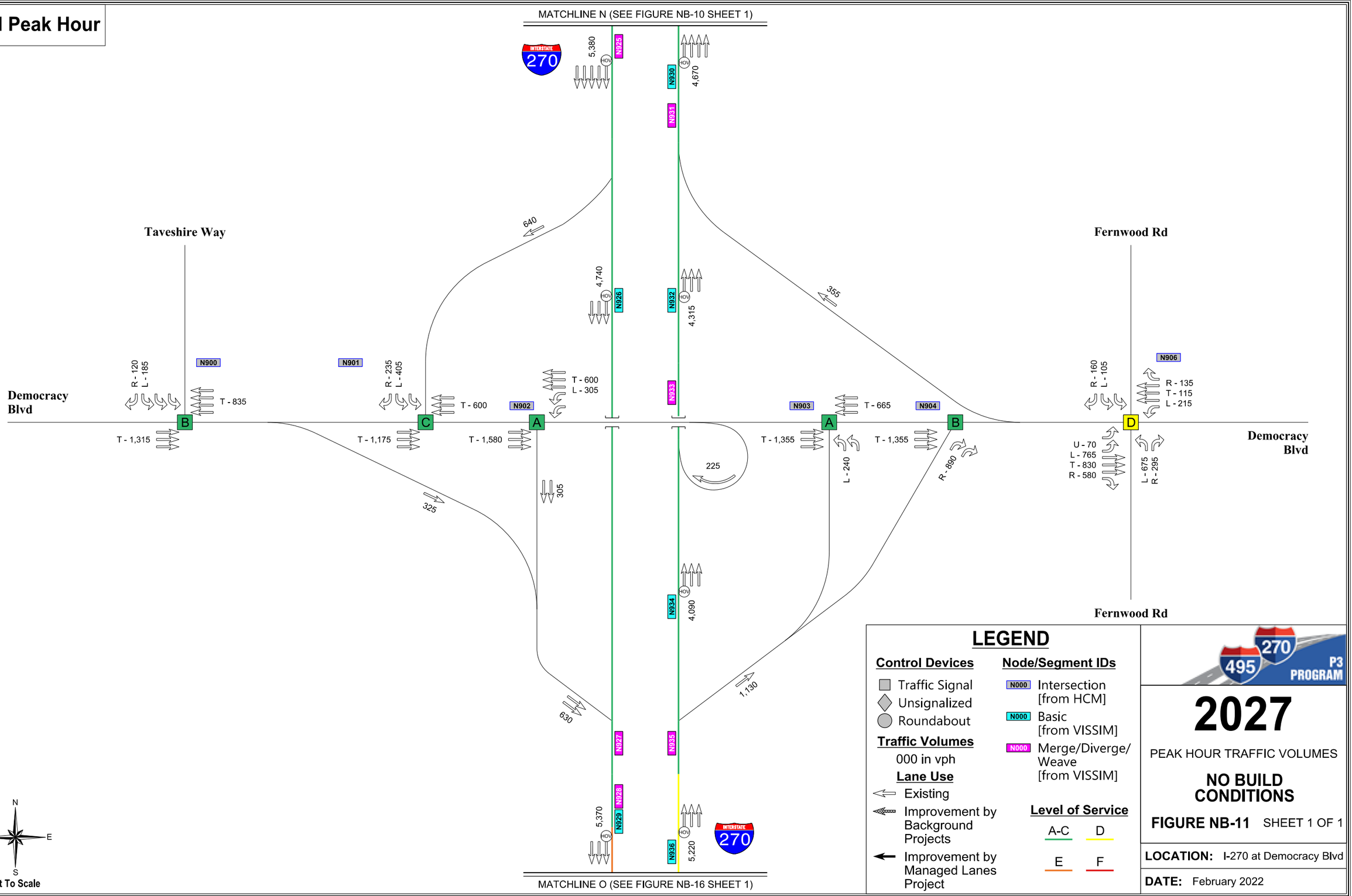
NO BUILD CONDITIONS

FIGURE NB-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

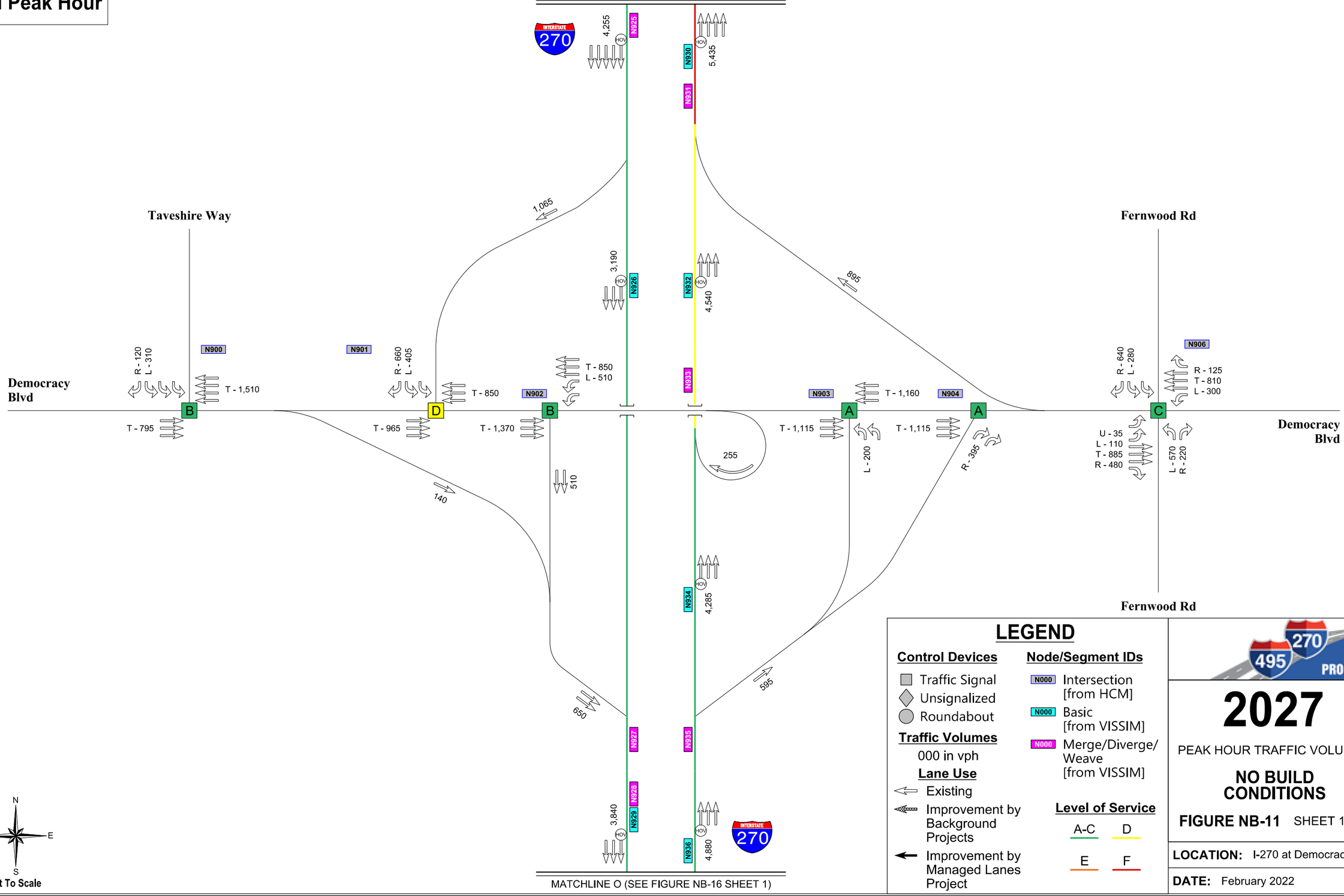
FIGURE NB-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

PM Peak Hour

MATCHLINE N (SEE FIGURE NB-10 SHEET 1)



MATCHLINE O (SEE FIGURE NB-16 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

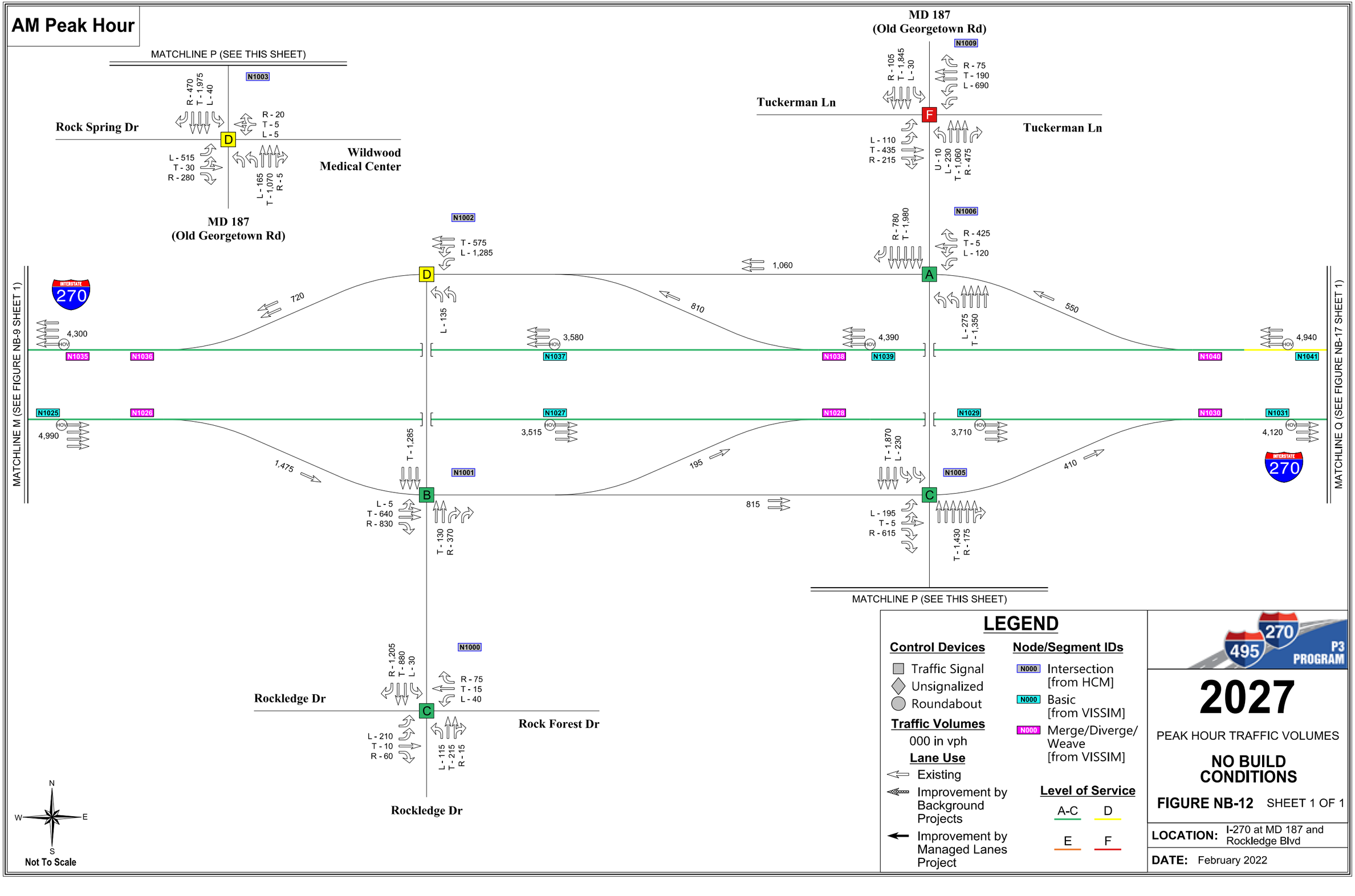
NO BUILD CONDITIONS

FIGURE NB-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

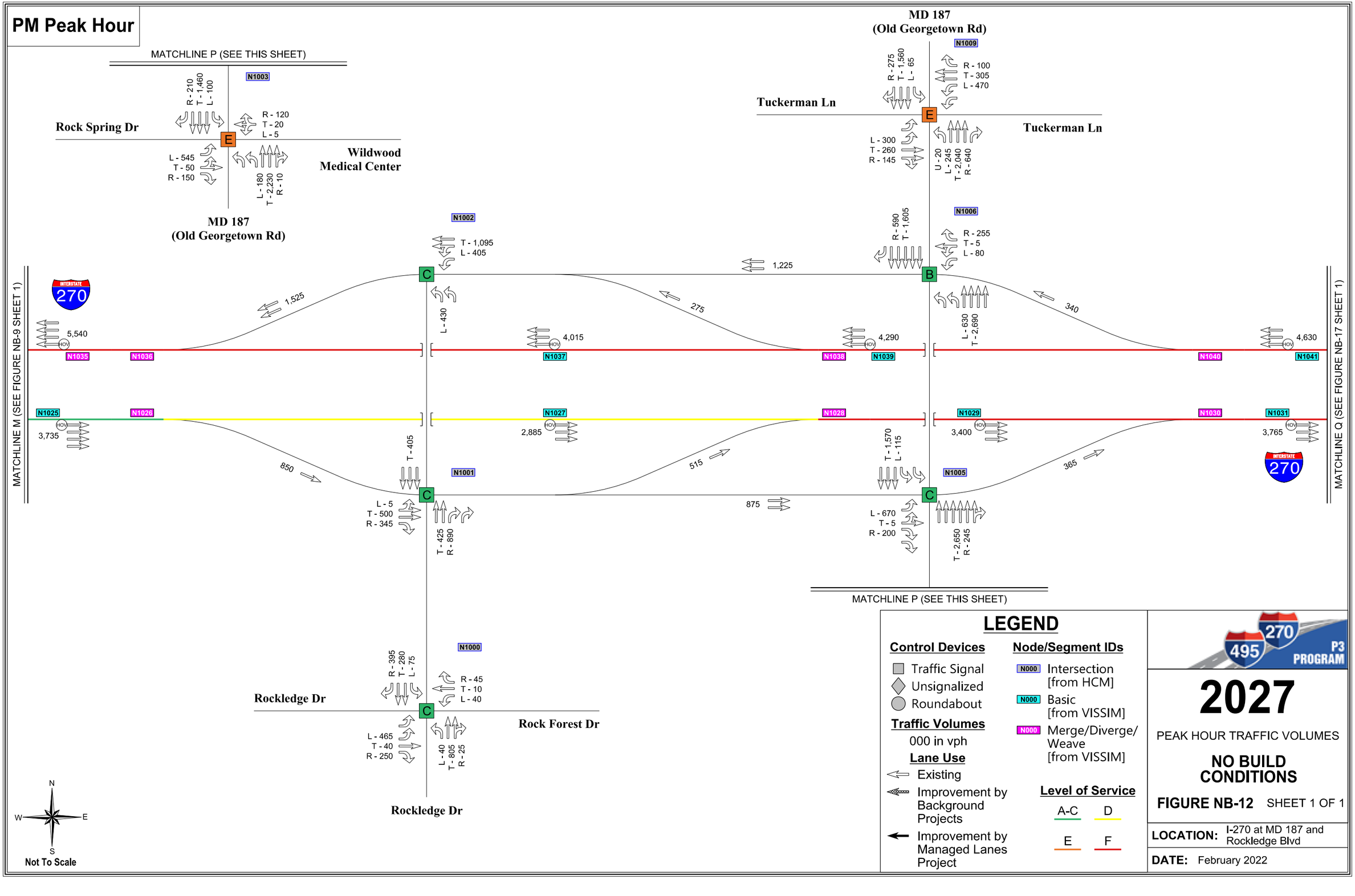
NO BUILD CONDITIONS

FIGURE NB-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

495 270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

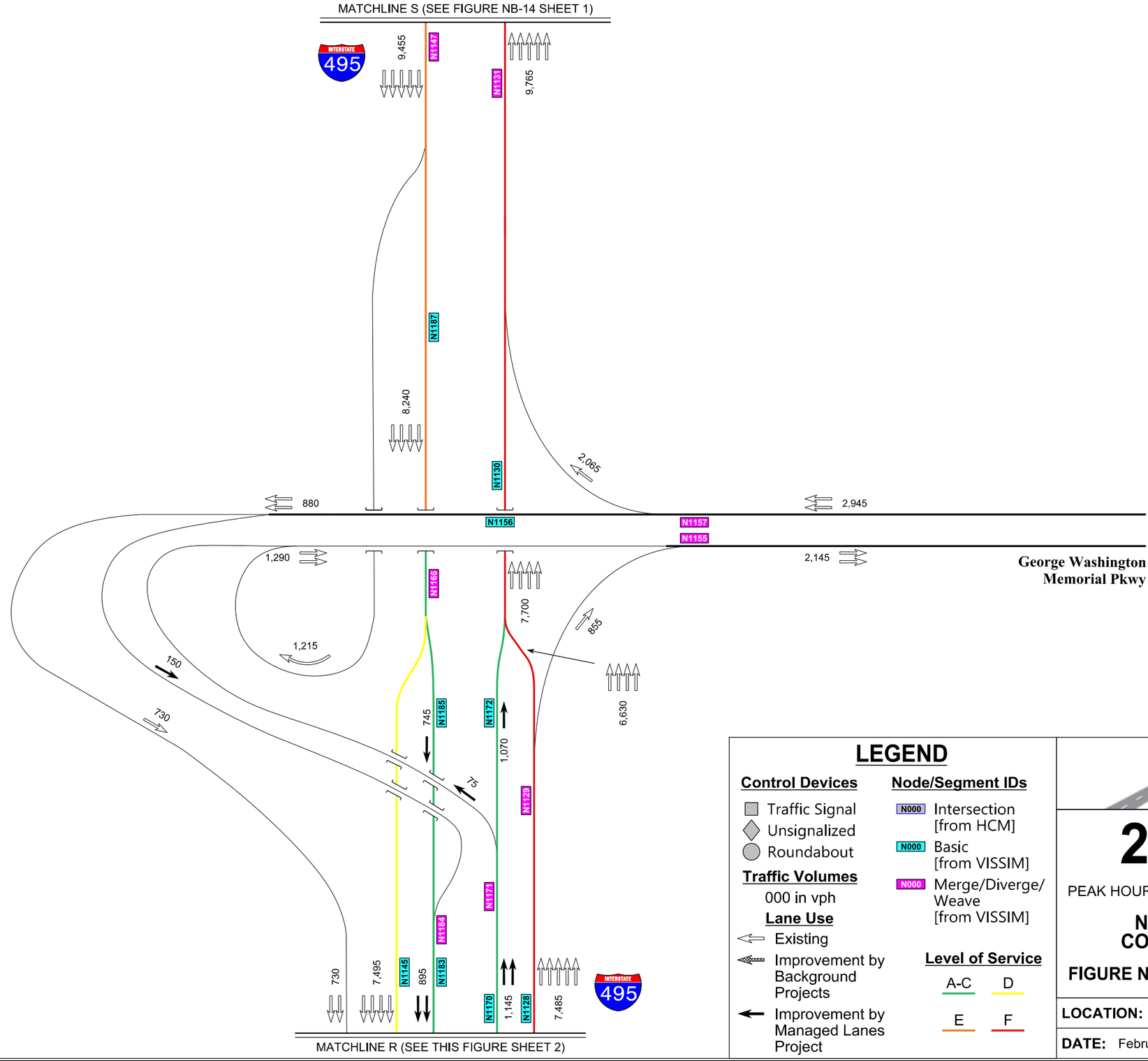
NO BUILD CONDITIONS

FIGURE NB-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

495 270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

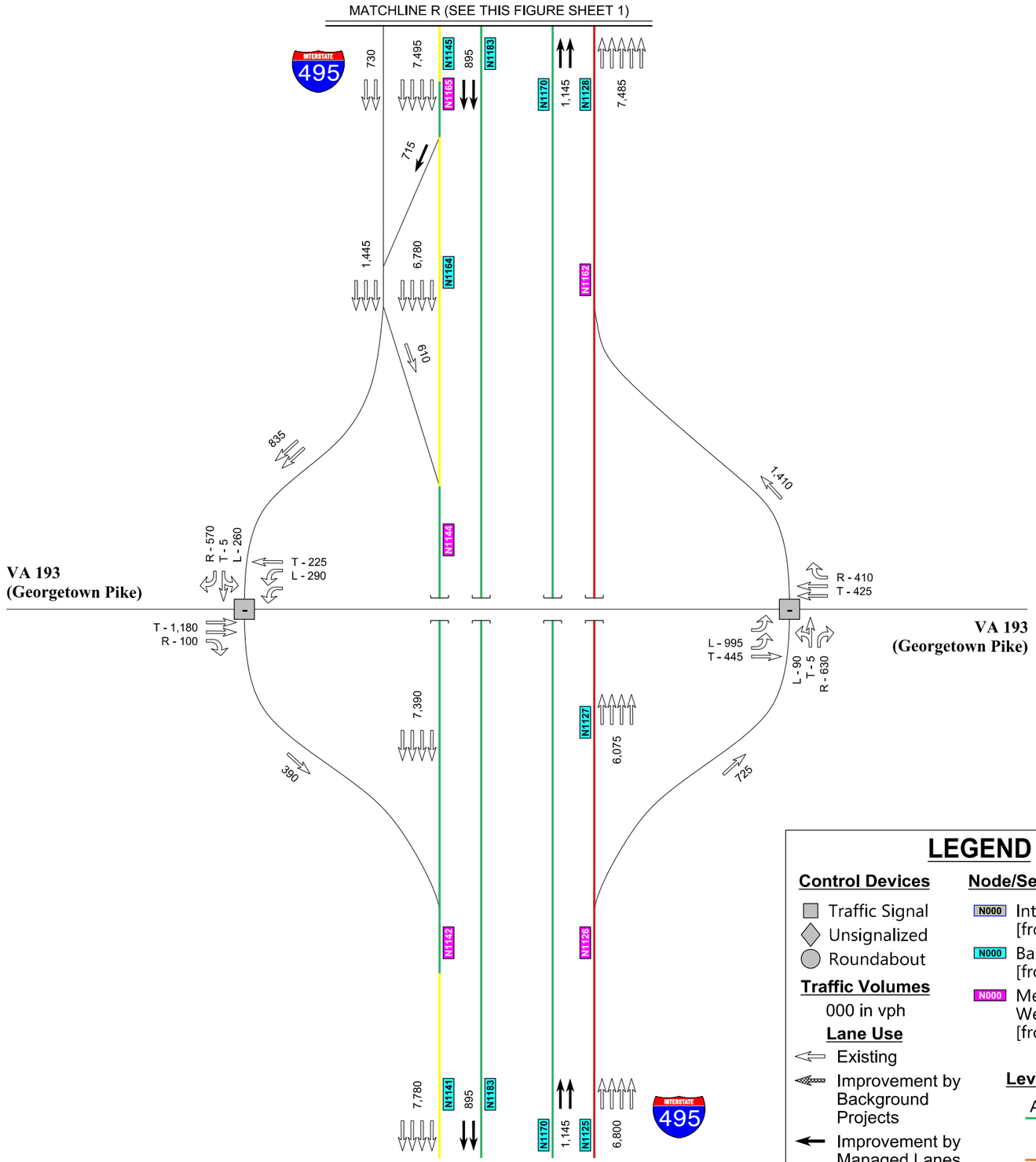
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

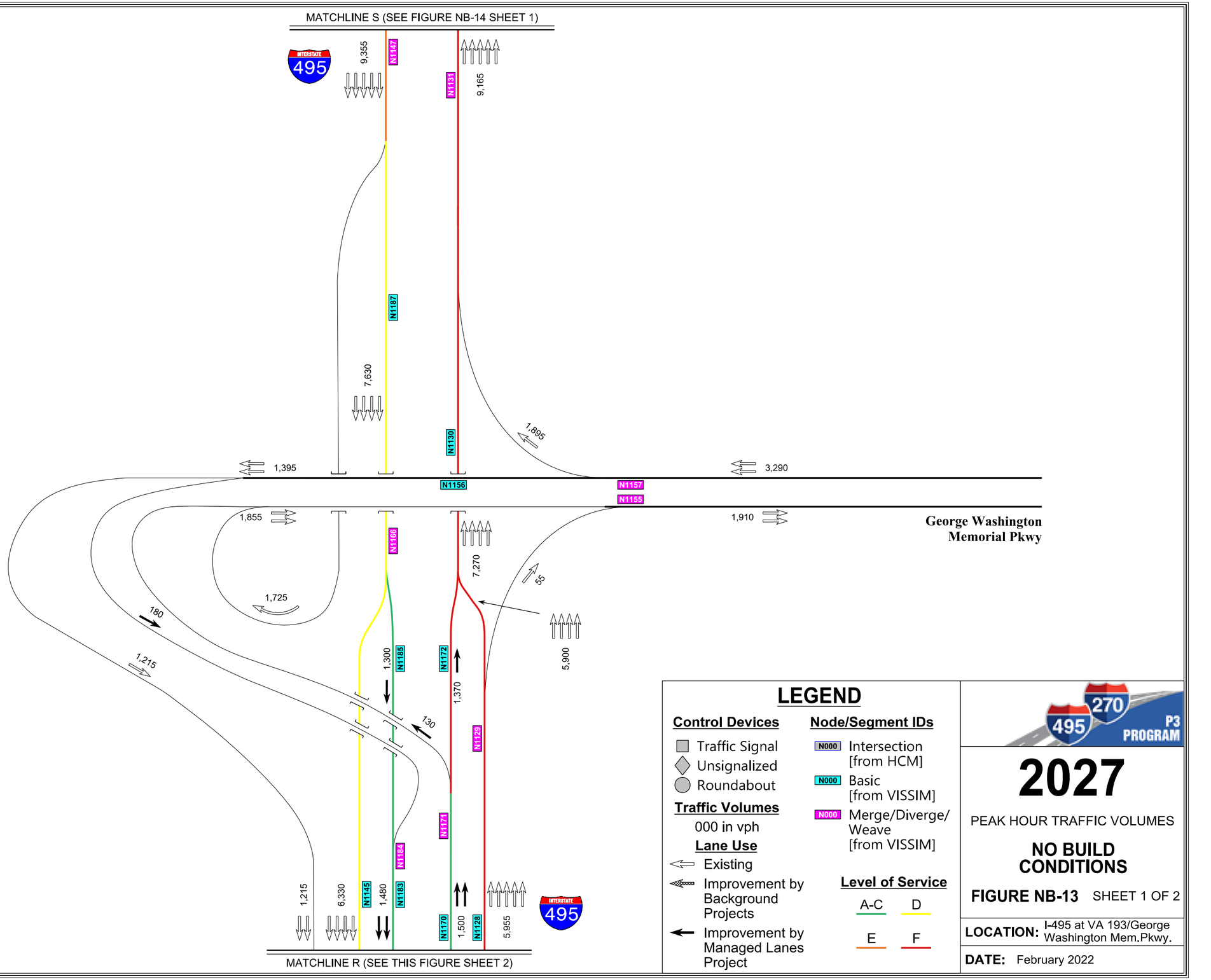
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

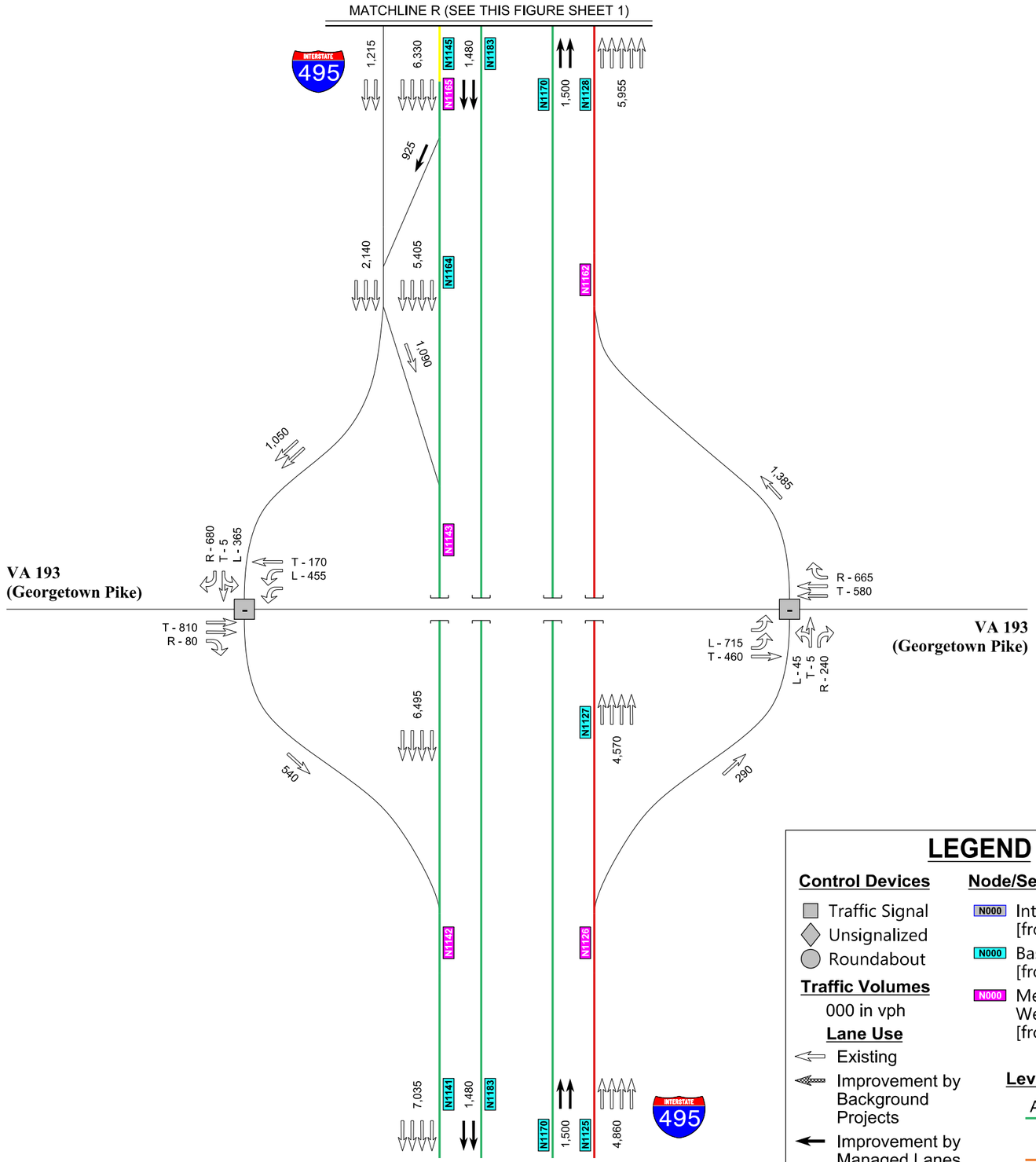
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

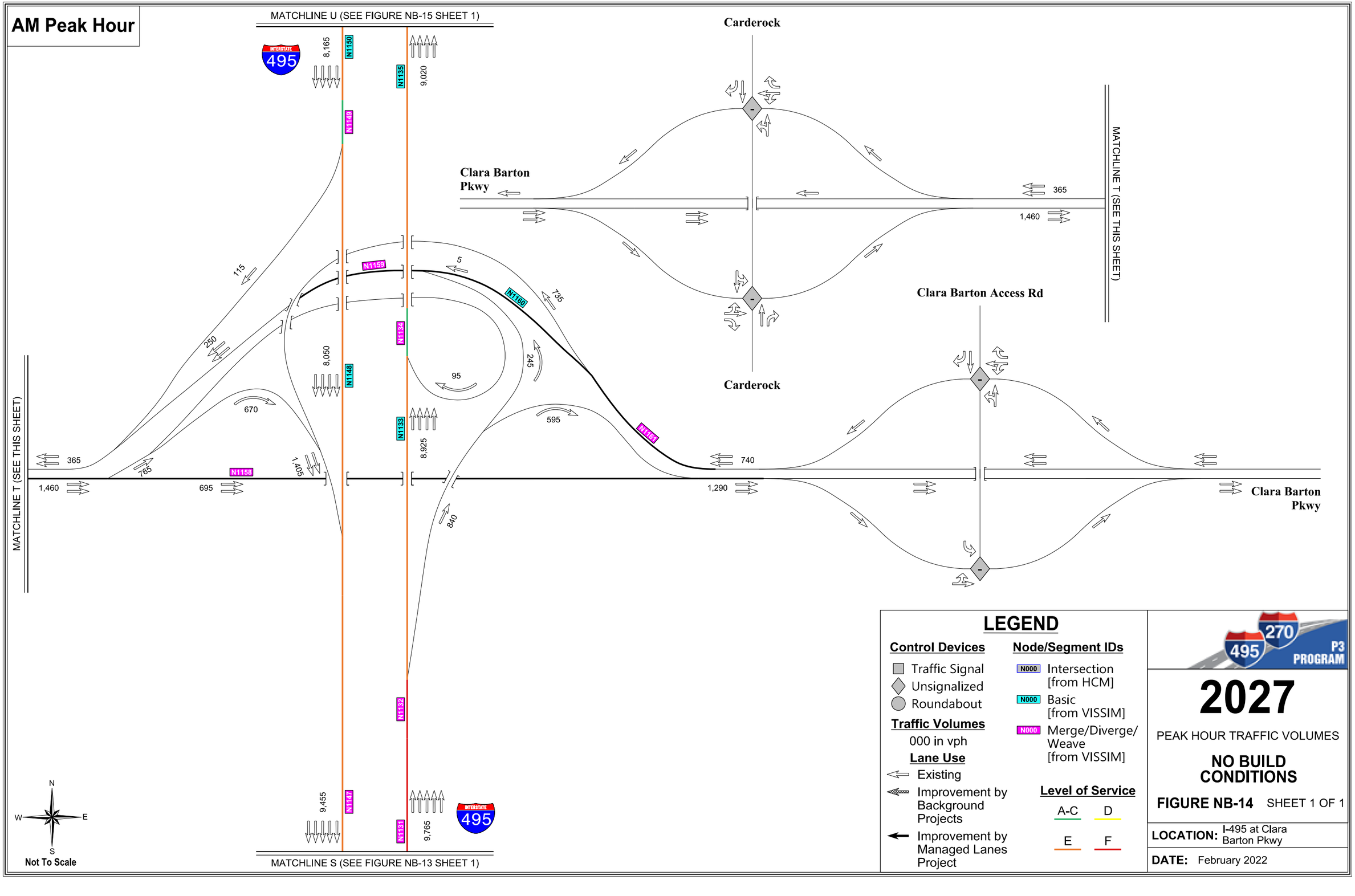
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

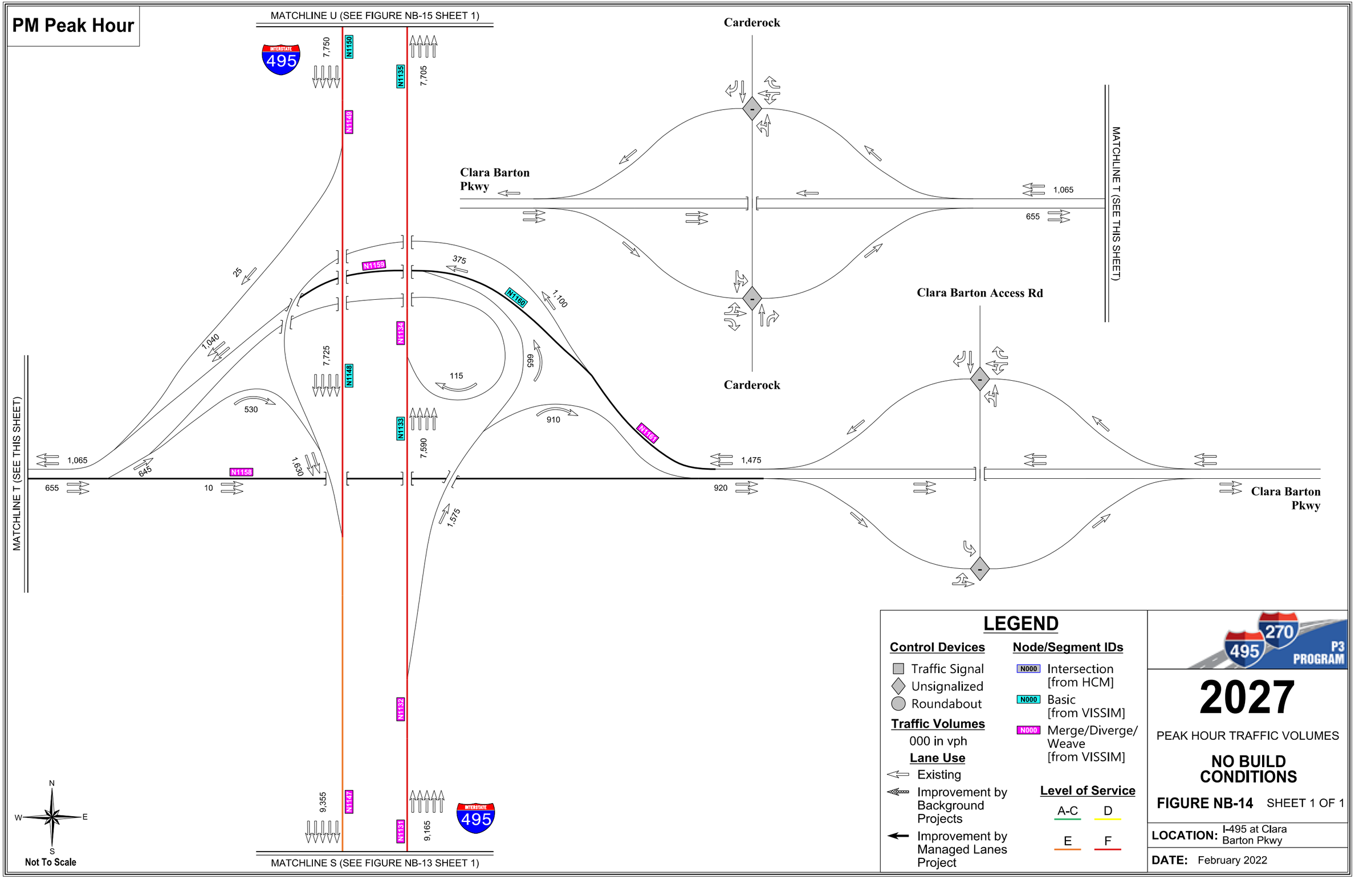
NO BUILD CONDITIONS

FIGURE NB-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

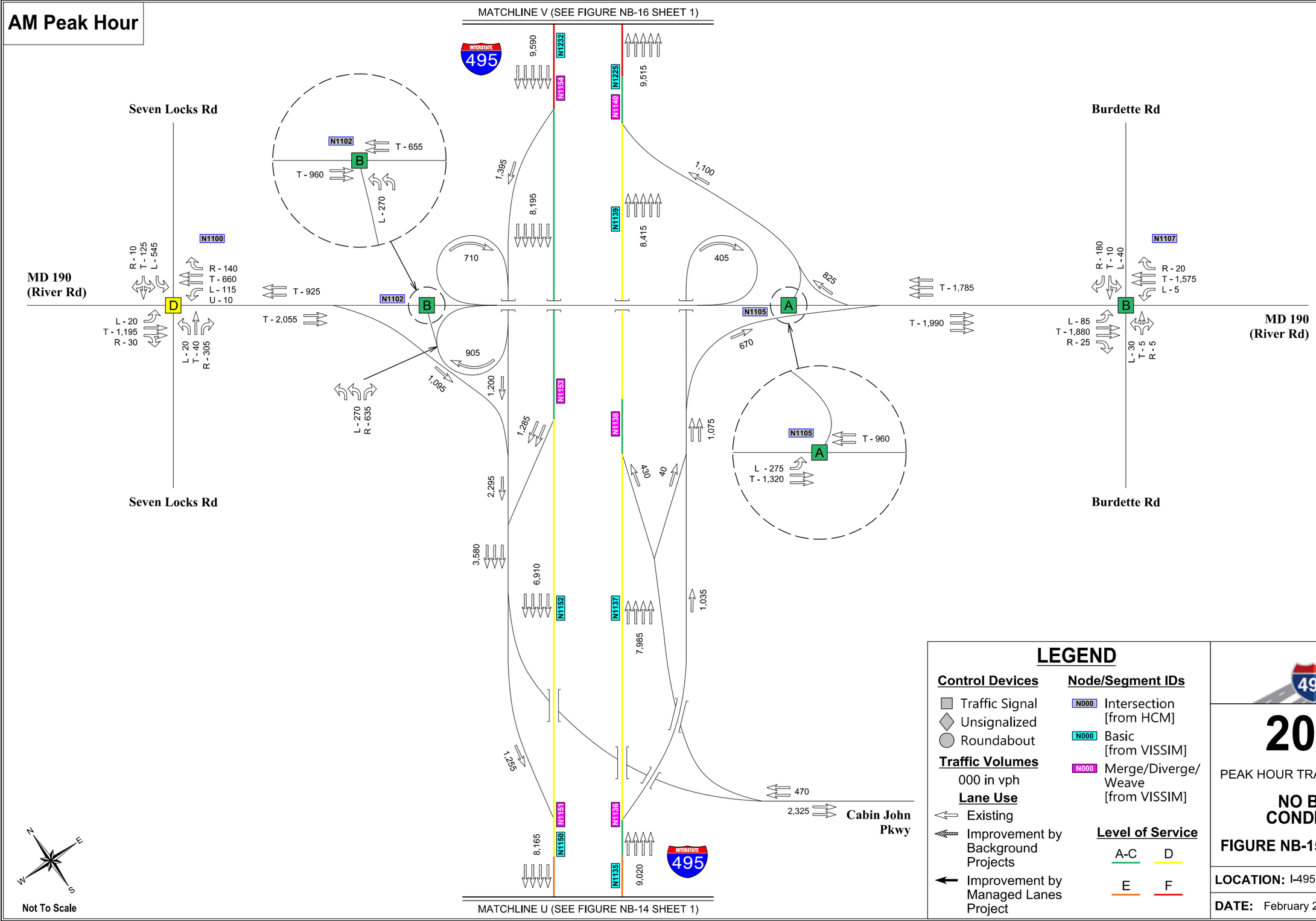
NO BUILD CONDITIONS

FIGURE NB-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

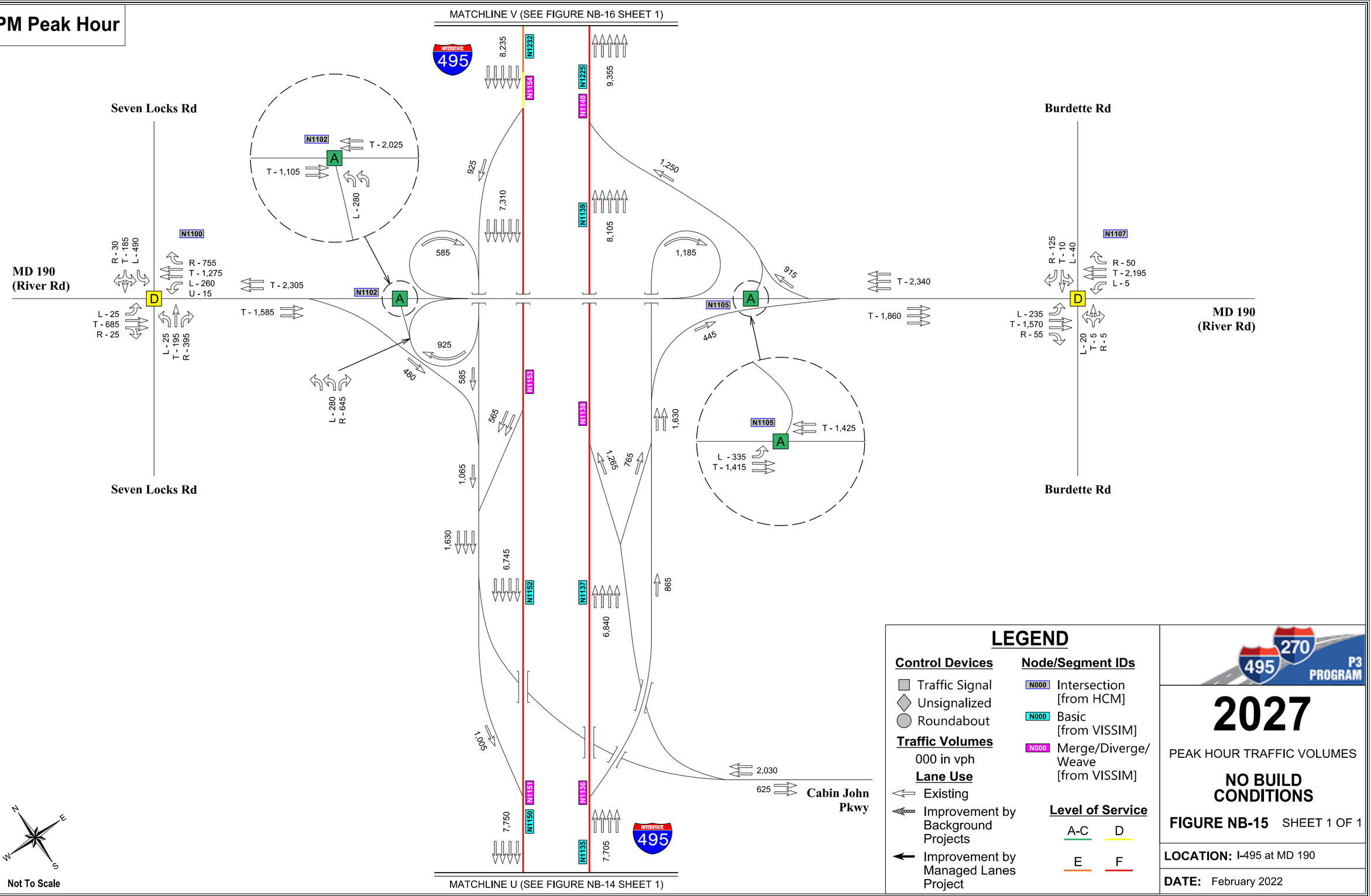
NO BUILD CONDITIONS

FIGURE NB-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

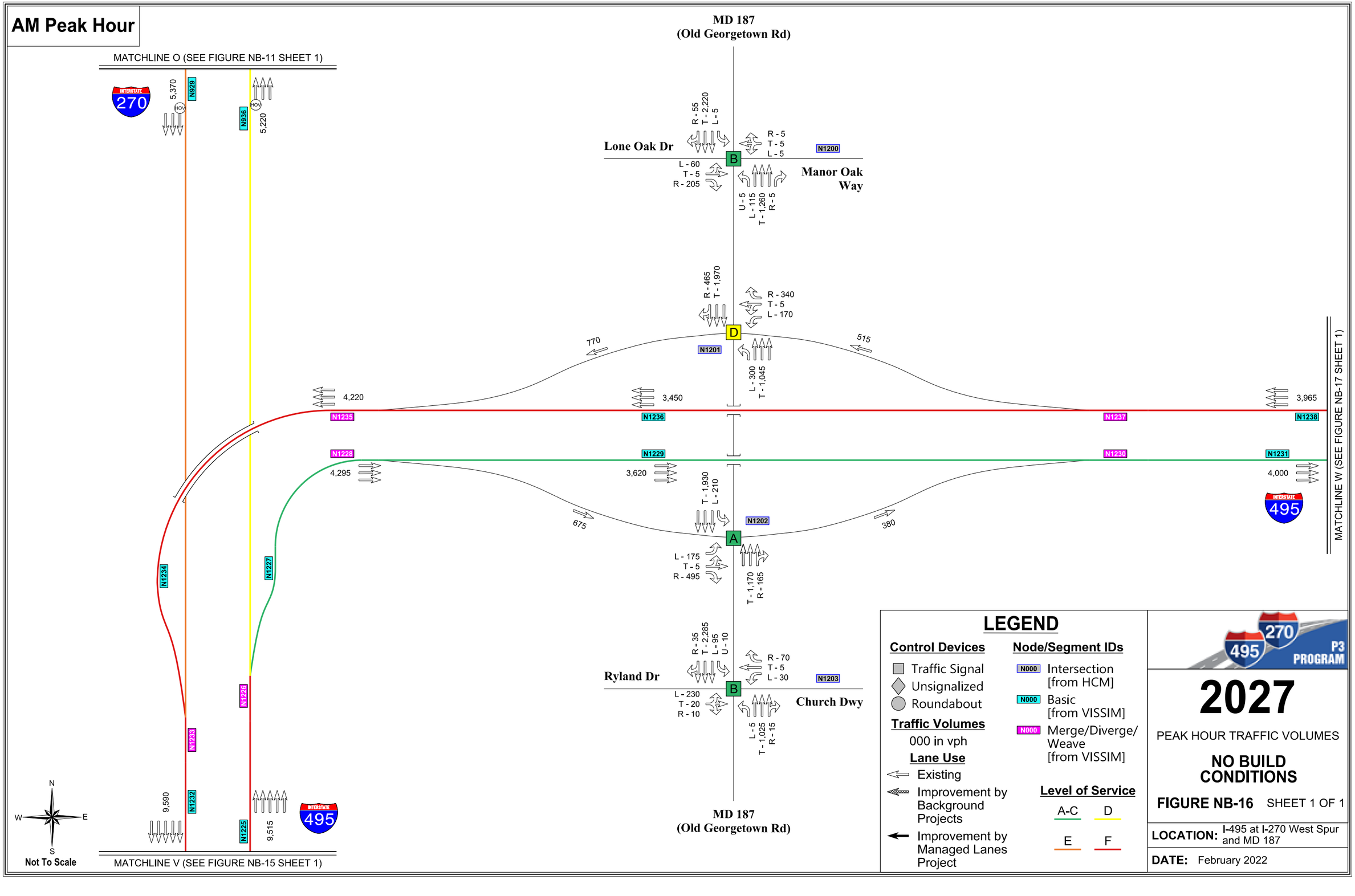
NO BUILD CONDITIONS

FIGURE NB-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

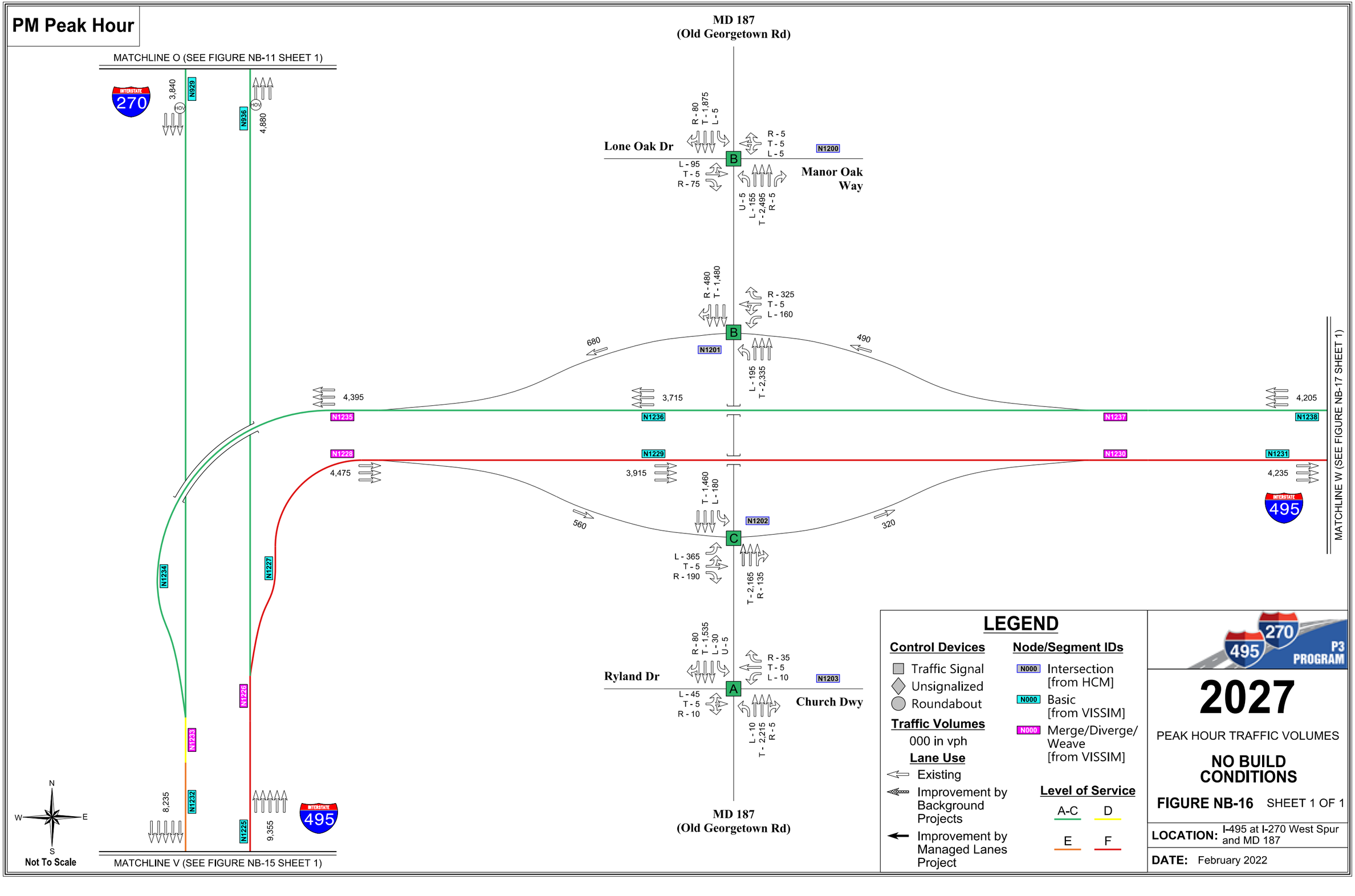
NO BUILD CONDITIONS

FIGURE NB-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

AM Peak Hour

MATCHLINE Q (SEE FIGURE NB-12 SHEET 1)

MATCHLINE W (SEE FIGURE NB-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

INTERSTATE 270

INTERSTATE 495

4,940 — N1041

4,120 — N1031

3,965 — N1238

4,000 — N1231

3,535 — N1326

6,400 — N1327

7,675 — N1334

8,630 — N1432

7,705 — N1425

7,455

N1325 N1328 N1329 N1330

N1042 N1037 N1033 N1043 N1044 N1331 N1332 N1333

830 955 465 250 1,255 2,965 4,110 1,055 400

MD 355 (Rockville Pike)

Grosvenor Ln — N1300

R - 105
T - 2,120

R - 110
T - 115
L - 610

R - 750

L - 95
R - 220

T - 1,130

T - 85
R - 440

R - 525
T - 1,190

T - 1,895
L - 1,055

L - 830
T - 700

Grosvenor Ln

C

-

Alta Vista Rd — N1310 — Bellevue Dr

R - 90
T - 3,245
L - 5
U - 305

R - 10
T - 5
L - 5

L - 65
T - 5
R - 20

T - 1,385
R - 5

B

MD 355 (Rockville Pike)

T - 3,150

R - 465

C — N1307

L - 400
T - 1,530

T - 1,930
R - 250

Pooks Hill Rd — N1309

R - 115
T - 3,500

L - 455
R - 145

L - 40
T - 1,725

C

N W E S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

PM Peak Hour

MATCHLINE Q (SEE FIGURE NB-12 SHEET 1)

MATCHLINE W (SEE FIGURE NB-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

INTERSTATE 270

INTERSTATE 495

4,630 HOV N1041

N1031 3,765 HOV

4,205 N1238

N1231 4,235

N1325

N1326 3,915

N1327

N1331

N1332

N1333 6,760

N1334 7,255

N1328

N1329

N1330

N1425 7,920

N1432 8,335

N1037

N1033

N1043 3,375

N1044 2,845 920

1,255

1,080

320

310

850

325

7,610

MD 355 (Rockville Pike)

Grosvenor Ln N1300

R - 115
T - 1,700

R - 135
T - 130
L - 240

R - 410

L - 145
R - 185

T - 1,770

T - 95
R - 810

R - 905
T - 1,770

L - 1,255
T - 1,595

T - 1,275
L - 850

L - 325
T - 2,850

T - 2,195

R - 320

T - 3,175
R - 310

Grosvenor Ln

Alta Vista Rd N1310

R - 130
T - 1,895
L - 5
U - 245

R - 5
T - 5
L - 10

L - 90
T - 5
R - 15

U - 5
L - 10
T - 2,960
R - 5

Bellevue Dr

MD 355 (Rockville Pike)

Pooks Hill Rd N1309

R - 305
T - 2,210

L - 245
R - 65

L - 60
T - 3,240

N1307

N
W E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

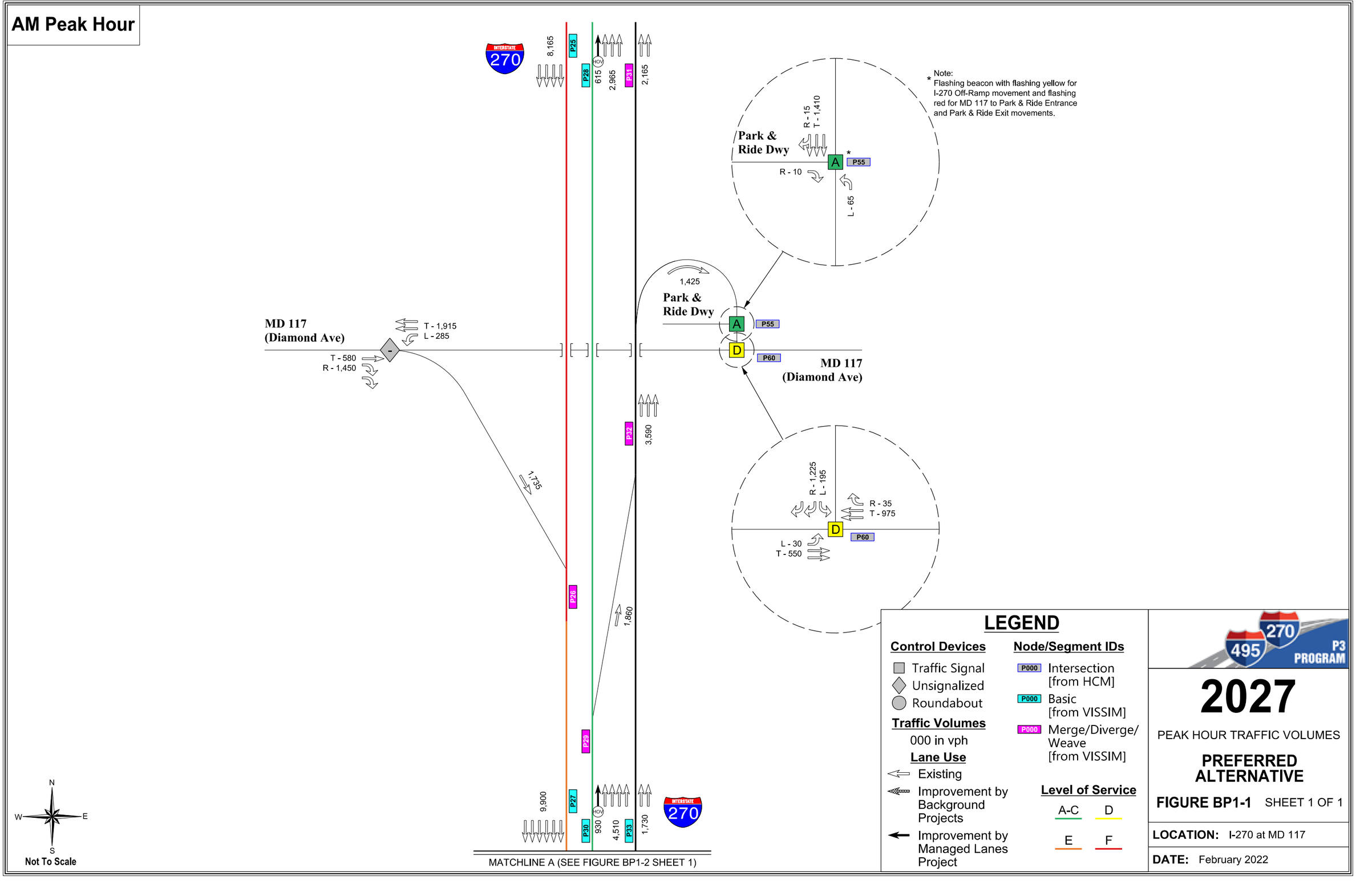
FIGURE NB-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

2027 PREFERRED ALTERNATIVE GRAPHICS

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

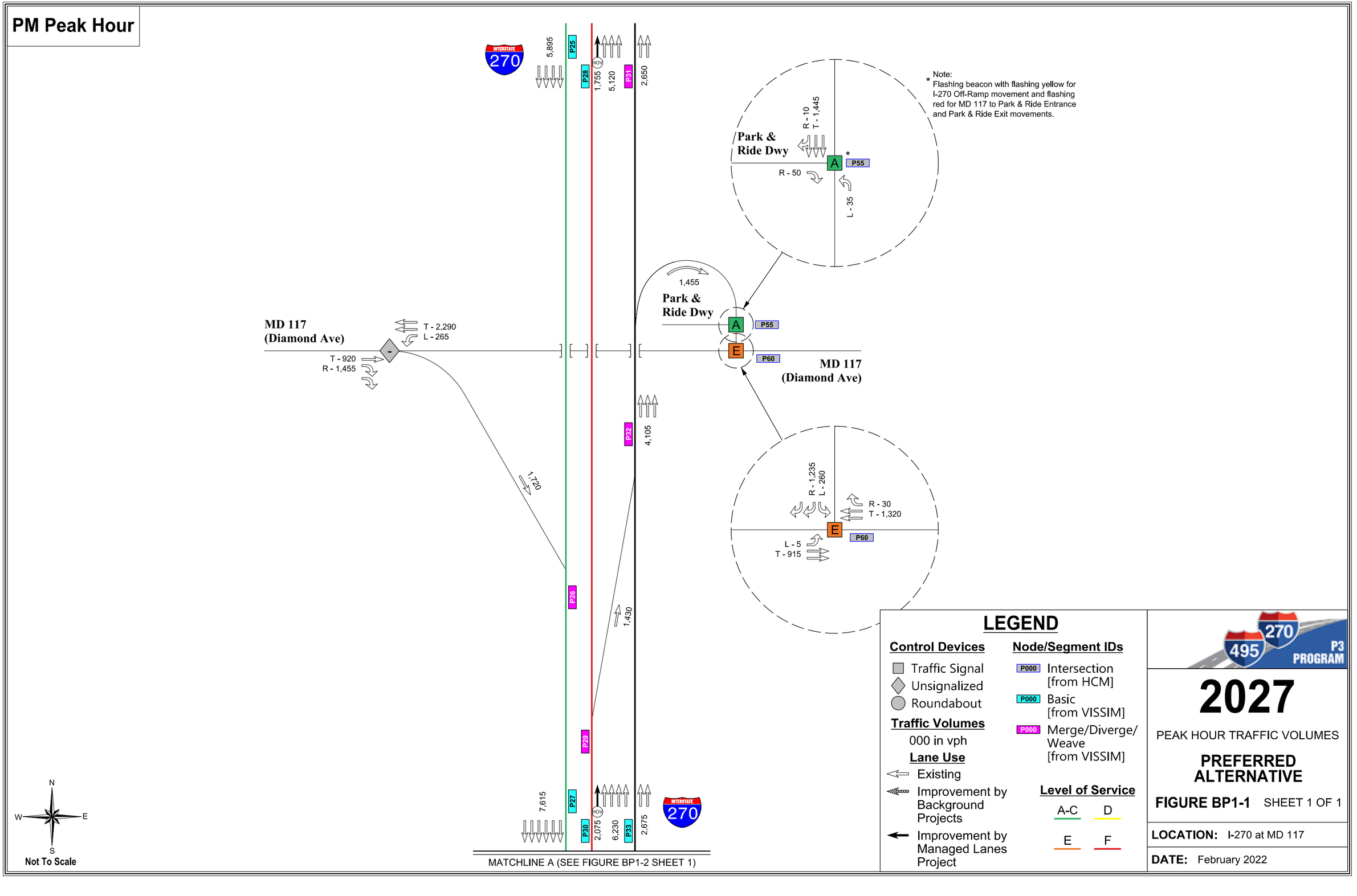
PREFERRED ALTERNATIVE

FIGURE BP1-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

AM Peak Hour

MATCHLINE A (SEE FIGURE BP1-1 SHEET 1)

MATCHLINE B (SEE THIS FIGURE SHEET 2)

MATCHLINE C (SEE FIGURE BP1-3 SHEET 1)

INTERSTATE 270

INTERSTATE 370

9,900 P125 P30 930 HOV 4,510 P33 1,730

P132 P126 1,000

2,920

6,980 P127 P150 540 HOV 3,900 P135 2,730

P128

735

1,985

1,300

P151 P136

2,185 P170 P137 745 565

3,670

590 105 135 1,785 1,110 675 2,800 4,785

1,095 660 885 450 435 450 1,760 665 3,945

P133 P138

2,210 945 1,265

295 1,230

5,890 P130 1,090 1,080 1,940

540 770 P173 P139

P175 P174

7,830 P131 2,170 P172 1,310 P140 5,195

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

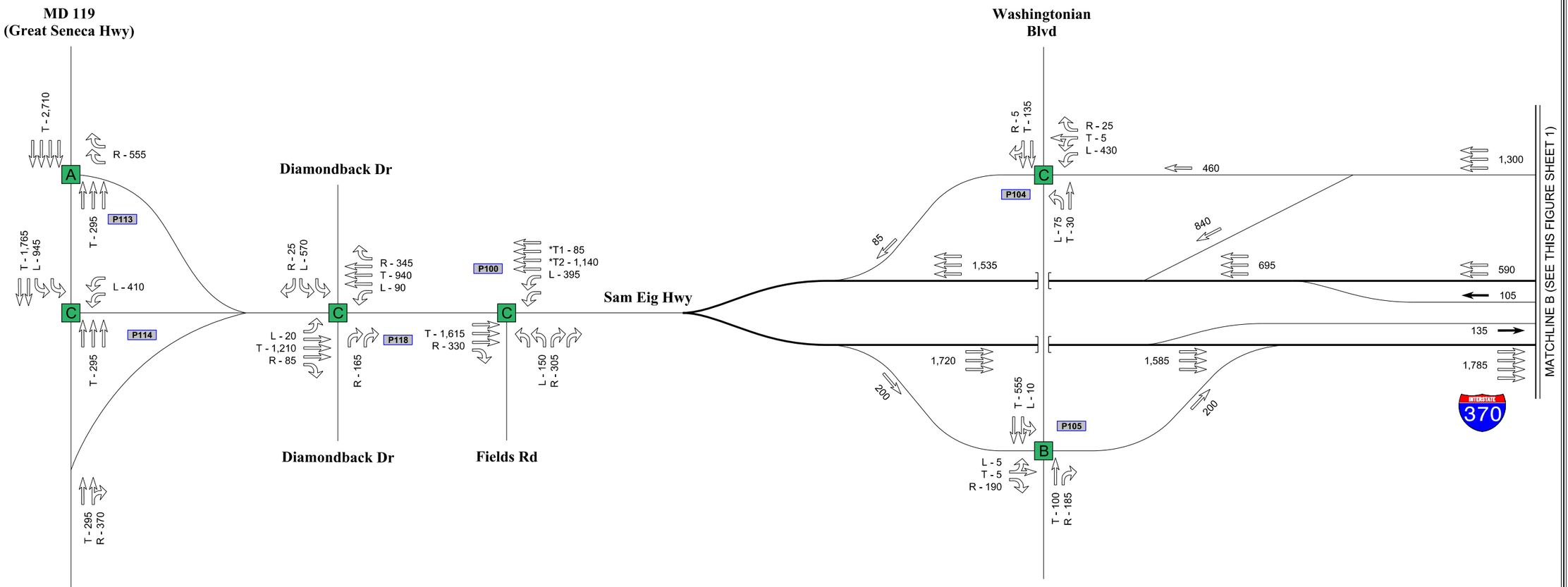
PREFERRED ALTERNATIVE

FIGURE BP1-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour



MD 119
(Great Seneca Hwy)
Washingtonian
Blvd

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

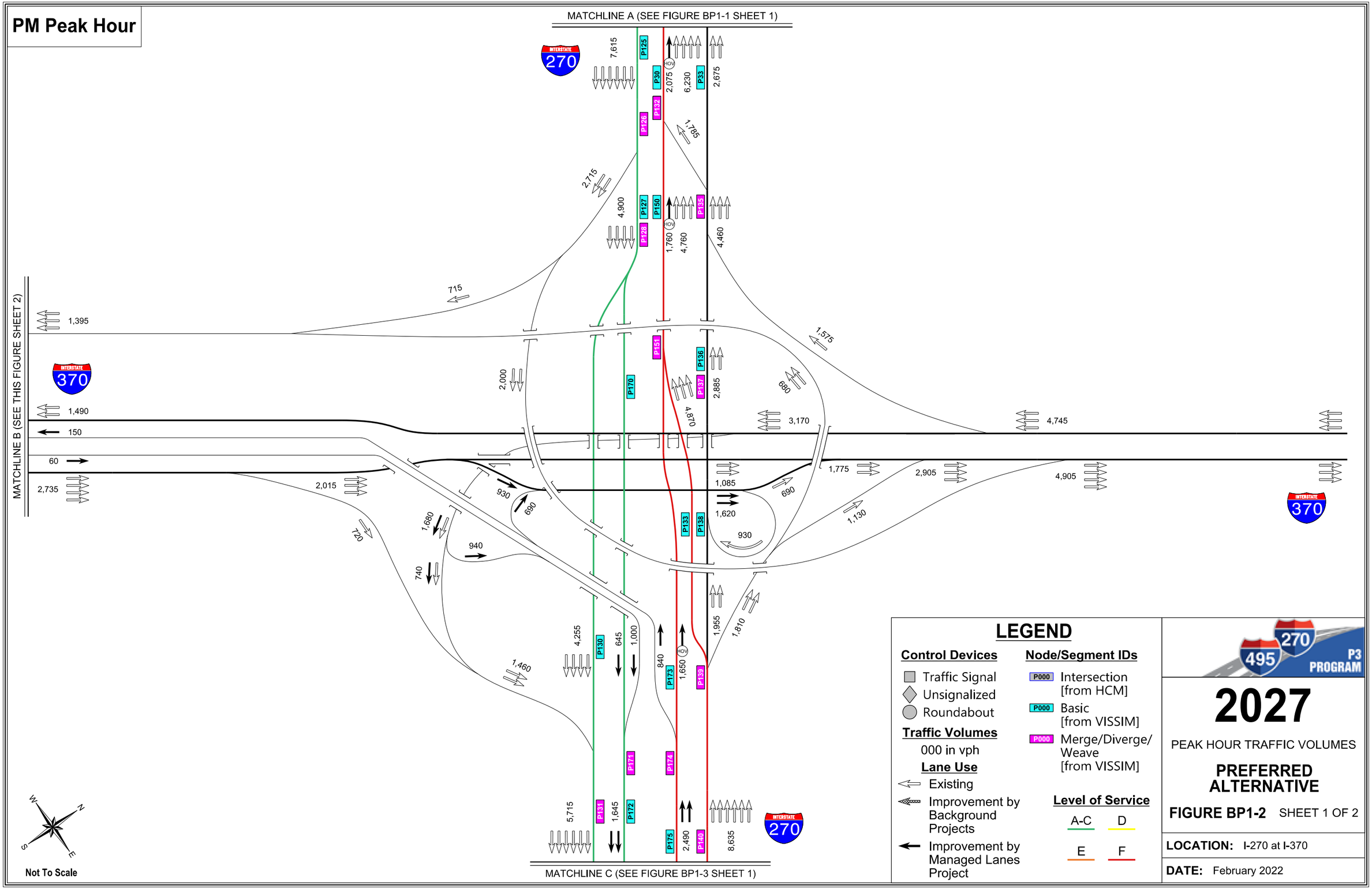
PREFERRED ALTERNATIVE

FIGURE BP1-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

495 270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

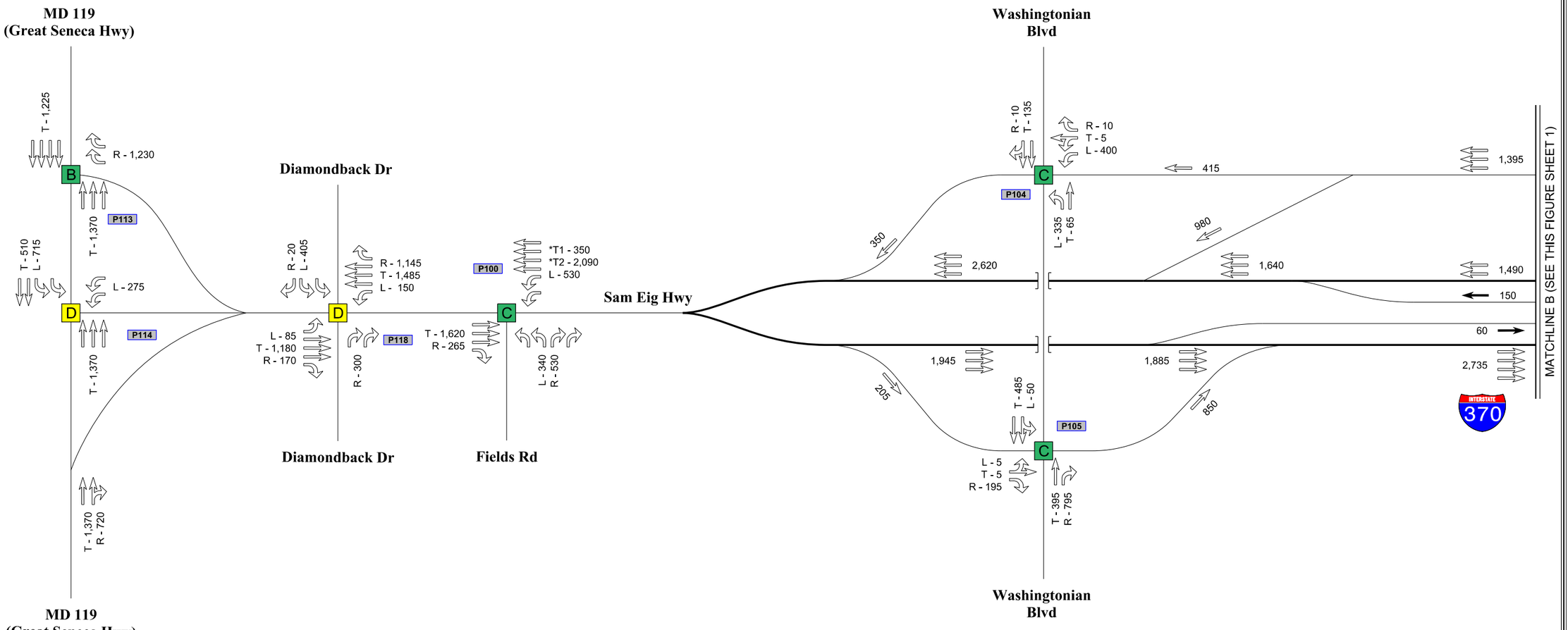
PREFERRED ALTERNATIVE

FIGURE BP1-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour

MATCHLINE C (SEE FIGURE BP1-2 SHEET 1)

MATCHLINE D (SEE FIGURE BP1-4 SHEET 1)

Fields Rd

MD 28 (Key W Ave)

MD 28 (Key W Ave)

Medical Center Dr

Omega Dr

Washingtonian Blvd

Corporate Blvd

Corporate Blvd

Shady Grove Rd

Shady Grove Rd

Home Depot Dwy

Choke Cherry Rd

Piccard Dr

Piccard Dr

Redland Blvd

INTERSTATE 270

P200 P203 P204 P205 P207 P210 P212 P216 P225 P226 P227 P228 P229 P230 P236 P238 P250 P251 P172 P175 P140 P331

A B C D

L - 80 T - 1,880 R - 185

R - 55 T - 240 L - 120

L - 10 T - 60 R - 55

L - 235 U - 20 R - 500 R - 95

T - 800

T - 160

T - 50 T - 650

R - 15 L - 150

R - 185 T - 110

R - 135 L - 205

340

1,580

6,250

515

1,240

6,765

405

345

4,855

1,115

245

1,360

340

7,830

2,170

1,310

5,195

7,170

2,170

1,310

5,870

R - 10 T - 10 L - 90

R - 175 T - 1,790 L - 315 U - 115

L - 5 T - 1,115 R - 20

L - 20 T - 5 R - 45

R - 825 L - 415

T - 1,570

T - 960

T - 1,250

T - 1,030

L - 835 R - 280

R - 50 T - 5 L - 25

R - 10 T - 1,405 L - 130

U - 5 L - 120 T - 925 R - 260

L - 130 T - 5 R - 35

T - 325 L - 70

R - 20 L - 155

L - 40 T - 145 R - 60

T - 45 R - 55

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

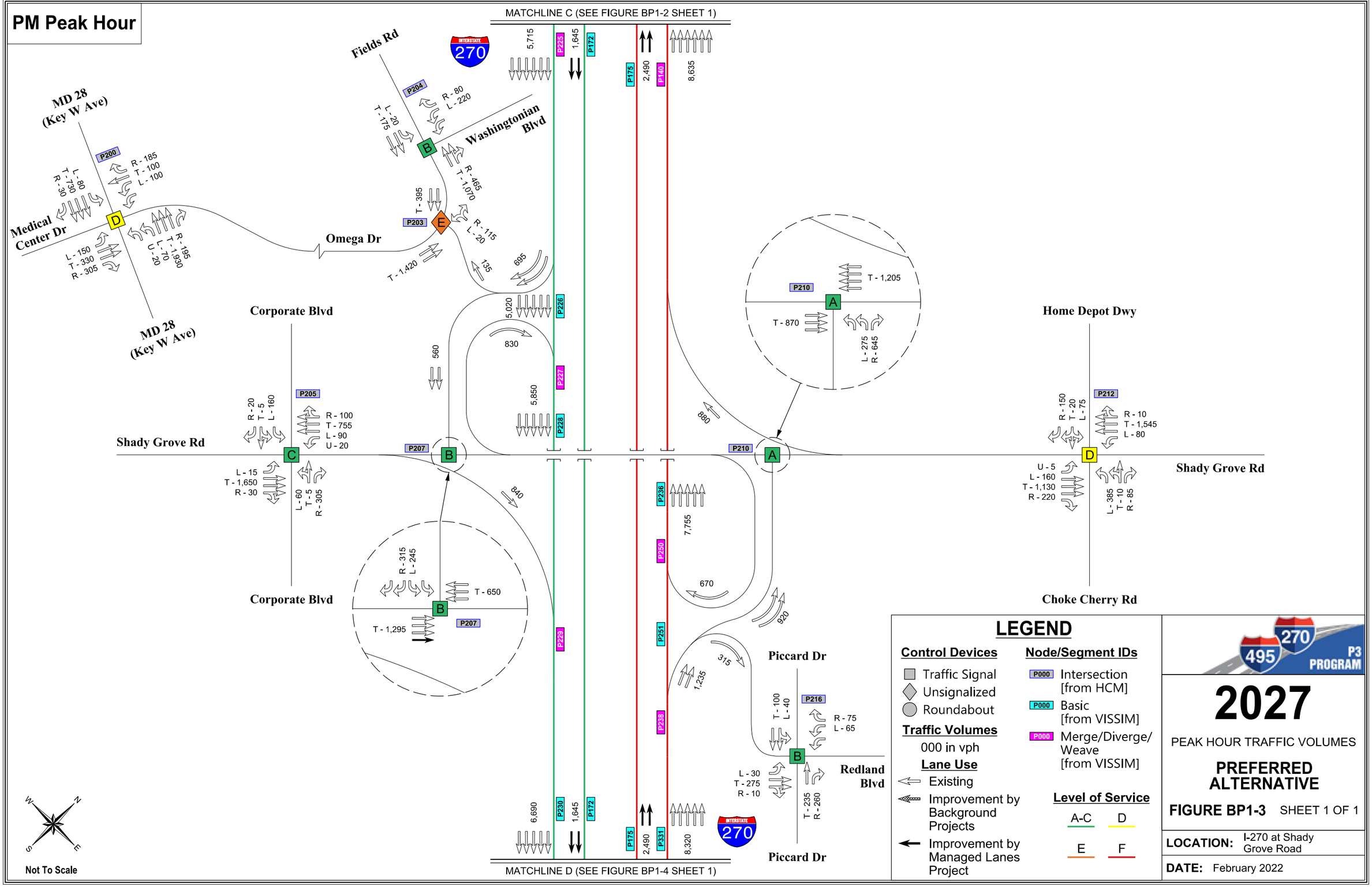
FIGURE BP1-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

PM Peak Hour

MATCHLINE C (SEE FIGURE BP1-2 SHEET 1)



MATCHLINE D (SEE FIGURE BP1-4 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

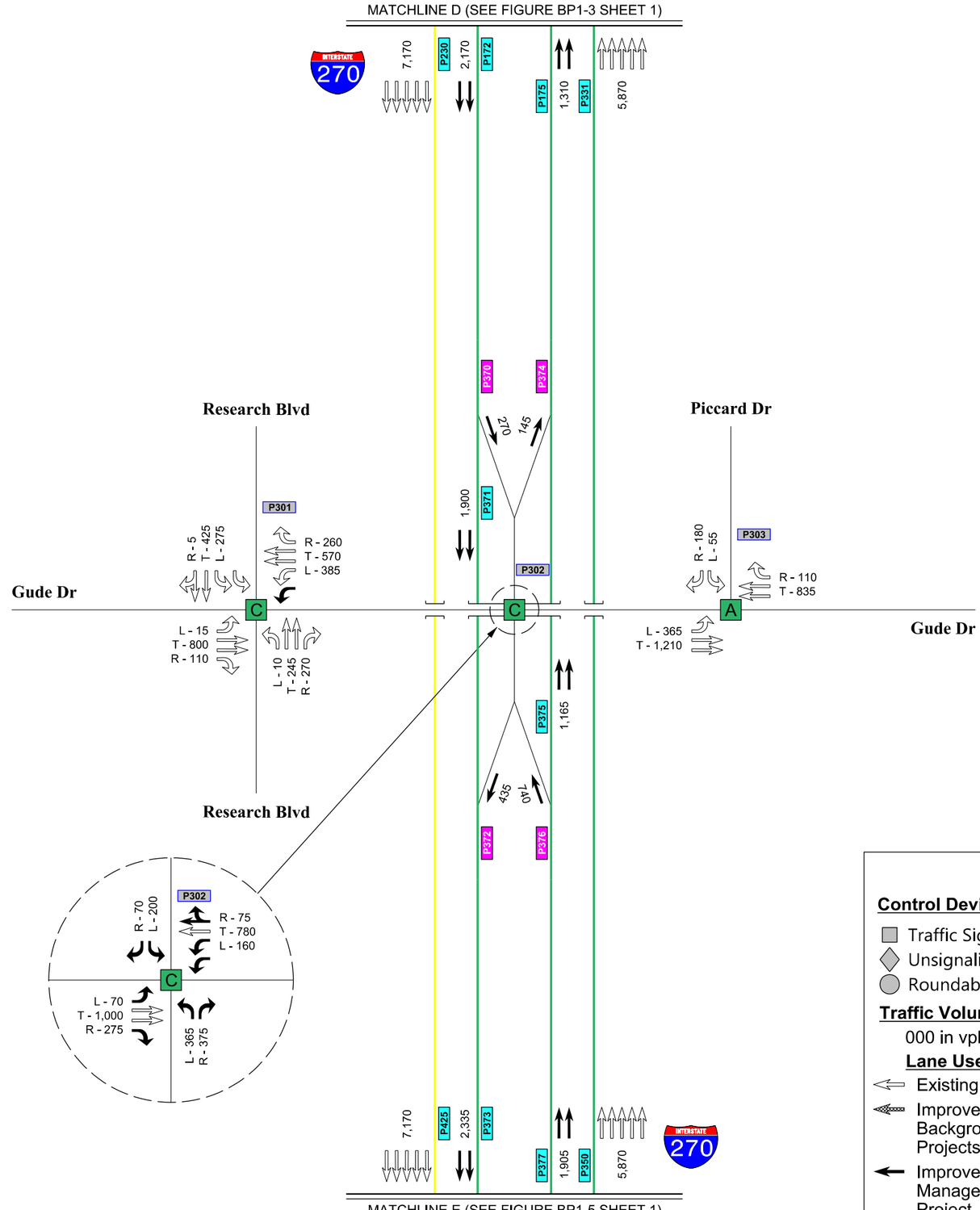
FIGURE BP1-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

AM Peak Hour

MATCHLINE D (SEE FIGURE BP1-3 SHEET 1)



MATCHLINE E (SEE FIGURE BP1-5 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

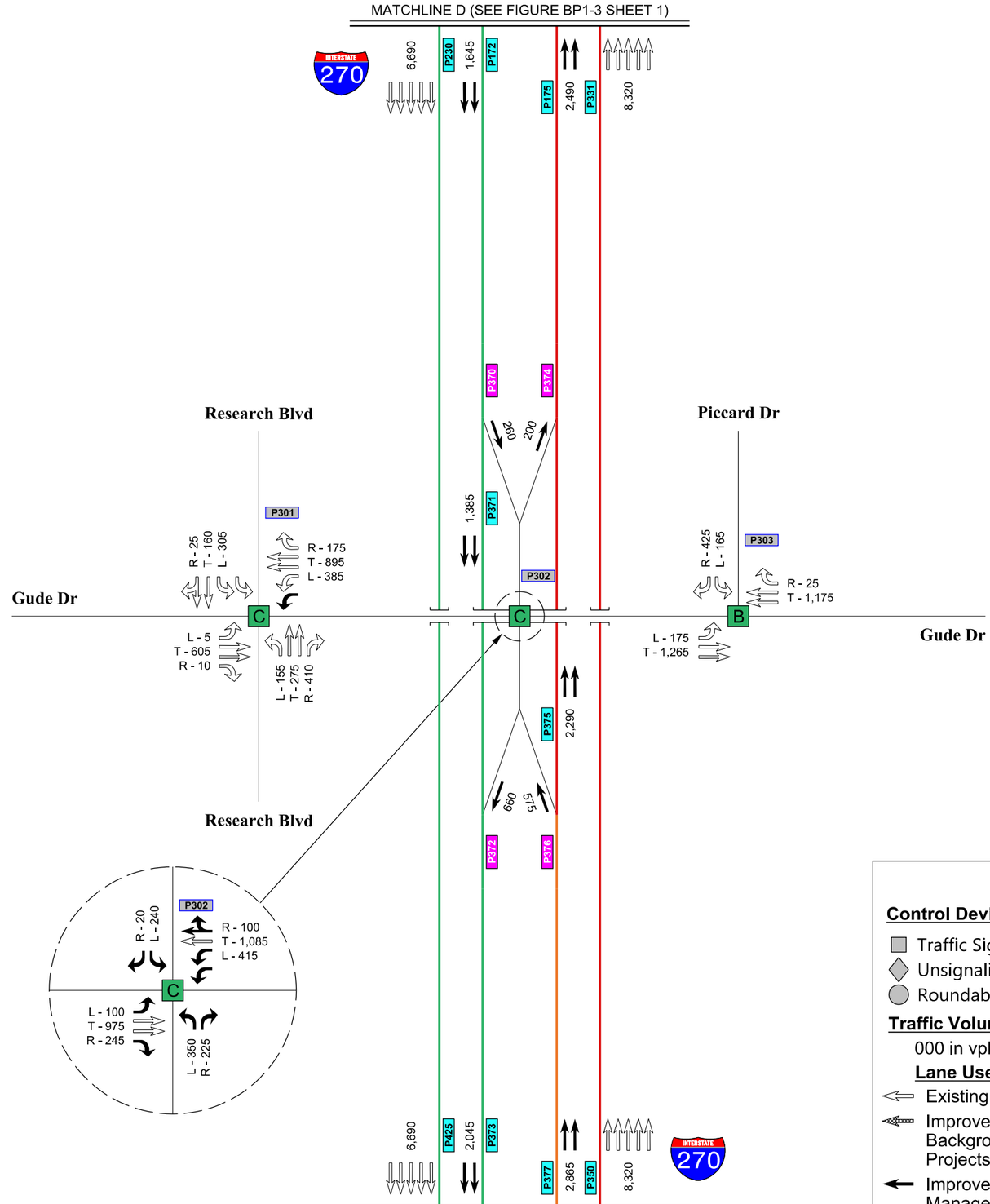
FIGURE BP1-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

PM Peak Hour

MATCHLINE D (SEE FIGURE BP1-3 SHEET 1)



MATCHLINE E (SEE FIGURE BP1-5 SHEET 1)

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 at 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

AM Peak Hour

MATCHLINE E (SEE FIGURE BP1-4 SHEET 1)

INTERSTATE 270

7,170 P425 2,335 P373 P377 1,905 P350 5,870

P426 P442

485 6,685 P427 310 5,560 P443

265 1,340

P444

Hurley Ave | **Nelson St** | **Laird St**

MD 28 (Montgomery Ave) P400 B

R - 5, T - 5, L - 15
R - 40, T - 1,740, L - 110, U - 15
L - 5, T - 1,890, R - 305
L - 65, T - 5, R - 170

P401 B

R - 95, L - 390
T - 1,810
T - 1,030, R - 1,060
1,420

P428

1,060 6,950 P429 120 350 P445

6,780

P430

L - 320, T - 980
T - 135, R - 215

P405 C

R - 265, L - 25
R - 15, T - 780

P407

T - 795, L - 0
T - 1,220, R - 0
R - 25, T - 5, L - 75
R - 10, T - 760, L - 5
L - 5, T - 1,210, R - 5
L - 10, T - 5, R - 10

B

MD 28 (Montgomery Ave)

Hurley Ave | **Adclare Rd** | **Bullard Cir**

8,010 P525 2,335 P373 P377 1,905 P447 7,130

INTERSTATE 270

MATCHLINE F (SEE FIGURE BP1-6 SHEET 1)

N W E S

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

PM Peak Hour

MATCHLINE E (SEE FIGURE BP1-4 SHEET 1)

INTERSTATE 270

P425 6,690 | P373 2,045 | P377 2,865 | P350 8,320

P426 | P442

730

P427 5,960

580

P443 7,740

220

1,540

P444

Hurley Ave

Nelson St

Laird St

MD 28 (Montgomery Ave)

P400 — R - 10, T - 5, L - 40 | R - 15, T - 2,190, L - 270, U - 15

P401 — R - 230, L - 500 | T - 2,260

P405 — R - 405, L - 30 | R - 40, T - 1,115

P407 — R - 65, T - 5, L - 20 | R - 10, T - 1,085, L - 5

T - 1,155, L - 0

T - 1,340, R - 0

L - 30, T - 1,295, R - 15

L - 5, T - 5, R - 10

C — L - 5, T - 2,000, R - 70 | L - 85, T - 5, R - 140

B — T - 955, R - 1,240

1,455

L - 220, T - 1,135

T - 260, R - 175

P428

6,180

1,240

100

435

P429 | P445

9,180

P430

Hurley Ave

Adclare Rd

Bullard Cir

MD 28 (Montgomery Ave)

P525 7,420 | P373 2,045 | P377 2,865 | P447 9,615

INTERSTATE 270

MATCHLINE F (SEE FIGURE BP1-6 SHEET 1)

N / W / E / S

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C | D | E | F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

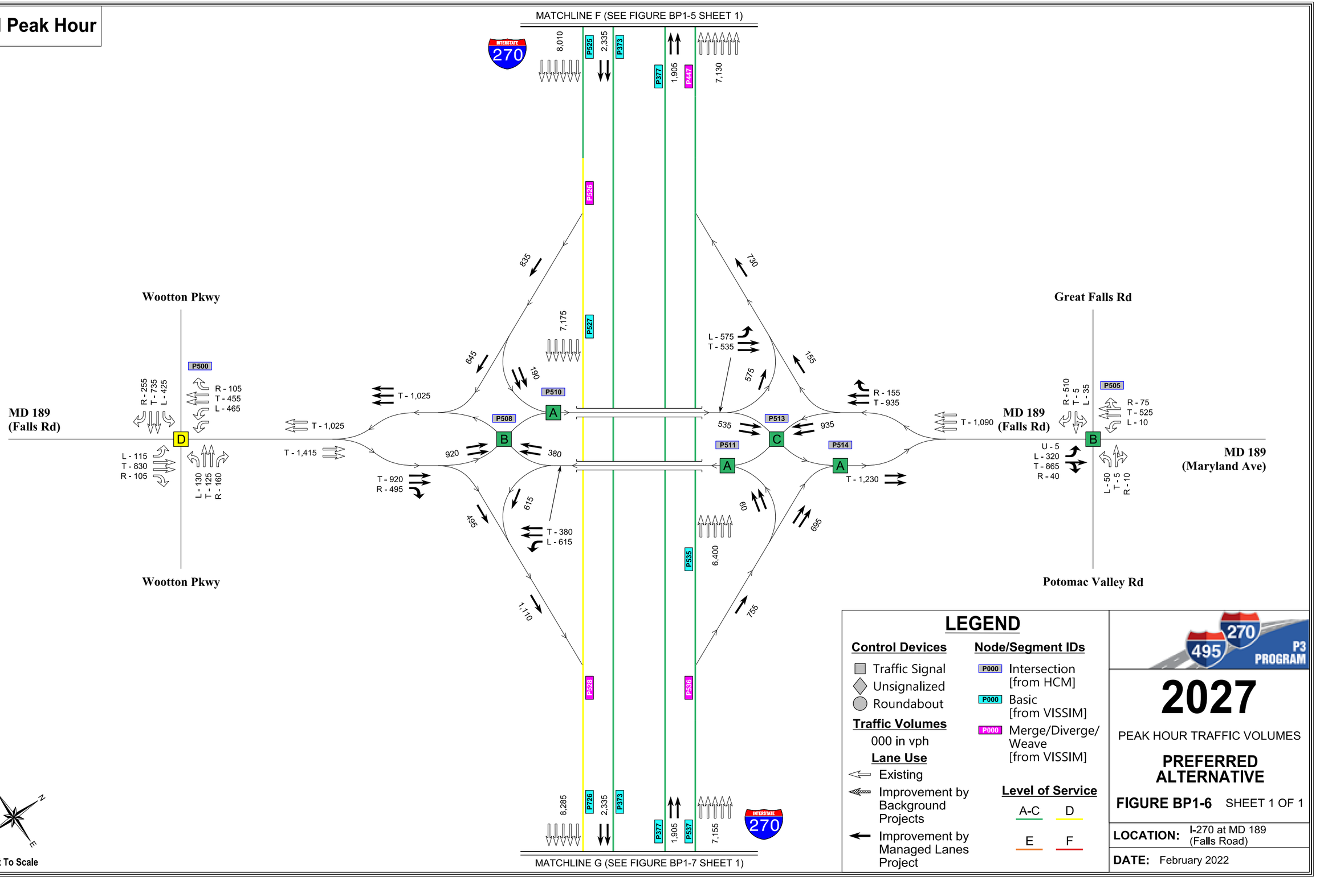
PREFERRED ALTERNATIVE

FIGURE BP1-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

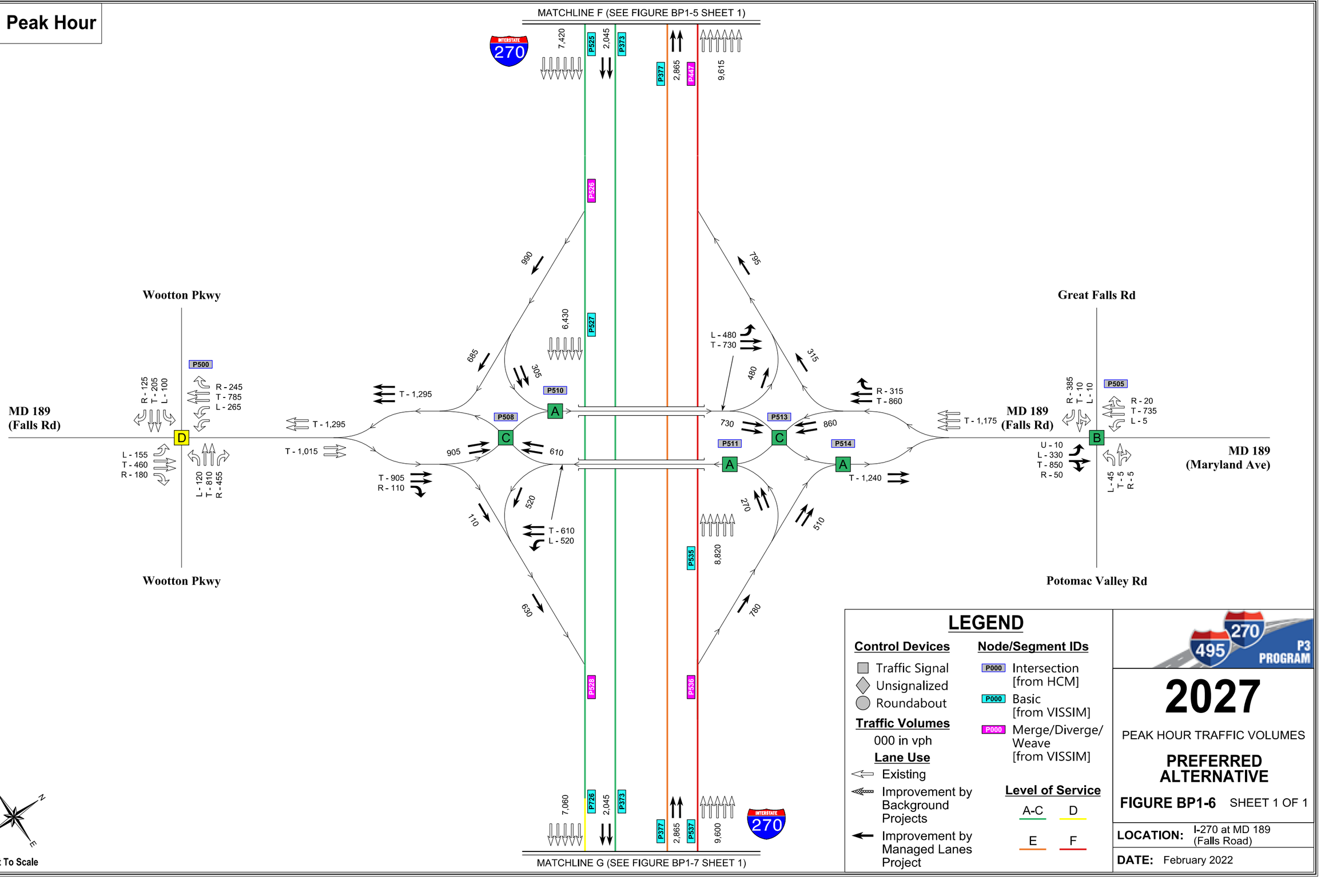
PREFERRED ALTERNATIVE

FIGURE BP1-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

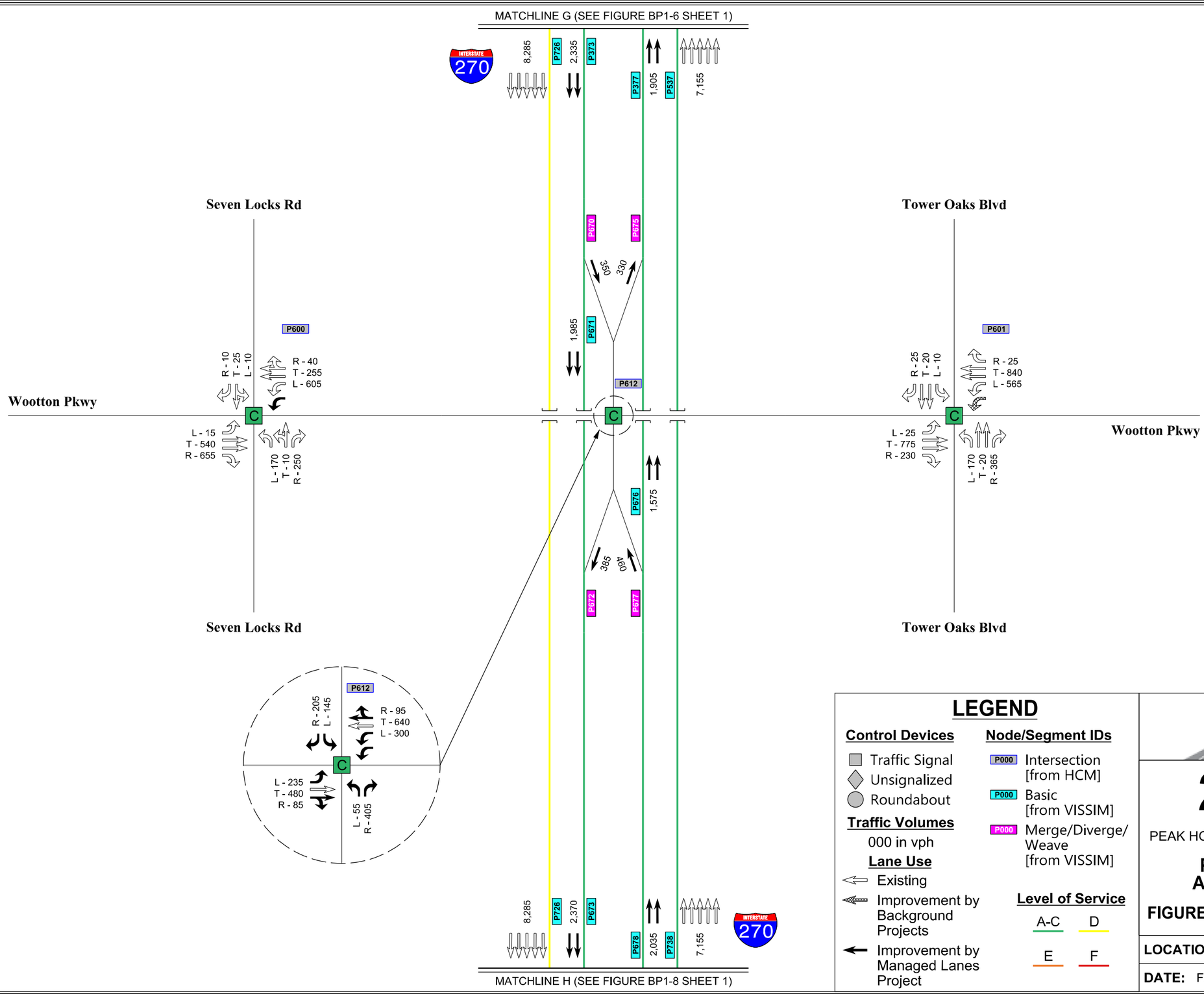
PREFERRED ALTERNATIVE

FIGURE BP1-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

AM Peak Hour



N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

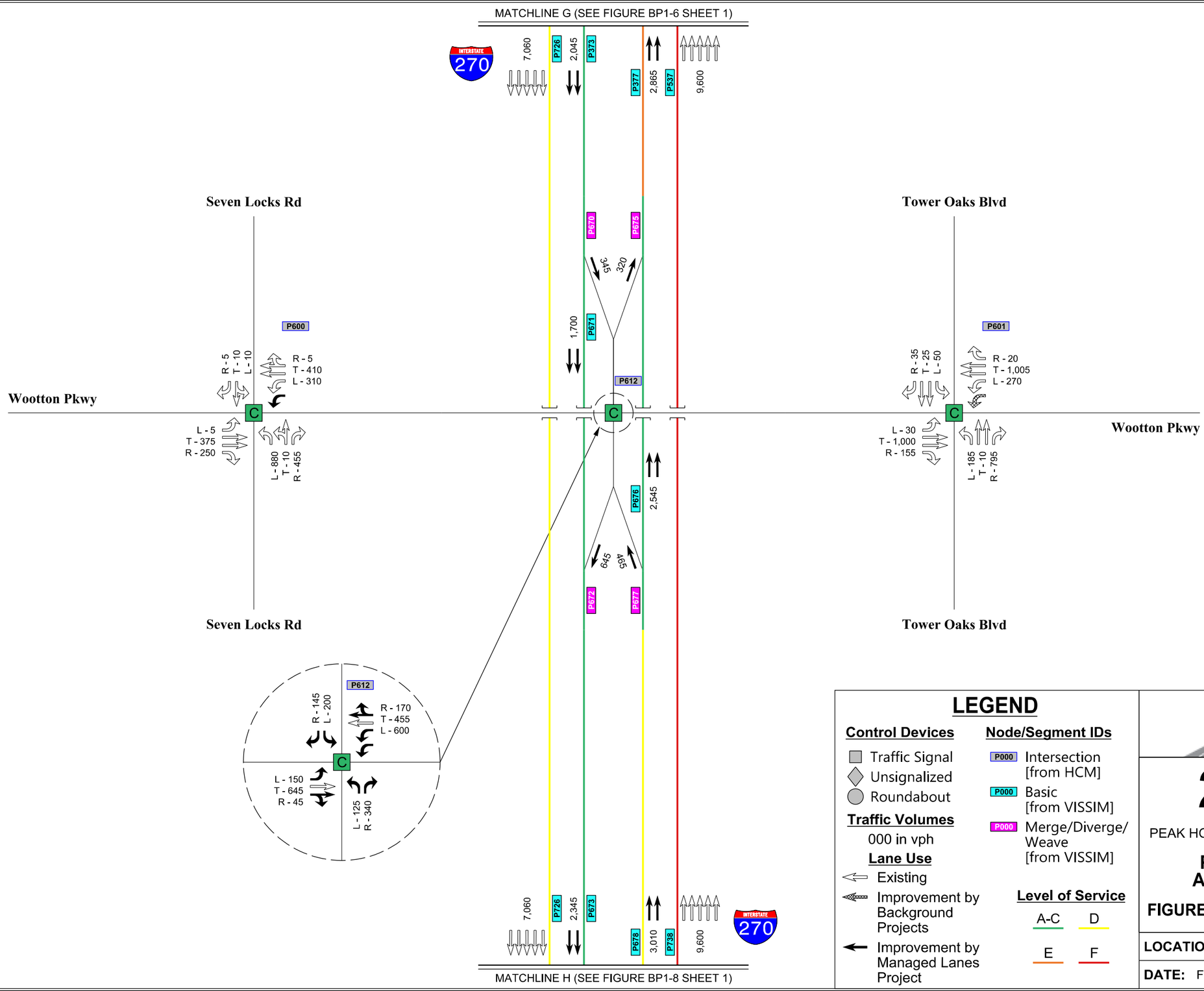
FIGURE BP1-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

PM Peak Hour

MATCHLINE G (SEE FIGURE BP1-6 SHEET 1)



MATCHLINE H (SEE FIGURE BP1-8 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

AM Peak Hour

MATCHLINE H (SEE FIGURE BP1-7 SHEET 1)

MATCHLINE I (SEE THIS FIGURE SHEET 2)

MATCHLINE J (SEE THIS FIGURE SHEET 2)

MATCHLINE K (SEE FIGURE BP1-9 SHEET 1)

INTERSTATE 270

8,285 P726 2,370 P673 P678 2,035 P738 7,155

Park Potomac Ave

P739

1,110

P727

165

To Parking

60

8,120 P728

105

1,005

230

995

350

720

210

930

8,130 P730

P742 5,925

1,295

P740 6,045

680

50

P710

R - 25 T - 630 L - 15

R - 5 T - 5 L - 5

B

L - 610 T - 10 R - 60

L - 20 T - 170 R - 15

GEICO Entrance

Tower Oaks Blvd

P707

R - 485 L - 210

R - 125 T - 2,075

L - 80 T - 1,305

615

Montrose Rd

Seven Locks Rd

P701

R - 65 T - 640 L - 435

R - 115 T - 200 L - 395

C

L - 65 T - 230 R - 55

L - 15 T - 200 R - 600

P702

R - 105

R - 225 T - 605

E

T - 1,245 R - 20

R - 215

Montrose Rd

Seven Locks Rd

Park Potomac Ave

P723 P741

9,060 P732 2,370 P673 P678 2,035 P744 7,220

INTERSTATE 270

N W E S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

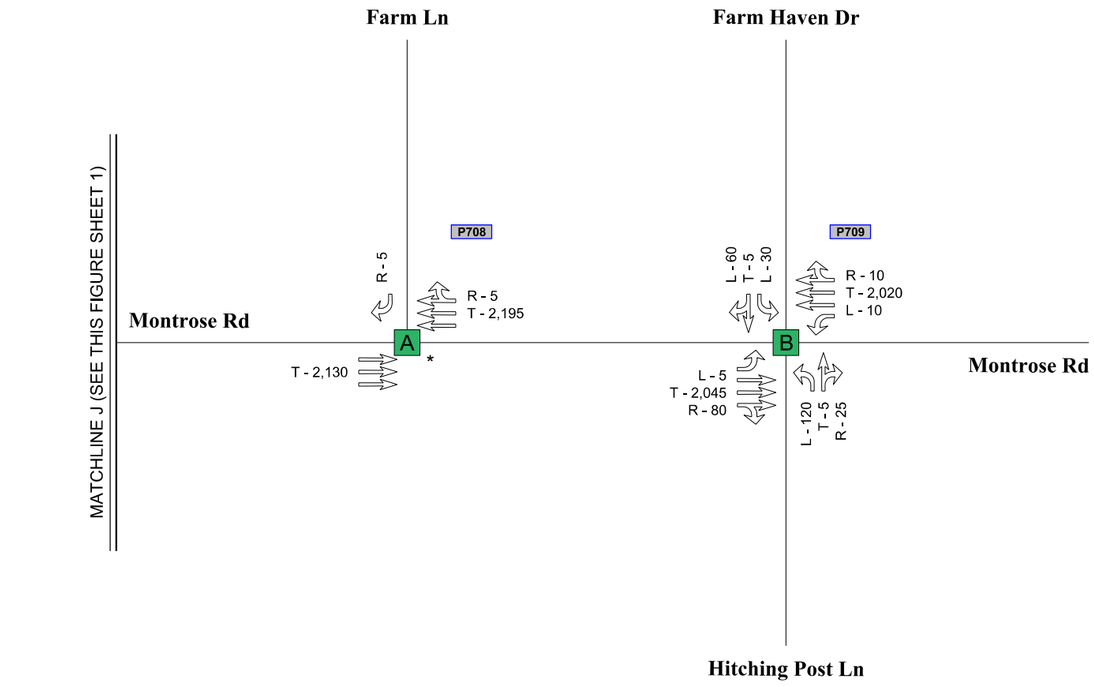
PREFERRED ALTERNATIVE

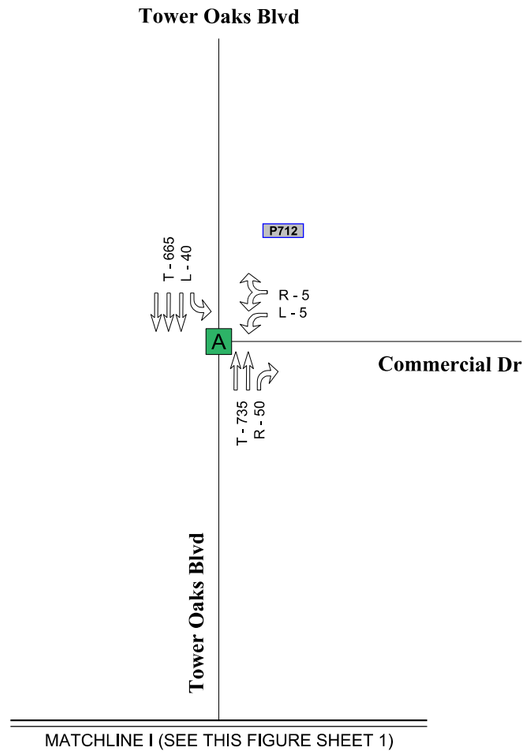
FIGURE BP1-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour





N
W E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour

MATCHLINE H (SEE FIGURE BP1-7 SHEET 1)

MATCHLINE I (SEE THIS FIGURE SHEET 2)

MATCHLINE J (SEE THIS FIGURE SHEET 2)

MATCHLINE K (SEE FIGURE BP1-9 SHEET 1)

INTERSTATE 270

7,060 — P726 — 2,345 — P673

P678 — 3,010 — P738 — 9,600

P739

1,435

1,145

P740 — 8,165

P727

P728 — 6,635

P730 — 6,345

P742 — 8,205

P732 — 6,770 — 2,345 — P673

P678 — 3,010 — P744 — 9,210

INTERSTATE 270

Park Potomac Ave

Seven Locks Rd

To Parking

425

85

340

695

985

170

255

425

390

350

1,005

290

500

505

Tower Oaks Blvd

GEICO Entrance

Montrose Rd

Montrose Rd

Seven Locks Rd

Park Potomac Ave

P701 — R - 85, T - 385, L - 160 — R - 520, T - 610, L - 715 — L - 65, T - 315, R - 35 — L - 70, T - 590, R - 490 — C

P702 — R - 185 — R - 190, T - 1,660 — T - 945, R - 20 — R - 130 — F

P710 — R - 190, T - 395, L - 5 — R - 10, T - 15, L - 10 — L - 475, T - 5, R - 20 — L - 85, T - 155, R - 5 — B

P707 — R - 300, L - 125 — R - 180, T - 2,660 — L - 65, T - 1,475 — B

N

W E

S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

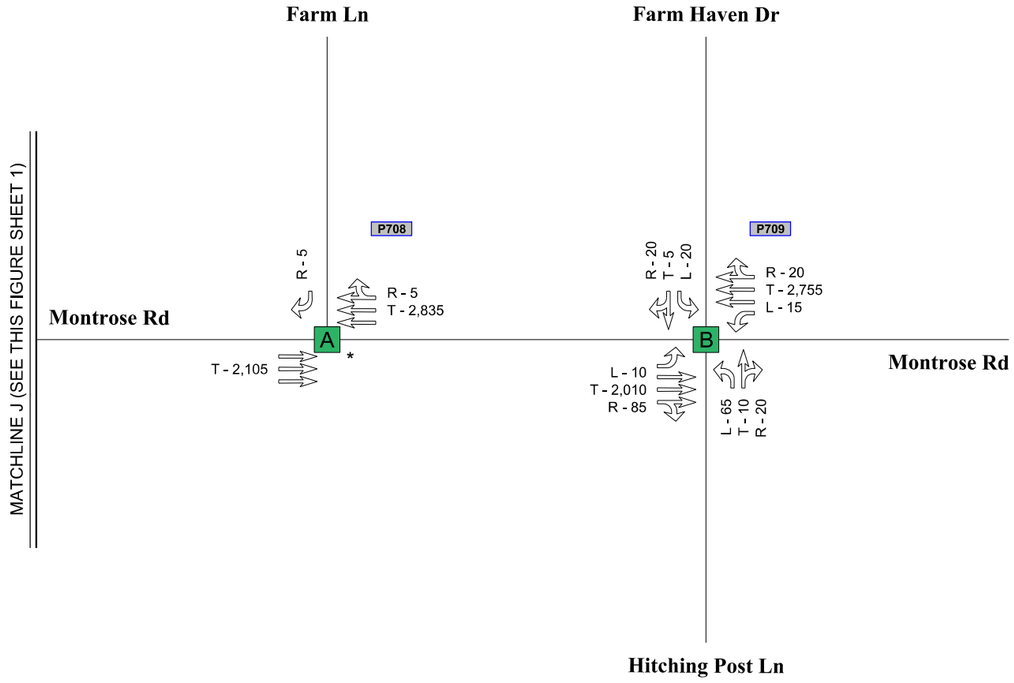
PREFERRED ALTERNATIVE

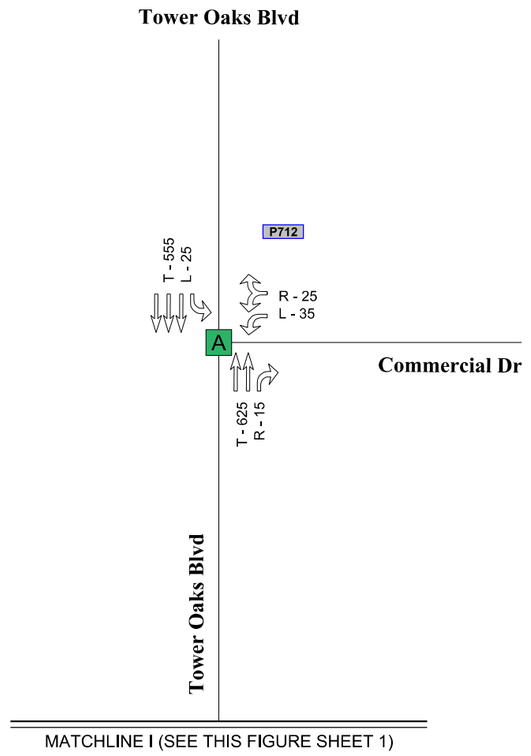
FIGURE BP1-8 SHEET 1 OF 2

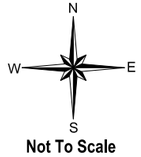
LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour







Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

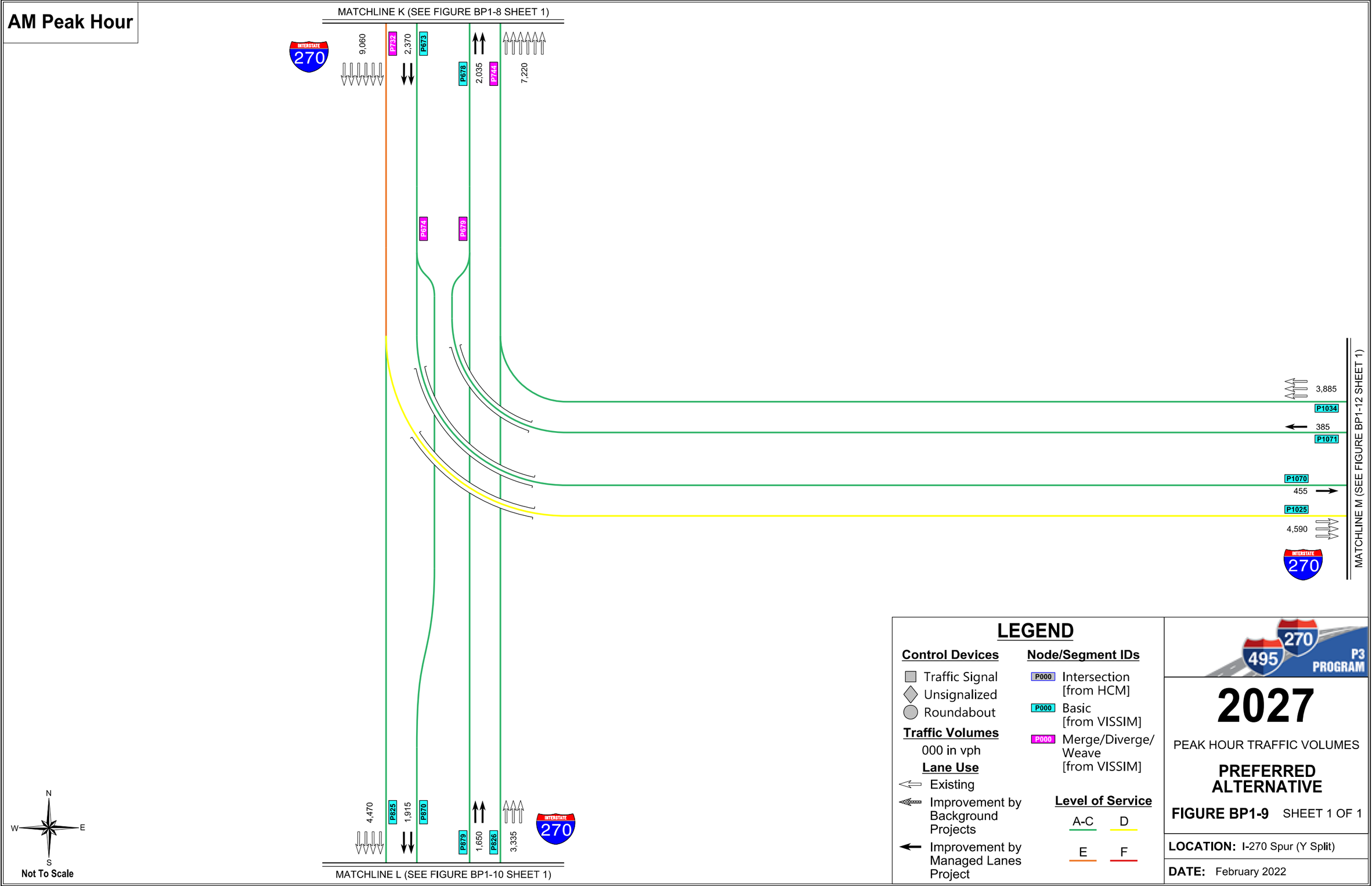
PREFERRED ALTERNATIVE

FIGURE BP1-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

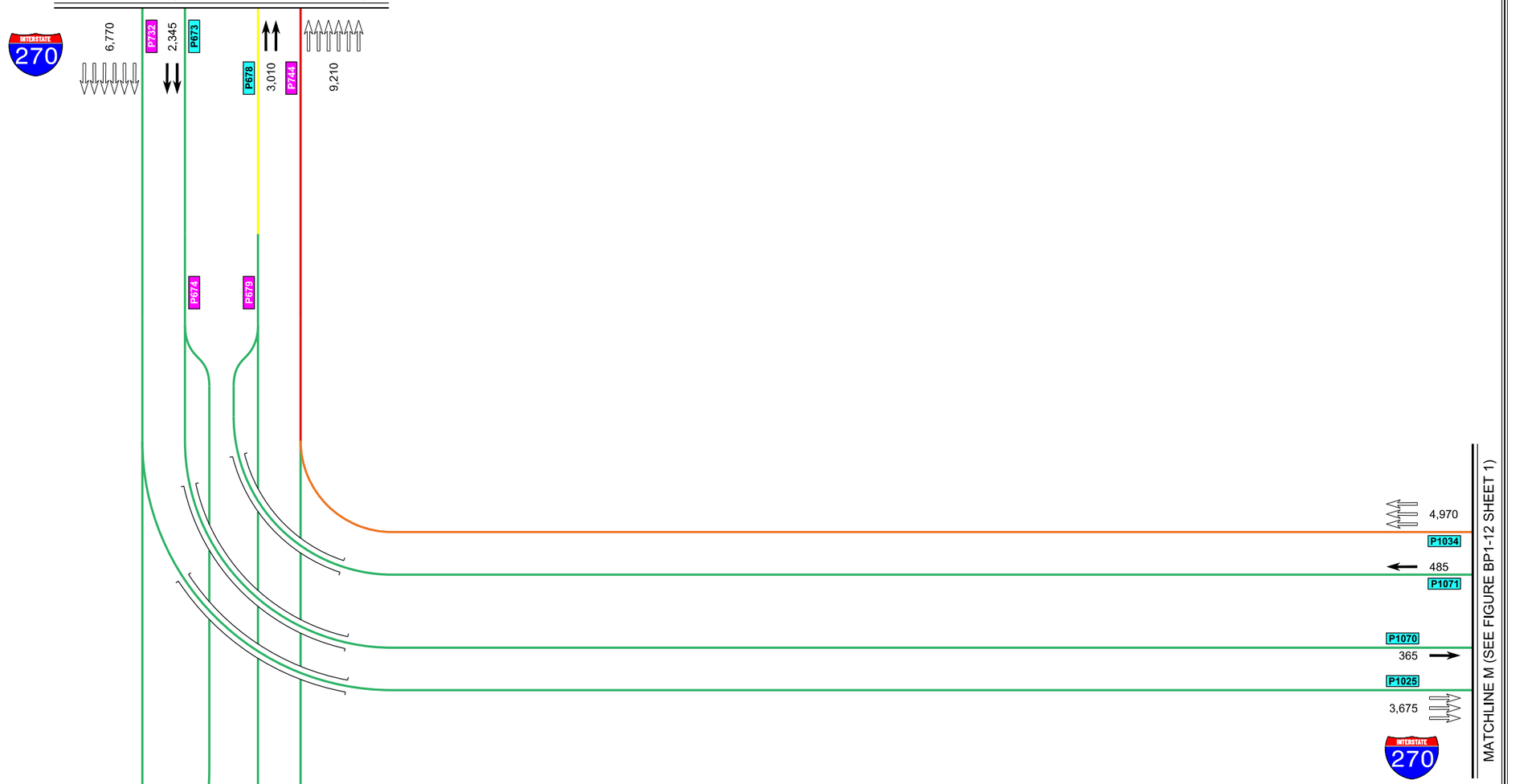
FIGURE BP1-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

PM Peak Hour

MATCHLINE K (SEE FIGURE BP1-8 SHEET 1)



MATCHLINE L (SEE FIGURE BP1-10 SHEET 1)

MATCHLINE M (SEE FIGURE BP1-12 SHEET 1)

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

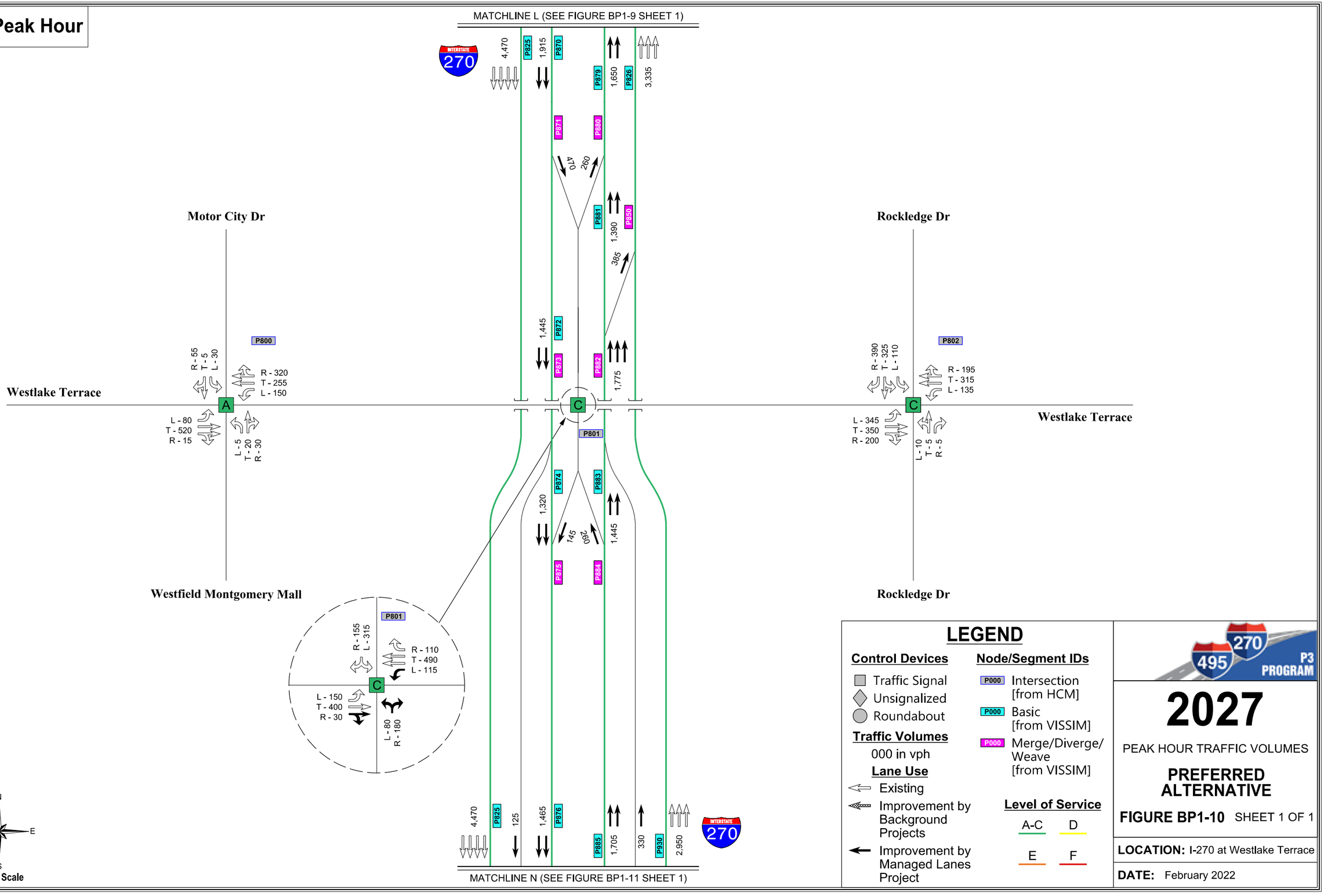
PREFERRED ALTERNATIVE

FIGURE BP1-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

PM Peak Hour

MATCHLINE L (SEE FIGURE BP1-9 SHEET 1)

INTERSTATE 270

3,095 P825 1,980 P870 2,525 P879 P826 4,240

P871 P880

320 815

P881 P850 1,710

895

1,660 P872

P873 P882 2,605

Motor City Dr

Rockledge Dr

P800

R - 45
T - 15
L - 205

R - 135
T - 520
L - 220

Westlake Terrace

B

C

D

L - 40
T - 345
R - 10

L - 40
T - 10
R - 205

P801

L - 230
T - 350
R - 15

L - 220
T - 85
R - 200

P802

R - 550
T - 5
L - 205

R - 30
T - 545
L - 5

Westlake Terrace

P874 P883

875

245 140 2,425

P875 P884

Westfield Montgomery Mall

Rockledge Dr

P801

R - 195
L - 125

R - 505
T - 630
L - 180

C

L - 310
T - 380
R - 65

L - 50
R - 90

3,095 P825 785 1,120 P876 2,565 P885 180 P930 3,345

INTERSTATE 270

MATCHLINE N (SEE FIGURE BP1-11 SHEET 1)

N
W E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

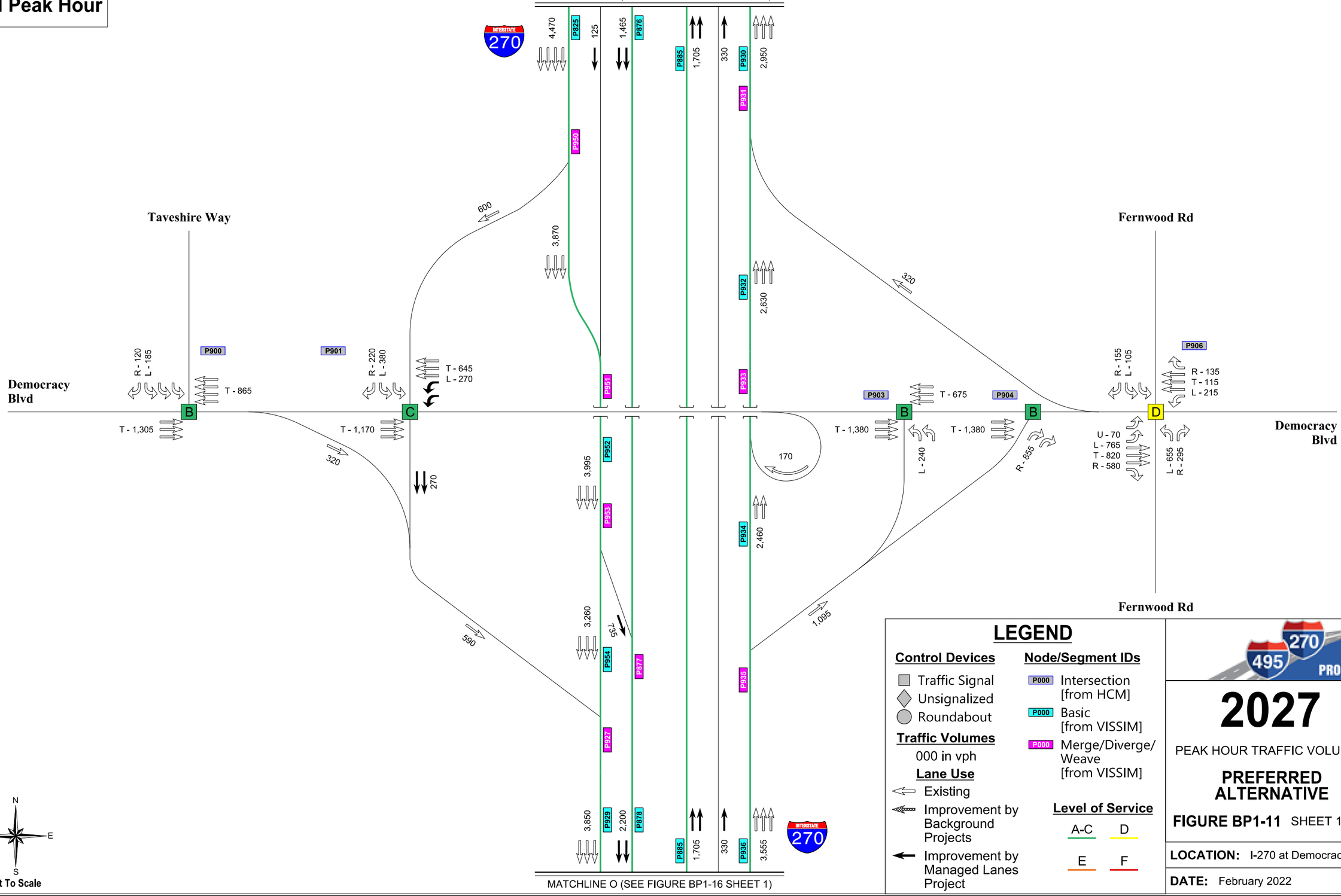
FIGURE BP1-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

AM Peak Hour

MATCHLINE N (SEE FIGURE BP1-10 SHEET 1)



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

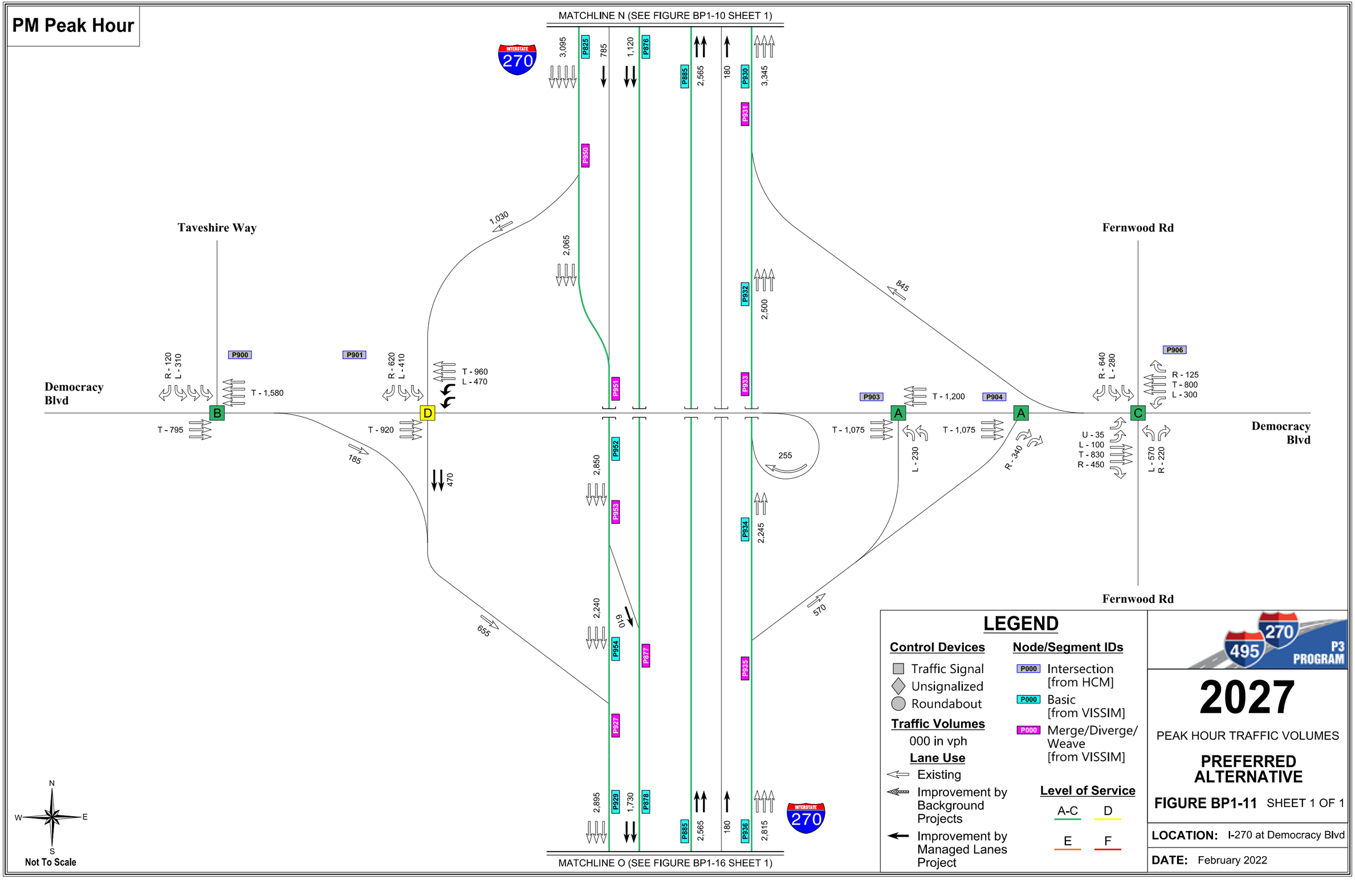
PREFERRED ALTERNATIVE

FIGURE BP1-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

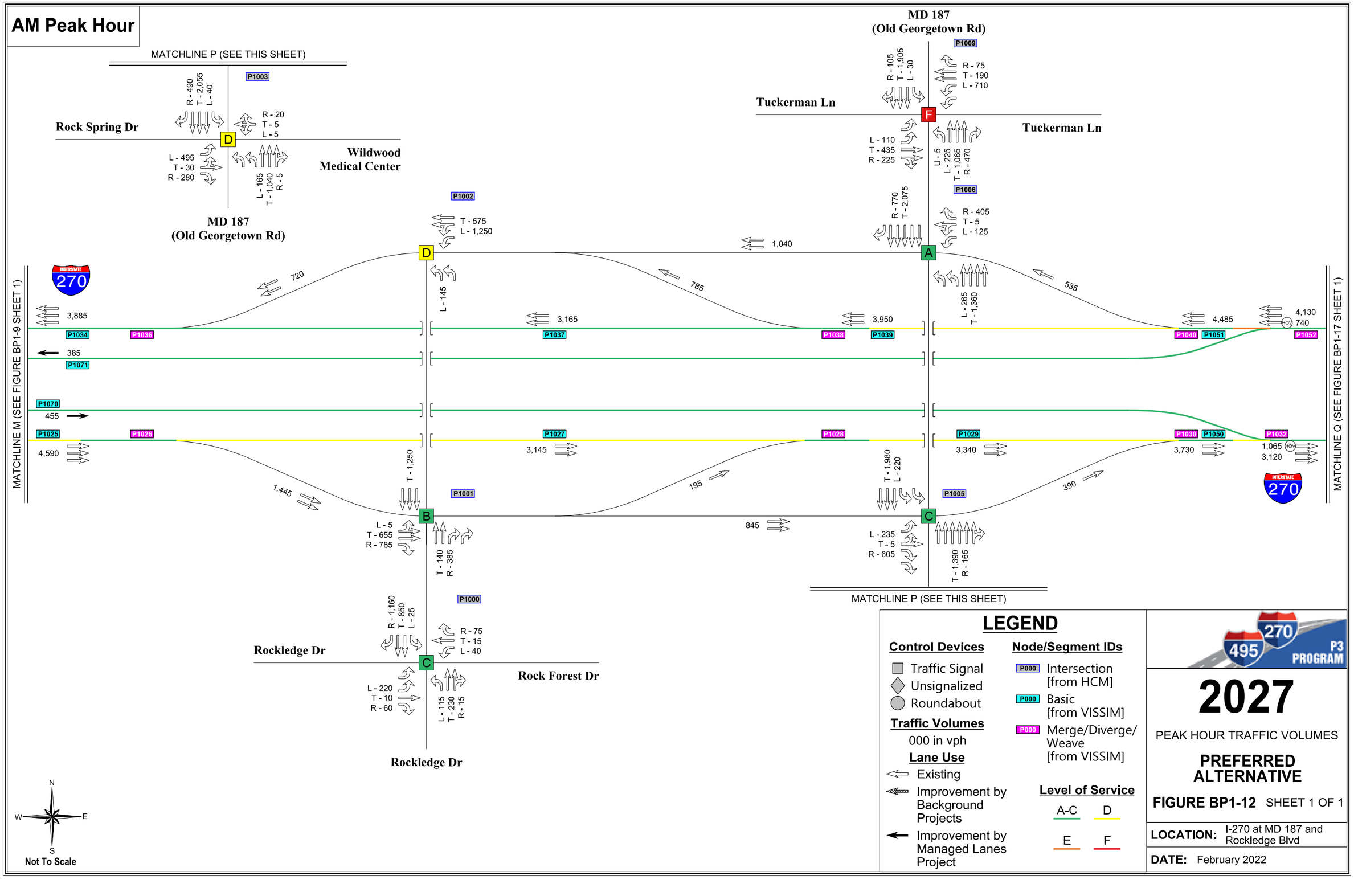
PREFERRED ALTERNATIVE

FIGURE BP1-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

N W E S

Not To Scale

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

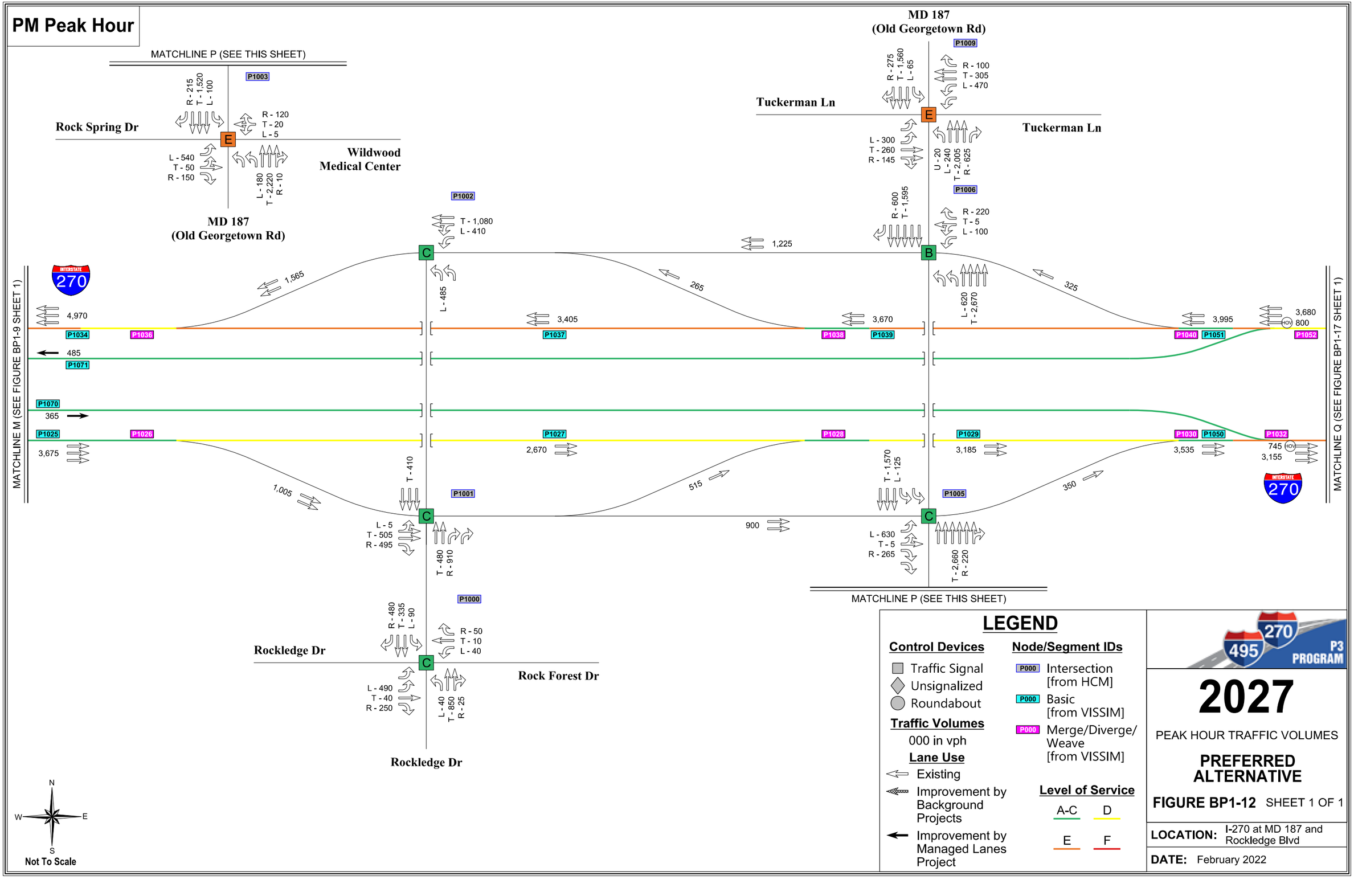
PREFERRED ALTERNATIVE

FIGURE BP1-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

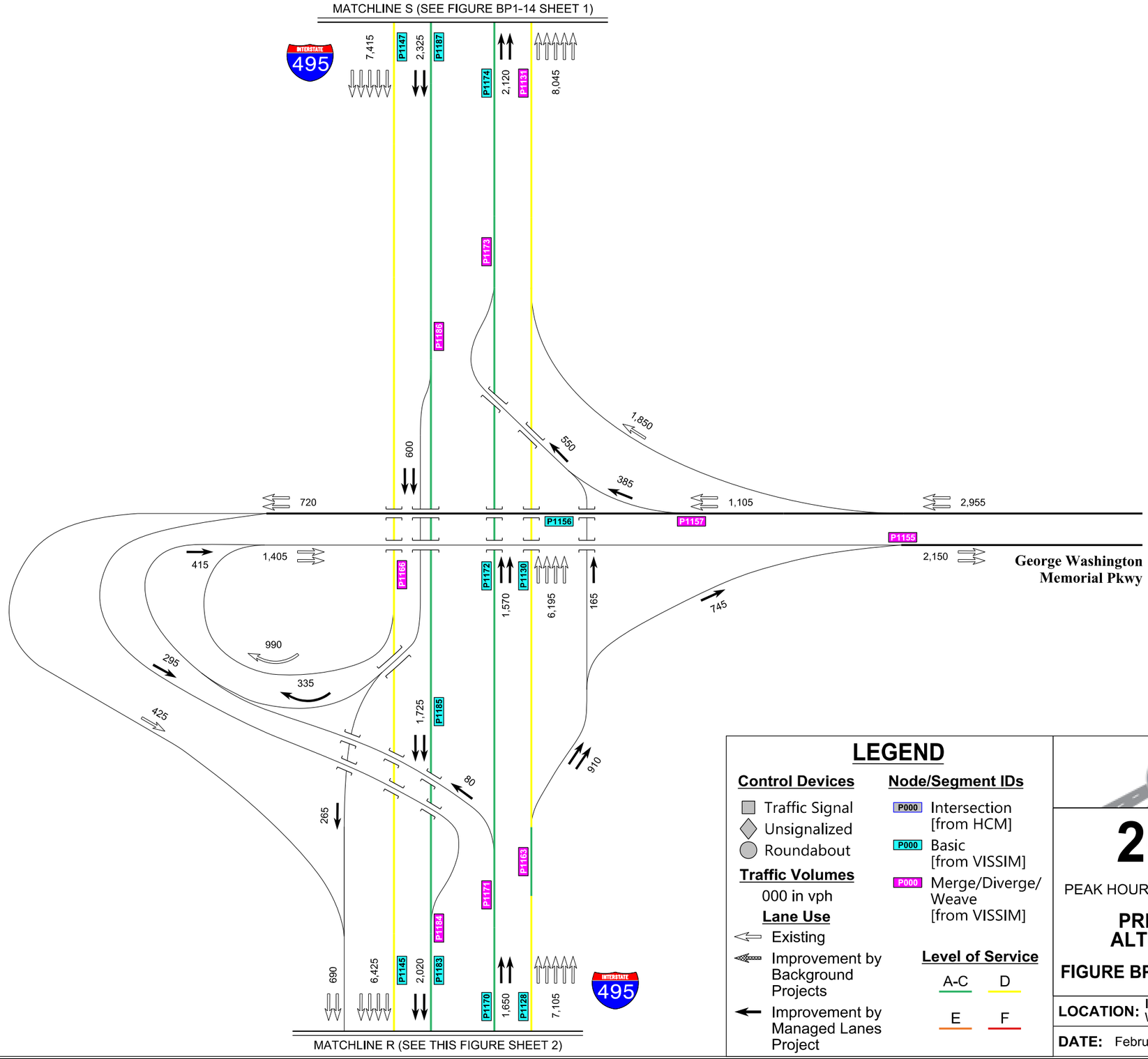
PREFERRED ALTERNATIVE

FIGURE BP1-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

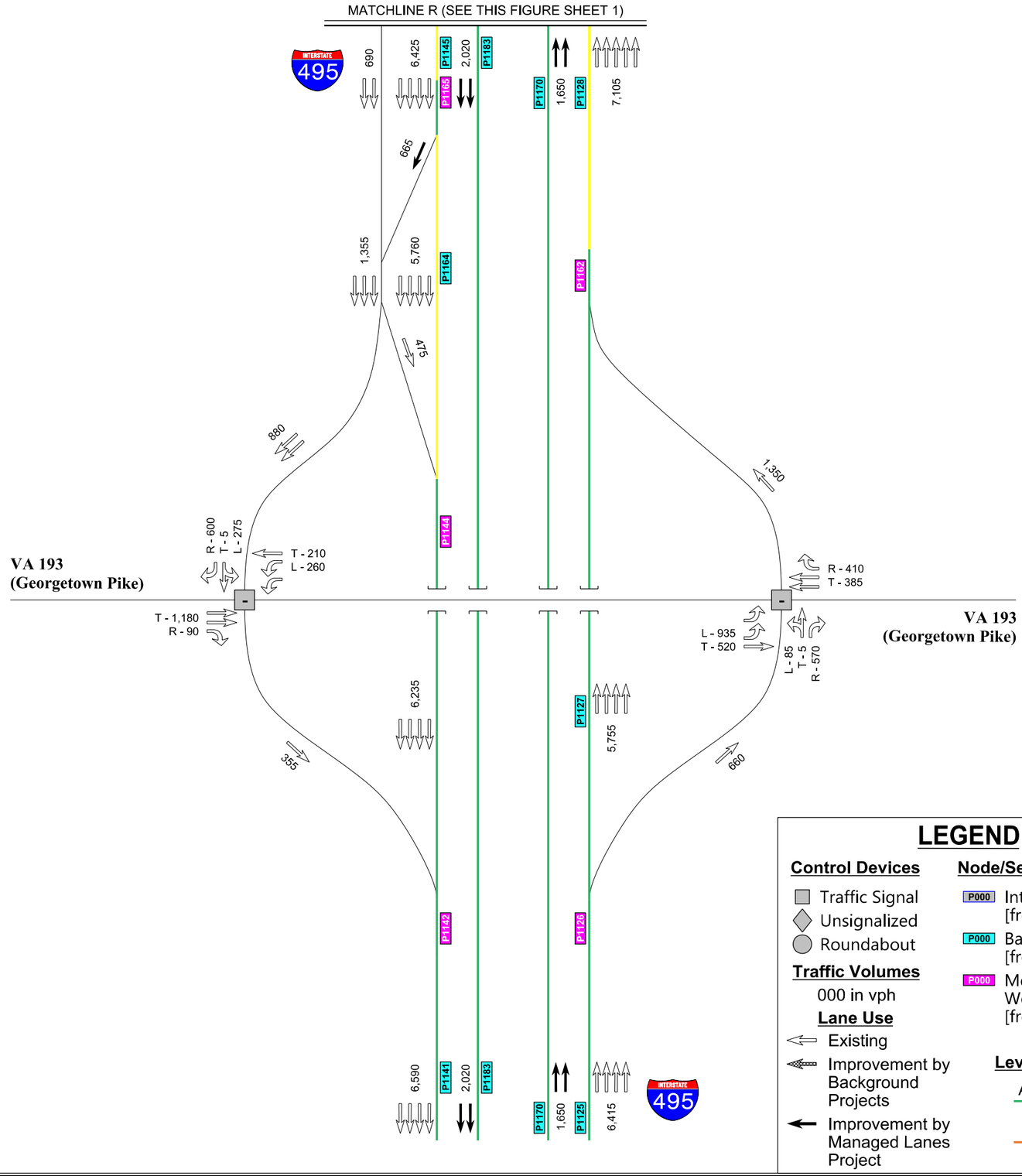
PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

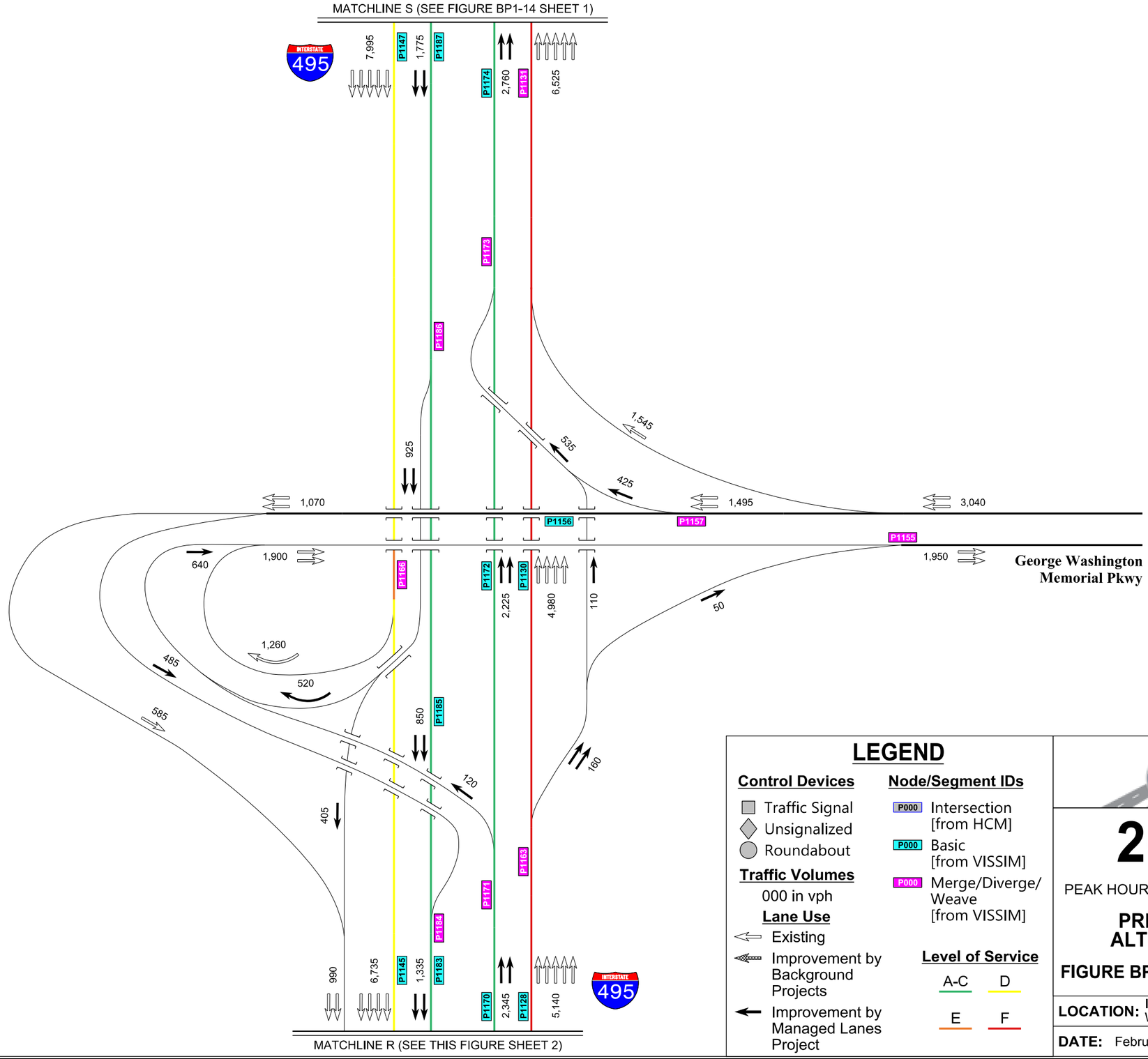
PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

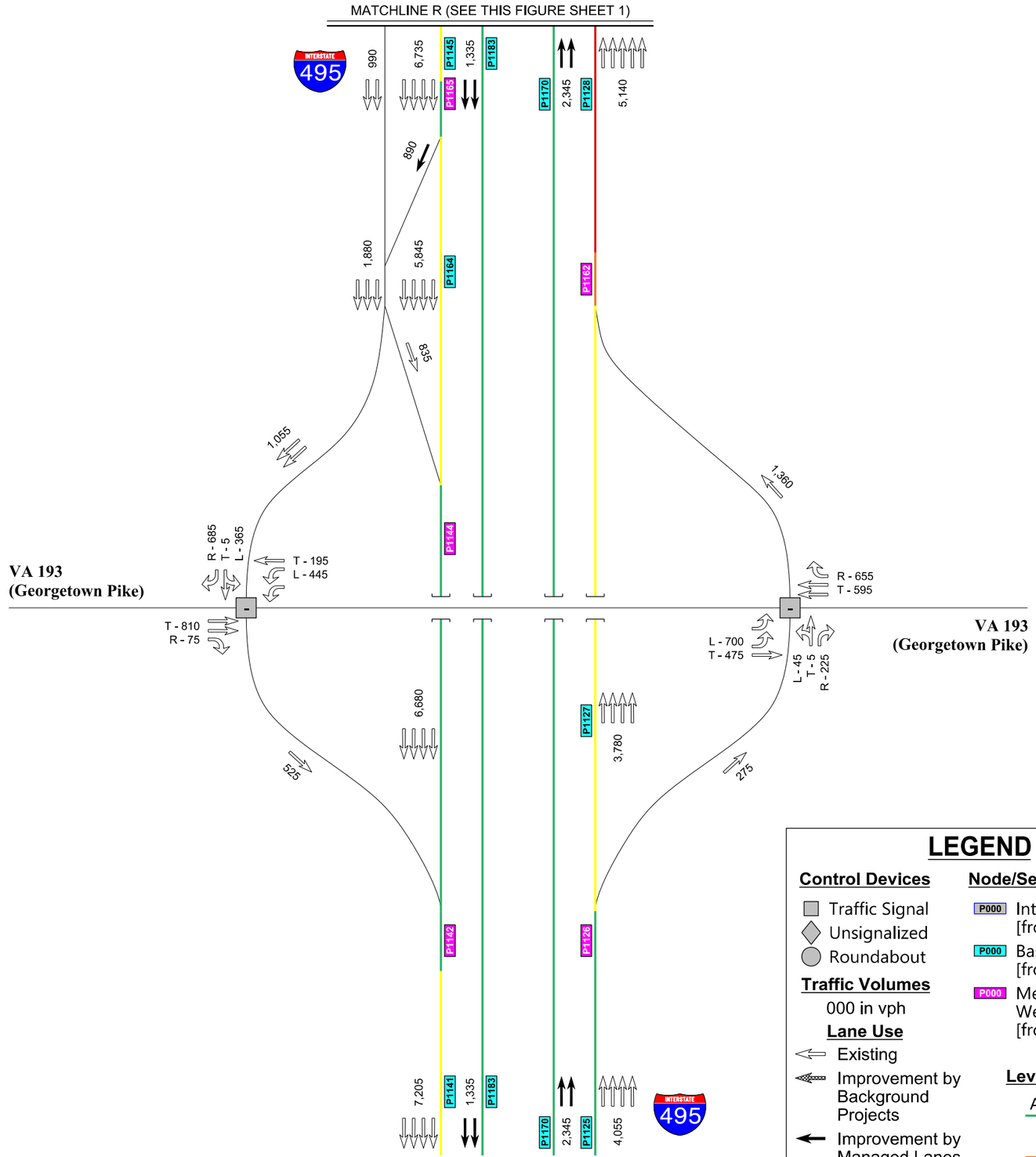
PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

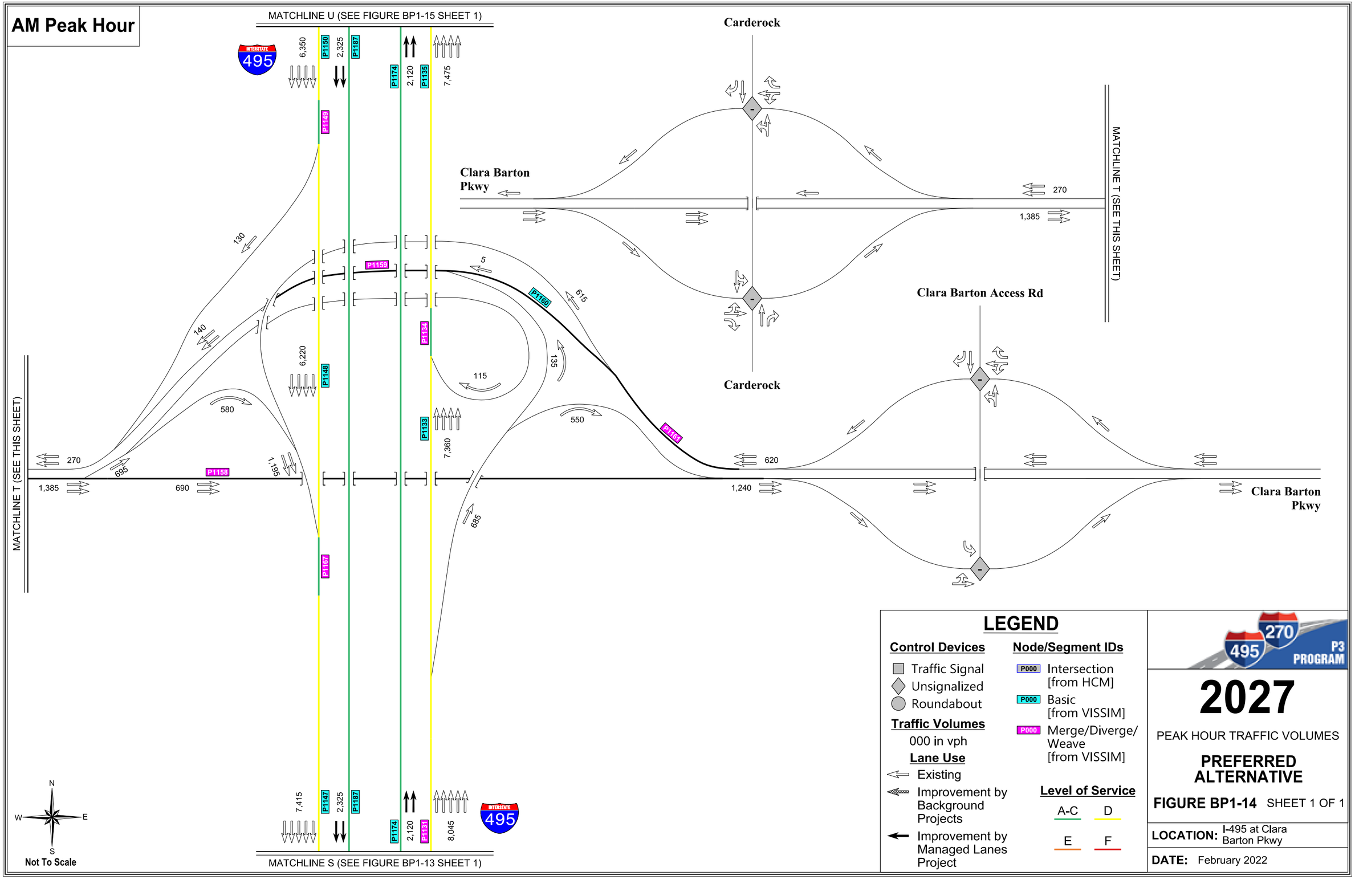
PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

495 270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

PM Peak Hour

MATCHLINE U (SEE FIGURE BP1-15 SHEET 1)

MATCHLINE T (SEE THIS SHEET)

MATCHLINE T (SEE THIS SHEET)

MATCHLINE S (SEE FIGURE BP1-13 SHEET 1)

INTERSTATE 495

INTERSTATE 495

Carderock

Clara Barton Pkwy

Carderock

Clara Barton Access Rd

Clara Barton Pkwy

6,685 P1150 1,775 P1187 P1174 2,760 P1135 5,275

P1149

30

P1159

395

P1160

955

1,025

P1134

6,655 P1148

125

630

385

745

P1133 5,250

P1161

1,055 515 510 P1158 5 1,340

1,375

P1167

1,055 515

1,350 750

7,995 P1147 1,775 P1187 P1174 2,760 P1133 6,525

N W E S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

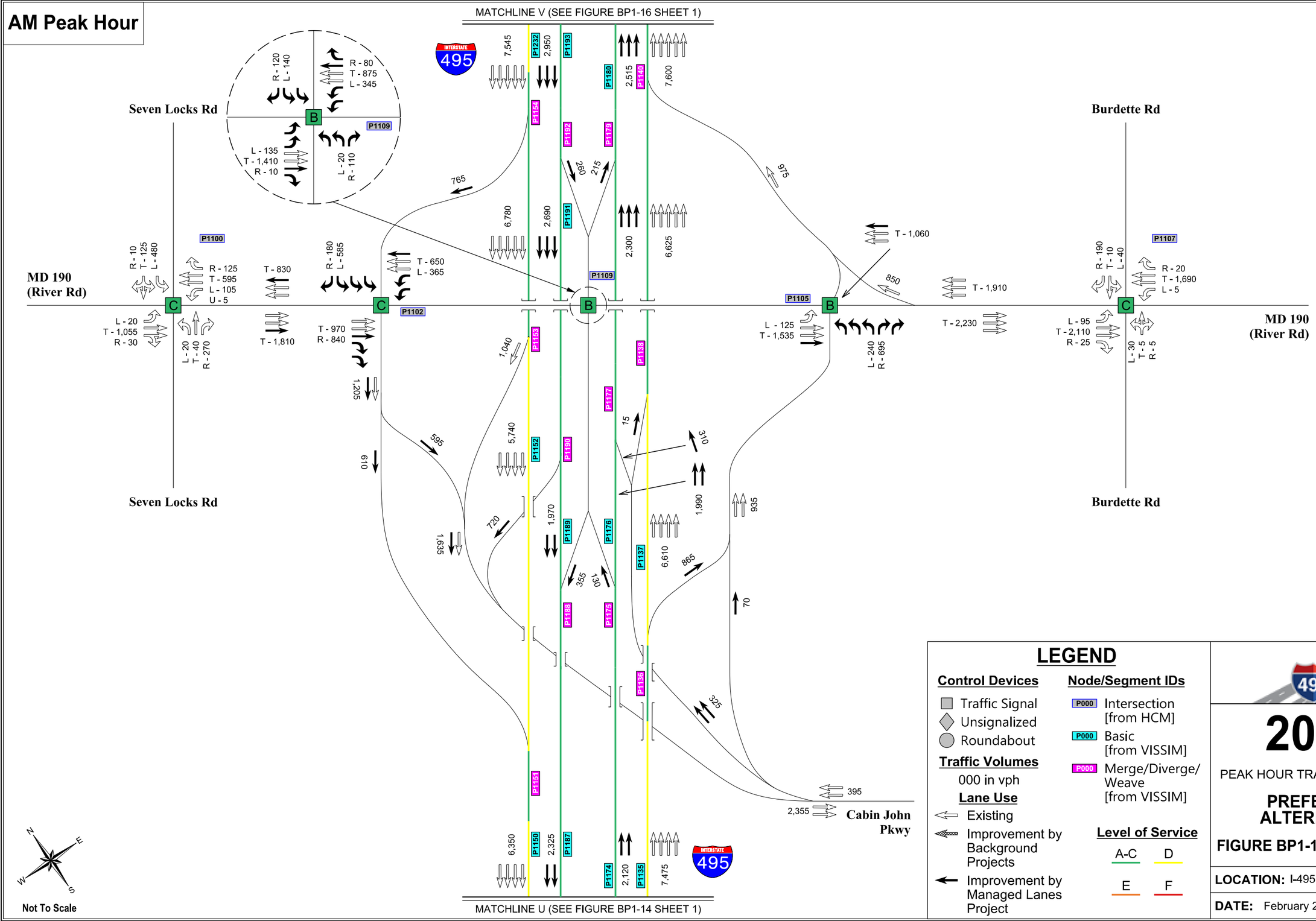
PREFERRED ALTERNATIVE

FIGURE BP1-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

AM Peak Hour



MATCHLINE U (SEE FIGURE BP1-14 SHEET 1)

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

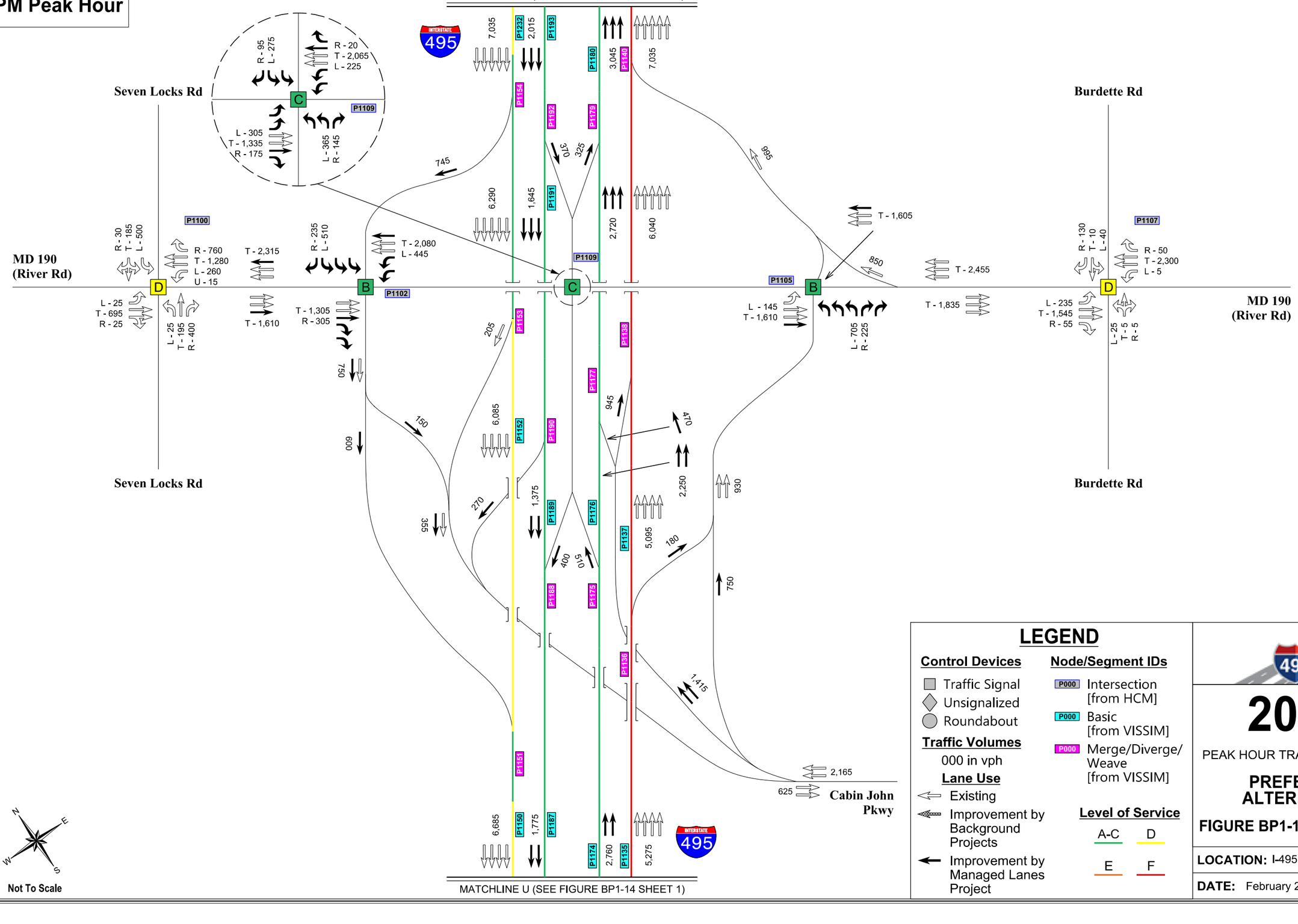
FIGURE BP1-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

PM Peak Hour

MATCHLINE V (SEE FIGURE BP1-16 SHEET 1)



MATCHLINE U (SEE FIGURE BP1-14 SHEET 1)

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

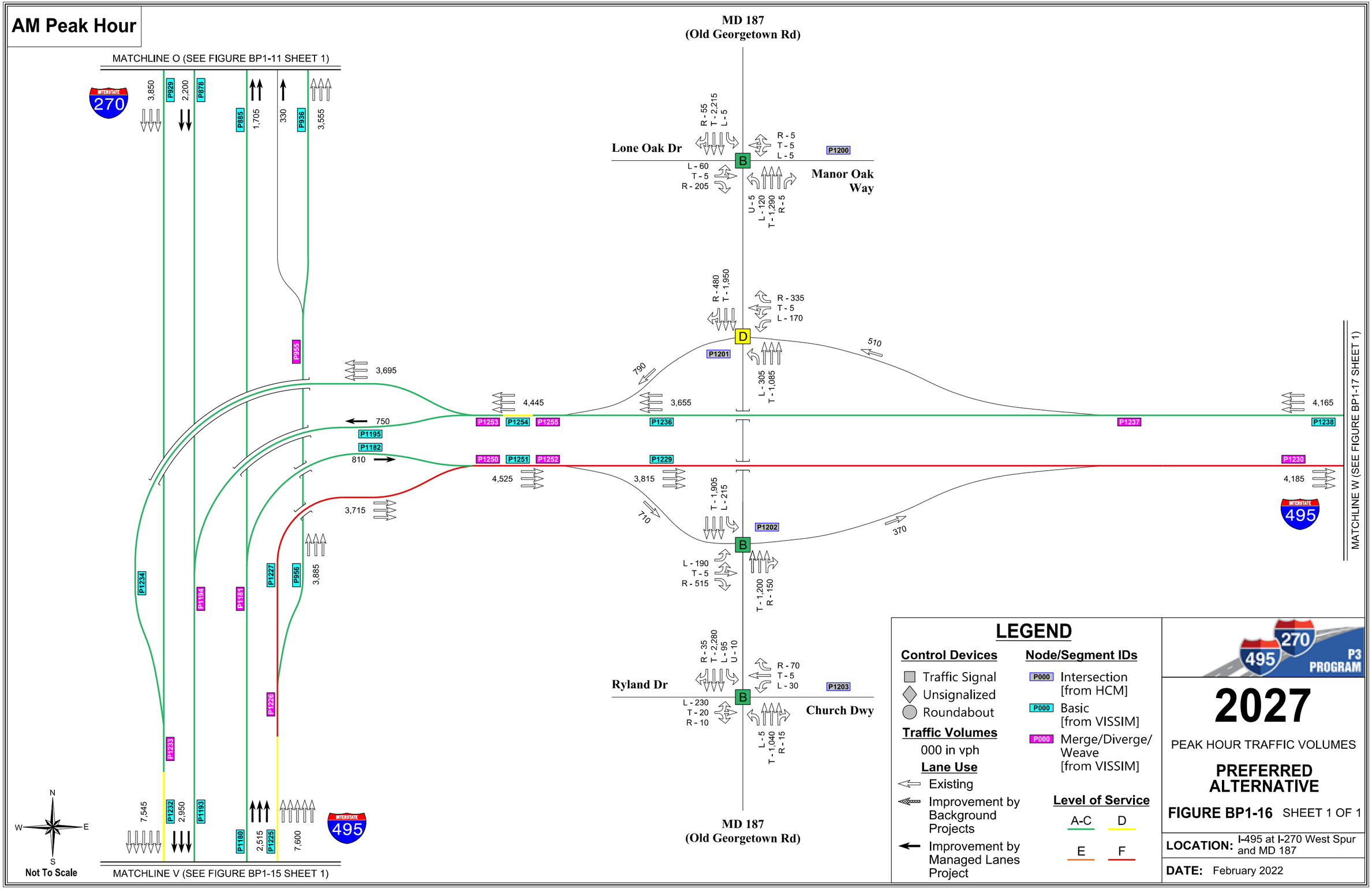
PREFERRED ALTERNATIVE

FIGURE BP1-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

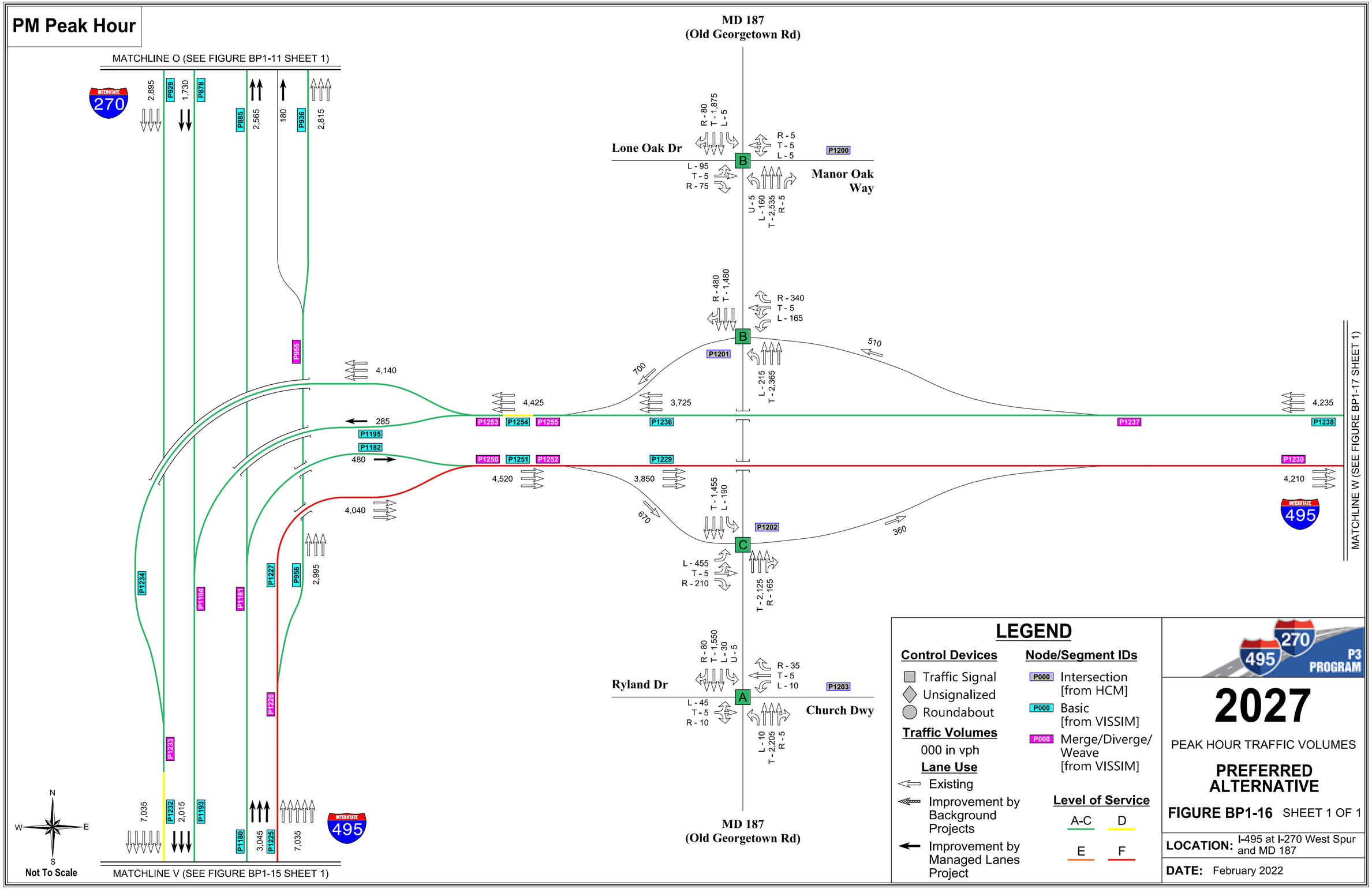
PREFERRED ALTERNATIVE

FIGURE BP1-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

AM Peak Hour

MATCHLINE Q (SEE FIGURE BP1-12 SHEET 1)

MATCHLINE W (SEE FIGURE BP1-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

MD 355 (Rockville Pike)

Grosvenor Ln P1300

R - 125
T - 2,140

R - 110
T - 105
L - 620

R - 750

L - 110
R - 220

T - 1,175

T - 85
R - 460

R - 545
T - 1,175

Grosvenor Ln

Alta Vista Rd

R - 95
T - 3,310
L - 5
U - 295

R - 10
T - 5
L - 5

P1310

L - 65
T - 5
R - 20

T - 1,395
R - 5

Bellevue Dr

MD 355 (Rockville Pike)

INTERSTATE 270

4,130
740
HOV
P1041

P1032
1,065
3,120
HOV

P1042

770

P1033

P1043

4,100

975

INTERSTATE 495

4,165
P1238

2,930

1,255

P1044

T - 1,925
L - 1,055

L - 770
T - 745

7,860

8,835

P1331

P1332

P1333

P1334

P1432

1,055

405

P1325

P1326

P1327

P1328

P1330

P1425

4,185

3,715

6,645

7,950

INTERSTATE 495

T - 3,180

L - 405
T - 1,515

250

7,700

470

P1307

R - 470

T - 1,920
R - 250

Pooks Hill Rd P1309

R - 120
T - 3,530

L - 455
R - 175

L - 50
T - 1,715

N
W
E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

PM Peak Hour

MATCHLINE Q (SEE FIGURE BP1-12 SHEET 1)

MATCHLINE W (SEE FIGURE BP1-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MD 355 (Rockville Pike)

Grosvenor Ln — P1300

R - 125
T - 1,625

R - 135
T - 145
L - 225

R - 410

L - 155
R - 175

T - 1,770

T - 95
R - 810

R - 905
T - 1,770

Grosvenor Ln

Alta Vista Rd — P1310

R - 130
T - 1,915
L - 5
U - 230

R - 5
T - 5
L - 10

L - 90
T - 5
R - 15

U - 5
L - 10
T - 2,900
R - 5

Bellevue Dr

MD 355 (Rockville Pike)

INTERSTATE 270

3,680
HOV 800
P1041

P1032
745 HOV
3,155

P1042

1,180

P1033

P1043

3,300

1,065

INTERSTATE 495

4,235
P1238

2,880

1,020

P1044

T - 1,150
L - 875

L - 1,180
T - 1,610

7,220

8,285
P1432

P1331

P1332

P1333

P1334

875

315

P1325

P1326

P1327

P1328

P1330

P1425

4,210

3,865

6,745

7,915

INTERSTATE 495

T - 2,170

L - 315
T - 2,790

295

7,620

345

P1307

R - 345

T - 3,105
R - 295

R - 305
T - 2,210

Pooks Hill Rd — P1309

L - 240
R - 70

L - 65
T - 3,160

N
W E
S
Not To Scale

MATCHLINE X (SEE THIS SHEET)

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

INTERSTATE 270 INTERSTATE 495 P3 PROGRAM

2027

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

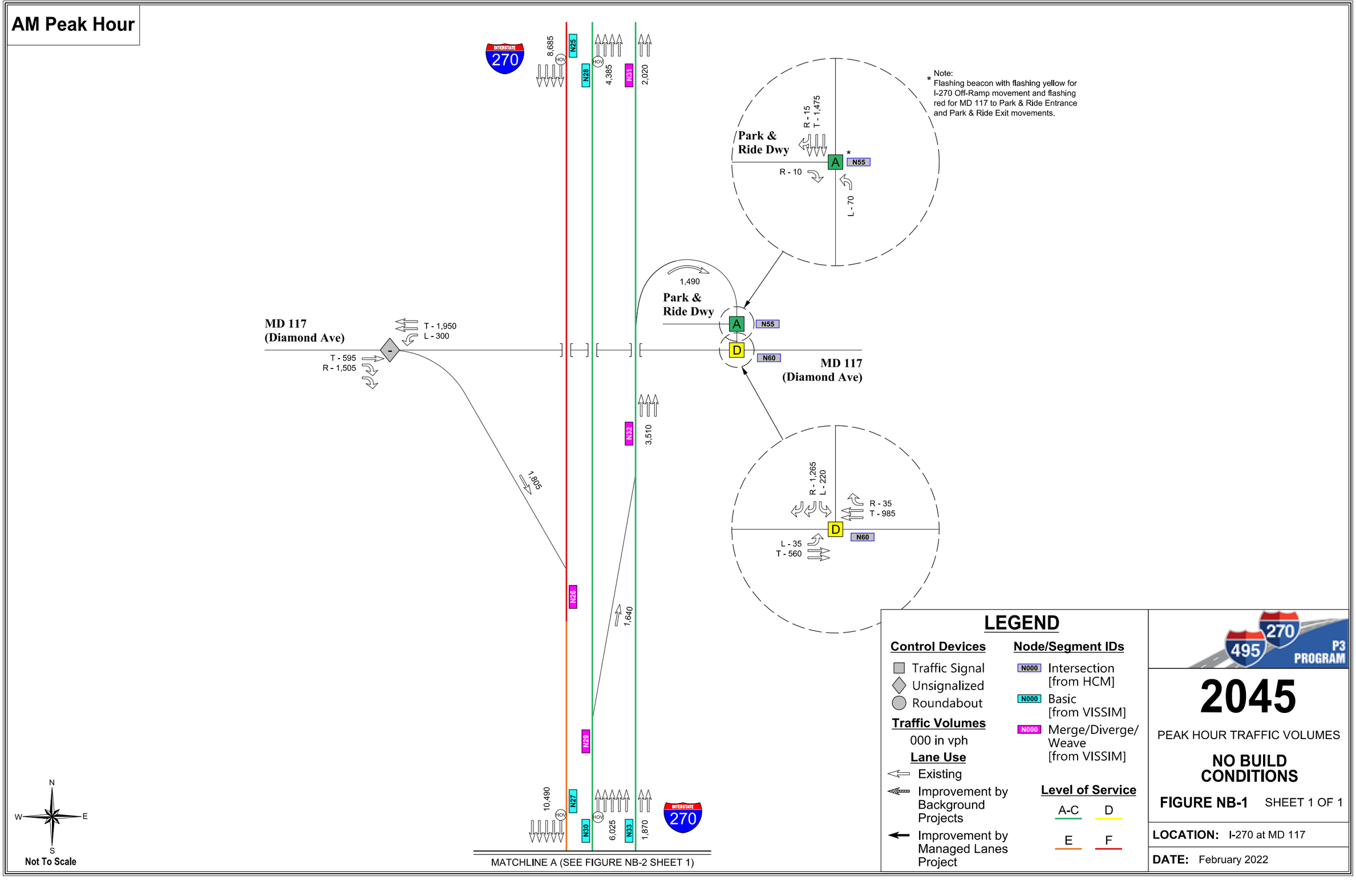
FIGURE BP1-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

2045 NO BUILD CONDITIONS GRAPHICS

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

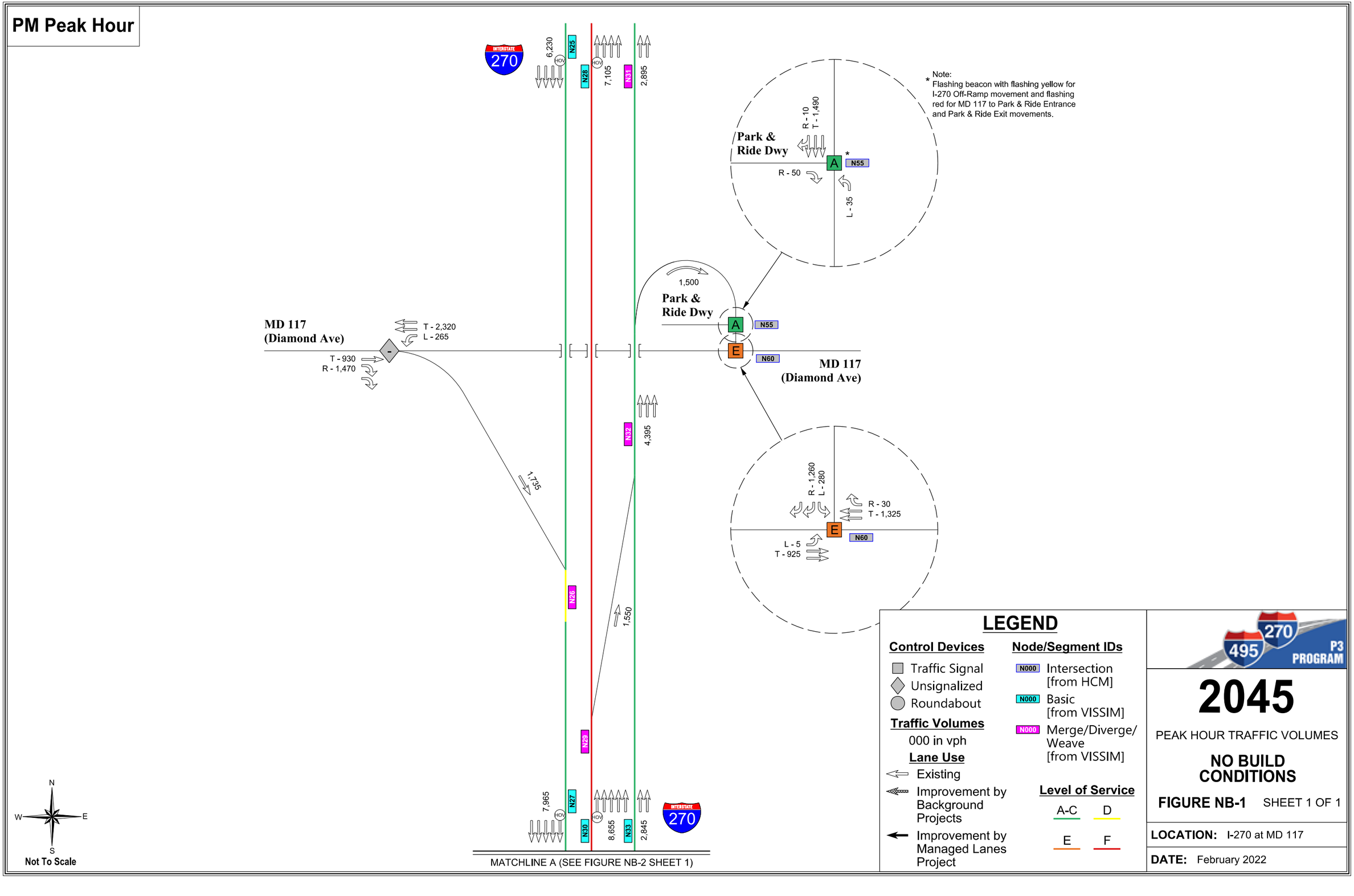
NO BUILD CONDITIONS

FIGURE NB-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

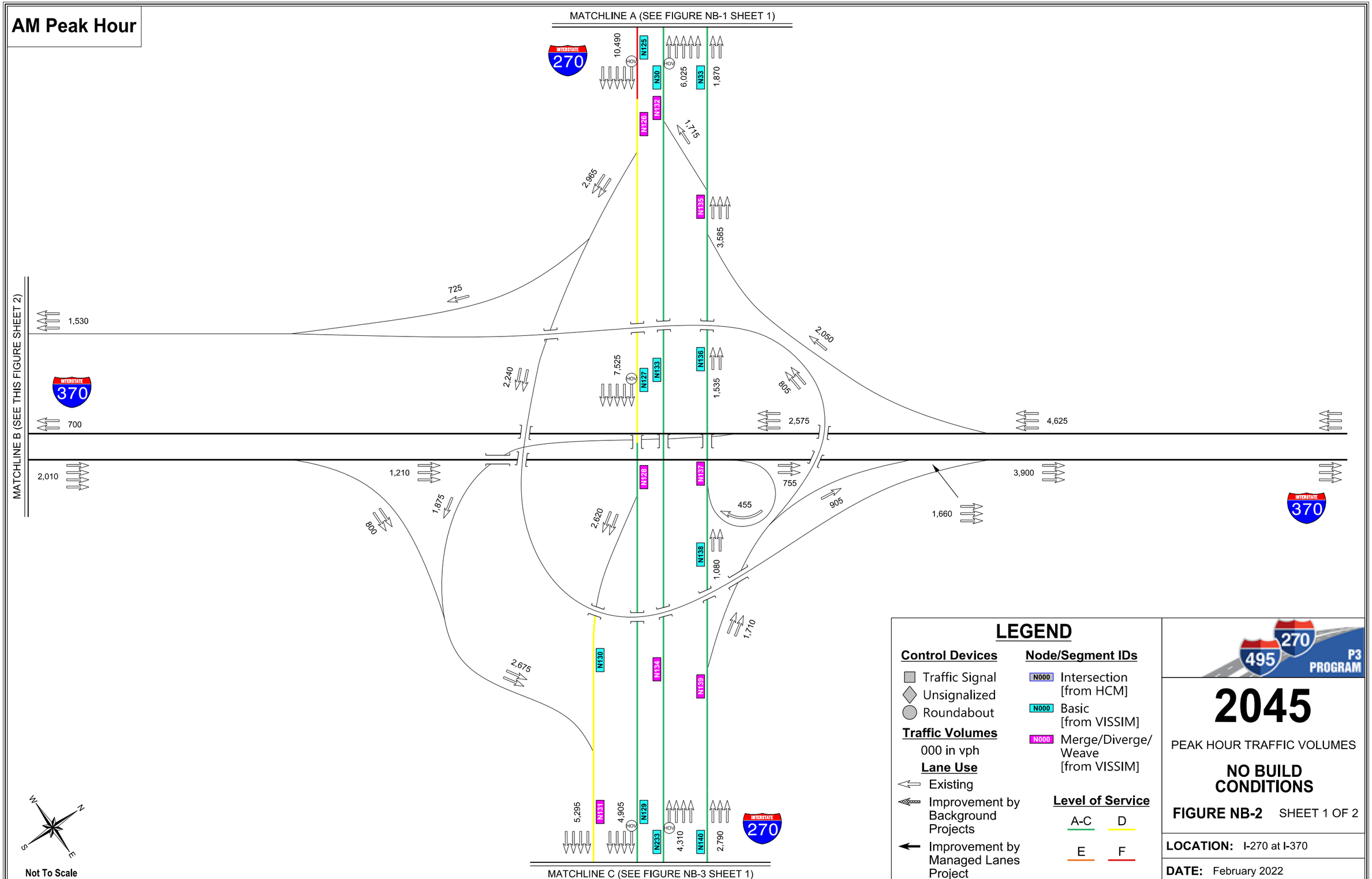
NO BUILD CONDITIONS

FIGURE NB-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

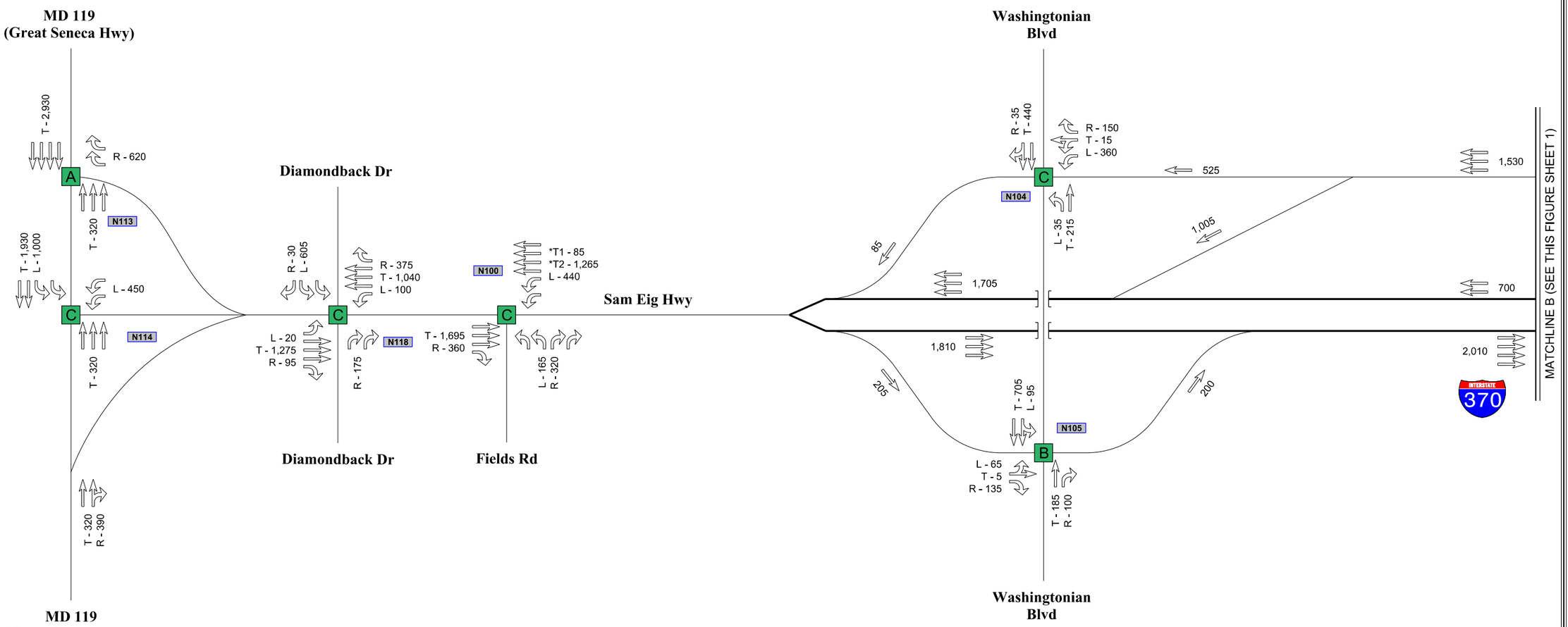
NO BUILD CONDITIONS

FIGURE NB-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour



*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

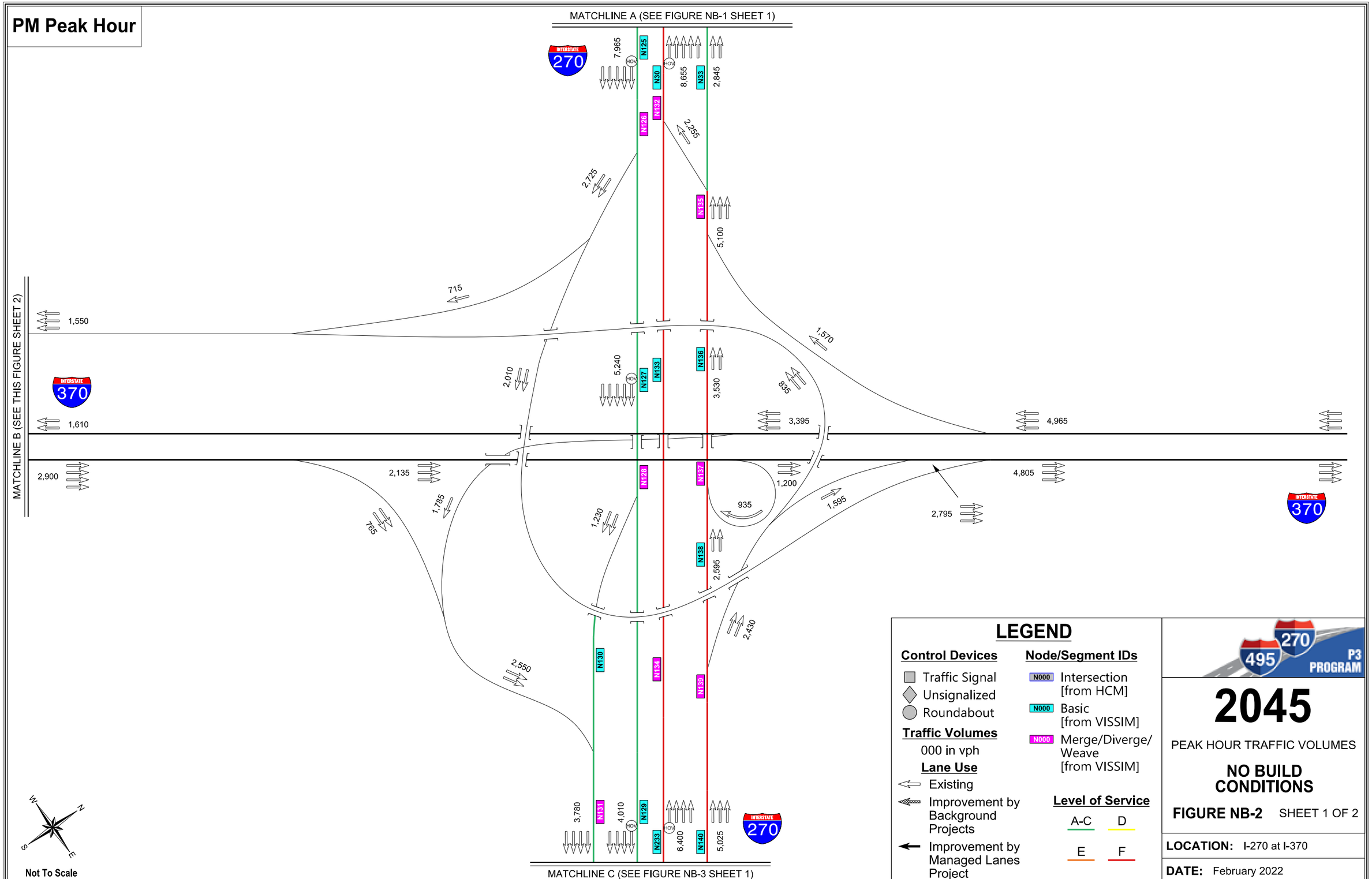
NO BUILD CONDITIONS

FIGURE NB-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

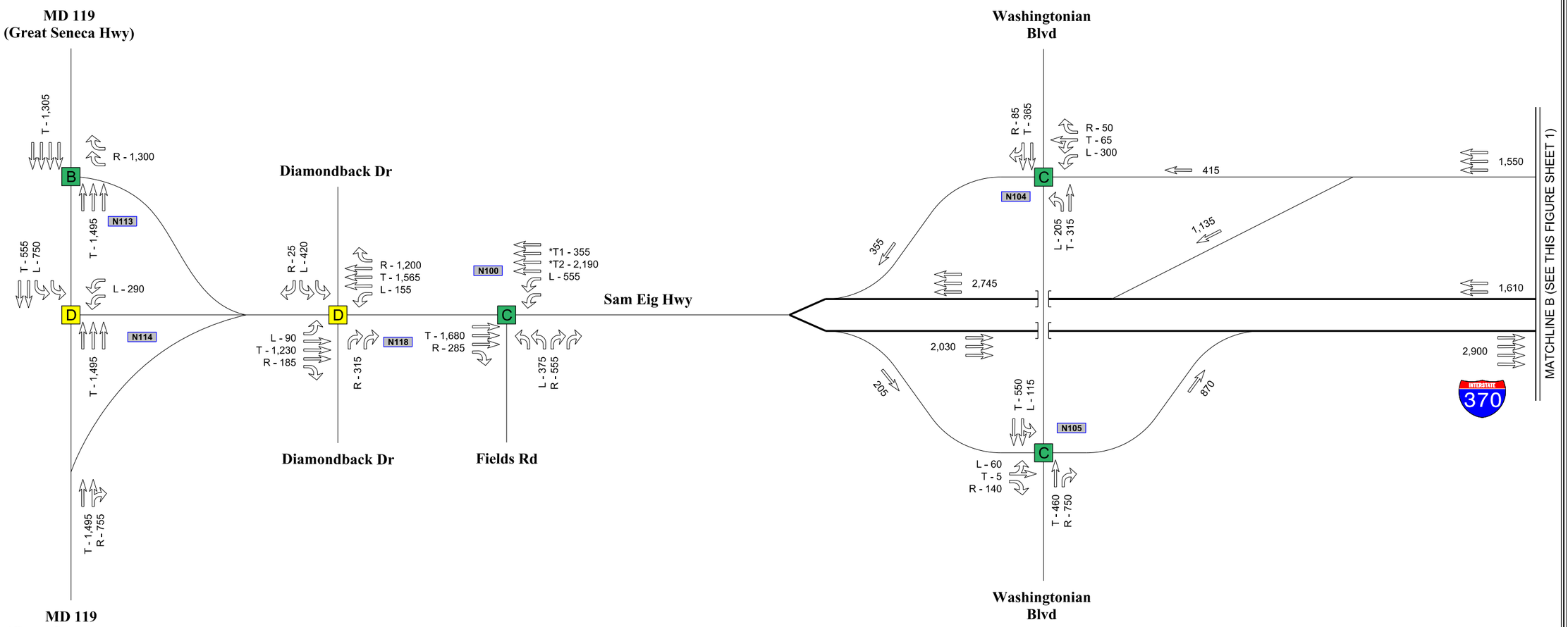
NO BUILD CONDITIONS

FIGURE NB-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

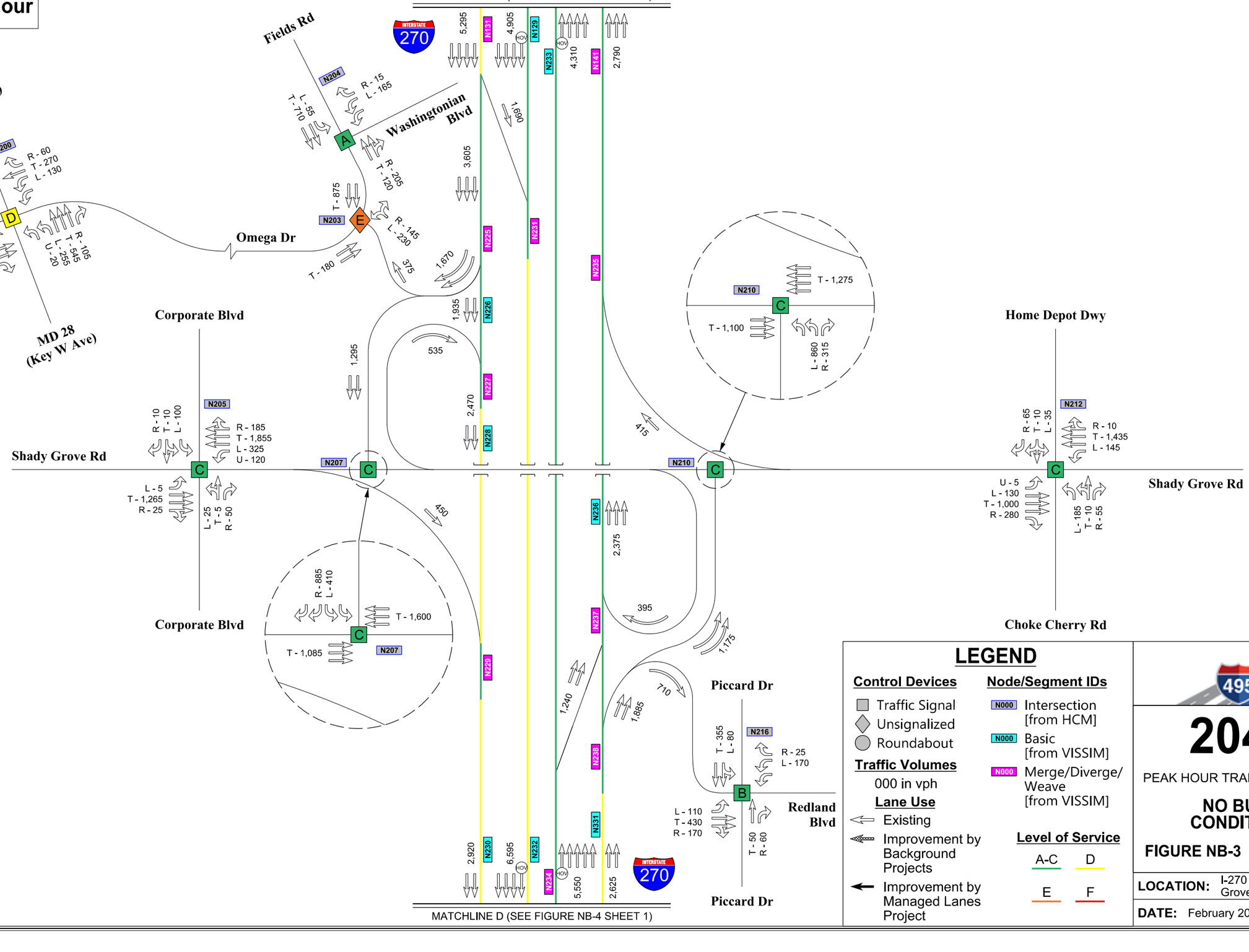
FIGURE NB-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour

MATCHLINE C (SEE FIGURE NB-2 SHEET 1)



MATCHLINE D (SEE FIGURE NB-4 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-3 SHEET 1 OF 1

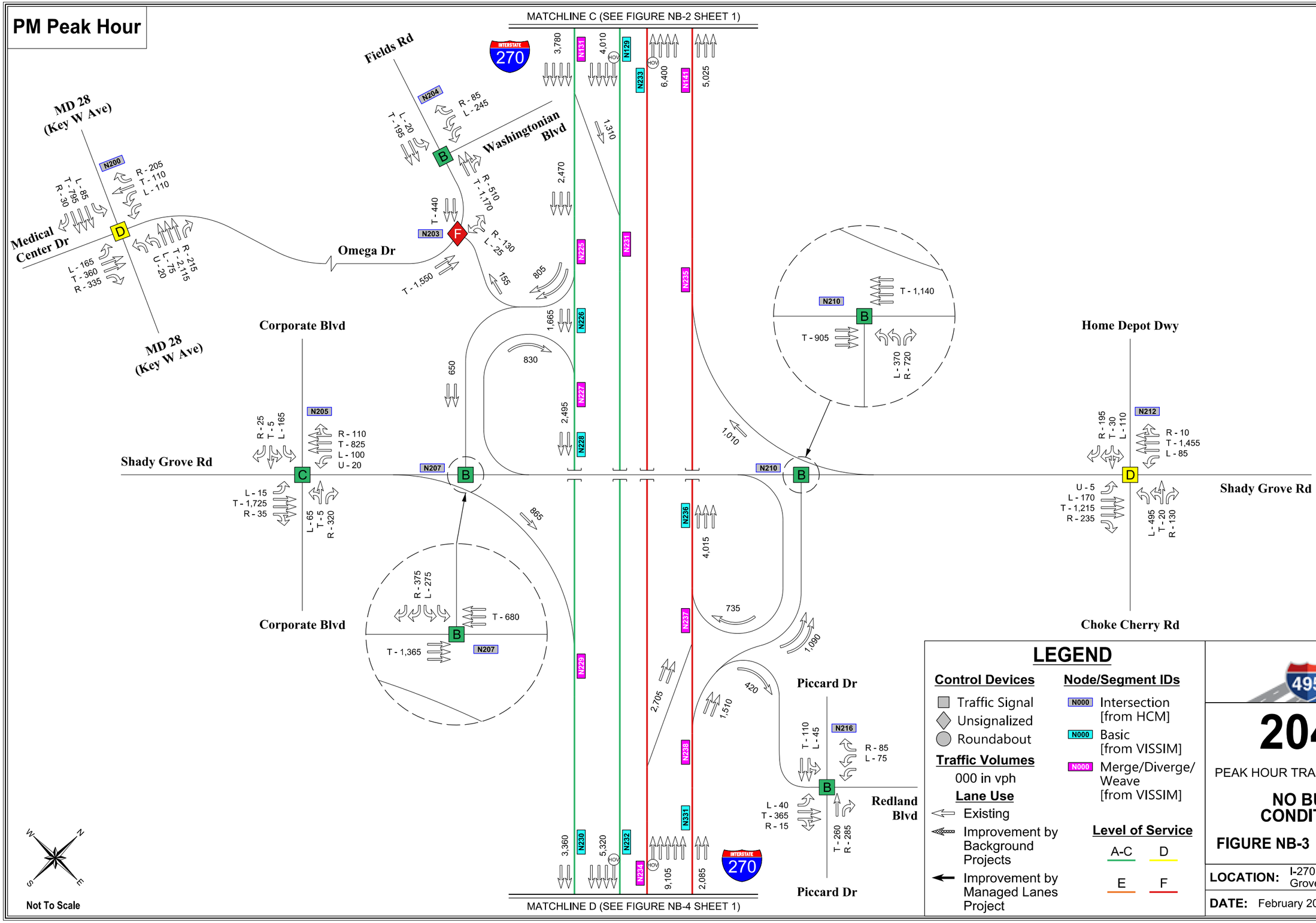
LOCATION: I-270 at Shady Grove Road

DATE: February 2022

PM Peak Hour

MATCHLINE C (SEE FIGURE NB-2 SHEET 1)

MATCHLINE D (SEE FIGURE NB-4 SHEET 1)



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

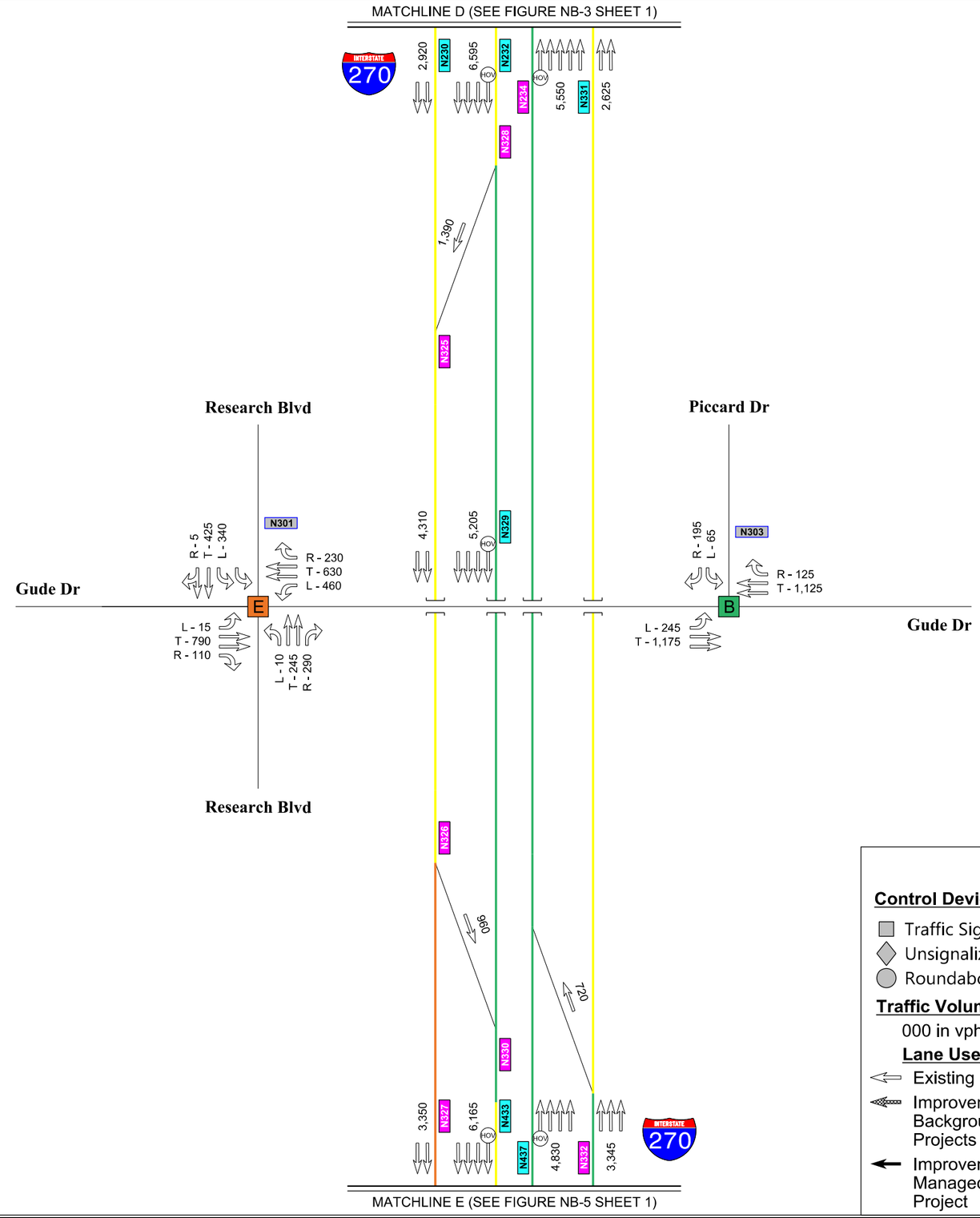
NO BUILD CONDITIONS

FIGURE NB-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

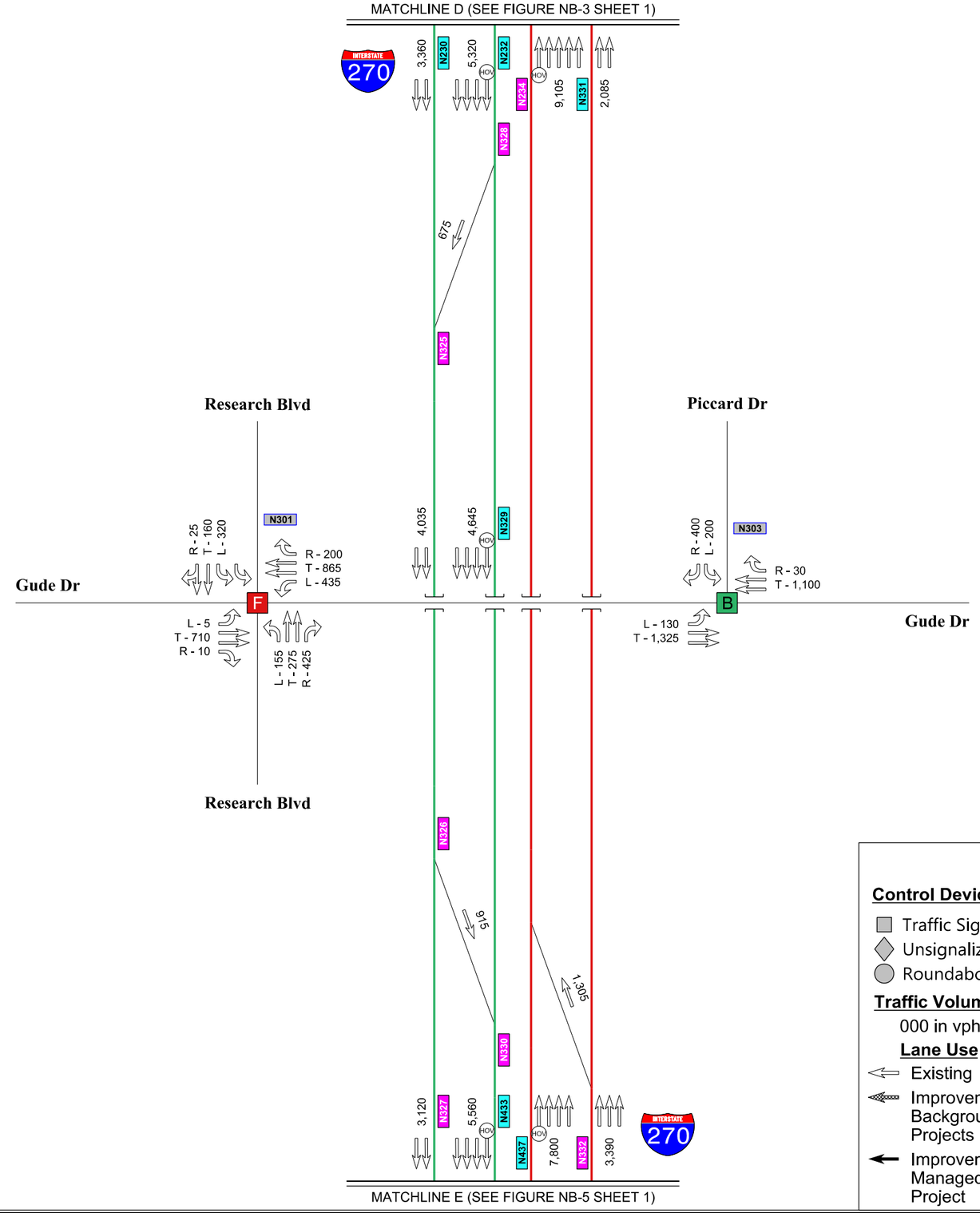
FIGURE NB-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

PM Peak Hour

MATCHLINE D (SEE FIGURE NB-3 SHEET 1)



MATCHLINE E (SEE FIGURE NB-5 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

AM Peak Hour

MATCHLINE E (SEE FIGURE NB-4 SHEET 1)

INTERSTATE 270

3,350 N427 | 6,165 HOV N433 | N437 4,830 HOV N441 3,345

2,690 N425 | 990 | 1,130 | 2,215 N442

N426 | N434

525 | 360

2,165 N427 | N443 1,855

275 | 1,370

N444

Hurley Ave

Nelson St

Laird St

MD 28 (Montgomery Ave)

N400 R - 5, T - 5, L - 15 | R - 45, T - 1,865, L - 120, U - 15

N401 R - 185, L - 340 | T - 1,860

N405 R - 275, L - 25 | R - 15, T - 850

N407 R - 30, T - 5, L - 80 | R - 10, T - 825, L - 5

T - 865, L - 0

T - 1,280, R - 0

L - 5, T - 1,270, R - 5

L - 10, T - 5, R - 10

MD 28 (Montgomery Ave)

B | B | C | - | B

L - 5, T - 1,955, R - 335

L - 70, T - 5, R - 175

T - 1,085, R - 1,075

1,425

L - 330, T - 1,005

T - 160, R - 250

N428 | 6,825 HOV N435 | N438 HOV 5,960

2,440 | 1,075 | 90 | 410

N429 | N445 3,135

N436

3,515 N430 | 970 | N446 | 1,215

N431 | N447 3,545

4,485 N432 | 5,855 HOV N529 | N440 HOV 4,745 | N532 4,760

INTERSTATE 270

MATCHLINE F (SEE FIGURE NB-6 SHEET 1)

Hurley Ave

Adclare Rd

Bullard Cir

N

W E

S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C | D | E | F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

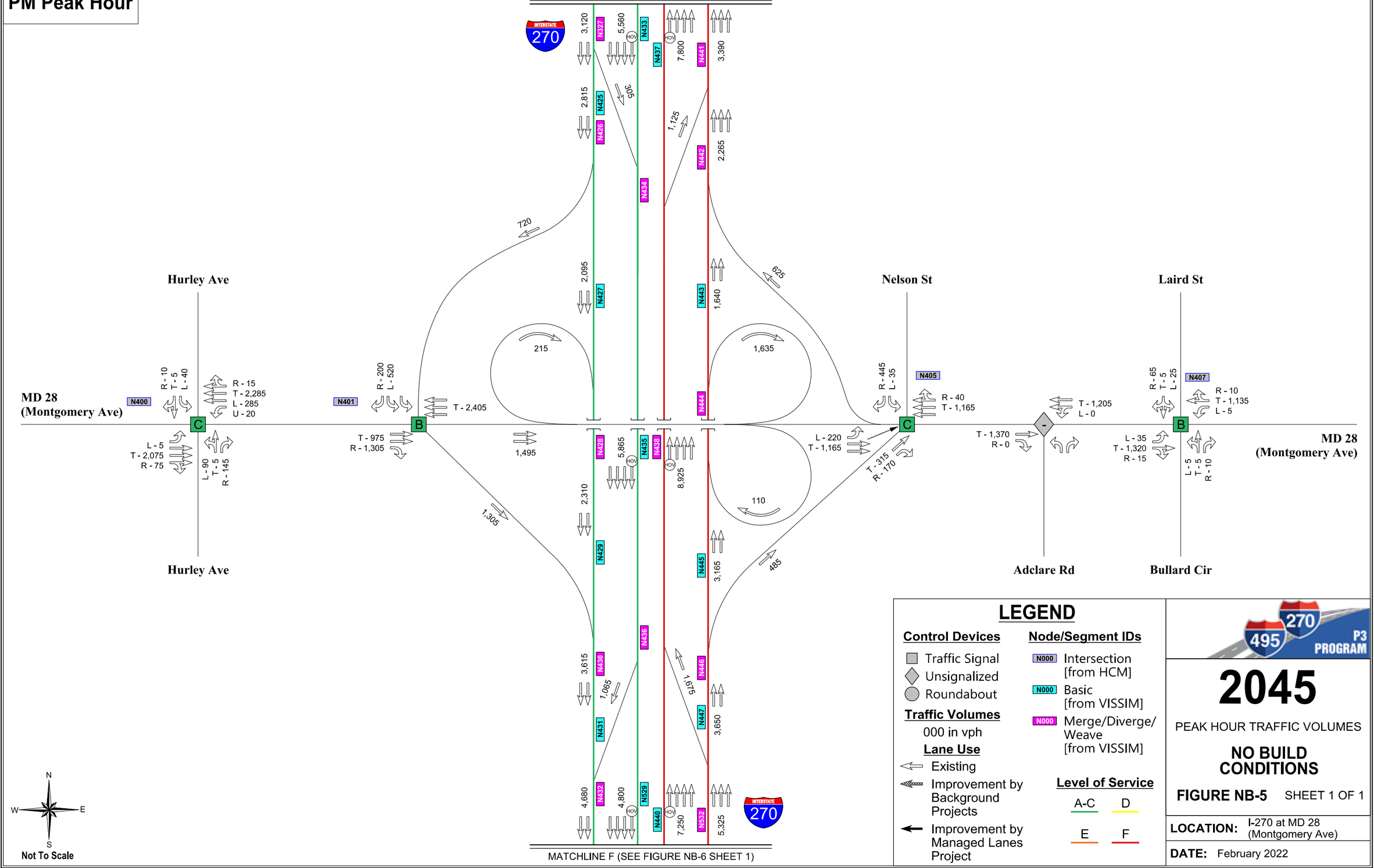
FIGURE NB-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

PM Peak Hour

MATCHLINE E (SEE FIGURE NB-4 SHEET 1)



MATCHLINE F (SEE FIGURE NB-6 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

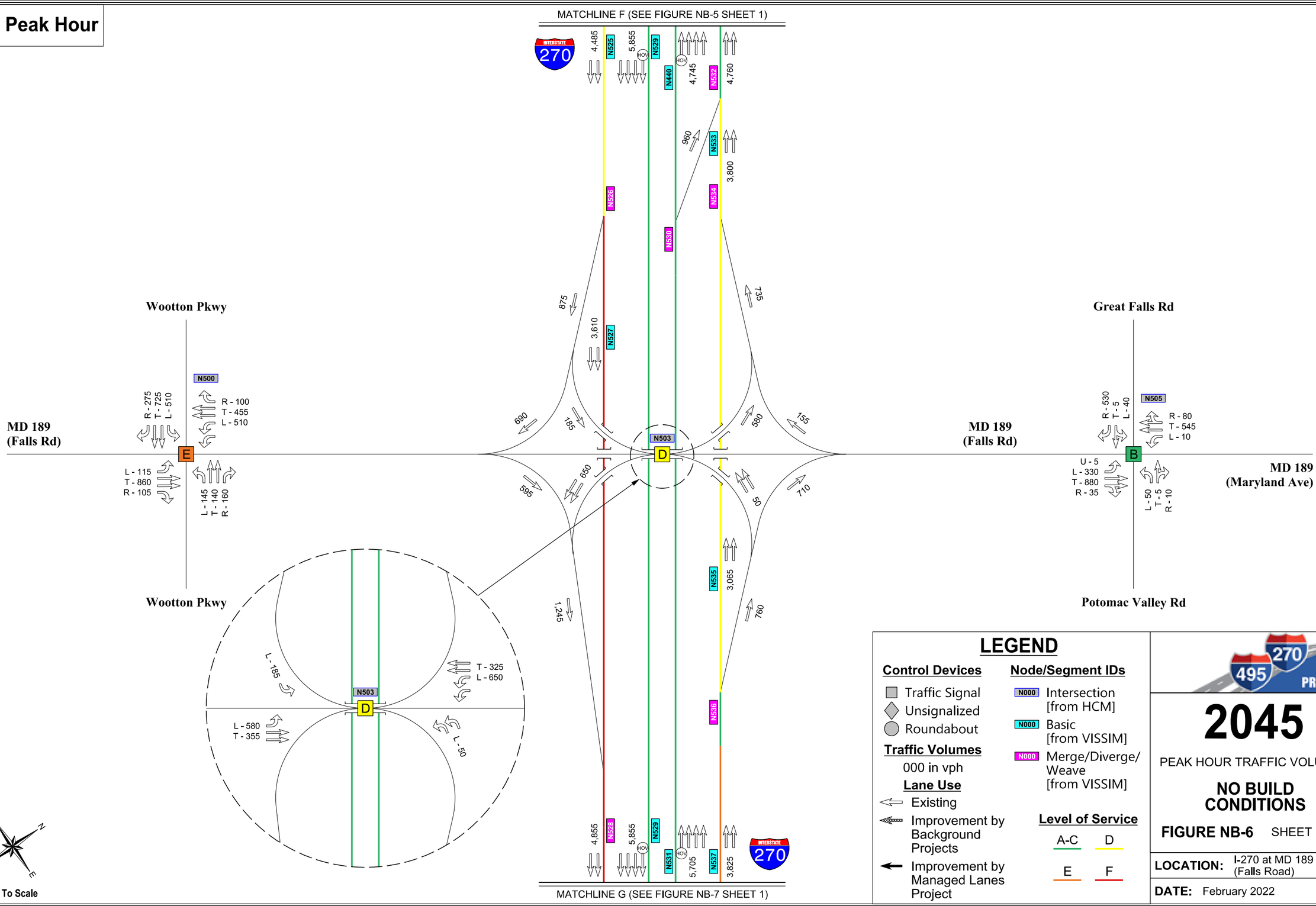
NO BUILD CONDITIONS

FIGURE NB-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

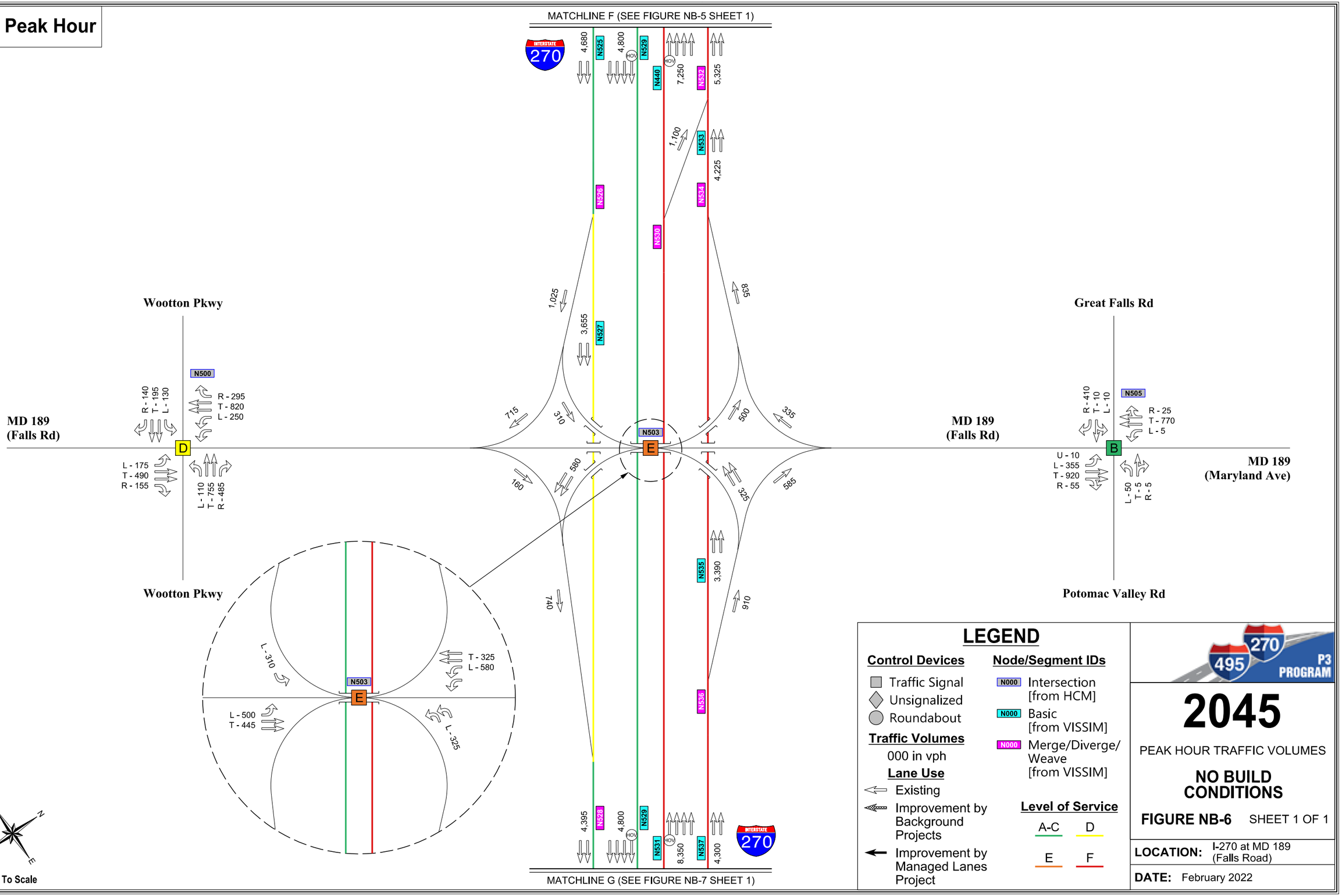
NO BUILD CONDITIONS

FIGURE NB-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

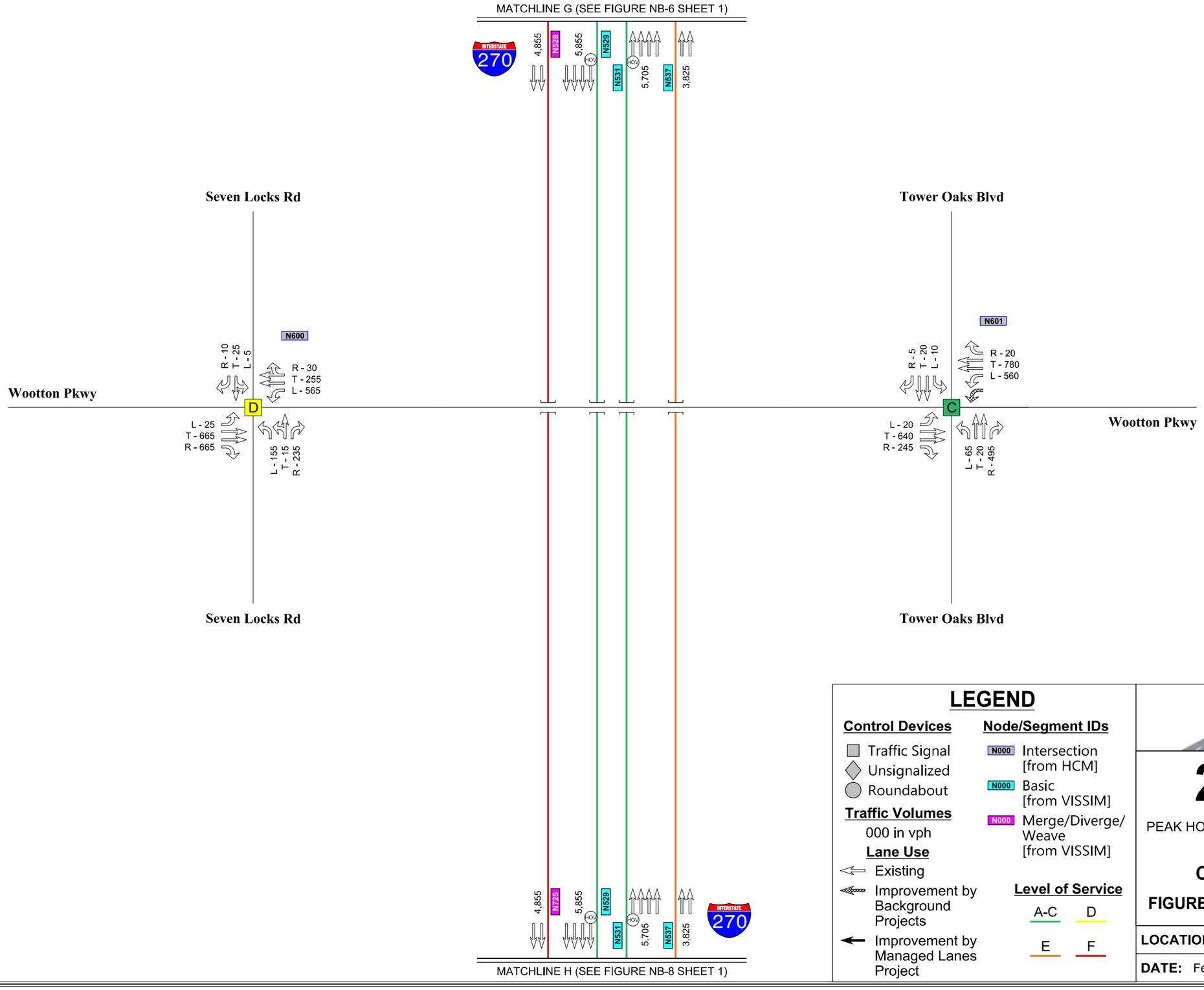
FIGURE NB-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

AM Peak Hour

MATCHLINE G (SEE FIGURE NB-6 SHEET 1)



MATCHLINE H (SEE FIGURE NB-8 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

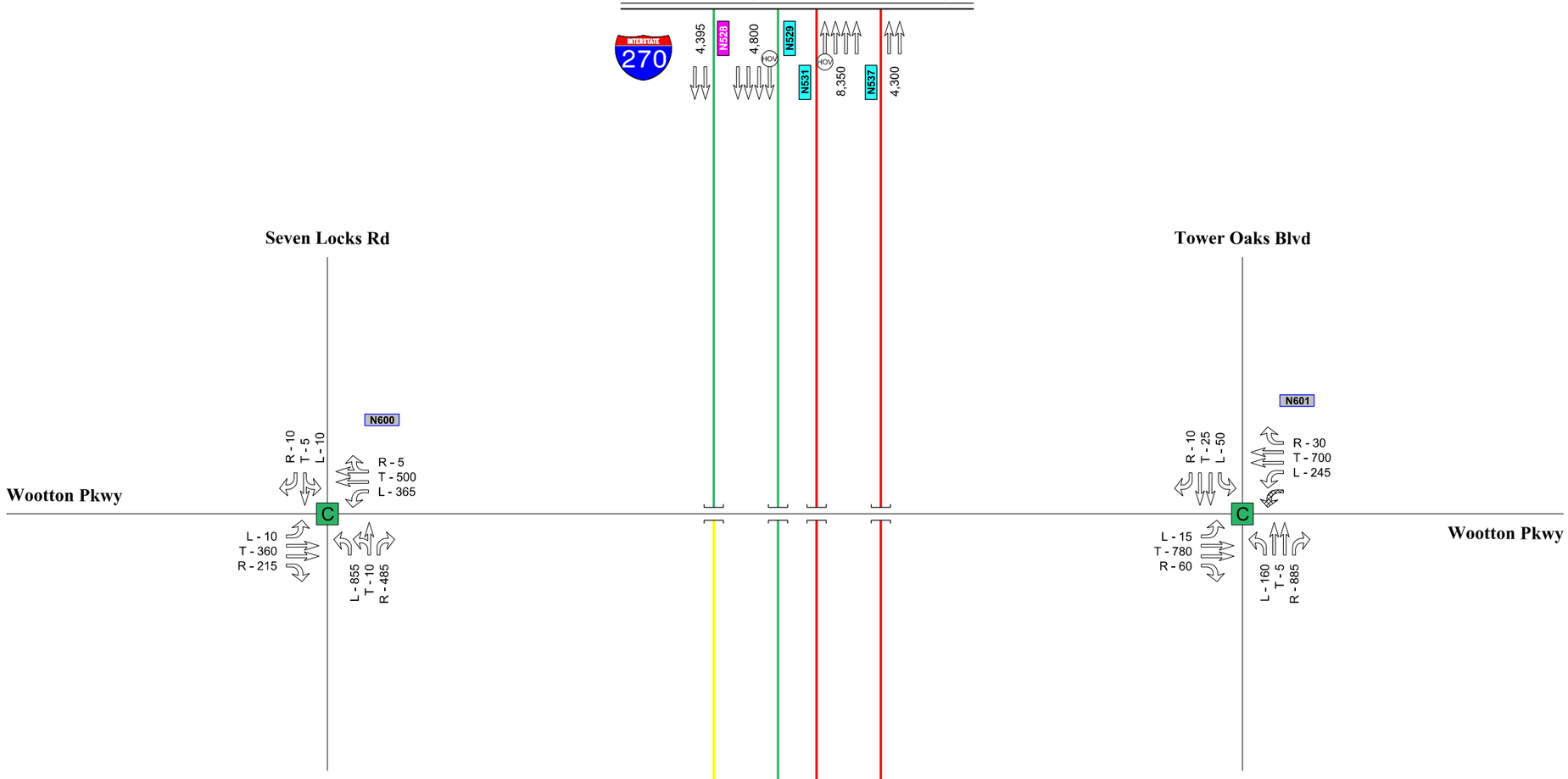
FIGURE NB-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

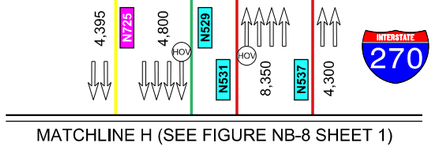
DATE: February 2022

PM Peak Hour

MATCHLINE G (SEE FIGURE NB-6 SHEET 1)



MATCHLINE H (SEE FIGURE NB-8 SHEET 1)



Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

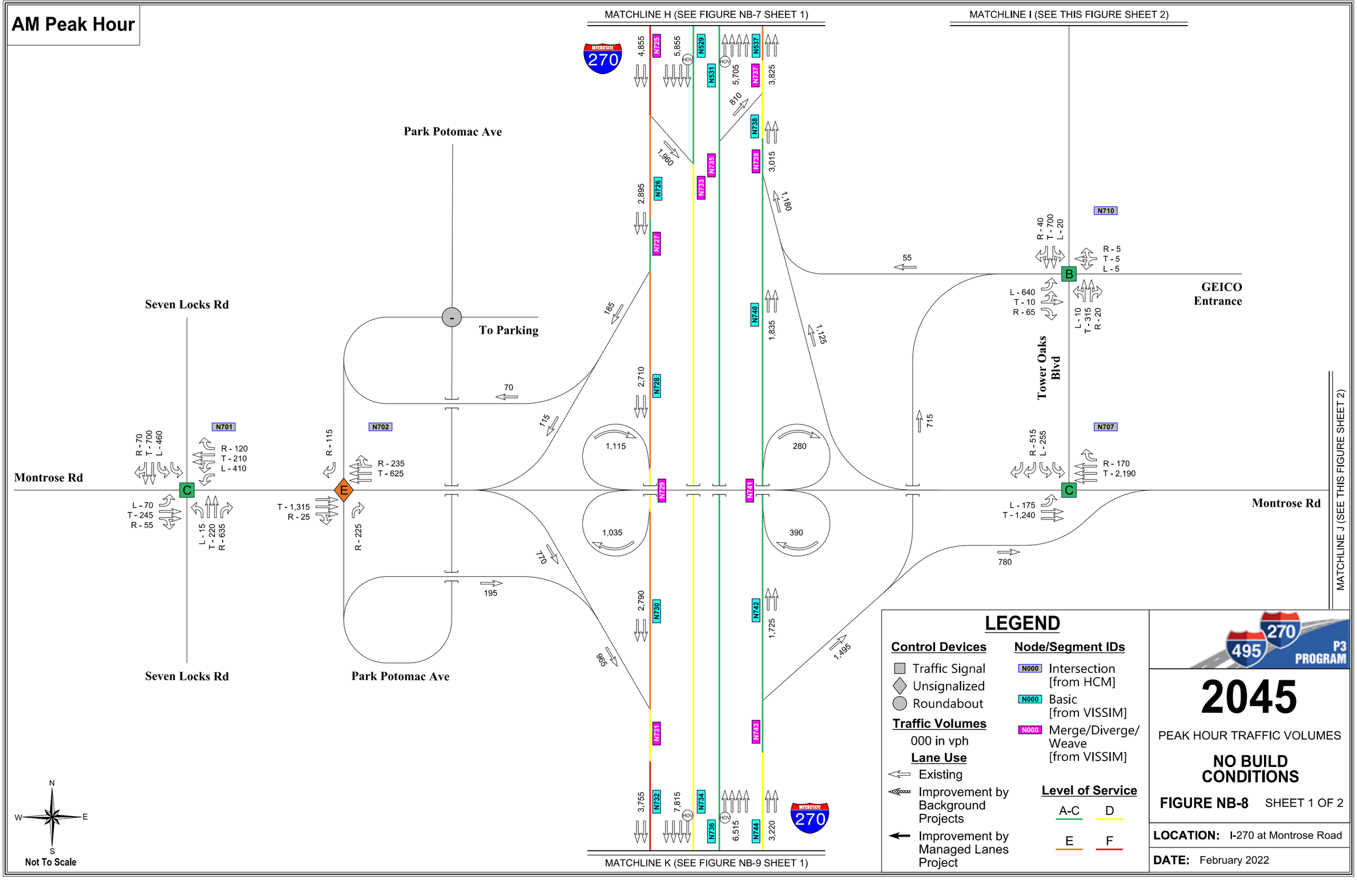
NO BUILD CONDITIONS

FIGURE NB-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C | D | E | F

2045

PEAK HOUR TRAFFIC VOLUMES

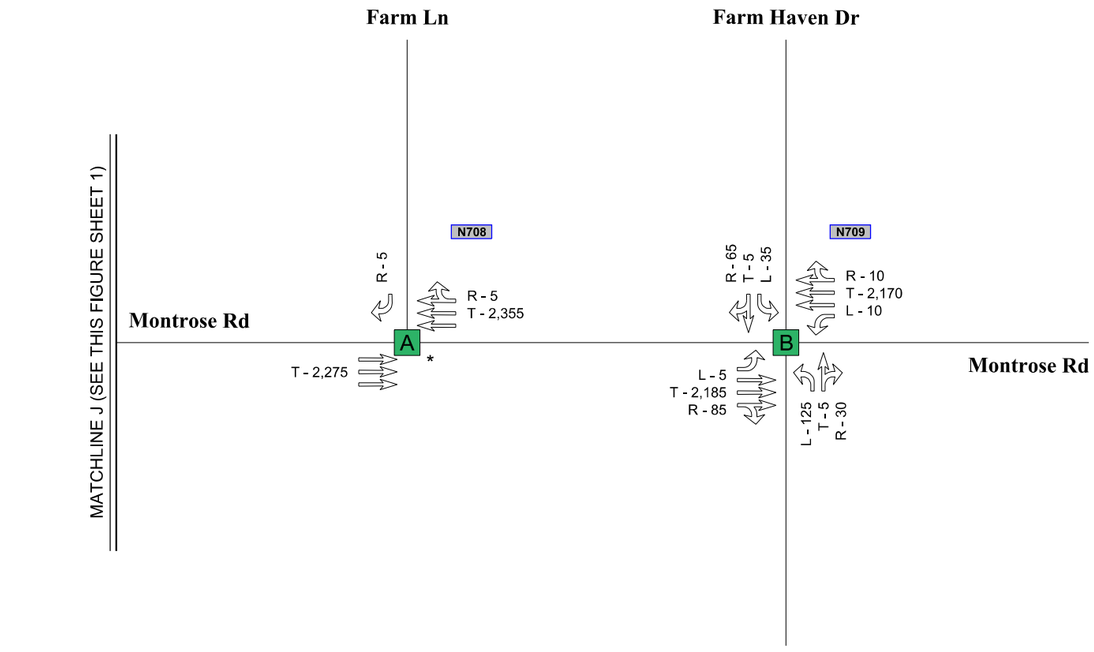
NO BUILD CONDITIONS

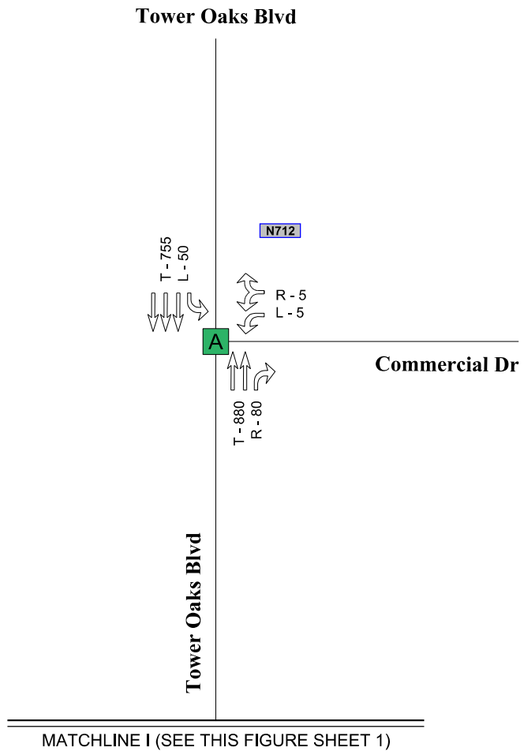
FIGURE NB-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour





N
W
E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour

MATCHLINE H (SEE FIGURE NB-7 SHEET 1)

MATCHLINE I (SEE THIS FIGURE SHEET 2)

MATCHLINE J (SEE THIS FIGURE SHEET 2)

MATCHLINE K (SEE FIGURE NB-9 SHEET 1)

Park Potomac Ave

Seven Locks Rd

Montrose Rd

Tower Oaks Blvd

GEICO Entrance

To Parking

Seven Locks Rd

Park Potomac Ave

Montrose Rd

INTERSTATE 270

HOV

N725 4,395
N529 4,800
N537
N531 8,350
N737 4,300
915
N738
1,825
N735
N739 3,385
N733
N726 2,570
1,555
N727
N710
R - 90 T - 400 L - 5
R - 15 T - 20 L - 10
315
B
L - 535 T - 5 R - 25
L - 205 T - 100 R - 5
455
N740 1,830
1,240
95
N728 2,115
360
750
425
565
N701
R - 90 T - 420 L - 180
R - 525 T - 615 L - 715
N702
R - 210
R - 200 T - 1,645
N707
R - 260 L - 175
R - 195 T - 2,790
D
F
B
L - 70 T - 350 R - 40
L - 75 T - 645 R - 540
T - 1,045 R - 25
R - 135
L - 115 T - 1,585
1,175
345
310
565
270
N729
N741
1,690
N730
N742 1,910
580
1,130
N731
N743
2,270
N732
6,625
N734
N736
9,265
N744
3,040

N
W E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

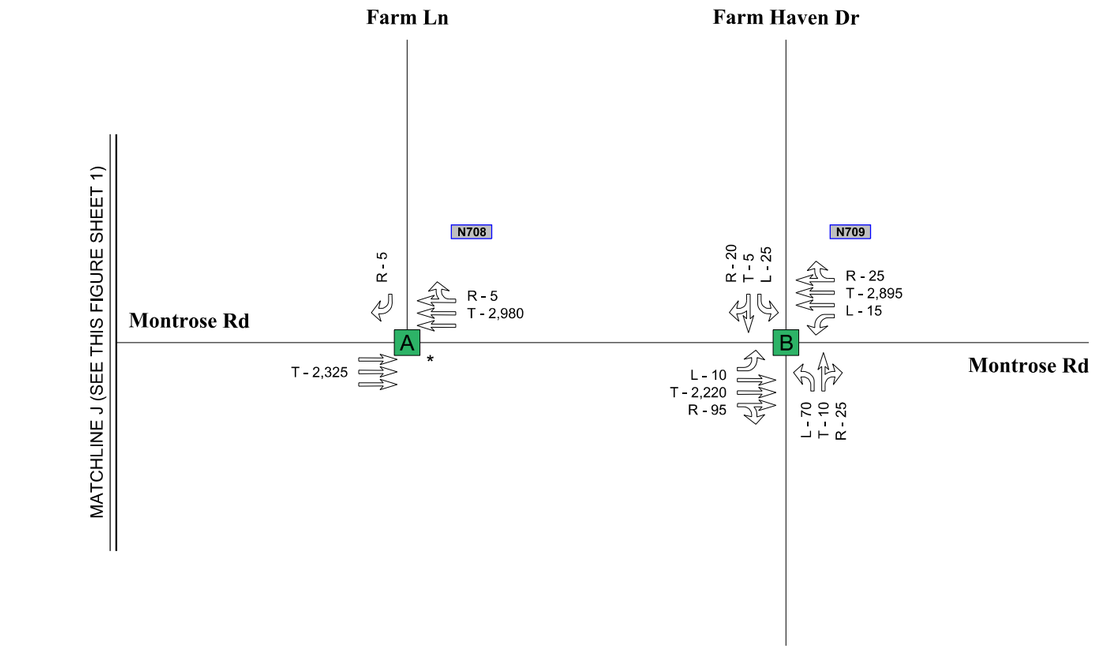
NO BUILD CONDITIONS

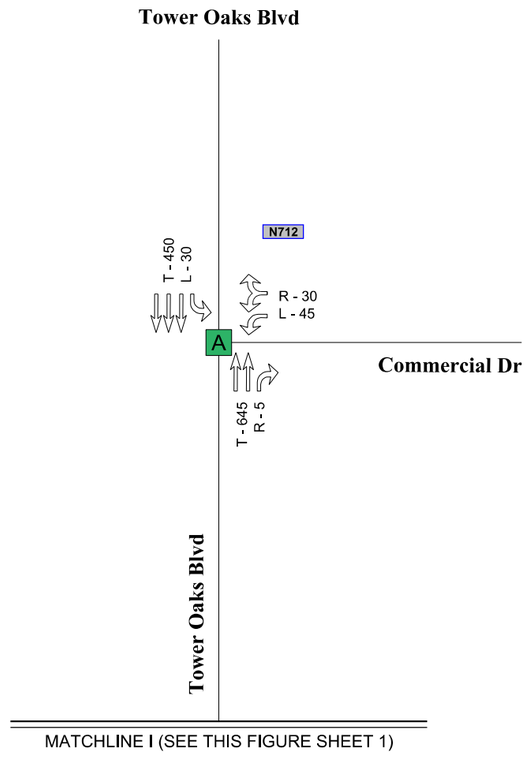
FIGURE NB-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour





N
W E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

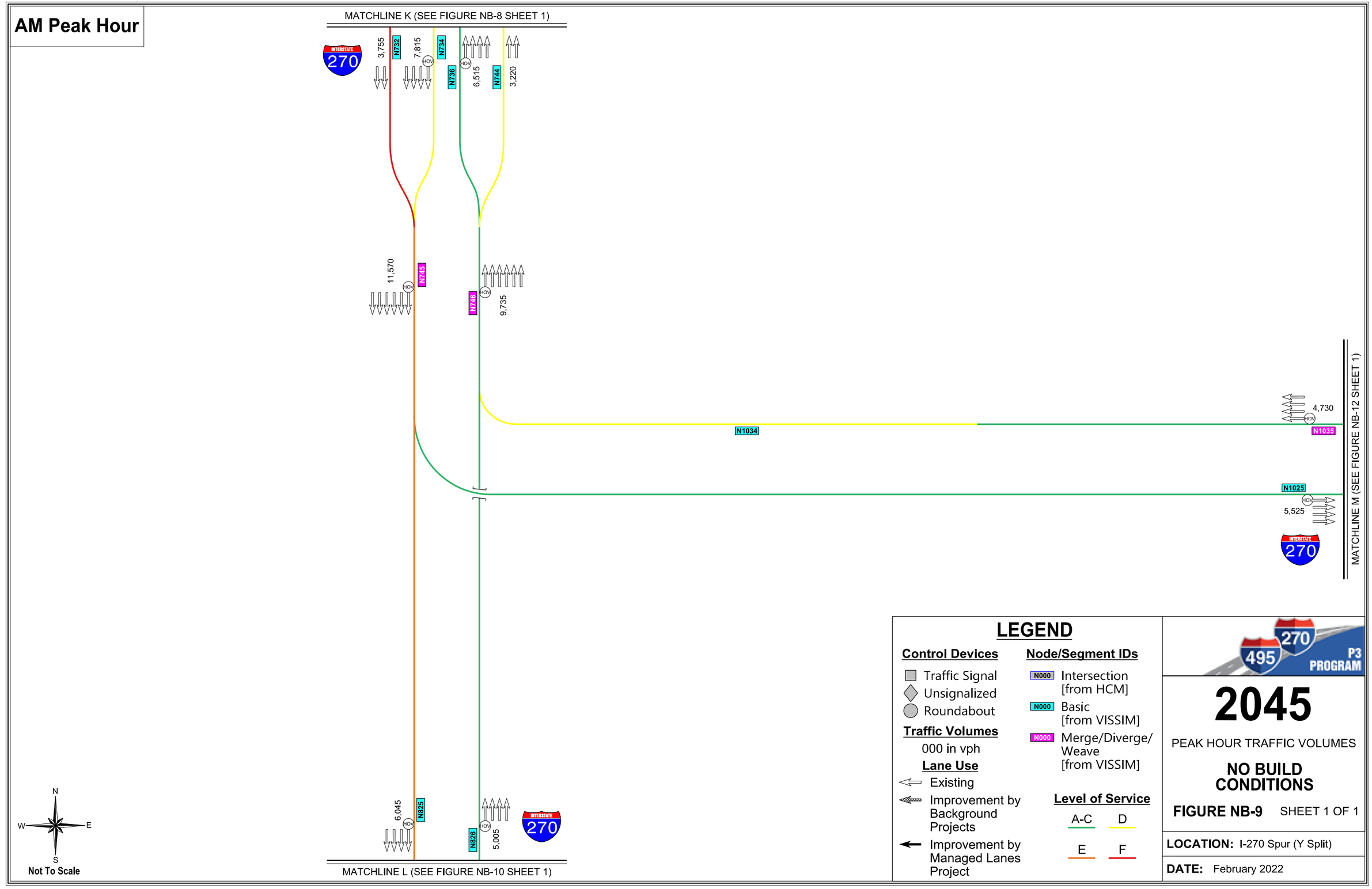
NO BUILD CONDITIONS

FIGURE NB-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C | D | E | F

495 270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

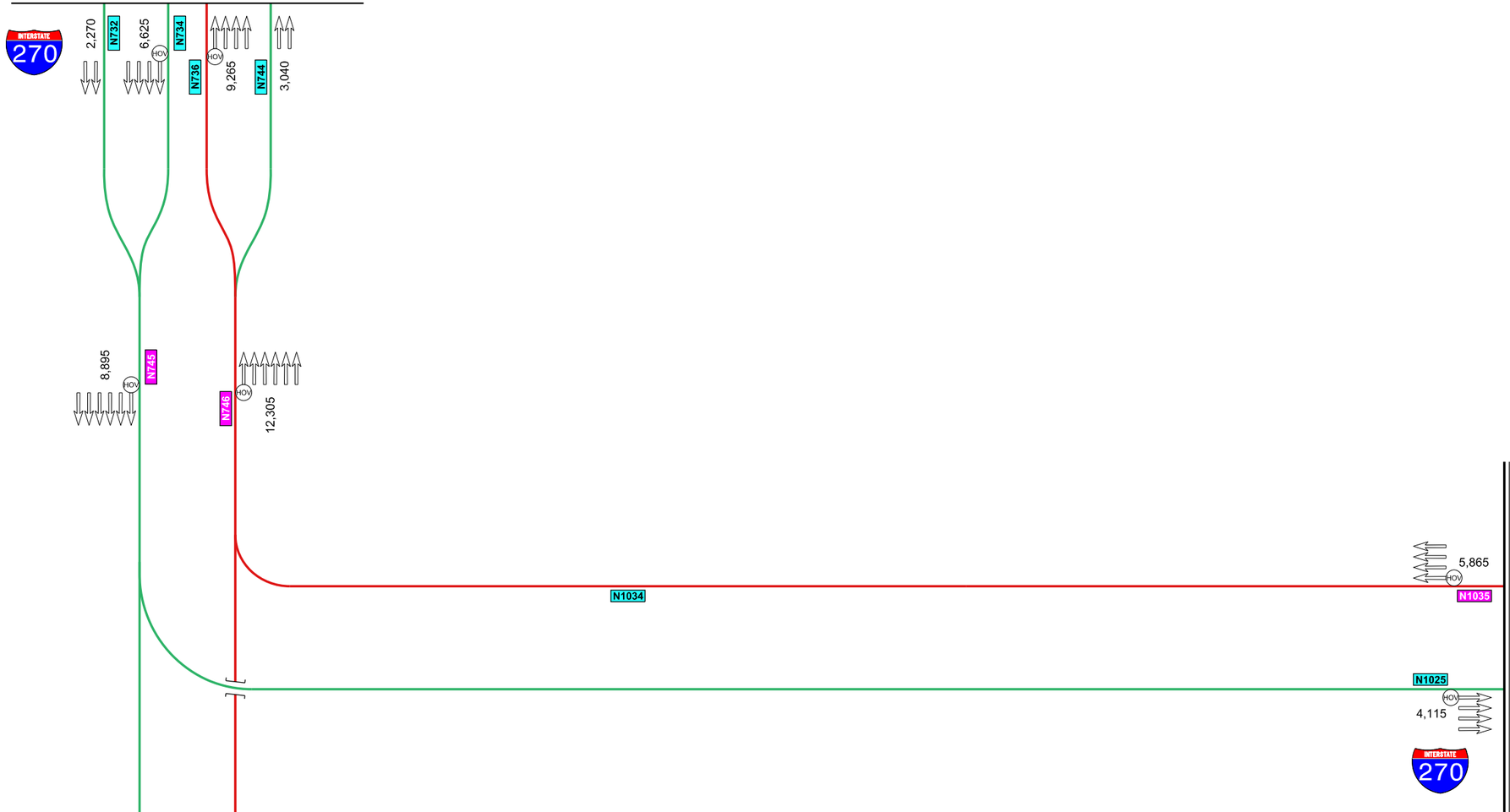
FIGURE NB-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

PM Peak Hour

MATCHLINE K (SEE FIGURE NB-8 SHEET 1)



MATCHLINE L (SEE FIGURE NB-10 SHEET 1)

MATCHLINE M (SEE FIGURE NB-12 SHEET 1)

N
W E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

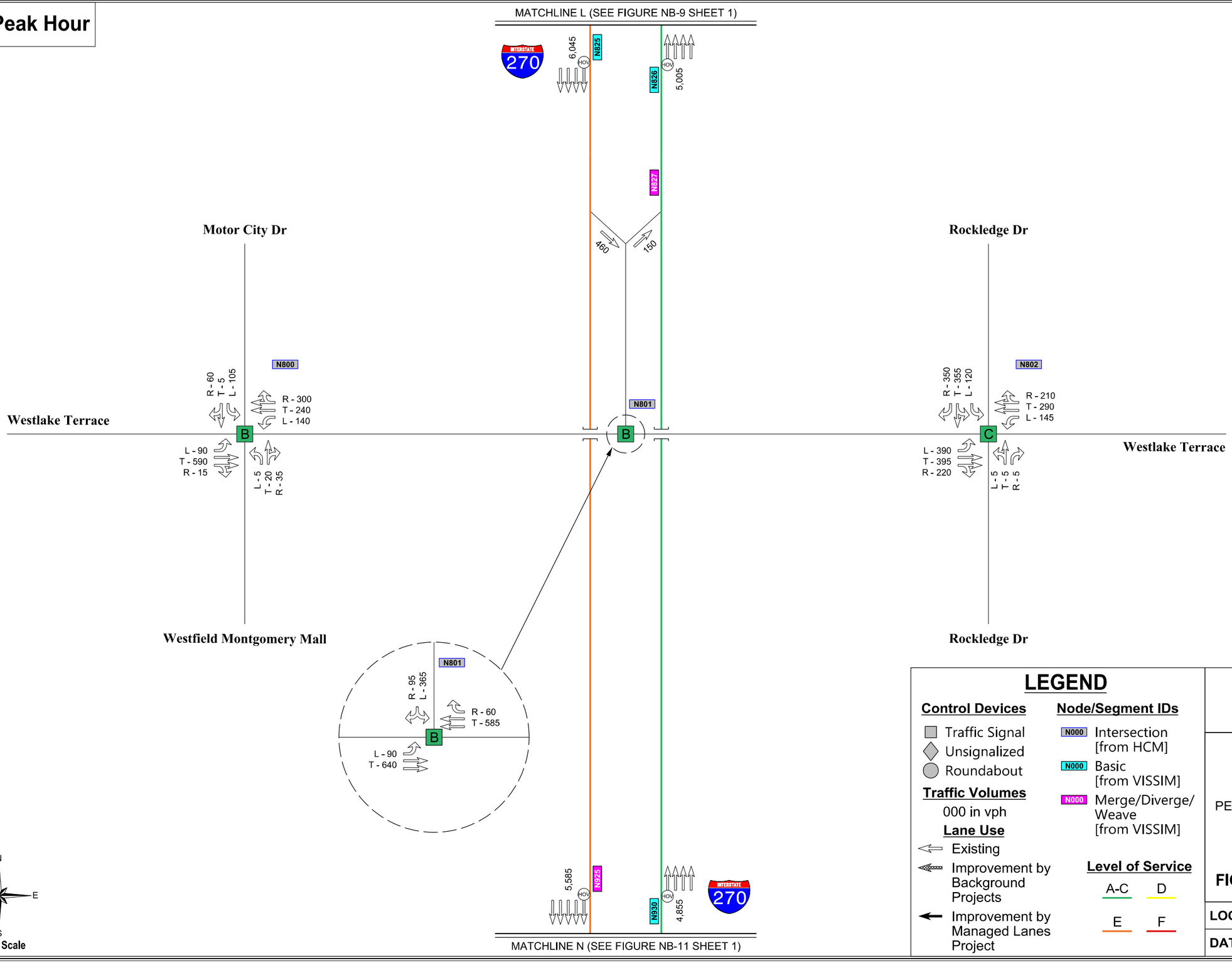
NO BUILD CONDITIONS

FIGURE NB-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

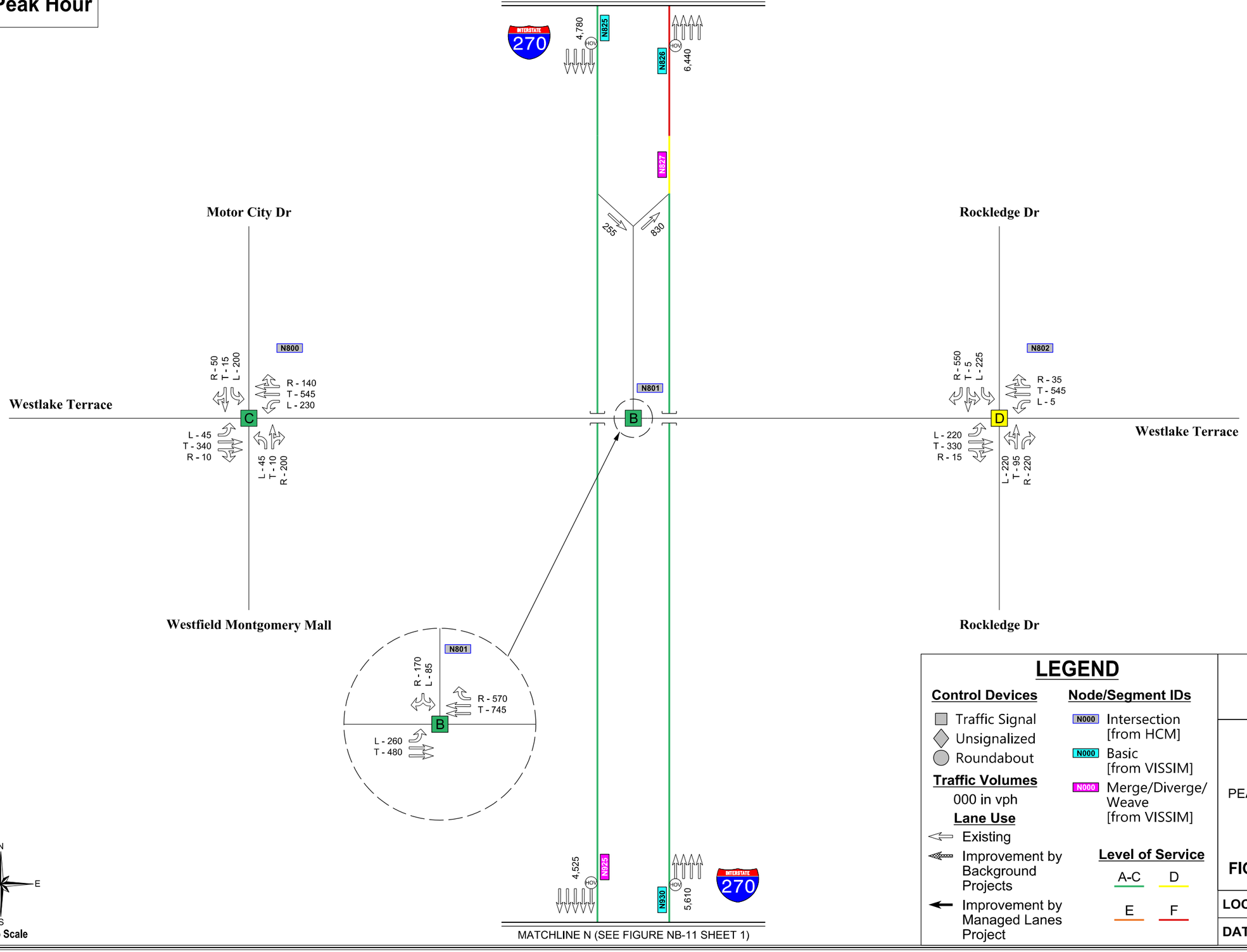
FIGURE NB-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

PM Peak Hour

MATCHLINE L (SEE FIGURE NB-9 SHEET 1)



MATCHLINE N (SEE FIGURE NB-11 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

495 270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

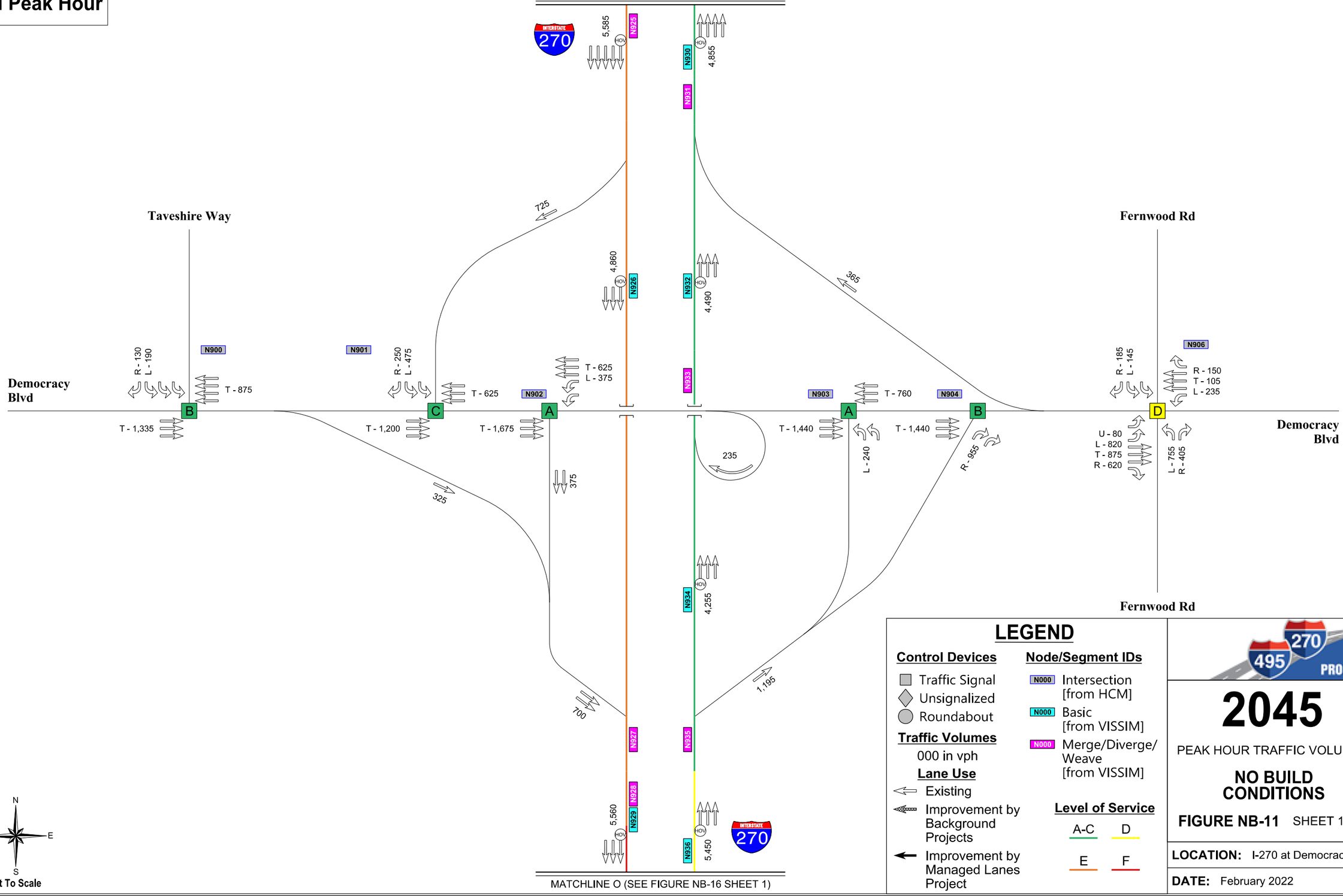
FIGURE NB-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

AM Peak Hour

MATCHLINE N (SEE FIGURE NB-10 SHEET 1)



MATCHLINE O (SEE FIGURE NB-16 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

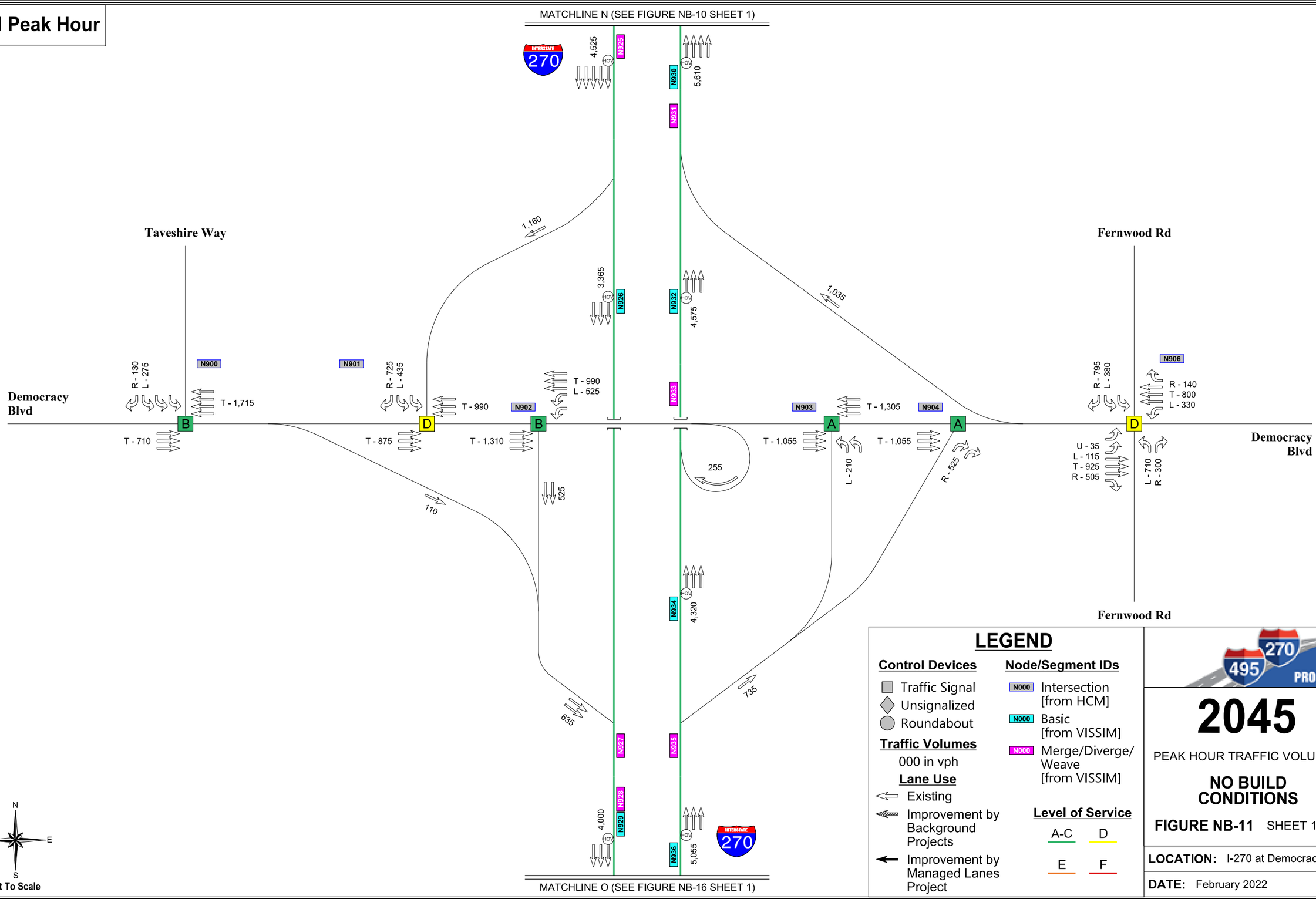
FIGURE NB-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

PM Peak Hour

MATCHLINE N (SEE FIGURE NB-10 SHEET 1)



MATCHLINE O (SEE FIGURE NB-16 SHEET 1)

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

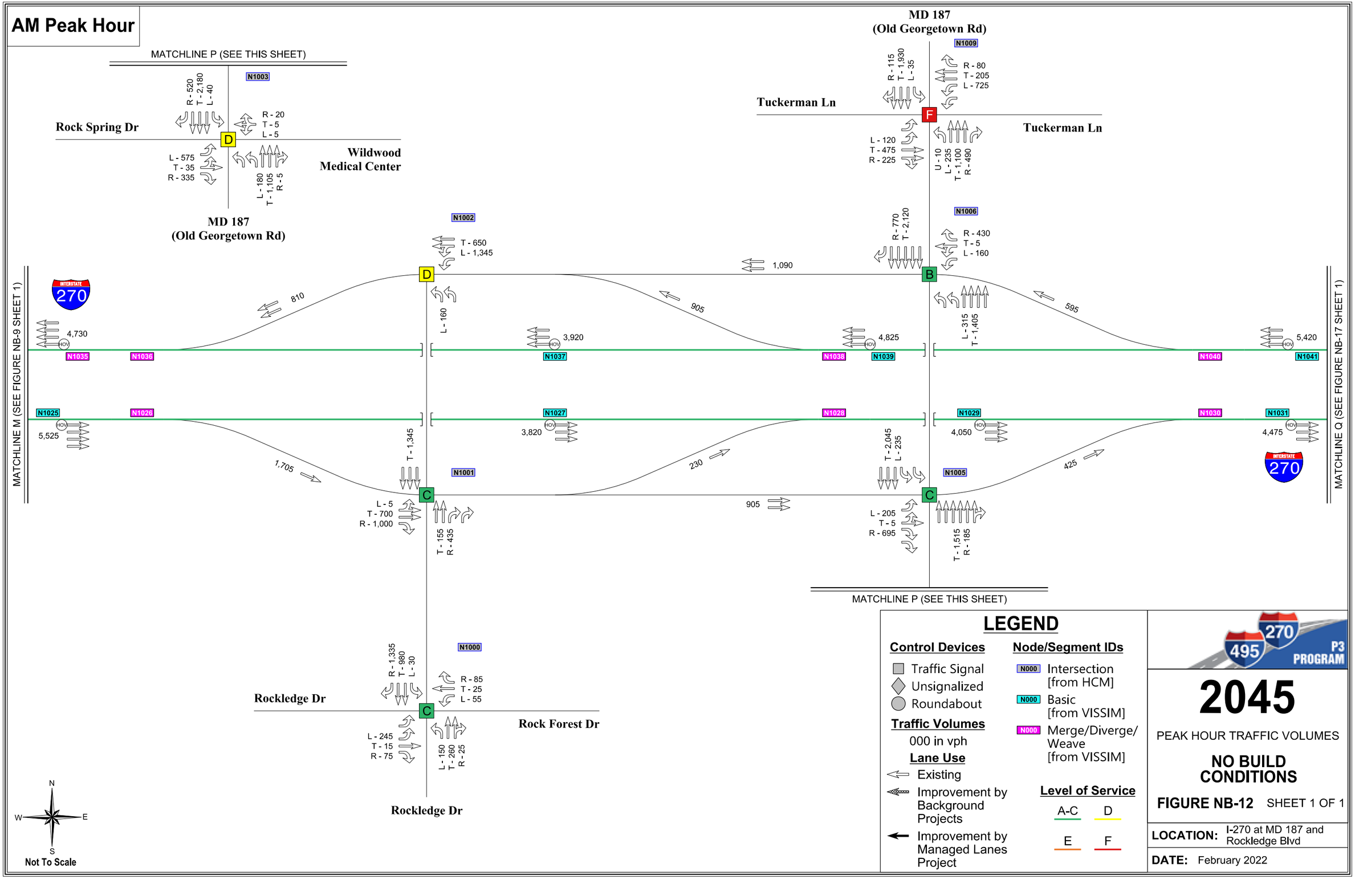
NO BUILD CONDITIONS

FIGURE NB-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

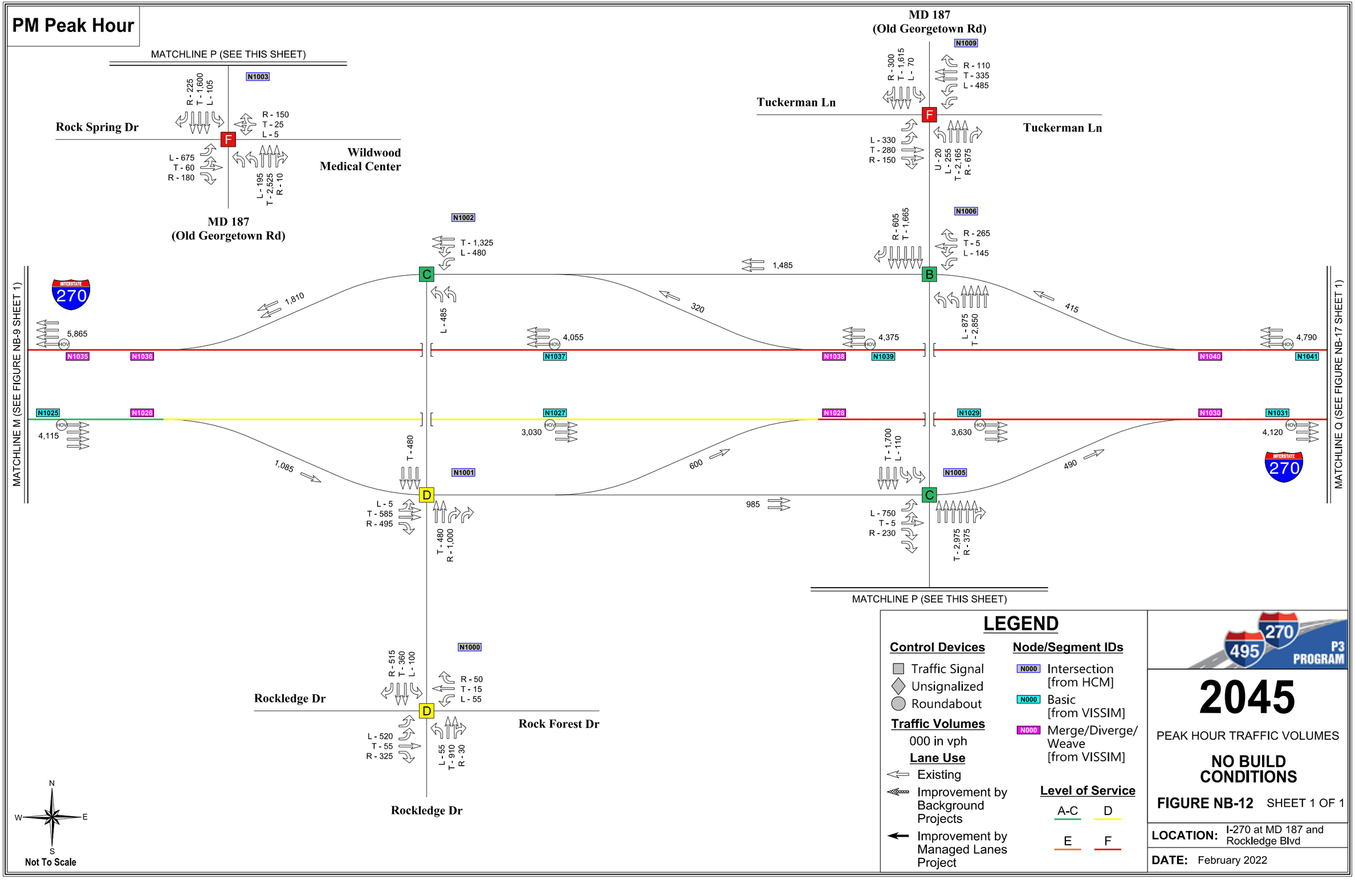
NO BUILD CONDITIONS

FIGURE NB-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

495 270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

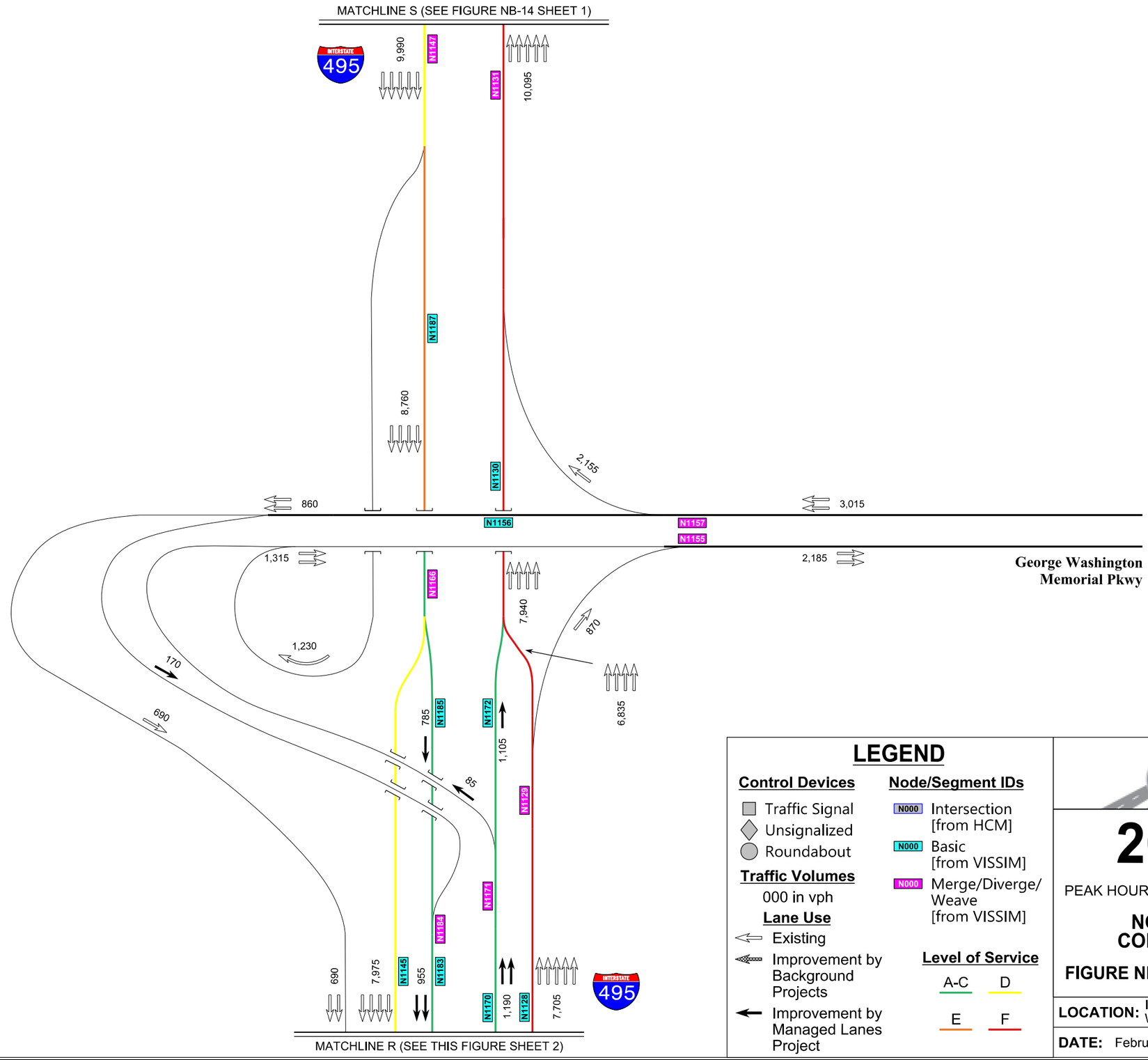
NO BUILD CONDITIONS

FIGURE NB-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

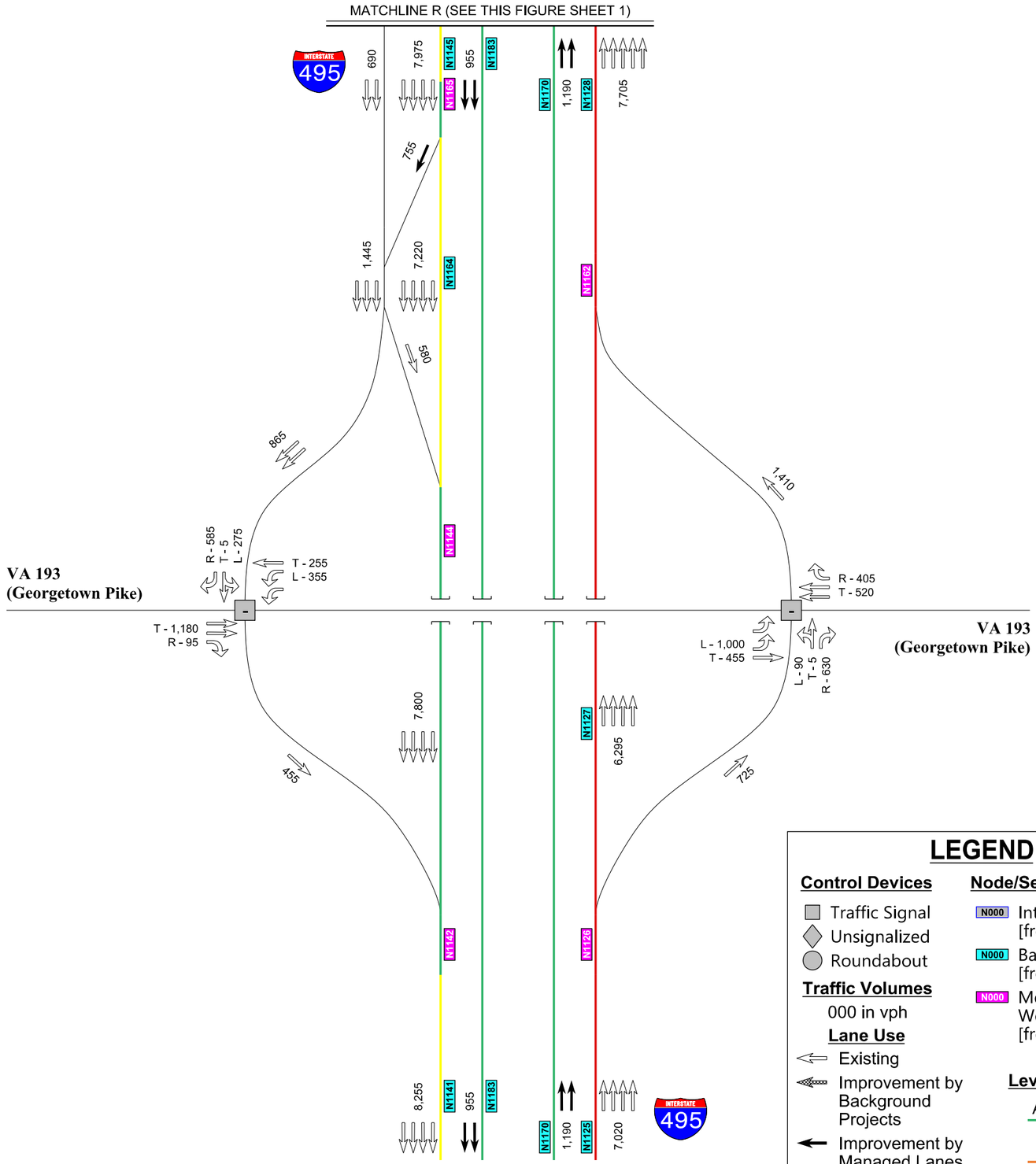
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

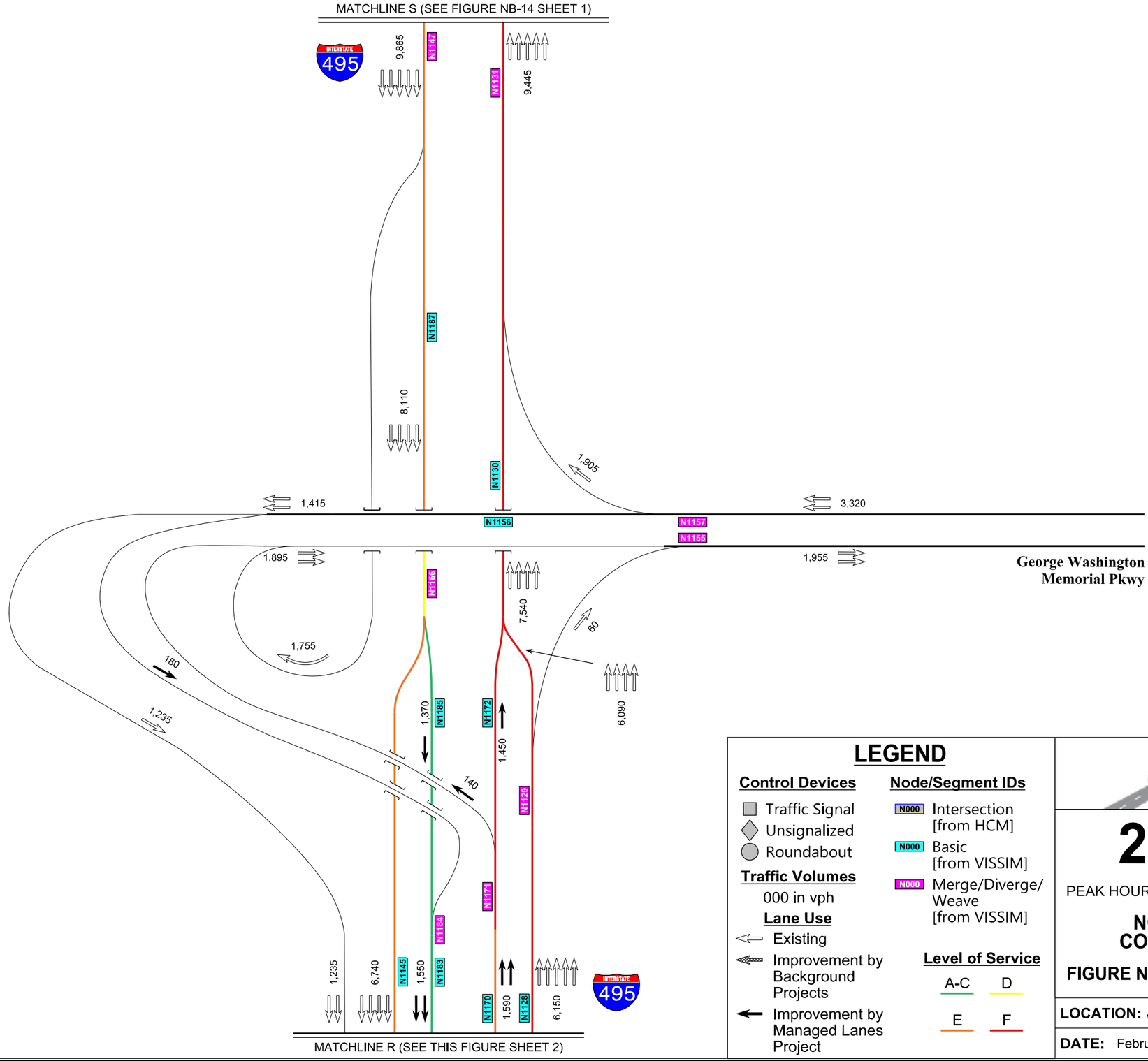
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

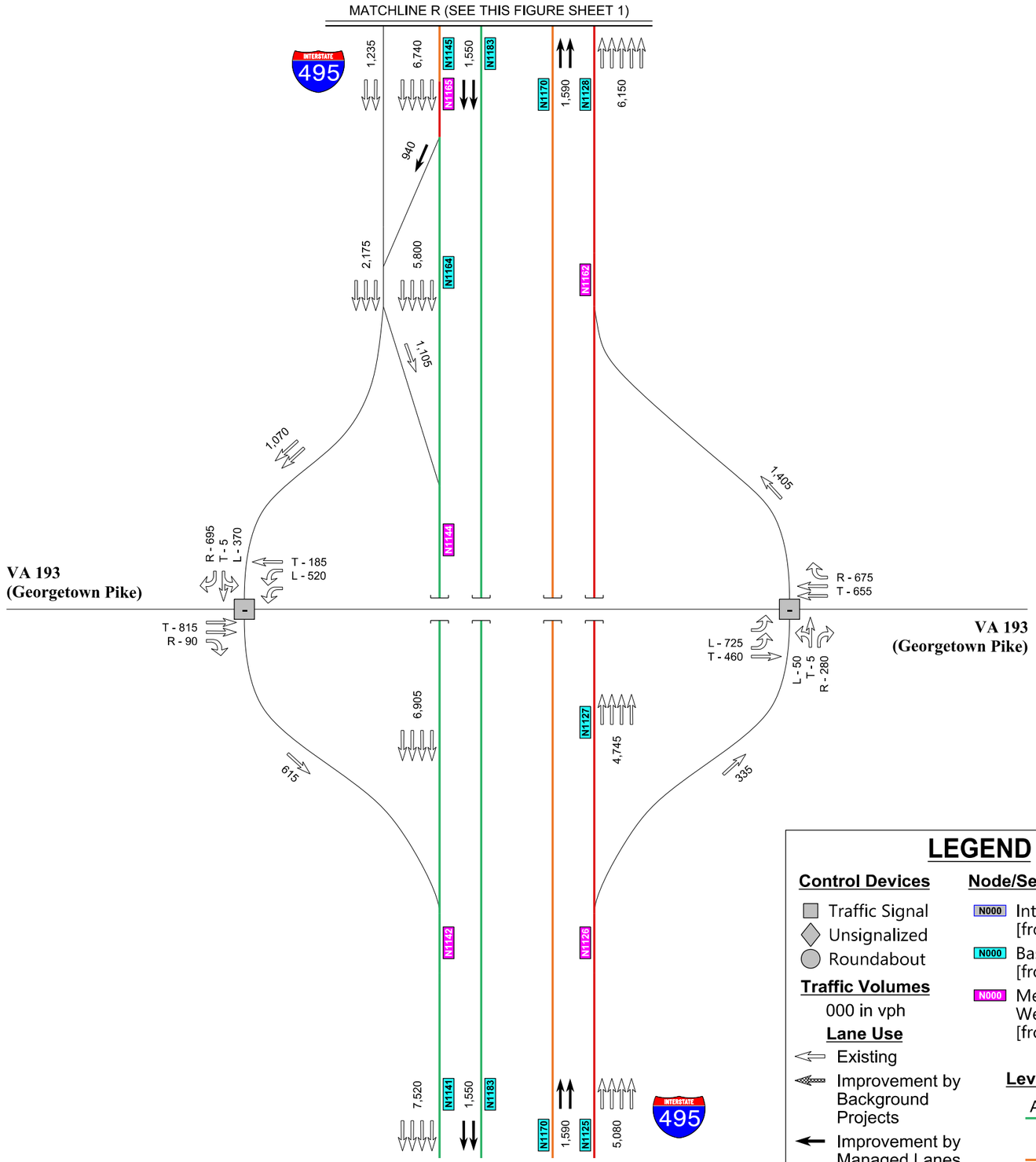
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

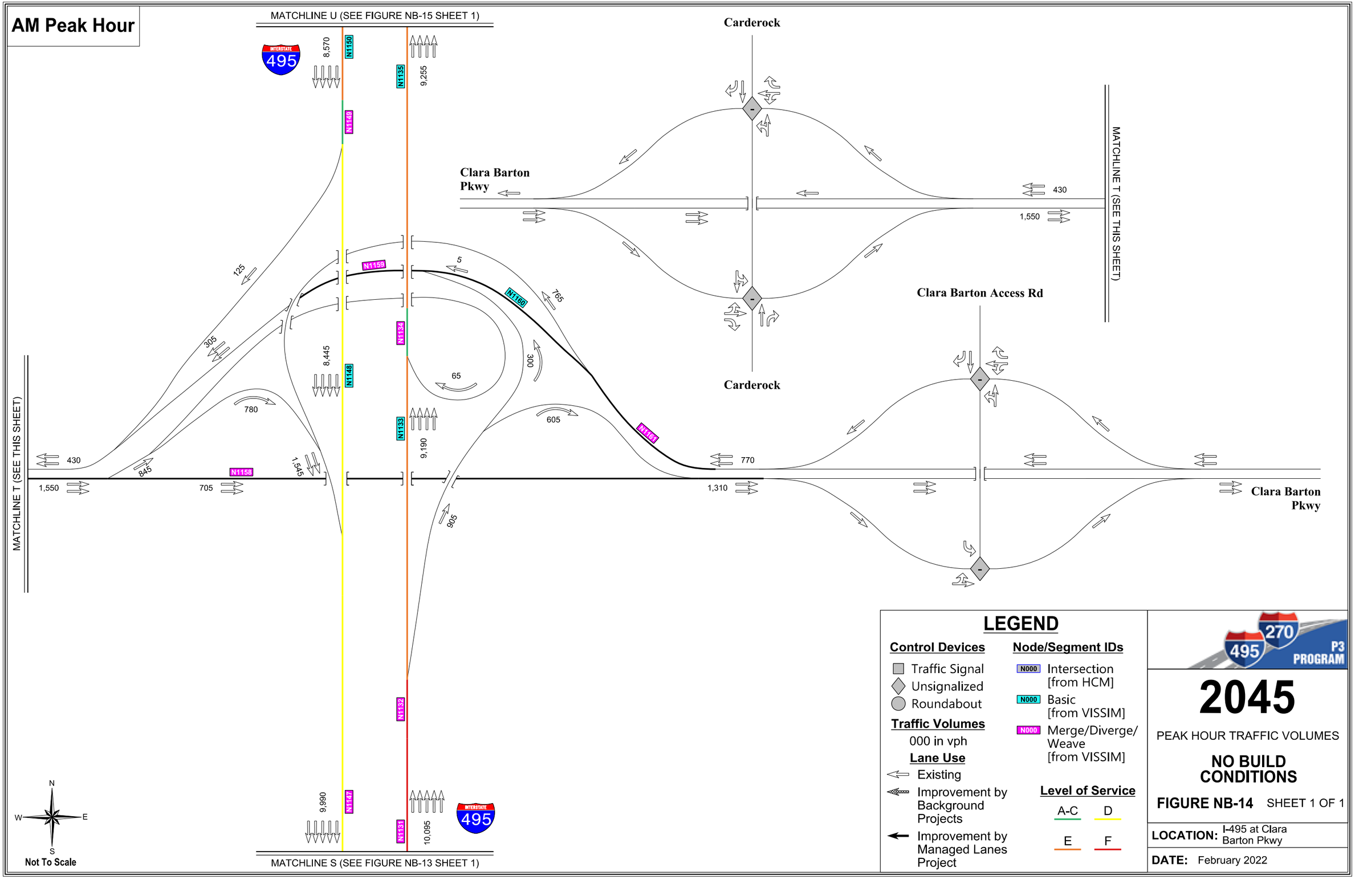
NO BUILD CONDITIONS

FIGURE NB-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

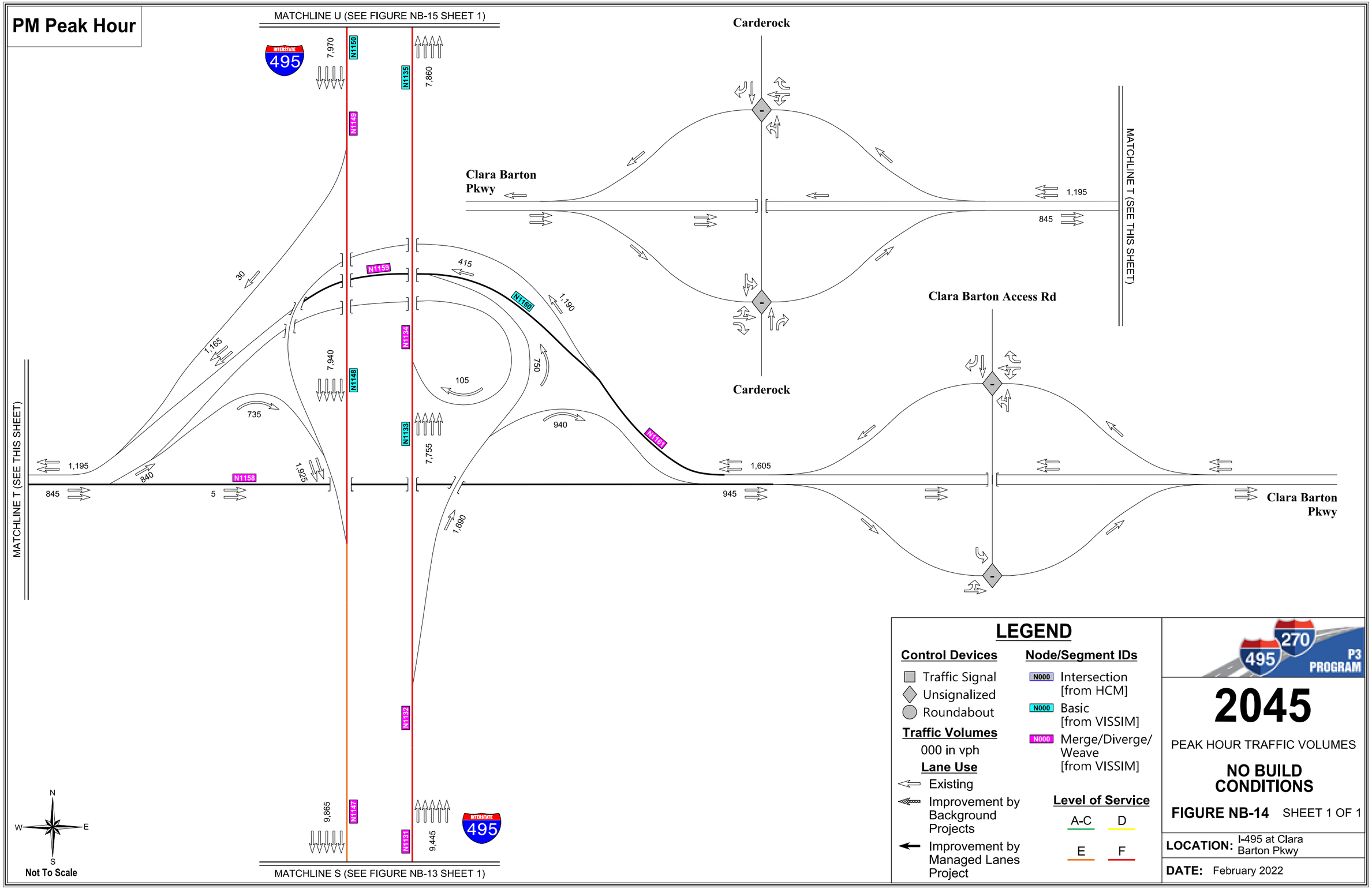
NO BUILD CONDITIONS

FIGURE NB-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

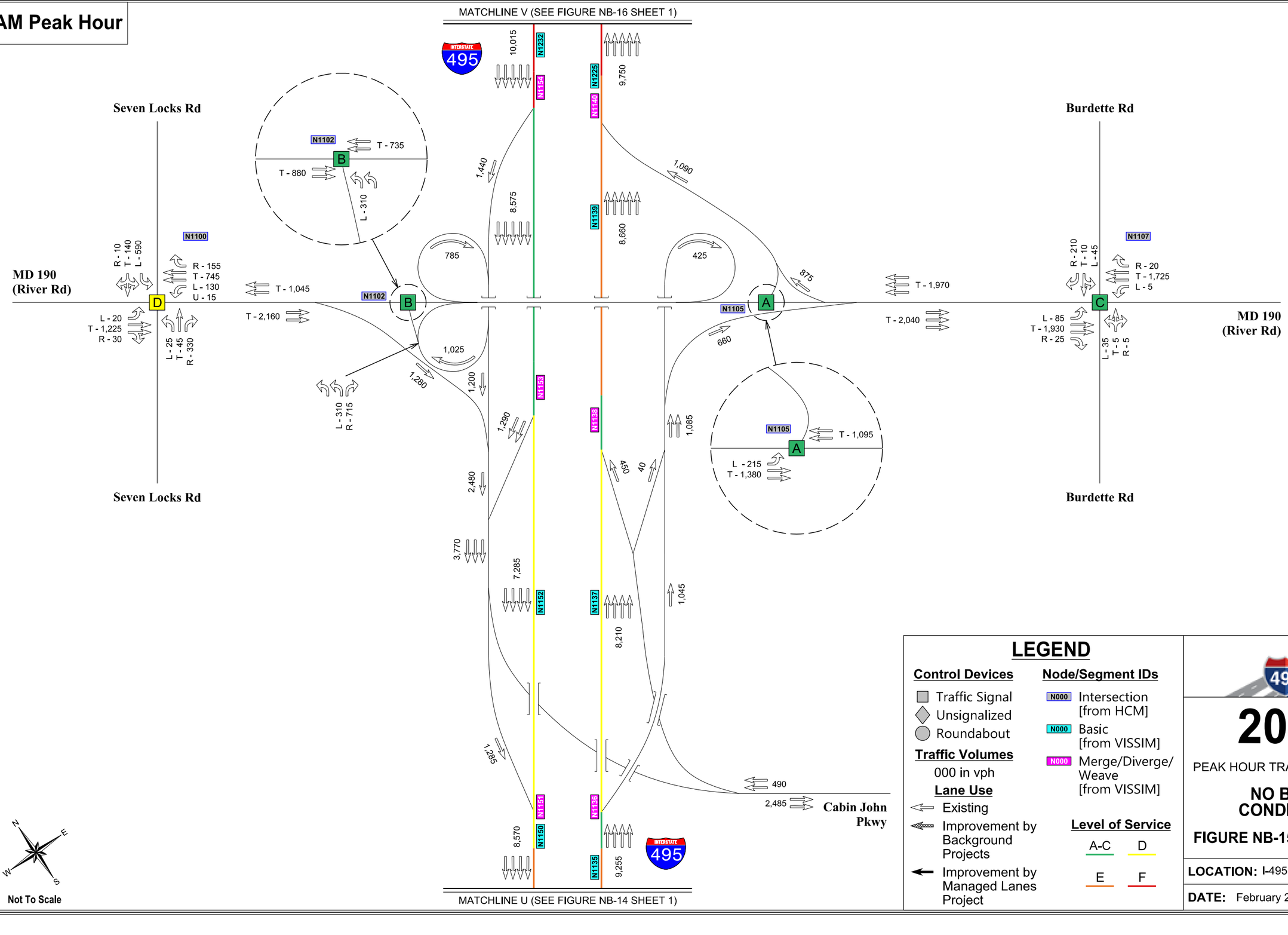
NO BUILD CONDITIONS

FIGURE NB-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

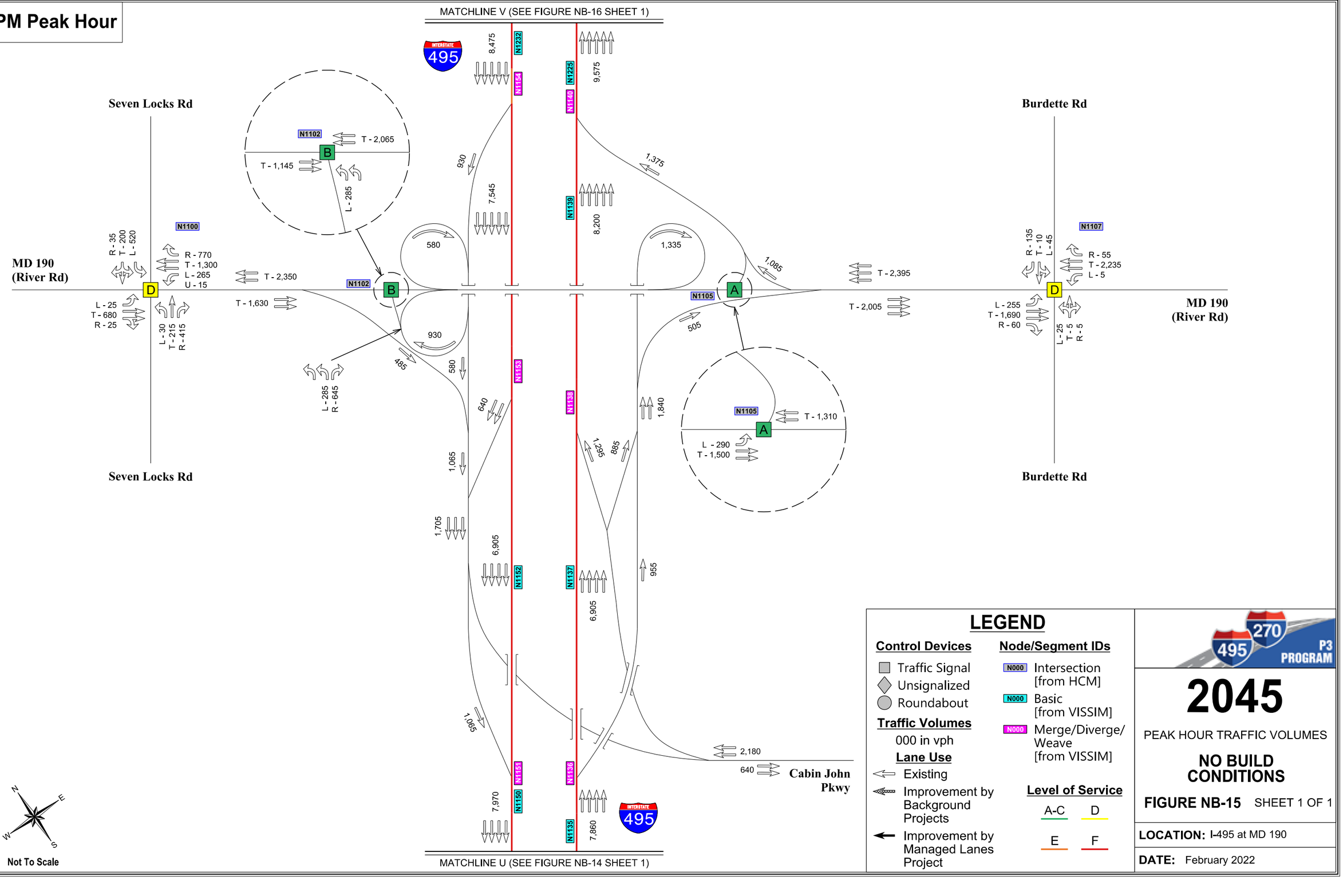
NO BUILD CONDITIONS

FIGURE NB-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

495 270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

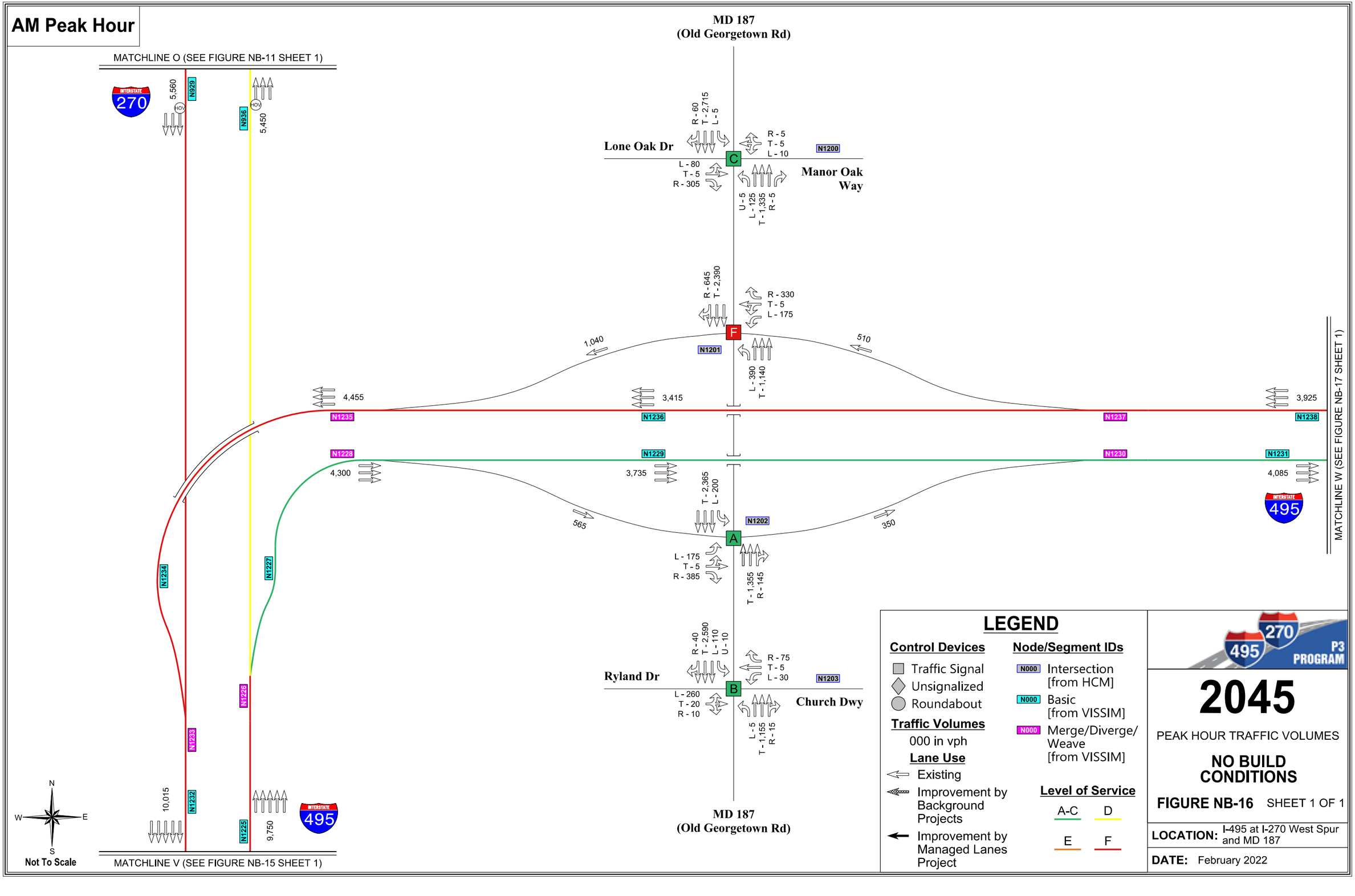
NO BUILD CONDITIONS

FIGURE NB-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

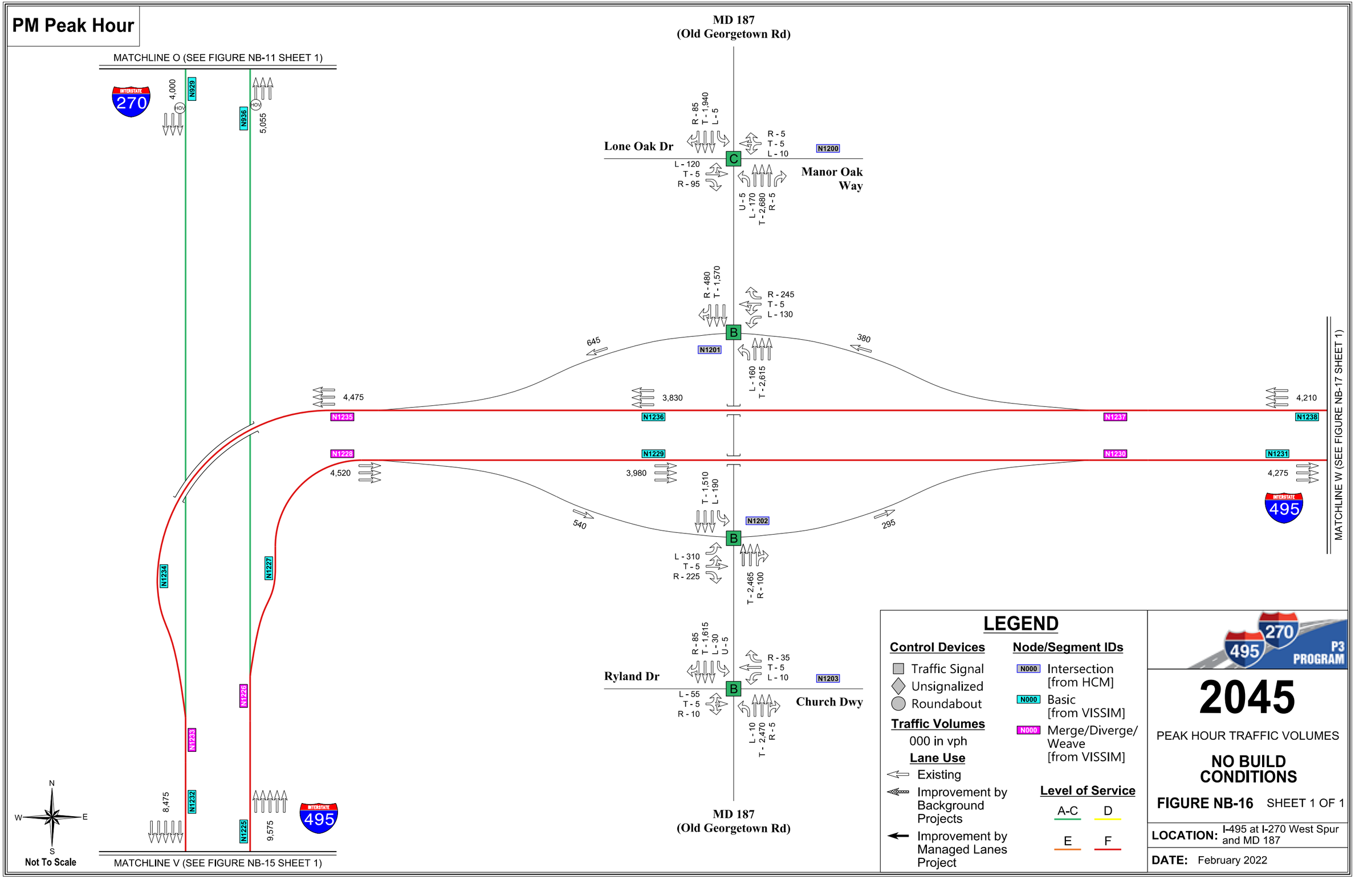
NO BUILD CONDITIONS

FIGURE NB-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

AM Peak Hour

MATCHLINE Q (SEE FIGURE NB-12 SHEET 1)

MATCHLINE W (SEE FIGURE NB-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

INTERSTATE 270

INTERSTATE 495

5,420 HOV N1041

N1031 4,475 HOV

N1042

N1037

N1033

N1043 4,500

N1044

920

1,390

3,085

T - 1,915
L - 1,050

3,925 N1238

N1231 4,085

N1325

N1326 3,625

N1327

N1331

N1332

N1333

1,050

430

6,710

7,995 N1334

8,995 N1432

N1328

N1329

N1330

N1425 8,030

INTERSTATE 495

L - 430
T - 1,675

270

7,760

460

T - 3,305

C N1307

R - 460

T - 2,105
R - 270

1,000

L - 920
T - 755

MD 355 (Rockville Pike)

R - 110
T - 2,125

R - 115
T - 135
L - 620

Grosvenor Ln N1300

C

R - 785

Grosvenor Ln

L - 100
R - 220

T - 1,200

T - 85
R - 470

R - 555
T - 1,200

MD 355 (Rockville Pike)

R - 95
T - 3,380
L - 5
U - 315

Alta Vista Rd

B

R - 15
T - 5
L - 5

N1310

Bellevue Dr

L - 70
T - 5
R - 20

T - 1,515
R - 5

Pooks Hill Rd N1309

R - 120
T - 3,645

D

L - 500
R - 150

L - 40
T - 1,875

N
W E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

FIGURE NB-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

PM Peak Hour

MATCHLINE Q (SEE FIGURE NB-12 SHEET 1)

MATCHLINE W (SEE FIGURE NB-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

MD 355 (Rockville Pike)

Grosvenor Ln N1300

R - 120, T - 1,710

R - 145, T - 145, L - 240

R - 430

L - 150, R - 190

T - 1,900

T - 100, R - 875

Grosvenor Ln

R - 975, T - 1,900

Alta Vista Rd

R - 140, T - 2,050, L - 5, U - 265

R - 5, T - 5, L - 10

N1310

L - 90, T - 5, R - 15

U - 5, L - 10, T - 3,010, R - 5

Bellevue Dr

MD 355 (Rockville Pike)

INTERSTATE 270

4,790 HOV N1041

N1031 4,120 HOV

N1042

N1037

N1033

1,310

3,480 N1043

1,290

L - 1,310, T - 1,585

T - 1,255, L - 885

1,150

2,910

N1044

INTERSTATE 495

4,210 N1238

N1331

N1332

N1333

7,360 N1334

8,650 N1432

885

330

N1231 4,275

N1325

N1326 3,965

N1327

6,935

N1328

N1329

N1330

N1425 8,150

INTERSTATE 495

L - 330, T - 2,895

330

7,820

T - 2,405

310

B N1307

R - 310

T - 3,225, R - 330

R - 325, T - 2,390

Pooks Hill Rd N1309

B

L - 250, R - 70

L - 65, T - 3,305

N

W E

S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- N000 Intersection [from HCM]
- N000 Basic [from VISSIM]
- N000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

INTERSTATE 270 INTERSTATE 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

NO BUILD CONDITIONS

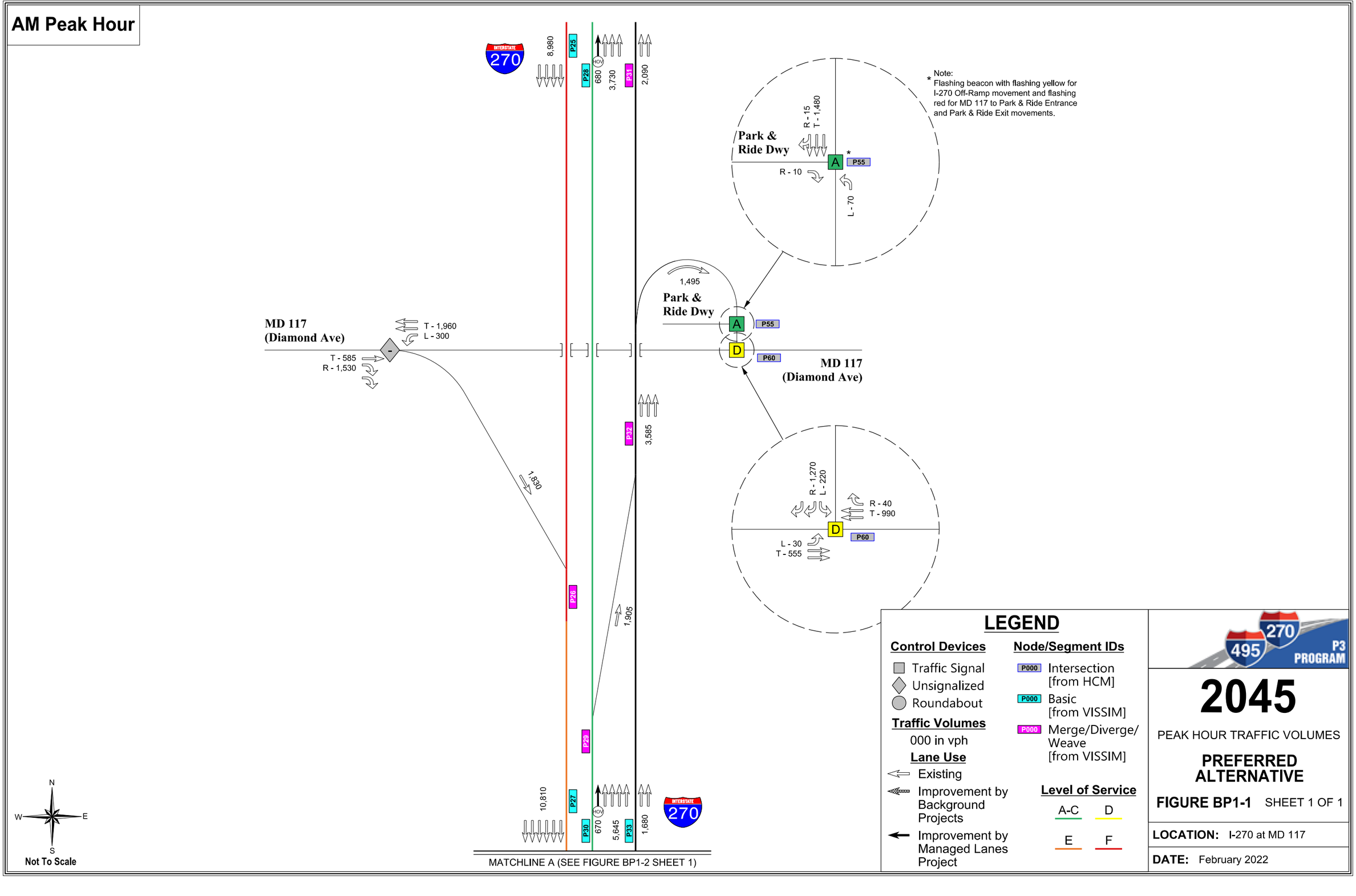
FIGURE NB-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

2045 PREFERRED ALTERNATIVE GRAPHICS

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

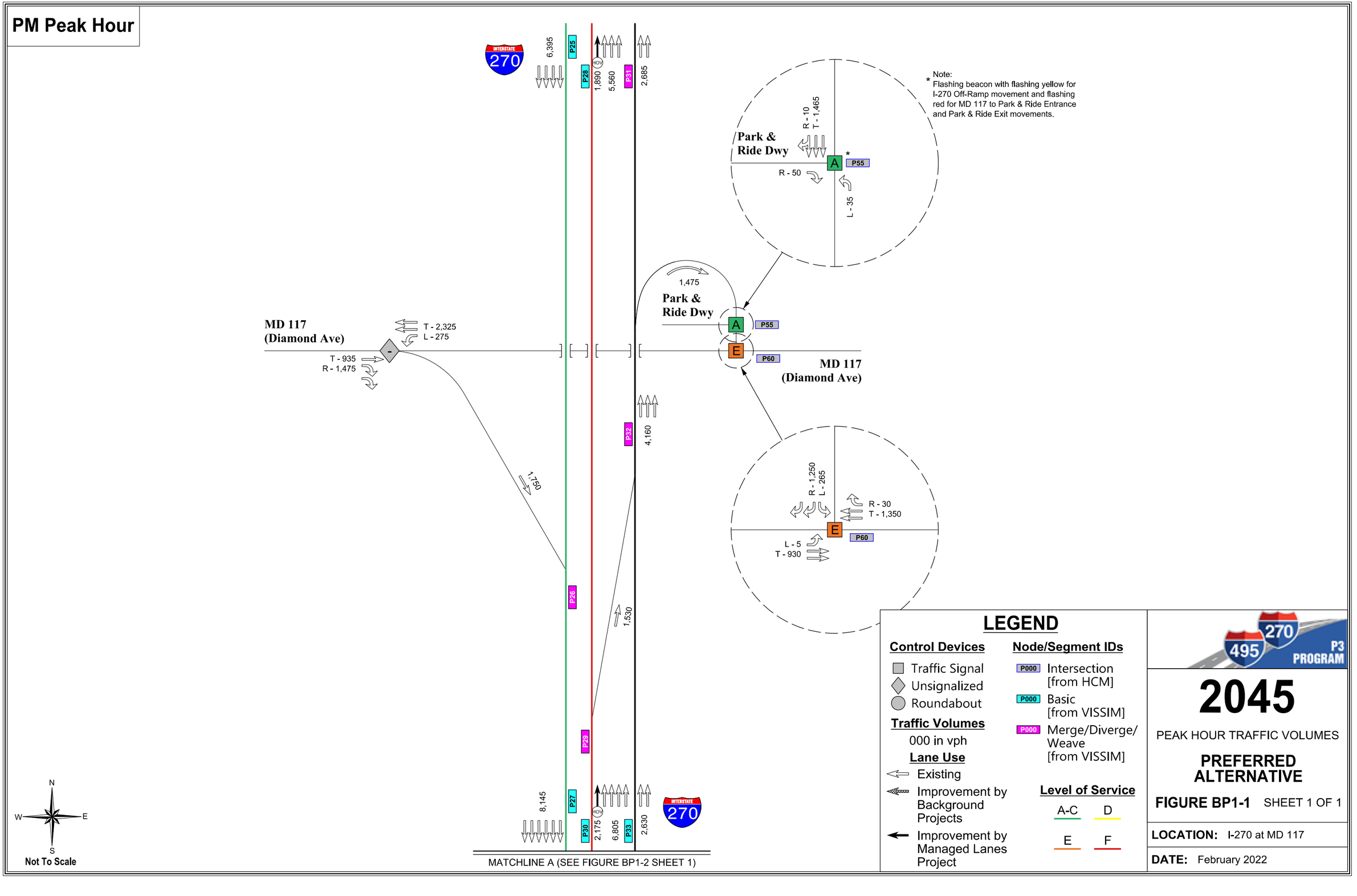
PREFERRED ALTERNATIVE

FIGURE BP1-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-1 SHEET 1 OF 1

LOCATION: I-270 at MD 117

DATE: February 2022

AM Peak Hour

MATCHLINE A (SEE FIGURE BP1-1 SHEET 1)

MATCHLINE B (SEE THIS FIGURE SHEET 2)

MATCHLINE C (SEE FIGURE BP1-3 SHEET 1)

INTERSTATE 270

INTERSTATE 370

10,810 P125 P30 670 HOV 5,645 P33 1,680

P126 P132 1,240

2,980 7,830 P127 P150 670 HOV 4,405 P135 2,920

P128

750

1,320

2,000

P151 P136

2,230 P170 P157 920 570

4,565

695 110 140 1,920 1,240 680

3,000 5,000

1,250 780 930 460 470 460 1,910 660 4,140

P133 P138

2,305 1,305 1,000

6,230 P130 1,600 1,140 1,985

580 P173 780 HOV P139 460 1,230

8,215 P131 2,740 P172 P175 P174 1,360 P140 5,985

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

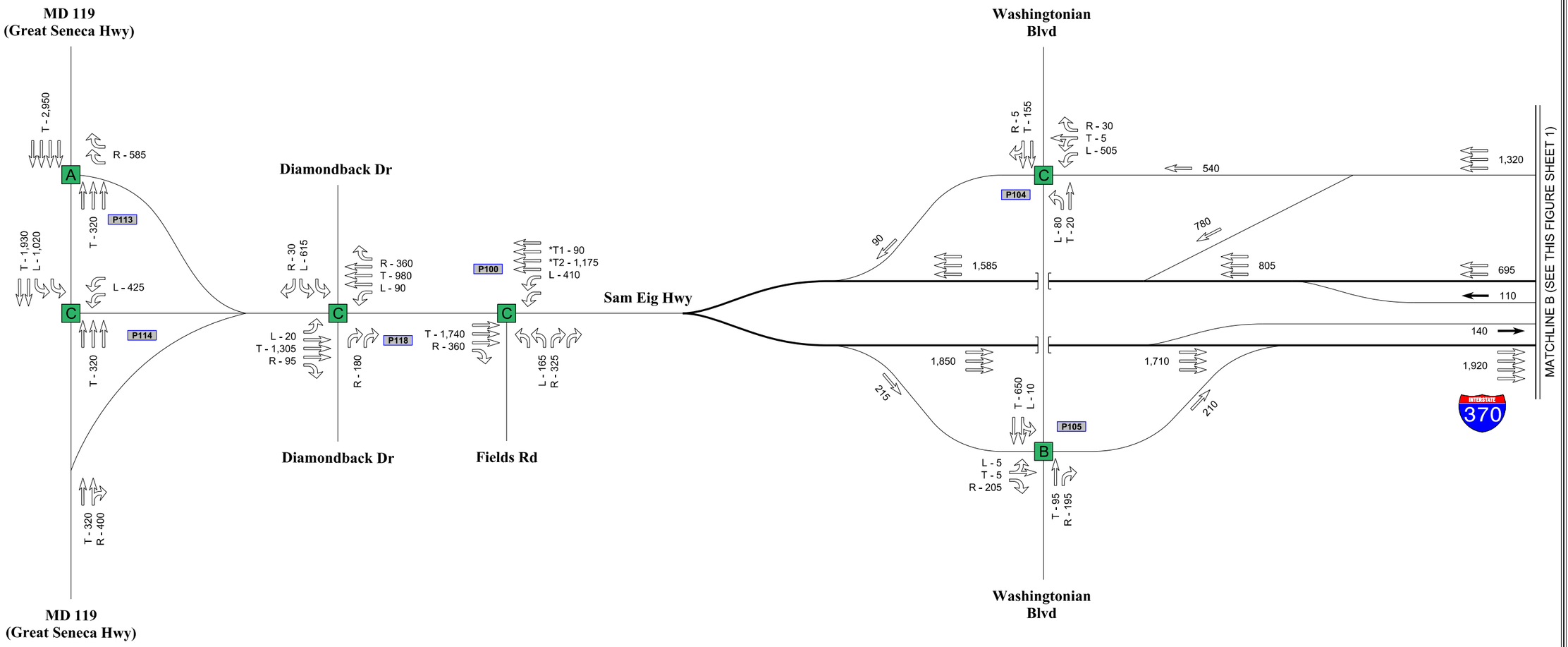
PREFERRED ALTERNATIVE

FIGURE BP1-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour

MATCHLINE A (SEE FIGURE BP1-1 SHEET 1)

MATCHLINE B (SEE THIS FIGURE SHEET 2)

MATCHLINE C (SEE FIGURE BP1-3 SHEET 1)

INTERSTATE 270

INTERSTATE 370

8,145 P125 P30 2,175 6,805 P33 2,630

P126 P132 1,915

2,785 5,360 P127 P150 2,175 4,890 P135 4,545

P128

715

1,405

1,800

P151 P136

2,070 P170 P157 2,745 690

5,250

1,575 165 65 2,840 2,115 940 725 1,795 755 1,040 725

3,370 1,900 1,175 1,665 940 725 1,240 3,140 5,170 5,210

P133 P138

1,480 4,465 P130 895 1,105 890 P173 1,815 1,805 1,930 P139

P171 P174

5,945 P131 2,000 P172 P175 2,705 P140 8,985

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

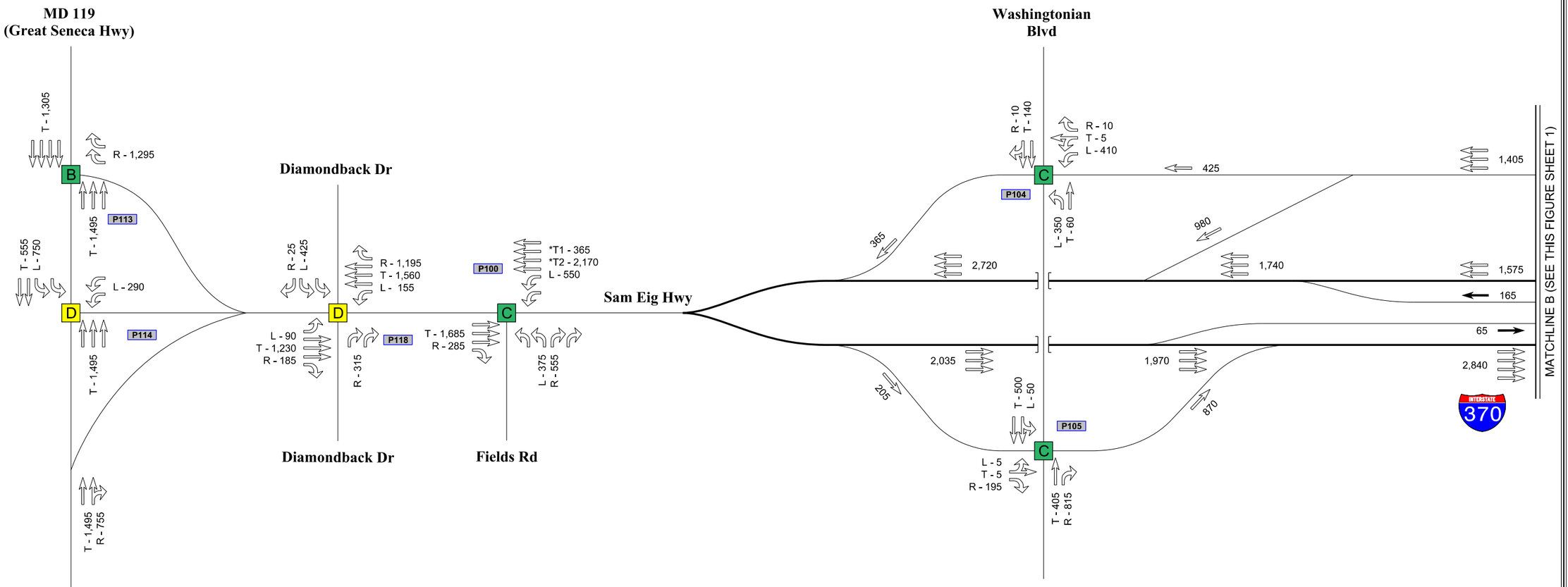
PREFERRED ALTERNATIVE

FIGURE BP1-2 SHEET 1 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

Not To Scale

*T1 represents vehicles arriving from I-370 (Sam Eig Hwy)
*T2 represents vehicles arriving from Washingtonian Blvd Ramp

270 / 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

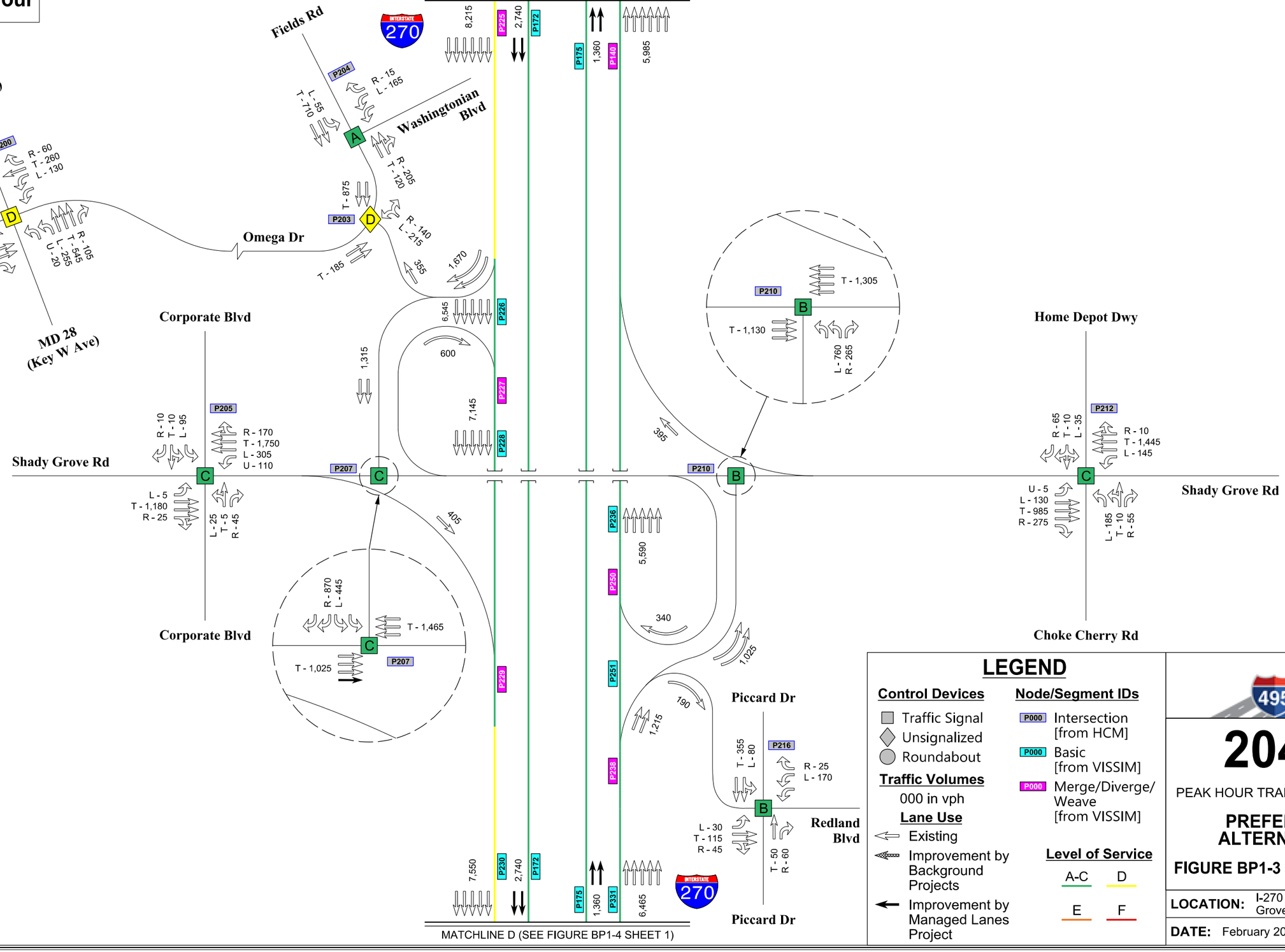
FIGURE BP1-2 SHEET 2 OF 2

LOCATION: I-270 at I-370

DATE: February 2022

AM Peak Hour

MATCHLINE C (SEE FIGURE BP1-2 SHEET 1)



MATCHLINE D (SEE FIGURE BP1-4 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

PM Peak Hour

MATCHLINE C (SEE FIGURE BP1-2 SHEET 1)

MATCHLINE D (SEE FIGURE BP1-4 SHEET 1)

Fields Rd

MD 28 (Key W Ave)

Medical Center Dr

Omega Dr

Washingtonian Blvd

Corporate Blvd

Shady Grove Rd

Home Depot Dwy

Choke Cherry Rd

Piccard Dr

Redland Blvd

INTERSTATE 270

P200 R - 205, T - 110, L - 110

L - 85, T - 795, R - 30

L - 165, T - 360, R - 335

R - 215, T - 115, U - 20

L - 75, U - 20

P204 R - 85, L - 245

L - 20, T - 195

R - 510, T - 1,170

T - 440

P203 F

R - 125, L - 25

T - 1,555

150

775

5,945

P225

2,000

P172

P175

2,705

P140

8,985

P226 5,170

840

625

P227

6,010

P228

935

P210 A

T - 1,215

T - 980

L - 245, R - 615

P205 R - 25, T - 5, L - 160

R - 95, T - 730, L - 85, U - 20

P207 B

C

L - 15, T - 1,655, R - 35

L - 65, T - 5, R - 305

825

R - 310, L - 315

T - 620

T - 1,315

P229

P236 8,050

P250

650

860

P251

245

1,105

P216

T - 110, L - 45

R - 85, L - 75

P238

L - 25, T - 210, R - 10

T - 260, R - 285

P230 6,835

2,000

P172

P175 2,705

P331 8,505

P212 R - 195, T - 30, L - 110

R - 10, T - 1,455, L - 85

U - 5, L - 165, T - 1,195, R - 230

L - 495, T - 20, R - 130

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

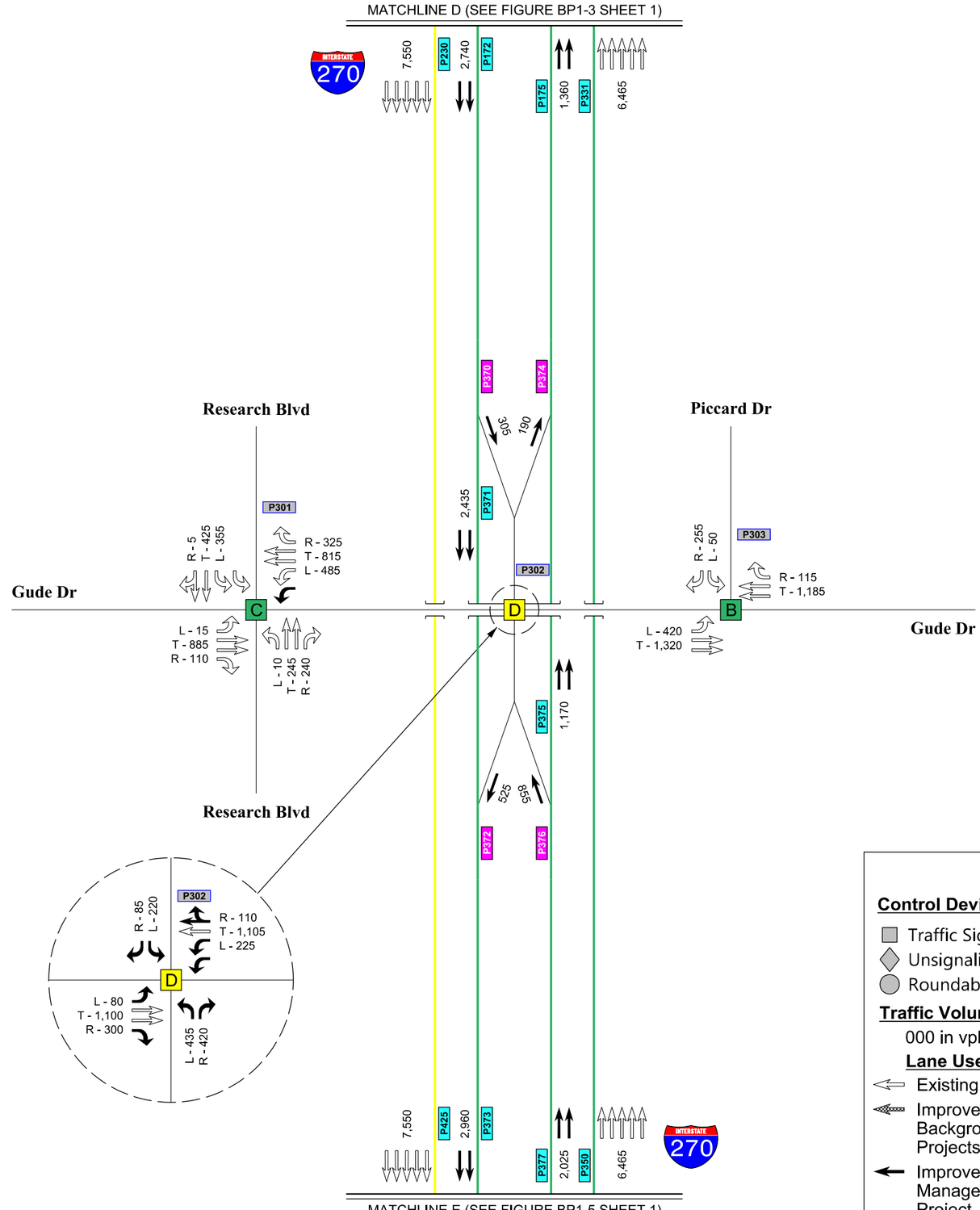
FIGURE BP1-3 SHEET 1 OF 1

LOCATION: I-270 at Shady Grove Road

DATE: February 2022

AM Peak Hour

MATCHLINE D (SEE FIGURE BP1-3 SHEET 1)



MATCHLINE E (SEE FIGURE BP1-5 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

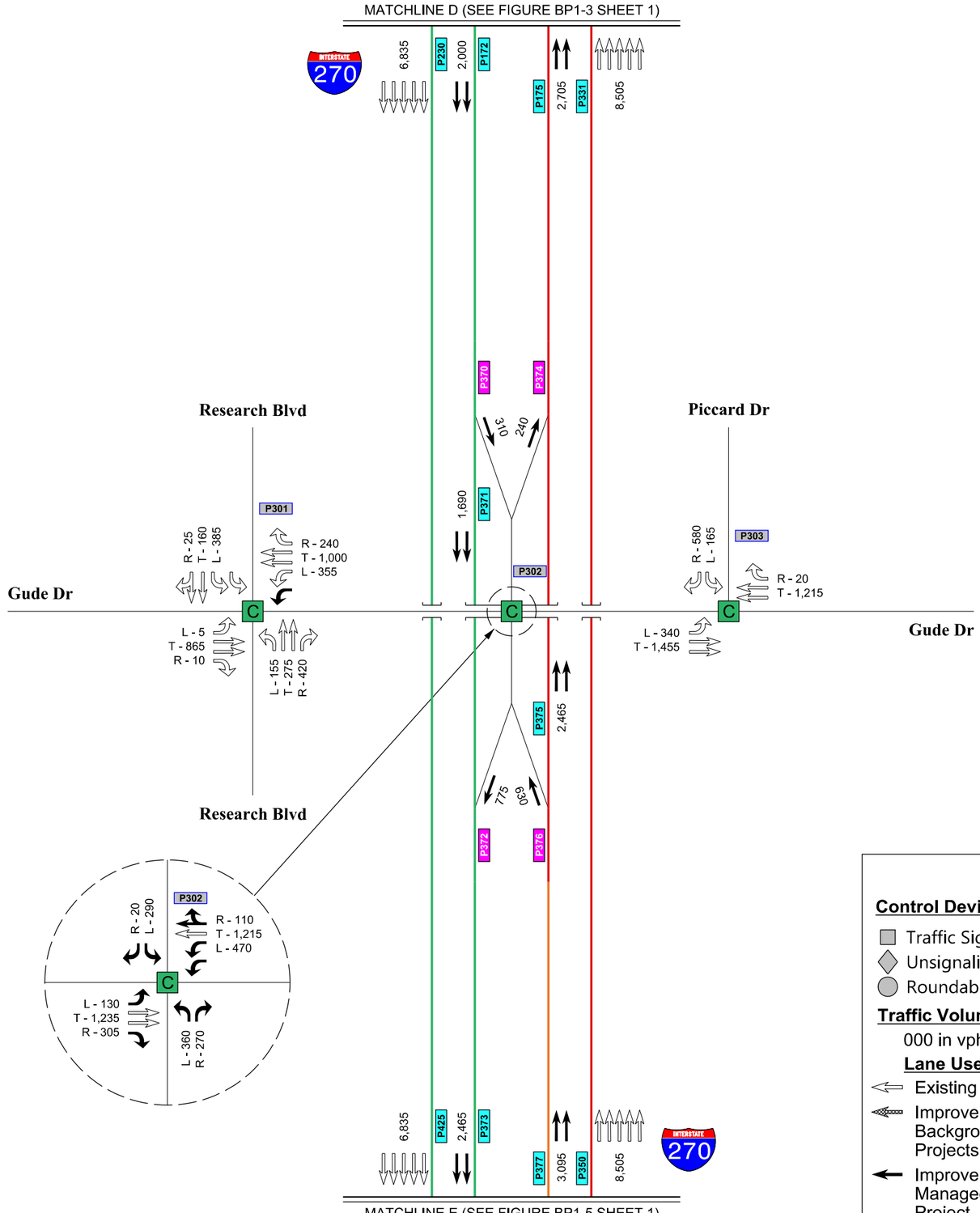
FIGURE BP1-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

PM Peak Hour

MATCHLINE D (SEE FIGURE BP1-3 SHEET 1)



MATCHLINE E (SEE FIGURE BP1-5 SHEET 1)

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

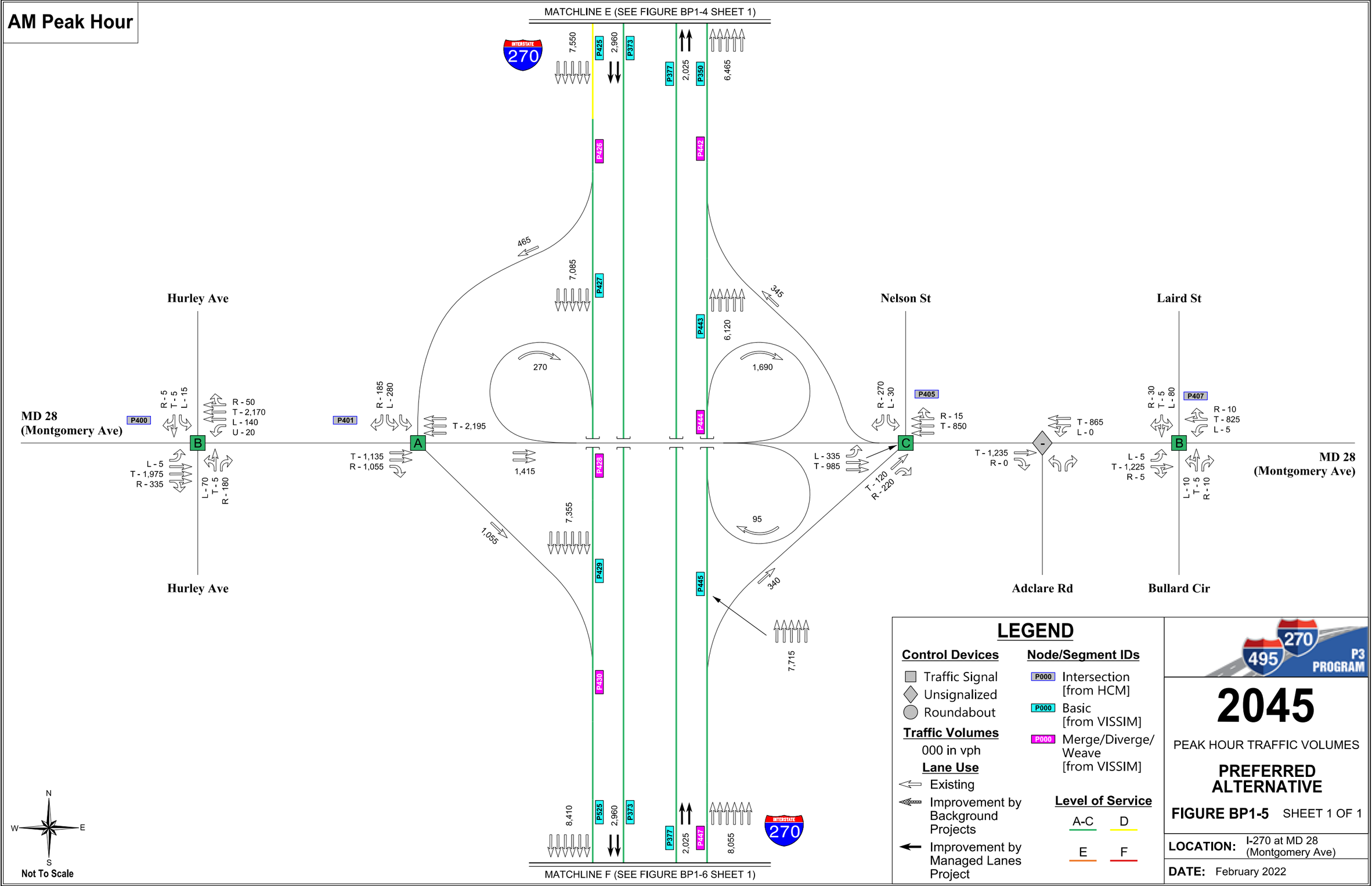
PREFERRED ALTERNATIVE

FIGURE BP1-4 SHEET 1 OF 1

LOCATION: I-270 at Gude Drive

DATE: February 2022

AM Peak Hour



N
W E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

PM Peak Hour

MATCHLINE E (SEE FIGURE BP1-4 SHEET 1)

INTERSTATE 270

P425 6,835 | P373 2,465 | P377 3,095 | P350 8,505

P426 | P442

735

P427 6,100

460

P443 8,045

215

1,635

P444

Hurley Ave

Nelson St

Laird St

MD 28 (Montgomery Ave)

P400 — R - 10, T - 5, L - 35 | R - 20, T - 2,340, L - 290, U - 20

P401 — R - 240, L - 495 | T - 2,430

P405 — R - 415, L - 35 | R - 45, T - 1,055

P407 — R - 60, T - 5, L - 25 | R - 10, T - 1,035, L - 5

T - 1,100, L - 0

T - 1,380, R - 0

L - 35, T - 1,330, R - 15

L - 5, T - 5, R - 10

MD 28 (Montgomery Ave)

C — L - 5, T - 2,070, R - 75 | L - 90, T - 5, R - 145

B — T - 1,050, R - 1,220

1,545

L - 225, T - 1,180

T - 275, R - 165

P428

6,315

1,220

140

P429

P445

440

P430

9,540

P525 7,535 | P373 2,465 | P377 3,095 | P447 9,980

INTERSTATE 270

MATCHLINE F (SEE FIGURE BP1-6 SHEET 1)

Hurley Ave

Adclare Rd

Bullard Cir

N / W / E / S

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C | D | E | F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

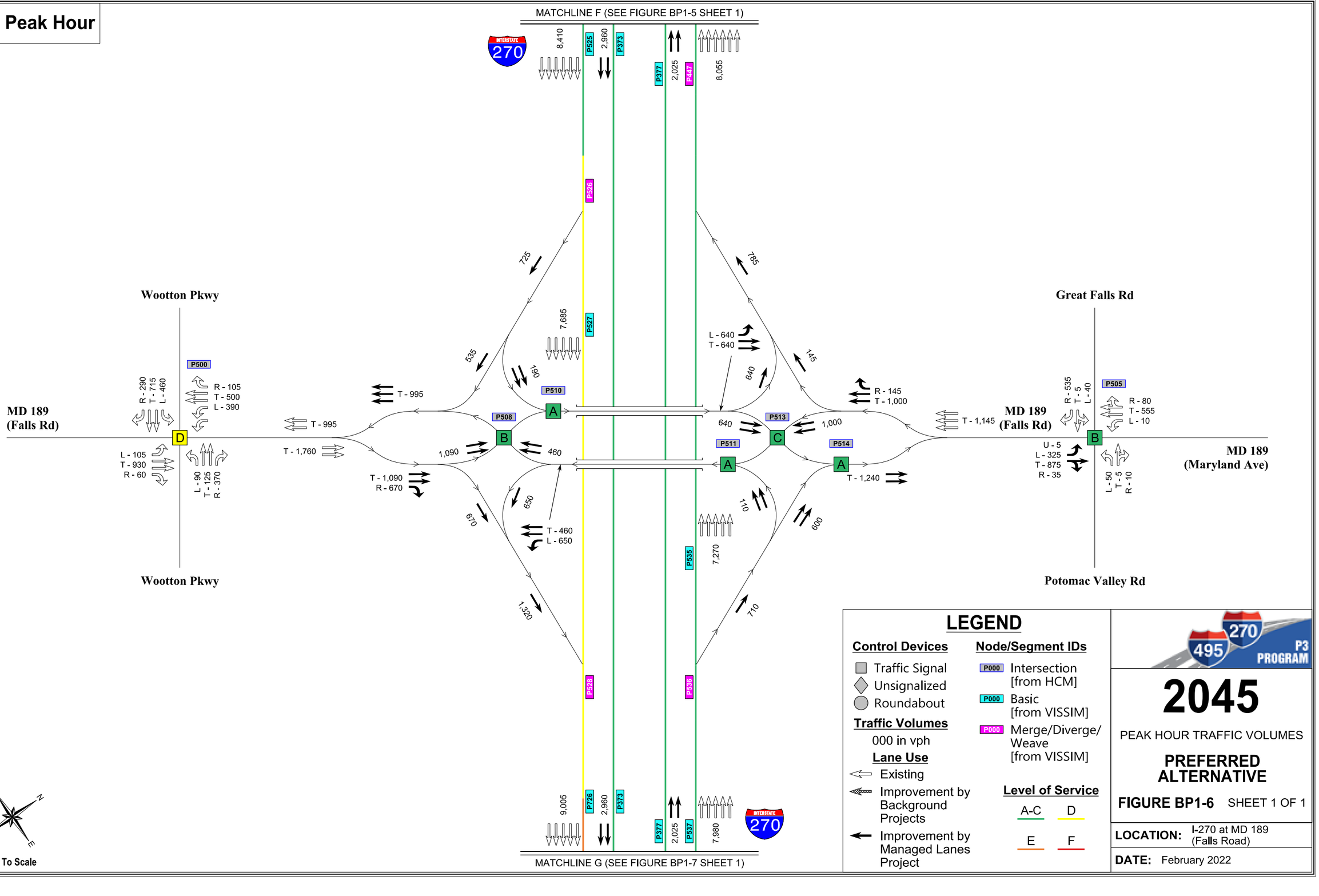
PREFERRED ALTERNATIVE

FIGURE BP1-5 SHEET 1 OF 1

LOCATION: I-270 at MD 28 (Montgomery Ave)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

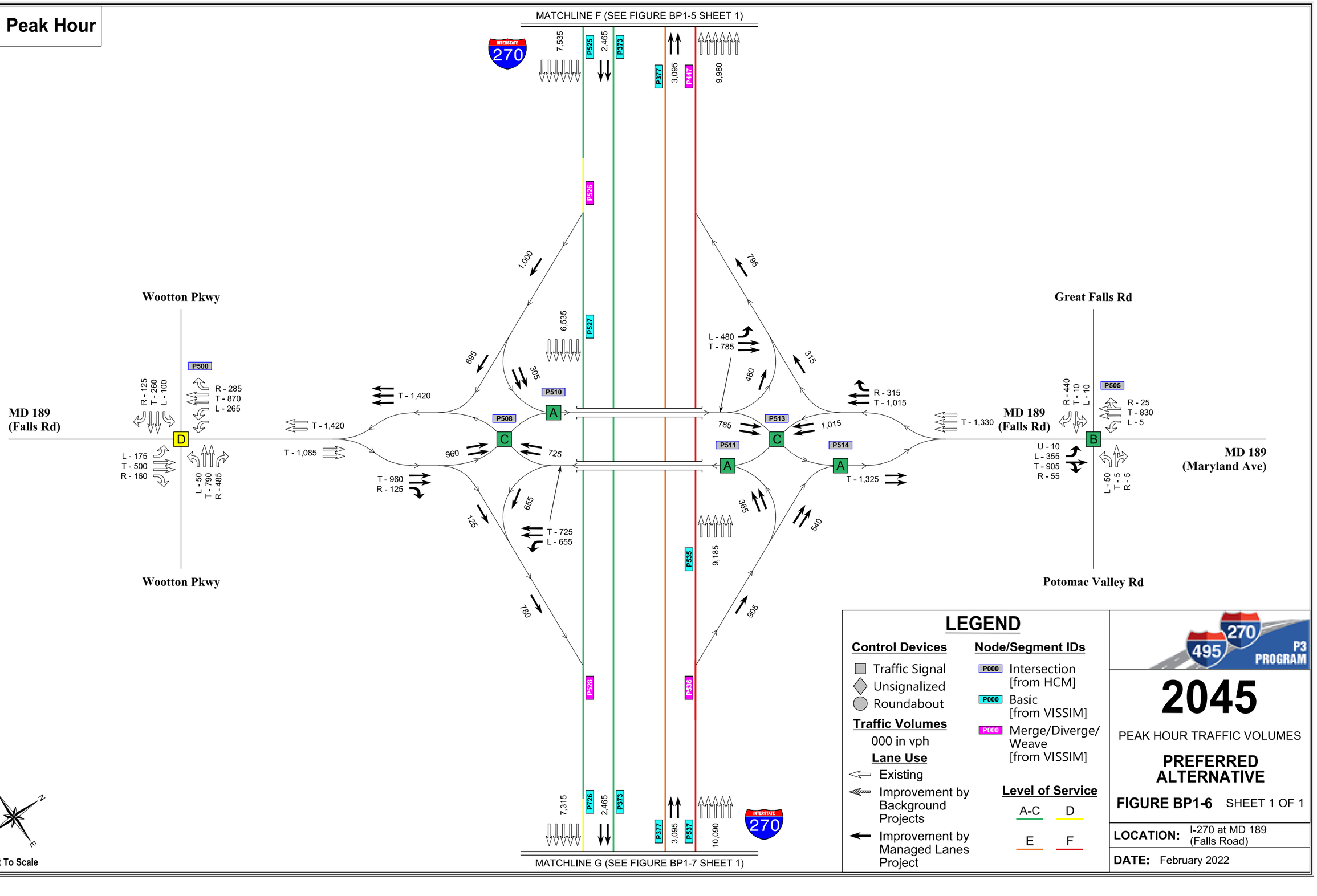
PREFERRED ALTERNATIVE

FIGURE BP1-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-270 / 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

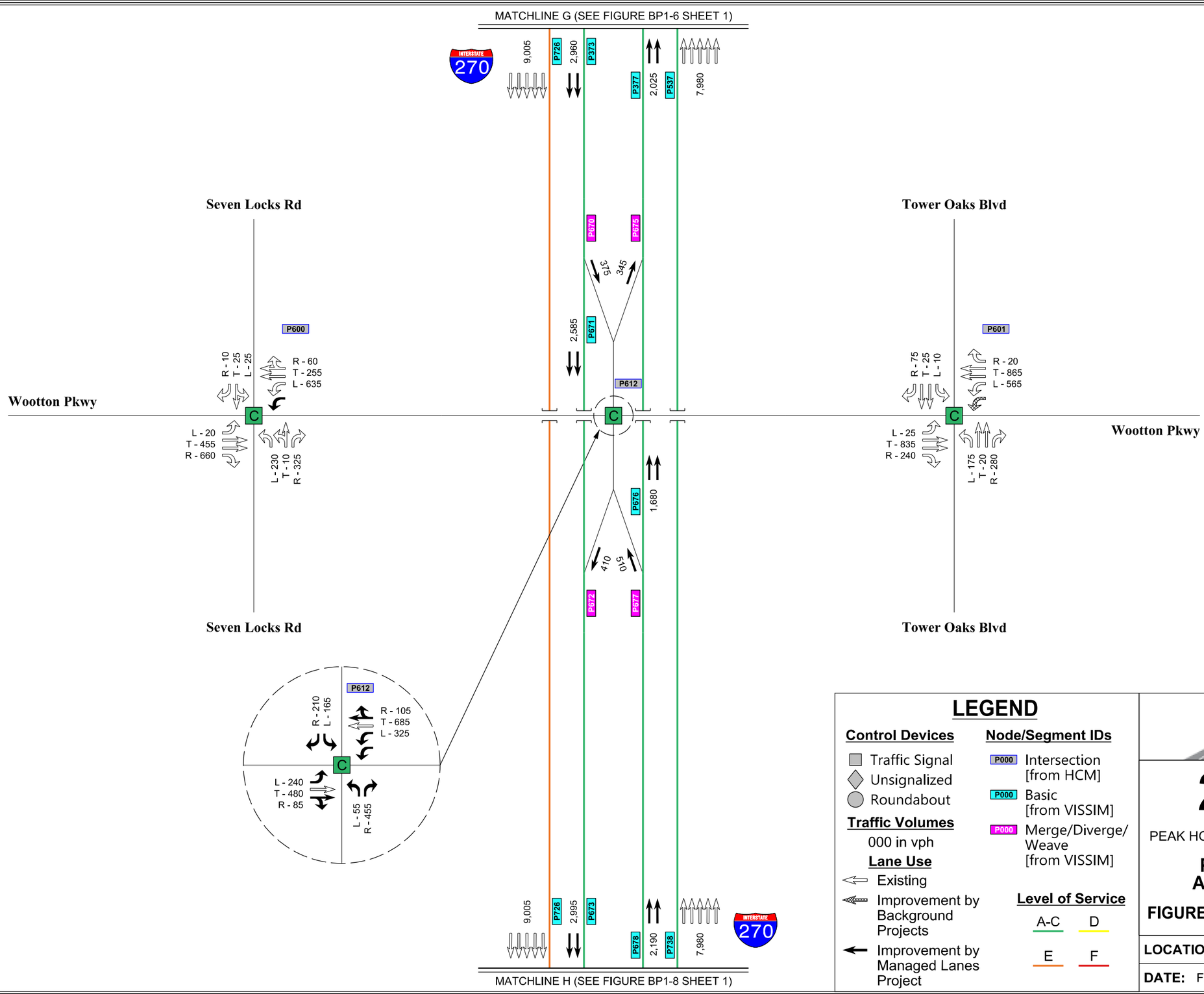
PREFERRED ALTERNATIVE

FIGURE BP1-6 SHEET 1 OF 1

LOCATION: I-270 at MD 189 (Falls Road)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

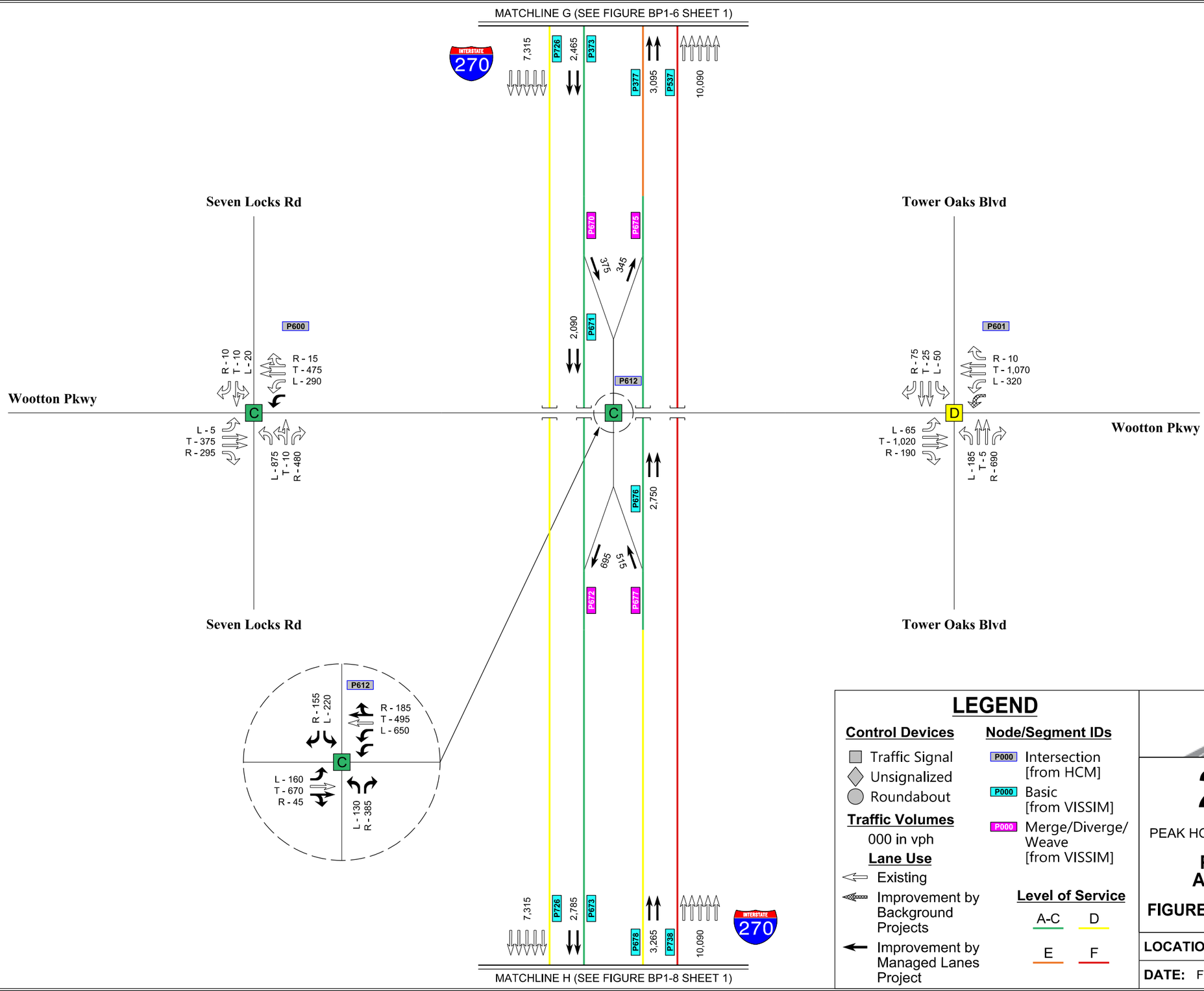
FIGURE BP1-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

PM Peak Hour

MATCHLINE G (SEE FIGURE BP1-6 SHEET 1)



MATCHLINE H (SEE FIGURE BP1-8 SHEET 1)

N
W
E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-7 SHEET 1 OF 1

LOCATION: I-270 at Wootton Parkway

DATE: February 2022

AM Peak Hour

MATCHLINE H (SEE FIGURE BP1-7 SHEET 1)

MATCHLINE I (SEE THIS FIGURE SHEET 2)

MATCHLINE J (SEE THIS FIGURE SHEET 2)

MATCHLINE K (SEE FIGURE BP1-9 SHEET 1)

INTERSTATE 270

Park Potomac Ave

Seven Locks Rd

Montrose Rd

Tower Oaks Blvd

GEICO Entrance

To Parking

P701 P702 P707 P710 P726 P727 P728 P729 P730 P732 P738 P739 P740 P741 P742 P744 P673 P678

9,005 2,995 2,190 7,980 1,220 65 1,155 6,760 640 8,835 170 60 110 1,040 205 R - 40 T - 605 L - 20 R - 5 T - 5 L - 5 L - 570 T - 15 R - 55 L - 20 T - 155 R - 15

R - 70 T - 700 L - 430 R - 120 T - 200 L - 395 L - 70 T - 235 R - 55 L - 15 T - 220 R - 595 R - 120 R - 240 T - 595 T - 1,235 R - 25 R - 210 R - 475 L - 190 R - 125 T - 2,240 L - 65 T - 1,425 620

1,085 315 725 195 8,790 6,650 920 1,260 9,710 2,995 2,190 7,910

N W E S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

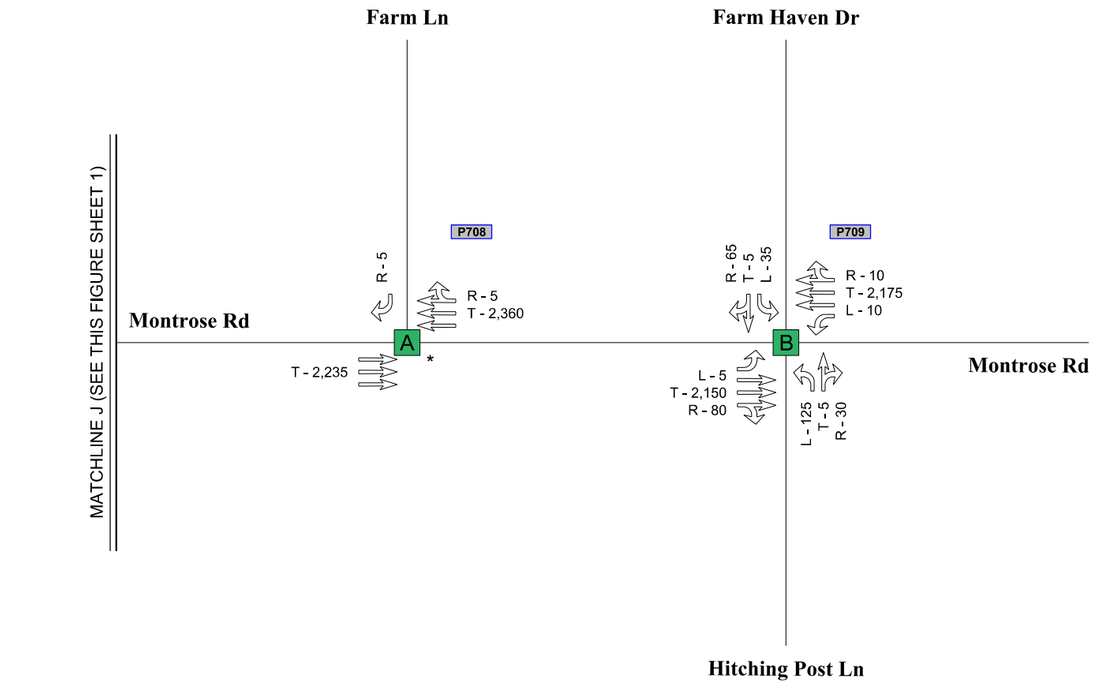
PREFERRED ALTERNATIVE

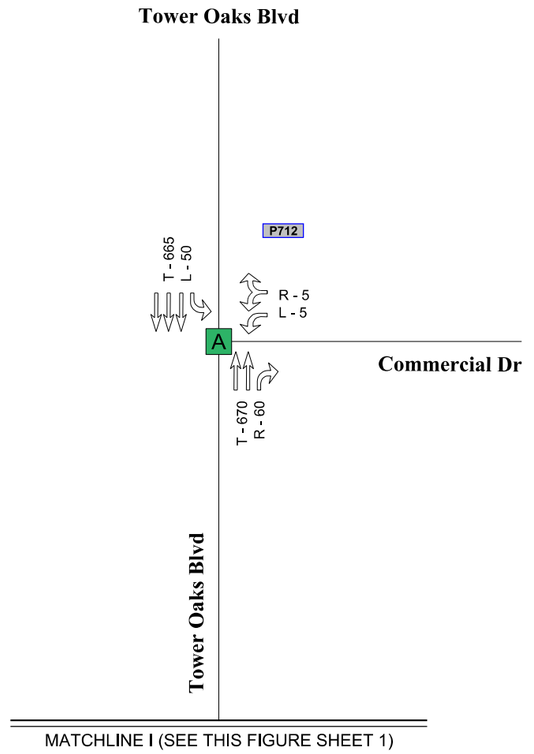
FIGURE BP1-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour





N
W E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour

MATCHLINE H (SEE FIGURE BP1-7 SHEET 1)

MATCHLINE I (SEE THIS FIGURE SHEET 2)

MATCHLINE J (SEE THIS FIGURE SHEET 2)

MATCHLINE K (SEE FIGURE BP1-9 SHEET 1)

INTERSTATE 270

Park Potomac Ave

Seven Locks Rd

Montrose Rd

Tower Oaks Blvd

GEICO Entrance

To Parking

P701 P702 P707 P710 P726 P727 P728 P729 P730 P732 P738 P739 P740 P741 P742 P744 P673 P678

D F B

R - 90, T - 420, L - 160
R - 540, T - 640, L - 740
L - 70, T - 310, R - 40
L - 75, T - 645, R - 485
R - 210
R - 190, T - 1,710
T - 930, R - 25
R - 145
R - 230, T - 515, L - 5
R - 15, T - 20, L - 10
L - 390, T - 5, R - 15
L - 75, T - 145, R - 5
R - 375, L - 165
R - 165, T - 2,785
L - 60, T - 1,570

7,315 2,785 3,265 10,090
6,890 835 1,080 6,645 425 270 155 340 85 425 1,490 1,165 325 410 400 370 520 930 8,600 8,630
7,070 2,785 3,265 9,560

N W E S

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

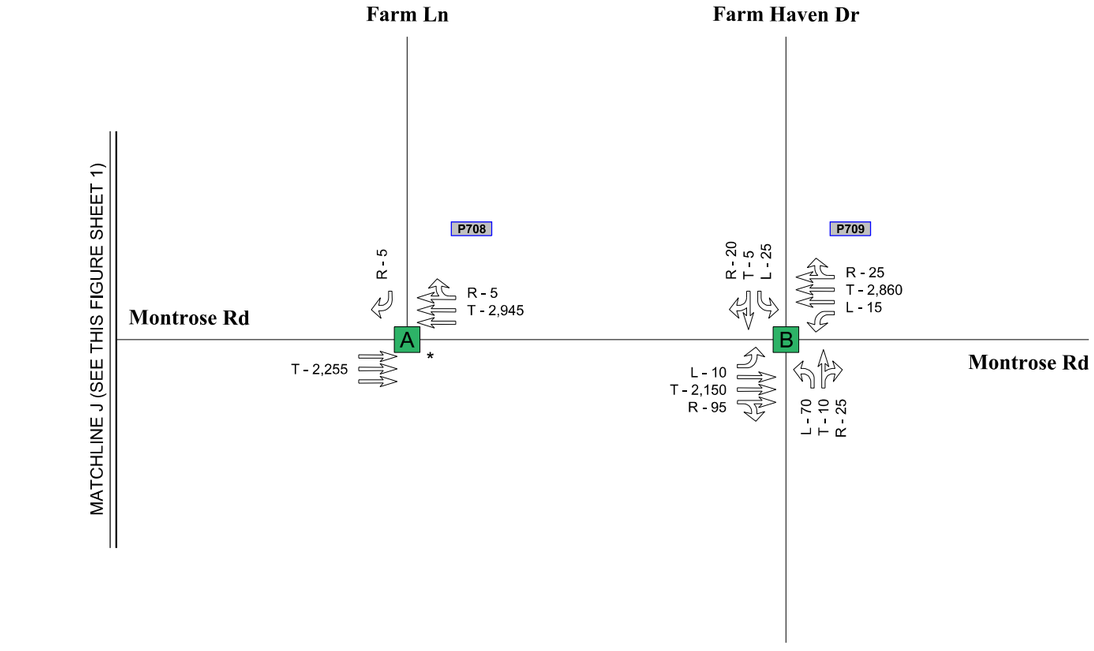
PREFERRED ALTERNATIVE

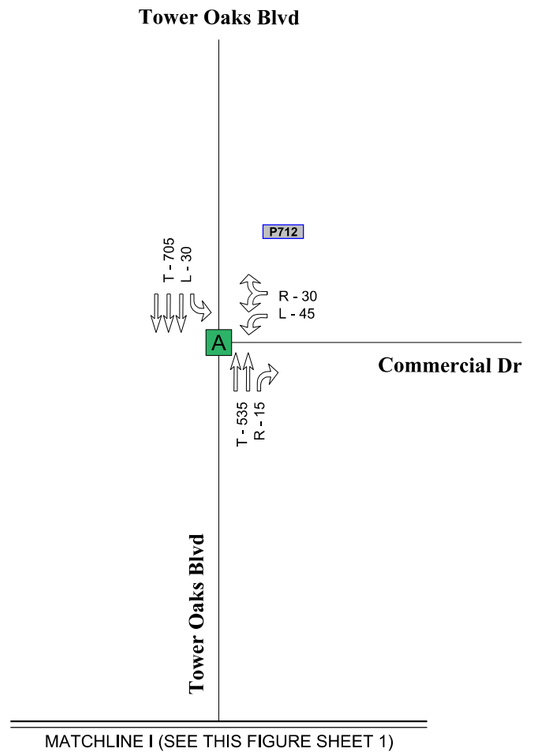
FIGURE BP1-8 SHEET 1 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

PM Peak Hour





N
W E
S
Not To Scale

*Note: Montrose Road at Farm Lane is a Pedestrian Signal with Farm Lane being yield controlled

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C	D
E	F

270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

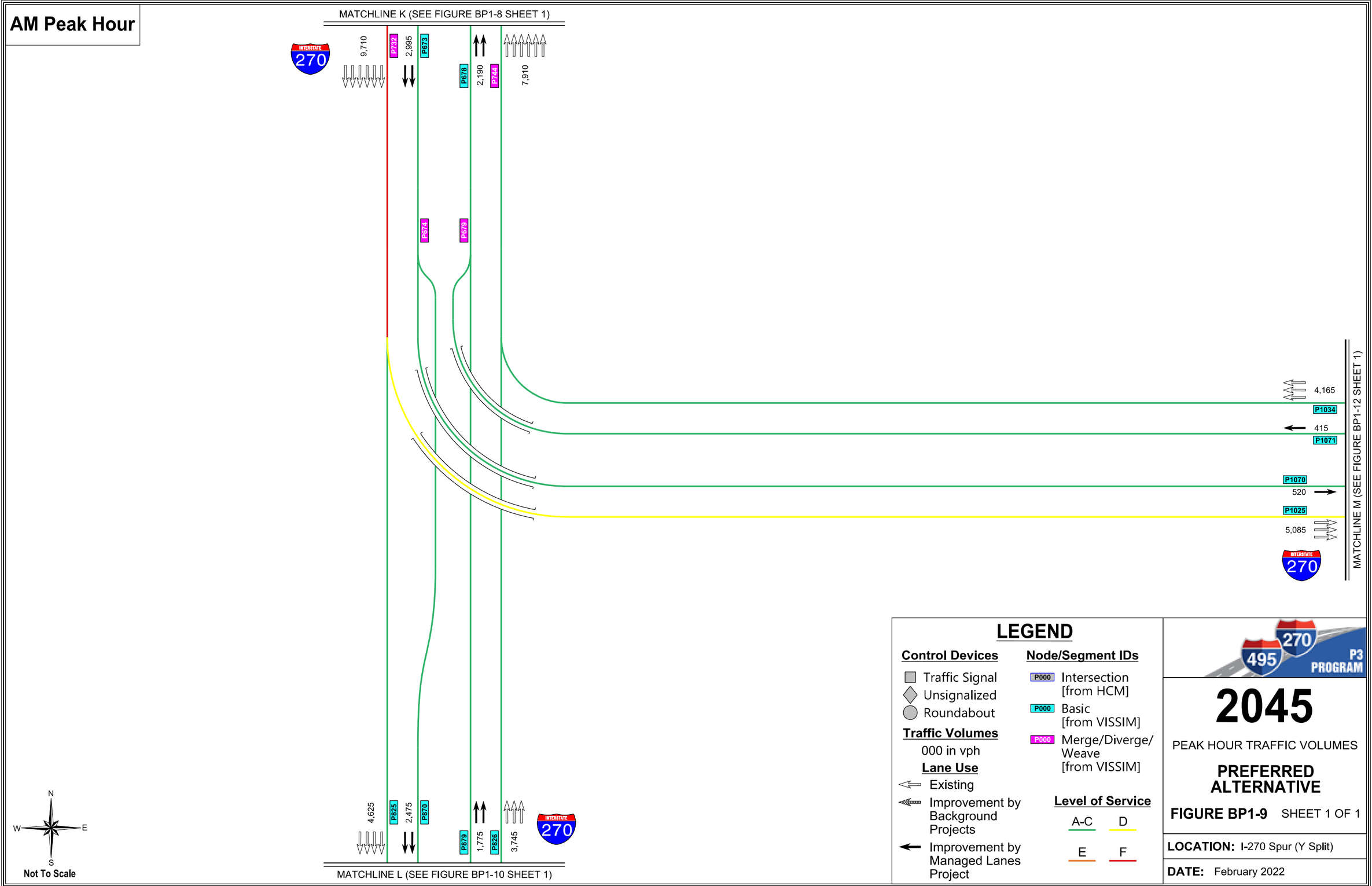
PREFERRED ALTERNATIVE

FIGURE BP1-8 SHEET 2 OF 2

LOCATION: I-270 at Montrose Road

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

495 270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

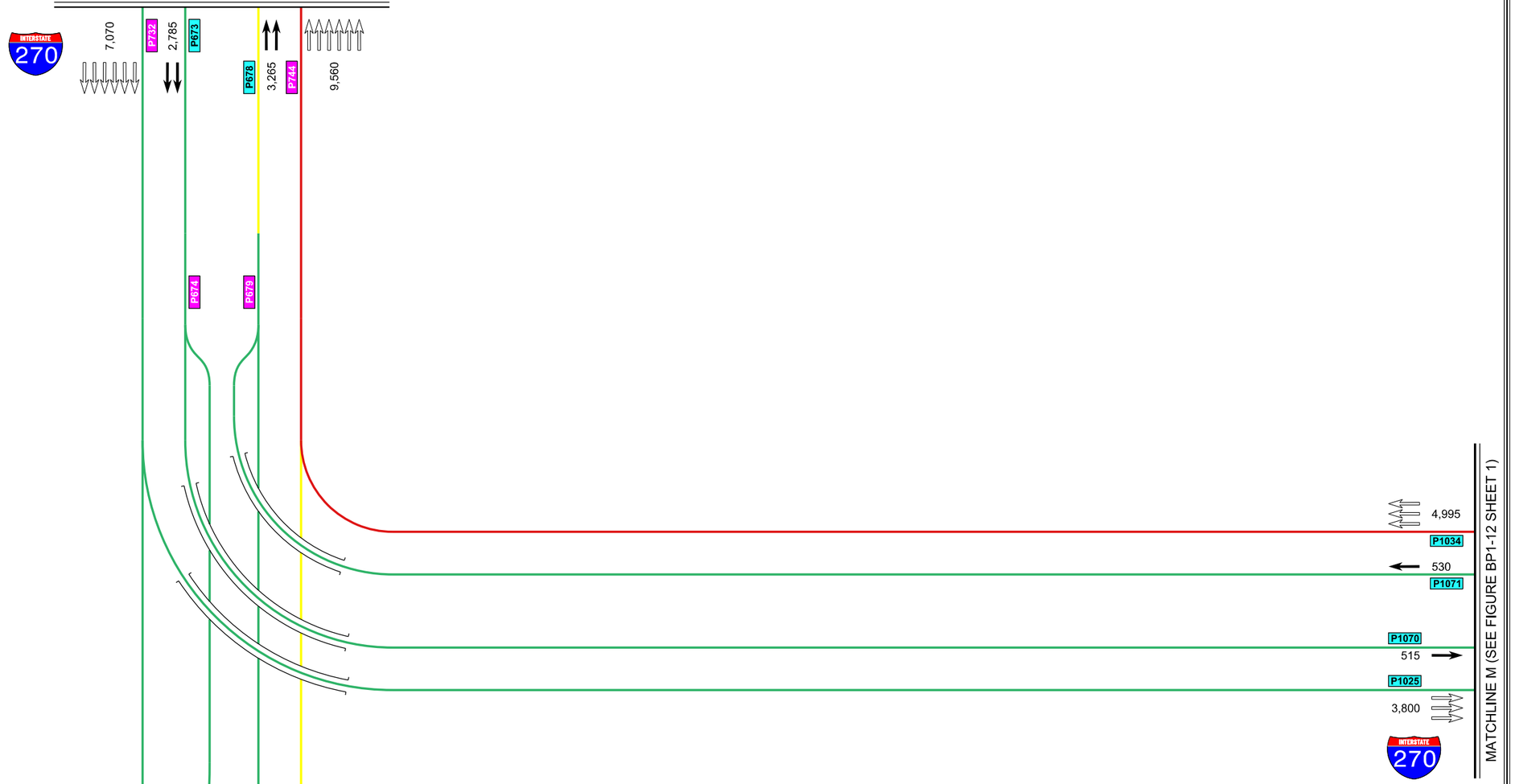
FIGURE BP1-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

PM Peak Hour

MATCHLINE K (SEE FIGURE BP1-8 SHEET 1)



MATCHLINE L (SEE FIGURE BP1-10 SHEET 1)

N
W E
S
Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

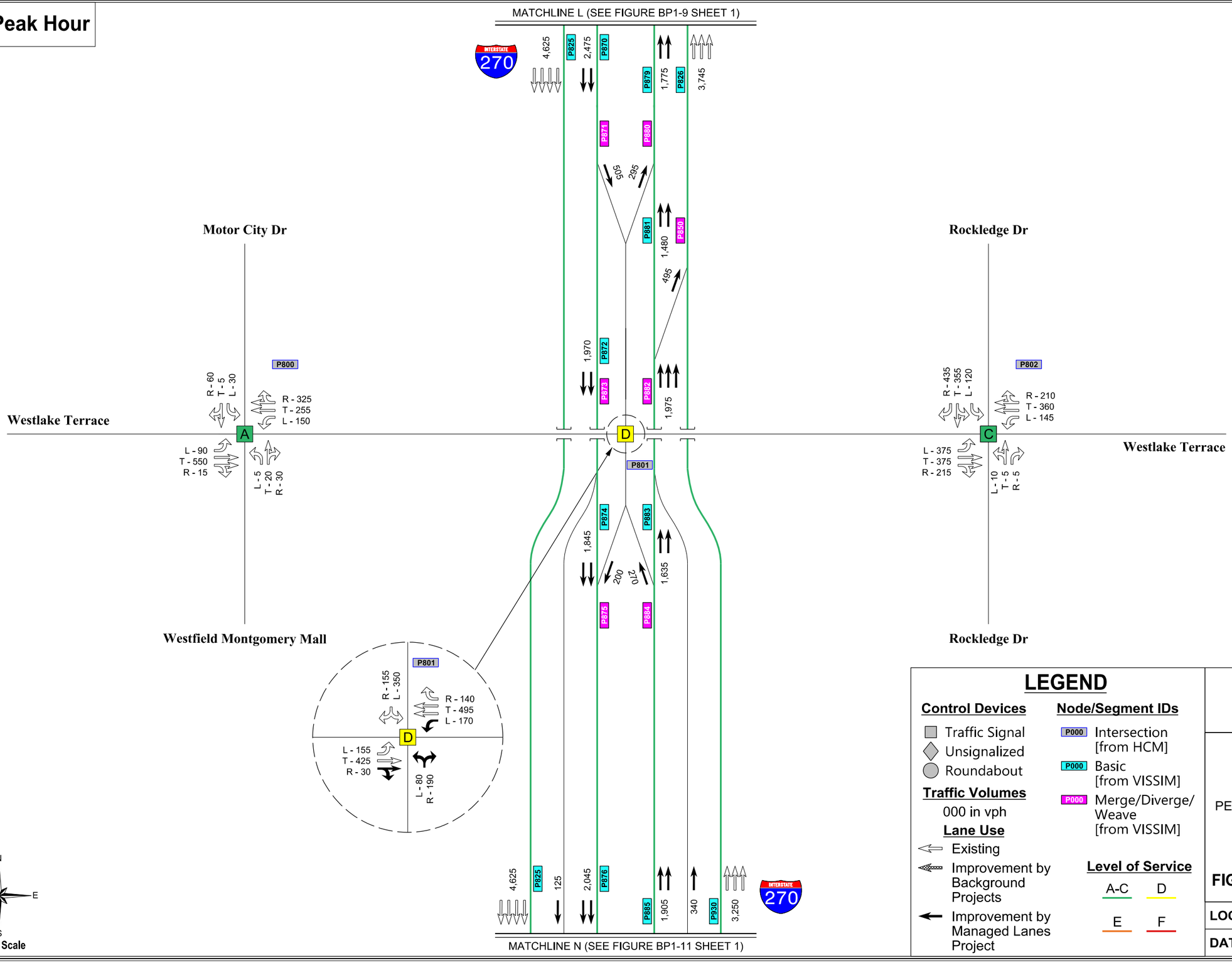
PREFERRED ALTERNATIVE

FIGURE BP1-9 SHEET 1 OF 1

LOCATION: I-270 Spur (Y Split)

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

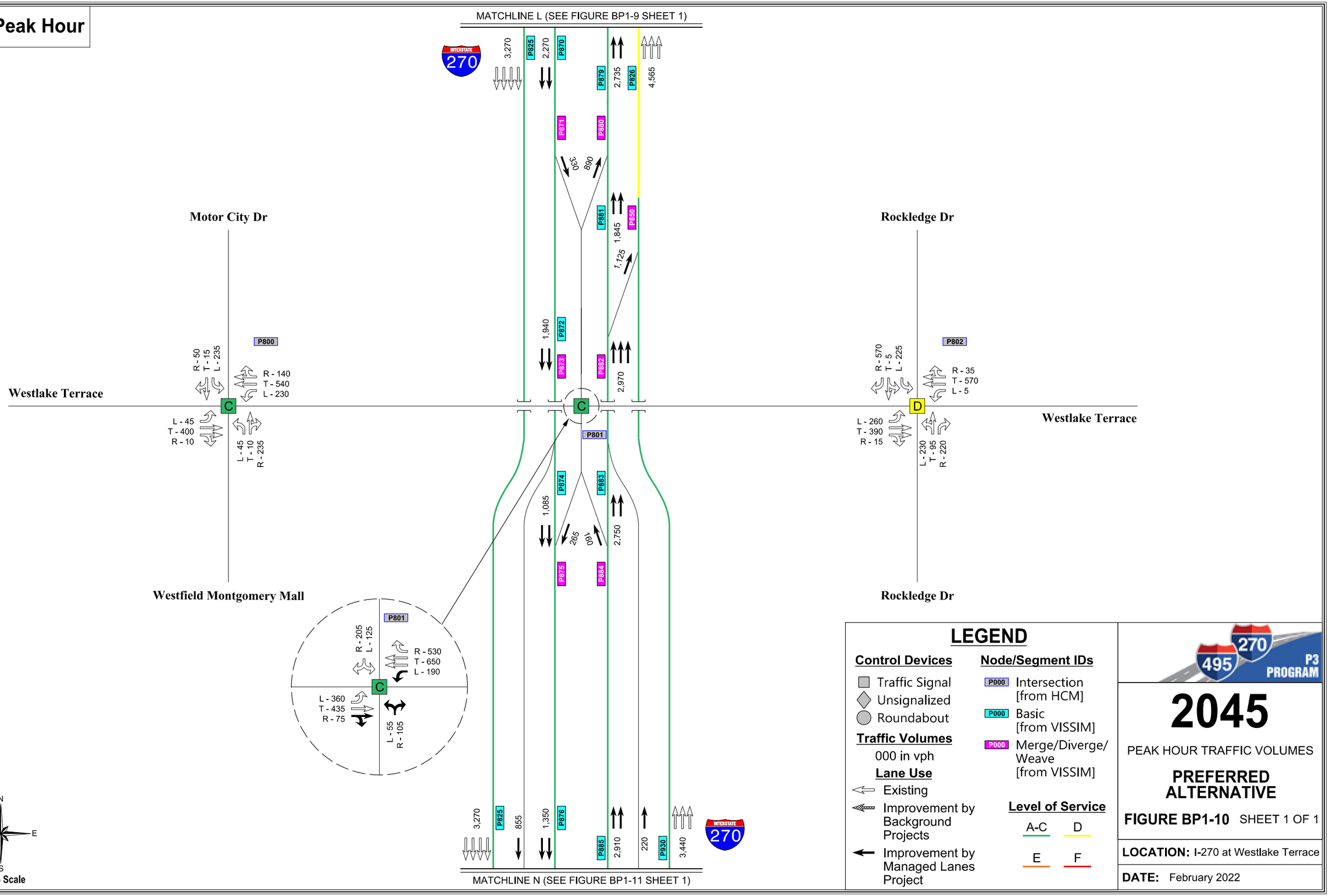
PREFERRED ALTERNATIVE

FIGURE BP1-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

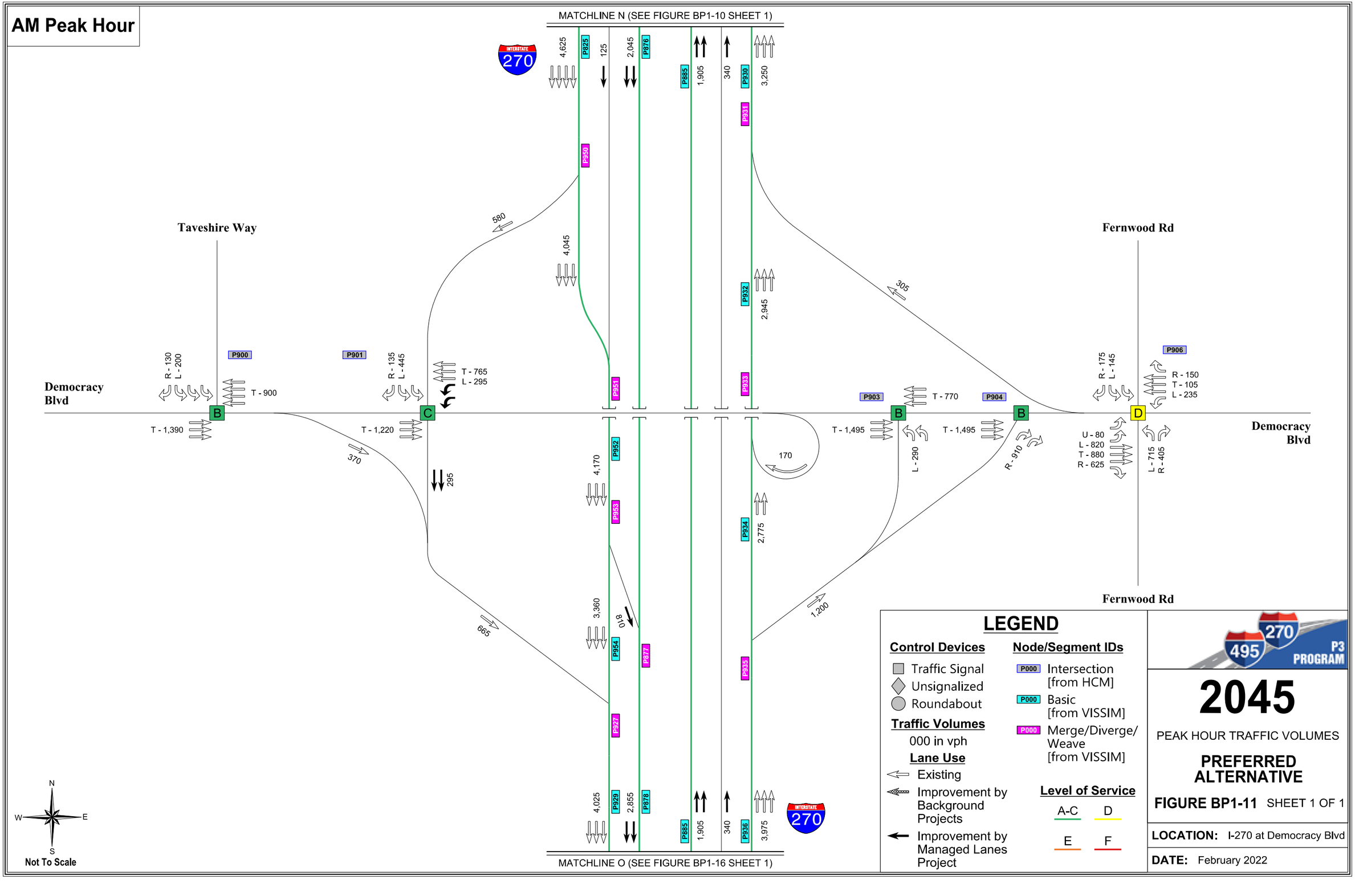
PREFERRED ALTERNATIVE

FIGURE BP1-10 SHEET 1 OF 1

LOCATION: I-270 at Westlake Terrace

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 at 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

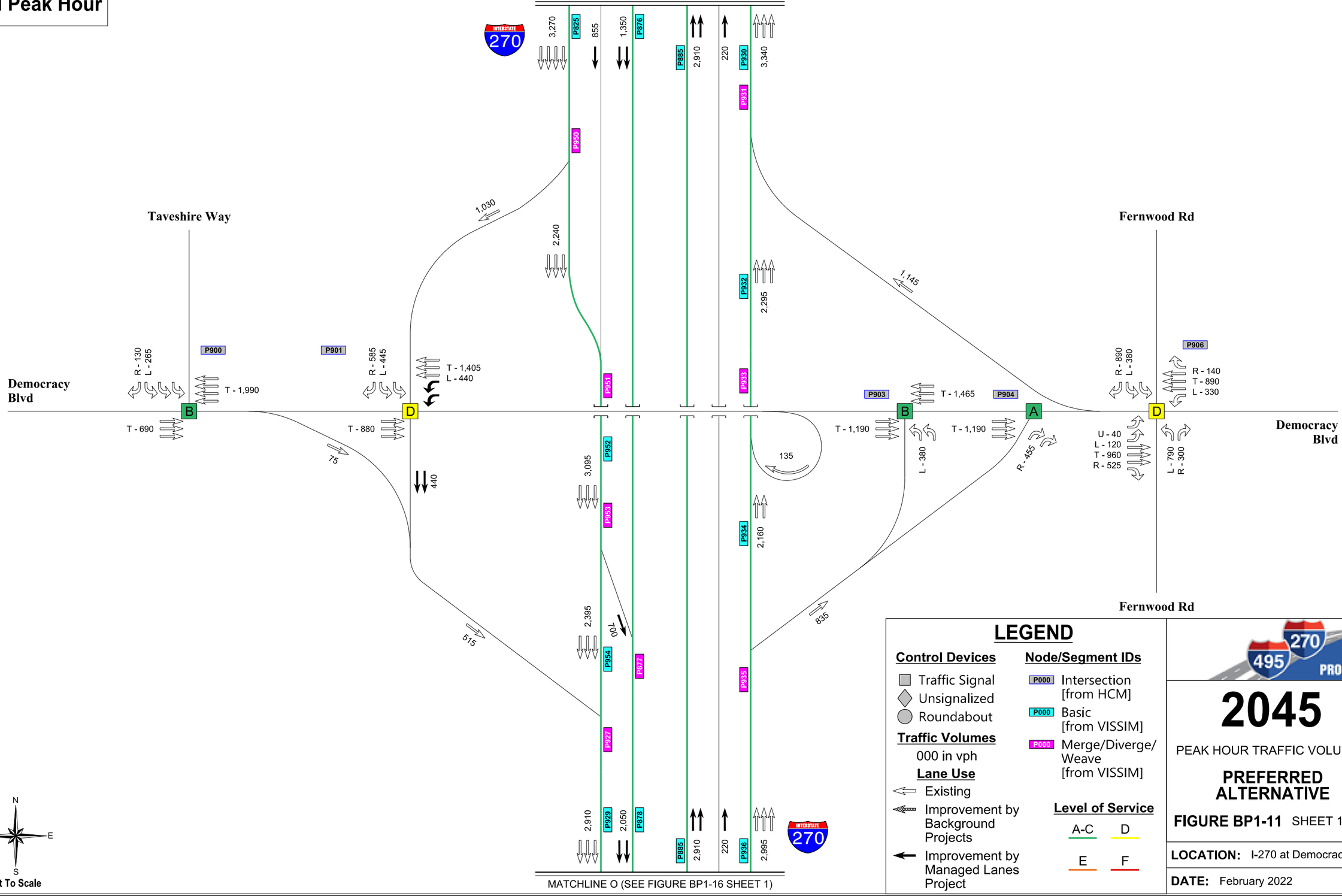
FIGURE BP1-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

PM Peak Hour

MATCHLINE N (SEE FIGURE BP1-10 SHEET 1)



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

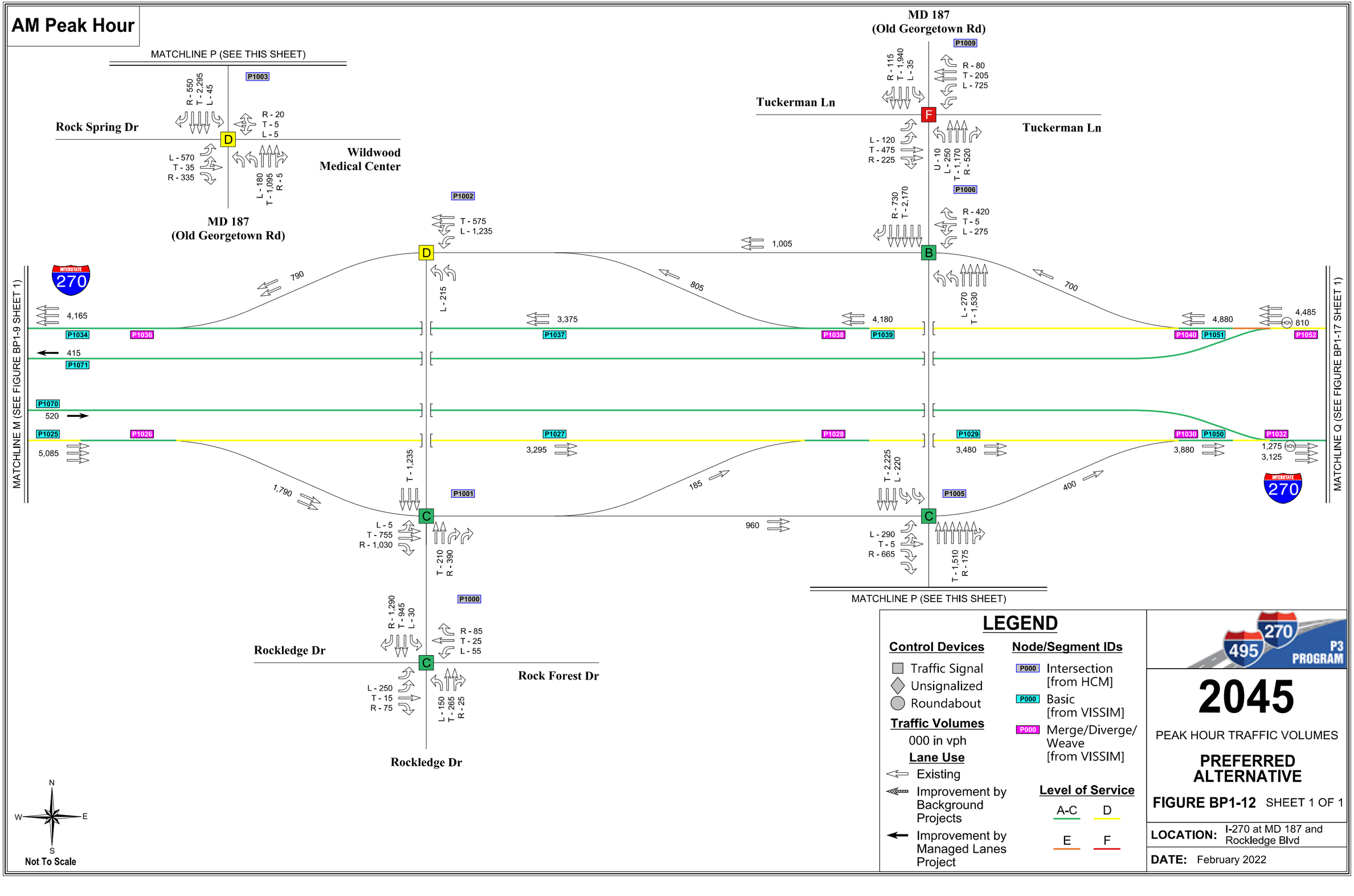
PREFERRED ALTERNATIVE

FIGURE BP1-11 SHEET 1 OF 1

LOCATION: I-270 at Democracy Blvd

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

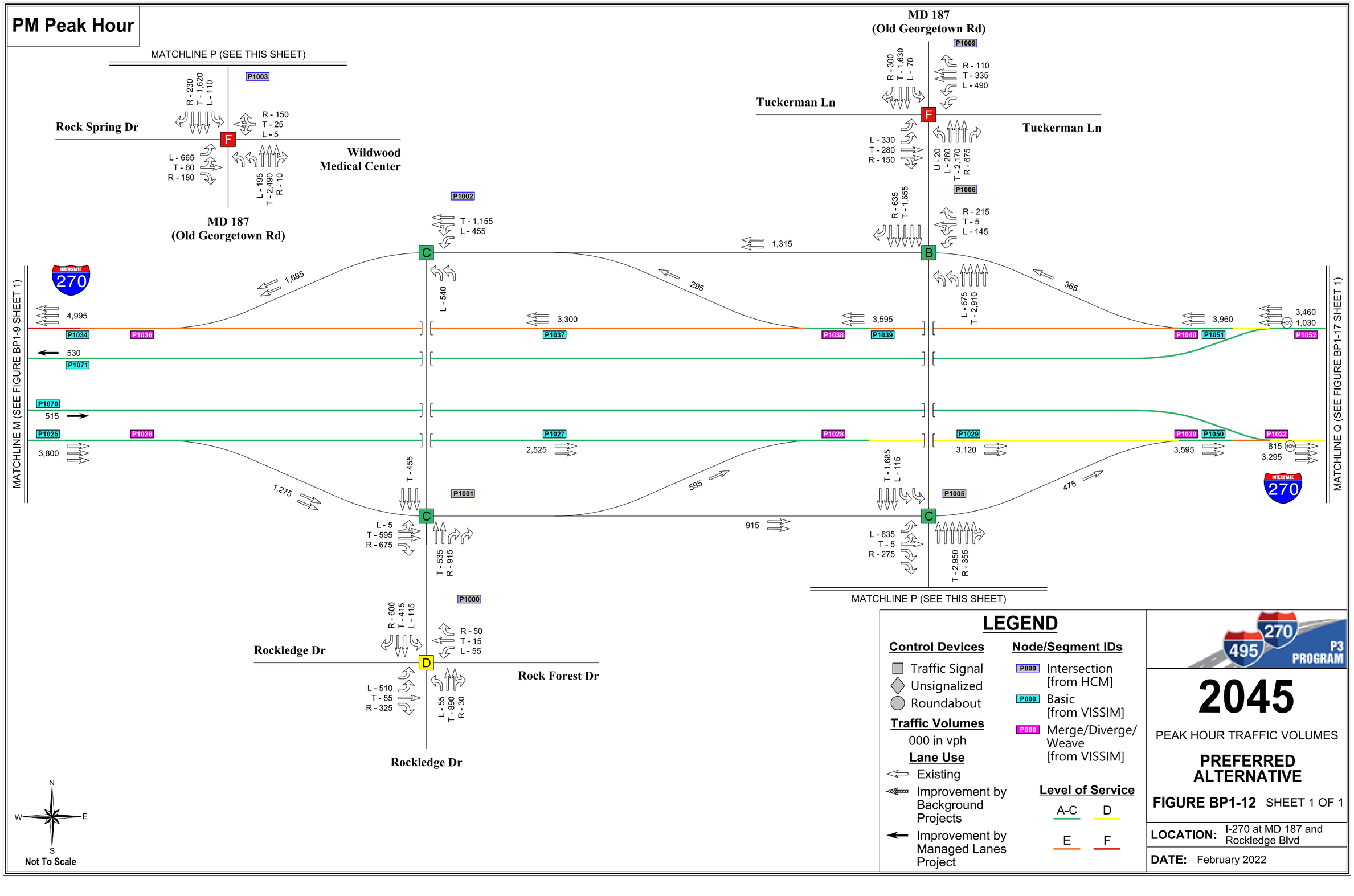
PREFERRED ALTERNATIVE

FIGURE BP1-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

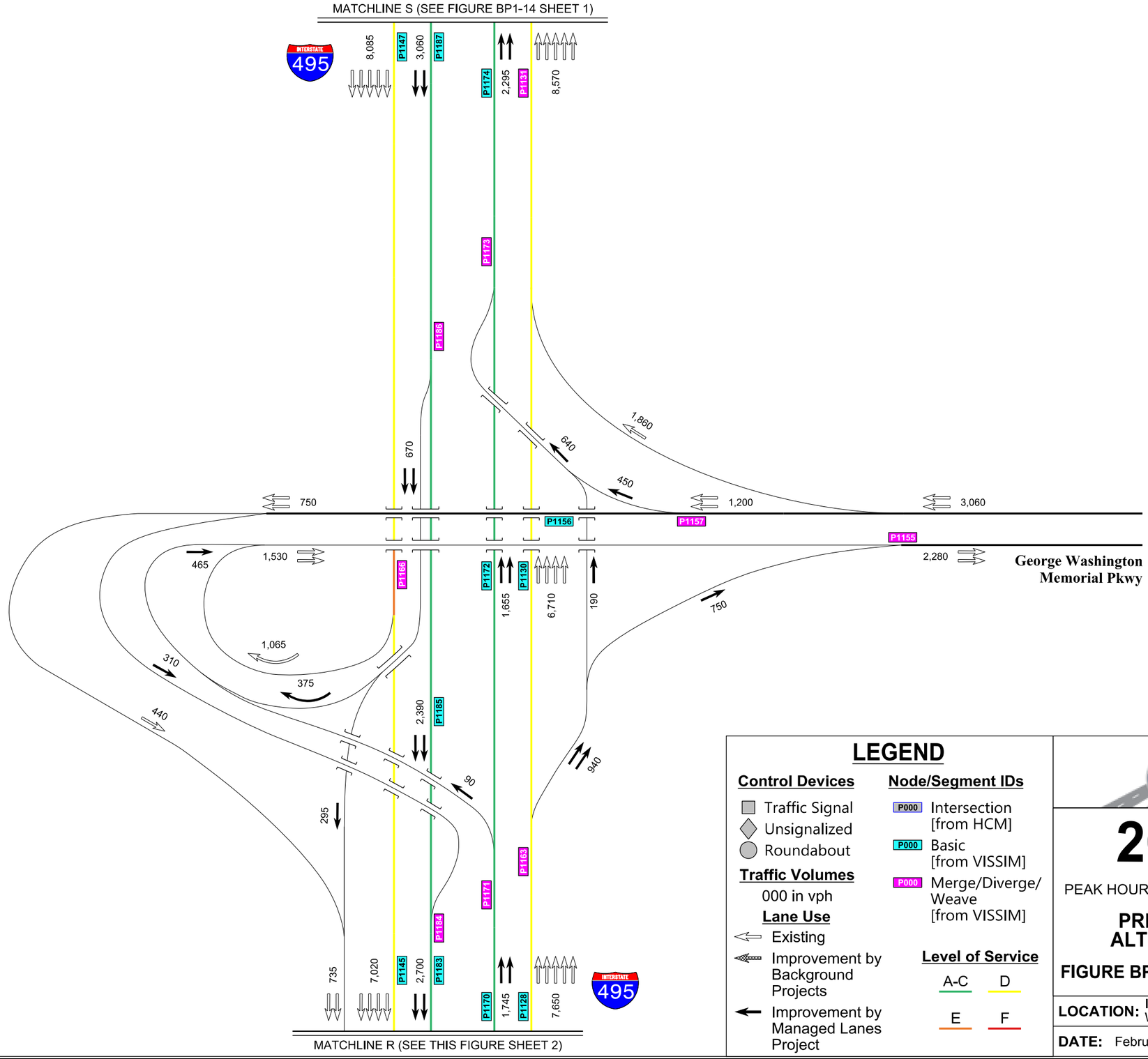
PREFERRED ALTERNATIVE

FIGURE BP1-12 SHEET 1 OF 1

LOCATION: I-270 at MD 187 and Rockledge Blvd

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

495 270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

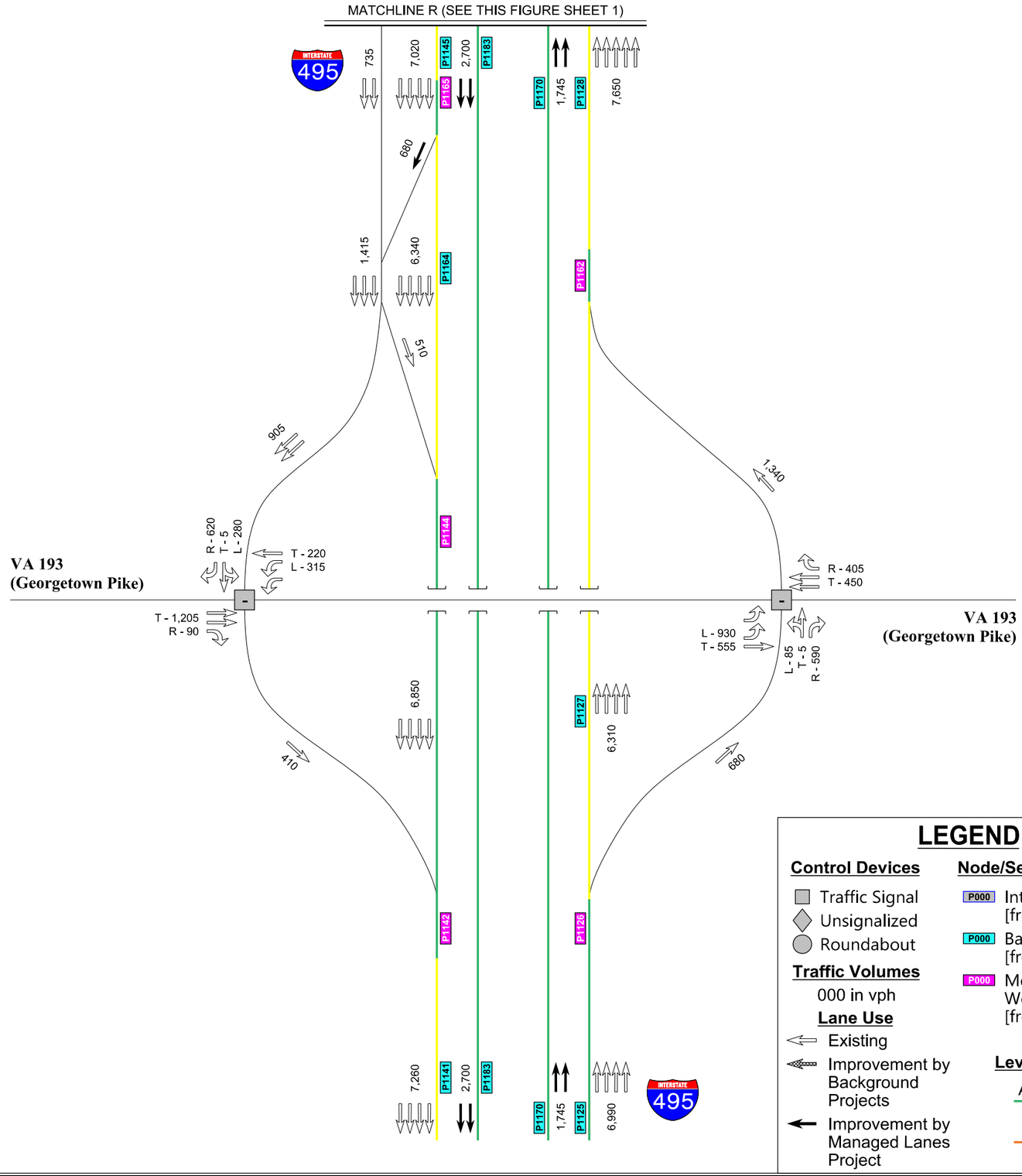
PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

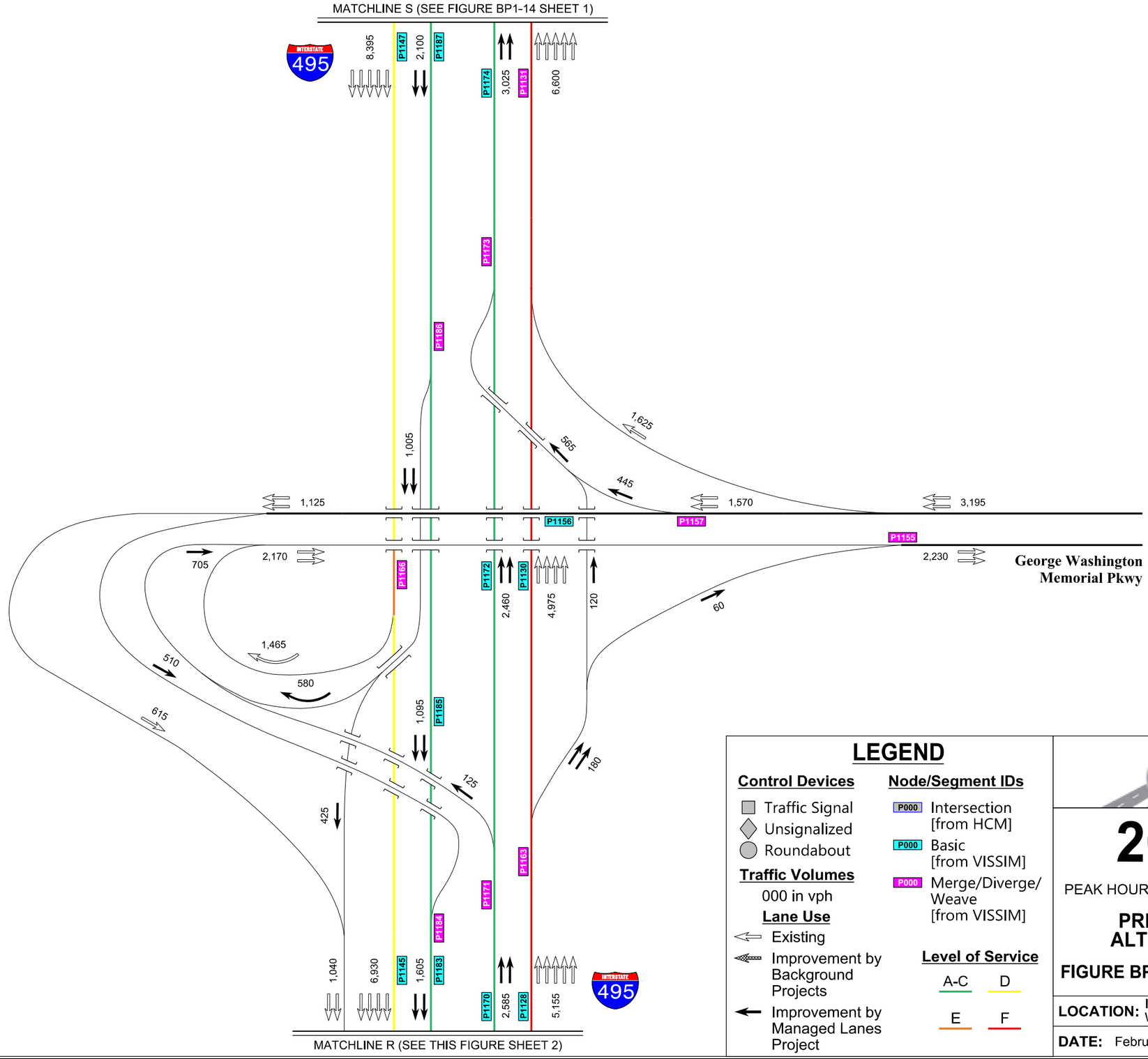
PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

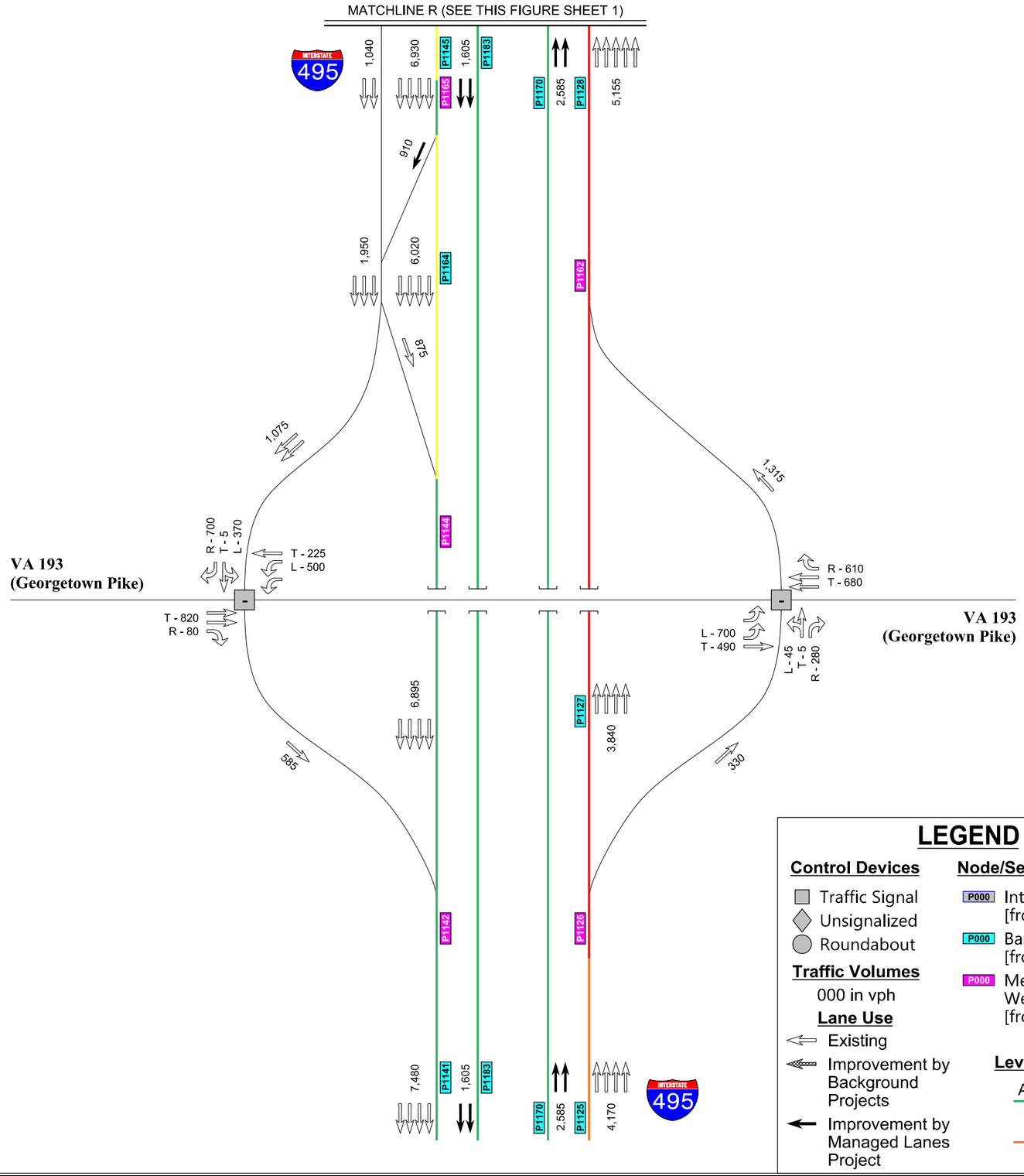
PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 1 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

Not To Scale

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-13 SHEET 2 OF 2

LOCATION: I-495 at VA 193/George Washington Mem.Pkwy.

DATE: February 2022

AM Peak Hour

MATCHLINE U (SEE FIGURE BP1-15 SHEET 1)

MATCHLINE T (SEE THIS SHEET)

MATCHLINE T (SEE THIS SHEET)

MATCHLINE S (SEE FIGURE BP1-13 SHEET 1)

INTERSTATE 495

Carderock

Clara Barton Pkwy

Clara Barton Access Rd

Carderock

Clara Barton Pkwy

P1149 P1150 P1187 P1174 P1135 P1159 P1160 P1134 P1148 P1133 P1161 P1158 P1167 P1147

6,905 3,060 2,295 7,990 6,770 7,885 8,085 3,060 2,295 8,570

135 140 5 625 105 135 550 690 275 795 1,505 1,315 710 685 275 1,505 630 1,260

Not To Scale

LEGEND

Control Devices
- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes
000 in vph

Lane Use
- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs
- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service
A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

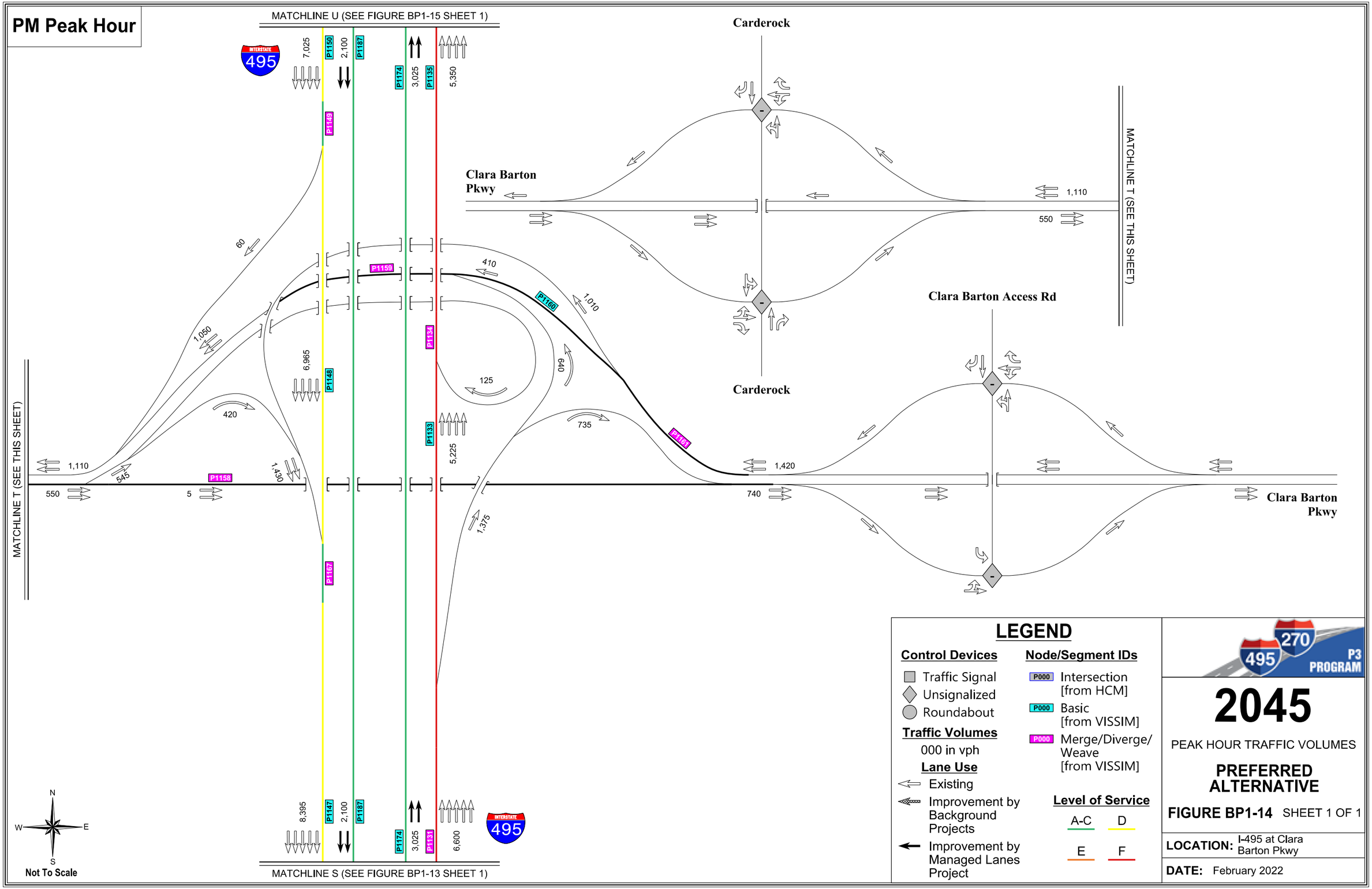
PREFERRED ALTERNATIVE

FIGURE BP1-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

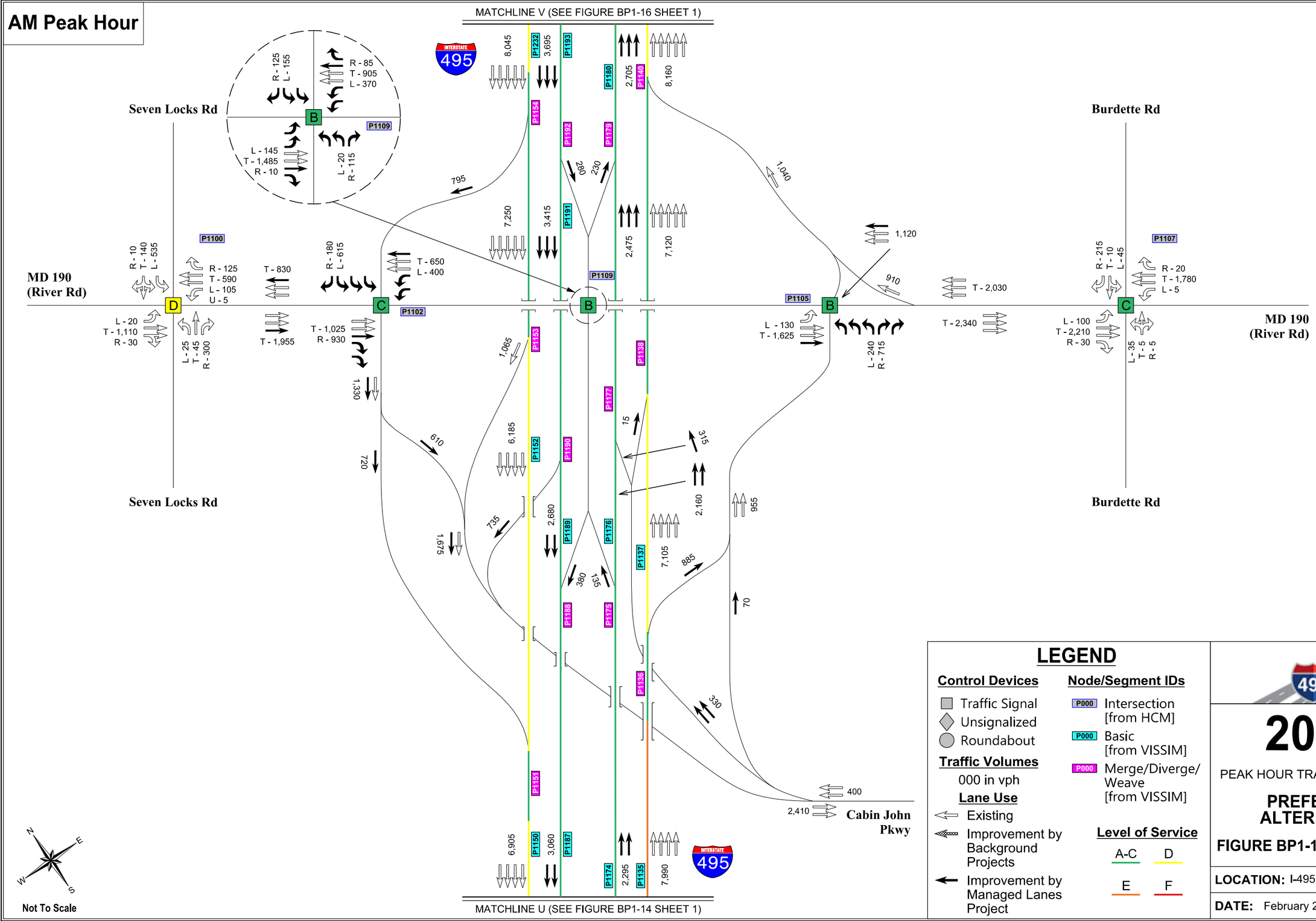
PREFERRED ALTERNATIVE

FIGURE BP1-14 SHEET 1 OF 1

LOCATION: I-495 at Clara Barton Pkwy

DATE: February 2022

AM Peak Hour



Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

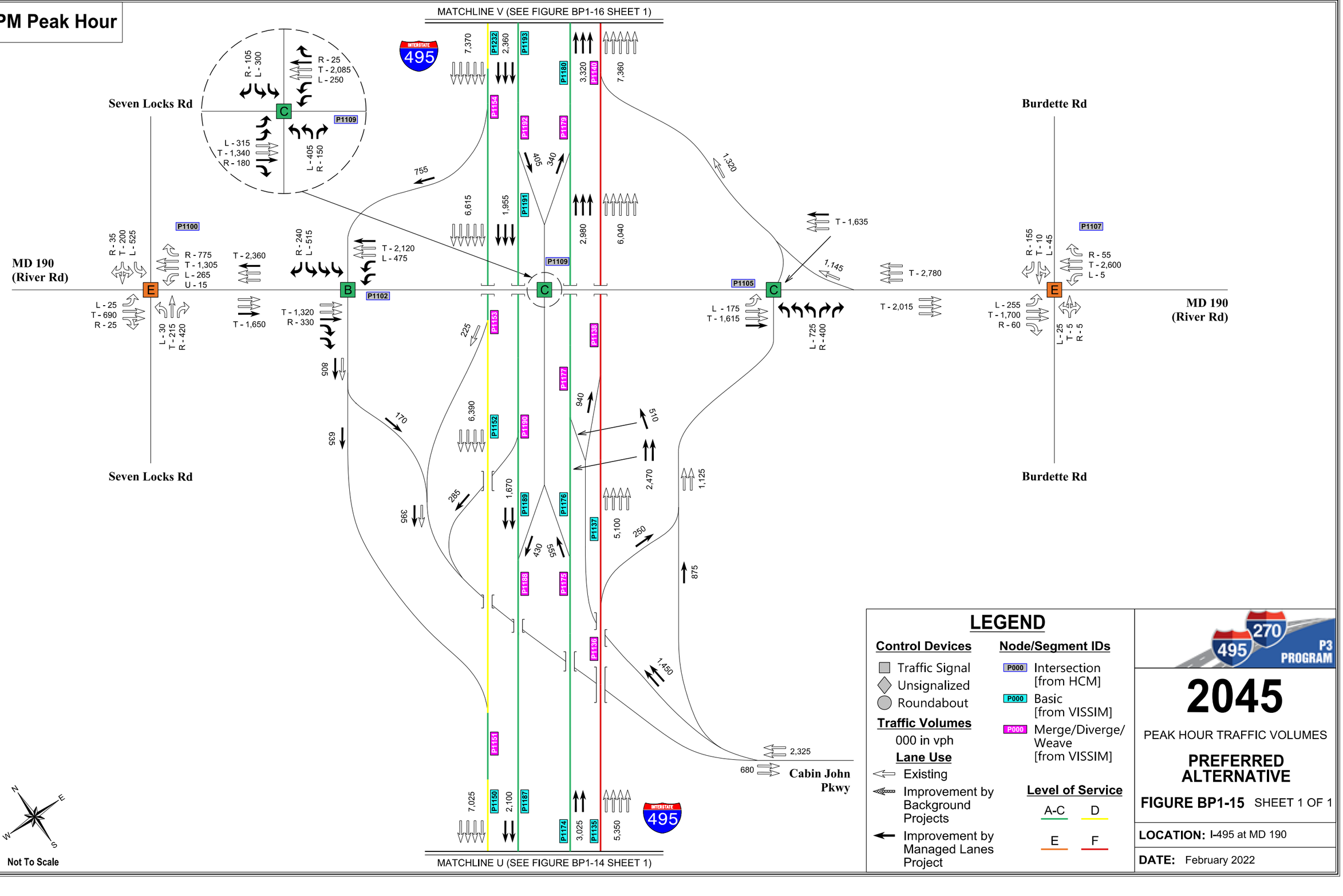
PREFERRED ALTERNATIVE

FIGURE BP1-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

PM Peak Hour



Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-495 & I-270 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

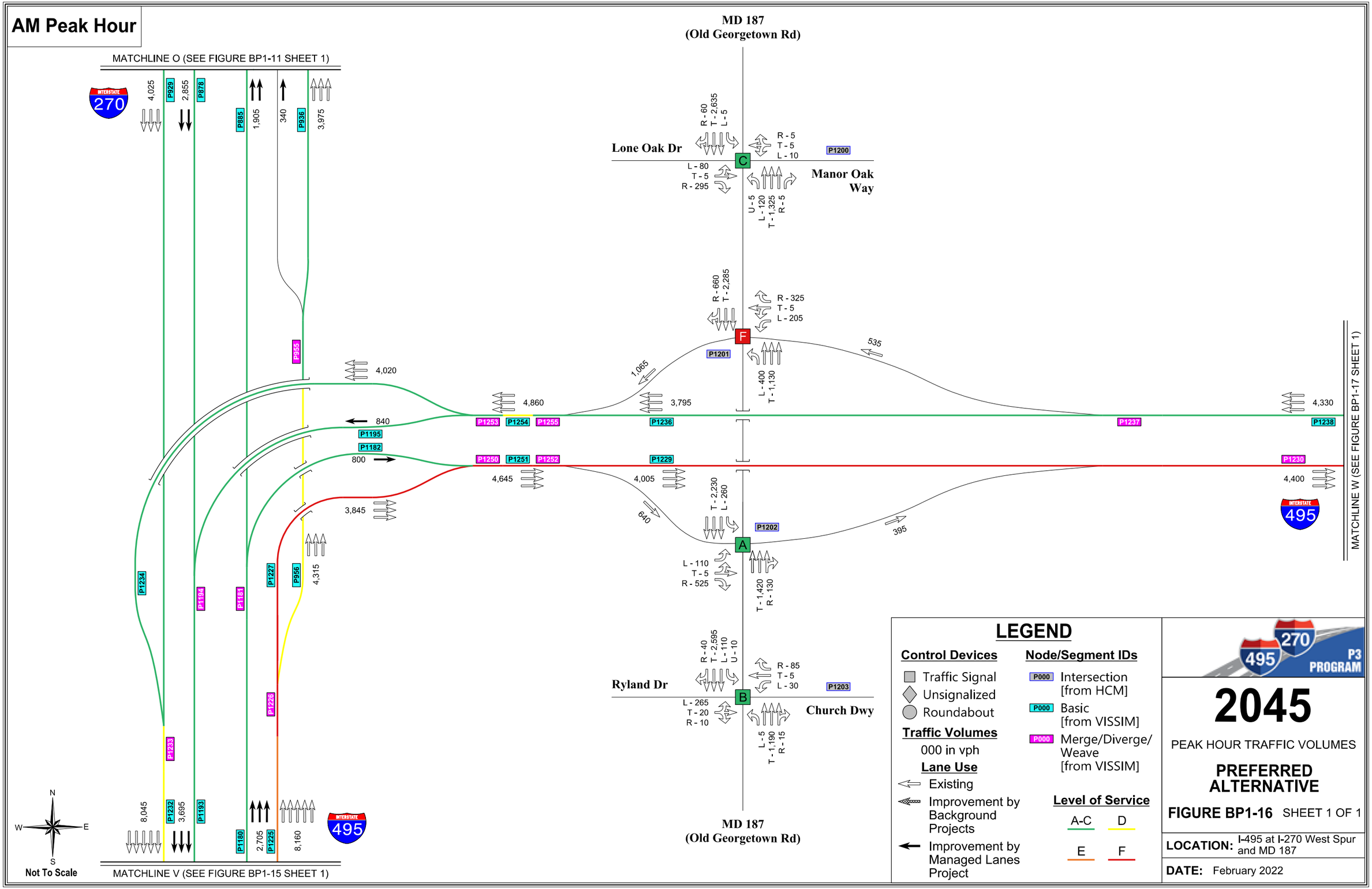
PREFERRED ALTERNATIVE

FIGURE BP1-15 SHEET 1 OF 1

LOCATION: I-495 at MD 190

DATE: February 2022

AM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

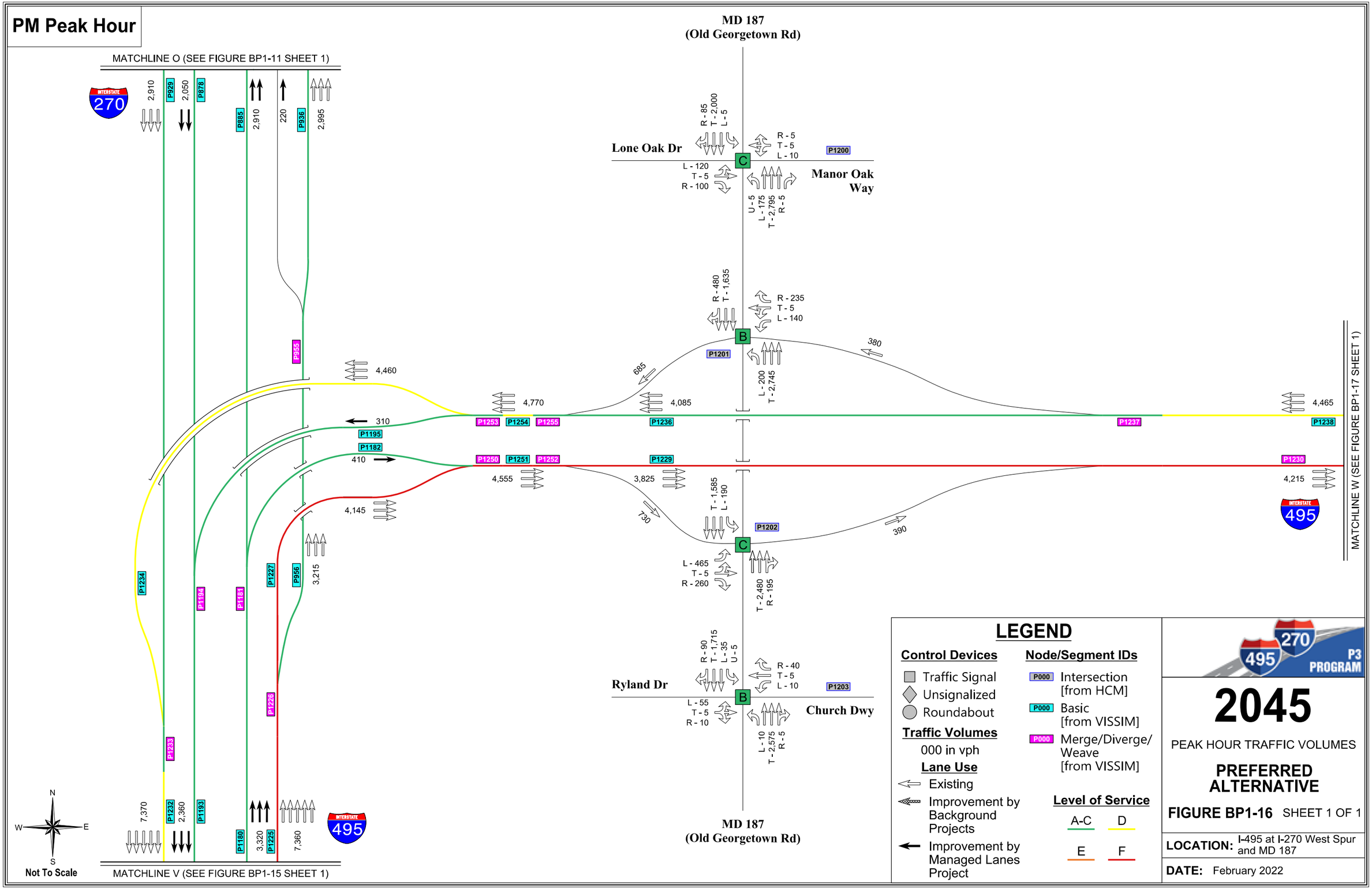
PREFERRED ALTERNATIVE

FIGURE BP1-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

PM Peak Hour



LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 / I-495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-16 SHEET 1 OF 1

LOCATION: I-495 at I-270 West Spur and MD 187

DATE: February 2022

AM Peak Hour

MATCHLINE Q (SEE FIGURE BP1-12 SHEET 1)

MATCHLINE W (SEE FIGURE BP1-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

MATCHLINE X (SEE THIS SHEET)

INTERSTATE 270

4,485
HOV 810
P1041

P1032
1,275 HOV
3,125

P1042

P1033

P1043

4,340

955

INTERSTATE 495

4,330
P1238

P1331

3,025

1,375

P1044

P1332

T - 1,950
L - 1,045

P1333

1,045

445

P1325

4,400

P1326

3,970

P1327

6,995

L - 955
T - 775

1,000

8,225

P1334

9,225

P1432

P1328

P1330

P1425

8,305

INTERSTATE 495

L - 445
T - 1,730

265

8,040

T - 3,325

430

C
P1307

R - 430

T - 2,175
R - 260

MD 355 (Rockville Pike)

R - 125
T - 2,145

R - 115
T - 135
L - 625

Grosvenor Ln P1300

C

R - 785

-

Grosvenor Ln

L - 115
R - 225

T - 1,215

T - 90
R - 470

R - 560
T - 1,215

Alta Vista Rd

R - 95
T - 3,410
L - 5
U - 320

R - 15
T - 5
L - 5

B
P1310

L - 75
T - 5
R - 25

Bellevue Dr

T - 1,575
R - 5

MD 355 (Rockville Pike)

Pooks Hill Rd P1309

R - 120
T - 3,635

D

L - 510
R - 195

L - 55
T - 1,930

N
W E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

I-270 495 P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

PM Peak Hour

MATCHLINE Q (SEE FIGURE BP1-12 SHEET 1)

MATCHLINE W (SEE FIGURE BP1-16 SHEET 1)

MATCHLINE X (SEE THIS SHEET)

INTERSTATE 270

3,460
HOV 1,030
P1041

P1032
815 HOV
3,295

P1042

P1033

P1043

3,275

1,215

INTERSTATE 495

4,465
P1238

P1331

2,950

1,160

P1044

P1332

T - 1,250
L - 900

P1333

900

335

7,405

P1334

8,610
P1432

P1325
4,215

P1326
3,810

P1327

6,760

P1328

P1330

P1425
8,100

INTERSTATE 495

L - 335
T - 2,830

440

7,660

405

T - 2,410

C
P1307

R - 405

T - 3,165
R - 440

R - 340
T - 2,475

Pooks Hill Rd
P1309

B

L - 255
R - 75

L - 65
T - 3,350

MATCHLINE X (SEE THIS SHEET)

MD 355
(Rockville Pike)

R - 135
T - 1,715

R - 145
T - 140
L - 245

Grosvenor Ln
P1300

D

R - 430

-

Grosvenor Ln

L - 165
R - 190

T - 1,865

T - 100
R - 855

R - 955
T - 1,865

L - 1,215
T - 1,615

1,205

MD 355
(Rockville Pike)

MATCHLINE X (SEE THIS SHEET)

R - 145
T - 2,165
L - 5
U - 235

Alta Vista Rd

C

R - 5
T - 5
L - 10

P1310

Bellevue Dr

L - 95
T - 5
R - 15

U - 5
L - 10
T - 3,080
R - 5

N
W E
S

Not To Scale

LEGEND

Control Devices

- Traffic Signal
- Unsignalized
- Roundabout

Traffic Volumes

000 in vph

Lane Use

- Existing
- Improvement by Background Projects
- Improvement by Managed Lanes Project

Node/Segment IDs

- P000 Intersection [from HCM]
- P000 Basic [from VISSIM]
- P000 Merge/Diverge/ Weave [from VISSIM]

Level of Service

A-C D E F

P3 PROGRAM

2045

PEAK HOUR TRAFFIC VOLUMES

PREFERRED ALTERNATIVE

FIGURE BP1-17 SHEET 1 OF 1

LOCATION: I-495 at I-270 East Spur and MD 335

DATE: February 2022

2017 EXISTING CONDITIONS

SYNCHRO ANALYSIS OUTPUT TABLES

Table EX-2B - I-370 (Sam Eig Highway) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 100‡	I-370 (Sam Eig Hwy) at Fields Rd	24.6	C	Fields Rd WB	54.7	D	L	73.4	E	90	127
							R	45.5	D	162	192
				I-370 (Sam Eig Hwy) NB	19.8	B	T	20.5	C	537	655
							R	16.0	B	192	273
				I-370 (Sam Eig Hwy) SB	23.0	C	L	75.2	E	250	299
							T	4.8	A	123	157
				Washingtonian Blvd Ramp SEB	3.8	A	R	3.8	A	20	38
E 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	17.9	B	Washingtonian Blvd Ramp WB	21.9	C	L	22.2	C	86	184
							L/T	22.1	C	85	182
							R	17.8	B	0	0
				Washingtonian Blvd NB	1.8	A	L	0.7	A	0	1
							T	2.0	A	2	3
				Washingtonian Blvd SB	25.6	C	T	25.6	C	42	77
							T/R	-	-	-	-
E 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	12.3	B	Washingtonian Blvd Ramp EB	24.9	C	L/T	25.4	C	16	45
							R	24.7	C	0	0
				Washingtonian Blvd NB	19.5	B	T	20.2	C	65	127
							R	18.2	B	0	0
				Washingtonian Blvd SB	5.9	A	L/T	-	-	-	-
							T	5.9	A	20	93
E 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	3.1	A	MD 119 (Great Seneca Hwy) EB	0.1	A	T	0.1	A	0	0
				MD 119 (Great Seneca Hwy) WB	4.7	A	T	4.7	A	3	4
				I-370 (Sam Eig Hwy) SB	16.1	B	R	16.1	B	56	252
E 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	28.6	C	MD 119 (Great Seneca Hwy) EB	19.4	B	L	29.9	C	397	462
							T	13.6	B	544	610
				MD 119 (Great Seneca Hwy) WB	64.2	E	T	64.2	E	113	147
				I-370 (Sam Eig Hwy) SB	63.0	E	L	63.0	E	279	344
E 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	31.3	C	Diamondback Dr EB	79.7	E	L	80.7	F	356	415
							R	57.7	E	0	0
				Diamondback Dr WB	66.3	E	R	66.3	E	100	135
				I-370 (Sam Eig Hwy) NB	16.4	B	L	123.3	F	20	m35
							T	16.2	B	396	509
							R	0.1	A	0	0
				I-370 (Sam Eig Hwy) SB	20.5	C	L	91.4	F	113	148
							T	21.1	C	280	354
							R	0.3	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-2B - I-370 (Sam Eig Highway) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 100‡	I-370 (Sam Eig Hwy) at Fields Rd	30.2	C	Fields Rd WB	49.4	D	L	67.1	E	197	243
							R	38.5	D	257	282
				I-370 (Sam Eig Hwy) NB	34.9	C	T	36.4	D	751	818
							R	25.3	C	137	185
				I-370 (Sam Eig Hwy) SB	23.5	C	L	68.1	E	328	389
							T	12.1	B	431	535
				Washingtonian Blvd Ramp SEB	8.9	A	R	8.9	A	137	213
E 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	19.1	B	Washingtonian Blvd Ramp WB	29.5	C	L	30.5	C	78	178
							L/T	30.4	C	78	178
							R	26.3	C	0	0
				Washingtonian Blvd NB	0.4	A	L	0.3	A	1	m1
							T	0.5	A	1	m1
				Washingtonian Blvd SB	31.5	C	T	31.5	C	95	160
							T/R	-	-	-	-
E 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	21.7	C	Washingtonian Blvd Ramp EB	29.3	C	L/T	29.1	C	14	40
							R	29.3	C	0	3
				Washingtonian Blvd NB	24.3	C	T	27.0	C	224	399
							R	22.7	C	25	173
				Washingtonian Blvd SB	13.3	B	L/T	-	-	-	-
							T	13.3	B	36	61
E 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	21.1	C	MD 119 (Great Seneca Hwy) EB	0.0	A	T	0.0	A	0	0
				MD 119 (Great Seneca Hwy) WB	3.5	A	T	3.5	A	17	18
				I-370 (Sam Eig Hwy) SB	59.6	E	R	59.6	E	938	#1,084
E 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	38.7	D	MD 119 (Great Seneca Hwy) EB	34.0	C	L	54.9	D	396	471
							T	3.8	A	61	75
				MD 119 (Great Seneca Hwy) WB	38.4	D	T	38.4	D	455	505
				I-370 (Sam Eig Hwy) SB	60.2	E	L	60.2	E	165	211
E 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	36.6	D	Diamondback Dr EB	83.4	F	L	84.3	F	256	313
							R	64.9	E	0	0
				Diamondback Dr WB	59.1	E	R	59.1	E	177	218
				I-370 (Sam Eig Hwy) NB	46.9	D	L	65.4	E	102	m163
							T	51.9	D	493	568
							R	0.1	A	0	0
				I-370 (Sam Eig Hwy) SB	22.0	C	L	91.6	F	170	254
							T	29.5	C	542	671
							R	3.3	A	843	1,231

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 200‡	Omega Dr at MD 28 (Key W Ave)	33.6	C	MD 28 (Key W Ave) EB	26.7	C	L	71.3	E	79	134
							T	25.8	C	416	684
							R	16.5	B	0	47
				MD 28 (Key W Ave) WB	31.0	C	U/L	-	-	-	-
							L	69.3	E	125	169
							T	15.0	B	69	134
							R	14.0	B	0	15
				Medical Center Dr NB	60.0	E	L	77.6	E	11	33
							T	58.7	E	30	47
							R	57.9	E	0	9
				Omega Dr SB	66.6	E	L	68.9	E	59	92
							T	69.2	E	232	311
							R	51.6	D	0	0
E 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L/R	21.7	C	-	4.4*
E 204†	Omega Dr / Fields Rd at Washingtonian Blvd	7.5	A	Fields Rd EB	5.6	A	L	18.7	B	6	31
							T	4.6	A	37	67
				Omega Dr WB	8.7	A	T	8.3	A	5	35
							T/R	8.9	A	-	-
				Washingtonian Blvd SB	13.3	B	L	13.5	B	9	35
							R	11.1	B	0	5
E 205‡	Shady Grove Rd at Corporate Blvd	31.2	C	Corporate Blvd EB	82.5	F	L	84.0	F	55	#122
							L/T	84.1	F	56	#125
							R	67.2	E	0	0
				Corporate Blvd WB	70.6	E	L/T	73.2	E	26	61
							R	69.1	E	0	0
				Shady Grove Rd NB	12.6	B	L	10.5	B	2	8
							T	12.6	B	188	216
							T/R	-	-	-	-
				Shady Grove Rd SB	36.5	D	U/L	174.6	F	~326	#624
							T	6.3	A	129	163
							T/R	-	-	-	-

Table EX-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 207[†]	Shady Grove Rd at I-270 SB Off-Ramp	20.4	C	I-270 SB Off-Ramp EB	47.6	D	L	35.4	D	156	184
							R	53.7	D	445	497
				Shady Grove Rd NB	17.9	B	T	17.9	B	166	m184
				Shady Grove Rd SB	0.7	A	T	0.7	A	630	m645
							R	0.0	A	198	210
E 210[†]	Shady Grove Rd at I-270 NB Off-Ramp	28.5	C	I-270 NB Off-Ramp WB	88.1	F	L	88.1	F	~505	#639
							R	0.0	A	0	0
				Shady Grove Rd NB	0.2	A	T	0.2	A	96	121
							R	0.0	A	15	34
				Shady Grove Rd SB	11.0	B	T	11.0	B	141	217
E 212[‡]	Shady Grove Rd at Choke Cherry Rd	21.1	C	Choke Cherry Rd EB	66.1	E	L/T/R	72.4	E	28	70
							R	59.3	E	0	3
				Choke Cherry Rd WB	71.3	E	L	73.9	E	65	121
							L/T	72.1	E	65	120
							R	64.6	E	0	0
				Shady Grove Rd NB	22.6	C	U/L	12.6	B	58	80
							T	14.0	B	184	256
							R	58.9	E	82	126
				Shady Grove Rd SB	13.1	B	L	7.5	A	33	56
							T	13.6	B	270	352
							T/R	-	-	-	-
E 216[†]	Redland Blvd at Piccard Dr	12.4	B	I-270 NB Off-Ramp EB	5.2	A	L	4.3	A	26	54
							T	5.3	A	70	107
							T/R	5.4	A	-	-
				Redland Blvd WB	-	-	L	-	-	32	59
							R	-	-	0	0
				Piccard Dr NB	19.3	B	T	19.1	B	19	48
							R	19.5	B	0	16
				Piccard Dr SB	23.8	C	L/T	22.7	C	-	-
							T	25.1	C	92	#178

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.
[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table EX-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 200‡	Omega Dr at MD 28 (Key W Ave)	36.4	D	MD 28 (Key W Ave) EB	21.5	C	L	71.3	E	79	134
							T	16.2	B	128	184
							R	13.9	B	0	0
				MD 28 (Key W Ave) WB	26.9	C	U/L	-	-	-	-
							L	69.1	E	43	72
							T	26.0	C	501	679
							R	16.5	B	3	50
				Medical Center Dr NB	66.0	E	L	94.8	F	148	#267
							T	61.9	E	164	208
							R	56.4	E	8	97
				Omega Dr SB	63.2	E	L	68.9	E	51	82
							T	64.1	E	96	150
							R	59.7	E	0	71
E 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L/R	37.1	E	-	3*
E 204†	Omega Dr / Fields Rd at Washingtonian Blvd	11.7	B	Fields Rd EB	5.7	A	L	36.2	D	7	30
							T	3.0	A	11	22
				Omega Dr WB	9.9	A	T	9.7	A	252	378
							T/R	10.2	B	-	-
				Washingtonian Blvd SB	24.6	C	L	25.0	C	47	101
							R	23.4	C	0	35
E 205‡	Shady Grove Rd at Corporate Blvd	39.2	D	Corporate Blvd EB	78.1	E	L	80.0	E	86	151
							L/T	80.0	F	87	152
							R	63.4	E	0	0
				Corporate Blvd WB	134.2	F	L/T	58.0	E	58	109
							R	149.4	F	~266	#474
				Shady Grove Rd NB	23.4	C	L	14.8	B	7	20
							T	23.5	C	432	490
							T/R	-	-	-	-
				Shady Grove Rd SB	24.3	C	U/L	45.6	D	81	141
							T	21.6	C	206	231
							T/R	-	-	-	-

Table EX-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 207†	Shady Grove Rd at I-270 SB Off-Ramp	16.8	B	I-270 SB Off-Ramp EB	63.7	E	L	59.9	E	124	161
							R	66.7	E	182	231
				Shady Grove Rd NB	5.2	A	T	5.2	A	185	m275
				Shady Grove Rd SB	0.1	A	T	0.1	A	122	197
							R	0.0	A	196	266
E 210†	Shady Grove Rd at I-270 NB Off-Ramp	13.0	B	I-270 NB Off-Ramp WB	67.8	E	L	67.8	E	200	249
							R	0.0	A	0	0
				Shady Grove Rd NB	0.1	A	T	0.1	A	137	152
							R	0.0	A	165	259
				Shady Grove Rd SB	4.3	A	T	4.3	A	14	24
E 212‡	Shady Grove Rd at Choke Cherry Rd	31.0	C	Choke Cherry Rd EB	77.9	E	L/T/R	100.9	F	109	#283
							R	52.7	D	30	91
				Choke Cherry Rd WB	74.1	E	L	79.4	E	181	266
							L/T	76.7	E	184	270
							R	55.3	E	0	22
				Shady Grove Rd NB	16.2	B	U/L	59.9	E	104	187
							T	12.4	B	158	178
							R	2.9	A	4	9
				Shady Grove Rd SB	27.7	C	L	15.8	B	28	50
							T	28.3	C	446	515
							T/R	-	-	-	-
E 216†	Redland Blvd at Piccard Dr	14.7	B	I-270 NB Off-Ramp EB	5.5	A	L	4.8	A	7	21
							T	5.5	A	40	65
							T/R	5.5	A	-	-
				Redland Blvd WB	-	-	L	-	-	11	26
							R	-	-	0	19
				Piccard Dr NB	21.7	C	T	17.5	B	84	#184
							R	25.3	C	0	55
				Piccard Dr SB	14.6	B	L/T	14.6	B	-	-
							T	14.5	B	24	47

Note: 95th percentile queuing reported using Synchro software.

- \- Hyphen denotes that no value was recorded for this metric.
- m Volume for the 95th percentile queue is metered by upstream signal.
- # Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
- ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
- * Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:

- † HCM 6th Signalized Intersection Summary used for Delay and LOS.
- ‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
- †† HCM 6th Two Way Stop Control used for Delay and LOS.

Table EX-4B - Gude Drive Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 301†	Gude Dr at Research Blvd	61.1	E	Gude Dr EB	26.2	C	L	19.2	B	7	26
							T	27.1	C	293	#463
							R	20.6	C	0	0
				Gude Dr WB	15.5	B	L	28.9	C	186	#348
							T	9.5	A	127	96
							R	9.7	A	33	13
				Research Blvd NB	242.4	F	L	38.8	D	5	17
							T	47.5	D	84	125
							R	416.8	F	0	79
				Research Blvd SB	43.3	D	L	45.8	D	83	120
							T	42.0	D	125	191
							T/R	41.9	D	-	-
E 303†	Gude Dr at Piccard Dr	8.9	A	Gude Dr EB	4.6	A	L	6.6	A	24	m61
							T	4.3	A	14	30
				Gude Dr WB	8.4	A	T	8.7	A	161	274
							R	6.2	A	1	25
				Piccard Dr SB	40.2	D	L	41.2	D	37	75
							R	39.8	D	79	122

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

Table EX-4B - Gude Drive Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 301†	Gude Dr at Research Blvd	93.0	F	Gude Dr EB	30.2	C	L	23.6	C	3	13
							T	30.4	C	211	#306
							R	23.4	C	0	0
				Gude Dr WB	16.7	B	L	26.6	C	121	#445
							T	13.1	B	96	108
							R	10.5	B	1	m4
				Research Blvd NB	297.5	F	L	33.2	C	76	117
							T	44.5	D	93	134
							R	570.3	F	3	96
				Research Blvd SB	42.9	D	L	44.9	D	102	141
							T	39.8	D	55	86
							T/R	39.9	D	-	-
E 303†	Gude Dr at Piccard Dr	18.3	B	Gude Dr EB	9.7	A	L	11.0	B	5	m7
							T	9.6	A	33	36
				Gude Dr WB	15.3	B	T	15.5	B	242	382
							R	10.0	A	0	19
				Piccard Dr SB	46.3	D	L	33.7	C	109	169
							R	52.2	D	196	257

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

Table EX-5B - MD 28 (Montgomery Avenue) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 400‡	MD 28 (Montgomery Ave) at Hurley Ave	42.3	D	MD 28 (Montgomery Ave) EB	34.0	C	L	17.5	B	2	10
							T	34.1	C	550	623
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	51.9	D	U/L	759.6	F	~176	#316
							T	1.8	A	60	69
							T/R	-	-	-	-
				Hurley Ave NB	36.8	D	L/T	60.6	E	52	97
							R	27.6	C	77	134
				Hurley Ave SB	50.4	D	L/T	50.7	D	15	39
							R	49.2	D	0	0
E 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	12.4	B	MD 28 (Montgomery Ave) EB	0.2	A	T	0.2	A	65	m123
							R	0.0	A	405	m402
				MD 28 (Montgomery Ave) WB	7.1	A	T	7.1	A	186	227
				I-270 Off-Ramp SB	57.8	E	L	57.8	E	191	245
							R	0.0	A	51	104
E 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	24.4	C	MD 28 (Montgomery Ave) EB	11.5	B	L	23.6	C	98	#225
							T	7.5	A	194	233
				MD 28 (Montgomery Ave) WB	35.5	D	T	35.5	D	217	265
							T/R	-	-	-	-
				I-270 Off-Ramp NB	44.4	D	T	47.4	D	112	180
							R	42.0	D	0	65
				Nelson St SB	27.7	C	L	51.8	D	16	42
							R	26.0	C	107	171
E 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	14.5	B	MD 28 (Montgomery Ave) EB	16.1	B	L	1.6	A	0	m1
							T/R	16.1	B	718	#853
				MD 28 (Montgomery Ave) WB	5.1	A	L	2.3	A	1	4
							T/R	5.1	A	167	319
				Bullard Cir NB	47.3	D	L/T	47.6	D	11	32
							R	47.0	D	0	17
				Laird St SB	58.8	E	L/T/R	58.8	E	72	128

Note: 95th percentile queuing reported using Synchro software.

- \- Hyphen denotes that no value was recorded for this metric.
- m Volume for the 95th percentile queue is metered by upstream signal.
- # Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
- ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:

- † HCM 6th Signalized Intersection Summary used for Delay and LOS.
- ‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-5B - MD 28 (Montgomery Avenue) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 400‡	MD 28 (Montgomery Ave) at Hurley Ave	135.0	F	MD 28 (Montgomery Ave) EB	32.1	C	L	18.6	B	2	11
							T	32.2	C	547	619
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	236.6	F	U/L	2,033.1	F	~427	#617
							T	2.6	A	82	79
							T/R	-	-	-	-
				Hurley Ave NB	38.2	D	L/T	56.4	E	68	118
							R	27.2	C	61	111
				Hurley Ave SB	48.0	D	L/T	48.6	D	31	64
							R	45.8	D	0	0
E 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	14.0	B	MD 28 (Montgomery Ave) EB	0.2	A	T	0.2	A	63	m118
							R	0.0	A	600	599
				MD 28 (Montgomery Ave) WB	9.6	A	T	9.6	A	267	304
				I-270 Off-Ramp SB	59.1	E	L	59.1	E	210	272
							R	0.0	A	58	115
E 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	31.9	C	MD 28 (Montgomery Ave) EB	23.1	C	L	74.4	E	146	m#313
							T	11.0	B	287	291
				MD 28 (Montgomery Ave) WB	36.3	D	T	36.3	D	324	417
							T/R	-	-	-	-
				I-270 Off-Ramp NB	46.6	D	T	51.1	D	195	291
							R	40.5	D	34	104
				Nelson St SB	32.7	C	L	53.6	D	24	58
							R	31.1	C	203	300
E 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	16.6	B	MD 28 (Montgomery Ave) EB	21.1	C	L	1.1	A	1	m8
							T/R	21.6	C	795	#1,020
				MD 28 (Montgomery Ave) WB	7.6	A	L	1.8	A	0	4
							T/R	7.6	A	237	820
				Bullard Cir NB	51.0	D	L/T	51.3	D	8	23
							R	50.7	D	0	17
				Laird St SB	53.1	D	L/T/R	53.1	D	20	68

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-6B - MD 189 (Falls Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 500‡	MD 189 (Falls Rd) at Wootton Pkwy	59.6	E	MD 189 (Falls Rd) EB	102.4	F	L	74.0	E	125	191
							T	117.3	F	~508	#680
							R	34.8	C	17	63
				MD 189 (Falls Rd) WB	44.1	D	L	56.3	E	252	#395
							T	37.2	D	176	273
							R	14.3	B	0	32
				Wootton Pkwy NB	44.7	D	L	55.0	E	108	147
							T	56.8	E	64	90
							R	23.1	C	0	43
				Wootton Pkwy SB	42.7	D	L	40.7	D	347	399
							T	57.1	E	395	441
							R	0.2	A	0	0
E 503‡	MD 189 (Falls Rd) at I-270 Ramps (SPUI)	64.9	E	MD 189 (Falls Rd) EB	103.0	F	L	149.3	F	~507	#724
							T	37.0	D	126	173
				MD 189 (Falls Rd) WB	31.3	C	L	33.1	C	189	244
							T	27.8	C	86	122
				I-270 Off-Ramp SEB	51.1	D	L	51.1	D	139	219
				I-270 Off-Ramp NWB	40.6	D	L	40.6	D	28	52
E 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	24.7	C	MD 189 (Falls Rd) EB	3.7	A	U/L	4.6	A	47	90
							T	3.3	A	74	119
							T/R	-	-	-	-
				MD 189 (Maryland Ave) WB	11.9	B	L	9.9	A	3	12
							T	12.0	B	95	144
							T/R	-	-	-	-
				Potomac Valley Rd NB	38.6	D	L	39.6	D	28	63
							T/R	35.4	D	2	21
				Great Falls Rd SB	85.0	F	L/T	38.3	D	22	53
							R	88.7	F	183	#362

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-6B - MD 189 (Falls Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 500‡	MD 189 (Falls Rd) at Wootton Pkwy	47.1	D	MD 189 (Falls Rd) EB	42.3	D	L	73.9	E	156	227
							T	38.6	D	193	261
							R	26.1	C	0	48
				MD 189 (Falls Rd) WB	46.5	D	L	67.0	E	140	185
							T	44.9	D	359	466
							R	27.8	C	44	112
				Wootton Pkwy NB	54.8	D	L	34.1	C	109	167
							T	73.5	E	492	#634
							R	24.6	C	0	56
				Wootton Pkwy SB	30.3	C	L	46.3	D	83	150
							T	41.2	D	73	107
							R	0.1	A	0	0
E 503‡	MD 189 (Falls Rd) at I-270 Ramps (SPUI)	63.8	E	MD 189 (Falls Rd) EB	76.0	E	L	99.5	F	~602	#857
							T	47.5	D	204	258
				MD 189 (Falls Rd) WB	59.4	E	L	62.7	E	291	359
							T	54.1	D	165	216
				I-270 Off-Ramp SEB	57.3	E	L	57.3	E	361	485
				I-270 Off-Ramp NWB	44.7	D	L	44.7	D	127	170
E 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	14.7	B	MD 189 (Falls Rd) EB	3.5	A	U/L	5.6	A	49	97
							T	2.7	A	73	120
							T/R	-	-	-	-
				MD 189 (Maryland Ave) WB	13.4	B	L	10.1	B	1	9
							T	13.4	B	136	240
							T/R	-	-	-	-
				Potomac Valley Rd NB	45.8	D	L	47.4	D	26	65
							T/R	38.1	D	3	19
				Great Falls Rd SB	48.2	D	L/T	39.6	D	11	36
							R	48.7	D	155	250

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-7B - Wootton Parkway Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 600‡	Wootton Pkwy at Seven Locks Rd	49.6	D	Wootton Pkwy EB	72.8	E	L	31.2	C	10	31
							T	105.0	F	225	#348
							R	40.3	D	198	328
				Wootton Pkwy WB	25.3	C	L	34.1	C	~267	#495
							T	11.7	B	52	114
							T/R	-	-	-	-
				Seven Locks Rd NB	12.5	B	L	30.2	C	38	76
							L/T	30.2	C	40	75
							R	0.2	A	0	0
				Seven Locks Rd SB	42.5	D	L/T	42.9	D	18	46
							R	41.1	D	0	0
E 601‡	Wootton Pkwy at Tower Oaks Rd	21.3	C	Wootton Pkwy EB	32.2	C	L	33.5	C	9	m14
							T	43.1	D	154	m#179
							R	0.1	A	0	m0
				Wootton Pkwy WB	19.2	B	L	30.1	C	222	#498
							T	10.5	B	46	183
							R	8.1	A	0	0
				Tower Oaks Blvd NB	4.9	A	L	31.7	C	29	54
							T	36.3	D	4	14
							R	0.4	A	0	0
				Tower Oaks Blvd SB	35.4	D	L	39.9	D	6	18
							T	41.2	D	6	17
							R	0.0	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-7B - Wootton Parkway Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 600‡	Wootton Pkwy at Seven Locks Rd	31.3	C	Wootton Pkwy EB	23.5	C	L	26.1	C	2	12
							T	31.2	C	98	162
							R	10.4	B	0	30
				Wootton Pkwy WB	18.7	B	L	26.2	C	77	m#204
							T	14.7	B	72	m157
							T/R	-	-	-	-
				Seven Locks Rd NB	44.1	D	L	65.2	E	287	#497
							L/T	60.3	E	281	#485
							R	0.4	A	0	0
				Seven Locks Rd SB	44.3	D	L/T	44.7	D	12	36
							R	42.4	D	0	0
E 601‡	Wootton Pkwy at Tower Oaks Rd	15.2	B	Wootton Pkwy EB	20.7	C	L	10.6	B	2	m6
							T	22.0	C	186	290
							R	0.0	A	0	0
				Wootton Pkwy WB	10.5	B	L	9.4	A	32	100
							T	10.9	B	48	195
							R	8.2	A	0	0
				Tower Oaks Blvd NB	14.4	B	L	70.9	E	~146	163
							T	42.2	D	4	14
							R	1.6	A	0	0
				Tower Oaks Blvd SB	30.4	C	L	34.0	C	30	54
							T	41.4	D	7	20
							R	0.0	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-8B - Montrose Road Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 701‡	Montrose Rd at Seven Locks Rd	32.7	C	Montrose Rd EB	43.9	D	L	41.4	D	42	84
							T	44.5	D	103	148
							T/R	-	-	-	-
				Montrose Rd WB	39.2	D	L	45.3	D	151	m236
							L/T	-	-	-	-
							T	41.6	D	152	m202
							R	21.4	C	2	m30
				Seven Locks Rd NB	10.3	B	L	37.9	D	10	31
							T	38.5	D	69	105
							R	0.7	A	0	0
				Seven Locks Rd SB	41.6	D	L	65.6	E	182	#268
							T	26.0	C	207	264
							T/R	-	-	-	-
E 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	37.7	E	-	5.0*
				Potomac Rd SB	-	-	R	14.6	B	-	1.3*
E 707‡	Montrose Rd at Tower Oaks Blvd	42.0	D	Montrose Rd EB	6.2	A	L	13.2	B	31	m85
							T	5.0	A	149	180
				Montrose Rd WB	10.6	B	T	10.7	B	193	224
							R	7.4	A	0	14
				Tower Oaks Blvd SB	185.0	F	L	55.8	E	77	117
							R	222.3	F	~229	#364
				I-270 NB Off-Ramp NEB	1.8	A	R	1.8	A	0	0
E 708‡§	Montrose Rd at Farm Ln	1.6	A	Montrose Rd EB	1.8	A	T	1.8	A	0	328
				Montrose Rd WB	1.4	A	T	1.4	A	0	204
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0

Table EX-8B - Montrose Road Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 709[†]	Montrose Rd at Hitching Post Ln / Farm Haven Dr	8.2	A	Montrose Rd EB	7.2	A	L	3.9	A	1	2
							T	6.9	A	123	272
							T/R	7.7	A	-	-
				Montrose Rd WB	5.2	A	L	5.3	A	1	4
							T	5.1	A	66	148
							T/R	5.4	A	-	-
				Hitching Post Ln NB	44.2	D	L	46.1	D	46	#124
							T/R	39.4	D	3	30
				Farm Haven Dr SB	40.7	D	L	40.8	D	18	48
							T/R	40.6	D	3	36
E 710[‡]	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	19.8	B	Tower Oaks Blvd EB	18.1	B	L/T	-	-	-	-
							T/R	18.1	B	110	223
				Tower Oaks Blvd WB	12.7	B	L/T	-	-	-	-
							T/R	12.7	B	24	60
				I-270 NB Ramps NB	24.0	C	L	25.1	C	96	#322
							L/T	24.7	C	95	#316
							R	15.0	B	0	10
				GEICO Ent SB	34.3	C	L/T/R	34.3	C	3	22
E 712[‡]	Tower Oaks Blvd at Commercial Dr	3.4	A	Commercial Dr WB	33.2	C	L	33.2	C	1	6
							L/R	-	-	-	-
				Tower Oaks Blvd NB	4.8	A	T	4.9	A	0	135
							R	3.6	A	0	16
				Tower Oaks Blvd SB	1.7	A	L	1.7	A	0	10
							T	1.7	A	0	41

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

* Unsignalized intersection 95th percentile queue reported in number of vehicles.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:

[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.

[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table EX-8B - Montrose Road Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 701‡	Montrose Rd at Seven Locks Rd	38.0	D	Montrose Rd EB	49.3	D	L	43.3	D	43	86
							T	50.2	D	145	200
							T/R	-	-	-	-
				Montrose Rd WB	46.0	D	L	70.7	E	346	m#562
							L/T	-	-	-	-
							T	53.3	D	353	#512
							R	13.2	B	42	m126
				Seven Locks Rd NB	23.5	C	L	37.1	D	46	93
							T	42.7	D	228	295
							R	0.5	A	0	0
				Seven Locks Rd SB	34.5	C	L	55.1	E	67	105
							T	26.9	C	131	177
							T/R	-	-	-	-
E 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	17.6	C	-	1.3*
				Potomac Rd SB	-	-	R	77.7	F	-	7.2*
E 707‡	Montrose Rd at Tower Oaks Blvd	12.4	B	Montrose Rd EB	7.9	A	L	18.1	B	12	m44
							T	7.4	A	260	308
				Montrose Rd WB	11.7	B	T	12.0	B	535	42
							R	0.5	A	0	m0
				Tower Oaks Blvd SB	52.1	D	L	49.8	D	26	49
							R	52.6	D	32	84
				I-270 NB Off-Ramp NEB	1.4	A	R	1.4	A	0	0
E 708‡§	Montrose Rd at Farm Ln	3.5	A	Montrose Rd EB	2.2	A	T	2.2	A	0	169
				Montrose Rd WB	4.5	A	T	4.5	A	0	549
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0

Table EX-8B - Montrose Road Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 709[†]	Montrose Rd at Hitching Post Ln / Farm Haven Dr	9.1	A	Montrose Rd EB	7.3	A	L	7.2	A	1	6
							T	7.0	A	147	364
							T/R	7.8	A	-	-
				Montrose Rd WB	8.8	A	L	5.4	A	2	8
							T	8.4	A	229	554
							T/R	9.6	A	-	-
				Hitching Post Ln NB	41.4	D	L	42.3	D	35	72
							T/R	39.7	D	6	31
				Farm Haven Dr SB	39.9	D	L	40.6	D	12	33
							T/R	39.1	D	3	23
E 710[‡]	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	17.7	B	Tower Oaks Blvd EB	17.3	B	L/T	-	-	-	-
							T/R	17.3	B	53	98
				Tower Oaks Blvd WB	15.2	B	L/T	-	-	-	-
							T/R	15.2	B	18	38
				I-270 NB Ramps NB	18.1	B	L	18.2	B	80	174
							L/T	18.3	B	82	177
							R	12.7	B	0	0
				GEICO Ent SB	26.4	C	L/T/R	26.4	C	11	39
E 712[‡]	Tower Oaks Blvd at Commercial Dr	4.9	A	Commercial Dr WB	31.3	C	L	31.3	C	7	21
							L/R	-	-	-	-
				Tower Oaks Blvd NB	4.8	A	T	4.9	A	32	97
							R	3.8	A	0	6
				Tower Oaks Blvd SB	2.0	A	L	1.8	A	2	6
							T	2.0	A	17	25

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

* Unsignalized intersection 95th percentile queue reported in number of vehicles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:

[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.

[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table EX-9B - Westlake Terrace Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	13.5	B	Westlake Terr EB	6.9	A	L	6.5	A	22	52
							T	7.0	A	76	121
							T/R	7.0	A	-	-
				Westlake Terr WB	3.8	A	L	4.7	A	16	35
							T	3.4	A	14	31
							T/R	3.7	A	-	-
				Westfield Montgomery Mall Ent NB	50.0	D	L	51.1	D	4	15
							T/R	49.9	D	15	52
				Motor City Dr SB	54.8	D	L	57.7	E	64	113
							T/R	51.0	D	4	43
E 801†	Westlake Terr at I-270 Spur Ramps	8.8	A	Westlake Terr EB	8.2	A	L	9.4	A	13	44
							T	8.0	A	40	84
				Westlake Terr WB	7.5	A	T	7.6	A	27	60
							R	7.0	A	0	16
				I-270 Spur Ramps SB	11.6	B	L/R	11.6	B	33	82
E 802‡	Westlake Terr at Rockledge Dr	25.2	C	Westlake Terr EB	20.0	B	L	16.3	B	80	186
							T	22.3	C	67	148
							T/R	-	-	-	-
				Westlake Terr WB	21.1	C	L	16.6	B	35	92
							T	22.8	C	38	93
							T/R	-	-	-	-
				Rockledge Dr NB	48.4	D	L/T	49.3	D	6	22
							R	46.6	D	0	0
				Rockledge Dr SB	33.6	C	L	28.4	C	49	89
							L/T	38.9	D	204	298
							R	27.7	C	0	52

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-9B - Westlake Terrace Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	21.5	C	Westlake Terr EB	18.2	B	L	17.0	B	16	48
							T	18.3	B	86	156
							T/R	18.3	B	-	-
				Westlake Terr WB	11.5	B	L	12.6	B	58	120
							T	11.1	B	89	156
							T/R	11.1	B	-	-
				Westfield Montgomery Mall Ent NB	38.6	D	L	36.0	D	27	53
							T/R	39.1	D	7	64
				Motor City Dr SB	49.1	D	L	55.8	E	115	180
							T/R	33.5	C	10	42
E 801†	Westlake Terr at I-270 Spur Ramps	12.6	B	Westlake Terr EB	12.3	B	L	26.3	C	47	157
							T	5.0	A	34	76
				Westlake Terr WB	6.0	A	T	5.4	A	51	110
							R	6.9	A	0	34
				I-270 Spur Ramps SB	47.5	D	L/R	47.5	D	19	110
E 802‡	Westlake Terr at Rockledge Dr	42.2	D	Westlake Terr EB	24.7	C	L	25.3	C	116	181
							T	24.3	C	93	153
							T/R	-	-	-	-
				Westlake Terr WB	35.8	D	L	27.8	C	2	11
							T	35.9	D	206	268
							T/R	-	-	-	-
				Rockledge Dr NB	52.7	D	L/T	61.7	E	220	#353
							R	39.7	D	0	63
				Rockledge Dr SB	53.5	D	L	41.3	D	70	124
							L/T	41.4	D	71	125
							R	58.5	E	142	#305

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-10B - Democracy Boulevard Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 900†	Democracy Blvd at Taveshire Way	10.3	B	Democracy Blvd EB	4.3	A	T	4.3	A	85	117
				Democracy Blvd WB	3.6	A	T	3.6	A	40	56
				Taveshire Way SB	55.2	E	L	49.3	D	47	70
							R	63.8	E	0	56
E 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	28.6	C	Democracy Blvd EB	27.8	C	T	27.8	C	353	468
							T/R	-	-	-	-
				Democracy Blvd WB	2.5	A	T	2.5	A	21	27
				I-270 Spur Off Ramp SB	55.9	E	L	58.6	E	194	254
							R	51.3	D	0	78
E 902‡	Democracy Blvd at I-270 SB On-Ramp	9.0	A	Democracy Blvd EB	0.5	A	T	0.5	A	9	10
				Democracy Blvd WB	22.8	C	L	75.0	E	127	173
							T	0.7	A	0	0
E 903‡	Democracy Blvd at I-270 Spur NB Ramps	10.6	B	Democracy Blvd EB	0.2	A	T	0.2	A	0	0
							T/R	-	-	-	-
				Democracy Blvd WB	10.6	B	T	10.6	B	145	173
				I-270 Spur Off Ramp NB	71.0	E	L	71.0	E	125	173
E 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	33.1	C	Democracy Blvd EB	41.8	D	T	41.8	D	417	540
				Democracy Blvd WB	0.1	A	T	0.1	A	0	m0
				I-270 Spur Off Ramp NB	43.2	D	R	43.2	D	477	571
E 906‡	Democracy Blvd at Fernwood Rd	63.1	E	Democracy Blvd EB	24.2	C	U/L	-	-	-	-
							L	39.9	D	279	346
							T	24.8	C	171	164
							R	0.5	A	0	0
				Democracy Blvd WB	35.6	D	L	57.8	E	201	295
							T	35.8	D	32	54
							R	0.1	A	0	0
				Fernwood Rd NB	186.5	F	L	262.3	F	~882	#1,126
							R	0.2	A	0	0
				Fernwood Rd SB	16.1	B	L	42.0	D	37	62
							R	0.1	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-10B - Democracy Boulevard Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
E 900†	Democracy Blvd at Taveshire Way	12.1	B	Democracy Blvd EB	4.2	A	T	4.2	A	63	99
				Democracy Blvd WB	4.6	A	T	4.6	A	98	144
				Taveshire Way SB	52.4	D	L	50.4	D	86	110
							R	58.0	E	67	122
E 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	105.5	F	Democracy Blvd EB	33.5	C	T	33.5	C	316	364
							T/R	-	-	-	-
				Democracy Blvd WB	4.9	A	T	4.9	A	67	77
				I-270 Spur Off Ramp SB	263.6	F	L	58.9	E	197	257
							R	388.5	F	~716	#965
E 902‡	Democracy Blvd at I-270 SB On-Ramp	9.3	A	Democracy Blvd EB	1.7	A	T	1.7	A	15	16
				Democracy Blvd WB	17.4	B	L	46.1	D	223	284
							T	0.7	A	0	0
E 903‡	Democracy Blvd at I-270 Spur NB Ramps	9.9	A	Democracy Blvd EB	7.2	A	T	7.2	A	159	191
							T/R	-	-	-	-
				Democracy Blvd WB	3.5	A	T	3.5	A	84	113
				I-270 Spur Off Ramp NB	68.8	E	L	68.8	E	96	136
E 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	10.2	B	Democracy Blvd EB	7.0	A	T	7.0	A	234	446
				Democracy Blvd WB	0.2	A	T	0.2	A	0	0
				I-270 Spur Off Ramp NB	53.0	D	R	53.0	D	182	221
E 906‡	Democracy Blvd at Fernwood Rd	30.9	C	Democracy Blvd EB	27.3	C	U/L	-	-	-	-
							L	61.1	E	64	98
							T	36.4	D	236	283
							R	0.5	A	0	0
				Democracy Blvd WB	34.3	C	L	76.8	E	262	#414
							T	24.4	C	184	231
							R	0.1	A	0	0
				Fernwood Rd NB	56.3	E	L	76.8	E	473	#706
							R	0.2	A	0	0
				Fernwood Rd SB	10.4	B	L	34.0	C	84	120
							R	0.7	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 1000†	Rockledge Dr at Rock Forest Dr	23.1	C	Rockledge Dr EB	57.8	E	L	60.4	E	79	119
							T	47.8	D	8	27
							R	50.1	D	0	0
				Rock Forest Dr WB	66.0	E	L	74.0	E	29	64
							T	53.7	D	12	35
							R	64.5	E	0	0
				Rockledge Dr NB	8.9	A	L	9.2	A	25	48
							T	8.8	A	38	62
							T/R	8.8	A	-	-
				Rockledge Dr SB	12.4	B	L	7.8	A	6	16
							T	12.6	B	204	282
							R	0.0	A	0	0
E 1001‡	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	24.8	C	I-270 SB Off Ramp EB	46.2	D	L/T	-	-	-	-
							T	107.3	F	~355	#483
							R	1.4	A	0	0
				Rockledge Dr NB	29.3	C	T	66.0	E	65	101
							R	16.9	B	101	134
				Rockledge Dr SB	0.0	A	T	0.0	A	0	0
E 1002‡	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	25.9	C	I-270 NB Ramp Connector WB	27.6	C	L	30.1	C	532	717
							L/T	-	-	-	-
							T	26.2	C	487	571
				Rockledge Dr NB	0.1	A	L	0.1	A	0	0
E 1003‡	MD 187 (Old Georgetown Road) at Rock Spring Dr	64.2	E	Rock Spring Dr EB	63.9	E	L	83.6	F	262	#471
							L/T	81.9	F	260	#467
							R	29.5	C	74	136
				Rock Spring Dr WB	72.9	E	L/T/R	72.9	E	10	43
				MD 187 (Old Georgetown Road) NB	22.9	C	L	46.8	D	70	104
							T	19.1	B	209	256
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	84.5	F	L	77.7	E	38	m60
							T	93.1	F	~772	#870
							R	49.0	D	180	m268

Table EX-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	41.7	D	I-270 SB Ramp Connector EB	60.0	E	L	39.9	D	54	98
							L/T/R	39.8	D	54	97
							R	64.7	E	357	448
				MD 187 (Old Georgetown Road) NB	43.3	D	T	43.3	D	300	334
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	34.1	C	L	64.2	E	85	118
							T	30.2	C	501	585
E 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	11.9	B	I-270 NB Off Ramp WB	19.2	B	L	70.8	E	78	137
							L/T	69.7	E	78	136
							R	0.3	A	0	0
				MD 187 (Old Georgetown Road) NB	18.9	B	L	29.4	C	124	175
							T	16.9	B	285	342
				MD 187 (Old Georgetown Road) SB	6.6	A	T	9.5	A	147	m129
							R	0.1	A	12	m0
E 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	133.8	F	Tuckerman Ln EB	107.8	F	L	51.2	D	48	78
							T	117.3	F	~383	#512
							T/R	-	-	-	-
				Tuckerman Ln WB	81.8	F	L	95.3	F	~372	#507
							T	48.7	D	83	122
							R	40.1	D	0	5
				MD 187 (Old Georgetown Road) NB	103.6	F	U/L	374.0	F	~299	#488
							T	33.7	C	343	390
							R	124.8	F	227	344
				MD 187 (Old Georgetown Road) SB	193.7	F	L	71.7	E	32	70
							T	195.7	F	~1,066	#1,172
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 1000[†]	Rockledge Dr at Rock Forest Dr	33.8	C	Rockledge Dr EB	61.1	E	L	58.8	E	173	225
							T	42.6	D	26	58
							R	68.6	E	0	73
				Rock Forest Dr WB	67.5	E	L	74.0	E	29	64
							T	55.8	E	8	28
							R	64.7	E	0	0
				Rockledge Dr NB	15.6	B	L	10.2	B	11	27
							T	15.8	B	203	291
							T/R	15.8	B	-	-
				Rockledge Dr SB	11.9	B	L	11.2	B	21	46
							T	12.1	B	54	86
							R	0.0	A	0	0
E 1001[‡]	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	40.4	D	I-270 SB Off Ramp EB	51.4	D	L/T	-	-	-	-
							T	82.7	F	296	#400
							R	0.3	A	0	0
				Rockledge Dr NB	45.3	D	T	105.5	F	~269	#384
							R	17.1	B	261	368
				Rockledge Dr SB	0.0	A	T	0.0	A	0	0
E 1002[‡]	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	18.5	B	I-270 NB Ramp Connector WB	23.0	C	L	20.2	C	225	325
							L/T	-	-	-	-
							T	23.9	C	406	467
				Rockledge Dr NB	2.0	A	L	2.0	A	18	m22
E 1003[‡]	MD 187 (Old Georgetown Road) at Rock Spring Dr	50.8	D	Rock Spring Dr EB	71.9	E	L	81.7	F	285	#449
							L/T	82.5	F	290	#461
							R	31.2	C	0	34
				Rock Spring Dr WB	71.4	E	L/T/R	71.4	E	32	107
				MD 187 (Old Georgetown Road) NB	53.9	D	L	57.0	E	84	124
							T	53.6	D	~904	#992
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	35.9	D	L	68.7	E	84	#197
							T	34.9	C	552	601
							R	27.0	C	90	117

Table EX-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	46.2	D	I-270 SB Ramp Connector EB	60.1	E	L	65.3	E	296	409
							L/T/R	63.4	E	302	413
							R	47.6	D	105	149
				MD 187 (Old Georgetown Road) NB	44.3	D	T	44.3	D	649	m651
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	42.7	D	L	102.7	F	75	114
							T	37.2	D	567	616
E 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	14.5	B	I-270 NB Off Ramp WB	22.3	C	L	67.6	E	48	93
							L/T	69.4	E	70	123
							R	0.2	A	0	0
				MD 187 (Old Georgetown Road) NB	15.2	B	L	47.6	D	302	364
							T	8.6	A	312	393
				MD 187 (Old Georgetown Road) SB	12.1	B	T	16.5	B	169	m241
							R	0.2	A	0	m0
E 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	70.4	E	Tuckerman Ln EB	64.2	E	L	60.4	E	145	194
							T	67.1	E	204	262
							T/R	-	-	-	-
				Tuckerman Ln WB	115.1	F	L	161.1	F	~284	#400
							T	66.9	E	157	212
							R	48.6	D	0	24
				MD 187 (Old Georgetown Road) NB	66.4	E	U/L	255.9	F	~299	#514
							T	48.6	D	695	#889
							R	46.6	D	351	448
				MD 187 (Old Georgetown Road) SB	58.2	E	L	71.7	E	62	114
							T	57.8	E	~747	#915
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-12B - MD 190 (River Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 1100‡	MD 190 (River Rd) at Seven Locks Rd	36.1	D	MD 190 (River Rd) EB	39.7	D	L	25.2	C	13	37
							T	39.9	D	546	#721
							T/R	-	-	-	-
				MD 190 (River Rd) WB	20.1	C	U/L	25.0	C	67	101
							T	19.1	B	254	310
							R	20.0	B	18	40
				Seven Locks Rd NB	13.4	B	L	68.8	E	21	50
							T	72.2	E	41	81
							R	0.2	A	0	0
				Seven Locks Rd SB	63.7	E	L	64.5	E	298	#456
							L/T/R	62.9	E	310	#451
E 1102‡	MD 190 (River Rd) at I-495 Outer Loop Off-Ramp	11.5	B	MD 190 (River Rd) EB	2.7	A	T	2.7	A	93	93
				MD 190 (River Rd) WB	3.8	A	T	3.8	A	67	98
				I-495 Outer Loop Off-Ramp NB	66.1	E	L	66.1	E	132	176
E 1105‡	MD 190 (River Rd) WB at I-495 Inner Loop On-Ramp	1.9	A	MD 190 (River Rd) EB	2.8	A	L	11.3	B	79	335
							T	0.1	A	0	0
				MD 190 (River Rd) WB	0.2	A	T	0.2	A	0	0
E 1107†	MD 190 (River Rd) at Burdette Rd	16.9	B	MD 190 (River Rd) EB	11.5	B	L	12.9	B	15	40
							T	11.5	B	382	926
							R	4.5	A	0	0
				MD 190 (River Rd) WB	11.1	B	L	11.4	B	1	5
							T	11.2	B	442	705
							R	5.4	A	0	0
				Burdette Rd NB	77.4	E	L/T/R	77.4	E	37	75
				Burdette Rd SB	91.9	F	L/T	74.0	E	88	138
							R	99.5	F	41	118

Note: 95th percentile queuing reported using Synchro software.

\- Hyphen denotes that no value was recorded for this metric.

\# Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-12B - MD 190 (River Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
E 1100‡	MD 190 (River Rd) at Seven Locks Rd	39.1	D	MD 190 (River Rd) EB	47.6	D	L	58.9	E	21	59
							T	47.1	D	317	389
							T/R	-	-	-	-
				MD 190 (River Rd) WB	26.3	C	U/L	44.7	D	114	#281
							T	29.0	C	492	557
							R	15.2	B	26	60
				Seven Locks Rd NB	28.7	C	L	55.1	E	23	53
							T	76.3	E	199	292
							R	0.3	A	0	0
				Seven Locks Rd SB	80.4	F	L	61.3	E	293	#453
							L/T/R	94.3	F	~448	#687
E 1102‡	MD 190 (River Rd) at I-495 Outer Loop Off-Ramp	12.0	B	MD 190 (River Rd) EB	2.0	A	T	2.0	A	37	m107
				MD 190 (River Rd) WB	9.3	B	T	9.3	A	599	787
				I-495 Outer Loop Off-Ramp NB	68.3	E	L	68.3	E	147	192
E 1105‡	MD 190 (River Rd) WB at I-495 Inner Loop On-Ramp	7.8	A	MD 190 (River Rd) EB	4.1	A	L	20.9	C	107	194
							T	0.1	A	0	0
				MD 190 (River Rd) WB	11.8	B	T	11.8	B	384	573
E 1107†	MD 190 (River Rd) at Burdette Rd	31.7	C	MD 190 (River Rd) EB	30.4	C	L	195.1	F	~270	#522
							T	6.5	A	208	450
							R	3.4	A	0	11
				MD 190 (River Rd) WB	26.8	C	L	6.7	A	1	3
							T	27.4	C	1,295	#1,591
							R	6.6	A	1	15
				Burdette Rd NB	80.6	F	L/T/R	80.6	F	32	71
				Burdette Rd SB	102.3	F	L/T	78.4	E	62	112
							R	112.3	F	13	85

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-13B - MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
E 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	14.6	B	Lone Oak Dr EB	67.9	E	L/T	76.6	E	61	110
							R	64.9	E	147	208
				Manor Oak Way WB	63.4	E	L/T/R	63.4	E	9	32
				MD 187 (Old Georgetown Rd) NB	7.6	A	U/L	27.2	C	61	m118
							T	5.8	A	163	243
							R	2.3	A	0	m0
				MD 187 (Old Georgetown Rd) SB	12.7	B	L	6.6	A	1	8
							T	12.7	B	413	592
							T/R	-	-	-	-
E 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	29.1	C	I-495 Outer Loop Off-Ramp WB	71.7	E	L	56.0	E	84	143
							L/T	56.1	E	86	146
							R	80.1	F	189	#340
				MD 187 (Old Georgetown Rd) NB	17.4	B	L	73.1	E	275	#455
							T	1.0	A	36	37
				MD 187 (Old Georgetown Rd) SB	26.3	C	T	26.3	C	126	132
							T/R	-	-	-	-
E 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	6.9	A	I-495 Inner Loop Off-Ramp EB	10.2	B	L	69.2	E	48	88
							L/T	69.0	E	47	87
							R	0.7	A	0	0
				MD 187 (Old Georgetown Rd) NB	10.1	B	T	10.1	B	176	m206
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	3.7	A	L	21.1	C	89	m108
							T	1.7	A	69	79
E 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	16.2	B	Ryland Dr EB	123.7	F	L/T/R	123.7	F	~295	#488
				Church Dwy WB	49.3	D	L	50.0	D	31	67
							T	48.6	D	4	17
							R	48.9	D	0	44
				MD 187 (Old Georgetown Rd) NB	13.9	B	L	14.9	B	1	5
							T	13.9	B	185	222
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	3.8	A	U/L	2.3	A	7	11
							T	3.8	A	65	90
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-13B - MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
E 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	12.5	B	Lone Oak Dr EB	61.1	E	L/T	70.5	E	97	154
							R	47.5	D	36	70
				Manor Oak Way WB	57.4	E	L/T/R	57.4	E	9	30
				MD 187 (Old Georgetown Rd) NB	6.4	A	U/L	67.8	E	95	m150
							T	2.3	A	94	m134
							R	3.5	A	0	m0
				MD 187 (Old Georgetown Rd) SB	16.1	B	L	12.8	B	2	11
							T	16.1	B	410	570
							T/R	-	-	-	-
E 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	32.8	C	I-495 Outer Loop Off-Ramp WB	101.2	F	L	49.1	D	76	133
							L/T	49.1	D	77	133
							R	123.8	F	~386	#604
				MD 187 (Old Georgetown Rd) NB	12.0	B	L	74.4	E	194	m#270
							T	5.9	A	165	173
				MD 187 (Old Georgetown Rd) SB	38.9	D	T	38.9	D	505	706
							T/R	-	-	-	-
E 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	30.0	C	I-495 Inner Loop Off-Ramp EB	48.5	D	L	71.6	E	213	310
							L/T	70.2	E	208	305
							R	0.2	A	0	0
				MD 187 (Old Georgetown Rd) NB	42.4	D	T	42.4	D	867	916
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	6.3	A	L	32.5	C	136	m190
							T	3.0	A	71	77
E 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	12.0	B	Ryland Dr EB	68.9	E	L/T/R	68.9	E	56	96
				Church Dwy WB	62.7	E	L	63.2	E	10	28
							T	62.6	E	5	17
							R	62.5	E	0	5
				MD 187 (Old Georgetown Rd) NB	8.7	A	L	4.4	A	1	8
							T	8.7	A	311	538
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	12.8	B	U/L	15.1	B	10	42
							T	12.7	B	268	504
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
E 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	44.6	D	Grosvenor Ln EB	50.7	D	L	54.2	D	53	80
							R	48.9	D	128	220
				Grosvenor Ln WB	33.1	C	L	27.1	C	195	235
							T/R	49.5	D	162	259
				MD 355 (Rockville Pike) NW	36.6	D	T	36.6	D	455	548
				MD 355 (Rockville Pike) SB	52.1	D	T	53.7	D	~887	#1,004
							R	23.7	C	24	69
E 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	25.2	C	I-495 Inner Loop Off-Ramp SE	71.9	E	R	71.9	E	325	376
				MD 355 (Rockville Pike) SB	17.9	B	T	17.9	B	656	809
E 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	31.2	C	Pooks Hill Rd EB	94.7	F	L	94.7	F	280	#360
							R	0.0	A	78	166
				MD 355 (Rockville Pike) NB	8.8	A	L	71.5	E	54	m103
							T	7.0	A	31	61
				MD 355 (Rockville Pike) SB	34.1	C	T	35.1	D	1,154	403
							R	5.3	A	0	m5
E 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	13.6	B	Alta Vista Rd EB	93.1	F	L/T/R	93.1	F	104	168
				Bellevue Dr WB	74.7	E	L/T/R	74.7	E	11	42
				MD 355 (Rockville Pike) NB	18.2	B	U/L	-	-	-	-
							T	18.2	B	309	380
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	9.7	A	U/L	18.6	B	209	m254
							T	8.9	A	343	143
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table EX-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
E 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	36.0	D	Grosvenor Ln EB	56.4	E	L	68.0	E	80	118
							R	46.2	D	34	95
				Grosvenor Ln WB	46.1	D	L	32.8	C	80	97
							T/R	56.9	E	233	311
				MD 355 (Rockville Pike) NW	42.1	D	T	42.1	D	737	#1,040
				MD 355 (Rockville Pike) SB	22.9	C	T	23.5	C	401	541
							R	15.9	B	0	38
E 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	17.6	B	I-495 Inner Loop Off-Ramp SE	78.7	E	R	78.7	E	217	270
				MD 355 (Rockville Pike) SB	7.8	A	T	7.8	A	245	316
E 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	18.3	B	Pooks Hill Rd EB	101.6	F	L	101.6	F	153	206
							R	0.0	A	0	56
				MD 355 (Rockville Pike) NB	9.1	A	L	58.0	E	79	m89
							T	8.1	A	40	45
				MD 355 (Rockville Pike) SB	22.4	C	T	23.8	C	541	573
							R	12.2	B	3	3
E 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	23.9	C	Alta Vista Rd EB	97.9	F	L/T/R	97.9	F	127	199
				Bellevue Dr WB	73.0	E	L/T/R	73.0	E	17	48
				MD 355 (Rockville Pike) NB	30.2	C	U/L	19.8	B	3	9
							T	30.3	C	1,071	1,238
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	11.6	B	U/L	82.6	F	275	#449
							T	2.9	A	87	42
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

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SYNCHRO ANALYSIS OUTPUT TABLES

Table NB-2B - I-370 (Sam Eig Highway) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 100‡	I-370 (Sam Eig Hwy) at Fields Rd	22.2	C	Fields Rd WB	54.0	D	L	73.0	E	92	130
							R	44.5	D	163	191
				I-370 (Sam Eig Hwy) NB	15.1	B	T	15.6	B	473	611
							R	12.6	B	186	349
				I-370 (Sam Eig Hwy) SB	22.9	C	L	74.4	E	255	304
							T	5.0	A	128	165
				Washingtonian Blvd Ramp SEB	3.9	A	R	3.9	A	20	39
N 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	20.5	C	Washingtonian Blvd Ramp WB	24.3	C	L	25.3	C	80	175
							L/T	25.3	C	81	176
							R	22.0	C	0	0
				Washingtonian Blvd NB	1.6	A	L	0.7	A	0	1
							T	1.8	A	1	2
				Washingtonian Blvd SB	25.2	C	T	25.2	C	101	155
							T/R	-	-	-	-
N 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	10.7	B	Washingtonian Blvd Ramp EB	29.5	C	L/T	29.8	C	14	43
							R	29.4	C	0	0
				Washingtonian Blvd NB	17.7	B	T	18.2	B	65	121
							R	16.7	B	0	0
				Washingtonian Blvd SB	4.1	A	L/T	-	-	-	-
							T	4.1	A	13	76
N 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	4.7	A	MD 119 (Great Seneca Hwy) EB	0.1	A	T	0.1	A	0	0
				MD 119 (Great Seneca Hwy) WB	3.8	A	T	3.8	A	4	5
				I-370 (Sam Eig Hwy) SB	26.8	C	R	26.8	C	30	177
N 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	33.5	C	MD 119 (Great Seneca Hwy) EB	23.3	C	L	41.6	D	492	570
							T	13.6	B	589	660
				MD 119 (Great Seneca Hwy) WB	50.9	D	T	50.9	D	108	140
				I-370 (Sam Eig Hwy) SB	86.9	F	L	86.9	F	293	355
N 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	29.4	C	Diamondback Dr EB	77.3	E	L	78.2	E	365	417
							R	56.5	E	0	0
				Diamondback Dr WB	66.7	E	R	66.7	E	103	138
				I-370 (Sam Eig Hwy) NB	11.2	B	L	128.1	F	27	m47
							T	10.0	B	89	374
							R	0.1	A	0	m0
				I-370 (Sam Eig Hwy) SB	21.7	C	L	103.2	F	122	179
							T	21.8	C	199	381
							R	0.3	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-2B - I-370 (Sam Eig Highway) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 100‡	I-370 (Sam Eig Hwy) at Fields Rd	28.4	C	Fields Rd WB	49.8	D	L	66.8	E	206	254
							R	39.0	D	260	303
				I-370 (Sam Eig Hwy) NB	28.0	C	T	28.8	C	619	343
							R	22.9	C	143	183
				I-370 (Sam Eig Hwy) SB	24.2	C	L	69.8	E	328	402
							T	12.6	B	450	544
				Washingtonian Blvd Ramp SEB	9.2	A	R	9.2	A	144	218
N 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	20.4	C	Washingtonian Blvd Ramp WB	33.2	C	L	34.1	C	102	#218
							L/T	33.8	C	101	216
							R	27.8	C	0	0
				Washingtonian Blvd NB	0.7	A	L	0.6	A	1	m2
							T	0.8	A	2	3
				Washingtonian Blvd SB	31.4	C	T	31.4	C	117	186
							T/R	-	-	-	-
N 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	21.7	C	Washingtonian Blvd Ramp EB	30.6	C	L/T	31.3	C	33	76
							R	30.3	C	0	0
				Washingtonian Blvd NB	24.8	C	T	27.0	C	232	395
							R	23.5	C	26	168
				Washingtonian Blvd SB	13.4	B	L/T	-	-	-	-
							T	13.4	B	33	68
N 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	10.9	B	MD 119 (Great Seneca Hwy) EB	0.0	A	T	0.0	A	0	0
				MD 119 (Great Seneca Hwy) WB	5.4	A	T	5.4	A	18	19
				I-370 (Sam Eig Hwy) SB	27.7	C	R	27.7	C	950	346
N 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	44.9	D	MD 119 (Great Seneca Hwy) EB	26.2	C	L	41.8	D	361	428
							T	4.3	A	70	86
				MD 119 (Great Seneca Hwy) WB	56.6	E	T	56.6	E	586	647
				I-370 (Sam Eig Hwy) SB	69.9	E	L	69.9	E	134	201
N 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	38.5	D	Diamondback Dr EB	82.0	F	L	82.9	F	263	317
							R	64.2	E	0	0
				Diamondback Dr WB	58.2	E	R	58.2	E	180	216
				I-370 (Sam Eig Hwy) NB	52.2	D	L	72.1	E	107	178
							T	58.3	E	509	593
							R	0.1	A	0	0
				I-370 (Sam Eig Hwy) SB	22.7	C	L	80.6	F	176	253
							T	31.8	C	556	686
							R	3.4	A	898	1,236

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 200‡	Omega Dr at MD 28 (Key W Ave)	35.2	D	MD 28 (Key W Ave) EB	28.4	C	L	71.8	E	83	140
							T	27.7	C	484	730
							R	17.0	B	0	46
				MD 28 (Key W Ave) WB	31.7	C	U/L	-	-	-	-
							L	70.2	E	136	184
							T	15.4	B	79	141
							R	14.3	B	0	34
				Medical Center Dr NB	61.6	E	L	122.6	F	11	34
							T	56.6	E	31	49
							R	55.8	E	0	15
				Omega Dr SB	69.7	E	L	81.2	F	65	#112
							T	68.4	E	246	326
							R	50.4	D	0	14
N 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L/R	24.9	C	-	5.3*
N 204†	Omega Dr / Fields Rd at Washingtonian Blvd	7.6	A	Fields Rd EB	5.7	A	L	18.6	B	11	33
							T	4.7	A	41	72
				Omega Dr WB	8.8	A	T	8.4	A	11	36
							T/R	9.1	A	-	-
				Washingtonian Blvd SB	13.4	B	L	13.6	B	16	36
							R	11.0	B	0	5
N 205‡	Shady Grove Rd at Corporate Blvd	22.0	C	Corporate Blvd EB	72.5	E	L	73.4	E	57	109
							L/T	72.9	E	57	109
							R	65.4	E	0	0
				Corporate Blvd WB	71.1	E	L/T	74.1	E	26	61
							R	69.6	E	0	0
				Shady Grove Rd NB	31.2	C	L	25.2	C	3	16
							T	31.2	C	352	474
							T/R	-	-	-	-
				Shady Grove Rd SB	13.5	B	U/L	51.1	D	342	475
							T	5.3	A	162	199
							T/R	-	-	-	-

Table NB-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 207[†]	Shady Grove Rd at I-270 SB Off-Ramp	25.3	C	I-270 SB Off-Ramp EB	46.2	D	L	34.1	C	152	175
							R	52.1	D	452	498
				Shady Grove Rd NB	19.2	B	T	19.2	B	61	68
				Shady Grove Rd SB	12.8	B	T	12.8	B	420	452
							R	0.0	A	173	281
N 210[†]	Shady Grove Rd at I-270 NB Off-Ramp	24.4	C	I-270 NB Off-Ramp WB	54.5	D	L	54.5	D	421	453
							R	0.0	A	0	0
				Shady Grove Rd NB	13.5	B	T	13.5	B	95	139
							R	0.0	A	0	67
				Shady Grove Rd SB	13.2	B	T	13.2	B	230	216
N 212[‡]	Shady Grove Rd at Choke Cherry Rd	19.8	B	Choke Cherry Rd EB	64.8	E	L/T/R	71.5	E	34	80
							R	57.4	E	0	12
				Choke Cherry Rd WB	70.6	E	L	73.3	E	73	130
							L/T	71.4	E	73	129
							R	63.6	E	0	0
				Shady Grove Rd NB	16.7	B	U/L	32.5	C	52	149
							T	12.2	B	143	198
							R	25.2	C	31	71
				Shady Grove Rd SB	14.7	B	L	8.6	A	36	68
							T	15.2	B	275	395
							T/R	-	-	-	-
N 216[†]	Redland Blvd at Piccard Dr	10.7	B	I-270 NB Off-Ramp EB	6.2	A	L	5.1	A	32	72
							T	6.4	A	88	148
							T/R	6.5	A	-	-
				Redland Blvd WB	-	-	L	-	-	31	61
							R	-	-	0	0
				Piccard Dr NB	15.3	B	T	15.1	B	16	41
							R	15.4	B	0	13
				Piccard Dr SB	17.8	B	L/T	17.6	B	-	-
							T	18.1	B	84	130

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:

[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.

[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 200‡	Omega Dr at MD 28 (Key W Ave)	37.8	D	MD 28 (Key W Ave) EB	22.4	C	L	76.1	E	83	145
							T	16.9	B	142	194
							R	14.3	B	0	0
				MD 28 (Key W Ave) WB	28.7	C	U/L	-	-	-	-
							L	70.1	E	48	81
							T	27.9	C	570	721
							R	16.8	B	0	44
				Medical Center Dr NB	65.1	E	L	82.1	F	156	#241
							T	58.6	E	172	210
							R	63.8	E	144	245
				Omega Dr SB	68.3	E	L	75.2	E	54	89
							T	66.7	E	104	161
							R	65.4	E	62	145
N 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L/R	46.8	E	-	4.0*
N 204†	Omega Dr / Fields Rd at Washingtonian Blvd	12.7	B	Fields Rd EB	6.5	A	L	37.7	D	10	38
							T	2.9	A	12	24
				Omega Dr WB	10.6	B	T	10.1	B	293	435
							T/R	11.1	B	-	-
				Washingtonian Blvd SB	27.1	C	L	27.7	C	54	105
							R	25.5	C	3	40
N 205‡	Shady Grove Rd at Corporate Blvd	32.3	C	Corporate Blvd EB	79.5	E	L	81.3	F	89	#157
							L/T	81.8	F	90	#156
							R	63.3	E	0	0
				Corporate Blvd WB	77.4	E	L/T	54.5	D	60	102
							R	82.1	F	196	308
				Shady Grove Rd NB	28.9	C	L	17.8	B	8	25
							T	29.0	C	515	659
							T/R	-	-	-	-
				Shady Grove Rd SB	12.8	B	U/L	51.3	D	54	146
							T	7.7	A	106	182
							T/R	-	-	-	-

Table NB-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 207[†]	Shady Grove Rd at I-270 SB Off-Ramp	17.7	B	I-270 SB Off-Ramp EB	64.1	E	L	58.8	E	130	169
							R	68.3	E	196	247
				Shady Grove Rd NB	5.7	A	T	5.7	A	52	65
				Shady Grove Rd SB	0.1	A	T	0.1	A	27	35
							R	0.0	A	191	226
N 210[†]	Shady Grove Rd at I-270 NB Off-Ramp	12.7	B	I-270 NB Off-Ramp WB	68.0	E	L	68.0	E	197	246
							R	0.0	A	0	0
				Shady Grove Rd NB	0.1	A	T	0.1	A	37	76
							R	0.0	A	10	77
				Shady Grove Rd SB	4.2	A	T	4.2	A	9	20
N 212[‡]	Shady Grove Rd at Choke Cherry Rd	38.7	D	Choke Cherry Rd EB	68.5	E	L/T/R	85.8	F	130	#230
							R	49.5	D	45	106
				Choke Cherry Rd WB	74.5	E	L	80.7	F	211	#312
							L/T	77.4	E	213	311
							R	53.1	D	0	8
				Shady Grove Rd NB	27.7	C	U/L	59.4	E	105	#234
							T	23.5	C	282	336
							R	25.9	C	15	62
				Shady Grove Rd SB	34.3	C	L	20.2	C	37	67
							T	35.0	C	524	605
							T/R	-	-	-	-
N 216[†]	Redland Blvd at Piccard Dr	13.1	B	I-270 NB Off-Ramp EB	5.9	A	L	5.1	A	9	25
							T	5.9	A	47	75
							T/R	5.9	A	-	-
				Redland Blvd WB	-	-	L	-	-	11	26
							R	-	-	0	22
				Piccard Dr NB	18.4	B	T	15.8	B	86	#161
							R	20.6	C	0	53
				Piccard Dr SB	13.6	B	L/T	13.7	B	-	-
							T	13.5	B	24	47

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

\# Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:

[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.

[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-4B - Gude Drive Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 301†	Gude Dr at Research Blvd	62.2	E	Gude Dr EB	28.7	C	L	20.9	C	8	25
							T	29.7	C	289	#407
							R	22.5	C	0	0
				Gude Dr WB	19.7	B	L	40.1	D	198	#395
							T	10.1	B	59	52
							R	10.1	B	1	1
				Research Blvd NB	242.4	F	L	38.8	D	5	17
							T	47.5	D	84	127
							R	416.8	F	0	80
				Research Blvd SB	41.4	D	L	45.3	D	93	131
							T	39.0	D	123	190
							T/R	38.9	D	-	-
N 303†	Gude Dr at Piccard Dr	9.5	A	Gude Dr EB	5.1	A	L	7.7	A	27	m23
							T	4.6	A	14	m13
				Gude Dr WB	9.3	A	T	9.5	A	165	283
							R	6.8	A	0	24
				Piccard Dr SB	39.3	D	L	40.2	D	37	75
							R	39.0	D	73	120

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

Table NB-4B - Gude Drive Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 301[†]	Gude Dr at Research Blvd	104.2	F	Gude Dr EB	30.4	C	L	23.2	C	3	13
							T	30.5	C	222	#316
							R	23.1	C	0	0
				Gude Dr WB	16.4	B	L	26.6	C	112	#407
							T	12.5	B	100	103
							R	10.2	B	0	m4
				Research Blvd NB	346.8	F	L	34.1	C	76	126
							T	47.3	D	93	142
							R	665.2	F	0	99
				Research Blvd SB	43.9	D	L	45.8	D	104	143
							T	40.7	D	54	86
							T/R	40.8	D	-	-
N 303[†]	Gude Dr at Piccard Dr	18.4	B	Gude Dr EB	12.5	B	L	13.7	B	5	m8
							T	12.4	B	35	44
				Gude Dr WB	18.6	B	T	18.8	B	265	409
							R	11.9	B	3	23
				Piccard Dr SB	32.8	C	L	30.3	C	115	174
							R	34.0	C	214	272

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.

Table NB-5B - MD 28 (Montgomery Avenue) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 400‡	MD 28 (Montgomery Ave) at Hurley Ave	16.5	B	MD 28 (Montgomery Ave) EB	20.0	B	L	10.8	B	2	9
							T	20.0	B	480	605
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	7.7	A	U/L	66.8	E	114	184
							T	3.4	A	100	112
							T/R	-	-	-	-
				Hurley Ave NB	51.2	D	L/T	56.9	E	56	106
							R	48.9	D	0	67
				Hurley Ave SB	48.6	D	L	48.9	D	11	33
							T/R	48.0	D	4	20
N 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	14.9	B	MD 28 (Montgomery Ave) EB	13.6	B	T	13.6	B	14	30
							R	0.0	A	465	413
				MD 28 (Montgomery Ave) WB	6.7	A	T	6.7	A	156	215
				I-270 Off-Ramp SB	53.0	D	L	53.0	D	176	221
							R	0.0	A	72	129
N 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	21.9	C	MD 28 (Montgomery Ave) EB	11.6	B	L	20.9	C	137	186
							T	8.7	A	203	208
				MD 28 (Montgomery Ave) WB	26.2	C	T	26.2	C	188	260
							T/R	-	-	-	-
				I-270 Off-Ramp NB	46.6	D	T	46.6	D	108	175
							R	46.6	D	69	155
				Nelson St SB	27.0	C	L	57.4	E	21	52
							R	24.1	C	106	131
N 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	13.7	B	MD 28 (Montgomery Ave) EB	14.2	B	L	0.9	A	0	m1
							T/R	14.3	B	422	#1,312
				MD 28 (Montgomery Ave) WB	5.5	A	L	2.9	A	1	4
							T/R	5.5	A	181	336
				Bullard Cir NB	46.9	D	L/T	47.1	D	11	32
							R	46.5	D	0	17
				Laird St SB	59.8	E	L/T/R	59.8	E	77	135

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-5B - MD 28 (Montgomery Avenue) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 400‡	MD 28 (Montgomery Ave) at Hurley Ave	22.5	C	MD 28 (Montgomery Ave) EB	30.9	C	L	18.2	B	2	11
							T	31.0	C	589	666
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	11.9	B	U/L	73.7	E	257	#376
							T	3.8	A	126	157
							T/R	-	-	-	-
				Hurley Ave NB	53.6	D	L/T	62.7	E	72	131
							R	47.8	D	0	61
				Hurley Ave SB	48.9	D	L	49.6	D	27	62
							T/R	47.2	D	3	25
N 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	17.3	B	MD 28 (Montgomery Ave) EB	14.3	B	T	14.3	B	15	28
							R	0.0	A	585	654
				MD 28 (Montgomery Ave) WB	10.2	B	T	10.2	B	258	327
				I-270 Off-Ramp SB	55.1	E	L	55.1	E	208	259
							R	0.0	A	98	166
N 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	25.1	C	MD 28 (Montgomery Ave) EB	13.1	B	L	34.1	C	96	182
							T	9.1	A	185	228
				MD 28 (Montgomery Ave) WB	29.6	C	T	29.6	C	311	364
							T/R	-	-	-	-
				I-270 Off-Ramp NB	44.1	D	T	47.9	D	210	310
							R	38.1	D	39	106
				Nelson St SB	30.1	C	L	64.2	E	26	#64
							R	27.6	C	192	257
N 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	13.7	B	MD 28 (Montgomery Ave) EB	15.3	B	L	0.4	A	0	m1
							T/R	15.7	B	846	#1,427
				MD 28 (Montgomery Ave) WB	8.1	A	L	1.9	A	0	4
							T/R	8.1	A	250	875
				Bullard Cir NB	51.0	D	L/T	51.3	D	8	23
							R	50.7	D	0	17
				Laird St SB	53.1	D	L/T/R	53.1	D	20	68

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-6B - MD 189 (Falls Road) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 500‡	MD 189 (Falls Rd) at Wootton Pkwy	53.1	D	MD 189 (Falls Rd) EB	52.6	D	L	76.3	E	120	189
							T	52.9	D	436	524
							R	27.6	C	12	52
				MD 189 (Falls Rd) WB	54.1	D	L	81.2	F	273	#382
							T	33.0	C	185	244
							R	15.3	B	0	28
				Wootton Pkwy NB	45.8	D	L	64.6	E	104	#207
							T	54.1	D	62	95
							R	20.4	C	0	36
				Wootton Pkwy SB	54.8	D	L	70.6	E	393	#654
							T	63.9	E	393	476
							R	0.2	A	0	0
N 503‡	MD 189 (Falls Rd) at I-270 Ramps (SPUI)	37.8	D	MD 189 (Falls Rd) EB	40.8	D	L	33.9	C	376	525
							T	51.8	D	144	197
				MD 189 (Falls Rd) WB	31.1	C	L	22.3	C	172	220
							T	48.0	D	127	177
				I-270 Off-Ramp SEB	56.3	E	L	56.3	E	146	230
				I-270 Off-Ramp NWB	41.9	D	L	41.9	D	20	40
N 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	16.8	B	MD 189 (Falls Rd) EB	3.3	A	U/L	4.4	A	46	90
							T	2.8	A	73	120
							T/R	-	-	-	-
				MD 189 (Maryland Ave) WB	18.2	B	L	14.9	B	3	18
							T	18.3	B	121	223
							T/R	-	-	-	-
				Potomac Valley Rd NB	43.6	D	L	46.1	D	26	68
							T/R	35.1	D	2	22
				Great Falls Rd SB	42.5	D	L/T	40.1	D	20	57
							R	42.7	D	188	300

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-6B - MD 189 (Falls Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 500‡	MD 189 (Falls Rd) at Wootton Pkwy	44.2	D	MD 189 (Falls Rd) EB	44.2	D	L	82.5	F	160	#257
							T	38.1	D	204	264
							R	27.0	C	0	48
				MD 189 (Falls Rd) WB	46.4	D	L	68.9	E	138	187
							T	44.7	D	393	475
							R	28.2	C	116	189
				Wootton Pkwy NB	47.0	D	L	36.1	D	94	146
							T	61.7	E	421	506
							R	24.8	C	0	59
				Wootton Pkwy SB	28.4	C	L	42.1	D	80	143
							T	39.3	D	74	108
							R	0.1	A	0	0
N 503‡	MD 189 (Falls Rd) at I-270 Ramps (SPUI)	54.4	D	MD 189 (Falls Rd) EB	57.4	E	L	46.8	D	485	633
							T	69.5	E	255	322
				MD 189 (Falls Rd) WB	50.5	D	L	39.4	D	248	304
							T	70.2	E	182	239
				I-270 Off-Ramp SEB	60.8	E	L	60.8	E	329	448
				I-270 Off-Ramp NWB	49.1	D	L	49.1	D	143	190
N 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	15.0	B	MD 189 (Falls Rd) EB	3.7	A	U/L	6.2	A	50	119
							T	2.8	A	74	122
							T/R	-	-	-	-
				MD 189 (Maryland Ave) WB	14.8	B	L	11.0	B	1	9
							T	14.8	B	147	257
							T/R	-	-	-	-
				Potomac Valley Rd NB	43.6	D	L	45.0	D	25	64
							T/R	36.7	D	2	18
				Great Falls Rd SB	46.5	D	L/T	38.1	D	11	35
							R	47.0	D	162	257

Note: 95th percentile queuing reported using Synchro software.

Reporting Source:

- Hyphen denotes that no value was recorded for this metric.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table NB-7B - Wootton Parkway Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 600‡	Wootton Pkwy at Seven Locks Rd	33.2	C	Wootton Pkwy EB	48.8	D	L	30.1	C	10	30
							T	75.0	E	215	#318
							R	22.5	C	0	54
				Wootton Pkwy WB	14.5	B	L	20.6	C	240	#511
							T	4.2	A	51	10
							T/R	-	-	-	-
				Seven Locks Rd NB	14.6	B	L	34.3	C	46	88
							L/T	34.3	C	46	88
							R	0.2	A	0	0
				Seven Locks Rd SB	42.2	D	L/T	42.6	D	18	45
							R	40.9	D	0	0
N 601†	Wootton Pkwy at Tower Oaks Rd	25.5	C	Wootton Pkwy EB	21.3	C	L	47.2	D	13	m20
							T	20.5	C	29	m47
							R	0.0	A	0	m0
				Wootton Pkwy WB	26.6	C	L	47.7	D	167	218
							T	10.5	B	48	207
							R	8.0	A	0	0
				Tower Oaks Blvd NB	37.2	D	L	37.1	D	33	58
							T	37.5	D	6	17
							R	0.0	A	0	0
				Tower Oaks Blvd SB	39.2	D	L	38.4	D	6	18
							T	39.6	D	6	17
							R	0.0	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-7B - Wootton Parkway Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 600‡	Wootton Pkwy at Seven Locks Rd	30.0	C	Wootton Pkwy EB	26.7	C	L	29.0	C	2	11
							T	35.5	D	107	154
							R	11.9	B	0	27
				Wootton Pkwy WB	20.4	C	L	26.4	C	163	m#336
							T	16.9	B	145	m102
							T/R	-	-	-	-
				Seven Locks Rd NB	37.9	D	L	57.2	E	282	#486
							L/T	53.3	D	274	#473
							R	0.4	A	0	0
				Seven Locks Rd SB	42.1	D	L/T	42.6	D	12	35
							R	41.3	D	0	0
N 601†	Wootton Pkwy at Tower Oaks Rd	24.3	C	Wootton Pkwy EB	18.5	B	L	47.9	D	9	m25
							T	17.9	B	62	287
							R	0.0	A	0	m0
				Wootton Pkwy WB	25.7	C	L	62.4	E	73	108
							T	13.6	B	47	200
							R	10.4	B	0	0
				Tower Oaks Blvd NB	35.6	D	L	35.6	D	~137	158
							T	34.5	C	3	11
							R	0.0	A	0	0
				Tower Oaks Blvd SB	36.8	D	L	36.0	D	29	54
							T	38.5	D	7	20
							R	0.0	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-8B - Montrose Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 701‡	Montrose Rd at Seven Locks Rd	29.7	C	Montrose Rd EB	52.8	D	L	48.1	D	50	95
							T	53.8	D	117	167
							T/R	-	-	-	-
				Montrose Rd WB	32.2	C	L	38.6	D	152	m221
							L/T	-	-	-	-
							T	35.1	D	152	200
							R	11.1	B	8	m17
				Seven Locks Rd NB	10.3	B	L	37.1	D	10	31
							T	37.8	D	72	112
							R	0.8	A	0	0
				Seven Locks Rd SB	34.9	C	L	53.2	D	183	235
							T	23.3	C	207	263
							T/R	-	-	-	-
N 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	42.5	E	-	5.6*
				Potomac Rd SB	-	-	R	14.9	B	-	0.9*
N 707‡	Montrose Rd at Tower Oaks Blvd	19.2	B	Montrose Rd EB	7.6	A	L	32.8	C	68	m139
							T	4.3	A	127	154
				Montrose Rd WB	19.2	B	T	19.8	B	468	539
							R	10.6	B	0	28
				Tower Oaks Blvd SB	56.5	E	L	60.1	E	97	141
							R	55.0	D	36	103
				I-270 NB Off-Ramp NEB	2.0	A	R	2.0	A	0	0
N 708‡§	Montrose Rd at Farm Ln	1.9	A	Montrose Rd EB	1.9	A	T	1.9	A	0	383
				Montrose Rd WB	1.9	A	T	1.9	A	0	399
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0
N 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	12.9	B	Montrose Rd EB	12.3	B	L	8.0	A	1	4
							T	11.8	B	221	409
							T/R	13.2	B	-	-
				Montrose Rd WB	10.7	B	L	9.6	A	2	6
							T	10.3	B	194	358
							T/R	11.3	B	-	-
				Hitching Post Ln NB	39.2	D	L	40.8	D	70	#132
							T/R	32.8	C	2	27
				Farm Haven Dr SB	34.1	C	L	34.2	C	16	43
							T/R	34.1	C	2	38

Table NB-8B - Montrose Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	18.7	B	Tower Oaks Blvd EB	18.0	B	L/T	-	-	-	-
							T/R	18.0	B	89	186
				Tower Oaks Blvd WB	14.0	B	L/T	-	-	-	-
							T/R	14.0	B	31	74
				I-270 NB Ramps NB	21.0	C	L	21.9	C	84	#285
							L/T	21.7	C	83	#280
							R	13.3	B	0	10
				GEICO Ent SB	31.5	C	L/T/R	31.5	C	3	21
N 712‡	Tower Oaks Blvd at Commercial Dr	3.6	A	Commercial Dr WB	33.2	C	L	33.2	C	1	6
							L/R	-	-	-	-
				Tower Oaks Blvd NB	4.9	A	T	5.0	A	0	146
							R	3.5	A	0	14
				Tower Oaks Blvd SB	1.6	A	L	1.9	A	0	10
							T	1.6	A	0	35

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-8B - Montrose Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 701‡	Montrose Rd at Seven Locks Rd	35.3	D	Montrose Rd EB	75.5	E	L	50.7	D	51	97
							T	79.7	E	168	#267
							T/R	-	-	-	-
				Montrose Rd WB	29.6	C	L	41.3	D	349	m#529
							L/T	-	-	-	-
							T	33.2	C	347	431
							R	13.3	B	127	m202
				Seven Locks Rd NB	28.5	C	L	40.9	D	52	105
							T	52.3	D	255	#353
							R	0.6	A	0	0
				Seven Locks Rd SB	36.3	D	L	54.4	D	71	109
							T	29.6	C	146	195
							T/R	-	-	-	-
N 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	18.9	C	-	1.5*
				Potomac Rd SB	-	-	R	104.9	F	-	8.4*
N 707‡	Montrose Rd at Tower Oaks Blvd	10.5	B	Montrose Rd EB	5.7	A	L	23.7	C	10	m57
							T	4.7	A	246	m292
				Montrose Rd WB	7.8	A	T	8.4	A	543	0
							R	0.2	A	0	m0
				Tower Oaks Blvd SB	61.4	E	L	65.6	E	55	90
							R	59.3	E	23	73
				I-270 NB Off-Ramp NEB	1.5	A	R	1.5	A	0	0
N 708‡§	Montrose Rd at Farm Ln	4.4	A	Montrose Rd EB	3.1	A	T	3.1	A	0	369
				Montrose Rd WB	5.4	A	T	5.4	A	0	698
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0
N 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	10.8	B	Montrose Rd EB	8.3	A	L	10.7	B	2	6
							T	8.0	A	167	334
							T/R	9.0	A	-	-
				Montrose Rd WB	11.2	B	L	6.6	A	2	6
							T	10.5	B	273	542
							T/R	12.4	B	-	-
				Hitching Post Ln NB	41.3	D	L	42.4	D	39	#92
							T/R	39.0	D	6	34
				Farm Haven Dr SB	39.4	D	L	40.0	D	12	35
							T/R	38.9	D	3	27

Table NB-8B - Montrose Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	17.6	B	Tower Oaks Blvd EB	17.1	B	L/T	-	-	-	-
							T/R	17.1	B	53	127
				Tower Oaks Blvd WB	16.0	B	L/T	-	-	-	-
							T/R	16.0	B	30	78
				I-270 NB Ramps NB	18.3	B	L	18.4	B	57	189
							L/T	18.5	B	58	193
							R	12.8	B	0	0
				GEICO Ent SB	28.4	C	L/T/R	28.4	C	7	36
N 712‡	Tower Oaks Blvd at Commercial Dr	5.0	A	Commercial Dr WB	31.1	C	L	31.1	C	7	21
							L/R	-	-	-	-
				Tower Oaks Blvd NB	5.1	A	T	5.1	A	38	115
							R	3.8	A	0	7
				Tower Oaks Blvd SB	2.0	A	L	1.9	A	2	7
							T	2.0	A	17	26

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-9B - Westlake Terrace Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	12.6	B	Westlake Terr EB	8.0	A	L	7.7	A	25	60
							T	8.1	A	91	147
							T/R	8.1	A	-	-
				Westlake Terr WB	4.4	A	L	5.3	A	25	52
							T	3.9	A	22	46
							T/R	4.4	A	-	-
				Westfield Montgomery Mall Ent NB	48.8	D	L	50.1	D	3	15
							T/R	48.7	D	15	52
				Motor City Dr SB	54.3	D	L	57.3	E	72	123
							T/R	49.7	D	3	43
N 801‡	Westlake Terr at I-270 Spur Ramps	12.0	B	Westlake Terr EB	12.5	B	L	12.1	B	16	61
							T	12.6	B	53	122
				Westlake Terr WB	12.7	B	T	12.9	B	56	128
							R	10.2	B	0	19
				I-270 Spur Ramps SB	9.8	A	L/R	9.8	A	51	154
N 802‡	Westlake Terr at Rockledge Dr	29.4	C	Westlake Terr EB	24.2	C	L	21.8	C	109	#511
							T	25.7	C	95	190
							T/R	-	-	-	-
				Westlake Terr WB	37.0	D	L	29.1	C	41	118
							T	39.3	D	97	156
							T/R	-	-	-	-
				Rockledge Dr NB	48.4	D	L/T	49.3	D	6	22
							R	46.6	D	0	0
				Rockledge Dr SB	28.6	C	L	25.2	C	51	82
							L/T	32.7	C	207	265
							R	25.5	C	0	53

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-9B - Westlake Terrace Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	23.7	C	Westlake Terr EB	22.1	C	L	21.1	C	18	55
							T	22.2	C	85	155
							T/R	22.2	C	-	-
				Westlake Terr WB	14.5	B	L	15.5	B	72	143
							T	14.2	B	114	192
							T/R	14.2	B	-	-
				Westfield Montgomery Mall Ent NB	33.3	C	L	31.4	C	25	48
							T/R	33.7	C	6	58
				Motor City Dr SB	47.5	D	L	53.1	D	157	228
							T/R	29.3	C	9	39
N 801‡	Westlake Terr at I-270 Spur Ramps	8.8	A	Westlake Terr EB	8.8	A	L	14.0	B	56	149
							T	6.0	A	38	64
				Westlake Terr WB	6.6	A	T	6.6	A	61	98
							R	6.6	A	0	29
				I-270 Spur Ramps SB	20.4	C	L/R	20.4	C	38	154
N 802‡	Westlake Terr at Rockledge Dr	46.9	D	Westlake Terr EB	33.2	C	L	39.3	D	127	#217
							T	29.4	C	103	163
							T/R	-	-	-	-
				Westlake Terr WB	44.4	D	L	33.1	C	3	11
							T	44.5	D	223	290
							T/R	-	-	-	-
				Rockledge Dr NB	54.8	D	L/T	65.3	E	235	#382
							R	39.5	D	0	64
				Rockledge Dr SB	53.8	D	L	35.5	D	71	124
							L/T	35.5	D	71	124
							R	61.2	E	234	#446

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-10B - Democracy Boulevard Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 900†	Democracy Blvd at Taveshire Way	10.5	B	Democracy Blvd EB	4.7	A	T	4.7	A	99	136
				Democracy Blvd WB	3.8	A	T	3.8	A	41	59
				Taveshire Way SB	54.0	D	L	48.7	D	52	75
							R	62.1	E	8	65
N 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	32.0	C	Democracy Blvd EB	34.2	C	T	34.2	C	458	517
							T/R	-	-	-	-
				Democracy Blvd WB	8.1	A	T	8.1	A	76	86
				I-270 Spur Off Ramp SB	49.4	D	L	51.3	D	196	254
							R	46.0	D	0	75
N 902‡	Democracy Blvd at I-270 SB On-Ramp	5.5	A	Democracy Blvd EB	0.5	A	T	0.5	A	8	8
				Democracy Blvd WB	14.3	B	L	41.2	D	160	206
							T	0.7	A	0	0
N 903‡	Democracy Blvd at I-270 Spur NB Ramps	7.3	A	Democracy Blvd EB	0.3	A	T	0.3	A	0	0
							T/R	-	-	-	-
				Democracy Blvd WB	1.4	A	T	1.4	A	19	27
				I-270 Spur Off Ramp NB	69.1	E	L	69.1	E	128	172
N 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	18.8	B	Democracy Blvd EB	15.5	B	T	15.5	B	373	457
				Democracy Blvd WB	0.1	A	T	0.1	A	0	m0
				I-270 Spur Off Ramp NB	38.0	D	R	38.0	D	442	477
N 906‡	Democracy Blvd at Fernwood Rd	41.1	D	Democracy Blvd EB	42.9	D	U/L	-	-	-	-
							L	67.5	E	464	#602
							T	47.6	D	327	313
							R	0.6	A	0	0
				Democracy Blvd WB	45.0	D	L	68.3	E	220	#334
							T	54.0	D	39	62
							R	0.1	A	0	0
				Fernwood Rd NB	43.8	D	L	62.8	E	666	#931
							R	0.3	A	0	0
				Fernwood Rd SB	9.9	A	L	24.8	C	32	52
							R	0.1	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-10B - Democracy Boulevard Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 900†	Democracy Blvd at Taveshire Way	12.1	B	Democracy Blvd EB	4.4	A	T	4.4	A	64	103
				Democracy Blvd WB	4.9	A	T	4.9	A	108	163
				Taveshire Way SB	51.5	D	L	49.4	D	85	108
							R	56.9	E	82	137
N 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	46.7	D	Democracy Blvd EB	63.6	E	T	63.6	E	413	#477
							T/R	-	-	-	-
				Democracy Blvd WB	18.5	B	T	18.5	B	148	168
				I-270 Spur Off Ramp SB	51.8	E	L	27.2	C	141	182
							R	66.9	E	626	#909
N 902‡	Democracy Blvd at I-270 SB On-Ramp	17.8	B	Democracy Blvd EB	2.5	A	T	2.5	A	14	54
				Democracy Blvd WB	33.2	C	L	87.3	F	281	#403
							T	0.7	A	0	0
N 903‡	Democracy Blvd at I-270 Spur NB Ramps	7.2	A	Democracy Blvd EB	1.0	A	T	1.0	A	21	24
							T/R	-	-	-	-
				Democracy Blvd WB	3.7	A	T	3.7	A	95	128
				I-270 Spur Off Ramp NB	69.2	E	L	69.2	E	107	148
N 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	8.6	A	Democracy Blvd EB	3.2	A	T	3.2	A	82	161
				Democracy Blvd WB	0.2	A	T	0.2	A	0	0
				I-270 Spur Off Ramp NB	48.3	D	R	48.3	D	207	235
N 906‡	Democracy Blvd at Fernwood Rd	31.3	C	Democracy Blvd EB	34.0	C	U/L	-	-	-	-
							L	62.3	E	69	107
							T	47.6	D	295	351
							R	0.6	A	0	0
				Democracy Blvd WB	38.7	D	L	76.0	E	272	#456
							T	30.8	C	212	268
							R	0.1	A	0	0
				Fernwood Rd NB	40.2	D	L	55.7	E	498	645
							R	0.2	A	0	0
				Fernwood Rd SB	9.2	A	L	28.1	C	89	118
							R	0.9	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1000†	Rockledge Dr at Rock Forest Dr	24.3	C	Rockledge Dr EB	56.3	E	L	58.8	E	88	127
							T	46.6	D	8	26
							R	49.2	D	0	0
				Rock Forest Dr WB	67.0	E	L	76.5	E	32	71
							T	52.9	D	12	35
							R	64.7	E	0	0
				Rockledge Dr NB	9.9	A	L	10.4	B	29	57
							T	9.6	A	42	69
							T/R	9.6	A	-	-
				Rockledge Dr SB	13.8	B	L	8.4	A	7	20
							T	14.0	B	224	318
							R	0.0	A	0	0
N 1001‡	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	19.0	B	I-270 SB Off Ramp EB	30.5	C	L/T	-	-	-	-
							T	67.8	E	367	442
							R	1.6	A	0	0
				Rockledge Dr NB	33.8	C	T	65.5	E	73	111
							R	22.7	C	131	172
				Rockledge Dr SB	0.0	A	T	0.0	A	0	0
N 1002‡	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	39.0	D	I-270 NB Ramp Connector WB	41.8	D	L	49.1	D	697	#1,009
							L/T	-	-	-	-
							T	38.1	D	628	741
				Rockledge Dr NB	0.3	A	L	0.3	A	0	0
N 1003‡	MD 187 (Old Georgetown Road) at Rock Spring Dr	40.5	D	Rock Spring Dr EB	75.2	E	L	91.5	F	301	#482
							L/T	89.3	F	298	#480
							R	45.4	D	122	208
				Rock Spring Dr WB	73.6	E	L/T/R	73.6	E	10	48
				MD 187 (Old Georgetown Road) NB	28.2	C	L	75.2	E	90	#149
							T	21.1	C	260	301
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	34.7	C	L	75.2	E	42	m59
							T	34.7	C	575	534
							R	31.3	C	95	177

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	23.4	C	I-270 SB Ramp Connector EB	49.5	D	L	36.1	D	80	118
							L/T/R	36.0	D	80	118
							R	53.8	D	376	426
				MD 187 (Old Georgetown Road) NB	24.3	C	T	24.3	C	202	218
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	12.6	B	L	37.5	D	0	0
							T	9.5	A	280	308
N 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	9.6	A	I-270 NB Off Ramp WB	16.0	B	L	69.7	E	68	121
							L/T	69.0	E	67	120
							R	0.4	A	0	0
				MD 187 (Old Georgetown Road) NB	16.3	B	L	91.6	F	160	211
							T	0.9	A	44	48
				MD 187 (Old Georgetown Road) SB	4.4	A	T	6.1	A	147	m119
							R	0.1	A	0	m0
N 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	139.6	F	Tuckerman Ln EB	78.9	E	L	47.6	D	49	78
							T	84.3	F	364	#496
							T/R	-	-	-	-
				Tuckerman Ln WB	257.0	F	L	334.2	F	~535	#664
							T	59.8	E	97	141
							R	48.4	D	0	9
				MD 187 (Old Georgetown Road) NB	56.3	E	U/L	300.2	F	~300	#490
							T	17.0	B	132	170
							R	20.6	C	12	46
				MD 187 (Old Georgetown Road) SB	181.0	F	L	71.5	E	32	69
							T	182.7	F	~1,101	#1,205
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 1000[†]	Rockledge Dr at Rock Forest Dr	34.8	C	Rockledge Dr EB	59.6	E	L	55.2	E	193	240
							T	40.3	D	29	59
							R	70.8	E	0	73
				Rock Forest Dr WB	67.7	E	L	76.5	E	32	70
							T	54.9	D	8	28
							R	62.8	E	0	0
				Rockledge Dr NB	18.3	B	L	11.5	B	12	32
							T	18.7	B	246	362
							T/R	18.6	B	-	-
				Rockledge Dr SB	13.7	B	L	13.3	B	24	54
							T	13.8	B	65	104
							R	0.0	A	0	0
N 1001[‡]	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	34.0	C	I-270 SB Off Ramp EB	47.4	D	L/T	-	-	-	-
							T	79.5	E	297	#393
							R	0.4	A	0	0
				Rockledge Dr NB	35.8	C	T	70.4	E	244	311
							R	19.2	B	317	439
				Rockledge Dr SB	0.0	A	T	0.0	A	0	0
N 1002[‡]	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	25.0	C	I-270 NB Ramp Connector WB	32.1	D	L	27.3	C	316	453
							L/T	-	-	-	-
							T	33.6	C	560	643
				Rockledge Dr NB	0.1	A	L	0.1	A	0	0
N 1003[‡]	MD 187 (Old Georgetown Road) at Rock Spring Dr	61.5	E	Rock Spring Dr EB	76.9	E	L	87.4	F	322	#509
							L/T	88.8	F	329	#520
							R	32.4	C	19	60
				Rock Spring Dr WB	155.1	F	L/T/R	155.1	F	53	#203
				MD 187 (Old Georgetown Road) NB	57.8	E	L	59.6	E	91	134
							T	57.7	E	~877	#998
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	52.5	D	L	95.3	F	~112	#247
							T	47.7	D	548	603
							R	66.1	E	117	174

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	22.2	C	I-270 SB Ramp Connector EB	61.8	E	L	68.3	E	348	#505
							L/T/R	65.4	E	350	487
							R	44.8	D	104	151
				MD 187 (Old Georgetown Road) NB	17.4	B	T	17.4	B	418	m421
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	9.9	A	L	26.3	C	51	77
							T	8.7	A	94	178
N 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	14.6	B	I-270 NB Off Ramp WB	18.2	B	L	72.5	E	46	91
							L/T	72.0	E	46	91
							R	0.2	A	0	0
				MD 187 (Old Georgetown Road) NB	16.7	B	L	73.6	E	268	245
							T	3.4	A	199	209
				MD 187 (Old Georgetown Road) SB	10.8	B	T	14.7	B	171	m198
							R	0.1	A	0	m0
N 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	76.7	E	Tuckerman Ln EB	61.0	E	L	57.8	E	152	195
							T	63.4	E	217	267
							T/R	-	-	-	-
				Tuckerman Ln WB	168.7	F	L	253.9	F	~340	#458
							T	76.4	E	169	#242
							R	50.7	D	0	29
				MD 187 (Old Georgetown Road) NB	46.5	D	U/L	246.2	F	~333	#525
							T	29.9	C	~834	#918
							R	16.9	B	118	442
				MD 187 (Old Georgetown Road) SB	87.0	F	L	77.5	E	67	#172
							T	87.3	F	~899	#1,079
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
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m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-12B - MD 190 (River Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1100‡	MD 190 (River Rd) at Seven Locks Rd	37.4	D	MD 190 (River Rd) EB	41.3	D	L	23.7	C	13	33
							T	41.5	D	634	742
							T/R	-	-	-	-
				MD 190 (River Rd) WB	18.2	B	U/L	65.1	E	83	#165
							T	12.8	B	139	168
							R	1.6	A	0	4
				Seven Locks Rd NB	19.2	B	L	83.2	F	21	54
							T	132.7	F	42	#105
							R	0.2	A	0	0
				Seven Locks Rd SB	66.5	E	L	70.5	E	360	#535
							L/T/R	62.5	E	345	480
N 1102‡	MD 190 (River Rd) at I-495 Outer Loop Off-Ramp	12.1	B	MD 190 (River Rd) EB	2.6	A	T	2.6	A	25	97
				MD 190 (River Rd) WB	4.1	A	T	4.1	A	80	117
				I-495 Outer Loop Off-Ramp NB	65.7	E	L	65.7	E	142	187
N 1105‡	MD 190 (River Rd) WB at I-495 Inner Loop On-Ramp	0.7	A	MD 190 (River Rd) EB	0.9	A	L	4.8	A	5	47
							T	0.1	A	0	0
				MD 190 (River Rd) WB	0.2	A	T	0.2	A	0	0
N 1107†	MD 190 (River Rd) at Burdette Rd	18.1	B	MD 190 (River Rd) EB	12.5	B	L	15.7	B	17	40
							T	12.5	B	425	859
							R	4.9	A	0	0
				MD 190 (River Rd) WB	12.5	B	L	12.5	B	1	5
							T	12.5	B	508	747
							R	5.8	A	0	0
				Burdette Rd NB	74.8	E	L/T/R	74.8	E	45	84
				Burdette Rd SB	95.2	F	L/T	71.1	E	60	104
							R	101.8	F	123	207

Note: 95th percentile queuing reported using Synchro software.

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Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-12B - MD 190 (River Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1100‡	MD 190 (River Rd) at Seven Locks Rd	45.0	D	MD 190 (River Rd) EB	62.3	E	L	88.0	F	24	#80
							T	61.4	E	385	#491
							T/R	-	-	-	-
				MD 190 (River Rd) WB	36.0	D	U/L	67.6	E	221	m#403
							T	40.3	D	682	766
							R	17.4	B	40	36
				Seven Locks Rd NB	30.7	C	L	56.9	E	23	55
							T	88.8	F	205	#341
							R	0.3	A	0	0
				Seven Locks Rd SB	68.6	E	L	57.9	E	314	445
							L/T/R	77.0	E	426	#637
N 1102‡	MD 190 (River Rd) at I-495 Outer Loop Off-Ramp	9.4	A	MD 190 (River Rd) EB	1.1	A	T	1.1	A	28	35
				MD 190 (River Rd) WB	5.5	A	T	5.5	A	171	202
				I-495 Outer Loop Off-Ramp NB	70.7	E	L	70.7	E	150	200
N 1105‡	MD 190 (River Rd) WB at I-495 Inner Loop On-Ramp	7.0	A	MD 190 (River Rd) EB	4.7	A	L	24.1	C	103	215
							T	0.2	A	0	0
				MD 190 (River Rd) WB	9.7	A	T	9.7	A	327	496
N 1107†	MD 190 (River Rd) at Burdette Rd	40.9	D	MD 190 (River Rd) EB	17.9	B	L	93.2	F	244	344
							T	7.1	A	238	444
							R	3.6	A	0	11
				MD 190 (River Rd) WB	54.5	D	L	9.7	A	1	4
							T	55.6	E	~1,643	#1,886
							R	10.1	B	0	1
				Burdette Rd NB	80.0	F	L/T/R	80.0	F	32	72
				Burdette Rd SB	104.1	F	L/T	77.8	E	62	112
							R	114.5	F	0	72

Note: 95th percentile queuing reported using Synchro software.

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m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-13B - MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	15.9	B	Lone Oak Dr EB	70.3	E	L/T	77.4	E	66	116
							R	68.0	E	178	243
				Manor Oak Way WB	62.9	E	L/T/R	62.9	E	9	31
				MD 187 (Old Georgetown Rd) NB	7.0	A	U/L	38.5	D	82	m142
							T	4.0	A	152	182
							R	2.4	A	0	m0
				MD 187 (Old Georgetown Rd) SB	14.6	B	L	7.2	A	1	8
							T	14.7	B	483	686
							T/R	-	-	-	-
N 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	37.3	D	I-495 Outer Loop Off-Ramp WB	76.3	E	L	54.0	D	83	143
							L/T	54.0	D	85	146
							R	87.8	F	233	#417
				MD 187 (Old Georgetown Rd) NB	21.7	C	L	89.0	F	291	#490
							T	2.3	A	73	78
				MD 187 (Old Georgetown Rd) SB	37.6	D	T	37.6	D	~802	#1,077
							T/R	-	-	-	-
N 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	8.9	A	I-495 Inner Loop Off-Ramp EB	18.6	B	L	68.5	E	96	152
							L/T	68.5	E	97	154
							R	0.6	A	0	0
				MD 187 (Old Georgetown Rd) NB	12.4	A	T	12.4	B	193	m246
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	3.7	A	L	20.3	C	94	m94
							T	1.9	A	69	m75
N 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	15.8	B	Ryland Dr EB	124.9	F	L/T/R	124.9	F	~296	#490
				Church Dwy WB	49.2	D	L	49.8	D	27	59
							T	48.6	D	4	17
							R	49.0	D	0	45
				MD 187 (Old Georgetown Rd) NB	13.9	B	L	15.7	B	1	5
							T	13.9	B	185	222
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	3.4	A	U/L	2.0	A	6	10
							T	3.5	A	55	75
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
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m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-13B - MD 187 (Old Georgetown Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	17.4	B	Lone Oak Dr EB	60.9	E	L/T	71.2	E	102	161
							R	47.3	D	44	81
				Manor Oak Way WB	57.0	E	L/T/R	57.0	E	9	30
				MD 187 (Old Georgetown Rd) NB	14.6	B	U/L	36.4	D	105	m180
							T	13.2	B	519	653
							R	3.6	A	0	m0
				MD 187 (Old Georgetown Rd) SB	17.0	B	L	14.0	B	2	12
							T	17.0	B	439	595
							T/R	-	-	-	-
N 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	14.9	B	I-495 Outer Loop Off-Ramp WB	75.4	E	L	50.3	D	76	133
							L/T	50.3	D	77	133
							R	88.1	F	284	#470
				MD 187 (Old Georgetown Rd) NB	5.0	A	L	50.3	D	172	m#205
							T	1.2	A	68	32
				MD 187 (Old Georgetown Rd) SB	12.6	B	T	12.6	B	154	164
							T/R	-	-	-	-
N 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	21.5	C	I-495 Inner Loop Off-Ramp EB	46.0	D	L	69.9	E	197	287
							L/T	69.2	E	195	284
							R	0.2	A	0	0
				MD 187 (Old Georgetown Rd) NB	25.5	C	T	25.5	C	790	230
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	7.7	A	L	49.7	D	154	m219
							T	2.5	A	33	160
N 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	7.9	A	Ryland Dr EB	68.9	E	L/T/R	68.9	E	56	96
				Church Dwy WB	62.7	E	L	63.2	E	10	28
							T	62.6	E	5	17
							R	62.5	E	0	11
				MD 187 (Old Georgetown Rd) NB	9.4	A	L	4.5	A	1	8
							T	9.4	A	363	624
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	2.0	A	U/L	34.0	C	1	35
							T	1.3	A	13	60
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Move-ment	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
N 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	32.6	C	Grosvenor Ln EB	59.6	E	L	60.5	E	47	79
							R	59.2	E	160	259
				Grosvenor Ln WB	44.6	D	L	38.7	D	259	321
							T/R	60.6	E	195	294
				MD 355 (Rockville Pike) NW	23.6	C	T	23.6	C	347	406
				MD 355 (Rockville Pike) SB	28.8	C	T	29.5	C	656	720
							R	15.5	B	6	35
N 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	24.8	C	I-495 Inner Loop Off-Ramp SE	76.2	E	R	76.2	E	322	392
				MD 355 (Rockville Pike) SB	17.2	B	T	17.2	B	697	771
N 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	31.3	C	Pooks Hill Rd EB	96.9	F	L	96.9	F	300	#398
							R	0.0	A	73	155
				MD 355 (Rockville Pike) NB	9.1	A	L	74.5	E	49	m92
							T	7.6	A	35	64
				MD 355 (Rockville Pike) SB	33.9	C	T	34.9	C	470	476
							R	4.5	A	0	m4
N 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	15.2	B	Alta Vista Rd EB	93.6	F	L/T/R	93.6	F	112	177
				Bellevue Dr WB	73.9	E	L/T/R	73.9	E	11	41
				MD 355 (Rockville Pike) NB	22.1	C	U/L	-	-	-	-
							T	22.1	C	369	451
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	10.4	B	U/L	18.9	B	248	m275
							T	9.6	A	340	158
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

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Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (PM Peak)												
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Move-ment**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft**	**95th %ile Queue (ft)**
N 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	31.5	C	Grosvenor Ln EB	61.6	E	L	66.1	E	77	113
							R	58.1	E	111	205
				Grosvenor Ln WB	59.2	E	L	38.4	D	95	132
							T/R	78.0	E	246	#429
				MD 355 (Rockville Pike) NW	30.9	C	T	30.9	C	686	789
				MD 355 (Rockville Pike) SB	19.0	C	T	19.4	B	404	449
							R	12.6	B	0	27
N 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	17.1	B	I-495 Inner Loop Off-Ramp SE	78.9	E	R	78.9	E	215	269
				MD 355 (Rockville Pike) SB	8.1	A	T	8.1	A	273	350
N 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	15.8	B	Pooks Hill Rd EB	99.1	F	L	99.1	F	157	211
							R	0.0	A	1	55
				MD 355 (Rockville Pike) NB	10.7	B	L	72.4	E	77	m82
							T	9.5	A	110	m97
				MD 355 (Rockville Pike) SB	14.3	B	T	15.4	B	283	290
							R	6.5	A	0	6
N 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	27.1	C	Alta Vista Rd EB	99.8	F	L/T/R	99.8	F	134	208
				Bellevue Dr WB	72.4	E	L/T/R	72.4	E	17	48
				MD 355 (Rockville Pike) NB	35.8	D	U/L	22.5	C	3	9
							T	35.8	D	1,195	1,360
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	11.9	B	U/L	98.9	F	291	#493
							T	1.2	A	35	16
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

\- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

\# Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

2027 PREFERRED ALTERNATIVE

SYNCHRO ANALYSIS OUTPUT TABLES

Table BP1-2B - I-370 (Sam Eig Highway) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 100‡	I-370 (Sam Eig Hwy) at Fields Rd	22.2	C	Fields Rd WB	53.8	D	L	72.5	E	92	129
							R	44.7	D	166	195
				I-370 (Sam Eig Hwy) NB	15.0	B	T	15.5	B	478	615
							R	12.5	B	182	348
				I-370 (Sam Eig Hwy) SB	22.9	C	L	74.5	E	249	297
							T	5.1	A	126	162
				Washingtonian Blvd Ramp SEB	4.1	A	R	4.1	A	21	39
P 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	20.0	C	Washingtonian Blvd Ramp WB	22.6	C	L	23.0	C	84	173
							L/T	22.8	C	82	170
							R	18.1	B	0	0
				Washingtonian Blvd NB	2.7	A	L	2.7	A	1	3
							T	2.6	A	1	3
				Washingtonian Blvd SB	24.6	C	T	24.6	C	29	57
							T/R	-	-	-	-
P 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	14.3	B	Washingtonian Blvd Ramp EB	26.2	C	L/T	25.5	C	4	16
							R	26.2	C	0	26
				Washingtonian Blvd NB	27.1	C	T	28.1	C	42	90
							R	26.5	C	0	38
				Washingtonian Blvd SB	3.6	A	L/T	-	-	-	-
							T	3.6	A	18	87
P 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	5.4	A	MD 119 (Great Seneca Hwy) EB	0.1	A	T	0.1	A	0	0
				MD 119 (Great Seneca Hwy) WB	3.8	A	T	3.8	A	4	5
				I-370 (Sam Eig Hwy) SB	32.0	C	R	32.0	C	21	168
P 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	33.8	C	MD 119 (Great Seneca Hwy) EB	24.0	C	L	43.6	D	506	587
							T	13.6	B	589	660
				MD 119 (Great Seneca Hwy) WB	49.3	D	T	49.3	D	106	138
				I-370 (Sam Eig Hwy) SB	87.0	F	L	87.0	F	286	348
P 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	29.3	C	Diamondback Dr EB	77.5	E	L	78.4	E	369	423
							R	56.3	E	0	0
				Diamondback Dr WB	66.7	E	R	66.7	E	103	138
				I-370 (Sam Eig Hwy) NB	10.8	B	L	126.2	F	27	m45
							T	9.7	A	89	354
							R	0.1	A	0	m0
				I-370 (Sam Eig Hwy) SB	21.6	C	L	103.9	F	121	186
							T	21.6	C	197	370
							R	0.3	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-2B - I-370 (Sam Eig Highway) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 100‡	I-370 (Sam Eig Hwy) at Fields Rd	28.2	C	Fields Rd WB	47.3	D	L	67.0	E	206	254
							R	34.6	C	257	302
				I-370 (Sam Eig Hwy) NB	28.6	C	T	29.5	C	765	336
							R	22.9	C	142	179
				I-370 (Sam Eig Hwy) SB	24.2	C	L	70.7	E	325	402
							T	12.4	B	440	538
				Washingtonian Blvd Ramp SEB	9.2	A	R	9.2	A	146	222
P 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	22.9	C	Washingtonian Blvd Ramp WB	37.3	D	L	37.7	D	120	#236
							L/T	37.2	D	116	#224
							R	28.3	C	0	0
				Washingtonian Blvd NB	2.6	A	L	2.4	A	16	m44
							T	3.2	A	2	m10
				Washingtonian Blvd SB	37.6	D	T	37.6	D	42	76
							T/R	-	-	-	-
P 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	26.4	C	Washingtonian Blvd Ramp EB	33.1	C	L/T	32.2	C	5	18
							R	33.1	C	0	38
				Washingtonian Blvd NB	29.5	C	T	34.3	C	216	#417
							R	27.1	C	0	130
				Washingtonian Blvd SB	17.0	B	L/T	-	-	-	-
							T	17.0	B	41	120
P 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	10.6	B	MD 119 (Great Seneca Hwy) EB	0.0	A	T	0.0	A	0	0
				MD 119 (Great Seneca Hwy) WB	5.2	A	T	5.2	A	18	19
				I-370 (Sam Eig Hwy) SB	27.1	C	R	27.1	C	946	346
P 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	44.6	D	MD 119 (Great Seneca Hwy) EB	26.6	C	L	42.6	D	364	432
							T	4.3	A	70	86
				MD 119 (Great Seneca Hwy) WB	55.3	E	T	55.3	E	581	642
				I-370 (Sam Eig Hwy) SB	71.1	E	L	71.1	E	134	201
P 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	38.7	D	Diamondback Dr EB	82.0	F	L	82.9	F	263	317
							R	64.2	E	0	0
				Diamondback Dr WB	58.2	E	R	58.2	E	180	216
				I-370 (Sam Eig Hwy) NB	52.7	D	L	72.4	E	108	179
							T	58.8	E	509	593
							R	0.1	A	0	0
				I-370 (Sam Eig Hwy) SB	22.7	C	L	82.6	F	177	253
							T	31.5	C	553	682
							R	3.4	A	869	1,227

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 200‡	Omega Dr at MD 28 (Key W Ave)	35.2	D	MD 28 (Key W Ave) EB	28.4	C	L	71.8	E	83	140
							T	27.7	C	484	730
							R	17.0	B	0	46
				MD 28 (Key W Ave) WB	31.7	C	U/L	-	-	-	-
							L	70.2	E	136	184
							T	15.4	B	79	141
							R	14.3	B	0	34
				Medical Center Dr NB	61.6	E	L	122.6	F	11	34
							T	56.6	E	31	49
							R	55.8	E	0	15
				Omega Dr SB	69.7	E	L	81.2	F	65	#112
							T	68.4	E	246	326
							R	50.4	D	0	14
P 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L	24.2	C	-	5.1*
P 204†	Omega Dr / Fields Rd at Washingtonian Blvd	7.6	A	Fields Rd EB	5.7	A	L	18.6	B	11	33
							T	4.7	A	41	72
				Omega Dr WB	8.8	A	T	8.4	A	11	36
							T/R	9.1	A	-	-
				Washingtonian Blvd SB	13.4	B	L	13.6	B	16	36
							R	11.0	B	0	5
P 205‡	Shady Grove Rd at Corporate Blvd	20.1	C	Corporate Blvd EB	78.4	E	L	79.3	E	54	105
							L/T	79.9	E	55	107
							R	66.7	E	0	0
				Corporate Blvd WB	71.1	E	L/T	74.1	E	26	61
							R	69.5	E	0	0
				Shady Grove Rd NB	27.7	C	L	22.7	C	3	15
							T	27.7	C	321	437
							T/R	-	-	-	-
				Shady Grove Rd SB	12.4	B	U/L	49.5	D	316	453
							T	4.2	A	139	130
							T/R	-	-	-	-

Table BP1-3B - Shady Grove Road Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 207[†]	Shady Grove Rd at I-270 SB Off-Ramp	24.8	C	I-270 SB Off-Ramp EB	46.6	D	L	34.9	C	156	180
							R	52.5	D	446	492
				Shady Grove Rd NB	17.4	B	T	17.4	B	46	52
				Shady Grove Rd SB	12.1	B	T	12.1	B	419	503
							R	0.0	A	169	442
P 210[†]	Shady Grove Rd at I-270 NB Off-Ramp	24.2	C	I-270 NB Off-Ramp WB	54.6	D	L	54.6	D	417	449
							R	0.0	A	0	0
				Shady Grove Rd NB	13.2	B	T	13.2	B	96	139
							R	0.0	A	0	67
				Shady Grove Rd SB	13.0	B	T	13.0	B	118	46
P 212[‡]	Shady Grove Rd at Choke Cherry Rd	19.3	B	Choke Cherry Rd EB	64.2	E	L/T/R	70.7	E	34	78
							R	57.1	E	0	11
				Choke Cherry Rd WB	69.9	E	L	72.3	E	73	129
							L/T	70.8	E	73	128
							R	63.4	E	0	0
				Shady Grove Rd NB	15.1	B	U/L	33.3	C	48	132
							T	11.5	B	130	148
							R	19.2	B	32	37
				Shady Grove Rd SB	15.0	B	L	8.7	A	36	73
							T	15.6	B	276	411
							T/R	-	-	-	-
P 216[†]	Redland Blvd at Piccard Dr	12.5	B	I-270 NB Off-Ramp EB	5.2	A	L	4.9	A	10	33
							T	5.2	A	20	48
							T/R	5.3	A	-	-
				Redland Blvd WB	-	-	L	-	-	30	61
							R	-	-	0	0
				Piccard Dr NB	14.3	B	T	14.1	B	15	39
							R	14.4	B	0	13
				Piccard Dr SB	16.6	B	L/T	16.4	B	-	-
							T	16.8	B	81	125

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.
[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 200‡	Omega Dr at MD 28 (Key W Ave)	37.8	D	MD 28 (Key W Ave) EB	22.4	C	L	76.1	E	83	145
							T	16.9	B	142	194
							R	14.3	B	0	0
				MD 28 (Key W Ave) WB	28.7	C	U/L	-	-	-	-
							L	70.1	E	48	81
							T	27.9	C	570	721
							R	16.8	B	0	44
				Medical Center Dr NB	65.1	E	L	82.1	F	156	#241
							T	58.6	E	172	210
							R	63.8	E	144	245
				Omega Dr SB	68.3	E	L	75.2	E	54	89
							T	66.7	E	104	161
							R	65.4	E	62	145
P 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L	46.8	E	-	4.0*
P 204†	Omega Dr / Fields Rd at Washingtonian Blvd	12.7	B	Fields Rd EB	6.5	A	L	37.7	D	10	38
							T	2.9	A	12	24
				Omega Dr WB	10.6	B	T	10.1	B	293	435
							T/R	11.1	B	-	-
				Washingtonian Blvd SB	27.1	C	L	27.7	C	54	105
							R	25.5	C	3	40
P 205‡	Shady Grove Rd at Corporate Blvd	31.0	C	Corporate Blvd EB	79.5	E	L	81.3	F	89	#157
							L/T	81.8	F	90	#156
							R	63.3	E	0	0
				Corporate Blvd WB	76.2	E	L/T	55.3	E	60	102
							R	80.6	F	184	292
				Shady Grove Rd NB	27.5	C	L	17.0	B	8	25
							T	27.6	C	491	650
							T/R	-	-	-	-
				Shady Grove Rd SB	10.6	B	U/L	53.0	D	60	123
							T	5.2	A	76	89
							T/R	-	-	-	-

Table BP1-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 207†	Shady Grove Rd at I-270 SB Off-Ramp	17.0	B	I-270 SB Off-Ramp EB	65.1	E	L	59.8	E	123	161
							R	69.2	E	185	235
				Shady Grove Rd NB	4.8	A	T	4.8	A	14	31
				Shady Grove Rd SB	0.1	A	T	0.1	A	27	54
							R	0.0	A	193	330
P 210†	Shady Grove Rd at I-270 NB Off-Ramp	9.9	A	I-270 NB Off-Ramp WB	70.9	E	L	70.9	E	147	192
							R	0.0	A	0	0
				Shady Grove Rd NB	0.1	A	T	0.1	A	88	103
							R	0.0	A	479	733
				Shady Grove Rd SB	3.1	A	T	3.1	A	17	34
P 212‡	Shady Grove Rd at Choke Cherry Rd	37.0	D	Choke Cherry Rd EB	68.5	E	L/T/R	85.8	F	130	#230
							R	49.5	D	45	106
				Choke Cherry Rd WB	74.5	E	L	80.7	F	211	#312
							L/T	77.4	E	213	311
							R	53.1	D	0	8
				Shady Grove Rd NB	22.9	C	U/L	71.8	E	132	#236
							T	18.4	B	217	240
							R	9.5	A	9	10
				Shady Grove Rd SB	34.3	C	L	20.0	B	37	67
							T	35.0	C	524	605
							T/R	-	-	-	-
P 216†	Redland Blvd at Piccard Dr	13.5	B	I-270 NB Off-Ramp EB	5.7	A	L	5.1	A	8	23
							T	5.8	A	39	65
							T/R	5.8	A	-	-
				Redland Blvd WB	-	-	L	-	-	11	26
							R	-	-	0	22
				Piccard Dr NB	18.4	B	T	15.8	B	86	#161
							R	20.6	C	0	53
				Piccard Dr SB	13.6	B	L/T	13.7	B	-	-
							T	13.5	B	24	47

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-4B - Gude Drive Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 301†	Gude Dr at Research Blvd	27.2	C	Gude Dr EB	36.3	D	L	60.3	E	10	32
							T	38.3	D	252	344
							R	18.6	B	0	0
				Gude Dr WB	10.0	B	L	25.7	C	141	m184
							T	2.6	A	81	m106
							R	3.1	A	13	m29
				Research Blvd NB	30.5	C	L	39.8	D	5	17
							T	51.7	D	85	128
							R	10.8	B	28	64
				Research Blvd SB	42.3	D	L	45.3	D	95	134
							T	40.4	D	124	190
							T/R	40.3	D	-	-
P 302‡	Gude Dr at I-270 Managed Lanes Direct Connector	29.5	C	Gude Dr EB	18.4	B	L	55.7	E	51	m84
							T	19.5	B	360	310
							R	4.5	A	0	1
				Gude Dr WB	19.1	B	L	24.6	C	50	39
							T	18.0	B	262	340
							TR	-	-	-	-
				I-270 Managed Lanes Ramp NB	62.0	E	L	58.4	E	242	#407
							R	65.4	E	157	#332
				I-270 Managed Lanes Ramp SB	35.8	D	L	33.1	C	117	189
							R	43.6	D	0	2
P 303†	Gude Dr at Piccard Dr	8.2	A	Gude Dr EB	2.4	A	L	9.1	A	22	m88
							T	0.3	A	121	m310
				Gude Dr WB	11.1	B	T	11.4	B	162	284
							R	9.0	A	0	31
				Piccard Dr SB	35.2	D	L	39.5	D	37	75
							R	33.9	C	82	113

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-4B - Gude Drive Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 301[†]	Gude Dr at Research Blvd	22.9	C	Gude Dr EB	38.1	D	L	73.0	E	3	15
							T	38.3	D	191	265
							R	13.9	B	0	0
				Gude Dr WB	5.4	A	L	18.9	B	0	m176
							T	0.6	A	88	247
							R	0.3	A	1	m2
				Research Blvd NB	29.5	C	L	34.8	C	79	125
							T	49.8	D	95	142
							R	13.8	B	68	118
				Research Blvd SB	44.5	D	L	46.1	D	106	145
							T	41.8	D	55	86
							T/R	41.9	D	-	-
P 302[‡]	Gude Dr at I-270 Managed Lanes Direct Connector	27.4	C	Gude Dr EB	20.0	C	L	51.1	D	62	m#108
							T	20.3	C	209	312
							R	6.1	A	39	57
				Gude Dr WB	25.7	C	L	48.8	D	152	202
							T	17.6	B	182	309
							TR	-	-	-	-
				I-270 Managed Lanes Ramp NB	45.3	D	L	49.9	D	226	#330
							R	38.3	D	46	126
				I-270 Managed Lanes Ramp SB	35.2	D	L	34.7	C	143	217
							R	40.9	D	0	0
P 303[†]	Gude Dr at Piccard Dr	18.7	B	Gude Dr EB	2.3	A	L	13.7	B	72	m127
							T	0.7	A	149	197
				Gude Dr WB	18.0	B	T	18.2	B	325	467
							R	10.7	B	1	16
				Piccard Dr SB	60.1	E	L	33.7	C	109	169
							R	70.3	E	235	317

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.
[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-5B - MD 28 (Montgomery Avenue) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 400‡	MD 28 (Montgomery Ave) at Hurley Ave	16.4	B	MD 28 (Montgomery Ave) EB	19.9	B	L	10.7	B	2	9
							T	19.9	B	481	609
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	7.8	A	U/L	68.0	E	110	180
							T	3.5	A	101	115
							T/R	-	-	-	-
				Hurley Ave NB	50.9	D	L/T	56.1	E	56	105
							R	48.8	D	0	66
				Hurley Ave SB	48.4	D	L/T	48.7	D	11	33
							R	47.9	D	4	20
P 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	14.1	B	MD 28 (Montgomery Ave) EB	13.2	B	T	13.2	B	14	30
							R	0.0	A	456	397
				MD 28 (Montgomery Ave) WB	6.2	A	T	6.2	A	151	209
				I-270 Off-Ramp SB	53.4	D	L	53.4	D	162	206
							R	0.0	A	53	103
P 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	21.7	C	MD 28 (Montgomery Ave) EB	11.0	B	L	19.5	B	133	176
							T	8.3	A	192	189
				MD 28 (Montgomery Ave) WB	26.7	C	T	26.7	C	188	264
							T/R	-	-	-	-
				I-270 Off-Ramp NB	46.1	D	T	46.0	D	100	164
							R	46.2	D	64	149
				Nelson St SB	26.6	C	L	57.4	E	21	52
							R	23.7	C	105	125
P 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	12.7	B	MD 28 (Montgomery Ave) EB	12.6	B	L	0.9	A	0	m1
							T/R	12.6	B	422	#1,256
				MD 28 (Montgomery Ave) WB	5.4	A	L	2.6	A	1	4
							T/R	5.5	A	178	331
				Bullard Cir NB	46.9	D	L/T	47.1	D	11	32
							R	46.5	D	0	17
				Laird St SB	59.8	E	L/T/R	59.8	E	77	135

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-5B - MD 28 (Montgomery Avenue) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 400‡	MD 28 (Montgomery Ave) at Hurley Ave	22.2	C	MD 28 (Montgomery Ave) EB	30.6	C	L	18.1	B	2	11
							T	30.6	C	584	661
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	11.7	B	U/L	70.9	E	253	#370
							T	4.1	A	125	193
							T/R	-	-	-	-
				Hurley Ave NB	53.6	D	L/T	62.7	E	72	131
							R	47.8	D	0	61
				Hurley Ave SB	49.2	D	L/T	50.0	D	30	67
							R	47.2	D	3	25
P 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	19.3	B	MD 28 (Montgomery Ave) EB	24.1	C	T	24.1	C	17	30
							R	0.0	A	566	631
				MD 28 (Montgomery Ave) WB	10.0	A	T	10.0	A	251	492
				I-270 Off-Ramp SB	52.5	D	L	52.5	D	203	244
							R	0.0	A	165	244
P 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	24.8	C	MD 28 (Montgomery Ave) EB	12.9	B	L	32.2	C	92	176
							T	9.2	A	183	240
				MD 28 (Montgomery Ave) WB	29.5	C	T	29.5	C	302	354
							T/R	-	-	-	-
				I-270 Off-Ramp NB	44.5	D	T	48.2	D	199	296
							R	39.0	D	39	107
				Nelson St SB	29.5	C	L	60.3	E	25	60
							R	27.2	C	185	247
P 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	13.9	B	MD 28 (Montgomery Ave) EB	16.1	B	L	0.3	A	0	m1
							T/R	16.4	B	853	#1446
				MD 28 (Montgomery Ave) WB	7.5	A	L	2.0	A	0	4
							T/R	7.5	A	233	805
				Bullard Cir NB	51.0	D	L/T	51.3	D	8	23
							R	50.7	D	0	17
				Laird St SB	53.1	D	L/T/R	53.1	D	20	68

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BD-6B - MD 189 (Falls Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 500‡	MD 189 (Falls Rd) at Wootton Pkwy	49.4	D	MD 189 (Falls Rd) EB	54.3	D	L	78.2	E	120	191
							T	54.3	D	430	516
							R	27.9	C	3	39
				MD 189 (Falls Rd) WB	49.9	D	L	74.0	E	254	#413
							T	33.6	C	186	253
							R	13.7	B	0	28
				Wootton Pkwy NB	43.8	D	L	59.2	E	91	147
							T	56.9	E	62	93
							R	21.1	C	0	40
				Wootton Pkwy SB	47.0	D	L	53.2	D	374	#511
							T	59.7	E	390	456
							R	0.2	A	0	0
P 508‡	MD 189 (Falls Rd) Crossover at I-270 SB Ramps	16.4	B	MD 189 (Falls Rd) NB	14.5	B	T	14.5	B	206	258
				MD 189 (Falls Rd) WB	21.0	C	T	21.0	C	37	103
P 510‡	MD 189 (Falls Rd) EB at I-270 SB Ramp	5.5	A	MD 189 (Falls Rd) EB	0.8	A	T	0.8	A	2	3
				I-270 SB Ramp SB	28.5	C	L	28.5	C	0	11
P 511‡	MD 189 (Falls Rd) WB at I-270 NB Ramps	2.0	A	MD 189 (Falls Rd) WB	0.7	A	T	0.7	A	0	0
				I-270 NB Ramp NB	22.1	C	L	22.1	C	0	0
P 513‡	MD 189 (Falls Rd) Crossover at I-270 NB Ramps	21.7	C	MD 189 (Falls Rd) EB	25.6	C	T	25.6	C	111	148
				MD 189 (Falls Rd) SB	19.5	B	T	19.5	B	214	240
P 514‡	MD 189 (Falls Rd) EB at I-270 NB Ramps	8.7	A	MD 189 (Falls Rd) EB	0.8	A	T	0.8	A	0	0
				I-270 NB Ramp NB	14.7	B	R	14.7	B	113	163
P 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	18.1	B	MD 189 (Falls Rd) EB	4.5	A	U/L	3.8	A	26	45
							T/R	4.8	A	89	430
				MD 189 (Maryland Ave) WB	21.5	C	L	17.7	B	4	19
							T	21.6	C	160	253
							T/R	-	-	-	-
				Potomac Valley Rd NB	51.5	D	L	52.8	D	37	76
							T/R	47.0	D	3	24
				Great Falls Rd SB	41.0	D	L/T	50.8	D	29	64
							R	40.2	D	262	316

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BD-6B - MD 189 (Falls Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 500‡	MD 189 (Falls Rd) at Wootton Pkwy	43.7	D	MD 189 (Falls Rd) EB	43.0	D	L	81.2	F	161	243
							T	36.7	D	199	259
							R	26.3	C	0	47
				MD 189 (Falls Rd) WB	45.7	D	L	69.3	E	141	190
							T	43.1	D	383	474
							R	28.6	C	109	184
				Wootton Pkwy NB	46.4	D	L	35.4	D	82	131
							T	60.8	E	426	508
							R	23.8	C	0	57
				Wootton Pkwy SB	29.6	C	L	44.1	D	68	120
							T	40.6	D	85	121
							R	0.1	A	0	0
P 508‡	MD 189 (Falls Rd) Crossover at I-270 SB Ramps	21.2	C	MD 189 (Falls Rd) NB	20.9	C	T	20.9	C	261	322
				MD 189 (Falls Rd) WB	21.6	C	T	21.6	C	121	167
P 510‡	MD 189 (Falls Rd) EB at I-270 SB Ramp	7.3	A	MD 189 (Falls Rd) EB	1.0	A	T	1.0	A	2	3
				I-270 SB Ramp SB	25.9	C	L	25.9	C	32	64
P 511‡	MD 189 (Falls Rd) WB at I-270 NB Ramps	5.5	A	MD 189 (Falls Rd) WB	0.9	A	T	0.9	A	0	0
				I-270 NB Ramp NB	20.2	C	L	20.2	C	29	56
P 513‡	MD 189 (Falls Rd) Crossover at I-270 NB Ramps	24.3	C	MD 189 (Falls Rd) EB	23.8	C	T	23.8	C	167	213
				MD 189 (Falls Rd) SB	24.6	C	T	24.6	C	335	196
P 514‡	MD 189 (Falls Rd) EB at I-270 NB Ramps	8.4	A	MD 189 (Falls Rd) EB	0.9	A	T	0.9	A	0	0
				I-270 NB Ramp NB	19.1	B	R	19.1	B	98	144
P 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	16.8	B	MD 189 (Falls Rd) EB	4.5	A	U/L	4.6	A	19	31
							T/R	4.5	A	79	509
				MD 189 (Maryland Ave) WB	17.2	B	L	12.9	B	2	10
							T	17.2	B	194	299
							T/R	-	-	-	-
				Potomac Valley Rd NB	56.8	E	L	57.7	E	37	76
							T/R	52.0	D	4	21
				Great Falls Rd SB	48.6	D	L/T	53.4	D	16	42
							R	48.3	D	239	301

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-7B - Wootton Parkway Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 600‡	Wootton Pkwy at Seven Locks Rd	22.8	C	Wootton Pkwy EB	27.9	C	L	57.6	E	9	28
							T	36.1	D	154	210
							R	20.4	C	9	59
				Wootton Pkwy WB	19.1	B	L	25.6	C	195	#357
							T	5.8	A	22	86
							T/R	-	-	-	-
				Seven Locks Rd NB	14.3	B	L	33.9	C	51	95
							L/T	33.9	C	51	95
							R	0.2	A	0	0
				Seven Locks Rd SB	42.3	D	L/T	42.8	D	21	51
							R	40.7	D	0	0
P 601†	Wootton Pkwy at Tower Oaks Rd	26.0	C	Wootton Pkwy EB	13.2	B	L	45.7	D	16	m33
							T	12.2	B	91	#370
							R	0.0	A	0	0
				Wootton Pkwy WB	31.9	C	L	57.8	E	164	218
							T	15.1	B	65	257
							R	10.7	B	0	0
				Tower Oaks Blvd NB	33.3	C	L	33.4	C	107	#155
							T	32.5	C	6	17
							R	0.0	A	0	0
				Tower Oaks Blvd SB	39.2	D	L	38.4	D	6	18
							T	39.6	D	6	17
							R	0.0	A	0	0
P 612†	Wootton Pkwy at I-270 Managed Lanes Direct Connector	24.7	C	Wootton Pkwy EB	20.2	C	L	26.0	C	54	58
							T	17.8	B	170	236
							T/R	-	-	-	-
				Wootton Pkwy WB	18.5	B	L	38.0	D	67	m140
							T	10.6	B	166	85
							T/R	-	-	-	-
				I-270 Managed Lane Ramp NB	39.4	D	L	34.4	C	31	63
							R	40.1	D	117	198
				I-270 Managed Lane Ramp SB	34.2	C	L	40.2	D	85	139
							R	30.0	C	0	54

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-7B - Wootton Parkway Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 600‡	Wootton Pkwy at Seven Locks Rd	32.6	C	Wootton Pkwy EB	26.9	C	L	47.8	D	3	14
							T	36.4	D	96	156
							R	12.3	B	0	30
				Wootton Pkwy WB	27.8	C	L	36.5	D	92	#165
							T	21.3	C	44	157
							T/R	-	-	-	-
				Seven Locks Rd NB	37.6	D	L	58.6	E	284	#489
							L/T	54.5	D	276	#477
							R	0.5	A	0	0
				Seven Locks Rd SB	44.3	D	L/T	44.7	D	12	35
							R	42.4	D	0	0
P 601†	Wootton Pkwy at Tower Oaks Rd	27.4	C	Wootton Pkwy EB	21.9	C	L	46.8	D	16	m30
							T	21.2	C	227	#401
							R	0.0	A	0	0
				Wootton Pkwy WB	30.0	C	L	79.8	E	79	117
							T	17.0	B	156	323
							R	11.0	B	0	0
				Tower Oaks Blvd NB	35.4	D	L	35.5	D	~140	161
							T	34.4	C	3	11
							R	0.0	A	0	0
				Tower Oaks Blvd SB	36.8	D	L	36.0	D	29	54
							T	38.5	D	7	20
							R	0.0	A	0	0
P 612†	Wootton Pkwy at I-270 Managed Lanes Direct Connector	23.2	C	Wootton Pkwy EB	17.6	B	L	44.0	D	95	157
							T	11.9	B	88	131
							T/R	-	-	-	-
				Wootton Pkwy WB	18.9	B	L	29.5	C	175	m127
							T	8.7	A	117	m121
							T/R	-	-	-	-
				I-270 Managed Lane Ramp NB	32.9	C	L	34.2	C	69	119
							R	32.5	C	109	196
				I-270 Managed Lane Ramp SB	38.5	D	L	42.1	D	117	184
							R	33.6	C	0	51

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-8B - Montrose Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 701‡	Montrose Rd at Seven Locks Rd	29.9	C	Montrose Rd EB	52.2	D	L	48.1	D	50	95
							T	53.1	D	112	161
							T/R	-	-	-	-
				Montrose Rd WB	32.0	C	L	37.6	D	158	m227
							L/T	-	-	-	-
							T	34.4	C	158	m201
							R	14.2	B	0	m20
				Seven Locks Rd NB	10.6	B	L	37.5	D	10	31
							T	38.1	D	73	112
							R	0.7	A	0	0
				Seven Locks Rd SB	35.5	D	L	53.8	D	177	230
							T	24.1	C	211	268
							T/R	-	-	-	-
P 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	37.7	E	-	5.0*
				Potomac Rd SB	-	-	R	15.0	C	-	0.9*
P 707‡	Montrose Rd at Tower Oaks Blvd	17.5	B	Montrose Rd EB	6.0	A	L	17.3	B	13	m58
							T	5.3	A	153	182
				Montrose Rd WB	16.7	B	T	17.2	B	416	494
							R	9.2	A	0	25
				Tower Oaks Blvd SB	56.7	E	L	53.5	D	86	128
							R	58.1	E	76	#150
				I-270 NB Off-Ramp NEB	1.8	A	R	1.8	A	0	0
P 708‡§	Montrose Rd at Farm Ln	1.9	A	Montrose Rd EB	1.9	A	T	1.9	A	0	382
				Montrose Rd WB	1.9	A	T	1.9	A	0	397
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0
P 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	12.9	B	Montrose Rd EB	12.3	B	L	7.9	A	1	4
							T	11.8	B	221	408
							T/R	13.2	B	-	-
				Montrose Rd WB	10.7	B	L	9.5	A	2	6
							T	10.3	B	194	356
							T/R	11.3	B	-	-
				Hitching Post Ln NB	39.2	D	L	40.8	D	70	#132
							T/R	32.8	C	2	27
				Farm Haven Dr SB	34.1	C	L	34.2	C	16	43
							T/R	34.1	C	2	38

Table BP1-8B - Montrose Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	18.2	B	Tower Oaks Blvd EB	17.6	B	L/T	-	-	-	-
							T/R	17.6	B	84	177
				Tower Oaks Blvd WB	13.4	B	L/T	-	-	-	-
							T/R	13.4	B	20	52
				I-270 NB Ramps NB	20.0	B	L	20.7	C	76	#263
							L/T	20.5	C	75	#260
							R	13.1	B	0	7
				GEICO Ent SB	31.4	C	L/T/R	31.4	C	3	21
P 712‡	Tower Oaks Blvd at Commercial Dr	3.4	A	Commercial Dr WB	33.2	C	L	33.2	C	1	6
							L/R	-	-	-	-
				Tower Oaks Blvd NB	4.7	A	T	4.7	A	0	124
							R	3.5	A	0	14
				Tower Oaks Blvd SB	1.6	A	L	1.5	A	0	10
							T	1.6	A	0	33

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two
§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-8B - Montrose Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 701‡	Montrose Rd at Seven Locks Rd	34.4	C	Montrose Rd EB	73.0	E	L	52.2	D	51	98
							T	76.9	E	152	#243
							T/R	-	-	-	-
				Montrose Rd WB	29.7	C	L	39.7	D	337	m459
							L/T	-	-	-	-
							T	32.8	C	347	m430
							R	15.9	B	158	m230
				Seven Locks Rd NB	27.7	C	L	39.7	D	51	104
							T	49.0	D	251	#341
							R	0.5	A	0	0
				Seven Locks Rd SB	35.1	D	L	53.6	D	65	101
							T	28.8	C	144	193
							T/R	-	-	-	-
P 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	17.6	C	-	1.4*
				Potomac Rd SB	-	-	R	104.9	F	-	8.4*
P 707‡	Montrose Rd at Tower Oaks Blvd	12.7	B	Montrose Rd EB	8.5	A	L	23.2	C	9	m38
							T	7.9	A	303	359
				Montrose Rd WB	11.2	B	T	11.9	B	603	34
							R	0.3	A	0	m0
				Tower Oaks Blvd SB	51.2	D	L	48.5	D	49	80
							R	52.3	D	64	119
				I-270 NB Off-Ramp NEB	1.5	A	R	1.5	A	0	0
P 708‡§	Montrose Rd at Farm Ln	4.0	A	Montrose Rd EB	2.4	A	T	2.4	A	0	173
				Montrose Rd WB	5.3	A	T	5.3	A	0	681
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0
P 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	10.4	B	Montrose Rd EB	8.0	A	L	9.5	A	1	4
							T	7.7	A	156	311
							T/R	8.6	A	-	-
				Montrose Rd WB	10.7	B	L	6.2	A	2	6
							T	10.1	B	267	528
							T/R	11.8	B	-	-
				Hitching Post Ln NB	41.3	D	L	42.4	D	39	#92
							T/R	39.0	D	6	34
				Farm Haven Dr SB	39.4	D	L	40.0	D	12	35
							T/R	38.9	D	3	27

Table BP1-8B - Montrose Road Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	17.5	B	Tower Oaks Blvd EB	17.3	B	L/T	-	-	-	-
							T/R	17.3	B	58	138
				Tower Oaks Blvd WB	15.5	B	L/T	-	-	-	-
							T/R	15.5	B	26	70
				I-270 NB Ramps NB	17.9	B	L	18.1	B	52	173
							L/T	18.2	B	54	177
							R	13.1	B	0	0
				GEICO Ent SB	28.9	C	L/T/R	28.9	C	7	37
P 712‡	Tower Oaks Blvd at Commercial Dr	4.8	A	Commercial Dr WB	31.1	C	L	31.1	C	7	21
							L/R	-	-	-	-
				Tower Oaks Blvd NB	4.9	A	T	5.0	A	33	102
							R	3.8	A	0	7
				Tower Oaks Blvd SB	2.0	A	L	1.8	A	2	7
							T	2.0	A	19	28

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two
§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-9B - Westlake Terrace Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	9.6	A	Westlake Terr EB	5.8	A	L	5.6	A	21	49
							T	5.9	A	78	120
							T/R	5.9	A	-	-
				Westlake Terr WB	3.0	A	L	3.7	A	21	41
							T	2.6	A	18	35
							T/R	2.9	A	-	-
				Westfield Montgomery Mall Ent NB	57.3	E	L	56.1	E	4	16
							T/R	57.4	E	16	56
				Motor City Dr SB	59.8	E	L	58.5	E	24	57
							T/R	60.5	E	4	46
P 801‡	Westlake Terr at I-270 Managed Lanes Direct Connector	33.3	C	Westlake Terr EB	33.7	C	L	49.1	D	100	#187
							T	28.3	C	132	182
							T/R	-	-	-	-
				Westlake Terr WB	24.8	C	L	42.0	D	63	m113
							T	23.9	C	164	223
							T/R	10.6	B	0	m12
				I-270 Spur Ramps NB	19.8	B	L/R	19.8	B	48	111
				I-270 Spur Ramps SB	53.4	D	L/R	53.4	D	214	#437
P 802‡	Westlake Terr at Rockledge Dr	30.8	C	Westlake Terr EB	25.3	C	L	25.9	C	151	m#492
							T	25.0	C	112	m212
							T/R	-	-	-	-
				Westlake Terr WB	41.4	D	L	30.0	C	42	118
							T	44.4	D	132	190
							T/R	-	-	-	-
				Rockledge Dr NB	49.4	D	L/T	50.4	D	10	30
							R	46.3	D	0	0
				Rockledge Dr SB	28.1	C	L	24.8	C	51	83
							L/T	32.0	C	205	269
							R	25.6	C	0	56

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-9B - Westlake Terrace Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 800[†]	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	18.9	B	Westlake Terr EB	24.3	C	L	23.0	C	19	58
							T	24.4	C	92	168
							T/R	24.4	C	-	-
				Westlake Terr WB	4.4	A	L	15.1	B	38	m65
							T	0.8	A	55	80
							T/R	0.9	A	-	-
				Westfield Montgomery Mall Ent NB	31.9	C	L	29.8	C	25	47
							T/R	32.2	C	6	57
				Motor City Dr SB	46.3	D	L	51.7	D	166	237
							T/R	27.8	C	9	37
P 801[‡]	Westlake Terr at I-270 Managed Lanes Direct Connector	31.9	C	Westlake Terr EB	24.6	C	L	37.1	D	246	208
							T	15.9	B	95	138
							T/R	-	-	-	-
				Westlake Terr WB	25.9	C	L	46.0	D	110	m175
							T	25.1	C	187	m313
							T/R	19.8	B	6	m59
				I-270 Spur Ramps NB	38.4	D	L/R	38.4	D	18	70
				I-270 Spur Ramps SB	70.8	E	L/R	70.8	E	177	283
P 802[‡]	Westlake Terr at Rockledge Dr	46.9	D	Westlake Terr EB	28.9	C	L	34.3	C	152	m#236
							T	25.5	C	124	184
							T/R	-	-	-	-
				Westlake Terr WB	45.4	D	L	32.8	C	2	11
							T	45.5	D	246	#342
							T/R	-	-	-	-
				Rockledge Dr NB	57.9	E	L/T	70.2	E	250	#411
							R	39.3	D	0	64
				Rockledge Dr SB	54.7	D	L	38.3	D	72	127
							L/T	38.3	D	72	127
							R	61.0	E	183	#400

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.
[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-10B - Democracy Boulevard Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 900†	Democracy Blvd at Taveshire Way	10.4	B	Democracy Blvd EB	4.7	A	T	4.7	A	97	137
				Democracy Blvd WB	3.8	A	T	3.8	A	43	62
				Taveshire Way SB	54.1	D	L	48.8	D	52	75
							R	62.2	E	11	69
P 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	27.8	C	Democracy Blvd EB	22.1	C	T	22.1	C	348	434
							T/R	-	-	-	-
				Democracy Blvd WB	14.3	B	L	44.8	D	150	202
							T	1.5	A	15	16
				I-270 Spur Off Ramp SB	62.5	E	L	66.9	E	203	250
							R	54.8	D	0	77
P 903‡	Democracy Blvd at I-270 Spur NB Ramps	10.7	B	Democracy Blvd EB	5.2	A	T	5.2	A	178	192
							T/R	-	-	-	-
				Democracy Blvd WB	2.7	A	T	2.7	A	39	50
				I-270 Spur Off Ramp NB	68.8	E	L	68.8	E	128	172
P 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	16.8	B	Democracy Blvd EB	10.6	B	T	10.6	B	131	320
				Democracy Blvd WB	0.1	A	T	0.1	A	0	m0
				I-270 Spur Off Ramp NB	40.0	D	R	40.0	D	430	477
P 906‡	Democracy Blvd at Fernwood Rd	36.6	D	Democracy Blvd EB	33.9	C	U/L	-	-	-	-
							L	54.4	D	471	#564
							T	36.6	D	255	274
							R	0.6	A	0	0
				Democracy Blvd WB	44.2	D	L	67.5	E	220	#332
							T	52.5	D	39	61
							R	0.1	A	0	0
				Fernwood Rd NB	46.1	D	L	66.8	E	658	#920
							R	0.3	A	0	0
				Fernwood Rd SB	10.7	B	L	26.3	C	33	54
							R	0.1	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-10B - Democracy Boulevard Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 900†	Democracy Blvd at Taveshire Way	12.0	B	Democracy Blvd EB	4.4	A	T	4.4	A	64	103
				Democracy Blvd WB	5.0	A	T	5.0	A	115	171
				Taveshire Way SB	51.7	D	L	49.6	D	85	108
							R	57.3	E	82	137
P 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	47.0	D	Democracy Blvd EB	61.7	E	T	61.7	E	421	#520
							T/R	-	-	-	-
				Democracy Blvd WB	33.8	C	L	65.7	E	252	#335
							T	18.1	B	171	193
				I-270 Spur Off Ramp SB	49.5	D	L	28.7	C	141	181
							R	63.3	E	559	#818
P 903‡	Democracy Blvd at I-270 Spur NB Ramps	8.5	A	Democracy Blvd EB	2.0	A	T	2.0	A	27	30
							T/R	-	-	-	-
				Democracy Blvd WB	4.2	A	T	4.2	A	106	143
				I-270 Spur Off Ramp NB	68.9	E	L	68.9	E	123	165
P 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	7.8	A	Democracy Blvd EB	3.0	A	T	3.0	A	32	37
				Democracy Blvd WB	0.2	A	T	0.2	A	0	0
				I-270 Spur Off Ramp NB	49.8	D	R	49.8	D	180	211
P 906‡	Democracy Blvd at Fernwood Rd	30.6	C	Democracy Blvd EB	35.7	D	U/L	-	-	-	-
							L	61.7	E	64	100
							T	50.6	D	281	#367
							R	0.5	A	0	0
				Democracy Blvd WB	38.0	D	L	69.1	E	267	#468
							T	32.2	C	211	284
							R	0.1	A	0	0
				Fernwood Rd NB	35.4	D	L	48.9	D	489	591
							R	0.2	A	0	0
				Fernwood Rd SB	8.7	A	L	26.7	C	88	108
							R	0.9	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1000†	Rockledge Dr at Rock Forest Dr	24.7	C	Rockledge Dr EB	56.8	E	L	59.4	E	92	132
							T	46.2	D	8	26
							R	48.8	D	0	0
				Rock Forest Dr WB	67.0	E	L	76.5	E	32	71
							T	52.9	D	12	35
							R	64.7	E	0	0
				Rockledge Dr NB	9.9	A	L	10.4	B	30	57
							T	9.7	A	45	73
							T/R	9.7	A	-	-
				Rockledge Dr SB	13.9	B	L	8.7	A	6	17
							T	14.0	B	215	304
							R	0.0	A	0	0
P 1001‡	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	19.2	B	I-270 SB Off Ramp EB	30.0	C	L/T	-	-	-	-
							T	63.9	E	374	441
							R	1.4	A	0	0
				Rockledge Dr NB	35.5	D	T	66.3	E	79	119
							R	24.3	C	144	188
				Rockledge Dr SB	0.0	A	T	0.0	A	0	0
P 1002‡	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	39.6	D	I-270 NB Ramp Connector WB	42.8	D	L	49.8	D	661	#980
							L/T	-	-	-	-
							T	39.1	D	602	732
				Rockledge Dr NB	0.2	A	L	0.2	A	0	0
P 1003‡	MD 187 (Old Georgetown Road) at Rock Spring Dr	39.3	D	Rock Spring Dr EB	73.6	E	L	88.3	F	286	#458
							L/T	87.8	F	287	#458
							R	46.5	D	124	210
				Rock Spring Dr WB	73.6	E	L/T/R	73.6	E	10	48
				MD 187 (Old Georgetown Road) NB	28.4	C	L	77.9	E	90	#155
							T	20.5	C	248	291
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	33.4	C	L	75.0	E	42	m56
							T	33.9	C	640	531
							R	28.1	C	103	153

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	22.8	C	I-270 SB Ramp Connector EB	51.8	D	L	38.2	D	97	150
							L/T/R	38.0	D	97	149
							R	57.2	E	371	449
				MD 187 (Old Georgetown Road) NB	22.7	C	T	22.7	C	195	211
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	11.9	B	L	38.2	D	0	0
							T	8.9	A	296	324
P 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	9.6	A	I-270 NB Off Ramp WB	17.1	B	L	69.8	E	71	125
							L/T	68.9	E	70	122
							R	0.3	A	0	0
				MD 187 (Old Georgetown Road) NB	16.0	B	L	92.9	F	154	205
							T	1.1	A	45	59
				MD 187 (Old Georgetown Road) SB	4.5	A	T	6.1	A	154	m121
							R	0.1	A	0	m0
P 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	148.8	F	Tuckerman Ln EB	82.4	F	L	47.6	D	49	78
							T	88.3	F	372	#509
							T/R	-	-	-	-
				Tuckerman Ln WB	273.5	F	L	354.6	F	~558	#688
							T	59.8	E	97	141
							R	48.4	D	0	9
				MD 187 (Old Georgetown Road) NB	51.3	D	U/L	275.3	F	~263	#464
							T	17.9	B	142	185
							R	17.4	B	11	27
				MD 187 (Old Georgetown Road) SB	198.5	F	L	71.5	E	32	69
							T	200.4	F	~1,157	#1,261
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1000[†]	Rockledge Dr at Rock Forest Dr	34.5	C	Rockledge Dr EB	58.5	E	L	56.0	E	203	255
							T	39.6	D	28	59
							R	66.3	E	0	73
				Rock Forest Dr WB	68.9	E	L	76.5	E	32	71
							T	55.0	D	8	28
							R	65.6	E	0	0
				Rockledge Dr NB	19.7	B	L	12.1	B	13	32
							T	20.1	C	273	392
							T/R	20.0	B	-	-
				Rockledge Dr SB	14.5	B	L	14.3	B	30	62
							T	14.6	B	81	123
							R	0.0	A	0	0
P 1001[‡]	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	32.1	C	I-270 SB Off Ramp EB	33.0	C	L/T	-	-	-	-
							T	64.5	E	287	351
							R	0.6	A	0	0
				Rockledge Dr NB	40.9	D	T	74.3	E	280	#353
							R	23.3	C	368	514
				Rockledge Dr SB	0.0	A	T	0.0	A	0	m0
P 1002[‡]	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	28.5	C	I-270 NB Ramp Connector WB	37.7	D	L	32.0	C	348	507
							L/T	-	-	-	-
							T	39.6	D	601	712
				Rockledge Dr NB	0.1	A	L	0.1	A	0	m0
P 1003[‡]	MD 187 (Old Georgetown Road) at Rock Spring Dr	58.4	E	Rock Spring Dr EB	75.4	E	L	85.5	F	318	#501
							L/T	87.4	F	326	#513
							R	31.9	C	19	60
				Rock Spring Dr WB	155.1	F	L/T/R	155.1	F	53	#203
				MD 187 (Old Georgetown Road) NB	56.7	E	L	58.8	E	91	132
							T	56.5	E	~861	#990
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	46.2	D	L	94.0	F	~108	#239
							T	43.0	D	619	670
							R	46.3	D	114	164

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	24.5	C	I-270 SB Ramp Connector EB	55.2	E	L	59.9	E	320	432
							L/T/R	58.4	E	324	434
							R	45.7	D	143	191
				MD 187 (Old Georgetown Road) NB	24.2	C	T	24.2	C	591	m672
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	8.9	A	L	22.6	C	56	79
							T	7.8	A	106	190
P 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	15.8	B	I-270 NB Off Ramp WB	22.6	C	L	69.8	E	56	106
							L/T	69.4	E	56	106
							R	0.2	A	0	0
				MD 187 (Old Georgetown Road) NB	17.5	B	L	75.2	E	272	272
							T	4.1	A	192	201
				MD 187 (Old Georgetown Road) SB	12.2	B	T	16.7	B	191	m218
							R	0.1	A	0	m0
P 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	73.6	E	Tuckerman Ln EB	61.0	E	L	57.8	E	152	195
							T	63.4	E	217	267
							T/R	-	-	-	-
				Tuckerman Ln WB	168.7	F	L	253.9	F	~340	#458
							T	76.4	E	169	#242
							R	50.7	D	0	29
				MD 187 (Old Georgetown Road) NB	39.0	D	U/L	231.5	F	~318	#510
							T	23.0	C	~438	#883
							R	10.3	B	115	155
				MD 187 (Old Georgetown Road) SB	87.0	F	L	77.5	E	67	#172
							T	87.3	F	~899	#1,079
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-12B - MD 190 (River Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1100‡	MD 190 (River Rd) at Seven Locks Rd	34.4	C	MD 190 (River Rd) EB	34.8	C	L	22.5	C	12	34
							T	35.0	C	508	632
							T/R	-	-	-	-
				MD 190 (River Rd) WB	18.6	B	U/L	25.6	C	55	93
							T	18.0	B	184	235
							R	15.3	B	0	34
				Seven Locks Rd NB	15.7	B	L	76.0	E	21	53
							T	90.5	F	42	86
							R	0.2	A	0	0
				Seven Locks Rd SB	65.1	E	L	66.4	E	312	433
							L/T/R	63.9	E	320	441
P 1102‡	MD 190 (River Rd) at I-495 Outer Loop Ramps	20.8	C	MD 190 (River Rd) EB	17.2	B	T	17.8	B	146	216
							R	16.6	B	0	41
				MD 190 (River Rd) WB	13.3	B	L	31.1	C	97	87
							T	3.3	A	33	29
				I-495 Outer Loop Off-Ramp SB	39.2	D	L	41.3	D	124	156
							R	32.4	C	0	55
P 1105‡	MD 190 (River Rd) at I-495 Inner Loop Ramps	18.3	B	MD 190 (River Rd) EB	6.8	A	L	70.0	E	84	m117
							T	1.7	A	9	58
				MD 190 (River Rd) WB	18.3	B	T	18.3	B	201	279
				I-495 Inner Loop Off-Ramp NB	38.6	D	L	25.6	C	40	54
							R	43.0	D	199	252
P 1107†	MD 190 (River Rd) at Burdette Rd	20.7	C	MD 190 (River Rd) EB	16.4	B	L	23.2	C	11	m66
							T	16.3	B	579	1,231
							R	5.1	A	0	m2
				MD 190 (River Rd) WB	14.5	B	L	19.3	B	1	5
							T	14.6	B	627	891
							R	6.1	A	0	0
				Burdette Rd NB	73.8	E	L/T/R	73.8	E	44	84
				Burdette Rd SB	96.6	F	L/T	70.1	E	60	104
							R	103.5	F	136	224

Table BP1-12B - MD 190 (River Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1109‡	MD 190 (River Rd) at I-495 Managed Lanes Direct Connector	13.8	B	MD 190 (River Rd) EB	12.0	B	L	21.2	C	42	61
							T	11.2	B	182	223
							R	8.7	A	0	m0
				MD 190 (River Rd) WB	8.9	A	L	25.3	C	144	156
							T	3.1	A	13	31
							R	0.4	A	0	0
				I-495 Managed Lanes Direct Connector NB	32.1	C	L	38.3	D	6	17
							R	31.0	C	0	0
				I-495 Managed Lanes Direct Connector SB	39.8	D	L	40.9	D	43	72
							R	38.4	D	0	0

Note: 95th percentile queuing reported using Synchro software.

\- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

\# Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-12B - MD 190 (River Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1100‡	MD 190 (River Rd) at Seven Locks Rd	51.9	D	MD 190 (River Rd) EB	60.2	E	L	87.2	F	23	#79
							T	59.3	E	384	466
							T/R	-	-	-	-
				MD 190 (River Rd) WB	48.3	D	U/L	75.7	E	225	#402
							T	45.1	D	651	759
							R	43.7	D	296	540
				Seven Locks Rd NB	32.4	C	L	57.6	E	24	55
							T	94.9	F	206	#353
							R	0.3	A	0	0
				Seven Locks Rd SB	71.9	E	L	60.0	E	325	#461
							L/T/R	81.3	F	435	#661
P 1102‡	MD 190 (River Rd) at I-495 Outer Loop Ramps	17.6	B	MD 190 (River Rd) EB	19.5	B	T	20.6	C	220	314
							R	14.9	B	0	29
				MD 190 (River Rd) WB	9.9	A	L	34.0	C	111	m109
							T	4.7	A	110	370
				I-495 Outer Loop Off-Ramp SB	39.8	D	L	40.3	D	109	135
							R	38.8	D	65	140
P 1105‡	MD 190 (River Rd) at I-495 Inner Loop Ramps	19.8	B	MD 190 (River Rd) EB	11.6	B	L	52.2	D	99	#165
							T	7.9	A	127	141
				MD 190 (River Rd) WB	17.0	B	T	17.0	B	413	m359
				I-495 Inner Loop Off-Ramp NB	40.1	D	L	42.8	D	149	189
							R	31.5	C	34	69
P 1107†	MD 190 (River Rd) at Burdette Rd	44.7	D	MD 190 (River Rd) EB	33.9	C	L	214.5	F	223	#519
							T	7.5	A	265	585
							R	3.8	A	3	10
				MD 190 (River Rd) WB	48.9	D	L	8.1	A	1	5
							T	49.9	D	~1,825	#1,930
							R	8.0	A	0	1
				Burdette Rd NB	79.7	E	L/T/R	79.7	E	38	74
				Burdette Rd SB	92.6	F	L/T	76.4	E	62	104
							R	98.9	F	48	116

Table BP1-12B - MD 190 (River Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1109‡	MD 190 (River Rd) at I-495 Managed Lanes Direct Connector	22.0	C	MD 190 (River Rd) EB	12.8	B	L	34.9	C	97	#172
							T	9.4	A	180	181
							R	0.5	A	0	0
				MD 190 (River Rd) WB	21.8	C	L	40.7	D	82	110
							T	19.9	B	356	393
							R	6.7	A	0	m1
				I-495 Managed Lanes Direct Connector NB	44.0	D	L	47.7	D	113	160
							R	34.7	C	0	3
				I-495 Managed Lanes Direct Connector SB	37.4	D	L	38.0	D	82	122
							R	35.8	D	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-13B - MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	15.5	B	Lone Oak Dr EB	69.6	E	L/T	77.4	E	66	116
							R	67.1	E	178	241
				Manor Oak Way WB	62.9	E	L/T/R	62.9	E	9	31
				MD 187 (Old Georgetown Rd) NB	5.8	A	U/L	35.5	D	85	m125
							T	3.0	A	154	167
							R	2.4	A	0	m0
				MD 187 (Old Georgetown Rd) SB	14.8	B	L	7.3	A	1	8
							T	14.8	B	484	691
							T/R	-	-	-	-
P 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	37.3	D	I-495 Outer Loop Off-Ramp WB	81.8	F	L	55.0	D	85	145
							L/T	55.0	E	86	148
							R	95.8	F	237	#431
				MD 187 (Old Georgetown Rd) NB	21.0	C	L	85.9	F	297	#489
							T	2.8	A	79	84
				MD 187 (Old Georgetown Rd) SB	37.3	D	T	37.3	D	~693	#829
							T/R	-	-	-	-
P 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	10.6	B	I-495 Inner Loop Off-Ramp EB	19.3	B	L	68.9	E	105	166
							L/T	68.7	E	105	165
							R	0.6	A	0	0
				MD 187 (Old Georgetown Rd) NB	17.3	B	T	17.3	B	238	263
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	3.4	A	L	18.6	B	116	m116
							T	1.7	A	69	m75
P 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	14.5	B	Ryland Dr EB	73.4	E	L/T/R	73.4	E	264	357
				Church Dwy WB	44.1	D	L	44.6	D	25	52
							T	43.5	D	4	15
							R	43.9	D	0	18
				MD 187 (Old Georgetown Rd) NB	17.7	B	L	20.2	C	2	7
							T	17.7	B	218	297
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	5.5	A	U/L	2.7	A	8	14
							T	5.6	A	69	387
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-13B - MD 187 (Old Georgetown Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	17.7	B	Lone Oak Dr EB	60.6	E	L/T	71.2	E	102	161
							R	46.6	D	44	78
				Manor Oak Way WB	57.0	E	L/T/R	57.0	E	9	30
				MD 187 (Old Georgetown Rd) NB	14.9	B	U/L	34.4	C	105	m167
							T	13.7	B	586	656
							R	3.6	A	0	m0
				MD 187 (Old Georgetown Rd) SB	17.5	B	L	14.3	B	2	13
							T	17.5	B	439	636
							T/R	-	-	-	-
P 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	17.9	B	I-495 Outer Loop Off-Ramp WB	68.2	E	L	47.6	D	74	129
							L/T	47.7	D	76	131
							R	78.4	E	291	#459
				MD 187 (Old Georgetown Rd) NB	6.0	A	L	32.4	C	188	m209
							T	3.6	A	190	198
				MD 187 (Old Georgetown Rd) SB	20.5	C	T	20.5	C	120	128
							T/R	-	-	-	-
P 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	22.5	C	I-495 Inner Loop Off-Ramp EB	50.7	D	L	72.9	E	240	349
							L/T	74.4	E	247	#357
							R	0.2	A	0	0
				MD 187 (Old Georgetown Rd) NB	23.9	C	T	23.9	C	791	235
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	9.2	A	L	48.7	D	172	m205
							T	4.0	A	73	79
P 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	7.7	A	Ryland Dr EB	68.9	E	L/T/R	68.9	E	56	96
				Church Dwy WB	62.7	E	L	63.2	E	10	28
							T	62.6	E	5	17
							R	62.5	E	0	11
				MD 187 (Old Georgetown Rd) NB	9.3	A	L	4.5	A	1	8
							T	9.3	A	359	615
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	1.7	A	U/L	38.2	D	1	33
							T	0.9	A	13	30
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Move-ment	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
P 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	32.7	C	Grosvenor Ln EB	59.8	E	L	60.9	E	56	89
							R	59.2	E	159	258
				Grosvenor Ln WB	44.1	D	L	38.9	D	263	325
							T/R	59.2	E	183	282
				MD 355 (Rockville Pike) NW	24.2	C	T	24.2	C	370	433
				MD 355 (Rockville Pike) SB	29.0	C	T	29.8	C	671	736
							R	15.7	B	7	40
P 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	25.1	C	I-495 Inner Loop Off-Ramp SE	77.5	E	R	77.5	E	326	400
				MD 355 (Rockville Pike) SB	17.3	B	T	17.3	B	715	772
P 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	32.8	C	Pooks Hill Rd EB	94.5	F	L	94.5	F	297	#386
							R	0.0	A	89	180
				MD 355 (Rockville Pike) NB	9.6	A	L	74.6	E	63	m115
							T	7.8	A	35	49
				MD 355 (Rockville Pike) SB	36.4	D	T	37.4	D	786	478
							R	4.7	A	0	m3
P 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	16.3	B	Alta Vista Rd EB	93.6	F	L/T/R	93.6	F	112	177
				Bellevue Dr WB	73.9	E	L/T/R	73.9	E	11	41
				MD 355 (Rockville Pike) NB	23.4	C	U/L	-	-	-	-
							T	23.4	C	384	468
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	11.5	B	U/L	16.8	B	215	m237
							T	11.0	B	330	195
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (PM Peak)												
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Move-ment**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft**	**95th %ile Queue (ft)**
P 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	32.3	C	Grosvenor Ln EB	61.0	E	L	67.8	E	82	120
							R	55.0	D	91	179
				Grosvenor Ln WB	59.5	E	L	37.4	D	88	123
							T/R	77.3	E	263	#443
				MD 355 (Rockville Pike) NW	32.4	C	T	32.4	C	696	801
				MD 355 (Rockville Pike) SB	19.1	B	T	19.5	B	382	426
							R	13.0	B	0	29
P 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	18.3	B	I-495 Inner Loop Off-Ramp SE	77.8	E	R	77.8	E	235	288
				MD 355 (Rockville Pike) SB	8.9	A	T	8.9	A	284	363
P 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	15.4	B	Pooks Hill Rd EB	99.1	F	L	99.1	F	154	207
							R	0.0	A	0	55
				MD 355 (Rockville Pike) NB	10.1	B	L	72.5	E	84	m92
							T	8.8	A	109	m97
				MD 355 (Rockville Pike) SB	14.3	B	T	15.4	B	282	287
							R	6.6	A	0	5
P 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	23.5	C	Alta Vista Rd EB	99.8	F	L/T/R	99.8	F	134	208
				Bellevue Dr WB	72.4	E	L/T/R	72.4	E	17	48
				MD 355 (Rockville Pike) NB	29.0	C	U/L	21.3	C	3	9
							T	29.1	C	1,067	1,222
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	12.4	B	U/L	108.2	F	~282	#486
							T	1.4	A	37	18
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

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m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

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SYNCHRO ANALYSIS OUTPUT TABLES

Table NB-2B - I-370 (Sam Eig Highway) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 100‡	I-370 (Sam Eig Hwy) at Fields Rd	23.4	C	Fields Rd WB	52.9	D	L	72.6	E	102	140
							R	42.7	D	171	199
				I-370 (Sam Eig Hwy) NB	17.6	B	T	18.3	B	527	671
							R	14.7	B	244	418
				I-370 (Sam Eig Hwy) SB	23.0	C	L	73.4	E	277	326
							T	5.4	A	147	186
				Washingtonian Blvd Ramp SEB	4.1	A	R	4.1	A	21	39
N 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	22.1	C	Washingtonian Blvd Ramp WB	27.7	C	L	29.0	C	98	209
							L/T	29.0	C	100	210
							R	24.5	C	0	0
				Washingtonian Blvd NB	1.5	A	L	0.9	A	1	1
							T	1.6	A	4	5
				Washingtonian Blvd SB	26.7	C	T	26.7	C	120	190
							T/R	-	-	-	-
N 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	11.5	B	Washingtonian Blvd Ramp EB	30.2	C	L/T	31.2	C	36	81
							R	29.6	C	0	0
				Washingtonian Blvd NB	18.7	B	T	19.3	B	72	139
							R	17.6	B	0	0
				Washingtonian Blvd SB	4.2	A	L/T	-	-	-	-
							T	4.2	A	21	102
N 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	5.0	A	MD 119 (Great Seneca Hwy) EB	0.2	A	T	0.2	A	0	0
				MD 119 (Great Seneca Hwy) WB	3.9	A	T	3.9	A	4	5
				I-370 (Sam Eig Hwy) SB	28.4	C	R	28.4	C	53	234
N 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	34.7	C	MD 119 (Great Seneca Hwy) EB	24.3	C	L	42.2	D	532	614
							T	15.0	B	707	789
				MD 119 (Great Seneca Hwy) WB	51.2	D	T	51.2	D	118	151
				I-370 (Sam Eig Hwy) SB	90.7	F	L	90.7	F	314	#381
N 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	30.6	C	Diamondback Dr EB	78.0	E	L	79.1	E	391	452
							R	55.2	E	0	0
				Diamondback Dr WB	65.5	E	R	65.5	E	109	144
				I-370 (Sam Eig Hwy) NB	12.8	B	L	128.7	F	27	m44
							T	11.9	B	100	462
							R	0.1	A	0	m0
				I-370 (Sam Eig Hwy) SB	23.0	C	L	104.5	F	135	198
							T	23.3	C	220	418
							R	0.4	A	0	0

Note: 95th percentile queuing reported using Synchro software.
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m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-2B - I-370 (Sam Eig Highway) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 100‡	I-370 (Sam Eig Hwy) at Fields Rd	29.6	C	Fields Rd WB	50.4	D	L	67.5	E	229	281
							R	38.8	D	267	319
				I-370 (Sam Eig Hwy) NB	29.8	C	T	30.8	C	801	352
							R	23.8	C	154	194
				I-370 (Sam Eig Hwy) SB	25.1	C	L	71.0	E	340	420
							T	13.5	B	490	578
				Washingtonian Blvd Ramp SEB	9.6	A	R	9.6	A	152	224
N 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	20.7	C	Washingtonian Blvd Ramp WB	34.1	C	L	34.8	C	104	#235
							L/T	34.9	C	107	#242
							R	28.4	C	0	0
				Washingtonian Blvd NB	0.8	A	L	0.7	A	1	m2
							T	0.8	A	2	3
				Washingtonian Blvd SB	31.4	C	T	31.4	C	123	190
							T/R	-	-	-	-
N 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	21.7	C	Washingtonian Blvd Ramp EB	31.1	C	L/T	31.8	C	33	79
							R	30.8	C	0	0
				Washingtonian Blvd NB	24.9	C	T	26.7	C	240	398
							R	23.8	C	30	177
				Washingtonian Blvd SB	13.1	B	L/T	-	-	-	-
							T	13.1	B	34	77
N 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	12.4	B	MD 119 (Great Seneca Hwy) EB	0.0	A	T	0.0	A	0	0
				MD 119 (Great Seneca Hwy) WB	6.2	A	T	6.2	A	19	38
				I-370 (Sam Eig Hwy) SB	31.9	C	R	31.9	C	1,001	1,078
N 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	46.4	D	MD 119 (Great Seneca Hwy) EB	26.6	C	L	43.3	D	388	458
							T	4.0	A	73	88
				MD 119 (Great Seneca Hwy) WB	57.0	E	T	57.0	E	648	711
				I-370 (Sam Eig Hwy) SB	81.1	F	L	81.1	F	156	#233
N 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	40.0	D	Diamondback Dr EB	83.2	F	L	84.3	F	273	332
							R	63.9	E	0	0
				Diamondback Dr WB	57.6	E	R	57.6	E	188	225
				I-370 (Sam Eig Hwy) NB	54.1	D	L	73.3	E	115	187
							T	60.8	E	537	619
							R	0.2	A	0	0
				I-370 (Sam Eig Hwy) SB	24.2	C	L	84.1	F	183	263
							T	33.6	C	609	733
							R	4.1	A	1,036	1,295

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 200‡	Omega Dr at MD 28 (Key W Ave)	38.8	D	MD 28 (Key W Ave) EB	33.5	C	L	73.7	E	88	148
							T	33.3	C	611	824
							R	18.5	B	0	46
				MD 28 (Key W Ave) WB	32.9	C	U/L	-	-	-	-
							L	71.6	E	145	#228
							T	16.8	B	91	156
							R	15.4	B	0	36
				Medical Center Dr NB	59.2	E	L	122.6	F	11	34
							T	54.5	D	33	51
							R	53.7	D	0	20
				Omega Dr SB	71.2	E	L	88.0	F	71	#126
							T	68.1	E	276	358
							R	48.5	D	0	19
N 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L/R	36.1	E	-	7.8*
N 204†	Omega Dr / Fields Rd at Washingtonian Blvd	7.8	A	Fields Rd EB	5.8	A	L	18.5	B	12	36
							T	4.8	A	46	82
				Omega Dr WB	9.1	A	T	8.6	A	12	40
							T/R	9.5	A	-	-
				Washingtonian Blvd SB	13.5	B	L	13.8	B	18	39
							R	10.9	B	0	5
N 205‡	Shady Grove Rd at Corporate Blvd	23.1	C	Corporate Blvd EB	74.6	E	L	75.6	E	61	114
							L/T	75.3	E	61	114
							R	65.5	E	0	0
				Corporate Blvd WB	73.0	E	L/T	78.1	E	31	70
							R	70.0	E	0	0
				Shady Grove Rd NB	33.2	C	L	26.1	C	3	16
							T	33.2	C	401	513
							T/R	-	-	-	-
				Shady Grove Rd SB	13.7	B	U/L	52.6	D	367	488
							T	5.3	A	161	201
							T/R	-	-	-	-

Table NB-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 207†	Shady Grove Rd at I-270 SB Off-Ramp	26.5	C	I-270 SB Off-Ramp EB	45.3	D	L	32.2	C	146	172
							R	51.3	D	471	526
				Shady Grove Rd NB	21.3	C	T	21.3	C	65	73
				Shady Grove Rd SB	14.7	B	T	14.7	B	443	503
							R	0.0	A	187	429
N 210†	Shady Grove Rd at I-270 NB Off-Ramp	21.8	C	I-270 NB Off-Ramp WB	54.4	D	L	54.4	D	428	460
							R	0.0	A	0	0
				Shady Grove Rd NB	5.7	A	T	5.7	A	100	156
							R	0.0	A	0	66
				Shady Grove Rd SB	13.7	B	T	13.7	B	205	118
N 212‡	Shady Grove Rd at Choke Cherry Rd	25.0	C	Choke Cherry Rd EB	63.3	E	L/T/R	71.7	E	55	107
							R	54.0	D	0	28
				Choke Cherry Rd WB	70.1	E	L	74.3	E	107	171
							L/T	71.3	E	105	168
							R	60.6	E	0	4
				Shady Grove Rd NB	20.6	C	U/L	35.4	D	77	173
							T	16.0	B	166	238
							R	29.9	C	29	84
				Shady Grove Rd SB	19.2	B	L	11.6	B	47	93
							T	20.0	C	331	484
							T/R	-	-	-	-
N 216†	Redland Blvd at Piccard Dr	10.9	B	I-270 NB Off-Ramp EB	6.8	A	L	5.5	A	32	74
							T	7.0	A	93	158
							T/R	7.1	A	-	-
				Redland Blvd WB	-	-	L	-	-	35	67
							R	-	-	0	0
				Piccard Dr NB	14.1	B	T	14.0	B	17	42
							R	14.2	B	0	15
				Piccard Dr SB	16.8	B	L/T	16.5	B	-	-
							T	17.0	B	91	140

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-3B - Shady Grove Road Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 200‡	Omega Dr at MD 28 (Key W Ave)	41.2	D	MD 28 (Key W Ave) EB	24.3	C	L	82.6	F	88	#173
							T	18.5	B	169	213
							R	15.3	B	0	0
				MD 28 (Key W Ave) WB	33.3	C	U/L	-	-	-	-
							L	71.1	E	51	85
							T	33.1	C	723	826
							R	18.0	B	0	45
				Medical Center Dr NB	67.4	E	L	90.5	F	173	#296
							T	56.3	E	182	228
							R	68.0	E	196	313
				Omega Dr SB	69.7	E	L	81.5	F	60	#104
							T	64.0	E	111	173
							R	66.3	E	91	182
N 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L/R	98.8	F	-	7.1*
N 204†	Omega Dr / Fields Rd at Washingtonian Blvd	15.6	B	Fields Rd EB	6.7	A	L	43.1	D	12	38
							T	2.9	A	14	27
				Omega Dr WB	13.6	B	T	12.0	B	374	548
							T/R	15.1	B	-	-
				Washingtonian Blvd SB	31.6	C	L	32.3	C	72	115
							R	29.4	C	14	52
N 205‡	Shady Grove Rd at Corporate Blvd	33.8	C	Corporate Blvd EB	83.4	F	L	85.8	F	92	#175
							L/T	86.9	F	94	#181
							R	63.6	E	0	0
				Corporate Blvd WB	78.4	E	L/T	53.9	D	64	110
							R	83.7	F	206	#332
				Shady Grove Rd NB	30.5	C	L	18.2	B	8	25
							T	30.6	C	556	681
							T/R	-	-	-	-
				Shady Grove Rd SB	13.9	B	U/L	78.9	E	80	146
							T	5.5	A	73	84
							T/R	-	-	-	-

Table NB-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 207†	Shady Grove Rd at I-270 SB Off-Ramp	18.6	B	I-270 SB Off-Ramp EB	62.7	E	L	56.6	E	136	173
							R	67.2	E	219	271
				Shady Grove Rd NB	6.7	A	T	6.7	A	34	50
				Shady Grove Rd SB	0.1	A	T	0.1	A	30	82
							R	0.0	A	146	259
N 210†	Shady Grove Rd at I-270 NB Off-Ramp	12.5	B	I-270 NB Off-Ramp WB	68.3	E	L	68.3	E	197	246
							R	0.0	A	0	0
				Shady Grove Rd NB	0.1	A	T	0.1	A	135	142
							R	0.0	A	0	725
				Shady Grove Rd SB	4.2	A	T	4.2	A	25	42
N 212‡	Shady Grove Rd at Choke Cherry Rd	45.8	D	Choke Cherry Rd EB	70.7	E	L/T/R	91.8	F	185	#320
							R	47.5	D	82	155
				Choke Cherry Rd WB	72.7	E	L	81.9	F	275	#428
							L/T	75.5	E	273	#412
							R	48.7	D	0	58
				Shady Grove Rd NB	31.4	C	U/L	90.7	F	149	#269
							T	26.0	C	223	283
							R	14.9	B	0	33
				Shady Grove Rd SB	44.2	D	L	27.6	C	47	80
							T	45.2	D	547	616
							T/R	-	-	-	-
N 216†	Redland Blvd at Piccard Dr	13.8	B	I-270 NB Off-Ramp EB	6.3	A	L	5.4	A	10	27
							T	6.4	A	54	85
							T/R	6.4	A	-	-
				Redland Blvd WB	-	-	L	-	-	13	29
							R	-	-	0	27
				Piccard Dr NB	19.6	B	T	16.0	B	97	#196
							R	22.8	C	0	56
				Piccard Dr SB	13.8	B	L/T	14.3	B	-	-
							T	13.4	B	27	52

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-4B - Gude Drive Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 301[†]	Gude Dr at Research Blvd	68.7	E	Gude Dr EB	40.0	D	L	26.6	C	8	26
							T	41.8	D	287	#421
							R	28.9	C	0	0
				Gude Dr WB	29.5	C	L	63.4	E	~182	#477
							T	11.4	B	55	65
							R	11.2	B	1	2
				Research Blvd NB	250.5	F	L	38.7	D	5	17
							T	47.5	D	84	130
							R	429.3	F	0	83
				Research Blvd SB	41.3	D	L	47.8	D	118	160
							T	36.2	D	118	190
							T/R	36.2	D	-	-
N 303[†]	Gude Dr at Piccard Dr	11.5	B	Gude Dr EB	6.6	A	L	12.3	B	42	m24
							T	5.4	A	14	m13
				Gude Dr WB	11.6	B	T	12.0	B	222	374
							R	8.2	A	0	29
				Piccard Dr SB	37.3	D	L	38.5	D	44	85
							R	36.9	D	98	141

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.

Table NB-4B - Gude Drive Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 301†	Gude Dr at Research Blvd	121.4	F	Gude Dr EB	32.3	C	L	23.4	C	2	12
							T	32.5	C	251	#356
							R	23.2	C	0	0
				Gude Dr WB	18.8	B	L	35.5	D	~207	#459
							T	12.3	B	91	104
							R	10.4	B	0	m2
				Research Blvd NB	422.8	F	L	37.1	D	76	128
							T	52.0	D	94	#160
							R	803.1	F	16	#169
				Research Blvd SB	43.8	D	L	46.8	D	110	151
							T	38.7	D	52	84
							T/R	38.8	D	-	-
N 303†	Gude Dr at Piccard Dr	20.0	B	Gude Dr EB	14.5	B	L	16.0	B	6	m8
							T	14.4	B	37	46
				Gude Dr WB	20.8	C	T	21.1	C	282	438
							R	12.9	B	2	21
				Piccard Dr SB	31.6	C	L	29.1	C	131	192
							R	32.9	C	232	289

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.

Table NB-5B - MD 28 (Montgomery Avenue) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 400‡	MD 28 (Montgomery Ave) at Hurley Ave	16.9	B	MD 28 (Montgomery Ave) EB	21.2	C	L	11.1	B	2	9
							T	21.3	C	535	646
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	7.5	A	U/L	66.7	E	114	187
							T	3.4	A	99	113
							T/R	-	-	-	-
				Hurley Ave NB	51.3	D	L/T	57.5	E	60	112
							R	48.7	D	0	68
				Hurley Ave SB	48.3	D	L	48.6	D	11	33
							T/R	47.8	D	4	20
N 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	13.0	B	MD 28 (Montgomery Ave) EB	12.7	B	T	12.7	B	15	33
							R	0.0	A	418	364
				MD 28 (Montgomery Ave) WB	5.6	A	T	5.6	A	160	242
				I-270 Off-Ramp SB	54.5	D	L	54.5	D	138	172
							R	0.0	A	131	198
N 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	23.3	C	MD 28 (Montgomery Ave) EB	11.8	B	L	23.1	C	131	214
							T	8.0	A	166	205
				MD 28 (Montgomery Ave) WB	29.1	C	T	29.1	C	219	290
							T/R	-	-	-	-
				I-270 Off-Ramp NB	47.7	D	T	46.3	D	119	190
							R	48.6	D	99	195
				Nelson St SB	24.9	C	L	57.4	E	21	52
							R	22.0	C	101	131
N 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	15.9	B	MD 28 (Montgomery Ave) EB	17.4	B	L	1.1	A	0	m1
							T/R	17.5	B	518	#1,365
				MD 28 (Montgomery Ave) WB	6.3	A	L	3.8	A	1	5
							T/R	6.3	A	219	390
				Bullard Cir NB	46.4	D	L/T	46.7	D	11	32
							R	46.1	D	0	17
				Laird St SB	61.7	E	L/T/R	61.7	E	84	146

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-5B - MD 28 (Montgomery Avenue) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 400‡	MD 28 (Montgomery Ave) at Hurley Ave	24.2	C	MD 28 (Montgomery Ave) EB	34.4	C	L	18.6	B	2	11
							T	34.4	C	623	#752
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	12.5	B	U/L	76.0	E	275	m#394
							T	4.1	A	134	192
							T/R	-	-	-	-
				Hurley Ave NB	54.4	D	L/T	64.7	E	76	#146
							R	47.6	D	0	62
				Hurley Ave SB	48.9	D	L	49.7	D	30	67
							T/R	46.9	D	3	25
N 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	17.9	B	MD 28 (Montgomery Ave) EB	14.8	B	T	14.8	B	17	m30
							R	0.0	A	590	m675
				MD 28 (Montgomery Ave) WB	11.1	B	T	11.1	B	286	402
				I-270 Off-Ramp SB	55.1	E	L	55.1	E	213	267
							R	0.0	A	137	218
N 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	26.6	C	MD 28 (Montgomery Ave) EB	14.8	B	L	38.9	D	110	200
							T	10.3	B	217	285
				MD 28 (Montgomery Ave) WB	31.5	C	T	31.5	C	329	375
							T/R	-	-	-	-
				I-270 Off-Ramp NB	44.3	D	T	48.6	D	241	350
							R	36.3	D	35	98
				Nelson St SB	30.2	C	L	66.6	E	29	#77
							R	27.4	C	203	284
N 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	16.1	B	MD 28 (Montgomery Ave) EB	19.2	B	L	0.4	A	0	m1
							T/R	19.7	B	843	#1,506
				MD 28 (Montgomery Ave) WB	8.9	A	L	2.4	A	0	4
							T/R	8.9	A	279	#1,005
				Bullard Cir NB	50.7	D	L/T	51.0	D	7	23
							R	50.5	D	0	17
				Laird St SB	53.3	D	L/T/R	53.3	D	24	74

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-6B - MD 189 (Falls Road) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 500‡	MD 189 (Falls Rd) at Wootton Pkwy	57.9	E	MD 189 (Falls Rd) EB	57.8	E	L	76.3	E	120	189
							T	58.8	E	467	#592
							R	29.2	C	3	42
				MD 189 (Falls Rd) WB	50.0	D	L	72.3	E	271	#407
							T	33.0	C	182	252
							R	14.0	B	0	28
				Wootton Pkwy NB	50.4	D	L	77.1	E	106	#209
							T	57.0	E	70	102
							R	20.5	C	0	39
				Wootton Pkwy SB	65.9	E	L	111.1	F	~576	#827
							T	59.0	E	384	444
							R	0.3	A	0	0
N 503‡	MD 189 (Falls Rd) at I-270 Ramps (SPUI)	38.5	D	MD 189 (Falls Rd) EB	42.3	D	L	36.1	D	408	569
							T	52.4	D	148	203
				MD 189 (Falls Rd) WB	31.3	C	L	22.7	C	186	237
							T	48.4	D	132	183
				I-270 Off-Ramp SEB	56.3	E	L	56.3	E	146	230
				I-270 Off-Ramp NWB	41.8	D	L	41.8	D	18	37
N 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	18.0	B	MD 189 (Falls Rd) EB	3.3	A	U/L	4.7	A	48	93
							T	2.8	A	74	123
							T/R	-	-	-	-
				MD 189 (Maryland Ave) WB	19.5	B	L	15.7	B	4	18
							T	19.6	B	135	235
							T/R	-	-	-	-
				Potomac Valley Rd NB	45.4	D	L	48.2	D	27	68
							T/R	35.9	D	2	22
				Great Falls Rd SB	45.0	D	L/T	44.2	D	24	62
							R	45.1	D	206	327

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-6B - MD 189 (Falls Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 500‡	MD 189 (Falls Rd) at Wootton Pkwy	44.3	D	MD 189 (Falls Rd) EB	44.6	D	L	82.9	F	181	#286
							T	36.6	D	212	277
							R	26.4	C	0	45
				MD 189 (Falls Rd) WB	46.0	D	L	68.3	E	133	179
							T	45.4	D	414	501
							R	28.8	C	150	232
				Wootton Pkwy NB	47.5	D	L	38.4	D	75	123
							T	64.0	E	402	486
							R	23.8	C	0	57
				Wootton Pkwy SB	29.2	C	L	44.6	D	90	159
							T	39.8	D	80	114
							R	0.1	A	0	0
N 503‡	MD 189 (Falls Rd) at I-270 Ramps (SPUI)	55.1	E	MD 189 (Falls Rd) EB	58.0	E	L	48.0	D	506	659
							T	69.1	E	267	334
				MD 189 (Falls Rd) WB	51.9	D	L	41.0	D	273	333
							T	71.3	E	195	254
				I-270 Off-Ramp SEB	61.2	E	L	61.2	E	335	455
				I-270 Off-Ramp NWB	49.9	D	L	49.9	D	163	212
N 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	15.3	B	MD 189 (Falls Rd) EB	4.9	A	U/L	9.0	A	55	167
							T	3.4	A	84	140
							T/R	-	-	-	-
				MD 189 (Maryland Ave) WB	17.8	B	L	12.9	B	1	10
							T	17.8	B	168	299
							T/R	-	-	-	-
				Potomac Valley Rd NB	40.0	D	L	40.6	D	28	70
							T/R	36.5	D	2	19
				Great Falls Rd SB	39.7	D	L/T	37.4	D	11	36
							R	39.9	D	181	281

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-7B - Wootton Parkway Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 600‡	Wootton Pkwy at Seven Locks Rd	36.2	D	Wootton Pkwy EB	45.6	D	L	30.4	C	12	34
							T	69.3	E	209	#308
							R	22.4	C	0	54
				Wootton Pkwy WB	31.2	C	L	44.8	D	~367	#617
							T	4.1	A	50	8
							T/R	-	-	-	-
				Seven Locks Rd NB	14.5	B	L	34.3	C	48	92
							L/T	34.3	C	48	92
							R	0.2	A	0	0
				Seven Locks Rd SB	42.2	D	L/T	42.6	D	18	45
							R	40.9	D	0	0
N 601†	Wootton Pkwy at Tower Oaks Rd	25.3	C	Wootton Pkwy EB	21.5	C	L	47.2	D	13	m21
							T	20.7	C	30	m51
							R	0.0	A	0	m0
				Wootton Pkwy WB	26.1	C	L	47.5	D	166	216
							T	11.2	B	55	232
							R	8.2	A	0	0
				Tower Oaks Blvd NB	36.9	D	L	36.9	D	39	65
							T	37.0	D	6	17
							R	0.0	A	0	0
				Tower Oaks Blvd SB	39.2	D	L	38.4	D	6	18
							T	39.6	D	6	17
							R	0.0	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-7B - Wootton Parkway Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 600‡	Wootton Pkwy at Seven Locks Rd	27.7	C	Wootton Pkwy EB	27.8	C	L	30.8	C	5	19
							T	36.9	D	101	145
							R	12.5	B	0	27
				Wootton Pkwy WB	18.8	B	L	24.8	C	150	m#403
							T	14.5	B	101	m64
							T/R	-	-	-	-
				Seven Locks Rd NB	33.1	C	L	53.0	D	272	#470
							L/T	49.6	D	266	#458
							R	0.6	A	0	0
				Seven Locks Rd SB	43.6	D	L/T	44.3	D	9	29
							R	42.6	D	0	0
N 601†	Wootton Pkwy at Tower Oaks Rd	24.0	C	Wootton Pkwy EB	18.8	B	L	47.9	D	9	m25
							T	18.2	B	74	303
							R	0.0	A	0	0
				Wootton Pkwy WB	25.6	C	L	62.4	E	73	108
							T	13.4	B	47	196
							R	10.3	B	0	0
				Tower Oaks Blvd NB	34.3	C	L	34.3	C	~110	141
							T	34.6	C	1	6
							R	0.0	A	0	0
				Tower Oaks Blvd SB	37.0	D	L	36.1	D	29	54
							T	38.7	D	7	20
							R	0.0	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-8B - Montrose Road Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 701‡	Montrose Rd at Seven Locks Rd	30.0	C	Montrose Rd EB	53.0	D	L	48.5	D	53	102
							T	54.1	D	119	170
							T/R	-	-	-	-
				Montrose Rd WB	32.4	C	L	39.2	D	157	m227
							L/T	-	-	-	-
							T	35.4	D	157	m207
							R	10.4	B	7	m17
				Seven Locks Rd NB	10.9	B	L	37.6	D	10	32
							T	38.3	D	80	122
							R	0.8	A	0	0
				Seven Locks Rd SB	35.1	D	L	53.5	D	187	240
							T	24.1	C	233	293
							T/R	-	-	-	-
N 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	47.3	E	-	6.2*
				Potomac Rd SB	-	-	R	15.6	C	-	1.1*
N 707‡	Montrose Rd at Tower Oaks Blvd	20.4	C	Montrose Rd EB	8.2	A	L	35.3	D	80	m157
							T	4.3	A	130	157
				Montrose Rd WB	21.3	C	T	22.1	C	527	598
							R	11.2	B	0	31
				Tower Oaks Blvd SB	58.2	E	L	63.6	E	108	#158
							R	55.6	E	39	108
				I-270 NB Off-Ramp NEB	2.6	A	R	2.6	A	0	0
N 708‡§	Montrose Rd at Farm Ln	2.0	A	Montrose Rd EB	2.0	A	T	2.0	A	0	432
				Montrose Rd WB	2.1	A	T	2.1	A	0	453
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0

Table NB-8B - Montrose Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	14.3	B	Montrose Rd EB	13.9	B	L	9.0	A	1	4
							T	13.3	B	260	465
							T/R	15.1	B	-	-
				Montrose Rd WB	12.0	B	L	11.2	B	2	6
							T	11.5	B	229	404
							T/R	12.8	B	-	-
				Hitching Post Ln NB	39.2	D	L	41.1	D	73	#145
							T/R	32.3	C	2	29
				Farm Haven Dr SB	33.7	C	L	34.0	C	19	47
							T/R	33.6	C	2	40
N 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	19.1	B	Tower Oaks Blvd EB	18.4	B	L/T	-	-	-	-
							T/R	18.4	B	100	207
				Tower Oaks Blvd WB	13.8	B	L/T	-	-	-	-
							T/R	13.8	B	36	85
				I-270 NB Ramps NB	22.3	C	L	23.2	C	90	#282
							L/T	23.0	C	89	#277
							R	14.0	B	0	10
				GEICO Ent SB	31.7	C	L/T/R	31.7	C	3	21
N 712‡	Tower Oaks Blvd at Commercial Dr	4.0	A	Commercial Dr WB	32.3	C	L	32.3	C	1	6
							L/R	-	-	-	-
				Tower Oaks Blvd NB	5.7	A	T	5.9	A	55	154
							R	4.1	A	0	17
				Tower Oaks Blvd SB	1.7	A	L	2.2	A	0	11
							T	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-8B - Montrose Road Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 701‡	Montrose Rd at Seven Locks Rd	37.6	D	Montrose Rd EB	77.1	E	L	51.2	D	54	104
							T	81.7	F	170	#271
							T/R	-	-	-	-
				Montrose Rd WB	30.5	C	L	42.4	D	346	m#496
							L/T	-	-	-	-
							T	34.0	C	344	m434
							R	14.8	B	143	m213
				Seven Locks Rd NB	34.2	C	L	41.7	D	57	113
							T	61.5	E	285	#407
							R	0.6	A	0	0
				Seven Locks Rd SB	36.6	D	L	54.6	D	73	112
							T	30.2	C	163	215
							T/R	-	-	-	-
N 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	19.6	C	-	1.7*
				Potomac Rd SB	-	-	R	143.3	F	-	10.7*
N 707‡	Montrose Rd at Tower Oaks Blvd	12.0	B	Montrose Rd EB	7.0	A	L	35.2	D	35	m92
							T	5.0	A	258	m305
				Montrose Rd WB	8.7	A	T	9.3	A	600	0
							R	0.2	A	0	m0
				Tower Oaks Blvd SB	67.4	E	L	81.3	F	76	#138
							R	58.1	E	19	69
				I-270 NB Off-Ramp NEB	1.6	A	R	1.6	A	0	0
N 708‡§	Montrose Rd at Farm Ln	4.8	A	Montrose Rd EB	3.5	A	T	3.5	A	0	464
				Montrose Rd WB	5.9	A	T	5.9	A	0	774
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0

Table NB-8B - Montrose Road Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	11.7	B	Montrose Rd EB	9.2	A	L	11.6	B	1	4
							T	8.7	A	189	379
							T/R	10.0	A	-	-
				Montrose Rd WB	12.2	B	L	7.7	A	2	6
							T	11.4	B	302	601
							T/R	13.6	B	-	-
				Hitching Post Ln NB	41.1	D	L	42.2	D	42	#101
							T/R	38.9	D	6	35
				Farm Haven Dr SB	39.3	D	L	40.1	D	14	40
							T/R	38.5	D	3	27
N 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	18.5	B	Tower Oaks Blvd EB	17.8	B	L/T	-	-	-	-
							T/R	17.8	B	79	127
				Tower Oaks Blvd WB	17.6	B	L/T	-	-	-	-
							T/R	17.6	B	52	91
				I-270 NB Ramps NB	18.9	B	L	19.1	B	86	189
							L/T	19.3	B	87	192
							R	13.1	B	0	0
				GEICO Ent SB	26.9	C	L/T/R	26.9	C	11	41
N 712‡	Tower Oaks Blvd at Commercial Dr	5.8	A	Commercial Dr WB	30.2	C	L	30.2	C	8	24
							L/R	-	-	-	-
				Tower Oaks Blvd NB	5.8	A	T	5.8	A	35	106
							R	4.3	A	0	4
				Tower Oaks Blvd SB	2.1	A	L	1.9	A	3	8
							T	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table NB-9B - Westlake Terrace Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 800[†]	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	13.5	B	Westlake Terr EB	9.2	A	L	8.7	A	30	71
							T	9.3	A	113	181
							T/R	9.3	A	-	-
				Westlake Terr WB	5.0	A	L	6.1	A	28	58
							T	4.5	A	24	50
							T/R	5.0	A	-	-
				Westfield Montgomery Mall Ent NB	47.2	D	L	48.7	D	3	15
							T/R	47.0	D	15	52
				Motor City Dr SB	53.4	D	L	56.8	E	84	138
							T/R	47.9	D	3	43
N 801[‡]	Westlake Terr at I-270 Spur Ramps	14.1	B	Westlake Terr EB	15.3	B	L	14.1	B	20	75
							T	15.5	B	80	177
				Westlake Terr WB	14.4	B	T	14.7	B	72	160
							R	11.6	B	0	23
				I-270 Spur Ramps SB	11.6	B	L/R	11.6	B	83	233
N 802[‡]	Westlake Terr at Rockledge Dr	34.9	C	Westlake Terr EB	38.2	D	L	49.7	D	179	#602
							T	30.9	C	147	#253
							T/R	-	-	-	-
				Westlake Terr WB	39.3	D	L	29.5	C	48	126
							T	42.1	D	112	170
							T/R	-	-	-	-
				Rockledge Dr NB	48.4	D	L/T	49.3	D	6	22
							R	46.6	D	0	0
				Rockledge Dr SB	27.2	C	L	23.6	C	53	87
							L/T	31.3	C	222	293
							R	24.0	C	0	54

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.
[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-9B - Westlake Terrace Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	24.1	C	Westlake Terr EB	23.3	C	L	22.5	C	21	64
							T	23.4	C	91	164
							T/R	23.4	C	-	-
				Westlake Terr WB	15.3	B	L	16.2	B	79	156
							T	15.0	B	127	212
							T/R	15.0	B	-	-
				Westfield Montgomery Mall Ent NB	32.8	C	L	31.2	C	29	53
							T/R	33.1	C	6	58
				Motor City Dr SB	47.2	D	L	53.2	D	161	233
							T/R	28.8	C	9	39
N 801‡	Westlake Terr at I-270 Spur Ramps	10.1	B	Westlake Terr EB	11.9	B	L	22.5	C	70	191
							T	6.2	A	42	65
				Westlake Terr WB	6.9	A	T	6.9	A	73	107
							R	6.9	A	0	29
				I-270 Spur Ramps SB	21.7	C	L/R	21.7	C	50	#193
N 802‡	Westlake Terr at Rockledge Dr	54.3	D	Westlake Terr EB	44.2	D	L	63.8	E	134	#290
							T	31.7	C	106	167
							T/R	-	-	-	-
				Westlake Terr WB	52.6	D	L	35.6	D	3	11
							T	52.7	D	243	313
							T/R	-	-	-	-
				Rockledge Dr NB	58.3	E	L/T	71.7	E	259	#430
							R	39.1	D	0	66
				Rockledge Dr SB	60.2	E	L	34.2	C	78	134
							L/T	34.1	C	78	133
							R	71.1	E	291	#529

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-10B - Democracy Boulevard Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 900†	Democracy Blvd at Taveshire Way	10.8	B	Democracy Blvd EB	5.0	A	T	5.0	A	102	156
				Democracy Blvd WB	4.1	A	T	4.1	A	44	70
				Taveshire Way SB	53.4	D	L	47.8	D	53	75
							R	61.5	E	24	83
N 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	33.0	C	Democracy Blvd EB	35.7	D	T	35.7	D	470	530
							T/R	-	-	-	-
				Democracy Blvd WB	5.5	A	T	5.5	A	61	74
				I-270 Spur Off Ramp SB	51.1	D	L	53.7	D	237	300
							R	46.1	D	0	77
N 902‡	Democracy Blvd at I-270 SB On-Ramp	5.5	A	Democracy Blvd EB	0.5	A	T	0.5	A	9	9
				Democracy Blvd WB	14.0	B	L	36.1	D	169	226
							T	0.7	A	0	0
N 903‡	Democracy Blvd at I-270 Spur NB Ramps	6.8	A	Democracy Blvd EB	0.3	A	T	0.3	A	0	0
							T/R	-	-	-	-
				Democracy Blvd WB	1.3	A	T	1.3	A	20	28
				I-270 Spur Off Ramp NB	69.1	E	L	69.1	E	128	172
N 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	20.0	B	Democracy Blvd EB	19.7	B	T	19.7	B	415	471
				Democracy Blvd WB	0.1	A	T	0.1	A	0	m0
				I-270 Spur Off Ramp NB	36.3	D	R	36.3	D	463	531
N 906‡	Democracy Blvd at Fernwood Rd	47.3	D	Democracy Blvd EB	49.4	D	U/L	-	-	-	-
							L	86.2	F	~537	#677
							T	46.3	D	322	336
							R	0.6	A	0	0
				Democracy Blvd WB	47.7	D	L	74.6	E	243	#385
							T	55.4	E	35	57
							R	0.1	A	0	0
				Fernwood Rd NB	53.2	D	L	81.5	F	~858	#1,113
							R	0.4	A	0	0
				Fernwood Rd SB	10.6	B	L	23.8	C	45	68
							R	0.2	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-10B - Democracy Boulevard Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 900†	Democracy Blvd at Taveshire Way	11.7	B	Democracy Blvd EB	4.5	A	T	4.5	A	59	95
				Democracy Blvd WB	5.3	A	T	5.3	A	136	200
				Taveshire Way SB	51.3	D	L	48.2	D	74	95
							R	57.9	E	95	150
N 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	50.9	D	Democracy Blvd EB	56.8	E	T	56.8	E	357	415
							T/R	-	-	-	-
				Democracy Blvd WB	19.9	B	T	19.9	B	177	199
				I-270 Spur Off Ramp SB	72.3	E	L	27.5	C	153	196
							R	99.2	F	~815	#1,072
N 902‡	Democracy Blvd at I-270 SB On-Ramp	18.6	B	Democracy Blvd EB	1.6	A	T	1.6	A	12	34
				Democracy Blvd WB	33.3	C	L	94.6	F	290	#417
							T	0.7	A	0	0
N 903‡	Democracy Blvd at I-270 Spur NB Ramps	7.5	A	Democracy Blvd EB	1.1	A	T	1.1	A	23	26
							T/R	-	-	-	-
				Democracy Blvd WB	4.1	A	T	4.1	A	114	152
				I-270 Spur Off Ramp NB	69.1	E	L	69.1	E	112	154
N 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	9.7	A	Democracy Blvd EB	6.0	A	T	6.0	A	116	161
				Democracy Blvd WB	0.2	A	T	0.2	A	0	0
				I-270 Spur Off Ramp NB	40.7	D	R	40.7	D	257	281
N 906‡	Democracy Blvd at Fernwood Rd	38.0	D	Democracy Blvd EB	40.3	D	U/L	-	-	-	-
							L	62.6	E	71	109
							T	58.4	E	312	369
							R	0.6	A	0	0
				Democracy Blvd WB	48.2	D	L	100.1	F	318	#524
							T	35.2	D	219	265
							R	0.1	A	0	0
				Fernwood Rd NB	55.0	D	L	78.1	E	~719	#965
							R	0.3	A	0	0
				Fernwood Rd SB	9.1	A	L	25.4	C	120	159
							R	1.4	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1000†	Rockledge Dr at Rock Forest Dr	26.8	C	Rockledge Dr EB	57.7	E	L	61.0	E	102	146
							T	46.1	D	11	33
							R	49.4	D	0	0
				Rock Forest Dr WB	65.1	E	L	72.1	E	46	92
							T	52.7	D	20	50
							R	64.3	E	0	0
				Rockledge Dr NB	11.7	B	L	13.4	B	42	75
							T	10.8	B	55	87
							T/R	10.8	B	-	-
				Rockledge Dr SB	16.8	B	L	9.8	A	8	21
							T	17.0	B	278	410
							R	0.0	A	0	#185
N 1001‡	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	20.1	C	I-270 SB Off Ramp EB	30.5	D	L/T	-	-	-	-
							T	69.9	E	406	491
							R	2.7	A	0	0
				Rockledge Dr NB	35.7	D	T	69.9	E	87	129
							R	23.6	C	160	206
				Rockledge Dr SB	0.0	A	T	0.0	A	0	0
N 1002‡	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	43.4	D	I-270 NB Ramp Connector WB	46.9	D	L	55.3	E	775	#1,095
							L/T	-	-	-	-
							T	42.7	D	726	839
				Rockledge Dr NB	0.2	A	L	0.2	A	0	0
N 1003‡	MD 187 (Old Georgetown Road) at Rock Spring Dr	46.6	D	Rock Spring Dr EB	79.1	E	L	97.7	F	344	#564
							L/T	96.2	F	345	#563
							R	46.7	D	173	273
				Rock Spring Dr WB	73.6	E	L/T/R	73.6	E	10	48
				MD 187 (Old Georgetown Road) NB	30.6	C	L	79.3	E	99	#170
							T	22.7	C	271	313
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	42.7	D	L	74.8	E	42	m53
							T	44.2	D	551	728
							R	33.8	C	114	231

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)												
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
N 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	25.8	C	I-270 SB Ramp Connector EB	49.0	D	L	33.2	C	80	124
							L/T/R	33.1	C	78	124
							R	53.9	D	423	503
				MD 187 (Old Georgetown Road) NB	27.0	C	T	27.0	C	220	m233
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	15.6	B	L	36.3	D	0	0
							T	13.2	B	326	435
N 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	11.1	B	I-270 NB Off Ramp WB	19.7	B	L	70.4	E	89	149
							L/T	69.6	E	90	148
							R	0.4	A	0	0
				MD 187 (Old Georgetown Road) NB	17.8	B	L	92.3	F	183	237
							T	1.1	A	47	51
				MD 187 (Old Georgetown Road) SB	5.4	A	T	7.3	A	165	m127
							R	0.1	A	0	m0
N 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	156.7	F	Tuckerman Ln EB	95.6	F	L	47.7	D	54	85
							T	103.8	F	~422	#555
							T/R	-	-	-	-
				Tuckerman Ln WB	281.3	F	L	369.5	F	~575	#705
							T	60.4	E	105	150
							R	48.3	D	0	12
				MD 187 (Old Georgetown Road) NB	56.5	E	U/L	306.7	F	~324	#502
							T	17.2	B	139	179
							R	20.0	C	10	45
				MD 187 (Old Georgetown Road) SB	208.7	F	L	72.0	E	37	78
							T	211.0	F	~1,190	#1,293
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1000†	Rockledge Dr at Rock Forest Dr	40.6	D	Rockledge Dr EB	66.1	E	L	56.1	E	215	270
							T	36.8	D	40	76
							R	86.9	F	0	83
				Rock Forest Dr WB	61.8	E	L	71.9	E	45	91
							T	50.9	D	12	35
							R	53.9	D	0	0
				Rockledge Dr NB	25.3	C	L	15.0	B	19	42
							T	26.0	C	312	440
							T/R	25.8	C	-	-
				Rockledge Dr SB	18.1	B	L	18.5	B	35	70
							T	18.0	B	91	133
							R	0.0	A	0	0
N 1001‡	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	40.6	D	I-270 SB Off Ramp EB	59.1	E	L/T	-	-	-	-
							T	108.2	F	~374	#504
							R	0.6	A	0	0
				Rockledge Dr NB	40.2	D	T	77.9	E	282	#372
							R	22.2	C	397	529
				Rockledge Dr SB	0.0	A	T	0.0	A	0	m0
N 1002‡	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	32.9	C	I-270 NB Ramp Connector WB	41.7	D	L	30.4	C	397	561
							L/T	-	-	-	-
							T	45.3	D	776	887
				Rockledge Dr NB	0.2	A	L	0.2	A	0	m0
N 1003‡	MD 187 (Old Georgetown Road) at Rock Spring Dr	98.7	F	Rock Spring Dr EB	116.9	F	L	136.0	F	~462	#684
							L/T	139.3	F	~472	#698
							R	32.4	C	37	85
				Rock Spring Dr WB	418.8	F	L/T/R	418.8	F	~141	#309
				MD 187 (Old Georgetown Road) NB	103.4	F	L	60.0	E	100	143
							T	106.7	F	~1,153	#1,232
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	53.6	D	L	146.6	F	~121	#259
							T	47.1	D	545	595
							R	56.3	E	123	154

Table NB-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	31.7	C	I-270 SB Ramp Connector EB	66.7	E	L	75.5	E	403	#605
							L/T/R	71.6	E	406	#600
							R	44.0	D	122	173
				MD 187 (Old Georgetown Road) NB	28.4	C	T	28.4	C	~679	m453
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	19.0	B	L	27.6	C	48	48
							T	18.4	B	157	313
N 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	15.6	B	I-270 NB Off Ramp WB	25.6	C	L	71.4	E	82	142
							L/T	69.8	E	81	141
							R	0.2	A	0	0
				MD 187 (Old Georgetown Road) NB	15.6	B	L	52.1	D	300	m215
							T	4.4	A	241	m252
				MD 187 (Old Georgetown Road) SB	13.8	B	T	18.8	B	228	m238
							R	0.1	A	0	m0
N 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	92.3	F	Tuckerman Ln EB	61.2	E	L	58.1	E	168	214
							T	63.6	E	230	283
							T/R	-	-	-	-
				Tuckerman Ln WB	179.0	F	L	272.3	F	~357	#476
							T	86.3	F	187	#279
							R	50.7	D	0	36
				MD 187 (Old Georgetown Road) NB	61.7	E	U/L	261.4	F	~350	#545
							T	47.4	D	~926	#1,014
							R	26.2	C	199	798
				MD 187 (Old Georgetown Road) SB	111.6	F	L	80.7	F	73	#184
							T	112.7	F	~986	#1,150
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-12B - MD 190 (River Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1100‡	MD 190 (River Rd) at Seven Locks Rd	41.6	D	MD 190 (River Rd) EB	45.8	D	L	25.1	C	13	33
							T	46.2	D	661	#810
							T/R	-	-	-	-
				MD 190 (River Rd) WB	21.6	C	U/L	84.7	F	110	#223
							T	13.5	B	160	190
							R	1.2	A	0	2
				Seven Locks Rd NB	24.3	C	L	89.2	F	26	62
							T	164.3	F	48	#123
							R	0.3	A	0	0
				Seven Locks Rd SB	71.8	E	L	76.7	E	401	#606
							L/T/R	66.9	E	387	#569
N 1102‡	MD 190 (River Rd) at I-495 Outer Loop Off-Ramp	13.5	B	MD 190 (River Rd) EB	2.6	A	T	2.6	A	25	m108
				MD 190 (River Rd) WB	4.8	A	T	4.8	A	100	147
				I-495 Outer Loop Off-Ramp NB	65.0	E	L	65.0	E	163	208
N 1105‡	MD 190 (River Rd) WB at I-495 Inner Loop On-Ramp	0.5	A	MD 190 (River Rd) EB	0.7	A	L	4.4	A	1	132
							T	0.1	A	0	0
				MD 190 (River Rd) WB	0.3	A	T	0.3	A	0	0
N 1107†	MD 190 (River Rd) at Burdette Rd	21.5	C	MD 190 (River Rd) EB	15.2	B	L	25.1	C	19	68
							T	14.9	B	514	914
							R	5.6	A	0	0
				MD 190 (River Rd) WB	16.0	B	L	15.5	B	1	5
							T	16.1	B	680	907
							R	6.6	A	0	0
				Burdette Rd NB	73.0	E	L/T/R	73.0	E	49	92
				Burdette Rd SB	97.0	F	L/T	68.6	E	66	113
							R	104.5	F	162	254

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-12B - MD 190 (River Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1100‡	MD 190 (River Rd) at Seven Locks Rd	49.3	D	MD 190 (River Rd) EB	66.9	E	L	89.4	F	23	#77
							T	66.1	E	382	#485
							T/R	-	-	-	-
				MD 190 (River Rd) WB	39.5	D	U/L	75.2	E	235	m#415
							T	44.5	D	702	#836
							R	18.1	B	44	41
				Seven Locks Rd NB	35.3	D	L	56.7	E	29	63
							T	99.6	F	229	#392
							R	0.3	A	0	0
				Seven Locks Rd SB	75.1	E	L	59.3	E	338	#485
							L/T/R	87.3	F	471	#716
N 1102‡	MD 190 (River Rd) at I-495 Outer Loop Off-Ramp	10.7	B	MD 190 (River Rd) EB	1.1	A	T	1.1	A	31	m36
				MD 190 (River Rd) WB	7.7	A	T	7.7	A	526	542
				I-495 Outer Loop Off-Ramp NB	70.9	E	L	70.9	E	153	204
N 1105‡	MD 190 (River Rd) WB at I-495 Inner Loop On-Ramp	3.7	A	MD 190 (River Rd) EB	1.9	A	L	10.8	B	31	91
							T	0.2	A	0	0
				MD 190 (River Rd) WB	6.3	A	T	6.3	A	225	359
N 1107†	MD 190 (River Rd) at Burdette Rd	49.9	D	MD 190 (River Rd) EB	18.9	B	L	93.9	F	270	380
							T	8.2	A	281	512
							R	3.8	A	0	11
				MD 190 (River Rd) WB	71.9	E	L	10.9	B	1	4
							T	73.5	E	~1,731	#1,940
							R	11.3	B	0	5
				Burdette Rd NB	80.7	F	L/T/R	80.7	F	39	81
				Burdette Rd SB	105.4	F	L/T	77.2	E	69	122
							R	116.8	F	0	73

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-13B - MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	25.1	C	Lone Oak Dr EB	83.4	F	L/T	71.5	E	87	143
							R	86.7	F	280	375
				Manor Oak Way WB	59.3	E	L/T/R	59.3	E	14	40
				MD 187 (Old Georgetown Rd) NB	6.5	A	U/L	38.5	D	73	m135
							T	3.4	A	13	m249
							R	3.2	A	0	m0
				MD 187 (Old Georgetown Rd) SB	26.5	C	L	9.2	A	2	8
							T	26.5	C	875	#1,172
							T/R	-	-	-	-
N 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	96.0	F	I-495 Outer Loop Off-Ramp WB	86.5	F	L	55.6	E	88	150
							L/T	55.6	E	89	152
							R	103.2	F	245	#452
				MD 187 (Old Georgetown Rd) NB	54.5	D	L	200.6	F	~491	#714
							T	4.5	A	94	80
				MD 187 (Old Georgetown Rd) SB	118.4	F	T	118.4	F	~1,446	#1,491
							T/R	-	-	-	-
N 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	9.4	A	I-495 Inner Loop Off-Ramp EB	22.1	C	L	68.5	E	96	152
							L/T	68.5	E	97	154
							R	0.4	A	0	0
				MD 187 (Old Georgetown Rd) NB	17.4	B	T	17.4	B	260	315
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	2.0	A	L	16.0	B	107	m66
							T	0.8	A	69	m63
N 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	16.5	B	Ryland Dr EB	86.7	F	L/T/R	86.7	F	299	#478
				Church Dwy WB	43.4	D	L	43.9	D	25	55
							T	42.8	D	4	16
							R	43.3	D	0	26
				MD 187 (Old Georgetown Rd) NB	19.3	B	L	27.7	C	2	7
							T	19.2	B	260	310
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	6.9	A	U/L	5.4	A	6	24
							T	7.0	A	137	158
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-13B - MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
N 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	20.7	C	Lone Oak Dr EB	61.9	E	L/T	74.8	E	127	197
							R	45.0	D	58	97
				Manor Oak Way WB	55.5	E	L/T/R	55.5	E	15	40
				MD 187 (Old Georgetown Rd) NB	17.7	B	U/L	43.0	D	134	m200
							T	16.1	B	615	710
							R	4.1	A	0	m0
				MD 187 (Old Georgetown Rd) SB	20.1	C	L	15.5	B	2	12
							T	20.1	C	508	674
							T/R	-	-	-	-
N 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	11.6	B	I-495 Outer Loop Off-Ramp WB	69.1	E	L	55.0	E	65	114
							L/T	55.0	E	65	114
							R	76.9	E	194	294
				MD 187 (Old Georgetown Rd) NB	4.0	A	L	29.4	C	126	m138
							T	2.4	A	129	134
				MD 187 (Old Georgetown Rd) SB	11.2	B	T	11.2	B	111	119
							T/R	-	-	-	-
N 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	17.2	B	I-495 Inner Loop Off-Ramp EB	42.7	D	L	73.6	E	169	256
							L/T	72.7	E	167	253
							R	0.2	A	0	0
				MD 187 (Old Georgetown Rd) NB	17.9	B	T	17.9	B	856	175
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	8.0	A	L	54.9	D	167	m218
							T	2.1	A	57	60
N 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	10.4	B	Ryland Dr EB	66.7	E	L/T/R	66.7	E	68	111
				Church Dwy WB	60.4	E	L	60.8	E	10	28
							T	60.3	E	5	17
							R	60.3	E	0	11
				MD 187 (Old Georgetown Rd) NB	12.0	B	L	5.4	A	2	8
							T	12.0	B	471	753
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	4.4	A	U/L	32.7	C	3	45
							T	3.8	A	61	134
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Move-ment	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
N 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	33.4	C	Grosvenor Ln EB	59.1	E	L	60.6	E	51	82
							R	58.4	E	160	259
				Grosvenor Ln WB	45.8	D	L	38.5	D	265	328
							T/R	63.9	E	227	334
				MD 355 (Rockville Pike) NW	24.9	C	T	24.9	C	380	444
				MD 355 (Rockville Pike) SB	29.3	C	T	30.1	C	658	723
							R	15.8	B	6	36
N 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	25.4	C	I-495 Inner Loop Off-Ramp SE	75.9	E	R	75.9	E	319	388
				MD 355 (Rockville Pike) SB	18.4	B	T	18.4	B	769	854
N 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	35.7	D	Pooks Hill Rd EB	107.5	F	L	107.5	F	335	#461
							R	0.0	A	86	171
				MD 355 (Rockville Pike) NB	9.8	A	L	75.4	E	49	m90
							T	8.5	A	39	63
				MD 355 (Rockville Pike) SB	39.3	D	T	40.5	D	1,306	618
							R	4.3	A	0	m3
N 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	17.5	B	Alta Vista Rd EB	95.2	F	L/T/R	95.2	F	118	185
				Bellevue Dr WB	73.4	E	L/T/R	73.4	E	11	45
				MD 355 (Rockville Pike) NB	23.4	C	U/L	-	-	-	-
							T	23.4	C	426	512
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	12.8	B	U/L	19.0	B	261	m286
							T	12.3	B	292	222
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table NB-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Move-ment	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
N 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	36.5	D	Grosvenor Ln EB	61.3	E	L	66.6	E	79	117
							R	57.1	E	118	214
				Grosvenor Ln WB	62.5	E	L	37.5	D	95	132
							T/R	83.2	F	277	#479
				MD 355 (Rockville Pike) NW	40.9	D	T	40.9	D	803	#990
				MD 355 (Rockville Pike) SB	19.8	B	T	20.3	C	407	453
							R	13.1	B	0	28
N 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	16.5	B	I-495 Inner Loop Off-Ramp SE	79.5	E	R	79.5	E	212	265
				MD 355 (Rockville Pike) SB	8.4	A	T	8.4	A	313	399
N 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	16.5	B	Pooks Hill Rd EB	99.3	F	L	99.3	F	161	215
							R	0.0	A	2	57
				MD 355 (Rockville Pike) NB	11.5	B	L	73.1	E	84	m87
							T	10.3	B	115	m102
				MD 355 (Rockville Pike) SB	15.1	B	T	16.3	B	308	313
							R	6.6	A	0	7
N 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	29.3	C	Alta Vista Rd EB	99.8	F	L/T/R	99.8	F	134	208
				Bellevue Dr WB	72.4	E	L/T/R	72.4	E	17	48
				MD 355 (Rockville Pike) NB	38.6	D	U/L	26.2	C	3	9
							T	38.7	D	1,253	#1,513
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	14.4	B	U/L	119.4	F	~339	#553
							T	1.5	A	39	17
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

2045 PREFERRED ALTERNATIVE

SYNCHRO ANALYSIS OUTPUT TABLES

Table BP1-2B - I-370 (Sam Eig Highway) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 100‡	I-370 (Sam Eig Hwy) at Fields Rd	23.5	C	Fields Rd WB	53.2	D	L	72.1	E	101	140
							R	43.6	D	175	203
				I-370 (Sam Eig Hwy) NB	17.6	B	T	18.2	B	547	695
							R	14.4	B	237	408
				I-370 (Sam Eig Hwy) SB	23.2	C	L	74.0	E	258	307
							T	5.4	A	136	173
				Washingtonian Blvd Ramp SEB	4.3	A	R	4.3	A	23	42
P 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	22.2	C	Washingtonian Blvd Ramp WB	24.7	C	L	24.9	C	103	#211
							L/T	25.2	C	105	#220
							R	18.4	B	0	0
				Washingtonian Blvd NB	4.6	A	L	5.0	A	5	15
							T	2.8	A	1	2
				Washingtonian Blvd SB	24.9	C	T	24.9	C	33	64
							T/R	-	-	-	-
P 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	14.0	B	Washingtonian Blvd Ramp EB	27.0	C	L/T	26.2	C	4	17
							R	27.0	C	0	35
				Washingtonian Blvd NB	28.0	C	T	29.1	C	41	89
							R	27.5	C	0	46
				Washingtonian Blvd SB	3.6	A	L/T	-	-	-	-
							T	3.6	A	32	120
P 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	4.8	A	MD 119 (Great Seneca Hwy) EB	0.2	A	T	0.2	A	0	0
				MD 119 (Great Seneca Hwy) WB	3.9	A	T	3.9	A	4	5
				I-370 (Sam Eig Hwy) SB	28.5	C	R	28.5	C	44	212
P 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	34.1	C	MD 119 (Great Seneca Hwy) EB	24.6	C	L	42.7	D	547	632
							T	15.0	B	707	789
				MD 119 (Great Seneca Hwy) WB	51.2	D	T	51.2	D	118	151
				I-370 (Sam Eig Hwy) SB	86.9	F	L	86.9	F	296	359
P 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	30.7	C	Diamondback Dr EB	78.2	E	L	79.4	E	397	459
							R	54.9	D	0	0
				Diamondback Dr WB	66.3	E	R	66.3	E	113	149
				I-370 (Sam Eig Hwy) NB	12.7	B	L	128.8	F	27	m44
							T	11.9	B	102	456
							R	0.1	A	0	m0
				I-370 (Sam Eig Hwy) SB	22.7	C	L	105.0	F	122	191
							T	23.4	C	209	394
							R	0.4	A	0	0

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-2B - I-370 (Sam Eig Highway) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 100‡	I-370 (Sam Eig Hwy) at Fields Rd	29.1	C	Fields Rd WB	47.4	D	L	67.5	E	229	281
							R	33.9	C	267	317
				I-370 (Sam Eig Hwy) NB	29.8	C	T	30.8	C	791	354
							R	23.8	C	154	194
				I-370 (Sam Eig Hwy) SB	25.0	C	L	70.8	E	338	415
							T	13.3	B	481	569
				Washingtonian Blvd Ramp SEB	9.7	A	R	9.7	A	157	232
P 104‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	23.2	C	Washingtonian Blvd Ramp WB	37.8	D	L	38.2	D	123	#245
							L/T	37.8	D	121	#241
							R	28.3	C	0	0
				Washingtonian Blvd NB	2.9	A	L	2.8	A	19	m55
							T	3.4	A	2	m9
				Washingtonian Blvd SB	37.5	D	T	37.5	D	43	77
							T/R	-	-	-	-
P 105‡	Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	26.9	C	Washingtonian Blvd Ramp EB	33.1	C	L/T	32.2	C	5	18
							R	33.2	C	0	38
				Washingtonian Blvd NB	30.3	C	T	35.8	D	224	#432
							R	27.5	C	0	136
				Washingtonian Blvd SB	17.0	B	L/T	-	-	-	-
							T	17.0	B	45	123
P 113‡	I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	12.2	B	MD 119 (Great Seneca Hwy) EB	0.0	A	T	0.0	A	0	0
				MD 119 (Great Seneca Hwy) WB	6.2	A	T	6.2	A	19	38
				I-370 (Sam Eig Hwy) SB	31.4	C	R	31.4	C	997	1,075
P 114‡	I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	46.4	D	MD 119 (Great Seneca Hwy) EB	26.6	C	L	43.3	D	388	458
							T	4.0	A	73	88
				MD 119 (Great Seneca Hwy) WB	57.0	E	T	57.0	E	648	711
				I-370 (Sam Eig Hwy) SB	81.3	F	L	81.3	F	156	#233
P 118‡	I-370 (Sam Eig Hwy) at Diamondback Dr	40.1	D	Diamondback Dr EB	83.4	F	L	84.6	F	276	336
							R	63.7	E	0	0
				Diamondback Dr WB	57.6	E	R	57.6	E	188	225
				I-370 (Sam Eig Hwy) NB	54.3	D	L	73.4	E	115	187
							T	61.0	E	538	619
							R	0.2	A	0	0
				I-370 (Sam Eig Hwy) SB	24.3	C	L	83.5	F	183	265
							T	33.9	C	608	730
							R	4.0	A	1,012	1,268

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 200‡	Omega Dr at MD 28 (Key W Ave)	38.2	D	MD 28 (Key W Ave) EB	32.8	C	L	72.7	E	88	147
							T	32.6	C	603	824
							R	18.2	B	0	46
				MD 28 (Key W Ave) WB	32.3	C	U/L	-	-	-	-
							L	70.6	E	145	#219
							T	16.3	B	90	156
							R	15.1	B	0	36
				Medical Center Dr NB	60.0	E	L	122.6	F	11	34
							T	55.4	E	33	52
							R	54.5	D	0	20
				Omega Dr SB	71.8	E	L	88.0	F	71	#126
							T	68.9	E	266	348
							R	49.3	D	0	19
P 203†	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L	32.2	D	-	6.8*
P 204†	Omega Dr / Fields Rd at Washingtonian Blvd	7.8	A	Fields Rd EB	5.8	A	L	18.5	B	12	36
							T	4.8	A	46	82
				Omega Dr WB	9.1	A	T	8.6	A	12	40
							T/R	9.5	A	-	-
				Washingtonian Blvd SB	13.5	B	L	13.8	B	18	39
							R	10.9	B	0	5
P 205‡	Shady Grove Rd at Corporate Blvd	20.6	C	Corporate Blvd EB	72.5	E	L	73.4	E	57	109
							L/T	72.9	E	57	109
							R	65.4	E	0	0
				Corporate Blvd WB	71.7	E	L/T	75.3	E	31	69
							R	69.4	E	0	0
				Shady Grove Rd NB	29.5	C	L	23.3	C	3	15
							T	29.5	C	349	468
							T/R	-	-	-	-
				Shady Grove Rd SB	11.8	B	U/L	49.6	D	310	435
							T	3.6	A	94	212
							T/R	-	-	-	-

Table BP1-3B - Shady Grove Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 207[†]	Shady Grove Rd at I-270 SB Off-Ramp	21.1	C	I-270 SB Off-Ramp EB	45.1	D	L	33.2	C	162	187
							R	51.2	D	464	513
				Shady Grove Rd NB	19.2	B	T	19.2	B	49	56
				Shady Grove Rd SB	0.8	A	T	0.8	A	403	456
							R	0.0	A	243	555
P 210[†]	Shady Grove Rd at I-270 NB Off-Ramp	19.5	B	I-270 NB Off-Ramp WB	56.4	E	L	56.4	E	386	423
							R	0.0	A	0	0
				Shady Grove Rd NB	3.9	A	T	3.9	A	103	148
							R	0.0	A	0	0
				Shady Grove Rd SB	11.4	B	T	11.4	B	102	50
P 212[‡]	Shady Grove Rd at Choke Cherry Rd	24.4	C	Choke Cherry Rd EB	64.1	E	L/T/R	72.8	E	55	109
							R	54.5	D	0	29
				Choke Cherry Rd WB	70.4	E	L	74.6	E	107	172
							L/T	71.5	E	105	168
							R	60.7	E	0	4
				Shady Grove Rd NB	19.4	B	U/L	34.7	C	70	169
							T	14.8	B	159	226
							R	28.1	C	34	78
				Shady Grove Rd SB	18.9	B	L	11.3	B	47	89
							T	19.6	B	332	473
							T/R	-	-	-	-
P 216[†]	Redland Blvd at Piccard Dr	13.0	B	I-270 NB Off-Ramp EB	5.4	A	L	5.1	A	8	28
							T	5.4	A	16	41
							T/R	5.4	A	-	-
				Redland Blvd WB	-	-	L	-	-	34	67
							R	-	-	0	0
				Piccard Dr NB	13.7	B	T	13.5	B	17	41
							R	13.8	B	0	15
				Piccard Dr SB	16.2	B	L/T	16.0	B	-	-
							T	16.4	B	88	136

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.
[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 200‡	Omega Dr at MD 28 (Key W Ave)	41.2	D	MD 28 (Key W Ave) EB	24.3	C	L	82.6	F	88	#173
							T	18.5	B	169	213
							R	15.3	B	0	0
				MD 28 (Key W Ave) WB	33.3	C	U/L	-	-	-	-
							L	71.1	E	51	85
							T	33.1	C	723	826
							R	18.0	B	0	45
				Medical Center Dr NB	67.4	E	L	90.5	F	173	#296
							T	56.3	E	182	228
							R	68.0	E	196	313
				Omega Dr SB	69.7	E	L	81.5	F	60	#104
							T	64.0	E	111	173
							R	66.3	E	91	182
P 203††	Omega Dr at I-270 SB Off-Ramp	-	-	I-270 Off-Ramp WB	-	-	L	98.0	F	-	6.9*
P 204†	Omega Dr / Fields Rd at Washingtonian Blvd	15.6	B	Fields Rd EB	6.7	A	L	43.1	D	12	38
							T	2.9	A	14	27
				Omega Dr WB	13.6	B	T	12.0	B	374	548
							T/R	15.1	B	-	-
				Washingtonian Blvd SB	31.6	C	L	32.3	C	72	115
							R	29.4	C	14	52
P 205‡	Shady Grove Rd at Corporate Blvd	31.8	C	Corporate Blvd EB	79.2	E	L	81.3	F	89	#157
							L/T	81.8	F	90	#156
							R	63.4	E	0	0
				Corporate Blvd WB	76.2	E	L/T	54.8	D	65	109
							R	81.1	F	194	303
				Shady Grove Rd NB	28.0	C	L	17.2	B	8	25
							T	28.1	C	500	647
							T/R	-	-	-	-
				Shady Grove Rd SB	11.2	B	U/L	54.6	D	58	129
							T	5.7	A	74	98
							T/R	-	-	-	-

Table BP1-3B - Shady Grove Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 207[†]	Shady Grove Rd at I-270 SB Off-Ramp	18.4	B	I-270 SB Off-Ramp EB	65.2	E	L	62.1	E	163	206
							R	68.4	E	182	232
				Shady Grove Rd NB	4.8	A	T	4.8	A	29	26
				Shady Grove Rd SB	0.1	A	T	0.1	A	35	43
							R	0.0	A	156	310
P 210[†]	Shady Grove Rd at I-270 NB Off-Ramp	8.6	A	I-270 NB Off-Ramp WB	71.7	E	L	71.7	E	130	175
							R	0.0	A	0	0
				Shady Grove Rd NB	0.1	A	T	0.1	A	171	183
							R	0.0	A	469	688
				Shady Grove Rd SB	2.8	A	T	2.8	A	22	29
P 212[‡]	Shady Grove Rd at Choke Cherry Rd	44.5	D	Choke Cherry Rd EB	70.8	E	L/T/R	91.8	F	185	#320
							R	47.7	D	82	155
				Choke Cherry Rd WB	72.7	E	L	81.9	F	275	#428
							L/T	75.5	E	273	#412
							R	48.7	D	0	58
				Shady Grove Rd NB	28.0	C	U/L	86.7	F	144	#255
							T	23.3	C	216	260
							R	9.0	A	1	21
				Shady Grove Rd SB	44.0	D	L	27.5	C	47	80
							T	44.9	D	547	616
							T/R	-	-	-	-
P 216[†]	Redland Blvd at Piccard Dr	15.1	B	I-270 NB Off-Ramp EB	5.8	A	L	5.4	A	6	20
							T	5.9	A	29	51
							T/R	5.9	A	-	-
				Redland Blvd WB	-	-	L	-	-	13	29
							R	-	-	0	27
				Piccard Dr NB	19.6	B	T	16.0	B	97	#196
							R	22.8	C	0	56
				Piccard Dr SB	13.8	B	L/T	14.3	B	-	-
							T	13.4	B	27	52

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
* Unsignalized intersection 95th percentile queue reported in number of vehicles.

Reporting Source:
[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.
[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.
[††] HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-4B - Gude Drive Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 301†	Gude Dr at Research Blvd	29.2	C	Gude Dr EB	53.1	D	L	60.3	E	10	32
							T	57.1	E	313	#453
							R	20.4	C	0	0
				Gude Dr WB	7.3	A	L	23.3	C	144	m#204
							T	0.4	A	121	m182
							R	0.8	A	3	m21
				Research Blvd NB	31.1	C	L	39.8	D	5	17
							T	51.8	D	85	130
							R	9.7	A	15	48
				Research Blvd SB	42.3	D	L	48.5	D	122	167
							T	37.1	D	120	190
							T/R	37.1	D	-	-
P 302‡	Gude Dr at I-270 Managed Lanes Direct Connector	37.0	D	Gude Dr EB	31.7	C	L	52.2	D	59	m80
							T	38.0	D	428	m#557
							R	3.4	A	0	m2
				Gude Dr WB	21.3	C	L	25.9	C	37	m62
							T	20.4	C	418	491
							TR	-	-	-	-
				I-270 Managed Lanes Ramp NB	73.5	E	L	75.2	E	300	#507
							R	71.7	E	198	#396
				I-270 Managed Lanes Ramp SB	34.6	C	L	31.6	C	129	205
							R	42.3	D	0	16
P 303†	Gude Dr at Piccard Dr	14.8	B	Gude Dr EB	6.9	A	L	27.7	C	81	m142
							T	0.3	A	98	m350
				Gude Dr WB	22.4	C	T	23.1	C	344	#553
							R	14.5	B	5	42
				Piccard Dr SB	28.0	C	L	36.3	D	33	70
							R	26.4	C	116	156

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-4B - Gude Drive Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 301†	Gude Dr at Research Blvd	28.4	C	Gude Dr EB	39.6	D	L	73.0	E	3	15
							T	39.8	D	293	#378
							R	12.3	B	0	0
				Gude Dr WB	6.6	A	L	27.8	C	98	m130
							T	0.6	A	119	m225
							R	0.4	A	1	m9
				Research Blvd NB	45.8	D	L	37.1	D	76	128
							T	54.3	D	96	#160
							R	43.4	D	78	147
				Research Blvd SB	45.8	D	L	49.9	D	132	181
							T	37.4	D	52	85
							T/R	37.4	D	-	-
P 302‡	Gude Dr at I-270 Managed Lanes Direct Connector	32.4	C	Gude Dr EB	21.8	C	L	54.6	D	92	m121
							T	21.7	C	238	#452
							R	8.2	A	44	m53
				Gude Dr WB	31.0	C	L	37.9	D	146	m#180
							T	28.5	C	459	554
							TR	-	-	-	-
				I-270 Managed Lanes Ramp NB	60.2	E	L	60.5	E	240	#408
							R	59.8	E	131	#279
				I-270 Managed Lanes Ramp SB	41.3	D	L	41.4	D	184	281
							R	40.1	D	0	0
P 303†	Gude Dr at Piccard Dr	32.3	C	Gude Dr EB	24.8	C	L	39.8	D	78	m173
							T	21.4	C	68	387
				Gude Dr WB	34.1	C	T	34.4	C	420	#576
							R	17.0	B	1	17
				Piccard Dr SB	47.1	D	L	31.9	C	109	169
							R	51.5	D	318	475

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-5B - MD 28 (Montgomery Avenue) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 400‡	MD 28 (Montgomery Ave) at Hurley Ave	17.4	B	MD 28 (Montgomery Ave) EB	23.0	C	L	13.0	B	2	10
							T	23.0	C	571	671
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	8.0	A	U/L	68.3	E	138	m#218
							T	3.6	A	122	136
							T/R	-	-	-	-
				Hurley Ave NB	51.3	D	L/T	57.5	E	60	112
							R	48.7	D	0	69
				Hurley Ave SB	48.3	D	L/T	48.6	D	11	33
							R	47.8	D	4	20
P 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	7.7	A	MD 28 (Montgomery Ave) EB	0.2	A	T	0.2	A	16	37
							R	0.0	A	366	335
				MD 28 (Montgomery Ave) WB	5.5	A	T	5.5	A	216	486
				I-270 Off-Ramp SB	55.9	E	L	55.9	E	111	143
							R	0.0	A	131	200
P 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	21.1	C	MD 28 (Montgomery Ave) EB	9.2	A	L	19.9	B	86	188
							T	5.5	A	101	134
				MD 28 (Montgomery Ave) WB	26.7	C	T	26.7	C	208	283
							T/R	-	-	-	-
				I-270 Off-Ramp NB	47.6	D	T	46.5	D	89	151
							R	48.1	D	71	159
				Nelson St SB	27.5	C	L	59.7	E	25	60
							R	23.9	C	107	134
P 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	14.0	B	MD 28 (Montgomery Ave) EB	14.1	B	L	1.1	A	0	m1
							T/R	14.2	B	581	#1,283
				MD 28 (Montgomery Ave) WB	6.3	A	L	2.9	A	1	4
							T/R	6.3	A	219	390
				Bullard Cir NB	46.4	D	L/T	46.7	D	11	32
							R	46.1	D	0	17
				Laird St SB	61.7	E	L/T/R	61.7	E	84	146

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-5B - MD 28 (Montgomery Avenue) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 400‡	MD 28 (Montgomery Ave) at Hurley Ave	24.4	C	MD 28 (Montgomery Ave) EB	34.6	C	L	18.7	B	2	11
							T	34.6	C	620	#749
							T/R	-	-	-	-
				MD 28 (Montgomery Ave) WB	13.0	B	U/L	73.6	E	279	m#383
							T	5.0	A	145	276
							T/R	-	-	-	-
				Hurley Ave NB	54.4	D	L/T	64.7	E	76	#146
							R	47.6	D	0	62
				Hurley Ave SB	48.6	D	L/T	49.2	D	27	62
							R	46.9	D	3	25
P 401†	MD 28 (Montgomery Ave) at I-270 SB Ramps	19.7	B	MD 28 (Montgomery Ave) EB	25.3	C	T	25.3	C	18	m31
							R	0.0	A	513	m584
				MD 28 (Montgomery Ave) WB	10.9	B	T	10.9	B	429	726
				I-270 Off-Ramp SB	51.2	D	L	51.2	D	198	232
							R	0.0	A	173	248
P 405‡	MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	24.2	C	MD 28 (Montgomery Ave) EB	11.9	B	L	29.0	C	85	169
							T	8.6	A	164	278
				MD 28 (Montgomery Ave) WB	29.3	C	T	29.3	C	284	332
							T/R	-	-	-	-
				I-270 Off-Ramp NB	45.4	D	T	49.6	D	213	314
							R	38.4	D	32	97
				Nelson St SB	30.0	C	L	62.6	E	29	67
							R	27.2	C	190	253
P 407‡	MD 28 (Montgomery Ave) at Laird St / Bullard Cir	15.5	B	MD 28 (Montgomery Ave) EB	19.2	B	L	0.3	A	0	m1
							T/R	19.7	B	899	#1,520
				MD 28 (Montgomery Ave) WB	6.8	A	L	2.7	A	0	5
							T/R	6.8	A	213	691
				Bullard Cir NB	50.7	D	L/T	51.0	D	7	23
							R	50.5	D	0	17
				Laird St SB	53.2	D	L/T/R	53.2	D	24	72

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BD-6B - MD 189 (Falls Road) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 500‡	MD 189 (Falls Rd) at Wootton Pkwy	48.8	D	MD 189 (Falls Rd) EB	52.4	D	L	75.8	E	109	176
							T	51.5	D	501	#631
							R	25.4	C	0	4
				MD 189 (Falls Rd) WB	45.6	D	L	71.7	E	203	#323
							T	32.1	C	197	280
							R	12.5	B	0	28
				Wootton Pkwy NB	35.1	D	L	53.5	D	64	99
							T	59.1	E	63	93
							R	22.5	C	65	157
				Wootton Pkwy SB	53.7	D	L	77.9	E	~433	#632
							T	59.7	E	380	441
							R	0.3	A	0	0
P 508‡	MD 189 (Falls Rd) Crossover at I-270 SB Ramps	17.3	B	MD 189 (Falls Rd) NB	15.3	B	T	15.3	B	257	318
				MD 189 (Falls Rd) WB	21.9	C	T	21.9	C	51	147
P 510‡	MD 189 (Falls Rd) EB at I-270 SB Ramp	5.1	A	MD 189 (Falls Rd) EB	0.9	A	T	0.9	A	3	3
				I-270 SB Ramp SB	29.4	C	L	29.4	C	6	34
P 511‡	MD 189 (Falls Rd) WB at I-270 NB Ramps	2.9	A	MD 189 (Falls Rd) WB	0.9	A	T	0.9	A	0	0
				I-270 NB Ramp NB	21.0	C	L	21.0	C	0	13
P 513‡	MD 189 (Falls Rd) Crossover at I-270 NB Ramps	24.2	C	MD 189 (Falls Rd) EB	28.1	C	T	28.1	C	136	205
				MD 189 (Falls Rd) SB	21.7	C	T	21.7	C	228	257
P 514‡	MD 189 (Falls Rd) EB at I-270 NB Ramps	7.9	A	MD 189 (Falls Rd) EB	0.9	A	T	0.9	A	0	0
				I-270 NB Ramp NB	15.3	B	R	15.3	B	106	152
P 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	18.8	B	MD 189 (Falls Rd) EB	4.5	A	U/L	4.6	A	22	50
							T/R	4.5	A	73	107
				MD 189 (Maryland Ave) WB	25.3	C	L	20.3	C	5	20
							T	25.4	C	187	284
							T/R	-	-	-	-
				Potomac Valley Rd NB	51.6	D	L	53.0	D	37	76
							T/R	47.0	D	3	24
				Great Falls Rd SB	38.4	D	L/T	51.6	D	33	69
							R	37.4	D	284	338

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Reporting Source:

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BD-6B - MD 189 (Falls Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 500‡	MD 189 (Falls Rd) at Wootton Pkwy	44.5	D	MD 189 (Falls Rd) EB	43.4	D	L	82.9	F	181	#286
							T	35.2	D	212	271
							R	25.9	C	0	44
				MD 189 (Falls Rd) WB	46.0	D	L	69.3	E	141	190
							T	44.3	D	435	523
							R	29.5	C	146	228
				Wootton Pkwy NB	48.2	D	L	36.6	D	34	66
							T	64.7	E	423	509
							R	22.6	C	0	55
				Wootton Pkwy SB	32.2	C	L	47.4	D	71	#132
							T	41.7	D	112	153
							R	0.1	A	0	0
P 508‡	MD 189 (Falls Rd) Crossover at I-270 SB Ramps	25.0	C	MD 189 (Falls Rd) NB	23.1	C	T	23.1	C	294	362
				MD 189 (Falls Rd) WB	27.4	C	T	27.4	C	178	257
P 510‡	MD 189 (Falls Rd) EB at I-270 SB Ramp	6.8	A	MD 189 (Falls Rd) EB	1.1	A	T	1.1	A	2	3
				I-270 SB Ramp SB	24.8	C	L	24.8	C	42	74
P 511‡	MD 189 (Falls Rd) WB at I-270 NB Ramps	6.7	A	MD 189 (Falls Rd) WB	1.0	A	T	1.0	A	0	0
				I-270 NB Ramp NB	22.4	C	L	22.4	C	70	105
P 513‡	MD 189 (Falls Rd) Crossover at I-270 NB Ramps	25.0	C	MD 189 (Falls Rd) EB	26.2	C	T	26.2	C	178	238
				MD 189 (Falls Rd) SB	24.0	C	T	24.0	C	407	218
P 514‡	MD 189 (Falls Rd) EB at I-270 NB Ramps	8.1	A	MD 189 (Falls Rd) EB	1.0	A	T	1.0	A	0	0
				I-270 NB Ramp NB	18.3	B	R	18.3	B	118	165
P 505‡	MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	19.5	B	MD 189 (Falls Rd) EB	6.7	A	U/L	10.9	B	29	80
							T/R	5.1	A	80	206
				MD 189 (Maryland Ave) WB	22.7	C	L	16.2	B	2	11
							T	22.7	C	259	383
							T/R	-	-	-	-
				Potomac Valley Rd NB	57.7	E	L	58.8	E	41	81
							T/R	51.6	D	4	20
				Great Falls Rd SB	45.6	D	L/T	52.9	D	16	42
							R	45.2	D	285	347

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-7B - Wootton Parkway Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 600‡	Wootton Pkwy at Seven Locks Rd	25.8	C	Wootton Pkwy EB	24.4	C	L	46.3	D	12	35
							T	31.6	C	126	175
							R	18.8	B	10	60
				Wootton Pkwy WB	33.2	C	L	45.1	D	~250	#394
							T	9.3	A	51	102
							T/R	-	-	-	-
				Seven Locks Rd NB	14.5	B	L	33.7	C	67	122
							L/T	33.7	C	67	122
							R	0.3	A	0	0
				Seven Locks Rd SB	40.7	D	L/T	41.1	D	30	64
							R	39.0	D	0	0
P 601†	Wootton Pkwy at Tower Oaks Rd	26.2	C	Wootton Pkwy EB	14.4	B	L	45.7	D	16	m29
							T	13.4	B	131	#407
							R	0.0	A	0	m0
				Wootton Pkwy WB	31.9	C	L	57.8	E	164	218
							T	15.4	B	68	267
							R	10.8	B	0	0
				Tower Oaks Blvd NB	33.3	C	L	33.4	C	~112	#163
							T	32.3	C	6	17
							R	0.0	A	0	0
				Tower Oaks Blvd SB	39.1	D	L	38.2	D	6	18
							T	39.5	D	7	20
							R	0.0	A	0	0
P 612†	Wootton Pkwy at I-270 Managed Lanes Direct Connector	26.1	C	Wootton Pkwy EB	23.6	C	L	31.0	C	71	88
							T	20.4	C	165	235
							T/R	-	-	-	-
				Wootton Pkwy WB	18.3	B	L	32.6	C	62	m143
							T	12.4	B	185	m131
							T/R	-	-	-	-
				I-270 Managed Lane Ramp NB	40.5	D	L	33.6	C	30	62
							R	41.4	D	165	254
				I-270 Managed Lane Ramp SB	34.8	C	L	41.1	D	96	156
							R	29.9	C	0	54

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-7B - Wootton Parkway Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 600‡	Wootton Pkwy at Seven Locks Rd	31.9	C	Wootton Pkwy EB	26.1	C	L	47.8	D	3	14
							T	36.4	D	109	156
							R	12.6	B	0	32
				Wootton Pkwy WB	29.3	C	L	39.0	D	97	#159
							T	23.6	C	91	181
							T/R	-	-	-	-
				Seven Locks Rd NB	36.0	D	L	57.2	E	282	#486
							L/T	53.3	D	274	#473
							R	0.6	A	0	0
				Seven Locks Rd SB	42.2	D	L/T	42.6	D	18	46
							R	40.8	D	0	0
P 601†	Wootton Pkwy at Tower Oaks Rd	36.0	D	Wootton Pkwy EB	24.2	C	L	68.6	E	33	m55
							T	21.3	C	243	#450
							R	0.0	A	0	m0
				Wootton Pkwy WB	45.2	D	L	133.2	F	93	134
							T	19.2	B	187	376
							R	11.7	B	0	0
				Tower Oaks Blvd NB	35.7	D	L	35.7	D	~140	161
							T	34.4	C	1	6
							R	0.0	A	0	0
				Tower Oaks Blvd SB	37.0	D	L	36.1	D	29	54
							T	38.7	D	7	20
							R	0.0	A	0	0
P 612†	Wootton Pkwy at I-270 Managed Lanes Direct Connector	23.9	C	Wootton Pkwy EB	19.6	B	L	44.2	D	101	166
							T	14.1	B	102	150
							T/R	-	-	-	-
				Wootton Pkwy WB	18.0	B	L	28.9	C	162	m157
							T	7.6	A	134	m96
							T/R	-	-	-	-
				I-270 Managed Lane Ramp NB	35.2	D	L	33.7	C	71	124
							R	35.7	D	151	248
				I-270 Managed Lane Ramp SB	39.4	D	L	43.7	D	128	203
							R	33.2	C	0	53

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-8B - Montrose Road Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 701‡	Montrose Rd at Seven Locks Rd	29.9	C	Montrose Rd EB	52.4	D	L	48.5	D	53	102
							T	53.4	D	114	164
							T/R	-	-	-	-
				Montrose Rd WB	31.3	C	L	36.7	D	153	m213
							L/T	-	-	-	-
							T	33.7	C	153	m194
							R	14.1	B	10	m19
				Seven Locks Rd NB	11.4	B	L	37.7	D	10	32
							T	38.4	D	80	122
							R	0.7	A	0	0
				Seven Locks Rd SB	35.2	D	L	53.6	D	175	227
							T	25.0	C	237	298
							T/R	-	-	-	-
P 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	35.9	E	-	4.7*
				Potomac Rd SB	-	-	R	15.5	C	-	1.1*
P 707‡	Montrose Rd at Tower Oaks Blvd	17.6	B	Montrose Rd EB	6.3	A	L	17.3	B	9	m42
							T	5.8	A	178	220
				Montrose Rd WB	18.2	B	T	18.7	B	479	569
							R	9.2	A	0	25
				Tower Oaks Blvd SB	55.8	E	L	52.5	D	77	117
							R	57.2	E	72	143
				I-270 NB Off-Ramp NEB	1.8	A	R	1.8	A	0	0
P 708‡§	Montrose Rd at Farm Ln	2.0	A	Montrose Rd EB	2.0	A	T	2.0	A	0	417
				Montrose Rd WB	2.1	A	T	2.1	A	0	455
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0

Table BP1-8B - Montrose Road Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	14.2	B	Montrose Rd EB	13.6	B	L	9.0	A	1	4
							T	13.0	B	250	447
							T/R	14.7	B	-	-
				Montrose Rd WB	12.0	B	L	10.8	B	2	6
							T	11.6	B	229	406
							T/R	12.8	B	-	-
				Hitching Post Ln NB	39.2	D	L	41.1	D	73	#145
							T/R	32.3	C	2	29
				Farm Haven Dr SB	33.7	C	L	34.0	C	19	47
							T/R	33.6	C	2	40
P 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	17.9	B	Tower Oaks Blvd EB	17.7	B	L/T	-	-	-	-
							T/R	17.7	B	83	175
				Tower Oaks Blvd WB	13.4	B	L/T	-	-	-	-
							T/R	13.4	B	18	48
				I-270 NB Ramps NB	19.2	B	L	19.7	B	70	#236
							L/T	19.8	B	71	#241
							R	13.1	B	0	4
				GEICO Ent SB	31.3	C	L/T/R	31.3	C	3	21
P 712‡	Tower Oaks Blvd at Commercial Dr	3.6	A	Commercial Dr WB	32.3	C	L	32.3	C	1	6
							L/R	-	-	-	-
				Tower Oaks Blvd NB	5.1	A	T	5.2	A	38	111
							R	4.1	A	0	15
				Tower Oaks Blvd SB	1.6	A	L	1.5	A	0	11
							T	1.6	A	0	33

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

* Unsignalized intersection 95th percentile queue reported in number of vehicles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-8B - Montrose Road Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 701‡	Montrose Rd at Seven Locks Rd	36.7	D	Montrose Rd EB	72.9	E	L	52.8	D	55	105
							T	77.0	E	151	#242
							T/R	-	-	-	-
				Montrose Rd WB	32.3	C	L	44.6	D	353	m#523
							L/T	-	-	-	-
							T	35.3	D	354	m441
							R	16.7	B	160	m226
				Seven Locks Rd NB	32.1	C	L	40.5	D	56	112
							T	54.8	D	280	#395
							R	0.5	A	0	0
				Seven Locks Rd SB	35.2	D	L	53.6	D	65	101
							T	29.4	C	161	212
							T/R	-	-	-	-
P 702††	Montrose Rd at Potomac Ave	-	-	Potomac Rd NB	-	-	R	18.2	C	-	1.7*
				Potomac Rd SB	-	-	R	162.9	F	-	11.4*
P 707‡	Montrose Rd at Tower Oaks Blvd	15.1	B	Montrose Rd EB	9.4	A	L	23.0	C	9	m33
							T	8.9	A	332	394
				Montrose Rd WB	13.0	B	T	13.7	B	676	4
							R	0.3	A	0	m0
				Tower Oaks Blvd SB	56.7	E	L	49.9	D	66	102
							R	59.7	E	103	#171
				I-270 NB Off-Ramp NEB	1.5	A	R	1.5	A	0	0
P 708‡§	Montrose Rd at Farm Ln	4.3	A	Montrose Rd EB	2.5	A	T	2.5	A	0	208
				Montrose Rd WB	5.7	A	T	5.7	A	0	749
							T/R	-	-	-	-
				Farm Ln SB	0.0	A	R	0.0	A	0	0

Table BP1-8B - Montrose Road Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 709†	Montrose Rd at Hitching Post Ln / Farm Haven Dr	11.4	B	Montrose Rd EB	8.8	A	L	11.1	B	1	4
							T	8.4	A	178	356
							T/R	9.6	A	-	-
				Montrose Rd WB	11.8	B	L	7.2	A	2	6
							T	11.1	B	294	583
							T/R	13.2	B	-	-
				Hitching Post Ln NB	41.1	D	L	42.2	D	42	#101
							T/R	38.9	D	6	35
				Farm Haven Dr SB	39.3	D	L	40.1	D	14	40
							T/R	38.5	D	3	27
P 710‡	Tower Oaks Blvd at I-270 NB Ramps / GEICO Ent	19.0	B	Tower Oaks Blvd EB	19.4	B	L/T	-	-	-	-
							T/R	19.4	B	126	194
				Tower Oaks Blvd WB	15.2	B	L/T	-	-	-	-
							T/R	15.2	B	36	65
				I-270 NB Ramps NB	19.4	B	L	19.6	B	75	151
							L/T	19.5	B	74	149
							R	15.1	B	0	0
				GEICO Ent SB	29.4	C	L/T/R	29.4	C	13	43
P 712‡	Tower Oaks Blvd at Commercial Dr	5.1	A	Commercial Dr WB	30.2	C	L	30.2	C	8	24
							L/R	-	-	-	-
				Tower Oaks Blvd NB	5.4	A	T	5.5	A	27	86
							R	4.4	A	0	7
				Tower Oaks Blvd SB	2.2	A	L	1.9	A	3	8
							T	2.2	A	25	35

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

* Unsignalized intersection 95th percentile queue reported in number of vehicles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

§ Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

†† HCM 6th Two Way Stop Control used for Delay and LOS.

Table BP1-9B - Westlake Terrace Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	9.8	A	Westlake Terr EB	6.0	A	L	5.8	A	24	55
							T	6.0	A	84	127
							T/R	6.0	A	-	-
				Westlake Terr WB	3.0	A	L	3.7	A	21	41
							T	2.6	A	18	35
							T/R	3.0	A	-	-
				Westfield Montgomery Mall Ent NB	57.2	E	L	56.4	E	4	16
							T/R	57.3	E	16	56
				Motor City Dr SB	60.6	E	L	58.4	E	24	57
							T/R	61.7	E	4	48
P 801‡	Westlake Terr at I-270 Spur Ramps	37.5	D	Westlake Terr EB	41.8	D	L	66.6	E	106	#219
							T	33.4	C	143	196
							T/R	-	-	-	-
				Westlake Terr WB	27.5	C	L	54.6	D	91	m#206
							T	23.4	C	132	187
							T/R	8.9	A	0	m6
				I-270 Spur Ramps NB	18.0	B	L/R	18.0	B	49	115
				I-270 Spur Ramps SB	58.6	E	L/R	58.6	E	257	#497
P 802‡	Westlake Terr at Rockledge Dr	34.8	C	Westlake Terr EB	33.6	C	L	42.6	D	181	m#525
							T	27.9	C	147	m222
							T/R	-	-	-	-
				Westlake Terr WB	46.3	D	L	29.8	C	49	126
							T	50.6	D	161	225
							T/R	-	-	-	-
				Rockledge Dr NB	49.4	D	L/T	50.4	D	10	30
							R	46.3	D	0	0
				Rockledge Dr SB	26.7	C	L	23.1	C	52	88
							L/T	30.6	C	216	297
							R	24.3	C	0	59

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-9B - Westlake Terrace Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 800†	Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	20.7	C	Westlake Terr EB	29.7	C	L	27.8	C	24	70
							T	30.0	C	122	212
							T/R	29.9	C	-	-
				Westlake Terr WB	5.3	A	L	18.0	B	40	m71
							T	1.0	A	59	87
							T/R	1.1	A	-	-
				Westfield Montgomery Mall Ent NB	28.6	C	L	26.5	C	27	47
							T/R	29.0	C	6	55
				Motor City Dr SB	46.2	D	L	52.1	D	187	263
							T/R	24.5	C	8	35
P 801‡	Westlake Terr at I-270 Spur Ramps	32.2	C	Westlake Terr EB	26.3	C	L	39.9	D	291	232
							T	16.8	B	105	148
							T/R	-	-	-	-
				Westlake Terr WB	25.9	C	L	46.3	D	120	m160
							T	26.2	C	217	m315
							T/R	18.2	B	5	m41
				I-270 Spur Ramps NB	37.9	D	L/R	37.9	D	31	90
				I-270 Spur Ramps SB	71.1	E	L/R	71.1	E	185	#327
P 802‡	Westlake Terr at Rockledge Dr	53.0	D	Westlake Terr EB	42.0	D	L	65.2	E	186	m#330
							T	27.0	C	140	m200
							T/R	-	-	-	-
				Westlake Terr WB	54.3	D	L	35.3	D	2	11
							T	54.4	D	262	#372
							T/R	-	-	-	-
				Rockledge Dr NB	60.5	E	L/T	75.0	E	270	#449
							R	39.1	D	4	72
				Rockledge Dr SB	56.1	E	L	37.2	D	80	137
							L/T	37.2	D	80	137
							R	63.8	E	216	#449

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-10B - Democracy Boulevard Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 900[†]	Democracy Blvd at Taveshire Way	10.8	B	Democracy Blvd EB	5.2	A	T	5.2	A	109	167
				Democracy Blvd WB	4.1	A	T	4.1	A	46	73
				Taveshire Way SB	53.1	D	L	47.9	D	56	78
							R	61.2	E	27	86
P 901[‡]	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	28.2	C	Democracy Blvd EB	25.1	C	T	25.1	C	404	501
							T/R	-	-	-	-
				Democracy Blvd WB	13.7	B	L	44.0	D	162	218
							T	2.0	A	18	58
				I-270 Spur Off Ramp SB	63.1	E	L	66.5	E	237	286
							R	51.8	D	0	60
P 903[‡]	Democracy Blvd at I-270 Spur NB Ramps	12.4	B	Democracy Blvd EB	7.0	A	T	7.0	A	208	223
							T/R	-	-	-	-
				Democracy Blvd WB	3.0	A	T	3.0	A	42	51
				I-270 Spur Off Ramp NB	68.7	E	L	68.7	E	155	201
P 904[‡]	Democracy Blvd at I-270 Spur NB Off-Ramp	16.3	B	Democracy Blvd EB	11.1	B	T	11.1	B	222	113
				Democracy Blvd WB	0.1	A	T	0.1	A	0	m0
				I-270 Spur Off Ramp NB	38.7	D	R	38.7	D	451	522
P 906[‡]	Democracy Blvd at Fernwood Rd	41.5	D	Democracy Blvd EB	39.6	D	U/L	-	-	-	-
							L	66.6	E	~503	#641
							T	39.6	D	246	314
							R	0.6	A	0	0
				Democracy Blvd WB	46.9	D	L	73.4	E	243	#382
							T	54.5	D	35	57
							R	0.1	A	0	0
				Fernwood Rd NB	51.7	D	L	80.8	F	~804	#1,058
							R	0.4	A	0	0
				Fernwood Rd SB	11.7	B	L	25.6	C	47	71
							R	0.2	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

[†] HCM 6th Signalized Intersection Summary used for Delay and LOS.

[‡] HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-10B - Democracy Boulevard Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 900†	Democracy Blvd at Taveshire Way	11.3	B	Democracy Blvd EB	4.4	A	T	4.4	A	58	93
				Democracy Blvd WB	5.6	A	T	5.6	A	170	247
				Taveshire Way SB	51.7	D	L	48.3	D	71	92
							R	58.7	E	98	153
P 901‡	Democracy Blvd at I-270 SB On-Ramp / I-270 Spur SB Off-Ramp	39.5	D	Democracy Blvd EB	51.6	D	T	51.6	D	344	411
							T/R	-	-	-	-
				Democracy Blvd WB	28.7	C	L	58.4	E	232	296
							T	19.4	B	359	390
				I-270 Spur Off Ramp SB	47.5	D	L	30.6	C	160	198
							R	60.4	E	519	#716
P 903‡	Democracy Blvd at I-270 Spur NB Ramps	12.3	B	Democracy Blvd EB	2.4	A	T	2.4	A	43	52
							T/R	-	-	-	-
				Democracy Blvd WB	7.0	A	T	7.0	A	182	242
				I-270 Spur Off Ramp NB	67.2	E	L	67.2	E	202	251
P 904‡	Democracy Blvd at I-270 Spur NB Off-Ramp	8.3	A	Democracy Blvd EB	6.1	A	T	6.1	A	142	153
				Democracy Blvd WB	0.2	A	T	0.2	A	0	0
				I-270 Spur Off Ramp NB	40.5	D	R	40.5	D	219	253
P 906‡	Democracy Blvd at Fernwood Rd	47.1	D	Democracy Blvd EB	66.1	E	U/L	-	-	-	-
							L	63.2	E	76	115
							T	102.3	F	~368	#463
							R	0.6	A	0	0
				Democracy Blvd WB	54.7	D	L	111.8	F	~337	#536
							T	42.1	D	269	320
							R	0.1	A	0	0
				Fernwood Rd NB	54.9	D	L	75.6	E	~806	#1,057
							R	0.3	A	0	0
				Fernwood Rd SB	7.7	A	L	21.6	C	110	145
							R	1.8	A	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1000[†]	Rockledge Dr at Rock Forest Dr	27.0	C	Rockledge Dr EB	58.0	E	L	61.4	E	105	150
							T	45.9	D	11	33
							R	49.2	D	0	0
				Rock Forest Dr WB	65.1	E	L	72.1	E	46	92
							T	52.7	D	20	50
							R	64.3	E	0	0
				Rockledge Dr NB	11.6	B	L	13.1	B	42	75
							T	10.9	B	56	88
							T/R	10.9	B	-	-
				Rockledge Dr SB	16.6	B	L	9.9	A	8	21
							T	16.8	B	265	383
							R	0.0	A	0	#105
P 1001[‡]	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	22.0	C	I-270 SB Off Ramp EB	30.4	C	L/T	-	-	-	-
							T	67.6	E	436	523
							R	3.0	A	0	0
				Rockledge Dr NB	42.1	D	T	74.1	E	122	171
							R	24.9	C	146	190
				Rockledge Dr SB	0.1	A	T	0.1	A	0	0
P 1002[‡]	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	39.2	D	I-270 NB Ramp Connector WB	43.8	D	L	50.7	D	681	#970
							L/T	-	-	-	-
							T	40.2	D	623	724
				Rockledge Dr NB	0.2	A	L	0.2	A	0	0
P 1003[‡]	MD 187 (Old Georgetown Road) at Rock Spring Dr	48.7	D	Rock Spring Dr EB	79.1	E	L	97.9	F	~344	#564
							L/T	95.4	F	342	#561
							R	47.4	D	175	276
				Rock Spring Dr WB	73.6	E	L/T/R	73.6	E	10	48
				MD 187 (Old Georgetown Road) NB	31.3	C	L	83.2	F	100	#176
							T	22.8	C	268	310
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	46.3	D	L	76.6	E	48	m57
							T	49.8	D	626	#990
							R	29.4	C	115	m209

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	25.9	C	I-270 SB Ramp Connector EB	52.0	D	L	36.9	D	117	183
							L/T/R	36.7	D	116	180
							R	58.7	E	406	509
				MD 187 (Old Georgetown Road) NB	24.1	C	T	24.1	C	219	m233
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	16.9	B	L	35.8	D	102	148
							T	15.0	B	389	426
P 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	12.7	B	I-270 NB Off Ramp WB	28.4	C	L	71.6	E	151	223
							L/T	69.4	E	151	221
							R	0.4	A	0	0
				MD 187 (Old Georgetown Road) NB	16.9	B	L	99.6	F	157	208
							T	2.3	A	73	84
				MD 187 (Old Georgetown Road) SB	6.3	A	T	8.4	A	175	m136
							R	0.1	A	0	m0
P 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	157.7	F	Tuckerman Ln EB	95.6	F	L	47.7	D	54	85
							T	103.8	F	~422	#555
							T/R	-	-	-	-
				Tuckerman Ln WB	281.3	F	L	369.5	F	~575	#705
							T	60.4	E	105	150
							R	48.3	D	0	12
				MD 187 (Old Georgetown Road) NB	61.9	E	U/L	351.5	F	~362	#517
							T	17.9	B	165	208
							R	15.9	B	16	76
				MD 187 (Old Georgetown Road) SB	211.6	F	L	72.0	E	37	78
							T	214.0	F	~1,200	#1,302
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1000[†]	Rockledge Dr at Rock Forest Dr	41.1	D	Rockledge Dr EB	69.7	E	L	56.4	E	211	265
							T	37.5	D	40	76
							R	96.2	F	0	83
				Rock Forest Dr WB	62.1	E	L	72.0	E	45	91
							T	51.3	D	12	35
							R	54.4	D	0	0
				Rockledge Dr NB	24.8	C	L	15.0	B	19	42
							T	25.5	C	303	431
							T/R	25.4	C	-	-
				Rockledge Dr SB	18.0	B	L	18.2	B	40	77
							T	17.9	B	106	152
							R	0.0	A	0	0
P 1001[‡]	Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	34.8	C	I-270 SB Off Ramp EB	32.4	C	L/T	-	-	-	-
							T	67.7	E	343	421
							R	1.1	A	0	0
				Rockledge Dr NB	47.9	D	T	85.5	F	318	#432
							R	25.9	C	397	519
				Rockledge Dr SB	0.0	A	T	0.0	A	0	m0
P 1002[‡]	Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	33.4	C	I-270 NB Ramp Connector WB	44.5	D	L	36.1	D	412	580
							L/T	-	-	-	-
							T	47.3	D	689	793
				Rockledge Dr NB	0.5	A	L	0.5	A	0	m0
P 1003[‡]	MD 187 (Old Georgetown Road) at Rock Spring Dr	96.8	F	Rock Spring Dr EB	112.4	F	L	130.4	F	~449	#671
							L/T	134.5	F	~462	#686
							R	31.9	C	36	84
				Rock Spring Dr WB	418.8	F	L/T/R	418.8	F	~141	#309
				MD 187 (Old Georgetown Road) NB	97.2	F	L	59.3	E	99	142
							T	100.2	F	~1,125	#1,204
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	59.6	E	L	167.1	F	~134	#272
							T	52.4	D	559	649
							R	59.5	E	111	176

Table BP1-11B - Rockledge Road / MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1005‡	MD 187 (Old Georgetown Road) at I-270 SB Ramp Connector / I-270 SB On-Ramp	27.2	C	I-270 SB Ramp Connector EB	54.9	D	L	59.8	E	322	437
							L/T/R	58.0	E	325	438
							R	45.7	D	148	198
				MD 187 (Old Georgetown Road) NB	26.6	C	T	26.6	C	~658	m532
							T/R	-	-	-	-
				MD 187 (Old Georgetown Road) SB	14.2	B	L	31.3	C	51	72
							T	13.0	B	139	201
P 1006‡	MD 187 (Old Georgetown Road) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	14.8	B	I-270 NB Off Ramp WB	28.8	C	L	70.7	E	82	141
							L/T	69.3	E	81	140
							R	0.2	A	0	0
				MD 187 (Old Georgetown Road) NB	16.3	B	L	67.1	E	288	m235
							T	4.5	A	202	210
				MD 187 (Old Georgetown Road) SB	10.1	B	T	13.9	B	146	m168
							R	0.1	A	0	m0
P 1009‡	MD 187 (Old Georgetown Road) at Tuckerman Ln	94.2	F	Tuckerman Ln EB	61.2	E	L	58.1	E	168	214
							T	63.6	E	230	283
							T/R	-	-	-	-
				Tuckerman Ln WB	183.2	F	L	279.3	F	~363	#482
							T	86.3	F	187	#279
							R	50.7	D	0	36
				MD 187 (Old Georgetown Road) NB	62.0	E	U/L	272.0	F	~362	#558
							T	46.9	D	~929	#1,015
							R	23.4	C	117	797
				MD 187 (Old Georgetown Road) SB	115.4	F	L	80.7	F	73	#184
							T	116.6	F	~1,000	#1,164
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-12B - MD 190 (River Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1100‡	MD 190 (River Rd) at Seven Locks Rd	38.0	D	MD 190 (River Rd) EB	39.2	D	L	24.1	C	13	34
							T	39.5	D	571	680
							T/R	-	-	-	-
				MD 190 (River Rd) WB	20.7	C	U/L	33.1	C	60	120
							T	19.3	B	188	233
							R	16.4	B	0	34
				Seven Locks Rd NB	17.9	B	L	78.4	E	26	61
							T	102.0	F	48	#102
							R	0.2	A	0	0
				Seven Locks Rd SB	67.6	E	L	69.6	E	352	#520
							L/T/R	65.7	E	358	#508
P 1102‡	MD 190 (River Rd) at I-495 Outer Loop Ramps	21.6	C	MD 190 (River Rd) EB	18.5	B	T	19.1	B	162	236
							R	17.8	B	0	43
				MD 190 (River Rd) WB	13.7	B	L	30.2	C	115	97
							T	3.6	A	37	29
				I-495 Outer Loop Off-Ramp SB	39.5	D	L	41.7	D	131	163
							R	32.1	C	0	55
P 1105‡	MD 190 (River Rd) at I-495 Inner Loop Ramps	19.1	B	MD 190 (River Rd) EB	7.2	A	L	70.5	E	87	m122
							T	2.2	A	12	78
				MD 190 (River Rd) WB	19.7	B	T	19.7	B	201	262
				I-495 Inner Loop Off-Ramp NB	40.1	D	L	25.4	C	40	56
							R	45.1	D	206	268
P 1107†	MD 190 (River Rd) at Burdette Rd	24.8	C	MD 190 (River Rd) EB	21.0	C	L	35.4	D	32	m#112
							T	20.6	C	856	1,375
							R	5.7	A	0	m1
				MD 190 (River Rd) WB	17.5	B	L	26.5	C	1	5
							T	17.6	B	840	946
							R	6.8	A	0	0
				Burdette Rd NB	72.6	E	L/T/R	72.6	E	48	93
				Burdette Rd SB	98.4	F	L/T	68.2	E	64	114
							R	106.1	F	210	311

Table BP1-12B - MD 190 (River Road) Corridor - (AM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1109‡	MD 190 (River Rd) at I-495 Managed Lanes Direct Connector	13.6	B	MD 190 (River Rd) EB	11.2	B	L	20.2	C	45	53
							T	10.4	B	193	235
							R	8.5	A	0	m0
				MD 190 (River Rd) WB	9.2	A	L	26.4	C	153	167
							T	3.1	A	14	31
							R	0.3	A	0	0
				I-495 Managed Lanes Direct Connector NB	32.3	C	L	38.0	D	6	17
							R	31.3	C	0	0
				I-495 Managed Lanes Direct Connector SB	40.1	D	L	41.6	D	48	78
							R	38.3	D	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-12B - MD 190 (River Road) Corridor - (PM Peak)											
Node	**Location**	**Delay (s/veh)**	**LOS**	**Approach**	**Delay (s/veh)**	**LOS**	**Movement**	**Delay (s/veh)**	**LOS**	**50th %ile Queue (ft)**	**95th %ile Queue (ft)**
P 1100‡	MD 190 (River Rd) at Seven Locks Rd	58.3	E	MD 190 (River Rd) EB	68.2	E	L	89.4	F	23	#77
							T	67.4	E	388	#497
							T/R	-	-	-	-
				MD 190 (River Rd) WB	56.2	E	U/L	88.4	F	245	#439
							T	53.1	D	690	#843
							R	49.7	D	348	#685
				Seven Locks Rd NB	35.0	C	L	56.7	E	29	63
							T	99.6	F	229	#392
							R	0.4	A	0	0
				Seven Locks Rd SB	76.0	E	L	60.0	E	344	#505
							L/T/R	88.3	F	474	#721
P 1102‡	MD 190 (River Rd) at I-495 Outer Loop Ramps	17.9	B	MD 190 (River Rd) EB	20.3	C	T	21.5	C	229	325
							R	15.5	B	0	30
				MD 190 (River Rd) WB	10.0	B	L	31.9	C	110	m110
							T	5.1	A	158	412
				I-495 Outer Loop Off-Ramp SB	40.0	D	L	40.2	D	110	136
							R	39.5	D	69	145
P 1105‡	MD 190 (River Rd) at I-495 Inner Loop Ramps	21.6	C	MD 190 (River Rd) EB	11.9	B	L	52.5	D	119	m#189
							T	7.5	A	126	149
				MD 190 (River Rd) WB	18.8	B	T	18.8	B	405	m311
				I-495 Inner Loop Off-Ramp NB	40.9	D	L	43.8	D	154	194
							R	35.7	D	94	147
P 1107†	MD 190 (River Rd) at Burdette Rd	79.9	E	MD 190 (River Rd) EB	44.3	D	L	285.3	F	273	#591
							T	9.6	A	276	667
							R	4.4	A	3	m11
				MD 190 (River Rd) WB	105.9	F	L	9.8	A	1	5
							T	108.2	F	~2,233	#2,322
							R	8.5	A	0	4
				Burdette Rd NB	77.3	E	L/T/R	77.3	E	37	74
				Burdette Rd SB	93.2	F	L/T	74.1	E	69	113
							R	100.0	F	89	165

Table BP1-12B - MD 190 (River Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1109‡	MD 190 (River Rd) at I-495 Managed Lanes Direct Connector	23.0	C	MD 190 (River Rd) EB	13.7	B	L	41.5	D	101	#177
							T	9.0	A	181	147
							R	0.3	A	0	m0
				MD 190 (River Rd) WB	22.4	C	L	39.7	D	87	114
							T	20.5	C	341	373
							R	6.6	A	2	m2
				I-495 Managed Lanes Direct Connector NB	46.2	D	L	50.8	D	125	#194
							R	33.8	C	0	6
				I-495 Managed Lanes Direct Connector SB	37.4	D	L	37.9	D	89	132
							R	36.0	D	0	0

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-13B - MD 187 (Old Georgetown Road) Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	23.3	C	Lone Oak Dr EB	80.7	F	L/T	71.5	E	87	143
							R	83.3	F	271	353
				Manor Oak Way WB	59.3	E	L/T/R	59.3	E	14	40
				MD 187 (Old Georgetown Rd) NB	6.5	A	U/L	35.8	D	59	m117
							T	3.8	A	15	m301
							R	3.2	A	0	m0
				MD 187 (Old Georgetown Rd) SB	24.1	C	L	9.0	A	2	9
							T	24.1	C	797	#1,070
							T/R	-	-	-	-
P 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	88.4	F	I-495 Outer Loop Off-Ramp WB	83.4	E	L	56.9	E	105	173
							L/T	56.9	E	105	173
							R	100.6	F	235	#434
				MD 187 (Old Georgetown Rd) NB	52.2	D	L	192.2	F	~497	#722
							T	2.5	A	46	49
				MD 187 (Old Georgetown Rd) SB	108.2	F	T	108.2	F	~1,386	#1,431
							T/R	-	-	-	-
P 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	8.6	A	I-495 Inner Loop Off-Ramp EB	12.6	B	L	67.1	E	62	106
							L/T	67.2	E	63	107
							R	0.6	A	0	0
				MD 187 (Old Georgetown Rd) NB	15.8	B	T	15.8	B	250	315
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	3.0	A	L	20.0	B	207	m150
							T	1.0	A	81	m76
P 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	17.7	B	Ryland Dr EB	85.6	F	L/T/R	85.6	F	303	#481
				Church Dwy WB	42.9	D	L	43.3	D	25	54
							T	42.2	D	4	15
							R	42.8	D	0	35
				MD 187 (Old Georgetown Rd) NB	19.9	B	L	28.6	C	2	7
							T	19.9	B	275	327
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	8.4	A	U/L	7.1	A	8	31
							T	8.4	A	172	308
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-13B - MD 187 (Old Georgetown Road) Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Movement	Delay (s/veh)	LOS	50th %ile Queue (ft)	95th %ile Queue (ft)
P 1200‡	MD 187 (Old Georgetown Rd) at Lone Oak Dr/Manor Oak Way	21.0	C	Lone Oak Dr EB	61.4	E	L/T	74.8	E	127	197
							R	44.7	D	62	101
				Manor Oak Way WB	55.6	E	L/T/R	55.6	E	15	41
				MD 187 (Old Georgetown Rd) NB	17.7	B	U/L	43.5	D	129	m195
							T	16.1	B	668	708
							R	4.1	A	0	m0
				MD 187 (Old Georgetown Rd) SB	21.1	C	L	15.7	B	2	13
							T	21.1	C	541	724
							T/R	-	-	-	-
P 1201‡	MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-Ramp	12.9	B	I-495 Outer Loop Off-Ramp WB	69.6	E	L	56.6	E	71	125
							L/T	56.5	E	70	123
							R	77.7	E	183	285
				MD 187 (Old Georgetown Rd) NB	3.5	A	L	24.8	C	151	m154
							T	1.9	A	189	194
				MD 187 (Old Georgetown Rd) SB	15.8	B	T	15.8	B	165	262
							T/R	-	-	-	-
P 1202‡	MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-Ramp	24.6	C	I-495 Inner Loop Off-Ramp EB	56.3	E	L	85.9	F	254	#413
							L/T	88.7	F	262	#425
							R	0.2	A	0	0
				MD 187 (Old Georgetown Rd) NB	24.9	C	T	24.9	C	967	#184
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	11.2	B	L	73.1	E	169	m#208
							T	3.7	A	63	67
P 1203‡	MD 187 (Old Georgetown Rd) at Ryland Dr/Church Dwy	11.3	B	Ryland Dr EB	66.7	E	L/T/R	66.7	E	68	111
				Church Dwy WB	60.4	E	L	60.8	E	10	28
							T	60.3	E	5	17
							R	60.3	E	0	17
				MD 187 (Old Georgetown Rd) NB	12.8	B	L	5.7	A	2	8
							T	12.8	B	517	826
							T/R	-	-	-	-
				MD 187 (Old Georgetown Rd) SB	5.6	A	U/L	42.8	D	12	55
							T	4.8	A	71	154
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two

Reporting Source:
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (AM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Move-ment	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
P 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	33.8	C	Grosvenor Ln EB	59.5	E	L	61.0	E	58	92
							R	58.7	E	166	265
				Grosvenor Ln WB	45.5	D	L	38.3	D	267	330
							T/R	63.3	E	226	333
				MD 355 (Rockville Pike) NW	25.4	C	T	25.4	C	390	455
				MD 355 (Rockville Pike) SB	29.9	C	T	30.7	C	674	739
							R	16.1	B	7	40
P 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	24.0	C	I-495 Inner Loop Off-Ramp SE	76.3	E	R	76.3	E	299	362
				MD 355 (Rockville Pike) SB	17.2	B	T	17.2	B	747	848
P 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	36.6	D	Pooks Hill Rd EB	103.3	F	L	103.3	F	340	#463
							R	0.0	A	116	215
				MD 355 (Rockville Pike) NB	10.9	B	L	76.5	E	69	m117
							T	9.1	A	41	64
				MD 355 (Rockville Pike) SB	41.0	D	T	42.2	D	1,312	686
							R	4.3	A	0	m3
P 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	19.1	B	Alta Vista Rd EB	97.8	F	L/T/R	97.8	F	131	203
				Bellevue Dr WB	72.4	E	L/T/R	72.4	E	11	45
				MD 355 (Rockville Pike) NB	26.0	C	U/L	-	-	-	-
							T	26.0	C	473	555
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	13.7	B	U/L	19.3	B	274	m278
							T	13.2	B	287	235
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.
- Hyphen denotes that no value was recorded for this metric.
m Volume for the 95th percentile queue is metered by upstream signal.
Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:
† HCM 6th Signalized Intersection Summary used for Delay and LOS.
‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

Table BP1-14B - MD 355 (Rockville Pike) / I-270 East Spur Corridor - (PM Peak)

Node	Location	Delay (s/veh)	LOS	Approach	Delay (s/veh)	LOS	Move-ment	Delay (s/veh)	LOS	50th %ile Queue (ft	95th %ile Queue (ft)
P 1300‡	MD 355 (Rockville Pike) at Grosvenor Ln	35.3	D	Grosvenor Ln EB	61.9	E	L	67.6	E	88	126
							R	57.0	E	117	212
				Grosvenor Ln WB	60.3	E	L	37.4	D	97	135
							T/R	80.0	E	270	#469
				MD 355 (Rockville Pike) NW	38.5	D	T	38.5	D	782	#922
				MD 355 (Rockville Pike) SB	19.9	B	T	20.5	C	415	461
							R	13.3	B	0	30
P 1307‡	MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	20.8	C	I-495 Inner Loop Off-Ramp SE	75.2	E	R	75.2	E	277	332
				MD 355 (Rockville Pike) SB	11.7	B	T	11.7	B	384	480
P 1309†	MD 355 (Rockville Pike) at Pooks Hill Rd	17.0	B	Pooks Hill Rd EB	99.4	F	L	99.4	F	164	219
							R	0.0	A	4	62
				MD 355 (Rockville Pike) NB	12.1	B	L	73.3	E	84	m86
							T	10.9	B	121	m105
				MD 355 (Rockville Pike) SB	15.5	B	T	16.7	B	304	306
							R	6.7	A	0	5
P 1310‡	MD 355 (Rockville Pike) at Alta Vista Rd/Bellevue Dr	28.4	C	Alta Vista Rd EB	100.6	F	L/T/R	100.6	F	141	218
				Bellevue Dr WB	71.8	E	L/T/R	71.8	E	17	48
				MD 355 (Rockville Pike) NB	37.9	D	U/L	28.5	C	3	9
							T	38.0	D	1,284	#1,540
							T/R	-	-	-	-
				MD 355 (Rockville Pike) SB	13.2	B	U/L	121.5	F	~291	#498
							T	2.0	A	45	22
							T/R	-	-	-	-

Note: 95th percentile queuing reported using Synchro software.

- Hyphen denotes that no value was recorded for this metric.

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

m Volume for the 95th percentile queue is metered by upstream signal.

Volume for the 95th percentile exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Reporting Source:

† HCM 6th Signalized Intersection Summary used for Delay and LOS.

‡ HCM 2000 Signalized Intersection Capacity Analysis used for Delay and LOS.

SYNCHRO ANALYSIS RESULTS SUMMARY

I-370 (SAM EIG HIGHWAY) RESULTS

Under 2017 Existing Conditions, I-270 at I-370 is a system-to-system interchange with signalized intersections at Washingtonian Boulevard, Fields Road, Diamondback Drive, and MD 119. 2017 Existing Conditions analysis indicated that all intersection along the I-370 corridor operate at LOS D or better during peak hours.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that all intersections along the I-370 corridor continue to operate at LOS D or better.

Under the 2027 Preferred Alternative, a new Managed Lanes (ML) ramp connection with access to I-270 Southbound and from I-270 Northbound is added along I-370. With this infrastructure in place, 2027 Preferred Alternative analysis indicated that all intersections along the I-370 corridor continue to operate at LOS D or better.

There are no anticipated infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that all intersections along the I-370 corridor continue to operate at LOS D or better.

Anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative analysis indicated that all intersections along the I-370 corridor continue to operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-1 summarizes the capacity analysis results along I-370.

Table I-1 – I-370 Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-370 (Sam Eig Hwy) at Fields Rd	C (24.6)	C (30.2)	C (22.2)	C (28.4)	C (22.2)	C (28.2)	C (23.4)	C (29.6)	C (23.5)	C (29.1)
Washingtonian Blvd at I-370 (Sam Eig Hwy) WB Ramps	B (17.9)	B (19.1)	C (20.5)	C (20.4)	C (20.0)	C (22.9)	C (22.1)	C (20.7)	C (22.2)	C (23.2)
Washingtonian Blvd at I-370 (Sam Eig Hwy) EB Ramps	B (12.3)	C (21.7)	B (10.7)	C (21.7)	B (14.3)	C (26.4)	B (11.5)	C (21.7)	B (14.0)	C (26.9)
I-370 (Sam Eig Hwy) SBR at MD 119 (Great Seneca Hwy)	A (3.1)	C (21.1)	A (4.7)	B (10.9)	A (5.4)	B (10.6)	A (5.0)	B (12.4)	A (4.8)	B (12.2)
I-370 (Sam Eig Hwy) at MD 119 (Great Seneca Hwy)	C (28.6)	D (38.7)	C (33.5)	D (44.9)	C (33.8)	D (44.6)	C (34.7)	D (46.4)	C (34.1)	D (46.4)
I-370 (Sam Eig Hwy) at Diamondback Dr	C (31.3)	D (36.6)	C (29.4)	D (38.5)	C (29.3)	D (38.7)	C (30.6)	D (40.0)	C (30.7)	D (40.1)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

SHADY GROVE ROAD RESULTS

Under 2017 Existing Conditions, I-270 at Shady Grove Road is a partial cloverleaf interchange with signalized intersections at Corporate Boulevard and Choke Cherry Road. Additional locations studied as part of this corridor include the signalized intersections of Omega Drive at MD 28, Omega Drive/Fields Road at Washingtonian Boulevard, Redland Boulevard at Piccard Drive and the unsignalized intersection of Omega Drive at I-270 Southbound Off-Ramp. 2017 Existing Conditions analysis indicated that the unsignalized intersection of Omega Drive at I-270 Southbound Off-Ramp approaches capacity limits (LOS E) during the PM peak hour, while all signalized intersections would operate at LOS D or better during peak hours.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that Omega Drive at I-270 Southbound Off-Ramp continues to approach capacity limits (LOS E) during the PM peak hour. All signalized intersections continue to operate at LOS D or better.

Under the 2027 Preferred Alternative, Shady Grove Road Southbound adds an additional thru lane that that will now feed into an exclusive right-turn lane for the I-270 Northbound on-ramp. The 2027 Preferred Alternative analysis indicated that Omega Drive at I-270 Southbound Off-Ramp continues to approach capacity limits (LOS E) during the PM peak hour. All signalized intersections continue to operate at LOS D or better.

There are no anticipated infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that Omega Drive at I-270 Southbound Off-Ramp approaches or exceeds capacity limits (LOS E or F) during peak hours, while all signalized intersections continue to operate at LOS D or better.

Anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative analysis indicated that Omega Drive at I-270 Southbound Off-Ramp improves its operation to a LOS D in the AM peak hour but continues to exceed capacity limits (LOS F) during the PM peak hour. All signalized intersections continue to operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-2 summarizes the capacity analysis results along Shady Grove Road.

Table I-2 – Shady Grove Road Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Omega Dr at MD 28 (Key W Ave)	C (33.6)	D (36.4)	D (35.2)	D (37.8)	D (35.2)	D (37.8)	D (38.8)	D (41.2)	D (38.2)	D (41.2)
Omega Dr at I-270 SB Off-Ramp[§]	C (21.7)	E (37.1)	C (24.9)	E (46.8)	C (24.2)	E (46.8)	E (36.1)	**F (98.8)**	D (32.2)	**F (98.0)**
Omega Dr / Fields Rd at Washingtonian Blvd	A (7.5)	B (11.7)	A (7.6)	B (12.7)	A (7.6)	B (12.7)	A (7.8)	B (15.6)	A (7.8)	B (15.6)
Shady Grove Rd at Corporate Blvd	C (31.2)	D (39.2)	C (22.0)	C (32.3)	C (20.1)	C (31.0)	C (23.1)	C (33.8)	C (20.6)	C (31.8)
Shady Grove Rd at I-270 SB Off-Ramp	C (20.4)	B (16.8)	C (25.3)	B (17.7)	C (24.8)	B (17.0)	C (26.5)	B (18.6)	C (31.1)	B (18.4)
Shady Grove Rd at I-270 NB Off-Ramp	C (28.5)	B (13.0)	C (24.4)	B (12.7)	C (24.2)	A (9.9)	C (21.8)	B (12.5)	B (19.5)	A (8.6)
Shady Grove Rd at Choke Cherry Rd	C (21.1)	C (31.0)	B (19.8)	D (38.7)	B (19.3)	D (37.0)	C (25.0)	D (45.8)	C (24.4)	D (44.5)
Redland Blvd at Piccard Dr	B (12.4)	B (14.7)	B (10.7)	B (13.1)	B (12.5)	B (13.5)	B (10.9)	B (13.8)	B (13.0)	B (15.1)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

[§]Unsignalized intersection is stop controlled. LOS and delay listed are for the worst approach.

GUDE DRIVE RESULTS

Under 2017 Existing Conditions, Gude Drive forms an overpass over I-270 with signalized intersections at Research Boulevard and Piccard Drive. 2017 Existing Conditions analysis indicated that Gude Drive at Research Boulevard intersection approaches or exceeds capacity limits (LOS E or F) during peak hours. The Piccard Drive intersection operates at LOS B or better during peak hours.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that Gude Drive at Research Boulevard continues to approach or exceed capacity limits (LOS E or F) during peak hours, while the Piccard Drive intersection continues to operate at LOS B or better.

Under the 2027 Preferred Alternative, a new signalized Managed Lanes (ML) connection with access to I-270 Northbound and Southbound is added along Gude Drive. With these infrastructure changes in place, 2027 Preferred Alternative analysis indicated that all intersections along the Gude Drive corridor improve operations to LOS C or better.

There are no anticipated infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that Gude Drive at Research Boulevard continues to approach or exceed capacity limits (LOS E or F) during peak hours, while the Piccard Drive intersection continues to operate at LOS B or better.

Anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative analysis indicated that all intersections along the Gude Drive corridor operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-3 summarizes the capacity analysis results along Gude Drive.

Table I-3 – Gude Drive Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Gude Dr at Research Blvd	E (61.1)	**F (93.0)**	E (62.2)	**F (104.2)**	C (27.2)	C (22.9)	E (68.7)	**F (121.4)**	C (29.2)	C (28.4)
Gude Dr at Piccard Dr	A (8.9)	B (18.3)	A (9.5)	B (18.4)	A (8.2)	B (18.7)	B (11.5)	B (20.0)	B (14.8)	C (32.3)
Gude Dr at I-270 Managed Lanes Direct Connector	N/A				C (29.5)	C (27.4)	N/A		D (37.0)	C (32.4)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

MD 28 (MONTGOMERY AVENUE) RESULTS

Under 2017 Existing Conditions, I-270 at MD 28 is a partial cloverleaf interchange with signalized intersections at Hurley Avenue and Laird Street/Bullard Circle. 2017 Existing Conditions analysis indicated that MD 28 at Hurley Avenue exceeds capacity limits (LOS F) during the PM peak hour. All other intersections along the corridor operate at LOS D or better during peak hours.

Between 2017 Existing and 2027 No Build Conditions at MD 28 and Hurley Avenue signalized intersection, the Southbound approach was restriped to create an exclusive Southbound left-turn lane and a shared through lane with right-turning movements. With these changes in place, 2027 No Build Conditions analysis indicated that all intersections along the MD 28 corridor operate at LOS C or better.

There are no known infrastructure changes between 2027 No Build Conditions and the 2027 Preferred Alternative. The 2027 Preferred Alternative analysis indicated that all intersections along the MD 28 corridor continue to operate at LOS C or better.

There are no anticipated infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that all intersections along the MD 28 corridor continue to operate at LOS C or better.

There are no anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative. The 2045 Preferred Alternative analysis indicated that all intersections along the MD 28 corridor continue to operate at LOS C or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-4 summarizes the capacity analysis results along MD 28.

Table I-4 – MD 28 Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
MD 28 (Montgomery Ave) at Hurley Ave	D (42.3)	**F (135.0)**	B (16.5)	C (22.5)	B (16.4)	C (22.2)	B (16.9)	C (24.2)	B (17.4)	C (24.4)
MD 28 (Montgomery Ave) at I-270 SB Ramps	B (12.4)	B (14.0)	B (14.9)	B (17.3)	B (14.1)	B (19.3)	B (13.0)	B (17.9)	A (7.7)	B (19.7)
MD 28 (Montgomery Ave) at I-270 NB Off-Ramp / Nelson St	C (24.4)	C (31.9)	C (21.9)	C (25.1)	C (21.7)	C (24.8)	C (23.3)	C (26.6)	C (21.1)	C (24.2)
MD 28 (Montgomery Ave) at Laird St / Bullard Cir	B (14.5)	B (16.6)	B (13.7)	B (13.7)	B (12.7)	B (13.9)	B (15.9)	B (16.1)	B (14.0)	B (15.5)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

MD 189 (FALLS ROAD) RESULTS

Under 2017 Existing Conditions, I-270 at MD 189 is a single-point urban interchange (SPUI) with signalized intersections at Wootton Parkway and Great Falls Road/Potomac Valley Road. 2017 Existing Conditions analysis indicated that the intersections of MD 189 at Wootton Parkway I-270 Ramps (SPUI) approach capacity limits (LOS E) during at least one peak hour. MD 189 at Great Falls Road/Potomac Valley Road operates at LOS C or better during peak hours.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that the intersections of MD 189 at Wootton Parkway and I-270 Ramps (SPUI) improve to LOS D during peak hours. MD 189 at Great Falls Road/Potomac Valley Road operates at LOS B or better.

Under the 2027 Preferred Alternative, the I-270 at MD 189 interchange is re-designed to a diverging diamond interchange. With these infrastructure changes in place, 2027 Preferred Alternative analysis indicated that all intersections along the MD 189 corridor operate at LOS D or better.

There are no anticipated infrastructure changes between 2027 No Build and 2045 No Build Conditions. The 2045 No Build Conditions analysis indicated that the intersections of MD 189 at Wootton Parkway and I-270 Ramps (SPUI) continue to approach capacity limits (LOS E) during at least one peak hour. MD 189 at Great Falls Road/Potomac Valley Road operates at LOS B or better.

Anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative analysis indicated that all intersections along the MD 189 corridor operate at LOS D or better during peak hours.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-5 summarizes the capacity analysis results along MD 189.

Table I-5 – MD 189 Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
MD 189 (Falls Rd) at Wootton Pkwy	E (59.6)	D (47.1)	D (53.1)	D (44.2)	D (49.4)	D (43.7)	E (57.9)	D (44.3)	D (48.8)	D (44.5)
MD 189 (Falls Rd) at I-270 Ramps (SPUI)	E (64.9)	E (63.8)	D (37.8)	D (54.4)	N/A		D (38.5)	E (55.1)	N/A	
MD 189 (Falls Rd) Crossover at I-270 SB Ramps	N/A				B (16.4)	C (21.2)	N/A		B (17.3)	C (25.0)
MD 189 (Falls Rd) EB at I-270 SB Ramps	N/A				A (5.5)	A (7.3)	N/A		A (5.1)	A (6.8)
MD 189 (Falls Rd) WB at I-270 NB Ramps	N/A				A (2.0)	A (5.5)	N/A		A (2.9)	A (6.7)
MD 189 (Falls Rd) Crossover at I-270 NB Ramps	N/A				C (21.7)	C (24.3)	N/A		C (24.2)	C (25.0)
MD 189 (Falls Rd) EB at I-270 NB Ramps	N/A				A (8.7)	A (8.4)	N/A		A (7.9)	A (8.1)
MD 189 (Falls Rd / Maryland Ave) at Great Falls Rd / Potomac Valley Rd	C (24.7)	B (14.7)	B (16.8)	B (15.0)	B (18.1)	B (16.8)	B (18.0)	B (15.3)	B (18.8)	C (19.5)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

WOOTTON PARKWAY RESULTS

Under 2017 Existing Conditions, Wootton Parkway forms an overpass over I-270 with signalized intersections at Seven Locks Road and Tower Oaks Boulevard. The 2017 Existing Conditions analysis indicated that both intersections along the Wootton Parkway corridor operate at LOS D or better during peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that both intersections along the Wootton Parkway corridor operate at LOS C or better.

Under the 2027 Preferred Alternative, a new signalized Managed Lanes (ML) connection with access to I-270 Northbound and Southbound is added along Wootton Parkway. Additionally, a westbound left-turn lane is added at the intersection of Wootton Parkway at Seven Locks Road. With these infrastructure changes in place, 2027 Preferred Alternative analysis indicated that all intersections along the Wootton Parkway corridor operate at LOS C or better.

There are no anticipated roadway infrastructure changes between 2027 No Build and 2045 No Build Conditions. The 2045 No Build Conditions analysis indicated that both intersections along the Wootton Parkway corridor operate at LOS D or better during the peak hours.

Anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative indicated that all intersections along the corridor continue to operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-6 summarizes the capacity analysis results along Wootton Parkway.

Table I-6 – Wootton Parkway Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Wootton Pkwy at Seven Locks Rd	D (49.6)	C (31.3)	C (33.2)	C (30.0)	C (22.8)	C (32.6)	D (36.2)	C (27.7)	C (25.8)	C (31.9)
Wootton Pkwy at Tower Oaks Blvd	C (21.3)	B (15.2)	C (25.5)	C (24.3)	C (26.0)	C (27.4)	C (25.3)	C (24.0)	C (26.2)	D (36.0)
Wootton Pkwy at I-270 Managed Lanes Direct Connector	N/A				C (24.7)	C (23.2)	N/A		C (26.1)	C (23.9)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

MONTROSE ROAD RESULTS

Under 2017 Existing Conditions, I-270 at Montrose Road is a full cloverleaf interchange with signalized intersections at Seven Locks Road, Tower Oaks Boulevard and Hitching Post Lane/Farm Haven Drive. A two-way stopped-controlled intersection at Park Potomac Avenue and a one-way yield-controlled T-intersection at Farm Lane are also located along the corridor. In addition, the intersections along Tower Oaks Boulevard at the I-270 Northbound Ramps/GEICO Entrance and Commercial Drive were also analyzed. The 2017 Existing Conditions analysis indicated that all signalized intersections along the Montrose Road and Tower Oaks Boulevard corridors operate at LOS D or better during the peak hours of the day. The stop-controlled intersection at Park Potomac Avenue approaches or exceeds capacity limits (LOS E or F) during peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that all signalized intersections along the Montrose Road and Tower Oaks Boulevard corridors continue to operate at LOS D or better during the peak hours of the day. The stop-controlled intersection at Park Potomac Avenue continues to approach or exceed capacity limits (LOS E or F) during peak hours.

There are no known infrastructure changes between 2027 No Build Conditions and the 2027 Preferred Alternative. The 2027 Preferred Alternative analysis indicated that all signalized intersections along the Montrose Road and Tower Oaks Boulevard corridors improve operations to LOS C or better during peak hours. The stop-controlled intersection at Park Potomac Avenue continues to approach or exceed capacity limits (LOS E or F) during peak hours.

There are no anticipated roadway infrastructure changes between 2027 No Build and 2045 No Build Conditions. The 2045 No Build Conditions analysis indicated that all signalized intersections along the Montrose Road and Tower Oaks Boulevard corridors continue to operate at LOS D or better during the peak hours of the day. The stop-controlled intersection at Park Potomac Avenue continues to approach or exceed capacity limits (LOS E or F) during peak hours.

There are no anticipated roadway infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative. The 2045 Preferred Alternative analysis indicated that all signalized intersections along the Montrose Road and Tower Oaks Boulevard corridors continue to operate at LOS D or better during the peak hours of the day. The stop-controlled intersection at Park Potomac Avenue continues to approach or exceed capacity limits (LOS E or F) during peak hours.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-7 summarizes the capacity analysis results along Montrose Road and Tower Oaks Boulevard.

Table I-7 – Montrose Road Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Montrose Rd at Seven Locks Rd	C (32.7)	D (38.0)	C (29.7)	D (35.3)	C (29.9)	C (34.4)	C (30.0)	D (37.6)	C (29.9)	D (36.7)
Montrose Rd at Park Potomac Ave	E (37.7)	**F (77.7)**	E (42.5)	**F (104.9)**	E (37.7)	**F (104.9)**	E (47.3)	**F (143.3)**	E (35.9)	**F (162.9)**
Montrose Rd at Tower Oaks Blvd	D (42.0)	B (12.4)	B (19.2)	B (10.5)	B (17.5)	B (12.7)	C (20.4)	B (12.0)	B (17.6)	B (15.1)
Montrose Rd at Farm Ln[§]	A (1.6)	A (3.5)	A (1.9)	A (4.4)	A (1.9)	A (4.0)	A (2.0)	A (4.8)	A (2.0)	A (4.3)
Montrose Rd at Hitching Post Ln / Farm Haven Dr	A (8.2)	A (9.1)	B (12.9)	B (10.8)	B (12.9)	B (10.4)	B (14.3)	B (11.7)	B (14.2)	B (11.4)
Tower Oaks Blvd at I-270 NB Ramps/ GEICO Entrance	B (19.8)	B (17.7)	B (18.7)	B (17.6)	B (18.2)	B (17.5)	B (19.1)	B (18.5)	B (17.9)	B (19.0)
Tower Oaks Blvd at Commercial Dr	A (3.4)	A (4.9)	A (3.6)	A (5.0)	A (3.4)	A (4.8)	A (4.0)	A (5.8)	A (3.6)	A (5.1)

Notes: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

[§]Red light on Montrose Road by Farm Lane is triggered by pedestrian signal call. Farm Lane is yield-controlled.

WESTLAKE TERRACE RESULTS

Under 2017 Existing Conditions, Westlake Terrace provides access at a signalized T-intersection to the I-270 Northbound High Occupancy Vehicle (HOV) lanes and from the I-270 Southbound HOV lanes. Signalized intersections at the Westfield Montgomery Mall Entrance/Motor City Drive and Rockledge Drive are located to the east and west of the HOV lane connection, respectively. The 2017 Existing Conditions analysis indicated that all intersections along the Westlake Terrace corridor operate at LOS D or better during peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that all intersections along the Westlake Terrace corridor continue to operate at LOS D or better.

Under the 2027 Preferred Alternative, the existing HOV lane connection is being converted to a signalized Managed Lanes (ML) connection providing access both to and from the I-270 Northbound and Southbound ML. With these infrastructure changes in place, 2027 Preferred Alternative analysis indicated that all intersections along the Westlake Terrace corridor continue to operate at LOS D or better.

There are no anticipated roadway infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that all intersections along the Westlake Terrace corridor continue to operate at LOS D or better.

Anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative indicated that all intersections along the corridor continue to operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-8 summarizes the capacity analysis results along Westlake Terrace.

Table I-8 – Westlake Terrace Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Westlake Terr at Westfield Montgomery Mall Ent / Motor City Dr	B (13.5)	C (21.5)	B (12.6)	C (23.7)	A (9.6)	B (18.9)	B (13.5)	C (24.1)	A (9.8)	C (20.7)
Westlake Terrace at I-270 Spur Ramps[1]	A (8.8)	B (12.6)	B (12.0)	A (8.8)	C (33.3)	C (31.9)	B (14.1)	B (10.1)	D (37.5)	C (32.2)
Westlake Terrace at Rockledge Dr	C (25.2)	D (42.2)	C (29.4)	D (46.9)	C (30.8)	D (46.9)	C (34.9)	D (54.3)	C (34.8)	D (53.0)

Notes: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

[1] In 2027/2045 Build, the Spur ramp connection converts to Managed Lanes access.

DEMOCRACY BOULEVARD RESULTS

Under 2017 Existing Conditions, I-270 at Democracy Boulevard is a partial cloverleaf interchange with signalized intersections at Taveshire Way, the I-270 Southbound Off-Ramp, the I-270 Southbound On-Ramp from Democracy Boulevard Westbound, the I-270 Northbound Off-Ramp to Democracy Boulevard Westbound, the I-270 Northbound Off-Ramp to Democracy Boulevard Eastbound, and Fernwood Road. The 2017 Existing Conditions analysis indicated that the Fernwood Drive intersection approaches capacity limits (LOS E) during the AM Peak and the I-270 SB Off-Ramp intersection exceeds capacity limits (LOS F) in the PM Peak. All other intersections along the Democracy Boulevard corridor operate at LOS C or better during the peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that all intersections along the Democracy Boulevard corridor improve operations to LOS D or better.

Under the 2027 Preferred Alternative, the geometry of the I-270 Southbound signalized ramp intersections are combined into one signalized intersection. With these changes in place, 2027 Preferred Alternative analysis indicated that all intersections along the Democracy Boulevard corridor continue to operate at LOS D or better.

There are no anticipated roadway infrastructure changes between 2027 No Build and 2045 No Build Conditions. The 2045 No Build Conditions analysis indicated that all intersections along the Democracy Boulevard corridor continue to operate at LOS D or better.

Anticipated infrastructure changes between 2045 No Build Conditions and 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative analysis indicated that all intersections along the Democracy Boulevard continues corridor continue to operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-9 summarizes the capacity analysis results along Democracy Boulevard.

Table I-9 – Democracy Boulevard Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Democracy Blvd at Taveshire Way	B (10.3)	B (12.1)	B (10.5)	B (12.1)	B (10.4)	B (12.0)	B (10.8)	B (11.7)	B (10.8)	B (11.3)
Democracy Blvd at I-270 SB Off-Ramp	C (28.6)	**F (105.5)**	C (32.0)	D (46.7)	C (27.8)	D (47.0)	C (33.0)	D (50.9)	C (28.2)	D (39.5)
Democracy Blvd at I-270 SB On-Ramp from Democracy Blvd WB	A (9.0)	A (9.3)	A (5.5)	B (17.8)			A (5.5)	B (18.6)		
Democracy Blvd at I-270 NB Off-Ramp to Democracy Blvd WB	B (10.6)	A (9.9)	A (7.3)	A (7.2)	B (10.7)	A (8.5)	A (6.8)	A (7.5)	B (12.4)	B (12.3)
Democracy Blvd at I-270 NB Off-Ramp to Democracy Blvd EB	C (33.1)	B (10.2)	B (18.8)	A (8.6)	B (16.8)	A (7.8)	B (20.0)	A (9.7)	B (16.3)	A (8.3)
Democracy Blvd at Fernwood Rd	E (63.1)	C (30.9)	D (41.1)	C (31.3)	D (36.6)	C (30.6)	D (47.3)	D (38.0)	D (41.5)	D (47.1)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

ROCKLEDGE DRIVE & MD 187 (OLD GEORGETOWN ROAD) RESULTS

Under 2017 Existing Conditions, I-270 at Rockledge Drive and MD 187 (Old Georgetown Road) are adjacent diamond interchanges with overpasses over I-270 located approximately 1,500 feet apart. Signalized intersections at Rock Forest Drive, the I-270 Southbound Ramps, and the I-270 Northbound Ramps are located along Rockledge Drive. Signalized intersections at Rock Spring Drive, the I-270 Southbound Ramps, the I-270 Northbound Ramps, and Tuckerman Lane are located along MD 187. The 2017 Existing Conditions analysis indicated that the MD 187 at Tuckerman Lane intersection approaches or exceeds capacity limits (LOS E or F) during the peak hours and the MD 187 at Rock Spring Drive intersection approaches capacity limits (LOS E) during the AM peak. All other intersections along the Rockledge Drive and MD 187 corridors operate at LOS D or better during the peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that the MD 187 at Tuckerman Lane intersection continues to approach or exceed capacity limits (LOS E or F) during the peak hours and the MD 187 at Rock Spring Drive intersection approaches capacity limits (LOS E) during the PM peak hour. All other intersections along the Rockledge Drive and MD 187 corridors operate at LOS D or better.

There are no known infrastructure changes between 2027 No Build Conditions and the 2027 Preferred Alternative. The I-270 Managed Lanes (ML) tie into the general-purpose lanes east of the MD 187 interchange. The 2027 Preferred Alternative analysis indicated that the MD 187 at Tuckerman Lane intersection continues to approach or exceed capacity limits (LOS E or F) during the peak hours and the MD 187 at Rock Spring Drive intersection continues to approach capacity limits (LOS E) during the PM peak hour. All other intersections along the Rockledge Drive and MD 187 corridors continue to operate at LOS D or better.

There are no anticipated roadway infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that the MD 187 at Tuckerman Lane intersection exceeds capacity limits (LOS F) during peak hours and the MD 187 at Rock Spring Drive intersection exceeds capacity limits (LOS F) during the PM peak hour. All other intersections along the Rockledge Drive and MD 187 corridors operate at LOS D or better.

There are no anticipated roadway infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative. Similar to the 2027 Preferred Alternative, the I-270 MLs tie into the general-purpose lanes east of the MD 187 interchange. The 2045 Preferred Alternative analysis indicated that the MD 187 at Tuckerman Lane intersection continues to exceed capacity limits (LOS F) during peak hours and the MD 187 at Rock Spring Drive intersection continues to exceed capacity limits (LOS F) during the PM peak hour. All other intersections along the Rockledge Drive and MD 187 corridors operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-10 summarizes the capacity analysis results along Rockledge Drive and MD 187.

Table I-10 – Rockledge Drive and MD 187 Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Rockledge Dr at Rock Forest Dr	C (23.1)	C (33.8)	C (24.3)	C (34.8)	C (24.7)	C (34.5)	C (26.8)	D (40.6)	C (27.0)	D (41.1)
Rockledge Dr at I-270 SB Off Ramp / I-270 SB Ramp Connector	C (24.8)	D (40.4)	B (19.0)	C (34.0)	B (19.2)	C (32.1)	C (20.1)	D (40.6)	C (22.0)	C (34.8)
Rockledge Dr at I-270 NB On Ramp / I-270 NB Ramp Connector	C (25.9)	B (18.5)	D (39.0)	C (25.0)	D (39.6)	C (28.5)	D (43.4)	C (32.9)	D (39.2)	C (33.4)
MD 187 (Old Georgetown Rd) at Rock Spring Dr	E (64.2)	D (50.8)	D (40.5)	E (61.5)	D (39.3)	E (58.4)	D (46.6)	**F (98.7)**	D (48.7)	**F (96.8)**
MD 187 (Old Georgetown Rd) at I-270 SB Ramp Connector / I-270 SB On-Ramp	D (41.7)	D (46.2)	C (23.4)	C (22.2)	C (22.8)	C (24.5)	C (25.8)	C (31.7)	C (25.9)	C (27.2)
MD 187 (Old Georgetown Rd) at I-270 NB Ramp Connector / I-270 NB Off-Ramp	B (11.9)	B (14.5)	A (9.6)	B (14.6)	A (9.6)	B (15.8)	B (11.1)	B (15.6)	B (12.7)	B (14.8)
MD 187 (Old Georgetown Rd) at Tuckerman Ln	**F (133.8)**	E (70.4)	**F (139.6)**	E (76.7)	**F (148.8)**	E (73.6)	**F (156.7)**	**F (92.3)**	**F (157.7)**	**F (94.2)**

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

MD 190 (RIVER ROAD) RESULTS

Under 2017 Existing Conditions, I-495 at MD 190 is a partial cloverleaf interchange with signalized intersections at Seven Locks Road and Burdette Road. 2017 Existing Conditions analysis indicated that all intersections along the MD 190 corridor operate at LOS D or better during the peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that all intersections along the MD 190 corridor continue to operate at LOS D or better.

Under the 2027 Preferred Alternative, a new signalized Managed Lanes (ML) connection with access to I-495 Inner and Outer Loops is added along MD 190. The interchange is redesigned to remove looping off-ramps and function as a traditional diamond interchange for I-495 general purpose traffic. With these infrastructure changes in place, 2027 Preferred Alternative analysis indicated that all intersections along the corridor continue to operate at LOS D or better.

There are no anticipated infrastructure changes between the 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicates that all intersections along the MD 190 corridor continue to operate at LOS D or better.

Anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative are the same as those for the 2027 Preferred Alternative. The 2045 Preferred Alternative indicated that the intersections of MD 190 at Seven Locks Road and Burdette Rd approach capacity limits (LOS E) during the PM peak hour. All other intersections along the corridor continuing to operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-11 summarizes the capacity analysis results along MD 190.

Table I-11 – MD 190 Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
MD 190 (River Rd) at Seven Locks Rd	D (36.1)	D (39.1)	D (37.4)	D (45.0)	C (34.4)	D (51.9)	D (41.6)	D (49.3)	D (38.0)	E (58.3)
MD 190 (River Rd) at I-495 Outer Loop Off-Ramp[1]	B (11.5)	B (12.0)	B (12.1)	A (9.4)	C (20.8)	B (17.6)	B (13.5)	B (10.7)	C (21.6)	B (17.9)
MD 190 (River Rd) at I-495 Inner Loop On-Ramp[2]	A (1.9)	A (7.8)	A (0.7)	A (7.0)	B (18.3)	B (19.8)	A (0.5)	A (3.7)	B (19.1)	C (21.6)
MD 190 (River Rd) at Burdette Rd	B (16.9)	C (31.7)	B (18.1)	D (40.9)	C (20.7)	D (44.7)	C (21.5)	D (49.9)	C (24.8)	E (79.9)
MD 190 (River Rd) at I-495 Managed Lanes Direct Connector	N/A				B (13.8)	C (22.0)	N/A		B (13.6)	C (23.0)

Notes: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

[1] In 2027/2045 Phase 1 Build, the I-495 Outer Loop On-Ramp ties into this location.

[2] In 2027/2045 Phase 1 Build, the I-495 Inner Loop Off-Ramp ties into this location.

MD 187 (OLD GEORGETOWN ROAD) AT I-495 RESULTS

Under 2017 Existing Conditions, I-495 at MD 187 is a traditional diamond interchange with signalized intersections at Lone Oak Drive / Manor Oak Way and Ryland Drive / Church Driveway (St. Jane Frances de Chantal Catholic Church). 2017 Existing Conditions analysis indicated that all intersections along the MD 187 corridor operate at LOS C or better during the peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that all intersections along the corridor operate at LOS D or better.

There are no known infrastructure changes between 2027 No Build Conditions and the 2027 Preferred Alternative. The I-495 Managed Lanes (ML) tie back into the general-purpose lanes west of the MD 187 interchange. The 2027 Preferred Alternative analysis indicated that all intersections along the corridor continue to operate at LOS D or better.

There are no anticipated infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that MD 187 at I-495 Outer Loop Off-/On-Ramp intersection exceeds capacity limits (LOS F) during the AM peak hour. All other intersections along the corridor operate at LOS C or better.

The are no anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative. Similar to the 2027 Preferred Alternative, I-495 Managed Lanes (ML) tie back into the general-purpose lanes west of the MD 187 interchange. The 2045 Preferred Alternative analysis indicated that MD 187 at I-495 Outer Loop Off-/On-Ramp intersection continues to exceed capacity limits (LOS F) during the AM peak hour. All other intersections along the corridor continue to operate at LOS C or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-12 summarizes the capacity analysis results along MD 187.

Table I-12 – MD 187 Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
MD 187 (Old Georgetown Rd) at Lone Oak Dr/ Manor Oak Way	B (14.6)	B (12.5)	B (15.9)	B (17.4)	B (15.5)	B (17.7)	C (25.1)	C (20.7)	C (23.3)	C (21.0)
MD 187 (Old Georgetown Rd) at I-495 Outer Loop Off-/ On-Ramp	C (29.1)	C (32.8)	D (37.3)	B (14.9)	D (37.3)	B (17.9)	**F (96.0)**	B (11.6)	**F (88.4)**	B (12.9)
MD 187 (Old Georgetown Rd) at I-495 Inner Loop Off-/ On-Ramp	A (6.9)	C (30.0)	A (8.9)	C (21.5)	B (10.6)	C (22.5)	A (9.4)	B (17.2)	A (8.6)	C (24.6)
MD 187 (Old Georgetown Rd) at Ryland Dr	B (16.2)	B (12.0)	B (15.8)	A (7.9)	B (14.5)	A (7.7)	B (16.5)	B (10.4)	B (17.7)	B (11.3)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicle)

MD 355 (ROCKVILLE PIKE) RESULTS

Under 2017 Existing Conditions, I-495 / I-270 at MD 355 forms an interchange with signalized intersections at Grosvenor Lane, I-495 Inner Loop Off-Ramp, Pooks Hill Road, and Alta Vista Road / Bellevue Drive. 2017 Existing Conditions analysis indicated that all intersections along the MD 355 corridor operate at LOS D or better during the peak hours of the day.

There are no known infrastructure changes between 2017 Existing and 2027 No Build Conditions. 2027 No Build Conditions analysis indicated that all intersections along the MD 355 corridor operate at LOS C or better.

There are no known infrastructure changes between 2027 No Build Conditions and the 2027 Preferred Alternative. The I-270 Managed Lanes (ML) tie back into the general-purpose lanes west of the MD 355 interchange. The 2027 Preferred Alternative analysis indicated that all intersections along the MD 355 corridor continue to operate at LOS C or better.

There are no anticipated infrastructure changes between 2027 No Build and 2045 No Build Conditions. 2045 No Build Conditions analysis indicated that all intersections along the MD 355 corridor operate at LOS D or better.

The are no anticipated infrastructure changes between 2045 No Build Conditions and the 2045 Preferred Alternative. Similar to the 2027 Preferred Alternative, the I-270 MLs tie back into the general-purpose lanes west of the MD 355 interchange. The 2045 Preferred Alternative analysis indicated that all intersections along the MD 355 corridor continue to operate at LOS D or better.

Queuing Analysis: Queuing analysis results indicated no spillback queues along the ramp length to the interstate facility.

Table I-13 summarizes the capacity analysis results along MD 355.

Table I-13 – MD 355 Capacity Analysis Results

Location	2017 Existing Conditions		2027 No Build Conditions		2027 Preferred Alternative		2045 No Build Conditions		2045 Preferred Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
MD 355 (Rockville Pike) at Grosvenor Ln	D (44.6)	D (36.0)	C (32.6)	C (31.5)	C (32.7)	C (32.3)	C (33.4)	D (36.5)	C (33.8)	D (35.3)
MD 355 (Rockville Pike) at I-495 Inner Loop Off-Ramp	C (25.2)	B (17.6)	C (24.8)	B (17.1)	C (25.1)	B (18.3)	C (25.4)	B (16.5)	C (24.0)	C (20.8)
MD 355 (Rockville Pike) at Pooks Hill Rd	C (31.2)	B (18.3)	C (31.3)	B (15.8)	C (32.8)	B (15.4)	D (35.7)	B (16.5)	D (36.6)	C (17.0)
MD 355 (Rockville Pike) at Alta Vista Rd / Bellevue Dr	B (13.6)	C (23.9)	B (15.2)	C (27.1)	B (16.3)	C (23.5)	B (17.5)	C (29.3)	B (19.1)	C (28.4)

Note: Results sourced by HCM methodology and shown as LOS (Delay in sec/vehicles)

2017 EXISTING CONDITIONS

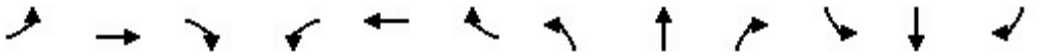
SYNCHRO ANALYSIS OUTPUTS

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	145	0	295	0	1560	315	395	1135	0	0	85
Future Volume (vph)	145	0	295	0	1560	315	395	1135	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	0	321	0	1696	342	429	1234	0	0	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	0	321	0	1696	342	429	1234	0	0	92
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		4 1		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	22.1		60.0		106.0	106.0	31.4	144.4			144.4
Effective Green, g (s)	22.1		60.0		106.0	106.0	31.4	144.4			144.4
Actuated g/C Ratio	0.12		0.33		0.59	0.59	0.17	0.80			0.80
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	421		929		2994	932	598	4079			1292
v/s Ratio Prot	0.05		c0.12		c0.33		c0.12	0.24			0.06
v/s Ratio Perm						0.22					
v/c Ratio	0.38		0.35		0.57	0.37	0.72	0.30			0.07
Uniform Delay, d1	72.6		45.2		22.8	19.4	70.1	4.6			3.7
Progression Factor	1.00		1.00		0.87	0.78	1.00	1.00			1.00
Incremental Delay, d2	0.8		0.3		0.7	0.9	5.1	0.2			0.1
Delay (s)	73.4		45.5		20.5	16.0	75.2	4.8			3.8
Level of Service	E		D		C	B	E	A			A
Approach Delay (s)	54.7				19.8			23.0		3.8	
Approach LOS	D				B			C		A	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

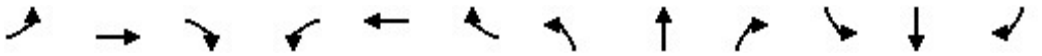
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	410	15	30	35	180	0	0	175	35
Future Volume (vph)	0	0	0	410	15	30	35	180	0	0	175	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1691	1583	1770	1863			3451	
Flt Permitted				0.95	0.96	1.00	0.61	1.00			1.00	
Satd. Flow (perm)				1681	1691	1583	1135	1863			3451	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	446	16	33	38	196	0	0	190	38
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	232	230	9	38	196	0	0	210	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				18.8	18.8	18.8	36.6	37.9			10.8	
Effective Green, g (s)				18.8	18.8	18.8	36.6	28.9			10.8	
Actuated g/C Ratio				0.28	0.28	0.28	0.54	0.43			0.16	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				466	469	439	783	795			550	
v/s Ratio Prot				c0.14	0.14		c0.01	c0.11			0.06	
v/s Ratio Perm						0.01	0.01					
v/c Ratio				0.50	0.49	0.02	0.05	0.25			0.38	
Uniform Delay, d1				20.5	20.4	17.8	7.4	12.4			25.5	
Progression Factor				1.00	1.00	1.00	0.09	0.13			1.00	
Incremental Delay, d2				1.7	1.7	0.0	0.1	0.3			0.2	
Delay (s)				22.2	22.1	17.8	0.7	2.0			25.6	
Level of Service				C	C	B	A	A			C	
Approach Delay (s)		0.0			21.9			1.8			25.6	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	29.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

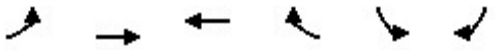
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	5	95	0	0	0	0	180	100	90	495	0
Future Volume (vph)	35	5	95	0	0	0	0	180	100	90	495	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.96	1.00					1.00	1.00		0.99	
Satd. Flow (prot)		1784	1583					1863	1583		3512	
Flt Permitted		0.96	1.00					1.00	1.00		0.87	
Satd. Flow (perm)		1784	1583					1863	1583		3067	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	5	103	0	0	0	0	196	109	98	538	0
RTOR Reduction (vph)	0	0	87	0	0	0	0	0	79	0	0	0
Lane Group Flow (vph)	0	43	16	0	0	0	0	196	30	0	636	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		10.4	10.4					18.5	18.5		29.6	
Effective Green, g (s)		10.4	10.4					18.5	18.5		29.6	
Actuated g/C Ratio		0.15	0.15					0.27	0.27		0.44	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		274	243					509	432		1464	
v/s Ratio Prot		c0.02						c0.11			c0.12	
v/s Ratio Perm			0.01						0.02		0.07	
v/c Ratio		0.16	0.07					0.39	0.07		0.43	
Uniform Delay, d1		24.8	24.5					20.0	18.2		13.2	
Progression Factor		1.00	1.00					1.00	1.00		0.44	
Incremental Delay, d2		0.6	0.2					0.2	0.0		0.1	
Delay (s)		25.4	24.7					20.2	18.2		5.9	
Level of Service		C	C					C	B		A	
Approach Delay (s)		24.9			0.0			19.5			5.9	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	29.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

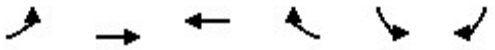
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2565	275	0	0	555
Future Volume (vph)	0	2565	275	0	0	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2788	299	0	0	603
RTOR Reduction (vph)	0	0	0	0	0	59
Lane Group Flow (vph)	0	2788	299	0	0	544
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	33.5			133.5
Effective Green, g (s)		180.0	33.5			133.5
Actuated g/C Ratio		1.00	0.19			0.74
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	946			2067
v/s Ratio Prot		c0.44	0.06			0.20
v/s Ratio Perm						
v/c Ratio		0.44	0.32			0.26
Uniform Delay, d1		0.0	63.3			7.5
Progression Factor		1.00	0.06			2.13
Incremental Delay, d2		0.1	0.8			0.2
Delay (s)		0.1	4.7			16.1
Level of Service		A	A			B
Approach Delay (s)		0.1	4.7		16.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

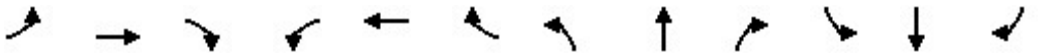
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	905	1660	275	0	405	0
Future Volume (vph)	905	1660	275	0	405	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	984	1804	299	0	440	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	984	1804	299	0	440	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	93.5	133.5	33.5		33.5	
Effective Green, g (s)	93.5	133.5	33.5		33.5	
Actuated g/C Ratio	0.52	0.74	0.19		0.19	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1783	2624	946		638	
v/s Ratio Prot	0.29	c0.51	0.06		c0.13	
v/s Ratio Perm						
v/c Ratio	0.55	0.69	0.32		0.69	
Uniform Delay, d1	29.1	12.3	63.3		68.4	
Progression Factor	1.00	1.00	1.00		0.87	
Incremental Delay, d2	0.7	1.4	0.9		3.2	
Delay (s)	29.9	13.6	64.2		63.0	
Level of Service	C	B	E		E	
Approach Delay (s)		19.4	64.2		63.0	
Approach LOS		B	E		E	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	550	0	25	0	0	160	15	1165	80	90	935	340
Future Volume (vph)	550	0	25	0	0	160	15	1165	80	90	935	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	0	27	0	0	174	16	1266	87	98	1016	370
RTOR Reduction (vph)	0	0	22	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	598	0	5	0	0	174	16	1266	87	98	1016	370
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	36.2		36.2			36.4	4.9	87.4	180.0	15.8	98.3	180.0
Effective Green, g (s)	36.2		36.2			30.9	4.9	87.4	180.0	15.8	98.3	180.0
Actuated g/C Ratio	0.20		0.20			0.17	0.03	0.49	1.00	0.09	0.55	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	690		318			478	48	2469	1583	155	2776	1583
v/s Ratio Prot	c0.17					c0.06	0.01	c0.25		c0.06	0.20	
v/s Ratio Perm			0.00						0.05			0.23
v/c Ratio	0.87		0.02			0.36	0.33	0.51	0.05	0.63	0.37	0.23
Uniform Delay, d1	69.6		57.6			65.9	85.9	31.7	0.0	79.3	23.2	0.0
Progression Factor	1.00		1.00			1.00	1.39	0.49	1.00	1.05	0.89	1.00
Incremental Delay, d2	11.1		0.0			0.5	3.8	0.7	0.1	7.9	0.4	0.3
Delay (s)	80.7		57.7			66.3	123.3	16.2	0.1	91.4	21.1	0.3
Level of Service	F		E			E	F	B	A	F	C	A
Approach Delay (s)		79.7			66.3			16.4			20.5	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

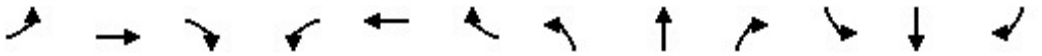
c Critical Lane Group

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	325	0	525	0	1595	250	535	2095	0	0	340
Future Volume (vph)	325	0	525	0	1595	250	535	2095	0	0	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		7.0		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	353	0	571	0	1734	272	582	2277	0	0	370
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	353	0	571	0	1734	272	582	2277	0	0	370
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		1 4		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	34.1		82.4		83.6	83.6	41.8	132.4			132.4
Effective Green, g (s)	34.1		75.9		83.6	83.6	41.8	132.4			132.4
Actuated g/C Ratio	0.19		0.42		0.46	0.46	0.23	0.74			0.74
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	650		1175		2361	735	797	3740			1184
v/s Ratio Prot	c0.10		0.20		c0.34		c0.17	0.45			0.23
v/s Ratio Perm						0.17					
v/c Ratio	0.54		0.49		0.73	0.37	0.73	0.61			0.31
Uniform Delay, d1	65.9		37.9		39.2	31.2	63.9	11.4			8.2
Progression Factor	1.00		1.00		0.88	0.77	1.00	1.00			1.00
Incremental Delay, d2	1.2		0.7		1.8	1.2	4.2	0.7			0.7
Delay (s)	67.1		38.5		36.4	25.3	68.1	12.1			8.9
Level of Service	E		D		D	C	E	B			A
Approach Delay (s)	49.4				34.9			23.5		8.9	
Approach LOS	D				C			C		A	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

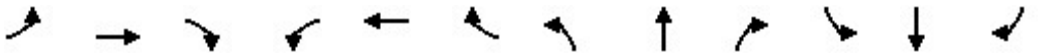
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	245	65	95	195	285	0	0	300	80
Future Volume (vph)	0	0	0	245	65	95	195	285	0	0	300	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.97	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1720	1583	1770	1863			3427	
Flt Permitted				0.95	0.97	1.00	0.50	1.00			1.00	
Satd. Flow (perm)				1681	1720	1583	937	1863			3427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	266	71	103	212	310	0	0	326	87
RTOR Reduction (vph)	0	0	0	0	0	80	0	0	0	0	25	0
Lane Group Flow (vph)	0	0	0	168	169	23	212	310	0	0	388	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				18.6	18.6	18.6	55.1	55.1			16.7	
Effective Green, g (s)				18.6	18.6	18.6	55.1	46.1			16.7	
Actuated g/C Ratio				0.22	0.22	0.22	0.65	0.54			0.20	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				369	377	347	898	1013			675	
v/s Ratio Prot				c0.10	0.10		c0.08	c0.17			c0.11	
v/s Ratio Perm						0.01	0.07					
v/c Ratio				0.46	0.45	0.07	0.24	0.31			0.57	
Uniform Delay, d1				28.7	28.6	26.2	6.8	10.6			30.8	
Progression Factor				1.00	1.00	1.00	0.02	0.02			1.00	
Incremental Delay, d2				1.9	1.8	0.2	0.2	0.3			0.7	
Delay (s)				30.5	30.4	26.3	0.3	0.5			31.5	
Level of Service				C	C	C	A	A			C	
Approach Delay (s)		0.0			29.5			0.4			31.5	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	29.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

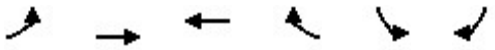
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	5	170	0	0	0	0	455	725	110	435	0
Future Volume (vph)	25	5	170	0	0	0	0	455	725	110	435	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.96	1.00					1.00	1.00		0.99	
Satd. Flow (prot)		1787	1583					1863	1583		3504	
Flt Permitted		0.96	1.00					1.00	1.00		0.56	
Satd. Flow (perm)		1787	1583					1863	1583		1975	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	5	185	0	0	0	0	495	788	120	473	0
RTOR Reduction (vph)	0	0	151	0	0	0	0	0	456	0	0	0
Lane Group Flow (vph)	0	32	34	0	0	0	0	495	332	0	593	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		15.4	15.4					30.7	30.7		35.3	
Effective Green, g (s)		15.4	15.4					30.7	30.7		35.3	
Actuated g/C Ratio		0.18	0.18					0.36	0.36		0.42	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		324	287					675	573		1158	
v/s Ratio Prot		0.02						c0.27			c0.11	
v/s Ratio Perm			c0.02						0.21		0.10	
v/c Ratio		0.10	0.12					0.73	0.58		0.51	
Uniform Delay, d1		28.9	29.0					23.4	21.8		18.3	
Progression Factor		1.00	1.00					1.00	1.00		0.72	
Incremental Delay, d2		0.3	0.4					3.6	0.9		0.2	
Delay (s)		29.1	29.3					27.0	22.7		13.3	
Level of Service		C	C					C	C		B	
Approach Delay (s)		29.3			0.0			24.3			13.3	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	29.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

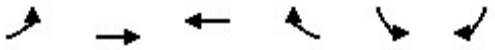
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1170	1290	0	0	1225
Future Volume (vph)	0	1170	1290	0	0	1225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1272	1402	0	0	1332
RTOR Reduction (vph)	0	0	0	0	0	15
Lane Group Flow (vph)	0	1272	1402	0	0	1317
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	81.5			85.5
Effective Green, g (s)		180.0	81.5			85.5
Actuated g/C Ratio		1.00	0.45			0.48
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	2302			1323
v/s Ratio Prot		0.20	c0.28			c0.47
v/s Ratio Perm						
v/c Ratio		0.20	0.61			1.00
Uniform Delay, d1		0.0	37.2			47.1
Progression Factor		1.00	0.07			0.82
Incremental Delay, d2		0.0	1.0			20.8
Delay (s)		0.0	3.5			59.6
Level of Service		A	A			E
Approach Delay (s)		0.0	3.5		59.6	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

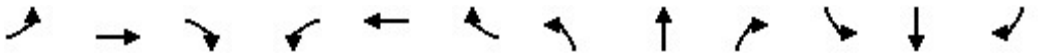
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	690	480	1290	0	275	0
Future Volume (vph)	690	480	1290	0	275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	750	522	1402	0	299	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	750	522	1402	0	299	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	58.5	146.5	81.5		20.5	
Effective Green, g (s)	58.5	146.5	81.5		20.5	
Actuated g/C Ratio	0.32	0.81	0.45		0.11	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1115	2880	2302		390	
v/s Ratio Prot	c0.22	0.15	c0.28		c0.09	
v/s Ratio Perm						
v/c Ratio	0.67	0.18	0.61		0.77	
Uniform Delay, d1	52.5	3.7	37.2		77.4	
Progression Factor	1.00	1.00	1.00		0.68	
Incremental Delay, d2	2.5	0.1	1.2		7.4	
Delay (s)	54.9	3.8	38.4		60.2	
Level of Service	D	A	D		E	
Approach Delay (s)		34.0	38.4		60.2	
Approach LOS		C	D		E	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	0	20	0	0	295	80	1155	155	145	1480	1135
Future Volume (vph)	395	0	20	0	0	295	80	1155	155	145	1480	1135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	429	0	22	0	0	321	87	1255	168	158	1609	1234
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	429	0	3	0	0	321	87	1255	168	158	1609	1234
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	27.3		27.3			48.9	14.2	83.8	180.0	20.7	90.3	180.0
Effective Green, g (s)	27.3		27.3			43.4	14.2	83.8	180.0	20.7	90.3	180.0
Actuated g/C Ratio	0.15		0.15			0.24	0.08	0.47	1.00	0.11	0.50	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	520		240			671	139	2367	1583	203	2550	1583
v/s Ratio Prot	0.12					0.12	0.05	0.25		0.09	0.32	
v/s Ratio Perm			0.00						0.11			c0.78
v/c Ratio	0.82		0.01			0.48	0.63	0.53	0.11	0.78	0.63	0.78
Uniform Delay, d1	74.0		64.9			58.6	80.3	34.1	0.0	77.4	32.7	0.0
Progression Factor	1.00		1.00			1.00	0.71	1.50	1.00	0.99	0.87	1.00
Incremental Delay, d2	10.3		0.0			0.5	8.2	0.8	0.1	14.7	1.0	3.3
Delay (s)	84.3		64.9			59.1	65.4	51.9	0.1	91.6	29.5	3.3
Level of Service	F		E			E	E	D	A	F	C	A
Approach Delay (s)		83.4			59.1			46.9			22.0	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	75	1765	175	15	220	465	90	10	55	50	110	225
Future Volume (vph)	75	1765	175	15	220	465	90	10	55	50	110	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1918	190	16	239	505	98	11	60	54	120	245
RTOR Reduction (vph)	0	0	86	0	0	0	41	0	0	47	0	0
Lane Group Flow (vph)	82	1918	105	0	255	505	57	11	60	7	120	245
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	12.3	82.5	82.5		16.4	86.6	86.6	3.0	18.6	18.6	10.5	26.1
Effective Green, g (s)	12.3	82.5	82.5		16.4	86.6	86.6	3.0	18.6	18.6	10.5	26.1
Actuated g/C Ratio	0.08	0.55	0.55		0.11	0.58	0.58	0.02	0.12	0.12	0.07	0.17
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	145	2796	870		375	2935	913	35	438	196	240	324
v/s Ratio Prot	0.05	c0.38			c0.07	c0.10		0.01	0.02		c0.03	c0.13
v/s Ratio Perm			0.07				0.04			0.00		
v/c Ratio	0.57	0.69	0.12		0.68	0.17	0.06	0.31	0.14	0.03	0.50	0.76
Uniform Delay, d1	66.3	24.4	16.3		64.3	14.9	13.9	72.5	58.5	57.8	67.2	58.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	1.4	0.3		5.0	0.1	0.1	5.1	0.2	0.1	1.6	10.2
Delay (s)	71.3	25.8	16.5		69.3	15.0	14.0	77.6	58.7	57.9	68.9	69.2
Level of Service	E	C	B		E	B	B	E	E	E	E	E
Approach Delay (s)		26.7				31.0			60.0			66.6
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	60
RTOR Reduction (vph)	50
Lane Group Flow (vph)	10
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	26.1
Effective Green, g (s)	26.1
Actuated g/C Ratio	0.17
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	275
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	51.5
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	51.6
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

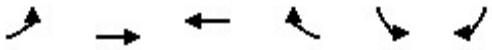
Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	200	125	155	0	0	755
Future Vol, veh/h	200	125	155	0	0	755
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	136	168	0	0	821

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	579	84	0	-	-	-
Stage 1	168	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	446	958	-	0	0	-
Stage 1	844	-	-	0	0	-
Stage 2	638	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	446	958	-	-	-	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.7	0	0
HCM LOS	C		

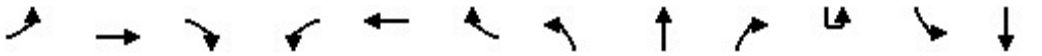
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	561	-
HCM Lane V/C Ratio	-	0.63	-
HCM Control Delay (s)	-	21.7	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	4.4	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	610	105	175	145	15
Future Volume (veh/h)	45	610	105	175	145	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	663	114	190	158	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	98	1850	551	492	423	281
Arrive On Green	0.06	0.52	0.31	0.31	0.12	0.12
Sat Flow, veh/h	1781	3647	1870	1585	3456	1585
Grp Volume(v), veh/h	49	663	114	190	158	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	0.9	3.5	1.5	3.0	1.4	0.3
Cycle Q Clear(g_c), s	0.9	3.5	1.5	3.0	1.4	0.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	98	1850	551	492	423	281
V/C Ratio(X)	0.50	0.36	0.21	0.39	0.37	0.06
Avail Cap(c_a), veh/h	608	6011	2123	1894	2574	1268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	4.6	8.2	8.7	13.0	11.0
Incr Delay (d2), s/veh	3.9	0.0	0.1	0.2	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.4	0.7	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.7	4.6	8.3	8.9	13.5	11.1
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		712	304		174	
Approach Delay, s/veh		5.6	8.7		13.3	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.8	15.5		9.9		22.3
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	11.0	38.5		24.0		54.5
Max Q Clear Time (g_c+I1), s	2.9	5.0		3.4		5.5
Green Ext Time (p_c), s	0.0	1.2		0.5		3.2

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	90	10	10	20	5	45	5	1110	20	115	315	1790
Future Volume (vph)	90	10	10	20	5	45	5	1110	20	115	315	1790
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected	0.95	0.96	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1604	1441		1730	1531	1685	4829			1643	4826
Flt Permitted	0.95	0.96	1.00		0.96	1.00	0.08	1.00			0.18	1.00
Satd. Flow (perm)	1584	1604	1441		1730	1531	144	4829			315	4826
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	11	11	22	5	49	5	1207	22	125	342	1946
RTOR Reduction (vph)	0	0	10	0	0	47	0	1	0	0	0	7
Lane Group Flow (vph)	54	55	1	0	27	2	5	1228	0	0	467	2129
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	8.1	8.1	8.1		6.3	6.3	97.7	97.7			116.6	116.6
Effective Green, g (s)	8.1	8.1	8.1		6.3	6.3	97.7	97.7			116.6	116.6
Actuated g/C Ratio	0.05	0.05	0.05		0.04	0.04	0.65	0.65			0.78	0.78
Clearance Time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	85	86	77		72	64	93	3145			372	3751
v/s Ratio Prot	0.03	c0.03			c0.02			0.25			c0.12	0.44
v/s Ratio Perm			0.00			0.00	0.03				c0.85	
v/c Ratio	0.64	0.64	0.01		0.38	0.03	0.05	0.39			1.26	0.57
Uniform Delay, d1	69.5	69.5	67.1		69.9	68.9	9.4	12.2			19.4	6.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			2.28	0.87
Incremental Delay, d2	14.5	14.6	0.0		3.3	0.2	1.1	0.4			130.3	0.5
Delay (s)	84.0	84.1	67.2		73.2	69.1	10.5	12.6			174.6	6.3
Level of Service	F	F	E		E	E	B	B			F	A
Approach Delay (s)		82.5			70.6			12.6				36.5
Approach LOS		F			E			B				D

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	175
Future Volume (vph)	175
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	190
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	410	815	0	940	1580	515
Future Volume (veh/h)	410	815	0	940	1580	515
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	446	886	0	1022	1717	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	1215	981	0	2864	2818	
Arrive On Green	0.36	0.36	0.00	0.57	1.00	0.00
Sat Flow, veh/h	3358	2711	0	5374	5125	1540
Grp Volume(v), veh/h	446	886	0	1022	1717	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1681	1654	1540
Q Serve(g_s), s	14.7	46.5	0.0	16.5	0.0	0.0
Cycle Q Clear(g_c), s	14.7	46.5	0.0	16.5	0.0	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	1215	981	0	2864	2818	
V/C Ratio(X)	0.37	0.90	0.00	0.36	0.61	
Avail Cap(c_a), veh/h	1500	1211	0	2864	2818	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.75	0.00
Uniform Delay (d), s/veh	35.2	45.4	0.0	17.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	8.3	0.0	0.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	16.9	0.0	6.4	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.4	53.7	0.0	17.9	0.7	0.0
LnGrp LOS	D	D	A	B	A	
Approach Vol, veh/h	1332			1022	1717	A
Approach Delay, s/veh	47.6			17.9	0.7	
Approach LOS	D			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		90.7		59.3		90.7
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		72.5		67.0		72.5
Max Q Clear Time (g_c+I1), s		2.0		48.5		18.5
Green Ext Time (p_c), s		20.7		5.8		8.6

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

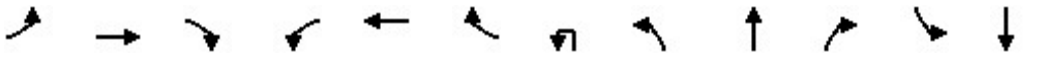
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	845	280	1010	340	0	1250
Future Volume (veh/h)	845	280	1010	340	0	1250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	918	0	1098	0	0	1359
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	907		3344		0	4214
Arrive On Green	0.26	0.00	1.00	0.00	0.00	0.66
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	918	0	1098	0	0	1359
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	39.5	0.0	0.0	0.0	0.0	13.7
Cycle Q Clear(g_c), s	39.5	0.0	0.0	0.0	0.0	13.7
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	907		3344		0	4214
V/C Ratio(X)	1.01		0.33		0.00	0.32
Avail Cap(c_a), veh/h	907		3344		0	4214
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.94	0.00	0.00	1.00
Uniform Delay (d), s/veh	55.2	0.0	0.0	0.0	0.0	10.8
Incr Delay (d2), s/veh	32.9	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	0.0	0.1	0.0	0.0	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	88.1	0.0	0.2	0.0	0.0	11.0
LnGrp LOS	F		A		A	B
Approach Vol, veh/h	918	A	1098	A		1359
Approach Delay, s/veh	88.1		0.2			11.0
Approach LOS	F		A			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		105.0		45.0		105.0
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		99.5		39.5		99.5
Max Q Clear Time (g_c+I1), s		15.7		41.5		2.0
Green Ext Time (p_c), s		13.6		0.0		9.7

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



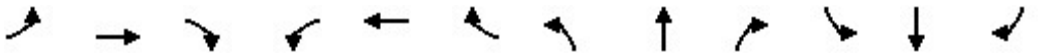
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	5	40	115	5	30	5	120	915	250	125	1430
Future Volume (vph)	20	5	40	115	5	30	5	120	915	250	125	1430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.96	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1465	1333	1561	1627	1418		1702	4891	1470	1619	4978
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.12	1.00	1.00	0.26	1.00
Satd. Flow (perm)		1465	1333	1561	1627	1418		220	4891	1470	438	4978
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	5	43	125	5	33	5	130	995	272	136	1554
RTOR Reduction (vph)	0	8	30	0	0	31	0	0	0	93	0	0
Lane Group Flow (vph)	0	28	4	65	65	2	0	135	995	179	136	1565
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		7.5	16.9	11.0	11.0	11.0		107.9	98.5	98.5	107.1	98.1
Effective Green, g (s)		7.5	16.9	11.0	11.0	11.0		107.9	98.5	98.5	107.1	98.1
Actuated g/C Ratio		0.05	0.11	0.07	0.07	0.07		0.72	0.66	0.66	0.71	0.65
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		73	150	114	119	103		251	3211	965	383	3255
v/s Ratio Prot		c0.02	0.00	c0.04	0.04			c0.03	0.20		0.02	0.31
v/s Ratio Perm			0.00			0.00		c0.35		0.12	0.23	
v/c Ratio		0.39	0.03	0.57	0.55	0.02		0.54	0.31	0.19	0.36	0.48
Uniform Delay, d1		69.0	59.2	67.2	67.1	64.5		8.7	11.1	10.1	6.9	13.1
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.20	1.24	5.81	1.00	1.00
Incremental Delay, d2		3.4	0.1	6.7	5.0	0.1		2.1	0.2	0.4	0.6	0.5
Delay (s)		72.4	59.3	73.9	72.1	64.6		12.6	14.0	58.9	7.5	13.6
Level of Service		E	E	E	E	E		B	B	E	A	B
Approach Delay (s)		66.1			71.3				22.6			13.1
Approach LOS		E			E				C			B

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	415	165	150	0	20	0	45	55	65	305	0
Future Volume (veh/h)	110	415	165	150	0	20	0	45	55	65	305	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	120	451	179	163	0	22	0	49	60	71	332	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	1117	1562	615	0	0	0	0	340	288	165	520	0
Arrive On Green	0.63	0.63	0.63	0.00	0.00	0.00	0.00	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	1781	2491	980		0		0	1870	1585	429	2947	0
Grp Volume(v), veh/h	120	321	309		0.0		0	49	60	217	186	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1694				0	1870	1585	1674	1617	0
Q Serve(g_s), s	1.5	4.5	4.6				0.0	1.2	1.8	4.7	5.8	0.0
Cycle Q Clear(g_c), s	1.5	4.5	4.6				0.0	1.2	1.8	6.6	5.8	0.0
Prop In Lane	1.00		0.58				0.00		1.00	0.33		0.00
Lane Grp Cap(c), veh/h	1117	1115	1063				0	340	288	391	294	0
V/C Ratio(X)	0.11	0.29	0.29				0.00	0.14	0.21	0.56	0.63	0.00
Avail Cap(c_a), veh/h	1117	1115	1063				0	340	288	391	294	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.1	4.7	4.7				0.0	18.9	19.1	21.0	20.8	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.7				0.0	0.2	0.4	1.7	4.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	1.3				0.0	0.5	0.6	2.6	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	5.3	5.4				0.0	19.1	19.5	22.7	25.1	0.0
LnGrp LOS	A	A	A				A	B	B	C	C	A
Approach Vol, veh/h		750						109			403	
Approach Delay, s/veh		5.2						19.3			23.8	
Approach LOS		A						B			C	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.0		40.0		15.0				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				10.0		34.5		10.0				
Max Q Clear Time (g_c+I1), s				8.6		6.6		3.8				
Green Ext Time (p_c), s				0.4		4.9		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			12.4									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	75	680	25	15	65	1810	185	140	310	285	95	95
Future Volume (vph)	75	680	25	15	65	1810	185	140	310	285	95	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	739	27	16	71	1967	201	152	337	310	103	103
RTOR Reduction (vph)	0	0	12	0	0	0	87	0	0	255	0	0
Lane Group Flow (vph)	82	739	15	0	87	1967	114	152	337	55	103	103
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	12.3	85.9	85.9		9.2	82.8	82.8	15.3	23.0	23.0	9.9	17.6
Effective Green, g (s)	12.3	85.9	85.9		9.2	82.8	82.8	15.3	23.0	23.0	9.9	17.6
Actuated g/C Ratio	0.08	0.57	0.57		0.06	0.55	0.55	0.10	0.15	0.15	0.07	0.12
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	145	2912	906		210	2806	873	180	542	242	226	218
v/s Ratio Prot	c0.05	c0.15			0.03	c0.39		c0.09	c0.10		0.03	0.06
v/s Ratio Perm			0.01				0.07			0.03		
v/c Ratio	0.57	0.25	0.02		0.41	0.70	0.13	0.84	0.62	0.23	0.46	0.47
Uniform Delay, d1	66.3	16.0	13.8		67.8	24.6	16.2	66.2	59.4	55.7	67.5	61.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.2	0.0		1.3	1.5	0.3	28.7	2.5	0.7	1.5	2.2
Delay (s)	71.3	16.2	13.9		69.1	26.0	16.5	94.8	61.9	56.4	68.9	64.1
Level of Service	E	B	B		E	C	B	F	E	E	E	E
Approach Delay (s)		21.5				26.9			66.0			63.2
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	175
Future Volume (vph)	175
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	190
RTOR Reduction (vph)	168
Lane Group Flow (vph)	22
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	17.6
Effective Green, g (s)	17.6
Actuated g/C Ratio	0.12
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	185
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.12
Uniform Delay, d1	59.3
Progression Factor	1.00
Incremental Delay, d2	0.4
Delay (s)	59.7
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

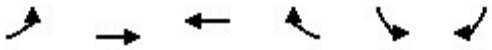
Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	100	1345	0	0	375
Future Vol, veh/h	20	100	1345	0	0	375
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	109	1462	0	0	408

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1666	731	0	-	-	-
Stage 1	1462	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	87	364	-	0	0	-
Stage 1	179	-	-	0	0	-
Stage 2	810	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	87	364	-	-	-	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	179	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37.1	0	0
HCM LOS	E		

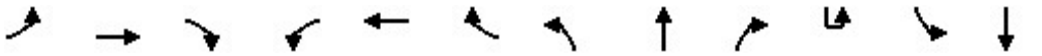
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	238	-
HCM Lane V/C Ratio	-	0.548	-
HCM Control Delay (s)	-	37.1	-
HCM Lane LOS	-	E	-
HCM 95th %tile Q(veh)	-	3	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	165	1005	440	210	75
Future Volume (veh/h)	15	165	1005	440	210	75
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	179	1092	478	228	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	35	2422	1391	592	393	211
Arrive On Green	0.02	0.68	0.57	0.57	0.11	0.11
Sat Flow, veh/h	1781	3647	2521	1034	3456	1585
Grp Volume(v), veh/h	16	179	791	779	228	82
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1684	1728	1585
Q Serve(g_s), s	0.5	0.9	19.2	20.6	3.5	2.7
Cycle Q Clear(g_c), s	0.5	0.9	19.2	20.6	3.5	2.7
Prop In Lane	1.00			0.61	1.00	1.00
Lane Grp Cap(c), veh/h	35	2422	1018	965	393	211
V/C Ratio(X)	0.46	0.07	0.78	0.81	0.58	0.39
Avail Cap(c_a), veh/h	159	4334	1850	1754	1230	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	3.0	9.2	9.5	23.6	22.2
Incr Delay (d2), s/veh	9.0	0.0	0.5	0.6	1.4	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	5.2	5.3	1.4	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.2	3.0	9.7	10.2	25.0	23.4
LnGrp LOS	D	A	A	B	C	C
Approach Vol, veh/h		195	1570		310	
Approach Delay, s/veh		5.7	9.9		24.6	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.1	37.7		12.4		43.8
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	5.0	58.5		20.0		68.5
Max Q Clear Time (g_c+I1), s	2.5	22.6		5.5		2.9
Green Ext Time (p_c), s	0.0	9.5		0.9		0.8

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	155	5	20	55	5	300	15	1630	30	20	90	775
Future Volume (vph)	155	5	20	55	5	300	15	1630	30	20	90	775
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.98
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1593	1441		1721	1531	1685	4829			1643	4804
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.29	1.00			0.07	1.00
Satd. Flow (perm)	1584	1593	1441		1721	1531	509	4829			121	4804
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	5	22	60	5	326	16	1772	33	22	98	842
RTOR Reduction (vph)	0	0	20	0	0	91	0	1	0	0	0	12
Lane Group Flow (vph)	86	87	2	0	65	235	16	1804	0	0	120	944
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	12.2	12.2	12.2		21.3	21.3	85.3	85.3			99.0	99.0
Effective Green, g (s)	12.2	12.2	12.2		21.3	21.3	85.3	85.3			99.0	99.0
Actuated g/C Ratio	0.08	0.08	0.08		0.14	0.14	0.57	0.57			0.66	0.66
Clearance Time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	128	129	117		244	217	289	2746			173	3170
v/s Ratio Prot	0.05	c0.05			0.04			0.37			c0.04	0.20
v/s Ratio Perm			0.00			c0.15	0.03				c0.41	
v/c Ratio	0.67	0.67	0.02		0.27	1.08	0.06	0.66			0.69	0.30
Uniform Delay, d1	67.0	67.0	63.4		57.4	64.3	14.4	22.3			20.0	10.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.72	1.98
Incremental Delay, d2	13.0	13.1	0.1		0.6	85.0	0.4	1.2			11.1	0.2
Delay (s)	80.0	80.0	63.4		58.0	149.4	14.8	23.5			45.6	21.6
Level of Service	E	F	E		E	F	B	C			D	C
Approach Delay (s)		78.1			134.2			23.4				24.3
Approach LOS		E			F			C				C

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	105
Future Volume (vph)	105
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	114
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	245	310	0	1255	680	830
Future Volume (veh/h)	245	310	0	1255	680	830
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	266	337	0	1364	739	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	500	404	0	3938	3875	
Arrive On Green	0.15	0.15	0.00	0.78	1.00	0.00
Sat Flow, veh/h	3358	2711	0	5374	5125	1540
Grp Volume(v), veh/h	266	337	0	1364	739	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1681	1654	1540
Q Serve(g_s), s	11.0	18.1	0.0	12.2	0.0	0.0
Cycle Q Clear(g_c), s	11.0	18.1	0.0	12.2	0.0	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	500	404	0	3938	3875	
V/C Ratio(X)	0.53	0.83	0.00	0.35	0.19	
Avail Cap(c_a), veh/h	828	669	0	3938	3875	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.93	0.00
Uniform Delay (d), s/veh	59.0	62.0	0.0	4.9	0.0	0.0
Incr Delay (d2), s/veh	0.9	4.7	0.0	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	6.6	0.0	3.7	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	59.9	66.7	0.0	5.2	0.1	0.0
LnGrp LOS	E	E	A	A	A	
Approach Vol, veh/h	603			1364	739	A
Approach Delay, s/veh	63.7			5.2	0.1	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		122.7		27.3		122.7
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		102.5		37.0		102.5
Max Q Clear Time (g_c+I1), s		2.0		20.1		14.2
Green Ext Time (p_c), s		5.7		2.2		13.8

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	375	650	820	680	0	1135
Future Volume (veh/h)	375	650	820	680	0	1135
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	408	0	891	0	0	1234
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	476		3976		0	5010
Arrive On Green	0.14	0.00	1.00	0.00	0.00	0.79
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	408	0	891	0	0	1234
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	17.4	0.0	0.0	0.0	0.0	7.6
Cycle Q Clear(g_c), s	17.4	0.0	0.0	0.0	0.0	7.6
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	476		3976		0	5010
V/C Ratio(X)	0.86		0.22		0.00	0.25
Avail Cap(c_a), veh/h	838		3976		0	5010
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.93	0.00	0.00	1.00
Uniform Delay (d), s/veh	63.2	0.0	0.0	0.0	0.0	4.2
Incr Delay (d2), s/veh	4.6	0.0	0.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	0.0	0.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.8	0.0	0.1	0.0	0.0	4.3
LnGrp LOS	E		A		A	A
Approach Vol, veh/h	408	A	891	A		1234
Approach Delay, s/veh	67.8		0.1			4.3
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		123.8		26.2		123.8
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		102.5		36.5		102.5
Max Q Clear Time (g_c+I1), s		9.6		19.4		2.0
Green Ext Time (p_c), s		11.6		1.4		7.2

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

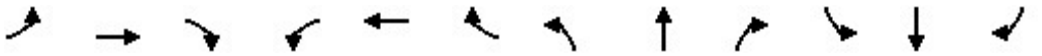
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	60	15	130	325	10	70	5	155	1100	210	75	1555
Future Volume (vph)	60	15	130	325	10	70	5	155	1100	210	75	1555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.95	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1457	1333	1561	1626	1418		1702	4891	1470	1619	4979
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.07	1.00	1.00	0.19	1.00
Satd. Flow (perm)		1457	1333	1561	1626	1418		127	4891	1470	331	4979
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	16	141	353	11	76	5	168	1196	228	82	1690
RTOR Reduction (vph)	0	10	57	0	0	65	0	0	0	102	0	0
Lane Group Flow (vph)	0	106	49	180	184	11	0	173	1196	126	82	1701
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		13.2	27.1	21.8	21.8	21.8		96.0	82.7	82.7	85.4	77.1
Effective Green, g (s)		13.2	27.1	21.8	21.8	21.8		96.0	82.7	82.7	85.4	77.1
Actuated g/C Ratio		0.09	0.18	0.15	0.15	0.15		0.64	0.55	0.55	0.57	0.51
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		128	240	226	236	206		227	2696	810	259	2559
v/s Ratio Prot		c0.07	0.02	c0.12	0.11			c0.07	0.24		0.02	0.34
v/s Ratio Perm			0.02			0.01		c0.42		0.09	0.16	
v/c Ratio		0.83	0.21	0.80	0.78	0.05		0.76	0.44	0.16	0.32	0.66
Uniform Delay, d1		67.3	52.3	62.0	61.8	55.2		33.3	20.0	16.5	15.1	26.9
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.39	0.60	0.15	1.00	1.00
Incremental Delay, d2		33.6	0.4	17.4	15.0	0.1		13.6	0.5	0.4	0.7	1.4
Delay (s)		100.9	52.7	79.4	76.7	55.3		59.9	12.4	2.9	15.8	28.3
Level of Service		F	D	E	E	E		E	B	A	B	C
Approach Delay (s)		77.9			74.1				16.2			27.7
Approach LOS		E			E				B			C

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



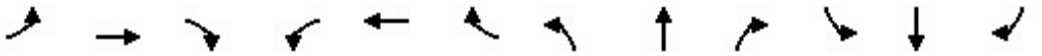
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	305	10	65	0	70	0	220	245	35	95	0
Future Volume (veh/h)	30	305	10	65	0	70	0	220	245	35	95	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	33	332	11	71	0	76	0	239	266	38	103	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	970	1911	63	0	0	0	0	416	352	194	482	0
Arrive On Green	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.22	0.22	0.22	0.22	0.00
Sat Flow, veh/h	1781	3510	116		0		0	1870	1585	314	2255	0
Grp Volume(v), veh/h	33	168	175		0.0		0	239	266	69	72	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1849				0	1870	1585	867	1617	0
Q Serve(g_s), s	0.4	2.1	2.1				0.0	5.1	7.1	0.2	1.6	0.0
Cycle Q Clear(g_c), s	0.4	2.1	2.1				0.0	5.1	7.1	5.3	1.6	0.0
Prop In Lane	1.00		0.06				0.00		1.00	0.55		0.00
Lane Grp Cap(c), veh/h	970	967	1007				0	416	352	317	359	0
V/C Ratio(X)	0.03	0.17	0.17				0.00	0.58	0.76	0.22	0.20	0.00
Avail Cap(c_a), veh/h	970	967	1007				0	416	352	317	359	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.8	5.2	5.2				0.0	15.6	16.4	14.3	14.2	0.0
Incr Delay (d2), s/veh	0.1	0.4	0.4				0.0	1.9	9.0	0.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.7	0.7				0.0	2.1	3.1	0.5	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.8	5.5	5.5				0.0	17.5	25.3	14.6	14.5	0.0
LnGrp LOS	A	A	A				A	B	C	B	B	A
Approach Vol, veh/h		376						505			141	
Approach Delay, s/veh		5.5						21.7			14.6	
Approach LOS		A						C			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.0		30.0		15.0				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				10.0		24.5		10.0				
Max Q Clear Time (g_c+I1), s				7.3		4.1		9.1				
Green Ext Time (p_c), s				0.2		2.1		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	835	110	355	565	230	10	245	285	240	425	5
Future Volume (veh/h)	15	835	110	355	565	230	10	245	285	240	425	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	908	120	386	614	250	11	266	310	261	462	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	1396	623	433	2164	965	164	391	174	332	695	8
Arrive On Green	0.39	0.39	0.39	0.15	0.61	0.61	0.01	0.11	0.11	0.10	0.19	0.19
Sat Flow, veh/h	640	3554	1585	1781	3554	1585	1781	3554	1585	3456	3601	39
Grp Volume(v), veh/h	16	908	120	386	614	250	11	266	310	261	228	239
Grp Sat Flow(s),veh/h/ln	640	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1863
Q Serve(g_s), s	1.6	20.8	5.0	12.2	8.2	7.3	0.5	7.2	11.0	7.4	11.9	11.9
Cycle Q Clear(g_c), s	1.6	20.8	5.0	12.2	8.2	7.3	0.5	7.2	11.0	7.4	11.9	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	324	1396	623	433	2164	965	164	391	174	332	343	359
V/C Ratio(X)	0.05	0.65	0.19	0.89	0.28	0.26	0.07	0.68	1.78	0.79	0.66	0.67
Avail Cap(c_a), veh/h	324	1396	623	565	2164	965	310	391	174	639	346	363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	24.7	19.9	18.5	9.2	9.1	38.7	42.8	44.5	44.2	37.4	37.4
Incr Delay (d2), s/veh	0.3	2.4	0.7	10.4	0.3	0.6	0.1	4.7	372.3	1.6	4.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	8.7	1.9	5.7	3.0	2.5	0.2	3.4	22.3	3.2	5.5	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	27.1	20.6	28.9	9.5	9.7	38.8	47.5	416.8	45.8	42.0	41.9
LnGrp LOS	B	C	C	C	A	A	D	D	F	D	D	D
Approach Vol, veh/h		1044			1250			587			728	
Approach Delay, s/veh		26.2			15.5			242.4			43.3	
Approach LOS		C			B			F			D	

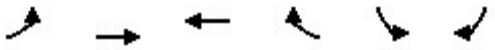
Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	67.4	6.8	25.8	21.6	45.8	15.1	17.5
Change Period (Y+Rc), s	6.5	5.5	6.5	7.0	* 6.5	5.5	* 6.5
Max Green Setting (Gmax), s	52.5	9.5	19.5	22.0	* 24	18.5	* 11
Max Q Clear Time (g_c+I1), s	10.2	2.5	13.9	14.2	22.8	9.4	13.0
Green Ext Time (p_c), s	12.0	0.0	1.3	0.4	0.9	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.1
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

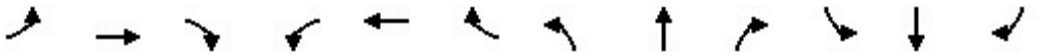
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	195	1165	1005	110	55	145
Future Volume (veh/h)	195	1165	1005	110	55	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	1266	1092	120	60	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	413	2750	2369	1057	207	275
Arrive On Green	0.06	0.77	0.67	0.67	0.12	0.12
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	212	1266	1092	120	60	158
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.5	12.5	14.8	2.7	3.1	9.2
Cycle Q Clear(g_c), s	3.5	12.5	14.8	2.7	3.1	9.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	413	2750	2369	1057	207	275
V/C Ratio(X)	0.51	0.46	0.46	0.11	0.29	0.57
Avail Cap(c_a), veh/h	792	2750	2369	1057	410	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.3	4.0	8.0	6.0	40.4	37.9
Incr Delay (d2), s/veh	0.2	0.3	0.6	0.2	0.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.3	4.9	0.8	1.4	8.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.6	4.3	8.7	6.2	41.2	39.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		1478	1212		218	
Approach Delay, s/veh		4.6	8.4		40.2	
Approach LOS		A	A		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	72.7		16.6		83.4
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	27.0	34.0		23.0		66.0
Max Q Clear Time (g_c+I1), s	5.5	16.8		11.2		14.5
Green Ext Time (p_c), s	0.3	5.0		0.5		7.6

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	595	10	410	865	145	155	275	405	295	160	25
Future Volume (veh/h)	5	595	10	410	865	145	155	275	405	295	160	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	647	11	446	940	158	168	299	440	321	174	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	1135	506	526	2030	905	359	462	206	393	444	68
Arrive On Green	0.32	0.32	0.32	0.18	0.57	0.57	0.10	0.13	0.13	0.11	0.14	0.14
Sat Flow, veh/h	514	3554	1585	1781	3554	1585	1781	3554	1585	3456	3091	472
Grp Volume(v), veh/h	5	647	11	446	940	158	168	299	440	321	99	102
Grp Sat Flow(s),veh/h/ln	514	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1785
Q Serve(g_s), s	0.7	15.2	0.5	16.0	15.4	4.7	8.0	8.0	13.0	9.1	5.0	5.2
Cycle Q Clear(g_c), s	0.7	15.2	0.5	16.0	15.4	4.7	8.0	8.0	13.0	9.1	5.0	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	236	1135	506	526	2030	905	359	462	206	393	255	257
V/C Ratio(X)	0.02	0.57	0.02	0.85	0.46	0.17	0.47	0.65	2.14	0.82	0.39	0.40
Avail Cap(c_a), veh/h	236	1135	506	558	2030	905	439	462	206	743	346	348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	28.3	23.3	18.6	12.5	10.2	32.8	41.3	43.5	43.3	38.8	38.9
Incr Delay (d2), s/veh	0.2	2.1	0.1	8.0	0.6	0.3	0.4	3.1	526.8	1.6	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.5	0.2	7.2	5.8	1.7	3.5	3.7	35.2	3.9	2.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	30.4	23.4	26.6	13.1	10.5	33.2	44.5	570.3	44.9	39.8	39.9
LnGrp LOS	C	C	C	C	B	B	C	D	F	D	D	D
Approach Vol, veh/h		663			1544			907			522	
Approach Delay, s/veh		30.2			16.7			297.5			42.9	
Approach LOS		C			B			F			D	

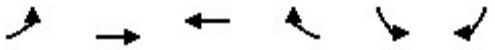
Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	63.6	15.5	20.9	25.2	38.4	16.9	19.5
Change Period (Y+Rc), s	6.5	5.5	6.5	7.0	* 6.5	5.5	* 6.5
Max Green Setting (Gmax), s	47.5	14.5	19.5	20.0	* 21	21.5	* 13
Max Q Clear Time (g_c+I1), s	17.4	10.0	7.2	18.0	17.2	11.1	15.0
Green Ext Time (p_c), s	15.1	0.1	0.8	0.2	2.1	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	93.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	1190	1065	40	165	355
Future Volume (veh/h)	105	1190	1065	40	165	355
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	1293	1158	43	179	386
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	321	2345	1998	891	410	440
Arrive On Green	0.05	0.66	0.56	0.56	0.23	0.23
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	114	1293	1158	43	179	386
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	2.5	19.4	21.2	1.2	8.6	23.0
Cycle Q Clear(g_c), s	2.5	19.4	21.2	1.2	8.6	23.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	321	2345	1998	891	410	440
V/C Ratio(X)	0.36	0.55	0.58	0.05	0.44	0.88
Avail Cap(c_a), veh/h	538	2345	1998	891	410	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	9.1	14.2	9.9	33.0	34.5
Incr Delay (d2), s/veh	0.1	0.5	1.2	0.1	0.7	17.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.6	7.9	0.4	3.8	20.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.0	9.6	15.5	10.0	33.7	52.2
LnGrp LOS	B	A	B	A	C	D
Approach Vol, veh/h		1407	1201		565	
Approach Delay, s/veh		9.7	15.3		46.3	
Approach LOS		A	B		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.8	62.2		28.0		72.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	17.0	44.0		23.0		66.0
Max Q Clear Time (g_c+I1), s	4.5	23.2		25.0		21.4
Green Ext Time (p_c), s	0.1	5.5		0.0		7.8

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	1790	290	15	110	1730	40	60	5	165	15	5
Future Volume (vph)	5	1790	290	15	110	1730	40	60	5	165	15	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5		6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00		1.00
Frt	1.00	0.98			1.00	1.00			1.00	0.85		1.00
Flt Protected	0.95	1.00			0.95	1.00			0.96	1.00		0.96
Satd. Flow (prot)	1906	5196			1585	5043			1661	1478		1795
Flt Permitted	0.10	1.00			0.13	1.00			0.73	1.00		0.73
Satd. Flow (perm)	207	5196			209	5043			1262	1478		1363
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1946	315	16	120	1880	43	65	5	179	16	5
RTOR Reduction (vph)	0	19	0	0	0	1	0	0	0	17	0	0
Lane Group Flow (vph)	5	2242	0	0	136	1922	0	0	70	162	0	21
Turn Type	Perm	NA		custom	Prot	NA		Perm	NA	pm+ov	Perm	NA
Protected Phases		6			5	2			4	5!		8
Permitted Phases	6			5!				4		4	8	
Actuated Green, G (s)	57.7	57.7			31.9	96.1			11.4	43.3		11.4
Effective Green, g (s)	57.7	57.7			31.9	96.1			11.4	43.3		11.4
Actuated g/C Ratio	0.48	0.48			0.27	0.80			0.10	0.36		0.10
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5		6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	5.0		4.0
Lane Grp Cap (vph)	99	2498			55	4038			119	613		129
v/s Ratio Prot		c0.43				0.38				0.07		
v/s Ratio Perm	0.02				c0.65				c0.06	0.04		0.02
v/c Ratio	0.05	0.90			2.47	0.48			0.59	0.26		0.16
Uniform Delay, d1	16.6	28.5			44.0	3.8			52.1	27.1		49.9
Progression Factor	1.00	1.00			1.21	0.38			1.00	1.00		1.00
Incremental Delay, d2	1.0	5.6			706.4	0.3			8.5	0.5		0.8
Delay (s)	17.5	34.1			759.6	1.8			60.6	27.6		50.7
Level of Service	B	C			F	A			E	C		D
Approach Delay (s)		34.0				51.9			36.8			50.4
Approach LOS		C				D			D			D

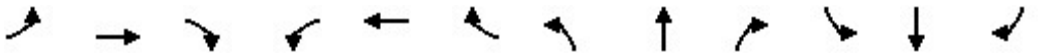
Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1584
Flt Permitted	1.00
Satd. Flow (perm)	1584
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	5
RTOR Reduction (vph)	5
Lane Group Flow (vph)	0
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	11.4
Effective Green, g (s)	11.4
Actuated g/C Ratio	0.10
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	150
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.00
Uniform Delay, d1	49.2
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	49.2
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary



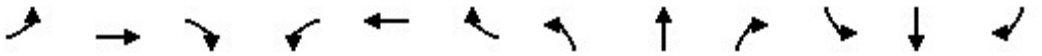
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑↑					↰↰		↱
Traffic Volume (veh/h)	0	925	1060	0	1800	0	0	0	0	460	0	95
Future Volume (veh/h)	0	925	1060	0	1800	0	0	0	0	460	0	95
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1005	0	0	1957	0				500	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2606		0	3685	0				578	0	
Arrive On Green	0.00	1.00	0.00	0.00	0.74	0.00				0.16	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1005	0	0	1957	0				500	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	0.0	0.0	0.0	20.1	0.0				16.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	20.1	0.0				16.3	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2606		0	3685	0				578	0	
V/C Ratio(X)	0.00	0.39		0.00	0.53	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	2606		0	3685	0				731	0	
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.44	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	6.6	0.0				49.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.6	0.0				8.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	5.6	0.0				8.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	7.1	0.0				57.8	0.0	0.0
LnGrp LOS	A	A		A	A	A				E	A	
Approach Vol, veh/h		1005	A		1957						500	A
Approach Delay, s/veh		0.2			7.1						57.8	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		95.1		24.9		95.1						
Change Period (Y+Rc), s		6.0		5.5		6.0						
Max Green Setting (Gmax), s		84.0		24.5		84.0						
Max Q Clear Time (g_c+I1), s		22.1		18.3		2.0						
Green Ext Time (p_c), s		2.9		1.0		1.1						

Intersection Summary		
HCM 6th Ctrl Delay		12.4
HCM 6th LOS		B

Notes

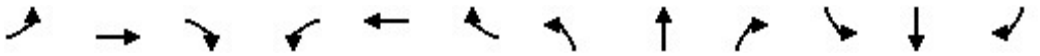
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	960	0	0	765	15	0	150	195	20	0	285
Future Volume (vph)	315	960	0	0	765	15	0	150	195	20	0	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5147			1867	1587	1783		1595
Flt Permitted	0.24	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	429	3504			5147			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	1043	0	0	832	16	0	163	212	22	0	310
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	174	0	0	34
Lane Group Flow (vph)	342	1043	0	0	846	0	0	163	38	22	0	276
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	69.5	69.5			47.6			21.5	21.5	10.5		61.4
Effective Green, g (s)	69.5	69.5			47.6			21.5	21.5	10.5		49.4
Actuated g/C Ratio	0.58	0.58			0.40			0.18	0.18	0.09		0.41
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	431	2029			2041			334	284	156		656
v/s Ratio Prot	c0.11	0.30			0.16			c0.09		0.01		c0.17
v/s Ratio Perm	c0.34								0.02			
v/c Ratio	0.79	0.51			0.41			0.49	0.13	0.14		0.42
Uniform Delay, d1	15.1	15.1			26.1			44.3	41.4	50.6		25.1
Progression Factor	0.91	0.44			1.34			1.00	1.00	1.00		1.00
Incremental Delay, d2	9.9	0.8			0.5			3.1	0.6	1.2		0.9
Delay (s)	23.6	7.5			35.5			47.4	42.0	51.8		26.0
Level of Service	C	A			D			D	D	D		C
Approach Delay (s)		11.5			35.5			44.4			27.7	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1165	5	5	745	10	10	5	10	70	5	25
Future Volume (vph)	5	1165	5	5	745	10	10	5	10	70	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	
Satd. Flow (prot)	1702	1852		1787	1815			1801	1531		1647	
Flt Permitted	0.30	1.00		0.12	1.00			0.86	1.00		0.78	
Satd. Flow (perm)	545	1852		221	1815			1596	1531		1331	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1266	5	5	810	11	11	5	11	76	5	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	11	0
Lane Group Flow (vph)	5	1271	0	5	821	0	0	16	1	0	97	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	98.1	98.1		98.1	98.1			13.9	13.9		13.9	
Effective Green, g (s)	98.1	98.1		98.1	98.1			13.9	13.9		13.9	
Actuated g/C Ratio	0.82	0.82		0.82	0.82			0.12	0.12		0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	445	1514		180	1483			184	177		154	
v/s Ratio Prot		c0.69			0.45							
v/s Ratio Perm	0.01			0.02				0.01	0.00		c0.07	
v/c Ratio	0.01	0.84		0.03	0.55			0.09	0.01		0.63	
Uniform Delay, d1	2.0	6.4		2.0	3.6			47.4	46.9		50.6	
Progression Factor	0.81	1.94		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	3.8		0.3	1.5			0.2	0.0		8.2	
Delay (s)	1.6	16.1		2.3	5.1			47.6	47.0		58.8	
Level of Service	A	B		A	A			D	D		E	
Approach Delay (s)		16.1			5.1			47.3			58.8	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	1985	65	15	255	2055	15	80	5	140	35	5
Future Volume (vph)	5	1985	65	15	255	2055	15	80	5	140	35	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5		6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00		1.00
Frt	1.00	1.00			1.00	1.00			1.00	0.85		1.00
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00		0.96
Satd. Flow (prot)	1906	5282			1585	5054			1660	1478		1785
Flt Permitted	0.07	1.00			0.14	1.00			0.71	1.00		0.69
Satd. Flow (perm)	145	5282			240	5054			1228	1478		1279
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2158	71	16	277	2234	16	87	5	152	38	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	17	0	0
Lane Group Flow (vph)	5	2226	0	0	293	2250	0	0	92	135	0	43
Turn Type	Perm	NA		custom	Prot	NA		Perm	NA	pm+ov	Perm	NA
Protected Phases		6			5	2			4	5!		8
Permitted Phases	6			5!				4		4	8	
Actuated Green, G (s)	58.0	58.0			27.8	92.3			15.2	43.0		15.2
Effective Green, g (s)	58.0	58.0			27.8	92.3			15.2	43.0		15.2
Actuated g/C Ratio	0.48	0.48			0.23	0.77			0.13	0.36		0.13
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5		6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	5.0		4.0
Lane Grp Cap (vph)	70	2552			55	3887			155	609		162
v/s Ratio Prot		c0.42				0.45				0.05		
v/s Ratio Perm	0.03				c1.22				c0.07	0.04		0.03
v/c Ratio	0.07	0.87			5.33	0.58			0.59	0.22		0.27
Uniform Delay, d1	16.6	27.7			46.1	5.8			49.5	26.8		47.4
Progression Factor	1.00	1.00			1.24	0.38			1.00	1.00		1.00
Incremental Delay, d2	2.0	4.5			1975.8	0.5			7.0	0.4		1.2
Delay (s)	18.6	32.2			2033.1	2.6			56.4	27.2		48.6
Level of Service	B	C			F	A			E	C		D
Approach Delay (s)		32.1				236.6			38.2			48.0
Approach LOS		C				F			D			D

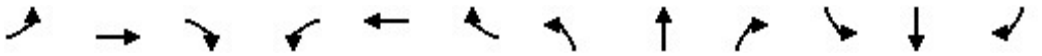
Intersection Summary			
HCM 2000 Control Delay	135.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1584
Flt Permitted	1.00
Satd. Flow (perm)	1584
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	10
Lane Group Flow (vph)	1
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	15.2
Effective Green, g (s)	15.2
Actuated g/C Ratio	0.13
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	200
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.01
Uniform Delay, d1	45.8
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	45.8
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary



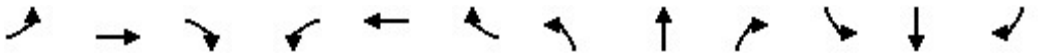
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	935	1240	0	2235	0	0	0	0	505	0	105
Future Volume (veh/h)	0	935	1240	0	2235	0	0	0	0	505	0	105
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1016	0	0	2429	0				549	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2562		0	3622	0				624	0	
Arrive On Green	0.00	1.00	0.00	0.00	0.73	0.00				0.17	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1016	0	0	2429	0				549	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	0.0	0.0	0.0	31.1	0.0				17.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	31.1	0.0				17.9	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2562		0	3622	0				624	0	
V/C Ratio(X)	0.00	0.40		0.00	0.67	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2562		0	3622	0				731	0	
HCM Platoon Ratio	1.00	1.67	1.67	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.44	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	8.6	0.0				48.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.0	0.0				10.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	9.0	0.0				8.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	9.6	0.0				59.1	0.0	0.0
LnGrp LOS	A	A		A	A	A				E	A	
Approach Vol, veh/h		1016	A		2429						549	A
Approach Delay, s/veh		0.2			9.6						59.1	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		93.6		26.4		93.6						
Change Period (Y+Rc), s		6.0		5.5		6.0						
Max Green Setting (Gmax), s		84.0		24.5		84.0						
Max Q Clear Time (g_c+I1), s		33.1		19.9		2.0						
Green Ext Time (p_c), s		4.1		0.9		1.1						

Intersection Summary		
HCM 6th Ctrl Delay		14.0
HCM 6th LOS		B

Notes

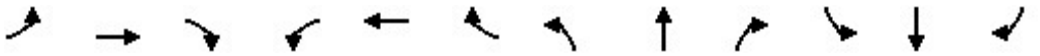
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	1100	0	0	1125	35	0	250	180	30	0	405
Future Volume (vph)	260	1100	0	0	1125	35	0	250	180	30	0	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5138			1867	1587	1783		1595
Flt Permitted	0.12	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	207	3504			5138			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	1196	0	0	1223	38	0	272	196	33	0	440
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	112	0	0	19
Lane Group Flow (vph)	283	1196	0	0	1259	0	0	272	84	33	0	421
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	66.2	66.2			47.5			25.4	25.4	9.9		61.5
Effective Green, g (s)	66.2	66.2			47.5			25.4	25.4	9.9		49.5
Actuated g/C Ratio	0.55	0.55			0.40			0.21	0.21	0.08		0.41
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	290	1933			2033			395	335	147		657
v/s Ratio Prot	c0.12	0.34			0.24			c0.15		0.02		c0.26
v/s Ratio Perm	c0.42								0.05			
v/c Ratio	0.98	0.62			0.62			0.69	0.25	0.22		0.64
Uniform Delay, d1	28.8	18.3			29.0			43.7	39.4	51.5		28.2
Progression Factor	1.11	0.53			1.22			1.00	1.00	1.00		1.00
Incremental Delay, d2	42.5	1.3			0.9			7.4	1.1	2.2		2.9
Delay (s)	74.4	11.0			36.3			51.1	40.5	53.6		31.1
Level of Service	E	B			D			D	D	D		C
Approach Delay (s)		23.1			36.3			46.6			32.7	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

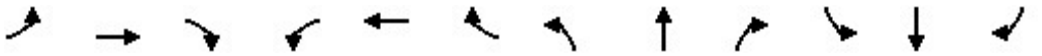
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1265	15	5	1090	10	5	5	10	20	5	65
Future Volume (vph)	30	1265	15	5	1090	10	5	5	10	20	5	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1702	1850		1787	1816			1817	1531		1574	
Flt Permitted	0.17	1.00		0.09	1.00			0.84	1.00		0.93	
Satd. Flow (perm)	312	1850		176	1816			1570	1531		1474	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1375	16	5	1185	11	5	5	11	22	5	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	65	0
Lane Group Flow (vph)	33	1391	0	5	1196	0	0	10	1	0	33	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	102.3	102.3		102.3	102.3			9.7	9.7		9.7	
Effective Green, g (s)	102.3	102.3		102.3	102.3			9.7	9.7		9.7	
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.08	0.08		0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	265	1577		150	1548			126	123		119	
v/s Ratio Prot		c0.75			0.66							
v/s Ratio Perm	0.11			0.03				0.01	0.00		c0.02	
v/c Ratio	0.12	0.88		0.03	0.77			0.08	0.01		0.28	
Uniform Delay, d1	1.5	5.3		1.3	3.8			51.0	50.7		51.8	
Progression Factor	0.66	3.13		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	5.1		0.4	3.8			0.3	0.0		1.3	
Delay (s)	1.1	21.6		1.8	7.6			51.3	50.7		53.1	
Level of Service	A	C		A	A			D	D		D	
Approach Delay (s)		21.1			7.6			51.0			53.1	
Approach LOS		C			A			D			D	

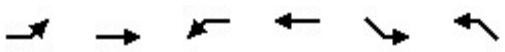
Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	815	130	495	425	105	145	125	140	410	745	235
Future Volume (vph)	120	815	130	495	425	105	145	125	140	410	745	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.18	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	344	3592	1607	918	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	886	141	538	462	114	158	136	152	446	810	255
RTOR Reduction (vph)	0	0	75	0	0	49	0	0	83	0	0	0
Lane Group Flow (vph)	130	886	66	538	462	65	158	136	69	446	810	255
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	16.5	35.1	50.2	33.3	52.4	85.8	37.3	22.2	68.4	62.6	41.0	150.0
Effective Green, g (s)	16.5	35.1	50.2	33.3	52.4	85.8	37.3	22.2	68.4	62.6	41.0	150.0
Actuated g/C Ratio	0.11	0.23	0.33	0.22	0.35	0.57	0.25	0.15	0.46	0.42	0.27	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	190	811	519	777	1261	923	231	531	807	576	977	1599
v/s Ratio Prot	0.07	c0.26	0.01	c0.15	0.13	0.02	0.07	0.04	0.02	c0.17	c0.23	
v/s Ratio Perm			0.03			0.02	0.10		0.02	0.15		0.16
v/c Ratio	0.68	1.09	0.13	0.69	0.37	0.07	0.68	0.26	0.09	0.77	0.83	0.16
Uniform Delay, d1	64.2	57.5	34.7	53.6	36.4	14.3	46.9	56.6	23.1	34.2	51.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	59.8	0.1	2.7	0.8	0.0	8.1	0.3	0.0	6.4	5.9	0.2
Delay (s)	74.0	117.3	34.8	56.3	37.2	14.3	55.0	56.8	23.1	40.7	57.1	0.2
Level of Service	E	F	C	E	D	B	E	E	C	D	E	A
Approach Delay (s)		102.4			44.1			44.7			42.7	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	59.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Traffic Volume (vph)	500	350	550	280	180	80
Future Volume (vph)	500	350	550	280	180	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	1770	3539	3433	3539	1770	3433
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	1770	3539	3433	3539	1770	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	543	380	598	304	196	87
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	543	380	598	304	196	87
Turn Type	Prot	NA	Prot	NA	Prot	Prot
Protected Phases	1	5	6	2	4	8
Permitted Phases						
Actuated Green, G (s)	31.0	32.5	41.0	42.5	23.0	23.0
Effective Green, g (s)	31.0	32.5	41.0	42.5	23.0	23.0
Actuated g/C Ratio	0.26	0.27	0.34	0.35	0.19	0.19
Clearance Time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Grp Cap (vph)	457	958	1172	1253	339	657
v/s Ratio Prot	c0.31	0.11	c0.17	0.09	c0.11	0.03
v/s Ratio Perm						
v/c Ratio	1.19	0.40	0.51	0.24	0.58	0.13
Uniform Delay, d1	44.5	35.7	31.5	27.4	44.1	40.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	104.8	1.2	1.6	0.5	7.0	0.4
Delay (s)	149.3	37.0	33.1	27.8	51.1	40.6
Level of Service	F	D	C	C	D	D
Approach Delay (s)		103.0		31.3		
Approach LOS		F		C		

Intersection Summary			
HCM 2000 Control Delay	64.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	320	855	35	10	510	70	50	5	10	35	5
Future Volume (vph)	5	320	855	35	10	510	70	50	5	10	35	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	0.98		1.00	0.90			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.96
Satd. Flow (prot)		1770	3518		1805	3545		1736	1639			1724
Flt Permitted		0.34	1.00		0.30	1.00		0.73	1.00			0.74
Satd. Flow (perm)		631	3518		563	3545		1332	1639			1331
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	348	929	38	11	554	76	54	5	11	38	5
RTOR Reduction (vph)	0	0	1	0	0	8	0	0	10	0	0	0
Lane Group Flow (vph)	0	353	966	0	11	622	0	54	6	0	0	43
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		64.5	64.5		44.4	44.4		7.4	7.4			7.4
Effective Green, g (s)		64.5	64.5		44.4	44.4		7.4	7.4			7.4
Actuated g/C Ratio		0.76	0.76		0.53	0.53		0.09	0.09			0.09
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		672	2688		296	1864		116	143			116
v/s Ratio Prot		0.09	0.27			0.18			0.00			
v/s Ratio Perm		c0.31			0.02			0.04				0.03
v/c Ratio		0.53	0.36		0.04	0.33		0.47	0.04			0.37
Uniform Delay, d1		3.8	3.2		9.7	11.5		36.6	35.3			36.3
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		0.7	0.1		0.2	0.5		2.9	0.1			2.0
Delay (s)		4.6	3.3		9.9	12.0		39.6	35.4			38.3
Level of Service		A	A		A	B		D	D			D
Approach Delay (s)			3.7			11.9			38.6			85.0
Approach LOS			A			B			D			F

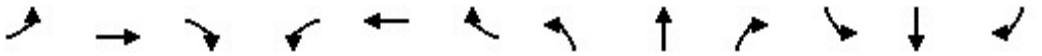
Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	18.5
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	495
Future Volume (vph)	495
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	538
RTOR Reduction (vph)	131
Lane Group Flow (vph)	407
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	21.5
Effective Green, g (s)	21.5
Actuated g/C Ratio	0.25
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	390
v/s Ratio Prot	c0.17
v/s Ratio Perm	0.09
v/c Ratio	1.04
Uniform Delay, d1	31.5
Progression Factor	1.00
Incremental Delay, d2	57.3
Delay (s)	88.7
Level of Service	F
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	450	190	265	750	230	155	885	445	120	170	125
Future Volume (vph)	150	450	190	265	750	230	155	885	445	120	170	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.61	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	1155	3592	1607	180	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	489	207	288	815	250	168	962	484	130	185	136
RTOR Reduction (vph)	0	0	118	0	0	96	0	0	258	0	0	0
Lane Group Flow (vph)	163	489	89	288	815	154	168	962	226	130	185	136
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	19.4	51.6	64.3	18.4	51.1	63.4	54.4	41.7	70.0	54.1	41.8	150.0
Effective Green, g (s)	19.4	51.6	64.3	18.4	51.1	63.4	54.4	41.7	70.0	54.1	41.8	150.0
Actuated g/C Ratio	0.13	0.34	0.43	0.12	0.34	0.42	0.36	0.28	0.47	0.36	0.28	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	224	1192	665	429	1229	682	473	998	824	196	996	1599
v/s Ratio Prot	c0.09	0.14	0.01	0.08	c0.23	0.02	0.03	c0.27	c0.03	c0.05	0.05	
v/s Ratio Perm			0.05			0.08	0.10		0.11	0.18		c0.09
v/c Ratio	0.73	0.41	0.13	0.67	0.66	0.23	0.36	0.96	0.27	0.66	0.19	0.09
Uniform Delay, d1	62.8	37.6	26.0	62.9	42.1	27.6	33.6	53.4	24.5	38.2	41.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.2	1.0	0.1	4.1	2.8	0.2	0.5	20.1	0.2	8.2	0.1	0.1
Delay (s)	73.9	38.6	26.1	67.0	44.9	27.8	34.1	73.5	24.6	46.3	41.2	0.1
Level of Service	E	D	C	E	D	C	C	E	C	D	D	A
Approach Delay (s)		42.3			46.5			54.8			30.3	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Traffic Volume (vph)	490	405	510	310	340	270
Future Volume (vph)	490	405	510	310	340	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	1770	3539	3433	3539	1770	3433
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	1770	3539	3433	3539	1770	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	533	440	554	337	370	293
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	533	440	554	337	370	293
Turn Type	Prot	NA	Prot	NA	Prot	Prot
Protected Phases	1	5	6	2	4	8
Permitted Phases						
Actuated Green, G (s)	51.0	52.5	41.0	42.5	53.0	53.0
Effective Green, g (s)	51.0	52.5	41.0	42.5	53.0	53.0
Actuated g/C Ratio	0.30	0.31	0.24	0.25	0.31	0.31
Clearance Time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Grp Cap (vph)	531	1092	827	884	551	1070
v/s Ratio Prot	c0.30	0.12	c0.16	0.10	c0.21	0.09
v/s Ratio Perm						
v/c Ratio	1.00	0.40	0.67	0.38	0.67	0.27
Uniform Delay, d1	59.5	46.4	58.4	52.8	50.9	44.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.0	1.1	4.3	1.2	6.4	0.6
Delay (s)	99.5	47.5	62.7	54.1	57.3	44.7
Level of Service	F	D	E	D	E	D
Approach Delay (s)		76.0		59.4		
Approach LOS		E		E		

Intersection Summary			
HCM 2000 Control Delay	63.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	10	330	850	50	5	705	20	45	5	5	10	10
Future Volume (vph)	10	330	850	50	5	705	20	45	5	5	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	1.00		1.00	0.93			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.98
Satd. Flow (prot)		1770	3510		1805	3595		1736	1691			1757
Flt Permitted		0.27	1.00		0.29	1.00		0.74	1.00			0.84
Satd. Flow (perm)		499	3510		557	3595		1358	1691			1507
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	359	924	54	5	766	22	49	5	5	11	11
RTOR Reduction (vph)	0	0	2	0	0	1	0	0	5	0	0	0
Lane Group Flow (vph)	0	370	976	0	5	787	0	49	5	0	0	22
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		68.4	68.4		45.1	45.1		5.6	5.6			5.6
Effective Green, g (s)		68.4	68.4		45.1	45.1		5.6	5.6			5.6
Actuated g/C Ratio		0.79	0.79		0.52	0.52		0.06	0.06			0.06
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		648	2775		290	1874		87	109			97
v/s Ratio Prot		0.11	0.28			0.22			0.00			
v/s Ratio Perm		c0.34			0.01			0.04				0.01
v/c Ratio		0.57	0.35		0.02	0.42		0.56	0.05			0.23
Uniform Delay, d1		4.4	2.6		10.0	12.7		39.3	38.0			38.4
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		1.2	0.1		0.1	0.7		8.1	0.2			1.2
Delay (s)		5.6	2.7		10.1	13.4		47.4	38.1			39.6
Level of Service		A	A		B	B		D	D			D
Approach Delay (s)			3.5			13.4			45.8			48.2
Approach LOS			A			B			D			D

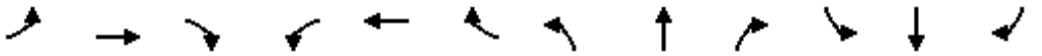
Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	18.5
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	370
Future Volume (vph)	370
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	402
RTOR Reduction (vph)	49
Lane Group Flow (vph)	353
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	22.9
Effective Green, g (s)	22.9
Actuated g/C Ratio	0.26
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	405
v/s Ratio Prot	c0.17
v/s Ratio Perm	0.06
v/c Ratio	0.87
Uniform Delay, d1	30.4
Progression Factor	1.00
Incremental Delay, d2	18.3
Delay (s)	48.7
Level of Service	D
Approach Delay (s)	
Approach LOS	

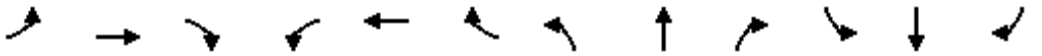
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	690	660	445	260	30	140	10	215	5	25	10
Future Volume (vph)	20	690	660	445	260	30	140	10	215	5	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3484		1681	1696	1583		1848	1583
Flt Permitted	0.56	1.00	1.00	0.17	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (perm)	1043	3539	1583	321	3484		1681	1696	1583		1848	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	750	717	484	283	33	152	11	234	5	27	11
RTOR Reduction (vph)	0	0	157	0	8	0	0	0	0	0	0	11
Lane Group Flow (vph)	22	750	560	484	308	0	81	82	234	0	32	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA	Free	Split	NA	Perm
Protected Phases		6	3	5	2		3	3		4	4	
Permitted Phases	6		6	2					Free			4
Actuated Green, G (s)	17.2	17.2	35.8	48.4	48.4		18.6	18.6	90.0		4.0	4.0
Effective Green, g (s)	17.2	17.2	35.8	48.4	48.4		18.6	18.6	90.0		4.0	4.0
Actuated g/C Ratio	0.19	0.19	0.40	0.54	0.54		0.21	0.21	1.00		0.04	0.04
Clearance Time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	199	676	629	578	1873		347	350	1583		82	70
v/s Ratio Prot		c0.21	c0.18	c0.23	0.09		0.05	0.05			c0.02	
v/s Ratio Perm	0.02		0.17	0.22					0.15			0.00
v/c Ratio	0.11	1.11	0.89	0.84	0.16		0.23	0.23	0.15		0.39	0.01
Uniform Delay, d1	30.1	36.4	25.3	21.0	10.5		29.8	29.8	0.0		41.8	41.1
Progression Factor	1.00	1.00	1.00	1.17	1.10		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	68.6	15.0	9.6	0.2		0.5	0.5	0.2		1.1	0.0
Delay (s)	31.2	105.0	40.3	34.1	11.7		30.2	30.2	0.2		42.9	41.1
Level of Service	C	F	D	C	B		C	C	A		D	D
Approach Delay (s)		72.8			25.3			12.5			42.5	
Approach LOS		E			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	49.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

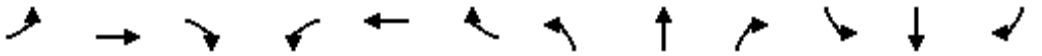
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	660	225	565	680	25	50	15	405	10	20	5
Future Volume (vph)	25	660	225	565	680	25	50	15	405	10	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	6.5	4.0	7.0	5.5	5.5	5.5	6.0	4.0	6.0	6.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.37	1.00	1.00	0.15	1.00	1.00	0.43	1.00	1.00	0.89	1.00	1.00
Satd. Flow (perm)	691	3539	1583	278	3539	1583	793	3539	1583	1656	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	717	245	614	739	27	54	16	440	11	22	5
RTOR Reduction (vph)	0	0	0	0	0	11	0	0	0	0	0	0
Lane Group Flow (vph)	27	717	245	614	739	16	54	16	440	11	22	5
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		Free	2		2	4		Free	8		Free
Actuated Green, G (s)	24.6	22.4	90.0	61.9	52.2	52.2	16.0	9.4	90.0	5.7	4.5	90.0
Effective Green, g (s)	24.6	22.4	90.0	61.9	52.2	52.2	16.0	9.4	90.0	5.7	4.5	90.0
Actuated g/C Ratio	0.27	0.25	1.00	0.69	0.58	0.58	0.18	0.10	1.00	0.06	0.05	1.00
Clearance Time (s)	7.5	6.5		7.0	5.5	5.5	5.5	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	3.0		3.0	3.0	3.0	2.0	1.0		2.0	3.0	
Lane Grp Cap (vph)	215	880	1583	713	2052	918	212	369	1583	106	176	1583
v/s Ratio Prot	0.00	0.20		c0.30	0.21		0.02	0.00		0.00	0.01	
v/s Ratio Perm	0.03		0.15	c0.29		0.01	0.03		c0.28	0.01		0.00
v/c Ratio	0.13	0.81	0.15	0.86	0.36	0.02	0.25	0.04	0.28	0.10	0.12	0.00
Uniform Delay, d1	24.7	31.8	0.0	19.7	10.0	8.0	31.5	36.3	0.0	39.7	40.9	0.0
Progression Factor	1.35	1.19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	5.3	0.1	10.4	0.5	0.0	0.2	0.0	0.4	0.2	0.3	0.0
Delay (s)	33.5	43.1	0.1	30.1	10.5	8.1	31.7	36.3	0.4	39.9	41.2	0.0
Level of Service	C	D	A	C	B	A	C	D	A	D	D	A
Approach Delay (s)		32.2			19.2			4.9			35.4	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

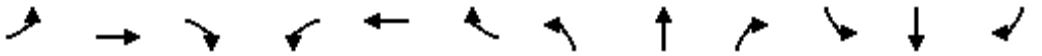
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	390	230	320	600	5	880	10	380	10	10	5
Future Volume (vph)	5	390	230	320	600	5	880	10	380	10	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3535		1681	1687	1583		1817	1583
Flt Permitted	0.40	1.00	1.00	0.33	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	749	3539	1583	617	3535		1681	1687	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	424	250	348	652	5	957	11	413	11	11	5
RTOR Reduction (vph)	0	0	114	0	1	0	0	0	0	0	0	5
Lane Group Flow (vph)	5	424	136	348	656	0	488	480	413	0	22	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA	Free	Split	NA	Perm
Protected Phases		6	3	5	2		3	3		4	4	
Permitted Phases	6		6	2					Free			4
Actuated Green, G (s)	22.0	22.0	48.8	41.5	41.5		26.8	26.8	90.0		2.7	2.7
Effective Green, g (s)	22.0	22.0	48.8	41.5	41.5		26.8	26.8	90.0		2.7	2.7
Actuated g/C Ratio	0.24	0.24	0.54	0.46	0.46		0.30	0.30	1.00		0.03	0.03
Clearance Time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	183	865	858	457	1630		500	502	1583		54	47
v/s Ratio Prot		0.12	0.05	c0.11	0.19		c0.29	0.28			0.01	
v/s Ratio Perm	0.01		0.04	c0.24					c0.26			0.00
v/c Ratio	0.03	0.49	0.16	0.76	0.40		0.98	0.96	0.26		0.41	0.00
Uniform Delay, d1	25.9	29.2	10.3	17.1	16.0		31.3	31.0	0.0		42.9	42.3
Progression Factor	1.00	1.00	1.00	1.18	0.88		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	2.0	0.1	6.0	0.7		33.9	29.3	0.4		1.8	0.0
Delay (s)	26.1	31.2	10.4	26.2	14.7		65.2	60.3	0.4		44.7	42.4
Level of Service	C	C	B	C	B		E	E	A		D	D
Approach Delay (s)		23.5			18.7			44.1			44.3	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

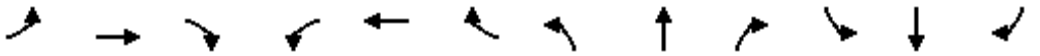
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	725	40	245	725	25	185	15	845	50	25	15
Future Volume (vph)	15	725	40	245	725	25	185	15	845	50	25	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	6.5	4.0	7.0	5.5	5.5	5.5	6.0	4.0	6.0	6.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.35	1.00	1.00	0.25	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00
Satd. Flow (perm)	659	3539	1583	459	3539	1583	1863	3539	1583	1693	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	788	43	266	788	27	201	16	918	54	27	16
RTOR Reduction (vph)	0	0	0	0	0	11	0	0	0	0	0	0
Lane Group Flow (vph)	16	788	43	266	788	16	201	16	918	54	27	16
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		Free	2		2	4		Free	8		Free
Actuated Green, G (s)	42.6	41.5	90.0	60.5	51.9	51.9	11.3	3.2	90.0	13.2	4.4	90.0
Effective Green, g (s)	42.6	41.5	90.0	60.5	51.9	51.9	11.3	3.2	90.0	13.2	4.4	90.0
Actuated g/C Ratio	0.47	0.46	1.00	0.67	0.58	0.58	0.13	0.04	1.00	0.15	0.05	1.00
Clearance Time (s)	7.5	6.5		7.0	5.5	5.5	5.5	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	3.0		3.0	3.0	3.0	2.0	1.0		2.0	3.0	
Lane Grp Cap (vph)	325	1631	1583	468	2040	912	225	125	1583	255	173	1583
v/s Ratio Prot	0.00	0.22		0.07	0.22		0.08	0.00		0.02	0.01	
v/s Ratio Perm	0.02		0.03	0.31		0.01	0.03		c0.58	0.01		0.01
v/c Ratio	0.05	0.48	0.03	0.57	0.39	0.02	0.89	0.13	0.58	0.21	0.16	0.01
Uniform Delay, d1	12.6	16.8	0.0	7.8	10.4	8.1	38.7	42.0	0.0	33.8	41.0	0.0
Progression Factor	0.84	1.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	1.0	0.0	1.6	0.6	0.0	32.2	0.2	1.6	0.2	0.4	0.0
Delay (s)	10.6	22.0	0.0	9.4	10.9	8.2	70.9	42.2	1.6	34.0	41.4	0.0
Level of Service	B	C	A	A	B	A	E	D	A	C	D	A
Approach Delay (s)		20.7			10.5			14.4			30.4	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	230	50	365	185	110	15	190	600	435	610	60
Future Volume (vph)	60	230	50	365	185	110	15	190	600	435	610	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3397		1541	3275	1567	1601	3438	1644	3539	3409	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.38	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3397		1541	3275	1567	632	3438	1644	3539	3409	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	250	54	397	201	120	16	207	652	473	663	65
RTOR Reduction (vph)	0	15	0	0	0	74	0	0	0	0	6	0
Lane Group Flow (vph)	65	289	0	198	400	46	16	207	652	473	722	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	23.5	23.5		28.0	28.0	52.2	27.8	27.8	120.0	18.2	51.5	
Effective Green, g (s)	23.5	23.5		28.0	28.0	46.2	27.8	27.8	120.0	18.2	51.5	
Actuated g/C Ratio	0.20	0.20		0.23	0.23	0.39	0.23	0.23	1.00	0.15	0.43	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	353	665		359	764	603	146	796	1644	536	1463	
v/s Ratio Prot	0.04	0.09		c0.13	0.12	0.03		0.06		c0.13	c0.21	
v/s Ratio Perm							0.03		c0.40			
v/c Ratio	0.18	0.43		0.55	0.52	0.08	0.11	0.26	0.40	0.88	0.49	
Uniform Delay, d1	40.3	42.4		40.5	40.2	23.4	36.3	37.7	0.0	49.9	24.8	
Progression Factor	1.00	1.00		0.97	0.97	0.91	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	2.1		6.0	2.5	0.1	1.5	0.8	0.7	15.7	1.2	
Delay (s)	41.4	44.5		45.3	41.6	21.4	37.9	38.5	0.7	65.6	26.0	
Level of Service	D	D		D	D	C	D	D	A	E	C	
Approach Delay (s)		43.9			39.2			10.3			41.6	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1255	10	0	505	160	0	0	215	0	0	155
Future Vol, veh/h	0	1255	10	0	505	160	0	0	215	0	0	155
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1364	11	0	549	174	0	0	234	0	0	168

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	688	-	-	362
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	333	0	0	542
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	333	-	-	542
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

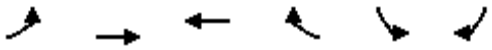
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	37.7	14.6
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	333	-	-	-	-	542
HCM Lane V/C Ratio	0.702	-	-	-	-	0.311
HCM Control Delay (s)	37.7	-	-	-	-	14.6
HCM Lane LOS	E	-	-	-	-	B
HCM 95th %tile Q(veh)	5	-	-	-	-	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	185	1160	0	0	1375	60	185	0	640	0	610
Future Volume (vph)	185	1160	0	0	1375	60	185	0	640	0	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.13	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	236	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	1261	0	0	1495	65	201	0	696	0	663
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	288	0	0
Lane Group Flow (vph)	201	1261	0	0	1495	43	201	0	408	0	663
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	94.5	94.5			78.5	78.5	13.0		13.0		120.0
Effective Green, g (s)	94.5	94.5			78.5	78.5	13.0		13.0		107.5
Actuated g/C Ratio	0.79	0.79			0.65	0.65	0.11		0.11		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	327	2694			3264	1051	379		307		1443
v/s Ratio Prot	c0.06	0.37			0.30		0.06				
v/s Ratio Perm	c0.42					0.03			c0.14		0.41
v/c Ratio	0.61	0.47			0.46	0.04	0.53		1.33		0.46
Uniform Delay, d1	6.5	4.3			10.2	7.4	50.6		53.5		1.1
Progression Factor	1.12	1.04			1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	5.9	0.6			0.5	0.1	5.2		168.8		0.7
Delay (s)	13.2	5.0			10.7	7.4	55.8		222.3		1.8
Level of Service	B	A			B	A	E		F		A
Approach Delay (s)		6.2			10.6		185.0			1.8	
Approach LOS		A			B		F			A	

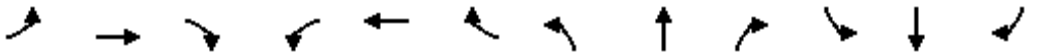
Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	1955	1430	5	0	5
Future Volume (vph)	0	1955	1430	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5159			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5159			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2125	1554	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2125	1559	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		87.3	87.3			100.9
Effective Green, g (s)		87.3	87.3			100.9
Actuated g/C Ratio		0.87	0.87			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4377	4463			1611
v/s Ratio Prot		c0.42	0.30			
v/s Ratio Perm						c0.00
v/c Ratio		0.49	0.35			0.00
Uniform Delay, d1		1.6	1.3			0.0
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.2	0.1			0.0
Delay (s)		1.8	1.4			0.0
Level of Service		A	A			A
Approach Delay (s)		1.8	1.4		0.0	
Approach LOS		A	A		A	

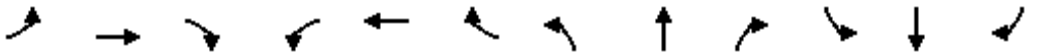
Intersection Summary			
HCM 2000 Control Delay	1.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1880	70	10	1320	10	75	5	25	30	5	40
Future Volume (veh/h)	5	1880	70	10	1320	10	75	5	25	30	5	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	5	2043	76	11	1435	11	82	5	27	33	5	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	3612	134	202	4014	31	155	22	119	170	14	120
Arrive On Green	0.01	0.72	0.72	0.01	0.72	0.72	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1776	5037	187	1818	5556	43	1357	264	1425	1373	167	1438
Grp Volume(v), veh/h	5	1375	744	11	935	511	82	0	32	33	0	48
Grp Sat Flow(s),veh/h/ln	1776	1697	1831	1818	1809	1980	1357	0	1689	1373	0	1606
Q Serve(g_s), s	0.1	17.3	17.4	0.1	8.7	8.7	5.0	0.0	1.6	2.1	0.0	2.5
Cycle Q Clear(g_c), s	0.1	17.3	17.4	0.1	8.7	8.7	7.5	0.0	1.6	3.7	0.0	2.5
Prop In Lane	1.00		0.10	1.00		0.02	1.00		0.84	1.00		0.90
Lane Grp Cap(c), veh/h	319	2433	1313	202	2614	1431	155	0	141	170	0	134
V/C Ratio(X)	0.02	0.56	0.57	0.05	0.36	0.36	0.53	0.00	0.23	0.19	0.00	0.36
Avail Cap(c_a), veh/h	418	2433	1313	293	2614	1431	155	0	141	170	0	134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.9	6.1	6.1	5.1	4.7	4.7	42.7	0.0	38.5	40.3	0.0	39.0
Incr Delay (d2), s/veh	0.0	0.9	1.6	0.1	0.4	0.7	3.4	0.0	0.8	0.5	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	5.3	0.0	2.4	2.7	2.0	0.0	0.7	0.7	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	6.9	7.7	5.3	5.1	5.4	46.1	0.0	39.4	40.8	0.0	40.6
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		2124			1457			114			81	
Approach Delay, s/veh		7.2			5.2			44.2			40.7	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	70.0		14.0	6.5	69.5		14.0				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	5.5	60.0		7.5	5.5	60.0		7.5				
Max Q Clear Time (g_c+I1), s	2.1	10.7		5.7	2.1	19.4		9.5				
Green Ext Time (p_c), s	0.0	13.1		0.0	0.0	22.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		8.2	
HCM 6th LOS		A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	755	50	10	220	15	635	10	65	5	5	5
Future Volume (vph)	15	755	50	10	220	15	635	10	65	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.99			0.99		1.00	1.00	0.85		0.95	
Flt Protected		1.00			1.00		0.95	0.95	1.00		0.98	
Satd. Flow (prot)		3504			3500		1681	1688	1583		1750	
Flt Permitted		0.95			0.91		0.95	0.95	1.00		0.98	
Satd. Flow (perm)		3320			3199		1681	1688	1583		1750	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	821	54	11	239	16	690	11	71	5	5	5
RTOR Reduction (vph)	0	6	0	0	6	0	0	0	49	0	5	0
Lane Group Flow (vph)	0	885	0	0	260	0	352	349	22	0	10	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		23.8			24.3		19.6	19.6	19.6		0.9	
Effective Green, g (s)		23.8			24.3		19.6	19.6	19.6		0.9	
Actuated g/C Ratio		0.38			0.39		0.31	0.31	0.31		0.01	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1268			1247		528	531	498		25	
v/s Ratio Prot							c0.21	0.21			c0.01	
v/s Ratio Perm		c0.27			0.08				0.01			
v/c Ratio		0.70			0.21		0.67	0.66	0.04		0.40	
Uniform Delay, d1		16.2			12.6		18.5	18.4	14.8		30.4	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1.8			0.1		6.5	6.2	0.2		3.8	
Delay (s)		18.1			12.7		25.1	24.7	15.0		34.3	
Level of Service		B			B		C	C	B		C	
Approach Delay (s)		18.1			12.7			24.0			34.3	
Approach LOS		B			B			C			C	

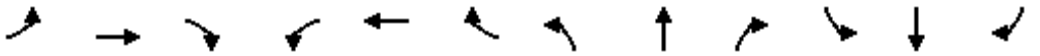
Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	5	790	70	40	815
Future Volume (vph)	5	5	790	70	40	815
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3261		3539	1583	1770	5085
Flt Permitted	0.98		1.00	1.00	0.32	1.00
Satd. Flow (perm)	3261		3539	1583	601	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	859	76	43	886
RTOR Reduction (vph)	5	0	0	24	0	0
Lane Group Flow (vph)	5	0	859	52	43	886
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	1.0		45.3	45.3	53.5	53.5
Effective Green, g (s)	1.0		45.3	45.3	53.5	53.5
Actuated g/C Ratio	0.02		0.68	0.68	0.80	0.80
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49		2410	1078	522	4090
v/s Ratio Prot	c0.00		c0.24		0.00	c0.17
v/s Ratio Perm				0.03	0.06	
v/c Ratio	0.10		0.36	0.05	0.08	0.22
Uniform Delay, d1	32.3		4.5	3.5	1.6	1.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.4	0.1	0.1	0.1
Delay (s)	33.2		4.9	3.6	1.7	1.7
Level of Service	C		A	A	A	A
Approach Delay (s)	33.2		4.8			1.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	325	35	670	570	490	65	560	505	165	365	80
Future Volume (vph)	60	325	35	670	570	490	65	560	505	165	365	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3439		1541	3304	1567	1601	3438	1644	3539	3362	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.48	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3439		1541	3304	1567	802	3438	1644	3539	3362	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	353	38	728	620	533	71	609	549	179	397	87
RTOR Reduction (vph)	0	7	0	0	0	193	0	0	0	0	15	0
Lane Group Flow (vph)	65	384	0	437	911	340	71	609	549	179	469	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	21.5	21.5		35.0	35.0	51.6	30.4	30.4	120.0	10.6	46.5	
Effective Green, g (s)	21.5	21.5		35.0	35.0	45.6	30.4	30.4	120.0	10.6	46.5	
Actuated g/C Ratio	0.18	0.18		0.29	0.29	0.38	0.25	0.25	1.00	0.09	0.39	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	323	616		449	963	595	203	870	1644	312	1302	
v/s Ratio Prot	0.04	c0.11		c0.28	0.28	0.22		c0.18		c0.05	0.14	
v/s Ratio Perm							0.09		0.33			
v/c Ratio	0.20	0.62		0.97	0.95	0.57	0.35	0.70	0.33	0.57	0.36	
Uniform Delay, d1	41.9	45.5		42.0	41.6	29.5	36.7	40.7	0.0	52.5	26.2	
Progression Factor	1.00	1.00		0.87	0.87	0.41	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	4.7		34.2	17.3	1.2	0.4	2.0	0.5	2.5	0.8	
Delay (s)	43.3	50.2		70.7	53.3	13.2	37.1	42.7	0.5	55.1	26.9	
Level of Service	D	D		E	D	B	D	D	A	E	C	
Approach Delay (s)		49.3			46.0			23.5			34.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	985	10	0	1545	180	0	0	120	0	0	185
Future Vol, veh/h	0	985	10	0	1545	180	0	0	120	0	0	185
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1071	11	0	1679	196	0	0	130	0	0	201

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	541	-	-	938
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	416	0	0	228
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	416	-	-	228
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

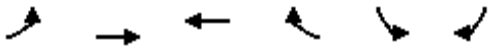
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	17.6	77.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	416	-	-	-	-	228
HCM Lane V/C Ratio	0.314	-	-	-	-	0.882
HCM Control Delay (s)	17.6	-	-	-	-	77.7
HCM Lane LOS	C	-	-	-	-	F
HCM 95th %tile Q(veh)	1.3	-	-	-	-	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	65	1420	0	0	2525	65	65	0	285	0	500
Future Volume (vph)	65	1420	0	0	2525	65	65	0	285	0	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	86	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	1543	0	0	2745	71	71	0	310	0	543
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	204	0	0
Lane Group Flow (vph)	71	1543	0	0	2745	47	71	0	106	0	543
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	94.5	94.5			79.7	79.7	13.0		13.0		120.0
Effective Green, g (s)	94.5	94.5			79.7	79.7	13.0		13.0		107.5
Actuated g/C Ratio	0.79	0.79			0.66	0.66	0.11		0.11		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	207	2694			3314	1067	379		307		1443
v/s Ratio Prot	0.03	c0.45			c0.55		0.02				
v/s Ratio Perm	0.24					0.03			0.04		c0.34
v/c Ratio	0.34	0.57			0.83	0.04	0.19		0.34		0.38
Uniform Delay, d1	18.1	4.9			15.0	7.0	48.7		49.6		1.0
Progression Factor	0.85	1.32			0.66	0.07	1.00		1.00		1.00
Incremental Delay, d2	2.8	0.9			2.0	0.1	1.1		3.1		0.5
Delay (s)	18.1	7.4			12.0	0.5	49.8		52.6		1.4
Level of Service	B	A			B	A	D		D		A
Approach Delay (s)		7.9			11.7		52.1			1.4	
Approach LOS		A			B		D			A	

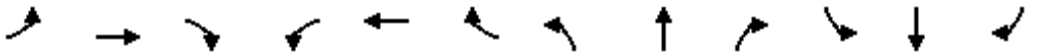
Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	1985	2585	5	0	5
Future Volume (vph)	0	1985	2585	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2158	2810	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2158	2815	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		99.8	99.8			120.0
Effective Green, g (s)		99.8	99.8			120.0
Actuated g/C Ratio		0.83	0.83			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4208	4291			1611
v/s Ratio Prot		0.43	c0.55			
v/s Ratio Perm						c0.00
v/c Ratio		0.51	0.66			0.00
Uniform Delay, d1		3.0	3.7			0.0
Progression Factor		0.60	1.00			1.00
Incremental Delay, d2		0.4	0.8			0.0
Delay (s)		2.2	4.5			0.0
Level of Service		A	A			A
Approach Delay (s)		2.2	4.5		0.0	
Approach LOS		A	A		A	

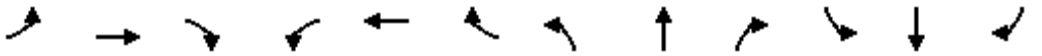
Intersection Summary			
HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1895	80	15	2515	20	60	10	20	20	5	15
Future Volume (veh/h)	10	1895	80	15	2515	20	60	10	20	20	5	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	11	2060	87	16	2734	22	65	11	22	22	5	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	3588	151	205	4000	32	175	46	93	165	31	100
Arrive On Green	0.01	0.72	0.72	0.01	0.72	0.72	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1776	5009	211	1818	5553	45	1391	579	1158	1372	390	1249
Grp Volume(v), veh/h	11	1394	753	16	1779	977	65	0	33	22	0	21
Grp Sat Flow(s),veh/h/ln	1776	1697	1827	1818	1809	1980	1391	0	1737	1372	0	1640
Q Serve(g_s), s	0.2	17.8	17.9	0.2	24.4	24.5	4.1	0.0	1.6	1.4	0.0	1.1
Cycle Q Clear(g_c), s	0.2	17.8	17.9	0.2	24.4	24.5	5.2	0.0	1.6	3.0	0.0	1.1
Prop In Lane	1.00		0.12	1.00		0.02	1.00		0.67	1.00		0.76
Lane Grp Cap(c), veh/h	144	2431	1308	205	2606	1426	175	0	139	165	0	131
V/C Ratio(X)	0.08	0.57	0.58	0.08	0.68	0.68	0.37	0.00	0.24	0.13	0.00	0.16
Avail Cap(c_a), veh/h	234	2431	1308	289	2606	1426	396	0	415	383	0	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.0	6.1	6.2	5.2	6.9	6.9	41.0	0.0	38.8	40.2	0.0	38.6
Incr Delay (d2), s/veh	0.2	0.9	1.6	0.2	1.5	2.7	1.3	0.0	0.9	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.7	5.4	0.1	6.9	8.1	1.5	0.0	0.7	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	7.0	7.8	5.4	8.4	9.6	42.3	0.0	39.7	40.6	0.0	39.1
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		2158			2772			98			43	
Approach Delay, s/veh		7.3			8.8			41.4			39.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	69.8		13.7	6.8	69.5		13.7				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	5.5	46.0		21.5	5.5	46.0		21.5				
Max Q Clear Time (g_c+I1), s	2.2	26.5		5.0	2.2	19.9		7.2				
Green Ext Time (p_c), s	0.0	17.1		0.1	0.0	17.7		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		9.1	
HCM 6th LOS		A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	320	215	45	80	5	515	5	20	10	20	10
Future Volume (vph)	5	320	215	45	80	5	515	5	20	10	20	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.94			0.99		1.00	1.00	0.85		0.97	
Flt Protected		1.00			0.98		0.95	0.95	1.00		0.99	
Satd. Flow (prot)		3326			3460		1681	1687	1583		1778	
Flt Permitted		0.95			0.72		0.95	0.95	1.00		0.99	
Satd. Flow (perm)		3170			2521		1681	1687	1583		1778	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	348	234	49	87	5	560	5	22	11	22	11
RTOR Reduction (vph)	0	166	0	0	4	0	0	0	15	0	10	0
Lane Group Flow (vph)	0	421	0	0	137	0	280	285	7	0	34	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		16.6			17.1		19.4	19.4	19.4		3.5	
Effective Green, g (s)		16.6			17.1		19.4	19.4	19.4		3.5	
Actuated g/C Ratio		0.29			0.30		0.34	0.34	0.34		0.06	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		915			749		567	569	534		108	
v/s Ratio Prot							0.17	c0.17			c0.02	
v/s Ratio Perm		c0.13			0.05				0.00			
v/c Ratio		0.46			0.18		0.49	0.50	0.01		0.31	
Uniform Delay, d1		16.8			15.0		15.1	15.2	12.7		25.8	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.5			0.2		3.1	3.1	0.0		0.6	
Delay (s)		17.3			15.2		18.2	18.3	12.7		26.4	
Level of Service		B			B		B	B	B		C	
Approach Delay (s)		17.3			15.2			18.1			26.4	
Approach LOS		B			B			B			C	

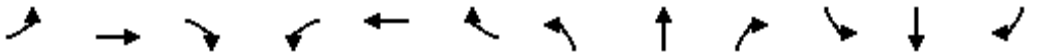
Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	25	595	10	20	505
Future Volume (vph)	35	25	595	10	20	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3292		3539	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.41	1.00
Satd. Flow (perm)	3292		3539	1583	756	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	27	647	11	22	549
RTOR Reduction (vph)	26	0	0	4	0	0
Lane Group Flow (vph)	39	0	647	7	22	549
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	3.0		43.7	43.7	50.9	50.9
Effective Green, g (s)	3.0		43.7	43.7	50.9	50.9
Actuated g/C Ratio	0.05		0.66	0.66	0.77	0.77
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149		2346	1049	602	3927
v/s Ratio Prot	c0.01		c0.18		0.00	c0.11
v/s Ratio Perm				0.00	0.03	
v/c Ratio	0.26		0.28	0.01	0.04	0.14
Uniform Delay, d1	30.4		4.6	3.8	1.8	1.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.3	0.0	0.0	0.1
Delay (s)	31.3		4.9	3.8	1.8	2.0
Level of Service	C		A	A	A	A
Approach Delay (s)	31.3		4.8			2.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	4.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

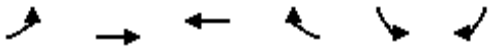
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	455	15	90	155	190	5	20	30	80	5	55
Future Volume (veh/h)	75	455	15	90	155	190	5	20	30	80	5	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	495	16	98	168	207	5	22	33	87	5	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	758	2432	79	687	1383	1233	167	79	119	179	15	174
Arrive On Green	0.69	0.69	0.69	0.03	0.78	0.78	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1008	3513	113	1781	1777	1585	1337	675	1013	1349	123	1480
Grp Volume(v), veh/h	82	250	261	98	168	207	5	0	55	87	0	65
Grp Sat Flow(s),veh/h/ln	1008	1777	1850	1781	1777	1585	1337	0	1688	1349	0	1604
Q Serve(g_s), s	3.3	6.0	6.1	1.8	2.8	4.0	0.4	0.0	3.6	7.5	0.0	4.5
Cycle Q Clear(g_c), s	3.3	6.0	6.1	1.8	2.8	4.0	4.9	0.0	3.6	11.1	0.0	4.5
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.60	1.00		0.92
Lane Grp Cap(c), veh/h	758	1230	1281	687	1383	1233	167	0	199	179	0	189
V/C Ratio(X)	0.11	0.20	0.20	0.14	0.12	0.17	0.03	0.00	0.28	0.49	0.00	0.34
Avail Cap(c_a), veh/h	758	1230	1281	831	1383	1233	344	0	422	357	0	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.2	6.6	6.6	4.6	3.3	3.4	50.9	0.0	48.3	53.4	0.0	48.7
Incr Delay (d2), s/veh	0.3	0.4	0.4	0.1	0.2	0.3	0.2	0.0	1.6	4.3	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.3	2.4	0.6	0.9	1.2	0.1	0.0	1.6	2.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	7.0	7.0	4.7	3.4	3.7	51.1	0.0	49.9	57.7	0.0	51.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h		593			473			60			152	
Approach Delay, s/veh		6.9			3.8			50.0			54.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		99.9		20.1	10.3	89.6		20.1				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		77.5		30.0	13.5	57.5		30.0				
Max Q Clear Time (g_c+I1), s		6.0		13.1	3.8	8.1		6.9				
Green Ext Time (p_c), s		0.4		1.0	0.1	0.6		0.4				

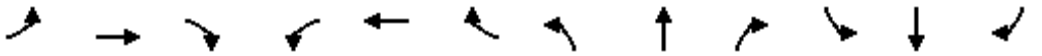
Intersection Summary												
HCM 6th Ctrl Delay			13.5									
HCM 6th LOS			B									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	85	480	345	45	195	90
Future Volume (veh/h)	85	480	345	45	195	90
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	522	375	49	212	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	466	991	991	442	322	149
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	963	3647	3647	1585	1169	540
Grp Volume(v), veh/h	92	522	375	49	311	0
Grp Sat Flow(s),veh/h/ln	963	1777	1777	1585	1715	0
Q Serve(g_s), s	2.2	3.2	2.2	0.6	4.1	0.0
Cycle Q Clear(g_c), s	4.4	3.2	2.2	0.6	4.1	0.0
Prop In Lane	1.00			1.00	0.68	0.32
Lane Grp Cap(c), veh/h	466	991	991	442	473	0
V/C Ratio(X)	0.20	0.53	0.38	0.11	0.66	0.00
Avail Cap(c_a), veh/h	2212	7434	7434	3316	1295	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.3	7.9	7.5	6.9	8.3	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.1	0.0	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	0.5	0.1	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.4	8.0	7.6	7.0	11.6	0.0
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h		614	424		311	
Approach Delay, s/veh		8.2	7.5		11.6	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		13.2		12.6		13.2
Change Period (Y+Rc), s		6.0		5.5		6.0
Max Green Setting (Gmax), s		54.0		19.5		54.0
Max Q Clear Time (g_c+I1), s		4.2		6.1		6.4
Green Ext Time (p_c), s		0.5		1.8		0.8

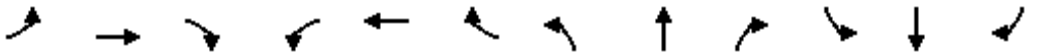
Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	265	150	125	175	180	5	5	5	100	310	210
Future Volume (vph)	260	265	150	125	175	180	5	5	5	100	310	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.95		1.00	0.92			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3347		1770	3270			1817	1583	1681	1767	1583
Flt Permitted	0.46	1.00		0.47	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	851	3347		872	3270			1817	1583	1681	1767	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	288	163	136	190	196	5	5	5	109	337	228
RTOR Reduction (vph)	0	65	0	0	126	0	0	0	5	0	0	165
Lane Group Flow (vph)	283	386	0	136	260	0	0	10	0	98	348	63
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	49.7	38.1		45.3	35.9			3.5	3.5	27.5	27.5	27.5
Effective Green, g (s)	49.7	38.1		45.3	35.9			3.5	3.5	27.5	27.5	27.5
Actuated g/C Ratio	0.50	0.38		0.45	0.36			0.04	0.04	0.28	0.28	0.28
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	529	1275		479	1173			63	55	462	485	435
v/s Ratio Prot	c0.06	0.12		0.03	0.08			c0.01		0.06	c0.20	
v/s Ratio Perm	c0.20			0.10					0.00			0.04
v/c Ratio	0.53	0.30		0.28	0.22			0.16	0.00	0.21	0.72	0.14
Uniform Delay, d1	15.2	21.7		16.2	22.3			46.8	46.6	27.9	32.7	27.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.6		0.3	0.4			2.5	0.0	0.5	6.2	0.3
Delay (s)	16.3	22.3		16.6	22.8			49.3	46.6	28.4	38.9	27.7
Level of Service	B	C		B	C			D	D	C	D	C
Approach Delay (s)		20.0			21.1			48.4			33.6	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

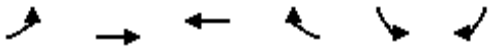
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	380	10	210	490	125	40	10	195	140	15	45
Future Volume (veh/h)	40	380	10	210	490	125	40	10	195	140	15	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	413	11	228	533	136	43	11	212	152	16	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	1732	46	611	1753	445	382	21	411	237	110	336
Arrive On Green	0.49	0.49	0.49	0.08	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	768	3536	94	1781	2806	713	1337	79	1518	1158	405	1242
Grp Volume(v), veh/h	43	207	217	228	337	332	43	0	223	152	0	65
Grp Sat Flow(s),veh/h/ln	768	1777	1853	1781	1777	1742	1337	0	1597	1158	0	1647
Q Serve(g_s), s	3.6	8.1	8.1	7.3	10.5	10.6	3.0	0.0	14.2	15.4	0.0	3.6
Cycle Q Clear(g_c), s	3.6	8.1	8.1	7.3	10.5	10.6	6.6	0.0	14.2	29.6	0.0	3.6
Prop In Lane	1.00		0.05	1.00		0.41	1.00		0.95	1.00		0.75
Lane Grp Cap(c), veh/h	436	870	908	611	1110	1089	382	0	433	237	0	446
V/C Ratio(X)	0.10	0.24	0.24	0.37	0.30	0.31	0.11	0.00	0.52	0.64	0.00	0.15
Avail Cap(c_a), veh/h	436	870	908	756	1110	1089	454	0	519	299	0	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	17.7	17.7	12.3	10.4	10.4	35.7	0.0	37.1	49.6	0.0	33.2
Incr Delay (d2), s/veh	0.5	0.6	0.6	0.4	0.7	0.7	0.3	0.0	2.0	6.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.5	3.6	2.9	4.2	4.2	1.0	0.0	5.8	4.8	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	18.3	18.3	12.6	11.1	11.1	36.0	0.0	39.1	55.8	0.0	33.5
LnGrp LOS	B	B	B	B	B	B	D	A	D	E	A	C
Approach Vol, veh/h		467			897			266			217	
Approach Delay, s/veh		18.2			11.5			38.6			49.1	
Approach LOS		B			B			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		81.5		38.5	16.2	65.3		38.5				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		68.5		39.0	19.5	42.5		39.0				
Max Q Clear Time (g_c+I1), s		12.6		31.6	9.3	10.1		16.2				
Green Ext Time (p_c), s		0.7		1.0	0.5	0.5		2.8				

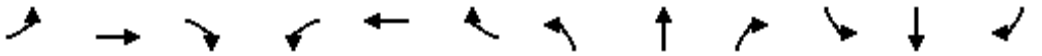
Intersection Summary												
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			C									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	245	470	655	520	60	170
Future Volume (veh/h)	245	470	655	520	60	170
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	266	511	712	565	65	185
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	346	2395	2395	1068	77	220
Arrive On Green	0.67	0.67	0.67	0.67	0.18	0.18
Sat Flow, veh/h	433	3647	3647	1585	423	1203
Grp Volume(v), veh/h	266	511	712	565	251	0
Grp Sat Flow(s),veh/h/ln	433	1777	1777	1585	1633	0
Q Serve(g_s), s	47.5	4.4	6.5	14.5	11.9	0.0
Cycle Q Clear(g_c), s	54.0	4.4	6.5	14.5	11.9	0.0
Prop In Lane	1.00			1.00	0.26	0.74
Lane Grp Cap(c), veh/h	346	2395	2395	1068	298	0
V/C Ratio(X)	0.77	0.21	0.30	0.53	0.84	0.00
Avail Cap(c_a), veh/h	346	2395	2395	1068	397	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.2	5.0	5.3	6.6	31.6	0.0
Incr Delay (d2), s/veh	9.1	0.0	0.0	0.3	15.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	1.3	2.0	3.9	5.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.3	5.0	5.4	6.9	47.5	0.0
LnGrp LOS	C	A	A	A	D	A
Approach Vol, veh/h		777	1277		251	
Approach Delay, s/veh		12.3	6.0		47.5	
Approach LOS		B	A		D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.0		20.1		60.0
Change Period (Y+Rc), s		6.0		5.5		6.0
Max Green Setting (Gmax), s		54.0		19.5		54.0
Max Q Clear Time (g_c+I1), s		16.5		13.9		56.0
Green Ext Time (p_c), s		4.9		0.8		0.0

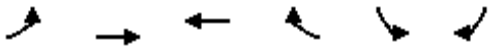
Intersection Summary		
HCM 6th Ctrl Delay	12.6	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	315	10	5	490	30	195	80	190	195	5	490
Future Volume (vph)	205	315	10	5	490	30	195	80	190	195	5	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3523		1770	3508			1799	1583	1681	1689	1583
Flt Permitted	0.27	1.00		0.54	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (perm)	509	3523		1007	3508			1799	1583	1681	1689	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	342	11	5	533	33	212	87	207	212	5	533
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	165	0	0	275
Lane Group Flow (vph)	223	351	0	5	563	0	0	299	42	108	109	258
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	54.4	48.1		38.4	37.1			24.2	24.2	24.9	24.9	24.9
Effective Green, g (s)	54.4	48.1		38.4	37.1			24.2	24.2	24.9	24.9	24.9
Actuated g/C Ratio	0.45	0.40		0.32	0.31			0.20	0.20	0.21	0.21	0.21
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	359	1412		330	1084			362	319	348	350	328
v/s Ratio Prot	c0.06	0.10		0.00	0.16			c0.17		0.06	0.06	
v/s Ratio Perm	c0.22			0.00					0.03			c0.16
v/c Ratio	0.62	0.25		0.02	0.52			0.83	0.13	0.31	0.31	0.79
Uniform Delay, d1	22.0	23.9		27.8	34.1			45.9	39.3	40.3	40.3	45.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.4		0.0	1.8			15.8	0.4	1.1	1.1	13.5
Delay (s)	25.3	24.3		27.8	35.9			61.7	39.7	41.3	41.4	58.5
Level of Service	C	C		C	D			E	D	D	D	E
Approach Delay (s)		24.7			35.8			52.7			53.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

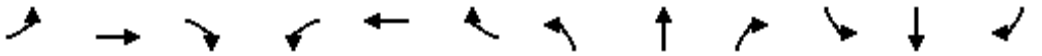
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (veh/h)	0	1200	815	0	170	115
Future Volume (veh/h)	0	1200	815	0	170	115
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1304	886	0	185	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3964	4995	0	601	190
Arrive On Green	0.00	0.78	0.78	0.00	0.12	0.12
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	1304	886	0	185	125
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	9.2	4.3	0.0	4.0	9.0
Cycle Q Clear(g_c), s	0.0	9.2	4.3	0.0	4.0	9.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3964	4995	0	601	190
V/C Ratio(X)	0.00	0.33	0.18	0.00	0.31	0.66
Avail Cap(c_a), veh/h	0	3964	4995	0	1528	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.0	3.5	0.0	48.3	50.5
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.0	1.0	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	1.1	0.0	1.8	4.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.3	3.6	0.0	49.3	63.8
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		1304	886		310	
Approach Delay, s/veh		4.3	3.6		55.2	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		99.2		20.8		99.2
Change Period (Y+Rc), s		6.0		6.5		6.0
Max Green Setting (Gmax), s		71.0		36.5		71.0
Max Q Clear Time (g_c+I1), s		11.2		11.0		6.3
Green Ext Time (p_c), s		13.1		3.3		7.5

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1000	370	0	590	0	0	0	0	380	0	225
Future Volume (vph)	0	1000	370	0	590	0	0	0	0	380	0	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0					7.0		7.0
Lane Util. Factor		0.91			0.91					0.97		1.00
Frt		0.96			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4879			5085					3433		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4879			5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1087	402	0	641	0	0	0	0	413	0	245
RTOR Reduction (vph)	0	39	0	0	0	0	0	0	0	0	0	199
Lane Group Flow (vph)	0	1450	0	0	641	0	0	0	0	413	0	46
Turn Type		NA			NA					Prot		Prot
Protected Phases		2			6 1					4		4
Permitted Phases												
Actuated Green, G (s)		74.9			109.0					28.0		28.0
Effective Green, g (s)		74.9			109.0					28.0		28.0
Actuated g/C Ratio		0.50			0.73					0.19		0.19
Clearance Time (s)		6.0								7.0		7.0
Vehicle Extension (s)		0.2								3.0		3.0
Lane Grp Cap (vph)		2436			3695					640		295
v/s Ratio Prot		c0.30			c0.13					c0.12		0.03
v/s Ratio Perm												
v/c Ratio		0.60			0.17					0.65		0.16
Uniform Delay, d1		26.8			6.4					56.4		51.1
Progression Factor		1.00			0.39					1.00		1.00
Incremental Delay, d2		1.1			0.0					2.2		0.2
Delay (s)		27.8			2.5					58.6		51.3
Level of Service		C			A					E		D
Approach Delay (s)		27.8			2.5			0.0			55.9	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1380	0	250	590	0	0
Future Volume (vph)	1380	0	250	590	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.5	6.5		
Lane Util. Factor	0.91		0.97	0.91		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	5085		3433	5085		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	5085		3433	5085		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1500	0	272	641	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1500	0	272	641	0	0
Turn Type	NA		Prot	NA		
Protected Phases	2 4		1	1 4 6		
Permitted Phases						
Actuated Green, G (s)	108.9		27.6	150.0		
Effective Green, g (s)	108.9		27.6	137.0		
Actuated g/C Ratio	0.73		0.18	0.91		
Clearance Time (s)			6.5			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	3691		631	4644		
v/s Ratio Prot	c0.29		c0.08	0.13		
v/s Ratio Perm						
v/c Ratio	0.41		0.43	0.14		
Uniform Delay, d1	8.0		54.2	0.6		
Progression Factor	0.06		1.37	1.00		
Incremental Delay, d2	0.1		0.5	0.0		
Delay (s)	0.5		75.0	0.7		
Level of Service	A		E	A		
Approach Delay (s)	0.5			22.8	0.0	
Approach LOS	A			C	A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1205	175	0	605	235	0
Future Volume (vph)	1205	175	0	605	235	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.98			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	4989			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	4989			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1310	190	0	658	255	0
RTOR Reduction (vph)	12	0	0	0	0	0
Lane Group Flow (vph)	1488	0	0	658	255	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	120.7			120.7	15.8	
Effective Green, g (s)	120.7			120.7	15.8	
Actuated g/C Ratio	0.80			0.80	0.11	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	4014			4091	361	
v/s Ratio Prot	c0.30			0.13	c0.07	
v/s Ratio Perm						
v/c Ratio	0.37			0.16	0.71	
Uniform Delay, d1	4.1			3.3	64.9	
Progression Factor	0.00			3.21	1.00	
Incremental Delay, d2	0.2			0.1	6.2	
Delay (s)	0.2			10.6	71.0	
Level of Service	A			B	E	
Approach Delay (s)	0.2			10.6	71.0	
Approach LOS	A			B	E	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1205	0	0	605	0	930
Future Volume (vph)	1205	0	0	605	0	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1310	0	0	658	0	1011
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1310	0	0	658	0	1011
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	73.6			150.0		64.9
Effective Green, g (s)	73.6			144.5		64.9
Actuated g/C Ratio	0.49			0.96		0.43
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	2495			4898		1205
v/s Ratio Prot	c0.26			0.13		c0.36
v/s Ratio Perm						
v/c Ratio	0.53			0.13		0.84
Uniform Delay, d1	26.2			0.1		37.9
Progression Factor	1.57			1.00		1.00
Incremental Delay, d2	0.8			0.0		5.3
Delay (s)	41.8			0.1		43.2
Level of Service	D			A		D
Approach Delay (s)	41.8			0.1	43.2	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

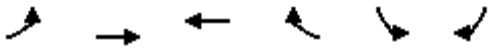
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	70	730	780	555	205	120	130	615	0	250	90	0
Future Volume (vph)	70	730	780	555	205	120	130	615	0	250	90	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	793	848	603	223	130	141	668	0	272	98	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	869	848	603	223	130	141	668	0	272	98	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		3			7	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		43.7	61.0	150.0	30.5	47.8	150.0	39.5		150.0	39.5	
Effective Green, g (s)		43.7	61.0	150.0	30.5	47.8	150.0	39.5		150.0	39.5	
Actuated g/C Ratio		0.29	0.41	1.00	0.20	0.32	1.00	0.26		1.00	0.26	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		1000	2067	1583	359	1620	1583	466		1583	904	
v/s Ratio Prot		c0.25	0.17		c0.13	0.03		c0.38			0.03	
v/s Ratio Perm				c0.38			0.09			0.17		
v/c Ratio		0.87	0.41	0.38	0.62	0.08	0.09	1.43		0.17	0.11	
Uniform Delay, d1		50.4	31.7	0.0	54.5	35.7	0.0	55.2		0.0	41.9	
Progression Factor		0.66	0.77	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.4	0.5	0.5	3.3	0.1	0.1	207.1		0.2	0.1	
Delay (s)		39.9	24.8	0.5	57.8	35.8	0.1	262.3		0.2	42.0	
Level of Service		D	C	A	E	D	A	F		A	D	
Approach Delay (s)			24.2			35.6			186.5			16.1
Approach LOS			C			D			F			B

Intersection Summary			
HCM 2000 Control Delay	63.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	145
Future Volume (vph)	145
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	158
RTOR Reduction (vph)	0
Lane Group Flow (vph)	158
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	150.0
Effective Green, g (s)	150.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.10
v/c Ratio	0.10
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	0.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

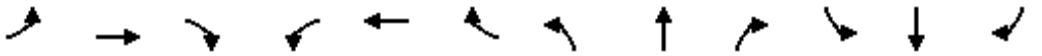
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (veh/h)	0	800	1430	0	310	115
Future Volume (veh/h)	0	800	1430	0	310	115
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	870	1554	0	337	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3891	4903	0	672	212
Arrive On Green	0.00	0.76	0.76	0.00	0.13	0.13
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	870	1554	0	337	125
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	5.9	9.1	0.0	7.5	8.9
Cycle Q Clear(g_c), s	0.0	5.9	9.1	0.0	7.5	8.9
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3891	4903	0	672	212
V/C Ratio(X)	0.00	0.22	0.32	0.00	0.50	0.59
Avail Cap(c_a), veh/h	0	3891	4903	0	1528	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.56	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.1	4.5	0.0	48.3	48.9
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	2.1	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	2.5	0.0	3.3	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.2	4.6	0.0	50.4	58.0
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		870	1554		462	
Approach Delay, s/veh		4.2	4.6		52.4	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		97.5		22.5		97.5
Change Period (Y+Rc), s		6.0		6.5		6.0
Max Green Setting (Gmax), s		71.0		36.5		71.0
Max Q Clear Time (g_c+I1), s		7.9		10.9		11.1
Green Ext Time (p_c), s		7.3		5.1		17.7

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	950	160	0	800	0	0	0	0	385	0	630
Future Volume (vph)	0	950	160	0	800	0	0	0	0	385	0	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.5					7.0		7.0
Lane Util. Factor		0.91			0.91					0.97		1.00
Frt		0.98			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4975			5085					3433		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4975			5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1033	174	0	870	0	0	0	0	418	0	685
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	0	185
Lane Group Flow (vph)	0	1192	0	0	870	0	0	0	0	418	0	500
Turn Type		NA			NA					Prot		Prot
Protected Phases		2			1 6					4		4
Permitted Phases												
Actuated Green, G (s)		64.0			109.0					28.0		28.0
Effective Green, g (s)		64.0			109.0					28.0		28.0
Actuated g/C Ratio		0.43			0.73					0.19		0.19
Clearance Time (s)		6.0								7.0		7.0
Vehicle Extension (s)		0.2								3.0		3.0
Lane Grp Cap (vph)		2122			3695					640		295
v/s Ratio Prot		c0.24			c0.17					0.12		c0.32
v/s Ratio Perm												
v/c Ratio		0.56			0.24					0.65		1.70
Uniform Delay, d1		32.4			6.8					56.5		61.0
Progression Factor		1.00			0.72					1.00		1.00
Incremental Delay, d2		1.1			0.0					2.4		327.5
Delay (s)		33.5			4.9					58.9		388.5
Level of Service		C			A					E		F
Approach Delay (s)		33.5			4.9			0.0			263.6	
Approach LOS		C			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	105.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1335	0	465	800	0	0
Future Volume (vph)	1335	0	465	800	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.5	6.5		
Lane Util. Factor	0.91		0.97	0.91		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	5085		3433	5085		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	5085		3433	5085		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1451	0	505	870	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1451	0	505	870	0	0
Turn Type	NA		Prot	NA		
Protected Phases	2 4		1	1 4 6		
Permitted Phases						
Actuated Green, G (s)	99.0		38.5	150.0		
Effective Green, g (s)	92.0		38.5	137.0		
Actuated g/C Ratio	0.61		0.26	0.91		
Clearance Time (s)			6.5			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	3118		881	4644		
v/s Ratio Prot	c0.29		c0.15	0.17		
v/s Ratio Perm						
v/c Ratio	0.47		0.57	0.19		
Uniform Delay, d1	15.7		48.6	0.7		
Progression Factor	0.10		0.93	1.00		
Incremental Delay, d2	0.1		0.9	0.0		
Delay (s)	1.7		46.1	0.7		
Level of Service	A		D	A		
Approach Delay (s)	1.7			17.4	0.0	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1080	255	0	1085	180	0
Future Volume (vph)	1080	255	0	1085	180	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.97			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	4940			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	4940			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1174	277	0	1179	196	0
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	1438	0	0	1179	196	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	122.5			122.5	14.0	
Effective Green, g (s)	122.5			122.5	14.0	
Actuated g/C Ratio	0.82			0.82	0.09	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	4034			4152	320	
v/s Ratio Prot	c0.29			0.23	c0.06	
v/s Ratio Perm						
v/c Ratio	0.36			0.28	0.61	
Uniform Delay, d1	3.6			3.3	65.4	
Progression Factor	1.95			1.00	1.00	
Incremental Delay, d2	0.2			0.2	3.5	
Delay (s)	7.2			3.5	68.8	
Level of Service	A			A	E	
Approach Delay (s)	7.2			3.5	68.8	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↱↱
Traffic Volume (vph)	1080	0	0	1085	0	335
Future Volume (vph)	1080	0	0	1085	0	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1174	0	0	1179	0	364
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1174	0	0	1179	0	364
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	104.6			150.0		33.9
Effective Green, g (s)	104.6			144.5		33.9
Actuated g/C Ratio	0.70			0.96		0.23
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	3545			4898		629
v/s Ratio Prot	c0.23			0.23		c0.13
v/s Ratio Perm						
v/c Ratio	0.33			0.24		0.58
Uniform Delay, d1	8.9			0.1		51.7
Progression Factor	0.75			1.00		1.00
Incremental Delay, d2	0.2			0.0		1.3
Delay (s)	7.0			0.2		53.0
Level of Service	A			A		D
Approach Delay (s)	7.0			0.2	53.0	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

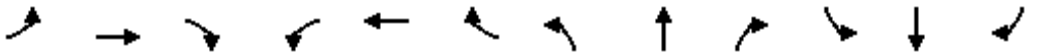
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	100	830	450	285	815	120	505	0	185	235	0
Future Volume (vph)	35	100	830	450	285	815	120	505	0	185	235	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	109	902	489	310	886	130	549	0	201	255	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	147	902	489	310	886	130	549	0	201	255	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		8			4	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		11.1	46.5	135.0	26.5	61.9	135.0	43.0		135.0	43.0	
Effective Green, g (s)		11.1	46.5	135.0	26.5	61.9	135.0	43.0		135.0	43.0	
Actuated g/C Ratio		0.08	0.34	1.00	0.20	0.46	1.00	0.32		1.00	0.32	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		282	1751	1583	347	2331	1583	563		1583	1093	
v/s Ratio Prot		0.04	c0.18		c0.18	0.17		c0.31			0.07	
v/s Ratio Perm				0.31			0.08			0.13		
v/c Ratio		0.52	0.52	0.31	0.89	0.38	0.08	0.98		0.13	0.23	
Uniform Delay, d1		59.4	35.3	0.0	52.9	24.0	0.0	45.5		0.0	33.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.7	1.1	0.5	23.9	0.5	0.1	31.4		0.2	0.1	
Delay (s)		61.1	36.4	0.5	76.8	24.4	0.1	76.8		0.2	34.0	
Level of Service		E	D	A	E	C	A	E		A	C	
Approach Delay (s)			27.3			34.3			56.3			10.4
Approach LOS			C			C			E			B

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	570
Future Volume (vph)	570
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	620
RTOR Reduction (vph)	0
Lane Group Flow (vph)	620
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	135.0
Effective Green, g (s)	135.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.39
v/c Ratio	0.39
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.7
Delay (s)	0.7
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary



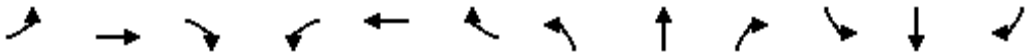
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	10	50	35	15	65	100	200	15	25	840	1145
Future Volume (veh/h)	190	10	50	35	15	65	100	200	15	25	840	1145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	207	11	54	38	16	71	109	217	16	27	913	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	205	174	53	117	99	423	2123	155	765	2087	
Arrive On Green	0.08	0.11	0.11	0.03	0.06	0.06	0.04	0.63	0.63	0.02	0.62	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3347	245	1692	3375	1505
Grp Volume(v), veh/h	207	11	54	38	16	71	109	114	119	27	913	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1820	1692	1687	1505
Q Serve(g_s), s	7.1	0.6	3.8	2.5	1.0	5.3	2.7	3.0	3.1	0.7	17.0	0.0
Cycle Q Clear(g_c), s	7.1	0.6	3.8	2.5	1.0	5.3	2.7	3.0	3.1	0.7	17.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	267	205	174	53	117	99	423	1124	1155	765	2087	
V/C Ratio(X)	0.78	0.05	0.31	0.72	0.14	0.72	0.26	0.10	0.10	0.04	0.44	
Avail Cap(c_a), veh/h	384	423	359	200	427	362	521	1124	1155	886	2087	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.00
Uniform Delay (d), s/veh	54.3	47.7	49.1	57.7	53.2	55.2	8.9	8.6	8.6	7.8	12.0	0.0
Incr Delay (d2), s/veh	6.1	0.1	1.0	16.3	0.5	9.3	0.3	0.2	0.2	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.3	1.5	1.4	0.5	2.4	1.0	1.2	1.2	0.2	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	47.8	50.1	74.0	53.7	64.5	9.2	8.8	8.8	7.8	12.6	0.0
LnGrp LOS	E	D	D	E	D	E	A	A	A	A	B	
Approach Vol, veh/h		272			125			342			940	A
Approach Delay, s/veh		57.8			66.0			8.9			12.4	
Approach LOS		E			E			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	82.6	14.9	14.0	10.4	80.7	9.1	19.8
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	11.5	43.5	13.5	27.5	11.5	43.5	13.5	27.5
Max Q Clear Time (g_c+I1), s	2.7	5.1	9.1	7.3	4.7	19.0	4.5	5.8
Green Ext Time (p_c), s	0.0	0.2	0.3	0.2	0.1	1.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	560	770	0	0	0	0	115	340	0	1240	0
Future Volume (vph)	5	560	770	0	0	0	0	115	340	0	1240	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3449	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3449	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	609	837	0	0	0	0	125	370	0	1348	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	614	837	0	0	0	0	125	370	0	1348	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		28.0	160.0					19.7	92.0		117.0	
Effective Green, g (s)		28.0	160.0					19.7	92.0		112.5	
Actuated g/C Ratio		0.18	1.00					0.12	0.58		0.70	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		603	1544					398	1518		3575	
v/s Ratio Prot								0.04	0.14		0.27	
v/s Ratio Perm		0.18	c0.54									
v/c Ratio		1.02	0.54					0.31	0.24		0.38	
Uniform Delay, d1		66.0	0.0					64.0	16.8		9.6	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		41.3	1.4					2.1	0.1		0.0	
Delay (s)		107.3	1.4					66.0	16.9		0.0	
Level of Service		F	A					E	B		A	
Approach Delay (s)		46.2			0.0			29.3			0.0	
Approach LOS		D			A			C			A	

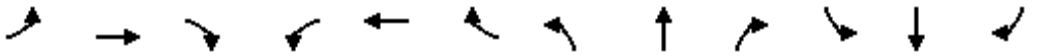
Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	1240	570	120	0
Future Volume (vph)	0	0	1240	570	120	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			4.5	4.5	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.97	0.95	
Satd. Flow (prot)			1549	3178	3433	
Flt Permitted			0.95	0.97	0.95	
Satd. Flow (perm)			1549	3178	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1348	620	130	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	674	1294	130	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			91.3	91.3	55.7	
Effective Green, g (s)			91.3	91.3	47.7	
Actuated g/C Ratio			0.57	0.57	0.30	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			883	1813	1023	
v/s Ratio Prot			c0.44	0.41	c0.04	
v/s Ratio Perm						
v/c Ratio			0.76	0.71	0.13	
Uniform Delay, d1			26.1	24.9	41.0	
Progression Factor			1.00	1.00	0.00	
Incremental Delay, d2			4.0	1.4	0.1	
Delay (s)			30.1	26.2	0.1	
Level of Service			C	C	A	
Approach Delay (s)	0.0			27.6	0.1	
Approach LOS	A			C	A	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

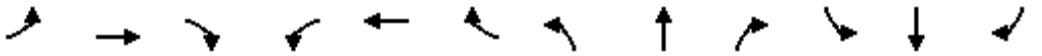
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	25	255	5	5	15	155	970	5	35	1835	435
Future Volume (vph)	440	25	255	5	5	15	155	970	5	35	1835	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.92		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1573	1575		1917		3285	4863		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1573	1575		1917		3285	4863		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	27	277	5	5	16	168	1054	5	38	1995	473
RTOR Reduction (vph)	0	0	76	0	16	0	0	0	0	0	0	174
Lane Group Flow (vph)	253	252	201	0	10	0	168	1059	0	38	1995	299
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	27.8	27.8	62.6		4.3		34.8	83.8		7.6	56.6	56.6
Effective Green, g (s)	27.8	27.8	62.6		4.3		34.8	83.8		7.6	56.6	56.6
Actuated g/C Ratio	0.19	0.19	0.42		0.03		0.23	0.56		0.05	0.38	0.38
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	289	291	657		54		762	2716		86	1854	637
v/s Ratio Prot	c0.16	0.16	0.07		c0.01		0.05	c0.22		0.02	c0.41	
v/s Ratio Perm			0.06									0.18
v/c Ratio	0.88	0.87	0.31		0.19		0.22	0.39		0.44	1.08	0.47
Uniform Delay, d1	59.4	59.3	29.2		71.2		46.6	18.7		69.1	46.7	35.3
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.09	1.09	1.34
Incremental Delay, d2	24.2	22.6	0.3		1.8		0.1	0.4		2.7	42.4	1.8
Delay (s)	83.6	81.9	29.5		72.9		46.8	19.1		77.7	93.1	49.0
Level of Service	F	F	C		E		D	B		E	F	D
Approach Delay (s)		63.9			72.9			22.9			84.5	
Approach LOS		E			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	64.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

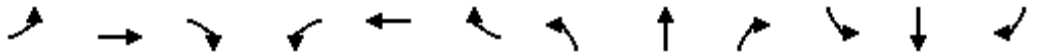
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	5	570	0	0	0	0	1270	155	220	1735	0
Future Volume (vph)	130	5	570	0	0	0	0	1270	155	220	1735	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.96	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1665	2412					8037		3319	4916	
Flt Permitted	0.95	0.96	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1665	2412					8037		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	5	620	0	0	0	0	1380	168	239	1886	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	73	73	620	0	0	0	0	1534	0	239	1886	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	43.3	43.3	43.3					57.2		29.5	93.2	
Effective Green, g (s)	43.3	43.3	43.3					57.2		29.5	93.2	
Actuated g/C Ratio	0.29	0.29	0.29					0.38		0.20	0.62	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	462	480	696					3064		652	3054	
v/s Ratio Prot	0.05	0.04	c0.26					0.19		0.07	c0.38	
v/s Ratio Perm												
v/c Ratio	0.16	0.15	0.89					0.50		0.37	0.62	
Uniform Delay, d1	39.8	39.7	51.1					35.5		52.2	17.4	
Progression Factor	1.00	1.00	1.00					1.21		1.20	1.68	
Incremental Delay, d2	0.2	0.1	13.6					0.5		1.5	0.9	
Delay (s)	39.9	39.8	64.7					43.3		64.2	30.2	
Level of Service	D	D	E					D		E	C	
Approach Delay (s)		60.0			0.0			43.3			34.1	
Approach LOS		E			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	135	10	395	225	1175	0	0	1820	815
Future Volume (vph)	0	0	0	135	10	395	225	1175	0	0	1820	815
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1709	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1709	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	147	11	429	245	1277	0	0	1978	886
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	79	79	429	245	1277	0	0	1978	886
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				13.2	13.2	150.0	17.7	122.8			98.6	150.0
Effective Green, g (s)				13.2	13.2	150.0	17.7	122.8			98.6	150.0
Actuated g/C Ratio				0.09	0.09	1.00	0.12	0.82			0.66	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)				144	150	1750	378	5070			4817	1591
v/s Ratio Prot				0.05	0.05		0.08	0.21			0.27	
v/s Ratio Perm						0.25						c0.56
v/c Ratio				0.55	0.53	0.25	0.65	0.25			0.41	0.56
Uniform Delay, d1				65.5	65.4	0.0	63.2	3.1			12.1	0.0
Progression Factor				1.00	1.00	1.00	0.41	5.42			0.79	1.00
Incremental Delay, d2				5.3	4.3	0.3	3.7	0.1			0.0	0.1
Delay (s)				70.8	69.7	0.3	29.4	16.9			9.5	0.1
Level of Service				E	E	A	C	B			A	A
Approach Delay (s)		0.0			19.2			18.9			6.6	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

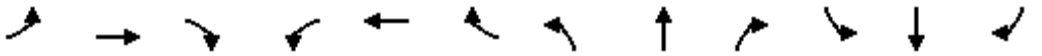
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	105	415	205	660	180	70	5	205	940	420	30	1765
Future Volume (vph)	105	415	205	660	180	70	5	205	940	420	30	1765
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3313		3172	3504	1567		1652	4916	1531	1719	4308
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.09	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3313		3172	3504	1567		152	4916	1531	1719	4308
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	451	223	717	196	76	5	223	1022	457	33	1918
RTOR Reduction (vph)	0	0	0	0	0	55	0	0	0	291	0	4
Lane Group Flow (vph)	114	674	0	717	196	21	0	228	1022	166	33	2023
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	28.5	28.5		33.5	33.5	41.1		54.4	54.4	54.4	7.6	53.5
Effective Green, g (s)	28.5	28.5		33.5	33.5	41.1		54.4	54.4	54.4	7.6	53.5
Actuated g/C Ratio	0.19	0.19		0.22	0.22	0.27		0.36	0.36	0.36	0.05	0.36
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	599	629		708	782	429		140	1782	555	87	1536
v/s Ratio Prot	0.04	c0.20		c0.23	0.06	0.01		c0.09	0.21		0.02	c0.47
v/s Ratio Perm								c0.50		0.11		
v/c Ratio	0.19	1.07		1.01	0.25	0.05		1.63	0.57	0.30	0.38	1.32
Uniform Delay, d1	51.1	60.8		58.2	47.9	40.1		66.3	38.5	34.2	68.9	48.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.93	0.84	3.61	1.00	1.00
Incremental Delay, d2	0.2	56.6		37.0	0.8	0.0		312.4	1.3	1.3	2.8	147.4
Delay (s)	51.2	117.3		95.3	48.7	40.1		374.0	33.7	124.8	71.7	195.7
Level of Service	D	F		F	D	D		F	C	F	E	F
Approach Delay (s)		107.8			81.8				103.6			193.7
Approach LOS		F			F				F			F

Intersection Summary			
HCM 2000 Control Delay	133.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	100
Future Volume (vph)	100
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	109
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



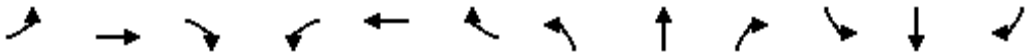
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	415	35	215	35	10	40	35	720	20	70	245	355
Future Volume (veh/h)	415	35	215	35	10	40	35	720	20	70	245	355
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	451	38	234	38	11	43	38	783	22	76	266	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	523	310	263	53	83	70	708	1985	56	407	1932	
Arrive On Green	0.15	0.17	0.17	0.03	0.04	0.04	0.03	0.56	0.56	0.04	0.57	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3519	99	1692	3375	1505
Grp Volume(v), veh/h	451	38	234	38	11	43	38	394	411	76	266	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1847	1692	1687	1505
Q Serve(g_s), s	15.5	2.1	17.6	2.5	0.7	3.2	1.1	15.0	15.0	2.2	4.4	0.0
Cycle Q Clear(g_c), s	15.5	2.1	17.6	2.5	0.7	3.2	1.1	15.0	15.0	2.2	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	523	310	263	53	83	70	708	999	1042	407	1932	
V/C Ratio(X)	0.86	0.12	0.89	0.72	0.13	0.61	0.05	0.39	0.39	0.19	0.14	
Avail Cap(c_a), veh/h	668	408	346	348	412	349	854	999	1042	532	1932	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	49.6	42.4	48.9	57.7	55.1	56.3	10.2	14.7	14.7	11.0	11.9	0.0
Incr Delay (d2), s/veh	9.2	0.2	19.8	16.3	0.7	8.3	0.0	1.2	1.1	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	1.0	8.3	1.4	0.3	1.4	0.4	6.2	6.5	0.8	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	42.6	68.6	74.0	55.8	64.7	10.2	15.8	15.8	11.2	12.1	0.0
LnGrp LOS	E	D	E	E	E	E	B	B	B	B	B	
Approach Vol, veh/h		723			92			843			342	A
Approach Delay, s/veh		61.1			67.5			15.6			11.9	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	74.2	23.9	11.8	9.1	75.2	9.1	26.6
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	13.5	32.5	23.5	26.5	13.5	32.5	23.5	26.5
Max Q Clear Time (g_c+I1), s	4.2	17.0	17.5	5.2	3.1	6.4	4.5	19.6
Green Ext Time (p_c), s	0.1	0.8	0.9	0.1	0.0	0.4	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	495	305	0	0	0	0	375	800	0	365	0
Future Volume (vph)	5	495	305	0	0	0	0	375	800	0	365	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3449	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3449	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	538	332	0	0	0	0	408	870	0	397	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	543	332	0	0	0	0	408	870	0	397	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		27.7	160.0					20.9	99.9		117.3	
Effective Green, g (s)		27.7	160.0					20.9	99.9		110.3	
Actuated g/C Ratio		0.17	1.00					0.13	0.62		0.69	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		597	1544					422	1648		3505	
v/s Ratio Prot								c0.13	c0.33		0.08	
v/s Ratio Perm		0.16	c0.22									
v/c Ratio		0.91	0.22					0.97	0.53		0.11	
Uniform Delay, d1		64.9	0.0					69.2	16.8		8.4	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		17.7	0.3					36.3	0.3		0.0	
Delay (s)		82.7	0.3					105.5	17.1		0.0	
Level of Service		F	A					F	B		A	
Approach Delay (s)		51.4			0.0			45.3			0.0	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	40.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	365	1020	380	0
Future Volume (vph)	0	0	365	1020	380	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			7.0	7.0	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	1.00	0.95	
Satd. Flow (prot)			1549	3255	3433	
Flt Permitted			0.95	1.00	0.95	
Satd. Flow (perm)			1549	3255	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	397	1109	413	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	357	1149	413	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			90.4	90.4	56.6	
Effective Green, g (s)			90.4	90.4	48.6	
Actuated g/C Ratio			0.57	0.57	0.30	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			875	1839	1042	
v/s Ratio Prot			0.23	c0.35	c0.12	
v/s Ratio Perm						
v/c Ratio			0.41	0.62	0.40	
Uniform Delay, d1			19.7	23.4	44.1	
Progression Factor			1.01	0.99	0.04	
Incremental Delay, d2			0.3	0.7	0.1	
Delay (s)			20.2	23.9	2.0	
Level of Service			C	C	A	
Approach Delay (s)	0.0			23.0	2.0	
Approach LOS	A			C	A	

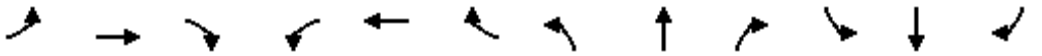
Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	495	45	135	5	20	110	170	2145	10	90	1330	190
Future Volume (vph)	495	45	135	5	20	110	170	2145	10	90	1330	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1578	1575		1875		3285	4863		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1578	1575		1875		3285	4863		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	538	49	147	5	22	120	185	2332	11	98	1446	207
RTOR Reduction (vph)	0	0	93	0	108	0	0	1	0	0	0	98
Lane Group Flow (vph)	291	296	54	0	39	0	185	2342	0	98	1446	109
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	31.5	31.5	55.0		7.9		23.5	73.2		10.9	60.6	60.6
Effective Green, g (s)	31.5	31.5	55.0		7.9		23.5	73.2		10.9	60.6	60.6
Actuated g/C Ratio	0.21	0.21	0.37		0.05		0.16	0.49		0.07	0.40	0.40
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	327	331	577		98		514	2373		124	1986	682
v/s Ratio Prot	0.19	c0.19	0.01		c0.02		0.06	c0.48		0.06	c0.29	
v/s Ratio Perm			0.02									0.06
v/c Ratio	0.89	0.89	0.09		0.40		0.36	0.99		0.79	0.73	0.16
Uniform Delay, d1	57.6	57.6	31.2		68.7		56.5	37.9		68.4	37.7	28.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.63	0.87	0.93
Incremental Delay, d2	24.2	24.9	0.1		2.6		0.4	15.7		26.0	2.2	0.5
Delay (s)	81.7	82.5	31.2		71.4		57.0	53.6		68.7	34.9	27.0
Level of Service	F	F	C		E		E	D		E	C	C
Approach Delay (s)		71.9			71.4			53.9			35.9	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

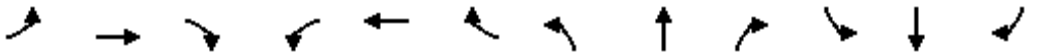
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	575	5	195	0	0	0	0	2505	245	130	1415	0
Future Volume (vph)	575	5	195	0	0	0	0	2505	245	130	1415	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1661	2412					8061		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1661	2412					8061		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	625	5	212	0	0	0	0	2723	266	141	1538	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	312	318	212	0	0	0	0	2978	0	141	1538	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	36.5	36.5	36.5					76.0		17.5	100.0	
Effective Green, g (s)	36.5	36.5	36.5					76.0		17.5	100.0	
Actuated g/C Ratio	0.24	0.24	0.24					0.51		0.12	0.67	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0	4.0					4.0		0.2	0.2	
Lane Grp Cap (vph)	389	404	586					4084		387	3277	
v/s Ratio Prot	c0.19	0.19	0.09					c0.37		0.04	c0.31	
v/s Ratio Perm												
v/c Ratio	0.80	0.79	0.36					0.73		0.36	0.47	
Uniform Delay, d1	53.4	53.1	47.1					28.9		61.1	12.1	
Progression Factor	1.00	1.00	1.00					1.52		1.64	3.03	
Incremental Delay, d2	11.9	10.3	0.5					0.4		2.5	0.5	
Delay (s)	65.3	63.4	47.6					44.3		102.7	37.2	
Level of Service	E	E	D					D		F	D	
Approach Delay (s)		60.1			0.0			44.3			42.7	
Approach LOS		E			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	50	60	230	520	2560	0	0	1495	550
Future Volume (vph)	0	0	0	50	60	230	520	2560	0	0	1495	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1777	1750	3204	6194			7329	1591
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1777	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	54	65	250	565	2783	0	0	1625	598
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	49	70	250	565	2783	0	0	1625	598
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				12.2	12.2	150.0	32.9	123.8			84.4	150.0
Effective Green, g (s)				12.2	12.2	150.0	32.9	123.8			84.4	150.0
Actuated g/C Ratio				0.08	0.08	1.00	0.22	0.83			0.56	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	0.2			0.2	
Lane Grp Cap (vph)				133	144	1750	702	5112			4123	1591
v/s Ratio Prot				0.03	0.04		c0.18	c0.45			0.22	
v/s Ratio Perm						0.14						c0.38
v/c Ratio				0.37	0.49	0.14	0.80	0.54			0.39	0.38
Uniform Delay, d1				65.3	65.9	0.0	55.5	4.2			18.4	0.0
Progression Factor				1.00	1.00	1.00	0.77	2.00			0.89	1.00
Incremental Delay, d2				2.3	3.5	0.2	4.8	0.3			0.1	0.2
Delay (s)				67.6	69.4	0.2	47.6	8.6			16.5	0.2
Level of Service				E	E	A	D	A			B	A
Approach Delay (s)		0.0			22.3			15.2			12.1	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	285	245	135	440	290	95	15	230	1940	605	60	1455
Future Volume (vph)	285	245	135	440	290	95	15	230	1940	605	60	1455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3300		3172	3504	1567		1652	4916	1531	1719	4244
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.07	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3300		3172	3504	1567		124	4916	1531	1719	4244
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	310	266	147	478	315	103	16	250	2109	658	65	1582
RTOR Reduction (vph)	0	0	0	0	0	82	0	0	0	209	0	13
Lane Group Flow (vph)	310	413	0	478	315	21	0	266	2109	449	65	1852
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	24.3	24.3		19.5	19.5	30.2		69.5	69.5	69.5	10.7	66.7
Effective Green, g (s)	24.3	24.3		19.5	19.5	30.2		69.5	69.5	69.5	10.7	66.7
Actuated g/C Ratio	0.16	0.16		0.13	0.13	0.20		0.46	0.46	0.46	0.07	0.44
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	511	534		412	455	315		194	2277	709	122	1887
v/s Ratio Prot	0.10	c0.13		c0.15	0.09	0.01		c0.12	0.43		0.04	c0.44
v/s Ratio Perm								c0.51		0.29		
v/c Ratio	0.61	0.77		1.16	0.69	0.07		1.37	0.93	0.63	0.53	0.98
Uniform Delay, d1	58.4	60.2		65.2	62.4	48.5		59.2	37.8	30.6	67.2	41.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.07	1.10	1.40	1.00	1.00
Incremental Delay, d2	2.0	6.9		95.9	4.5	0.1		192.9	7.1	3.7	4.4	16.7
Delay (s)	60.4	67.1		161.1	66.9	48.6		255.9	48.6	46.6	71.7	57.8
Level of Service	E	E		F	E	D		F	D	D	E	E
Approach Delay (s)		64.2			115.1				66.4			58.2
Approach LOS		E			F				E			E

Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	260
Future Volume (vph)	260
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	283
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	1055	30	10	105	600	125	20	40	260	470	125
Future Volume (vph)	20	1055	30	10	105	600	125	20	40	260	470	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	1.00			1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (prot)	1711	3524			1778	3557	1538	1694	1783	1776	1536	1623
Flt Permitted	0.40	1.00			0.09	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (perm)	728	3524			170	3557	1538	1694	1783	1776	1536	1623
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1147	33	11	114	652	136	22	43	283	511	136
RTOR Reduction (vph)	0	1	0	0	0	0	63	0	0	0	0	1
Lane Group Flow (vph)	22	1179	0	0	125	652	73	22	43	283	322	335
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	65.1	65.1			81.0	81.0	81.0	9.4	9.4	150.0	39.1	39.1
Effective Green, g (s)	65.1	65.1			81.0	81.0	81.0	9.4	9.4	150.0	39.1	39.1
Actuated g/C Ratio	0.43	0.43			0.54	0.54	0.54	0.06	0.06	1.00	0.26	0.26
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	315	1529			214	1920	830	106	111	1776	400	423
v/s Ratio Prot		c0.33			c0.04	0.18		0.01	c0.02		c0.21	0.21
v/s Ratio Perm	0.03				0.27		0.05			0.16		
v/c Ratio	0.07	0.77			0.58	0.34	0.09	0.21	0.39	0.16	0.81	0.79
Uniform Delay, d1	24.8	36.1			25.7	19.4	16.7	66.8	67.5	0.0	51.9	51.7
Progression Factor	1.00	1.00			0.82	0.96	1.19	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	3.8			3.9	0.5	0.2	2.0	4.6	0.2	12.7	11.2
Delay (s)	25.2	39.9			25.0	19.1	20.0	68.8	72.2	0.2	64.5	62.9
Level of Service	C	D			C	B	B	E	E	A	E	E
Approach Delay (s)		39.7				20.1			13.4			63.7
Approach LOS		D				C			B			E

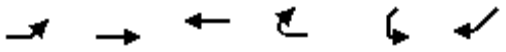
Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1045	0	0	590	250	0
Future Volume (vph)	1045	0	0	590	250	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0			6.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3539			3539	3547	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3539			3539	3547	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1136	0	0	641	272	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1136	0	0	641	272	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	4	
Permitted Phases						
Actuated Green, G (s)	120.4			120.4	18.6	
Effective Green, g (s)	120.4			120.4	18.6	
Actuated g/C Ratio	0.80			0.80	0.12	
Clearance Time (s)	6.0			6.0	5.0	
Vehicle Extension (s)	0.2			0.2	5.0	
Lane Grp Cap (vph)	2840			2840	439	
v/s Ratio Prot	c0.32			0.18	c0.08	
v/s Ratio Perm						
v/c Ratio	0.40			0.23	0.62	
Uniform Delay, d1	4.3			3.6	62.3	
Progression Factor	0.56			1.00	1.00	
Incremental Delay, d2	0.3			0.2	3.7	
Delay (s)	2.7			3.8	66.1	
Level of Service	A			A	E	
Approach Delay (s)	2.7			3.8	66.1	
Approach LOS	A			A	E	

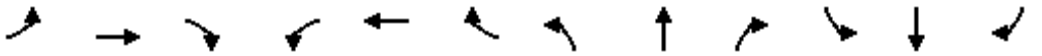
Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	395	1260	910	0	0	0
Future Volume (vph)	395	1260	910	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.0			
Lane Util. Factor	1.00	0.91	0.95			
Frt	1.00	1.00	1.00			
Flt Protected	0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085	3539			
Flt Permitted	0.29	1.00	1.00			
Satd. Flow (perm)	540	5085	3539			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	429	1370	989	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	429	1370	989	0	0	0
Turn Type	D.Pm	NA	NA			
Protected Phases		Free	2			
Permitted Phases	2					
Actuated Green, G (s)	150.0	150.0	150.0			
Effective Green, g (s)	150.0	150.0	150.0			
Actuated g/C Ratio	1.00	1.00	1.00			
Clearance Time (s)	6.0		6.0			
Vehicle Extension (s)	0.2		0.2			
Lane Grp Cap (vph)	540	5085	3539			
v/s Ratio Prot		0.27	0.28			
v/s Ratio Perm	c0.79					
v/c Ratio	0.79	0.27	0.28			
Uniform Delay, d1	0.0	0.0	0.0			
Progression Factor	1.00	1.00	1.00			
Incremental Delay, d2	11.3	0.1	0.2			
Delay (s)	11.3	0.1	0.2			
Level of Service	B	A	A			
Approach Delay (s)		2.8	0.2		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	1.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1865	25	5	1510	25	25	5	5	55	15	165
Future Volume (veh/h)	85	1865	25	5	1510	25	25	5	5	55	15	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	92	2027	27	5	1641	27	27	5	5	60	16	179
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	2840	1218	146	2616	1167	113	21	15	187	46	210
Arrive On Green	0.02	0.78	0.78	0.00	0.76	0.76	0.13	0.12	0.12	0.13	0.12	0.12
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	679	178	134	1312	399	1821
Grp Volume(v), veh/h	92	2027	27	5	1641	27	37	0	0	76	0	179
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	991	0	0	1711	0	1821
Q Serve(g_s), s	2.2	49.9	0.7	0.1	39.5	0.8	3.6	0.0	0.0	0.0	0.0	17.4
Cycle Q Clear(g_c), s	2.2	49.9	0.7	0.1	39.5	0.8	10.8	0.0	0.0	7.2	0.0	17.4
Prop In Lane	1.00		1.00	1.00		1.00	0.73		0.14	0.79		1.00
Lane Grp Cap(c), veh/h	241	2840	1218	146	2616	1167	163	0	0	257	0	210
V/C Ratio(X)	0.38	0.71	0.02	0.03	0.63	0.02	0.23	0.00	0.00	0.30	0.00	0.85
Avail Cap(c_a), veh/h	325	2840	1218	264	2616	1167	228	0	0	340	0	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.8	10.0	4.5	11.2	10.1	5.4	75.9	0.0	0.0	72.7	0.0	78.1
Incr Delay (d2), s/veh	2.1	1.6	0.0	0.2	1.2	0.0	1.5	0.0	0.0	1.4	0.0	21.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	18.8	0.2	0.1	14.5	0.3	1.7	0.0	0.0	3.3	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	11.5	4.5	11.4	11.2	5.4	77.4	0.0	0.0	74.0	0.0	99.5
LnGrp LOS	B	B	A	B	B	A	E	A	A	E	A	F
Approach Vol, veh/h		2146			1673			37			255	
Approach Delay, s/veh		11.5			11.1			77.4			91.9	
Approach LOS		B			B			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	142.4		27.2	6.7	146.1		27.2				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	13.0	119.0		29.5	13.0	119.0		29.5				
Max Q Clear Time (g_c+I1), s	4.2	41.5		12.8	2.1	51.9		19.4				
Green Ext Time (p_c), s	0.3	2.7		0.2	0.0	3.9		1.4				

Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	25	635	25	10	240	1175	695	25	195	350	440	185
Future Volume (vph)	25	635	25	10	240	1175	695	25	195	350	440	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (prot)	1711	3519			1778	3557	1538	1694	1783	1776	1536	1621
Flt Permitted	0.12	1.00			0.19	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (perm)	208	3519			356	3557	1538	1694	1783	1776	1536	1621
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	690	27	11	261	1277	755	27	212	380	478	201
RTOR Reduction (vph)	0	2	0	0	0	0	397	0	0	0	0	2
Lane Group Flow (vph)	27	715	0	0	272	1277	358	27	212	380	301	409
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	47.2	47.2			68.0	68.0	68.0	22.9	22.9	150.0	38.6	38.6
Effective Green, g (s)	47.2	47.2			68.0	68.0	68.0	22.9	22.9	150.0	38.6	38.6
Actuated g/C Ratio	0.31	0.31			0.45	0.45	0.45	0.15	0.15	1.00	0.26	0.26
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	65	1107			315	1612	697	258	272	1776	395	417
v/s Ratio Prot		0.20			0.09	c0.36		0.02	c0.12		0.20	c0.25
v/s Ratio Perm	0.13				c0.30		0.23			0.21		
v/c Ratio	0.42	0.65			0.86	0.79	0.51	0.10	0.78	0.21	0.76	0.98
Uniform Delay, d1	40.5	44.2			30.0	35.0	29.2	54.7	61.1	0.0	51.5	55.3
Progression Factor	1.00	1.00			0.93	0.74	0.45	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.4	2.9			16.7	3.1	2.0	0.4	15.2	0.3	9.9	39.0
Delay (s)	58.9	47.1			44.7	29.0	15.2	55.1	76.3	0.3	61.3	94.3
Level of Service	E	D			D	C	B	E	E	A	E	F
Approach Delay (s)		47.6				26.3			28.7			80.4
Approach LOS		D				C			C			F

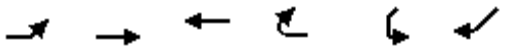
Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	30
Future Volume (vph)	30
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	33
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1065	0	0	1845	275	0
Future Volume (vph)	1065	0	0	1845	275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0			6.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3539			3539	3547	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3539			3539	3547	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1158	0	0	2005	299	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1158	0	0	2005	299	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	4	
Permitted Phases						
Actuated Green, G (s)	120.9			120.9	18.1	
Effective Green, g (s)	120.9			120.9	18.1	
Actuated g/C Ratio	0.81			0.81	0.12	
Clearance Time (s)	6.0			6.0	5.0	
Vehicle Extension (s)	5.0			5.0	3.0	
Lane Grp Cap (vph)	2852			2852	428	
v/s Ratio Prot	0.33			c0.57	c0.08	
v/s Ratio Perm						
v/c Ratio	0.41			0.70	0.70	
Uniform Delay, d1	4.2			6.5	63.3	
Progression Factor	0.40			1.21	1.00	
Incremental Delay, d2	0.3			1.4	4.9	
Delay (s)	2.0			9.3	68.3	
Level of Service	A			A	E	
Approach Delay (s)	2.0			9.3	68.3	
Approach LOS	A			A	E	

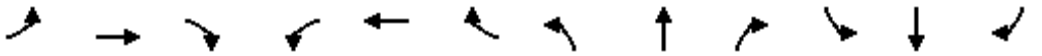
Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	320	1345	1480	0	0	0
Future Volume (vph)	320	1345	1480	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	6.0			
Lane Util. Factor	1.00	0.91	0.95			
Frt	1.00	1.00	1.00			
Flt Protected	0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085	3539			
Flt Permitted	0.11	1.00	1.00			
Satd. Flow (perm)	206	5085	3539			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	1462	1609	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	348	1462	1609	0	0	0
Turn Type	D.P+P	NA	NA			
Protected Phases	1	Free	2			
Permitted Phases	2					
Actuated Green, G (s)	139.0	150.0	108.3			
Effective Green, g (s)	139.0	150.0	108.3			
Actuated g/C Ratio	0.93	1.00	0.72			
Clearance Time (s)	5.0		6.0			
Vehicle Extension (s)	3.0		0.2			
Lane Grp Cap (vph)	510	5085	2555			
v/s Ratio Prot	c0.14	0.29	0.45			
v/s Ratio Perm	c0.49					
v/c Ratio	0.68	0.29	0.63			
Uniform Delay, d1	28.7	0.0	10.6			
Progression Factor	0.60	1.00	1.00			
Incremental Delay, d2	3.7	0.1	1.2			
Delay (s)	20.9	0.1	11.8			
Level of Service	C	A	B			
Approach Delay (s)		4.1	11.8		0.0	
Approach LOS		A	B		A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1460	50	5	2170	55	20	5	5	40	10	120
Future Volume (veh/h)	220	1460	50	5	2170	55	20	5	5	40	10	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	239	1587	54	5	2359	60	22	5	5	43	11	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	2955	1267	243	2540	1133	92	20	14	147	34	153
Arrive On Green	0.08	0.81	0.81	0.00	0.74	0.74	0.10	0.08	0.08	0.10	0.08	0.08
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	691	240	172	1320	400	1821
Grp Volume(v), veh/h	239	1587	54	5	2359	60	32	0	0	54	0	130
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1103	0	0	1721	0	1821
Q Serve(g_s), s	14.0	26.4	1.2	0.1	102.6	1.9	2.6	0.0	0.0	0.0	0.0	12.7
Cycle Q Clear(g_c), s	14.0	26.4	1.2	0.1	102.6	1.9	7.8	0.0	0.0	5.2	0.0	12.7
Prop In Lane	1.00		1.00	1.00		1.00	0.69		0.16	0.80		1.00
Lane Grp Cap(c), veh/h	200	2955	1267	243	2540	1133	142	0	0	204	0	153
V/C Ratio(X)	1.19	0.54	0.04	0.02	0.93	0.05	0.23	0.00	0.00	0.26	0.00	0.85
Avail Cap(c_a), veh/h	200	2955	1267	371	2540	1133	168	0	0	236	0	187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	69.1	5.8	3.4	6.6	19.9	6.5	78.9	0.0	0.0	76.9	0.0	81.3
Incr Delay (d2), s/veh	126.0	0.7	0.1	0.1	7.5	0.1	1.7	0.0	0.0	1.5	0.0	30.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.3	9.3	0.4	0.1	40.3	0.7	1.5	0.0	0.0	2.4	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	195.1	6.5	3.4	6.7	27.4	6.6	80.6	0.0	0.0	78.4	0.0	112.3
LnGrp LOS	F	A	A	A	C	A	F	A	A	E	A	F
Approach Vol, veh/h		1880			2424			32			184	
Approach Delay, s/veh		30.4			26.8			80.6			102.3	
Approach LOS		C			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	138.4		21.6	6.7	151.7		21.6				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	14.0	129.0		18.5	14.0	129.0		18.5				
Max Q Clear Time (g_c+I1), s	16.0	104.6		9.8	2.1	28.4		14.7				
Green Ext Time (p_c), s	0.0	5.1		0.1	0.0	2.6		0.4				

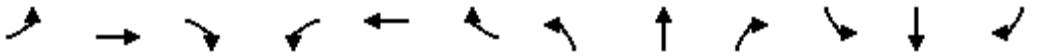
Intersection Summary			
HCM 6th Ctrl Delay		31.7	
HCM 6th LOS		C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	55	5	175	5	5	5	5	105	1180	5	5	2090
Future Volume (vph)	55	5	175	5	5	5	5	105	1180	5	5	2090
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.95			1.00	1.00	0.85	1.00	1.00
Flt Protected		0.96	1.00		0.98			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1781	1583		1750			1770	5085	1583	1770	5066
Flt Permitted		0.73	1.00		0.89			0.04	1.00	1.00	0.20	1.00
Satd. Flow (perm)		1363	1583		1583			80	5085	1583	380	5066
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	5	190	5	5	5	5	114	1283	5	5	2272
RTOR Reduction (vph)	0	0	18	0	5	0	0	0	0	1	0	1
Lane Group Flow (vph)	0	65	172	0	10	0	0	119	1283	4	5	2331
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		12.6	24.7		13.1			123.9	123.9	123.9	106.3	106.3
Effective Green, g (s)		12.6	24.7		13.1			123.9	123.9	123.9	106.3	106.3
Actuated g/C Ratio		0.08	0.16		0.09			0.83	0.83	0.83	0.71	0.71
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		114	260		138			202	4200	1307	269	3590
v/s Ratio Prot			c0.05					0.05	0.25			c0.46
v/s Ratio Perm		0.05	0.06		0.01			0.44		0.00	0.01	
v/c Ratio		0.57	0.66		0.08			0.59	0.31	0.00	0.02	0.65
Uniform Delay, d1		66.1	58.7		62.9			33.0	3.0	2.3	6.5	11.8
Progression Factor		1.00	1.00		1.00			0.70	1.85	1.00	1.00	1.00
Incremental Delay, d2		10.5	6.2		0.5			4.0	0.2	0.0	0.1	0.9
Delay (s)		76.6	64.9		63.4			27.2	5.8	2.3	6.6	12.7
Level of Service		E	E		E			C	A	A	A	B
Approach Delay (s)		67.9			63.4				7.6			12.7
Approach LOS		E			E				A			B

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

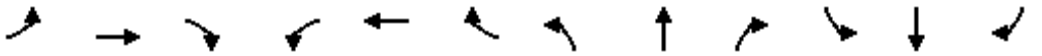
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	60
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	170	5	325	285	970	0	0	1840	435
Future Volume (vph)	0	0	0	170	5	325	285	970	0	0	1840	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1690	1583	1770	5085			4939	
Flt Permitted				0.95	0.95	1.00	0.04	1.00			1.00	
Satd. Flow (perm)				1681	1690	1583	84	5085			4939	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	185	5	353	310	1054	0	0	2000	473
RTOR Reduction (vph)	0	0	0	0	0	134	0	0	0	0	25	0
Lane Group Flow (vph)	0	0	0	94	96	219	310	1054	0	0	2448	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				25.1	25.1	25.1	112.9	112.9			82.4	
Effective Green, g (s)				25.1	25.1	25.1	112.9	112.9			82.4	
Actuated g/C Ratio				0.17	0.17	0.17	0.75	0.75			0.55	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				281	282	264	332	3827			2713	
v/s Ratio Prot							c0.15	0.21			0.50	
v/s Ratio Perm				0.06	0.06	c0.14	c0.55					
v/c Ratio				0.33	0.34	0.83	0.93	0.28			0.90	
Uniform Delay, d1				55.1	55.1	60.4	49.3	5.8			30.2	
Progression Factor				1.00	1.00	1.00	0.86	0.14			0.73	
Incremental Delay, d2				1.0	1.0	19.7	30.6	0.2			4.4	
Delay (s)				56.0	56.1	80.1	73.1	1.0			26.3	
Level of Service				E	E	F	E	A			C	
Approach Delay (s)		0.0			71.7			17.4			26.3	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

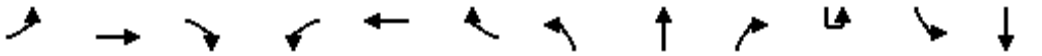
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	5	550	0	0	0	0	1170	150	210	1800	0
Future Volume (vph)	85	5	550	0	0	0	0	1170	150	210	1800	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.96	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1694	1583					4999		1770	5085	
Flt Permitted	0.95	0.96	1.00					1.00		0.15	1.00	
Satd. Flow (perm)	1681	1694	1583					4999		272	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	5	598	0	0	0	0	1272	163	228	1957	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	49	48	598	0	0	0	0	1427	0	228	1957	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	11.8	11.8	150.0					95.7		126.2	126.2	
Effective Green, g (s)	11.8	11.8	150.0					95.7		126.2	126.2	
Actuated g/C Ratio	0.08	0.08	1.00					0.64		0.84	0.84	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	132	133	1583					3189		468	4278	
v/s Ratio Prot	0.03	0.03						0.29		0.08	c0.38	
v/s Ratio Perm			c0.38							c0.33		
v/c Ratio	0.37	0.36	0.38					0.45		0.49	0.46	
Uniform Delay, d1	65.6	65.5	0.0					13.8		17.2	3.1	
Progression Factor	1.00	1.00	1.00					0.70		1.21	0.51	
Incremental Delay, d2	3.7	3.5	0.7					0.4		0.3	0.2	
Delay (s)	69.2	69.0	0.7					10.1		21.1	1.7	
Level of Service	E	E	A					B		C	A	
Approach Delay (s)		10.2			0.0			10.1			3.7	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	225	25	10	35	5	65	5	1020	20	10	95	2210
Future Volume (vph)	225	25	10	35	5	65	5	1020	20	10	95	2210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.99		1.00	1.00	0.85	1.00	1.00			1.00	1.00
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1776		1770	1863	1583	1770	5070			1770	5073
Flt Permitted		0.75		0.77	1.00	1.00	0.04	1.00			0.20	1.00
Satd. Flow (perm)		1392		1430	1863	1583	80	5070			375	5073
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	27	11	38	5	71	5	1109	22	11	103	2402
RTOR Reduction (vph)	0	1	0	0	0	57	0	1	0	0	0	1
Lane Group Flow (vph)	0	282	0	38	5	14	5	1130	0	0	114	2439
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		29.5		29.5	29.5	29.5	94.9	93.7			107.5	100.8
Effective Green, g (s)		29.5		29.5	29.5	29.5	94.9	93.7			107.5	100.8
Actuated g/C Ratio		0.20		0.20	0.20	0.20	0.63	0.62			0.72	0.67
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		273		281	366	311	64	3167			345	3409
v/s Ratio Prot					0.00		0.00	0.22			c0.02	c0.48
v/s Ratio Perm		c0.20		0.03		0.01	0.05				0.22	
v/c Ratio		1.03		0.14	0.01	0.04	0.08	0.36			0.33	0.72
Uniform Delay, d1		60.2		49.7	48.5	48.8	14.4	13.6			7.6	15.5
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			0.24	0.17
Incremental Delay, d2		63.5		0.3	0.0	0.1	0.5	0.3			0.5	1.2
Delay (s)		123.7		50.0	48.6	48.9	14.9	13.9			2.3	3.8
Level of Service		F		D	D	D	B	B			A	A
Approach Delay (s)		123.7			49.3			13.9				3.8
Approach LOS		F			D			B				A

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

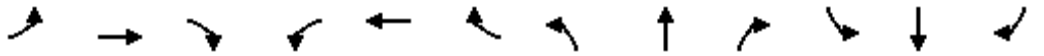
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	38
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	90	5	65	5	5	5	5	150	2360	5	5	1815
Future Volume (vph)	90	5	65	5	5	5	5	150	2360	5	5	1815
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.95			1.00	1.00	0.85	1.00	0.99
Flt Protected		0.95	1.00		0.98			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1778	1583		1750			1770	5085	1583	1770	5049
Flt Permitted		0.73	1.00		0.90			0.06	1.00	1.00	0.05	1.00
Satd. Flow (perm)		1352	1583		1609			105	5085	1583	85	5049
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	5	71	5	5	5	5	163	2565	5	5	1973
RTOR Reduction (vph)	0	0	17	0	4	0	0	0	0	1	0	3
Lane Group Flow (vph)	0	103	54	0	11	0	0	168	2565	4	5	2068
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		19.0	32.9		19.5			117.5	117.5	117.5	98.1	98.1
Effective Green, g (s)		19.0	32.9		19.5			117.5	117.5	117.5	98.1	98.1
Actuated g/C Ratio		0.13	0.22		0.13			0.78	0.78	0.78	0.65	0.65
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		171	347		209			236	3983	1240	55	3302
v/s Ratio Prot			0.01					0.07	c0.50			0.41
v/s Ratio Perm		c0.08	0.02		0.01			c0.49		0.00	0.06	
v/c Ratio		0.60	0.16		0.05			0.71	0.64	0.00	0.09	0.63
Uniform Delay, d1		61.9	47.3		57.1			35.3	7.1	3.5	9.5	15.2
Progression Factor		1.00	1.00		1.00			1.73	0.25	1.00	1.00	1.00
Incremental Delay, d2		8.5	0.2		0.2			6.8	0.6	0.0	3.2	0.9
Delay (s)		70.5	47.5		57.4			67.8	2.3	3.5	12.8	16.1
Level of Service		E	D		E			E	A	A	B	B
Approach Delay (s)		61.1			57.4				6.4			16.1
Approach LOS		E			E				A			B

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

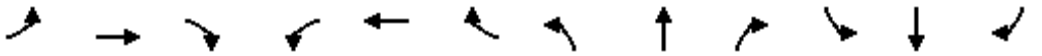
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	90
Future Volume (vph)	90
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	98
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	160	5	380	210	2140	0	0	1405	485
Future Volume (vph)	0	0	0	160	5	380	210	2140	0	0	1405	485
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.96	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1690	1583	1770	5085			4890	
Flt Permitted				0.95	0.95	1.00	0.05	1.00			1.00	
Satd. Flow (perm)				1681	1690	1583	90	5085			4890	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	174	5	413	228	2326	0	0	1527	527
RTOR Reduction (vph)	0	0	0	0	0	51	0	0	0	0	41	0
Lane Group Flow (vph)	0	0	0	89	90	362	228	2326	0	0	2013	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				32.5	32.5	32.5	105.5	105.5			84.0	
Effective Green, g (s)				32.5	32.5	32.5	105.5	105.5			84.0	
Actuated g/C Ratio				0.22	0.22	0.22	0.70	0.70			0.56	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				364	366	342	231	3576			2738	
v/s Ratio Prot							c0.10	0.46			0.41	
v/s Ratio Perm				0.05	0.05	c0.23	c0.59					
v/c Ratio				0.24	0.25	1.06	0.99	0.65			0.74	
Uniform Delay, d1				48.6	48.6	58.8	43.7	12.2			24.7	
Progression Factor				1.00	1.00	1.00	0.81	0.44			1.52	
Incremental Delay, d2				0.5	0.5	65.0	39.3	0.5			1.4	
Delay (s)				49.1	49.1	123.8	74.4	5.9			38.9	
Level of Service				D	D	F	E	A			D	
Approach Delay (s)		0.0			101.2			12.0			38.9	
Approach LOS		A			F			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

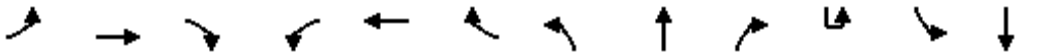
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	5	185	0	0	0	0	1955	165	175	1390	0
Future Volume (vph)	395	5	185	0	0	0	0	1955	165	175	1390	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1687	1583					5026		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.05	1.00	
Satd. Flow (perm)	1681	1687	1583					5026		85	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	429	5	201	0	0	0	0	2125	179	190	1511	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	219	215	201	0	0	0	0	2298	0	190	1511	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	25.9	25.9	150.0					81.6		112.1	112.1	
Effective Green, g (s)	25.9	25.9	150.0					81.6		112.1	112.1	
Actuated g/C Ratio	0.17	0.17	1.00					0.54		0.75	0.75	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	290	291	1583					2734		333	3800	
v/s Ratio Prot	c0.13	0.13						c0.46		c0.09	0.30	
v/s Ratio Perm			0.13							0.34		
v/c Ratio	0.76	0.74	0.13					0.84		0.57	0.40	
Uniform Delay, d1	59.0	58.8	0.0					28.7		41.9	6.8	
Progression Factor	1.00	1.00	1.00					1.38		0.74	0.41	
Incremental Delay, d2	12.5	11.3	0.2					2.8		1.6	0.2	
Delay (s)	71.6	70.2	0.2					42.4		32.5	3.0	
Level of Service	E	E	A					D		C	A	
Approach Delay (s)		48.5			0.0			42.4			6.3	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	45	5	10	10	5	30	10	2040	5	5	30	1465
Future Volume (vph)	45	5	10	10	5	30	10	2040	5	5	30	1465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.98		1.00	1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1754		1770	1863	1583	1770	5084			1770	5048
Flt Permitted		0.78		0.75	1.00	1.00	0.12	1.00			0.06	1.00
Satd. Flow (perm)		1413		1391	1863	1583	232	5084			107	5048
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	5	11	11	5	33	11	2217	5	5	33	1592
RTOR Reduction (vph)	0	5	0	0	0	30	0	0	0	0	0	2
Lane Group Flow (vph)	0	60	0	11	5	3	11	2222	0	0	38	1672
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		13.3		13.3	13.3	13.3	115.5	113.1			120.9	115.8
Effective Green, g (s)		13.3		13.3	13.3	13.3	115.5	113.1			120.9	115.8
Actuated g/C Ratio		0.09		0.09	0.09	0.09	0.77	0.75			0.81	0.77
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		125		123	165	140	203	3833			142	3897
v/s Ratio Prot					0.00		0.00	c0.44			c0.01	c0.33
v/s Ratio Perm		c0.04		0.01		0.00	0.04				0.21	
v/c Ratio		0.48		0.09	0.03	0.02	0.05	0.58			0.27	0.43
Uniform Delay, d1		65.0		62.8	62.5	62.4	4.2	8.1			6.1	5.8
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			2.29	2.13
Incremental Delay, d2		3.9		0.4	0.1	0.1	0.1	0.6			1.0	0.3
Delay (s)		68.9		63.2	62.6	62.5	4.4	8.7			15.1	12.7
Level of Service		E		E	E	E	A	A			B	B
Approach Delay (s)		68.9			62.7			8.7				12.8
Approach LOS		E			E			A				B

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

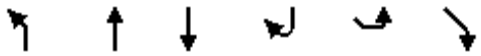
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	75
Future Volume (vph)	75
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	82
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	110	215	595	110	105	2085	120	1125
Future Volume (vph)	110	215	595	110	105	2085	120	1125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.93		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1727		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1727		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	234	647	120	114	2266	130	1223
RTOR Reduction (vph)	0	53	0	23	0	0	48	0
Lane Group Flow (vph)	120	181	647	211	0	2266	82	1223
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	24.9	38.6	69.0	38.6		68.5	68.5	68.5
Effective Green, g (s)	24.9	38.6	69.0	38.6		68.5	68.5	68.5
Actuated g/C Ratio	0.17	0.26	0.46	0.26		0.46	0.46	0.46
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	569	407	1579	444		2322	722	1648
v/s Ratio Prot	0.03		c0.19	c0.12		c0.45		0.34
v/s Ratio Perm		0.11					0.05	
v/c Ratio	0.21	0.45	0.41	0.48		0.98	0.11	0.74
Uniform Delay, d1	54.1	46.7	26.9	47.1		39.9	23.3	33.5
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	2.2	0.2	2.3		13.8	0.3	3.1
Delay (s)	54.2	48.9	27.1	49.5		53.7	23.7	36.6
Level of Service	D	D	C	D		D	C	D
Approach Delay (s)				33.1		52.1		
Approach LOS				C		D		

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

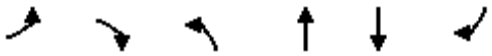
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	3025	0	0	470
Future Volume (vph)	0	0	3025	0	0	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	3288	0	0	511
RTOR Reduction (vph)	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	3288	0	0	510
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			125.7			42.3
Effective Green, g (s)			125.7			42.3
Actuated g/C Ratio			0.70			0.23
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4474			654
v/s Ratio Prot			c0.51			c0.18
v/s Ratio Perm						
v/c Ratio			0.73			0.78
Uniform Delay, d1			16.8			64.5
Progression Factor			1.00			1.00
Incremental Delay, d2			1.1			7.4
Delay (s)			17.9			71.9
Level of Service			B			E
Approach Delay (s)		0.0	17.9		71.9	
Approach LOS		A	B		E	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



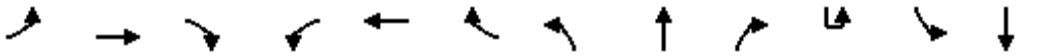
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	235	70	65	3110	2080	285
Future Volume (veh/h)	235	70	65	3110	2080	285
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	0	71	3380	2261	310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	304		382	4302	3807	1077
Arrive On Green	0.09	0.00	0.21	0.84	0.59	0.59
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	255	0	71	3380	2261	310
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	13.1	0.0	5.9	55.5	39.8	14.0
Cycle Q Clear(g_c), s	13.1	0.0	5.9	55.5	39.8	14.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	304		382	4302	3807	1077
V/C Ratio(X)	0.84		0.19	0.79	0.59	0.29
Avail Cap(c_a), veh/h	365		382	4302	3807	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.8	0.0	57.8	6.6	23.1	11.5
Incr Delay (d2), s/veh	20.8	0.0	0.2	1.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	2.7	16.5	14.8	6.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	101.6	0.0	58.0	8.1	23.8	12.2
LnGrp LOS	F		E	A	C	B
Approach Vol, veh/h	255	A		3451	2571	
Approach Delay, s/veh	101.6			9.1	22.4	
Approach LOS	F			A	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		158.2		21.8	45.2	113.0
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		148.5		19.0	35.5	106.5
Max Q Clear Time (g_c+I1), s		57.5		15.1	7.9	41.8
Green Ext Time (p_c), s		81.6		0.8	0.2	3.4

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	60	5	20	5	5	10	0	1300	5	295	5	3155
Future Volume (vph)	60	5	20	5	5	10	0	1300	5	295	5	3155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0			4.5	5.0
Lane Util. Factor		1.00			1.00			0.91			1.00	0.91
Frt		0.97			0.93			1.00			1.00	1.00
Flt Protected		0.97			0.99			1.00			0.95	1.00
Satd. Flow (prot)		1741			1711			5083			1770	5064
Flt Permitted		0.78			0.94			1.00			0.14	1.00
Satd. Flow (perm)		1400			1628			5083			266	5064
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	5	22	5	5	11	0	1413	5	321	5	3429
RTOR Reduction (vph)	0	3	0	0	10	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	89	0	0	11	0	0	1418	0	0	326	3526
Turn Type	Perm	NA		Perm	NA			NA		custom	pm+pt	NA
Protected Phases		8			4			6			5	2
Permitted Phases	8			4						5	2	
Actuated Green, G (s)		16.8			16.8			112.2			152.7	152.2
Effective Green, g (s)		16.8			16.8			112.2			152.7	152.2
Actuated g/C Ratio		0.09			0.09			0.62			0.85	0.85
Clearance Time (s)		6.0			6.0			5.0			4.5	5.0
Vehicle Extension (s)		3.0			3.0			0.2			3.0	0.2
Lane Grp Cap (vph)		130			151			3168			522	4281
v/s Ratio Prot								0.28			0.12	c0.70
v/s Ratio Perm		c0.06			0.01						0.41	
v/c Ratio		0.69			0.07			0.45			0.62	0.82
Uniform Delay, d1		79.1			74.5			17.7			21.7	7.1
Progression Factor		1.00			1.00			1.00			0.81	1.13
Incremental Delay, d2		14.0			0.2			0.5			1.1	0.9
Delay (s)		93.1			74.7			18.2			18.6	8.9
Level of Service		F			E			B			B	A
Approach Delay (s)		93.1			74.7			18.2				9.7
Approach LOS		F			E			B				A

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

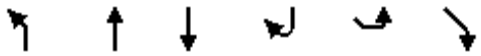
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	90
Future Volume (vph)	90
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	98
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	150	170	220	135	135	1570	125	1735
Future Volume (vph)	150	170	220	135	135	1570	125	1735
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.93		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1723		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1723		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	185	239	147	147	1707	136	1886
RTOR Reduction (vph)	0	107	0	25	0	0	61	0
Lane Group Flow (vph)	163	78	239	269	0	1707	75	1886
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	12.9	36.1	54.5	36.1		83.0	83.0	83.0
Effective Green, g (s)	12.9	36.1	54.5	36.1		83.0	83.0	83.0
Actuated g/C Ratio	0.09	0.24	0.36	0.24		0.55	0.55	0.55
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	295	380	1247	414		2813	875	1997
v/s Ratio Prot	c0.05		0.07	c0.16		0.34		c0.52
v/s Ratio Perm		0.05					0.05	
v/c Ratio	0.55	0.21	0.19	0.65		0.61	0.09	0.94
Uniform Delay, d1	65.8	45.5	32.7	51.3		22.5	15.7	31.3
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	0.8	0.1	5.7		1.0	0.2	10.7
Delay (s)	68.0	46.2	32.8	56.9		23.5	15.9	42.1
Level of Service	E	D	C	E		C	B	D
Approach Delay (s)				46.1		22.9		
Approach LOS				D		C		

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

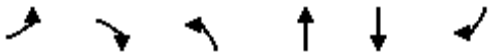
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	2040	0	0	325
Future Volume (vph)	0	0	2040	0	0	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2217	0	0	353
RTOR Reduction (vph)	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	2217	0	0	337
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			137.9			30.1
Effective Green, g (s)			137.9			30.1
Actuated g/C Ratio			0.77			0.17
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4909			466
v/s Ratio Prot			c0.35			c0.12
v/s Ratio Perm						
v/c Ratio			0.45			0.72
Uniform Delay, d1			7.5			71.0
Progression Factor			1.00			1.00
Incremental Delay, d2			0.3			7.7
Delay (s)			7.8			78.7
Level of Service			A			E
Approach Delay (s)		0.0	7.8		78.7	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	235	70	65	3110	2080	285
Future Volume (veh/h)	235	70	65	3110	2080	285
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	0	71	3380	2261	310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	304		382	4302	3807	1077
Arrive On Green	0.09	0.00	0.21	0.84	0.59	0.59
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	255	0	71	3380	2261	310
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	13.1	0.0	5.9	55.5	39.8	14.0
Cycle Q Clear(g_c), s	13.1	0.0	5.9	55.5	39.8	14.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	304		382	4302	3807	1077
V/C Ratio(X)	0.84		0.19	0.79	0.59	0.29
Avail Cap(c_a), veh/h	365		382	4302	3807	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.8	0.0	57.8	6.6	23.1	11.5
Incr Delay (d2), s/veh	20.8	0.0	0.2	1.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	2.7	16.5	14.8	6.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	101.6	0.0	58.0	8.1	23.8	12.2
LnGrp LOS	F		E	A	C	B
Approach Vol, veh/h	255	A		3451	2571	
Approach Delay, s/veh	101.6			9.1	22.4	
Approach LOS	F			A	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		158.2		21.8	45.2	113.0
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		148.5		19.0	35.5	106.5
Max Q Clear Time (g_c+I1), s		57.5		15.1	7.9	41.8
Green Ext Time (p_c), s		81.6		0.8	0.2	3.4

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

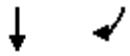
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	85	5	15	10	5	5	5	10	2855	5	230	5
Future Volume (vph)	85	5	15	10	5	5	5	10	2855	5	230	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			4.5	5.0			4.5
Lane Util. Factor		1.00			1.00			1.00	0.91			1.00
Frt		0.98			0.97			1.00	1.00			1.00
Flt Protected		0.96			0.97			0.95	1.00			0.95
Satd. Flow (prot)		1756			1757			1770	5084			1770
Flt Permitted		0.75			0.87			0.07	1.00			0.03
Satd. Flow (perm)		1373			1563			131	5084			59
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	5	16	11	5	5	5	11	3103	5	250	5
RTOR Reduction (vph)	0	4	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	109	0	0	17	0	0	16	3108	0	0	255
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		custom	pm+pt
Protected Phases		8			4		1	1	6			5
Permitted Phases	8			4			6	6			5	2
Actuated Green, G (s)		19.1			19.1			123.5	120.5			150.4
Effective Green, g (s)		19.1			19.1			123.5	120.5			150.4
Actuated g/C Ratio		0.11			0.11			0.69	0.67			0.84
Clearance Time (s)		6.0			6.0			4.5	5.0			4.5
Vehicle Extension (s)		3.0			3.0			3.0	0.2			3.0
Lane Grp Cap (vph)		145			165			117	3403			285
v/s Ratio Prot								0.00	c0.61			c0.12
v/s Ratio Perm		c0.08			0.01			0.09				0.62
v/c Ratio		0.75			0.10			0.14	0.91			0.89
Uniform Delay, d1		78.2			72.7			19.3	25.3			62.2
Progression Factor		1.00			1.00			1.00	1.00			0.94
Incremental Delay, d2		19.8			0.3			0.5	4.9			23.9
Delay (s)		97.9			73.0			19.8	30.3			82.6
Level of Service		F			E			B	C			F
Approach Delay (s)		97.9			73.0				30.2			
Approach LOS		F			E				C			

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1790	125
Future Volume (vph)	1790	125
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.91	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5035	
Flt Permitted	1.00	
Satd. Flow (perm)	5035	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	1946	136
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2078	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	142.4	
Effective Green, g (s)	142.4	
Actuated g/C Ratio	0.79	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	3983	
v/s Ratio Prot	0.41	
v/s Ratio Perm		
v/c Ratio	0.52	
Uniform Delay, d1	6.7	
Progression Factor	0.37	
Incremental Delay, d2	0.4	
Delay (s)	2.9	
Level of Service	A	
Approach Delay (s)	11.6	
Approach LOS	B	

Intersection Summary

2027 NO BUILD CONDITIONS

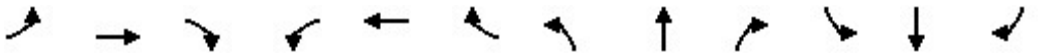
SYNCHRO ANALYSIS OUTPUTS

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	150	0	300	0	1600	330	405	1165	0	0	85
Future Volume (vph)	150	0	300	0	1600	330	405	1165	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	0	326	0	1739	359	440	1266	0	0	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	163	0	326	0	1739	359	440	1266	0	0	92
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		4 1		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	22.6		61.4		104.6	104.6	32.3	143.9			143.9
Effective Green, g (s)	22.6		61.4		104.6	104.6	32.3	143.9			143.9
Actuated g/C Ratio	0.13		0.34		0.58	0.58	0.18	0.80			0.80
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	431		950		2954	919	616	4065			1287
v/s Ratio Prot	0.05		c0.12		c0.34		c0.13	0.25			0.06
v/s Ratio Perm						0.23					
v/c Ratio	0.38		0.34		0.59	0.39	0.71	0.31			0.07
Uniform Delay, d1	72.2		44.3		24.0	20.4	69.5	4.8			3.8
Progression Factor	1.00		1.00		0.62	0.57	1.00	1.00			1.00
Incremental Delay, d2	0.8		0.3		0.7	1.0	4.9	0.2			0.1
Delay (s)	73.0		44.5		15.6	12.6	74.4	5.0			3.9
Level of Service	E		D		B	B	E	A			A
Approach Delay (s)	54.0				15.1			22.9		3.9	
Approach LOS	D				B			C		A	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

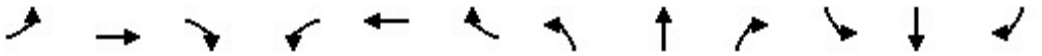
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	325	15	140	35	170	0	0	395	35
Future Volume (vph)	0	0	0	325	15	140	35	170	0	0	395	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1692	1583	1770	1863			3496	
Flt Permitted				0.95	0.96	1.00	0.48	1.00			1.00	
Satd. Flow (perm)				1681	1692	1583	898	1863			3496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	353	16	152	38	185	0	0	429	38
RTOR Reduction (vph)	0	0	0	0	0	113	0	0	0	0	7	0
Lane Group Flow (vph)	0	0	0	184	185	39	38	185	0	0	460	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				19.6	19.6	19.6	44.8	46.1			19.1	
Effective Green, g (s)				19.6	19.6	19.6	44.8	37.1			19.1	
Actuated g/C Ratio				0.26	0.26	0.26	0.58	0.48			0.25	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				429	432	404	729	901			870	
v/s Ratio Prot				c0.11	0.11		c0.01	c0.10			c0.13	
v/s Ratio Perm						0.02	0.02					
v/c Ratio				0.43	0.43	0.10	0.05	0.21			0.53	
Uniform Delay, d1				23.9	23.9	21.8	7.0	11.3			24.9	
Progression Factor				1.00	1.00	1.00	0.10	0.14			1.00	
Incremental Delay, d2				1.4	1.4	0.2	0.1	0.2			0.3	
Delay (s)				25.3	25.3	22.0	0.7	1.8			25.2	
Level of Service				C	C	C	A	A			C	
Approach Delay (s)		0.0			24.3			1.6			25.2	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	29.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

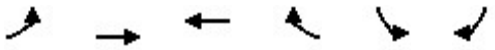
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	5	120	0	0	0	0	180	100	90	630	0
Future Volume (vph)	25	5	120	0	0	0	0	180	100	90	630	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.96	1.00					1.00	1.00		0.99	
Satd. Flow (prot)		1787	1583					1863	1583		3517	
Flt Permitted		0.96	1.00					1.00	1.00		0.87	
Satd. Flow (perm)		1787	1583					1863	1583		3094	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	5	130	0	0	0	0	196	109	98	685	0
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	71	0	0	0
Lane Group Flow (vph)	0	32	17	0	0	0	0	196	38	0	783	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		10.3	10.3					26.8	26.8		38.7	
Effective Green, g (s)		10.3	10.3					26.8	26.8		38.7	
Actuated g/C Ratio		0.13	0.13					0.35	0.35		0.50	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		239	212					650	553		1669	
v/s Ratio Prot		c0.02						0.11			c0.12	
v/s Ratio Perm			0.01						0.02		c0.12	
v/c Ratio		0.13	0.08					0.30	0.07		0.47	
Uniform Delay, d1		29.3	29.1					18.1	16.6		12.3	
Progression Factor		1.00	1.00					1.00	1.00		0.33	
Incremental Delay, d2		0.5	0.4					0.1	0.0		0.1	
Delay (s)		29.8	29.4					18.2	16.7		4.1	
Level of Service		C	C					B	B		A	
Approach Delay (s)		29.5			0.0			17.7			4.1	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	29.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

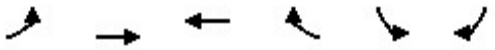
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2705	295	0	0	570
Future Volume (vph)	0	2705	295	0	0	570
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2940	321	0	0	620
RTOR Reduction (vph)	0	0	0	0	0	145
Lane Group Flow (vph)	0	2940	321	0	0	475
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	49.5			117.5
Effective Green, g (s)		180.0	49.5			117.5
Actuated g/C Ratio		1.00	0.28			0.65
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1398			1819
v/s Ratio Prot		c0.46	0.06			0.17
v/s Ratio Perm						
v/c Ratio		0.46	0.23			0.26
Uniform Delay, d1		0.0	50.5			13.1
Progression Factor		1.00	0.07			2.03
Incremental Delay, d2		0.1	0.4			0.2
Delay (s)		0.1	3.8			26.8
Level of Service		A	A			C
Approach Delay (s)		0.1	3.8		26.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

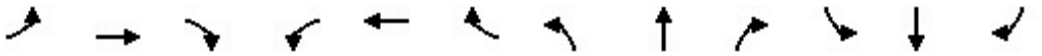
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	940	1765	295	0	420	0
Future Volume (vph)	940	1765	295	0	420	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1022	1918	321	0	457	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1022	1918	321	0	457	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	79.5	135.5	49.5		31.5	
Effective Green, g (s)	79.5	135.5	49.5		31.5	
Actuated g/C Ratio	0.44	0.75	0.28		0.18	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1516	2664	1398		600	
v/s Ratio Prot	0.30	c0.54	0.06		c0.13	
v/s Ratio Perm						
v/c Ratio	0.67	0.72	0.23		0.76	
Uniform Delay, d1	40.0	12.0	50.5		70.7	
Progression Factor	1.00	1.00	1.00		1.15	
Incremental Delay, d2	1.7	1.6	0.4		5.7	
Delay (s)	41.6	13.6	50.9		86.9	
Level of Service	D	B	D		F	
Approach Delay (s)		23.3	50.9		86.9	
Approach LOS		C	D		F	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	0	25	0	0	165	20	1200	85	90	965	345
Future Volume (vph)	565	0	25	0	0	165	20	1200	85	90	965	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	614	0	27	0	0	179	22	1304	92	98	1049	375
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	614	0	6	0	0	179	22	1304	92	98	1049	375
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	37.7		37.7			36.2	5.4	86.1	180.0	15.3	96.0	180.0
Effective Green, g (s)	37.7		37.7			30.7	5.4	86.1	180.0	15.3	96.0	180.0
Actuated g/C Ratio	0.21		0.21			0.17	0.03	0.48	1.00	0.09	0.53	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	719		331			475	53	2432	1583	150	2712	1583
v/s Ratio Prot	c0.18					c0.06	0.01	c0.26		c0.06	0.21	
v/s Ratio Perm			0.00						0.06			0.24
v/c Ratio	0.85		0.02			0.38	0.42	0.54	0.06	0.65	0.39	0.24
Uniform Delay, d1	68.5		56.5			66.2	85.7	32.9	0.0	79.8	24.7	0.0
Progression Factor	1.00		1.00			1.00	1.44	0.28	1.00	1.17	0.87	1.00
Incremental Delay, d2	9.7		0.0			0.5	4.6	0.8	0.1	9.5	0.4	0.3
Delay (s)	78.2		56.5			66.7	128.1	10.0	0.1	103.2	21.8	0.3
Level of Service	E		E			E	F	B	A	F	C	A
Approach Delay (s)		77.3			66.7			11.2			21.7	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

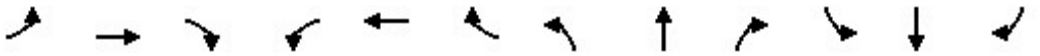
c Critical Lane Group

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	340	0	535	0	1620	265	535	2105	0	0	345
Future Volume (vph)	340	0	535	0	1620	265	535	2105	0	0	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		7.0		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	370	0	582	0	1761	288	582	2288	0	0	375
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	370	0	582	0	1761	288	582	2288	0	0	375
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		1 4		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	34.9		82.1		83.9	83.9	40.7	131.6			131.6
Effective Green, g (s)	34.9		75.6		83.9	83.9	40.7	131.6			131.6
Actuated g/C Ratio	0.19		0.42		0.47	0.47	0.23	0.73			0.73
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	665		1170		2370	737	776	3717			1177
v/s Ratio Prot	c0.11		0.21		c0.35		c0.17	0.45			0.23
v/s Ratio Perm						0.18					
v/c Ratio	0.56		0.50		0.74	0.39	0.75	0.62			0.32
Uniform Delay, d1	65.6		38.3		39.2	31.4	64.9	11.8			8.5
Progression Factor	1.00		1.00		0.69	0.69	1.00	1.00			1.00
Incremental Delay, d2	1.2		0.7		1.8	1.3	4.9	0.8			0.7
Delay (s)	66.8		39.0		28.8	22.9	69.8	12.6			9.2
Level of Service	E		D		C	C	E	B			A
Approach Delay (s)	49.8				28.0			24.2		9.2	
Approach LOS	D				C			C		A	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

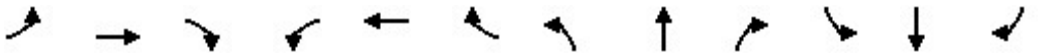
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	295	65	50	200	315	0	0	360	80
Future Volume (vph)	0	0	0	295	65	50	200	315	0	0	360	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.97	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1715	1583	1770	1863			3443	
Flt Permitted				0.95	0.97	1.00	0.44	1.00			1.00	
Satd. Flow (perm)				1681	1715	1583	825	1863			3443	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	321	71	54	217	342	0	0	391	87
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	196	196	12	217	342	0	0	459	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				19.3	19.3	19.3	59.2	59.2			20.5	
Effective Green, g (s)				19.3	19.3	19.3	59.2	50.2			20.5	
Actuated g/C Ratio				0.22	0.22	0.22	0.66	0.56			0.23	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				362	369	341	859	1044			788	
v/s Ratio Prot				c0.12	0.11		c0.08	c0.18			c0.13	
v/s Ratio Perm						0.01	0.08					
v/c Ratio				0.54	0.53	0.03	0.25	0.33			0.58	
Uniform Delay, d1				31.2	31.1	27.7	7.8	10.6			30.7	
Progression Factor				1.00	1.00	1.00	0.04	0.05			1.00	
Incremental Delay, d2				2.9	2.7	0.1	0.2	0.3			0.7	
Delay (s)				34.1	33.8	27.8	0.6	0.8			31.4	
Level of Service				C	C	C	A	A			C	
Approach Delay (s)		0.0			33.2			0.7			31.4	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	29.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

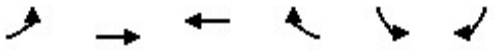
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	5	135	0	0	0	0	455	735	110	545	0
Future Volume (vph)	60	5	135	0	0	0	0	455	735	110	545	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.96	1.00					1.00	1.00		0.99	
Satd. Flow (prot)		1780	1583					1863	1583		3510	
Flt Permitted		0.96	1.00					1.00	1.00		0.57	
Satd. Flow (perm)		1780	1583					1863	1583		2006	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	5	147	0	0	0	0	495	799	120	592	0
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	456	0	0	0
Lane Group Flow (vph)	0	70	28	0	0	0	0	495	343	0	712	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		16.9	16.9					33.3	33.3		39.8	
Effective Green, g (s)		16.9	16.9					33.3	33.3		39.8	
Actuated g/C Ratio		0.19	0.19					0.37	0.37		0.44	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		336	298					693	588		1216	
v/s Ratio Prot		c0.04						c0.27			c0.13	
v/s Ratio Perm			0.02						0.22		0.13	
v/c Ratio		0.21	0.09					0.71	0.58		0.59	
Uniform Delay, d1		30.7	30.0					24.0	22.5		18.7	
Progression Factor		1.00	1.00					1.00	1.00		0.70	
Incremental Delay, d2		0.6	0.3					2.9	1.0		0.4	
Delay (s)		31.3	30.3					27.0	23.5		13.4	
Level of Service		C	C					C	C		B	
Approach Delay (s)		30.6			0.0			24.8			13.4	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	29.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

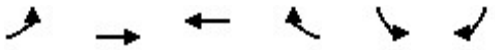
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1225	1370	0	0	1235
Future Volume (vph)	0	1225	1370	0	0	1235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1332	1489	0	0	1342
RTOR Reduction (vph)	0	0	0	0	0	3
Lane Group Flow (vph)	0	1332	1489	0	0	1339
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	64.5			102.5
Effective Green, g (s)		180.0	64.5			102.5
Actuated g/C Ratio		1.00	0.36			0.57
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1822			1587
v/s Ratio Prot		0.21	c0.29			c0.48
v/s Ratio Perm						
v/c Ratio		0.21	0.82			0.84
Uniform Delay, d1		0.0	52.4			32.1
Progression Factor		1.00	0.06			0.74
Incremental Delay, d2		0.0	2.4			3.9
Delay (s)		0.0	5.4			27.7
Level of Service		A	A			C
Approach Delay (s)		0.0	5.4		27.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

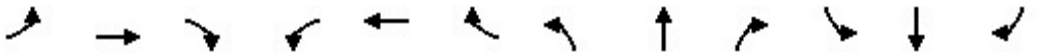
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	715	510	1370	0	275	0
Future Volume (vph)	715	510	1370	0	275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	777	554	1489	0	299	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	777	554	1489	0	299	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	73.5	144.5	64.5		22.5	
Effective Green, g (s)	73.5	144.5	64.5		22.5	
Actuated g/C Ratio	0.41	0.80	0.36		0.12	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1401	2841	1822		429	
v/s Ratio Prot	c0.23	0.16	c0.29		c0.09	
v/s Ratio Perm						
v/c Ratio	0.55	0.20	0.82		0.70	
Uniform Delay, d1	40.7	4.2	52.4		75.5	
Progression Factor	1.00	1.00	1.00		0.87	
Incremental Delay, d2	1.0	0.2	4.2		4.1	
Delay (s)	41.8	4.3	56.6		69.9	
Level of Service	D	A	E		E	
Approach Delay (s)		26.2	56.6		69.9	
Approach LOS		C	E		E	

Intersection Summary			
HCM 2000 Control Delay	44.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	0	20	0	0	300	85	1180	170	150	1490	1150
Future Volume (vph)	405	0	20	0	0	300	85	1180	170	150	1490	1150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	440	0	22	0	0	326	92	1283	185	163	1620	1250
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	440	0	3	0	0	326	92	1283	185	163	1620	1250
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	28.2		28.2			50.1	14.5	81.7	180.0	21.6	88.8	180.0
Effective Green, g (s)	28.2		28.2			44.6	14.5	81.7	180.0	21.6	88.8	180.0
Actuated g/C Ratio	0.16		0.16			0.25	0.08	0.45	1.00	0.12	0.49	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	537		248			690	142	2308	1583	212	2508	1583
v/s Ratio Prot	0.13					0.12	0.05	0.25		0.09	0.32	
v/s Ratio Perm			0.00						0.12			c0.79
v/c Ratio	0.82		0.01			0.47	0.65	0.56	0.12	0.77	0.65	0.79
Uniform Delay, d1	73.4		64.1			57.7	80.3	35.9	0.0	76.8	33.9	0.0
Progression Factor	1.00		1.00			1.00	0.78	1.60	1.00	0.88	0.91	1.00
Incremental Delay, d2	9.5		0.0			0.5	9.5	0.9	0.1	13.1	1.1	3.4
Delay (s)	82.9		64.2			58.2	72.1	58.3	0.1	80.6	31.8	3.4
Level of Service	F		E			E	E	E	A	F	C	A
Approach Delay (s)		82.0			58.2			52.2			22.7	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	1880	185	20	235	500	95	10	60	55	120	240
Future Volume (vph)	80	1880	185	20	235	500	95	10	60	55	120	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	2043	201	22	255	543	103	11	65	60	130	261
RTOR Reduction (vph)	0	0	91	0	0	0	44	0	0	52	0	0
Lane Group Flow (vph)	87	2043	110	0	277	543	59	11	65	8	130	261
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	12.7	81.8	81.8		17.0	86.1	86.1	1.6	21.1	21.1	8.1	27.6
Effective Green, g (s)	12.7	81.8	81.8		17.0	86.1	86.1	1.6	21.1	21.1	8.1	27.6
Actuated g/C Ratio	0.08	0.55	0.55		0.11	0.57	0.57	0.01	0.14	0.14	0.05	0.18
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	149	2773	863		389	2918	908	18	497	222	185	342
v/s Ratio Prot	0.05	c0.40			c0.08	c0.11		0.01	0.02		c0.04	c0.14
v/s Ratio Perm			0.07				0.04			0.01		
v/c Ratio	0.58	0.74	0.13		0.71	0.19	0.07	0.61	0.13	0.04	0.70	0.76
Uniform Delay, d1	66.1	25.9	16.7		64.1	15.2	14.1	73.9	56.4	55.7	69.8	58.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	1.8	0.3		6.1	0.1	0.1	48.7	0.2	0.1	11.4	10.3
Delay (s)	71.8	27.7	17.0		70.2	15.4	14.3	122.6	56.6	55.8	81.2	68.4
Level of Service	E	C	B		E	B	B	F	E	E	F	E
Approach Delay (s)		28.4				31.7			61.6			69.7
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	60
RTOR Reduction (vph)	49
Lane Group Flow (vph)	11
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	27.6
Effective Green, g (s)	27.6
Actuated g/C Ratio	0.18
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	291
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	50.3
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	50.4
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

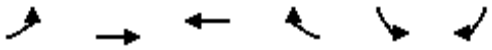
Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	210	135	160	0	0	800
Future Vol, veh/h	210	135	160	0	0	800
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	147	174	0	0	870

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	609	87	0	-	-	-
Stage 1	174	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	427	954	-	0	0	-
Stage 1	839	-	-	0	0	-
Stage 2	620	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	427	954	-	-	-	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.9	0	0
HCM LOS	C		

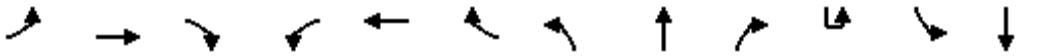
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	545	-
HCM Lane V/C Ratio	-	0.688	-
HCM Control Delay (s)	-	24.9	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	5.3	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	650	110	185	150	15
Future Volume (veh/h)	50	650	110	185	150	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	707	120	201	163	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	106	1855	548	489	427	290
Arrive On Green	0.06	0.52	0.31	0.31	0.12	0.12
Sat Flow, veh/h	1781	3647	1870	1585	3456	1585
Grp Volume(v), veh/h	54	707	120	201	163	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	1.0	3.9	1.6	3.3	1.4	0.3
Cycle Q Clear(g_c), s	1.0	3.9	1.6	3.3	1.4	0.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	106	1855	548	489	427	290
V/C Ratio(X)	0.51	0.38	0.22	0.41	0.38	0.06
Avail Cap(c_a), veh/h	604	5972	2109	1882	2558	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	4.6	8.3	8.9	13.1	10.9
Incr Delay (d2), s/veh	3.8	0.0	0.1	0.2	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.4	0.7	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.6	4.7	8.4	9.1	13.6	11.0
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		761	321		179	
Approach Delay, s/veh		5.7	8.8		13.4	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.9	15.5		10.0		22.4
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	11.0	38.5		24.0		54.5
Max Q Clear Time (g_c+I1), s	3.0	5.3		3.4		5.9
Green Ext Time (p_c), s	0.0	1.3		0.6		3.4

Intersection Summary	
HCM 6th Ctrl Delay	7.6
HCM 6th LOS	A

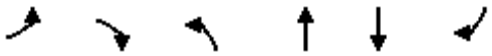


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	95	10	10	20	5	50	5	1170	20	115	320	1815
Future Volume (vph)	95	10	10	20	5	50	5	1170	20	115	320	1815
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected	0.95	0.96	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1603	1441		1730	1531	1685	4830			1643	4825
Flt Permitted	0.95	0.96	1.00		0.96	1.00	0.08	1.00			0.13	1.00
Satd. Flow (perm)	1584	1603	1441		1730	1531	140	4830			217	4825
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	11	11	22	5	54	5	1272	22	125	348	1973
RTOR Reduction (vph)	0	0	10	0	0	52	0	1	0	0	0	7
Lane Group Flow (vph)	57	57	1	0	27	2	5	1293	0	0	473	2162
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	10.0	10.0	10.0		5.9	5.9	68.7	68.7			115.1	115.1
Effective Green, g (s)	10.0	10.0	10.0		5.9	5.9	68.7	68.7			115.1	115.1
Actuated g/C Ratio	0.07	0.07	0.07		0.04	0.04	0.46	0.46			0.77	0.77
Clearance Time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	105	106	96		68	60	64	2212			564	3702
v/s Ratio Prot	c0.04	0.04			c0.02			0.27			c0.23	0.45
v/s Ratio Perm			0.00			0.00	0.04				c0.41	
v/c Ratio	0.54	0.54	0.01		0.40	0.04	0.08	0.58			0.84	0.58
Uniform Delay, d1	67.8	67.8	65.4		70.3	69.3	22.8	30.1			33.5	7.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.29	0.66
Incremental Delay, d2	5.6	5.2	0.0		3.8	0.2	2.4	1.1			7.9	0.5
Delay (s)	73.4	72.9	65.4		74.1	69.6	25.2	31.2			51.1	5.3
Level of Service	E	E	E		E	E	C	C			D	A
Approach Delay (s)		72.5			71.1			31.2				13.5
Approach LOS		E			E			C				B

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	180
Future Volume (vph)	180
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	196
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



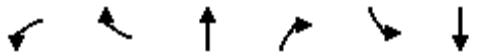
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	410	840	0	1005	1590	510
Future Volume (veh/h)	410	840	0	1005	1590	510
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	446	913	0	1092	1728	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	1254	1012	0	2807	2762	
Arrive On Green	0.37	0.37	0.00	0.56	0.74	0.00
Sat Flow, veh/h	3358	2711	0	5374	5125	1540
Grp Volume(v), veh/h	446	913	0	1092	1728	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1681	1654	1540
Q Serve(g_s), s	14.4	47.7	0.0	18.4	25.3	0.0
Cycle Q Clear(g_c), s	14.4	47.7	0.0	18.4	25.3	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	1254	1012	0	2807	2762	
V/C Ratio(X)	0.36	0.90	0.00	0.39	0.63	
Avail Cap(c_a), veh/h	1589	1283	0	2807	2762	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.82	0.00
Uniform Delay (d), s/veh	34.0	44.4	0.0	18.8	11.9	0.0
Incr Delay (d2), s/veh	0.2	7.7	0.0	0.4	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	17.2	0.0	7.1	7.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.1	52.1	0.0	19.2	12.8	0.0
LnGrp LOS	C	D	A	B	B	
Approach Vol, veh/h	1359			1092	1728	A
Approach Delay, s/veh	46.2			19.2	12.8	
Approach LOS	D			B	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		89.0		61.0		89.0
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		68.5		71.0		68.5
Max Q Clear Time (g_c+I1), s		27.3		49.7		20.4
Green Ext Time (p_c), s		18.0		6.3		9.3

Intersection Summary		
HCM 6th Ctrl Delay		25.3
HCM 6th LOS		C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



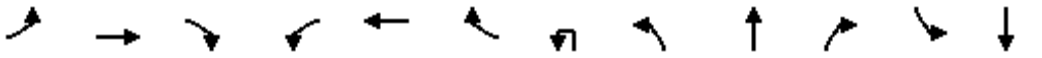
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	845	290	1050	365	0	1255
Future Volume (veh/h)	845	290	1050	365	0	1255
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	918	0	1141	0	0	1364
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1018		3182		0	4009
Arrive On Green	0.30	0.00	0.63	0.00	0.00	0.63
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	918	0	1141	0	0	1364
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	38.4	0.0	16.2	0.0	0.0	15.1
Cycle Q Clear(g_c), s	38.4	0.0	16.2	0.0	0.0	15.1
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1018		3182		0	4009
V/C Ratio(X)	0.90		0.36		0.00	0.34
Avail Cap(c_a), veh/h	1757		3182		0	4009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.93	0.00	0.00	1.00
Uniform Delay (d), s/veh	50.7	0.0	13.2	0.0	0.0	13.0
Incr Delay (d2), s/veh	3.8	0.0	0.3	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.1	0.0	6.0	0.0	0.0	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.5	0.0	13.5	0.0	0.0	13.2
LnGrp LOS	D		B		A	B
Approach Vol, veh/h	918	A	1141	A		1364
Approach Delay, s/veh	54.5		13.5			13.2
Approach LOS	D		B			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		100.2		49.8		100.2
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		62.5		76.5		62.5
Max Q Clear Time (g_c+I1), s		17.1		40.4		18.2
Green Ext Time (p_c), s		12.8		3.9		9.8

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

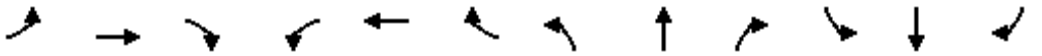


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	25	5	50	130	5	35	5	125	950	260	130	1405
Future Volume (vph)	25	5	50	130	5	35	5	125	950	260	130	1405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.96	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1457	1333	1561	1626	1418		1702	4891	1470	1619	4978
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.12	1.00	1.00	0.24	1.00
Satd. Flow (perm)		1457	1333	1561	1626	1418		220	4891	1470	416	4978
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	5	54	141	5	38	5	136	1033	283	141	1527
RTOR Reduction (vph)	0	10	36	0	0	35	0	0	0	102	0	0
Lane Group Flow (vph)	0	35	5	73	73	3	0	141	1033	181	141	1538
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		8.7	19.1	12.1	12.1	12.1		106.2	95.8	95.8	104.2	94.8
Effective Green, g (s)		8.7	19.1	12.1	12.1	12.1		106.2	95.8	95.8	104.2	94.8
Actuated g/C Ratio		0.06	0.13	0.08	0.08	0.08		0.71	0.64	0.64	0.69	0.63
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		84	169	125	131	114		258	3123	938	364	3146
v/s Ratio Prot		c0.02	0.00	c0.05	0.04			c0.04	0.21		0.02	0.31
v/s Ratio Perm			0.00			0.00		c0.35		0.12	0.24	
v/c Ratio		0.41	0.03	0.58	0.56	0.03		0.55	0.33	0.19	0.39	0.49
Uniform Delay, d1		68.2	57.3	66.5	66.4	63.5		9.7	12.4	11.2	7.9	14.7
Progression Factor		1.00	1.00	1.00	1.00	1.00		3.11	0.96	2.22	1.00	1.00
Incremental Delay, d2		3.3	0.1	6.8	5.1	0.1		2.3	0.3	0.4	0.7	0.5
Delay (s)		71.5	57.4	73.3	71.4	63.6		32.5	12.2	25.2	8.6	15.2
Level of Service		E	E	E	E	E		C	B	C	A	B
Approach Delay (s)		64.8			70.6				16.7			14.7
Approach LOS		E			E				B			B

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	430	170	155	0	20	0	45	55	70	325	0
Future Volume (veh/h)	115	430	170	155	0	20	0	45	55	70	325	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	125	467	185	168	0	22	0	49	60	76	353	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	1005	1405	552	0	0	0	0	398	337	191	612	0
Arrive On Green	0.56	0.56	0.56	0.00	0.00	0.00	0.00	0.21	0.21	0.21	0.21	0.00
Sat Flow, veh/h	1781	2491	980		0		0	1870	1585	419	2962	0
Grp Volume(v), veh/h	125	332	320		0.0		0	49	60	231	198	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1694				0	1870	1585	1679	1617	0
Q Serve(g_s), s	1.5	4.7	4.8				0.0	1.0	1.5	3.6	5.2	0.0
Cycle Q Clear(g_c), s	1.5	4.7	4.8				0.0	1.0	1.5	5.8	5.2	0.0
Prop In Lane	1.00		0.58				0.00		1.00	0.33		0.00
Lane Grp Cap(c), veh/h	1005	1002	955				0	398	337	459	344	0
V/C Ratio(X)	0.12	0.33	0.33				0.00	0.12	0.18	0.50	0.58	0.00
Avail Cap(c_a), veh/h	1005	1002	955				0	756	641	771	654	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.8	5.5	5.5				0.0	15.0	15.1	16.7	16.6	0.0
Incr Delay (d2), s/veh	0.3	0.9	0.9				0.0	0.1	0.2	0.9	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.5	1.4				0.0	0.4	0.5	2.1	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	6.4	6.5				0.0	15.1	15.4	17.6	18.1	0.0
LnGrp LOS	A	A	A				A	B	B	B	B	A
Approach Vol, veh/h		777						109			429	
Approach Delay, s/veh		6.2						15.3			17.8	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.0		32.0		15.0				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				19.0		26.5		19.0				
Max Q Clear Time (g_c+I1), s				7.8		6.8		3.5				
Green Ext Time (p_c), s				2.0		4.7		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		10.7	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	730	30	20	70	1930	195	150	330	305	100	100
Future Volume (vph)	80	730	30	20	70	1930	195	150	330	305	100	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	793	33	22	76	2098	212	163	359	332	109	109
RTOR Reduction (vph)	0	0	14	0	0	0	96	0	0	152	0	0
Lane Group Flow (vph)	87	793	19	0	98	2098	116	163	359	180	109	109
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	11.7	85.1	85.1		8.9	82.3	82.3	17.6	26.1	26.1	7.9	16.4
Effective Green, g (s)	11.7	85.1	85.1		8.9	82.3	82.3	17.6	26.1	26.1	7.9	16.4
Actuated g/C Ratio	0.08	0.57	0.57		0.06	0.55	0.55	0.12	0.17	0.17	0.05	0.11
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	138	2884	898		203	2789	868	207	615	275	180	203
v/s Ratio Prot	c0.05	c0.16			0.03	c0.41		c0.09	0.10		0.03	0.06
v/s Ratio Perm			0.01				0.07			c0.11		
v/c Ratio	0.63	0.27	0.02		0.48	0.75	0.13	0.79	0.58	0.65	0.61	0.54
Uniform Delay, d1	67.1	16.6	14.2		68.3	26.0	16.5	64.4	57.0	57.7	69.5	63.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.2	0.0		1.8	1.9	0.3	17.7	1.7	6.1	5.7	3.5
Delay (s)	76.1	16.9	14.3		70.1	27.9	16.8	82.1	58.6	63.8	75.2	66.7
Level of Service	E	B	B		E	C	B	F	E	E	E	E
Approach Delay (s)		22.4				28.7			65.1			68.3
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	185
Future Volume (vph)	185
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	201
RTOR Reduction (vph)	120
Lane Group Flow (vph)	81
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	16.4
Effective Green, g (s)	16.4
Actuated g/C Ratio	0.11
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	173
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.47
Uniform Delay, d1	62.7
Progression Factor	1.00
Incremental Delay, d2	2.7
Delay (s)	65.4
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

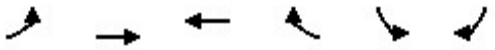
Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	115	1420	0	0	395
Future Vol, veh/h	20	115	1420	0	0	395
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	125	1543	0	0	429

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1758	772	0	-	-	-
Stage 1	1543	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	76	342	-	0	0	-
Stage 1	162	-	-	0	0	-
Stage 2	800	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	76	342	-	-	-	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	800	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	46.8	0	0
HCM LOS	E		

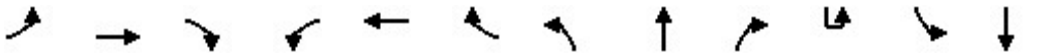
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	225	-
HCM Lane V/C Ratio	-	0.652	-
HCM Control Delay (s)	-	46.8	-
HCM Lane LOS	-	E	-
HCM 95th %tile Q(veh)	-	4	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	175	1070	465	220	80
Future Volume (veh/h)	20	175	1070	465	220	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	190	1163	505	239	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	45	2492	1453	608	391	220
Arrive On Green	0.03	0.70	0.60	0.60	0.11	0.11
Sat Flow, veh/h	1781	3647	2535	1022	3456	1585
Grp Volume(v), veh/h	22	190	834	834	239	87
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1686	1728	1585
Q Serve(g_s), s	0.8	1.0	22.2	24.5	4.1	3.1
Cycle Q Clear(g_c), s	0.8	1.0	22.2	24.5	4.1	3.1
Prop In Lane	1.00			0.61	1.00	1.00
Lane Grp Cap(c), veh/h	45	2492	1058	1004	391	220
V/C Ratio(X)	0.49	0.08	0.79	0.83	0.61	0.40
Avail Cap(c_a), veh/h	144	3926	1676	1591	1115	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	2.9	9.6	10.0	26.2	24.3
Incr Delay (d2), s/veh	7.8	0.0	0.5	1.1	1.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.2	6.2	6.6	1.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.7	2.9	10.1	11.1	27.7	25.5
LnGrp LOS	D	A	B	B	C	C
Approach Vol, veh/h		212	1668		326	
Approach Delay, s/veh		6.5	10.6		27.1	
Approach LOS		A	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.6	42.4		13.0		49.0
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	5.0	58.5		20.0		68.5
Max Q Clear Time (g_c+I1), s	2.8	26.5		6.1		3.0
Green Ext Time (p_c), s	0.0	10.4		1.0		0.8

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	160	5	20	60	5	310	15	1665	30	25	95	795
Future Volume (vph)	160	5	20	60	5	310	15	1665	30	25	95	795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.98
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1593	1441		1721	1531	1685	4829			1643	4806
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.28	1.00			0.06	1.00
Satd. Flow (perm)	1584	1593	1441		1721	1531	498	4829			99	4806
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	5	22	65	5	337	16	1810	33	27	103	864
RTOR Reduction (vph)	0	0	20	0	0	119	0	1	0	0	0	10
Lane Group Flow (vph)	89	90	2	0	70	218	16	1842	0	0	130	968
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	12.3	12.3	12.3		25.3	25.3	79.0	79.0			94.9	94.9
Effective Green, g (s)	12.3	12.3	12.3		25.3	25.3	79.0	79.0			94.9	94.9
Actuated g/C Ratio	0.08	0.08	0.08		0.17	0.17	0.53	0.53			0.63	0.63
Clearance Time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	129	130	118		290	258	262	2543			179	3040
v/s Ratio Prot	0.06	c0.06			0.04			0.38			c0.05	0.20
v/s Ratio Perm			0.00			c0.14	0.03				c0.40	
v/c Ratio	0.69	0.69	0.02		0.24	0.85	0.06	0.72			0.73	0.32
Uniform Delay, d1	67.0	67.0	63.3		54.0	60.5	17.4	27.2			33.4	12.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.14	0.58
Incremental Delay, d2	14.3	14.8	0.1		0.4	21.7	0.4	1.8			13.2	0.3
Delay (s)	81.3	81.8	63.3		54.5	82.1	17.8	29.0			51.3	7.7
Level of Service	F	F	E		D	F	B	C			D	A
Approach Delay (s)		79.5			77.4			28.9				12.8
Approach LOS		E			E			C				B

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	105
Future Volume (vph)	105
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	114
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	260	335	0	1305	685	830
Future Volume (veh/h)	260	335	0	1305	685	830
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	283	364	0	1418	745	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	533	430	0	3889	3827	
Arrive On Green	0.16	0.16	0.00	0.77	1.00	0.00
Sat Flow, veh/h	3358	2711	0	5374	5125	1540
Grp Volume(v), veh/h	283	364	0	1418	745	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1681	1654	1540
Q Serve(g_s), s	11.6	19.6	0.0	13.4	0.0	0.0
Cycle Q Clear(g_c), s	11.6	19.6	0.0	13.4	0.0	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	533	430	0	3889	3827	
V/C Ratio(X)	0.53	0.85	0.00	0.36	0.19	
Avail Cap(c_a), veh/h	783	632	0	3889	3827	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.93	0.00
Uniform Delay (d), s/veh	58.0	61.3	0.0	5.5	0.0	0.0
Incr Delay (d2), s/veh	0.8	7.0	0.0	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.2	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.8	68.3	0.0	5.7	0.1	0.0
LnGrp LOS	E	E	A	A	A	
Approach Vol, veh/h	647			1418	745	A
Approach Delay, s/veh	64.1			5.7	0.1	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		121.2		28.8		121.2
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		104.5		35.0		104.5
Max Q Clear Time (g_c+I1), s		2.0		21.6		15.4
Green Ext Time (p_c), s		5.7		2.2		14.7

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	370	685	860	705	0	1145
Future Volume (veh/h)	370	685	860	705	0	1145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	402	0	935	0	0	1245
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	469		3985		0	5022
Arrive On Green	0.14	0.00	1.00	0.00	0.00	0.79
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	402	0	935	0	0	1245
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	17.1	0.0	0.0	0.0	0.0	7.7
Cycle Q Clear(g_c), s	17.1	0.0	0.0	0.0	0.0	7.7
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	469		3985		0	5022
V/C Ratio(X)	0.86		0.23		0.00	0.25
Avail Cap(c_a), veh/h	815		3985		0	5022
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.93	0.00	0.00	1.00
Uniform Delay (d), s/veh	63.4	0.0	0.0	0.0	0.0	4.1
Incr Delay (d2), s/veh	4.6	0.0	0.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.0	0.0	0.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	68.0	0.0	0.1	0.0	0.0	4.2
LnGrp LOS	E		A		A	A
Approach Vol, veh/h	402	A	935	A		1245
Approach Delay, s/veh	68.0		0.1			4.2
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		124.1		25.9		124.1
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		103.5		35.5		103.5
Max Q Clear Time (g_c+I1), s		9.7		19.1		2.0
Green Ext Time (p_c), s		11.8		1.3		7.7

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

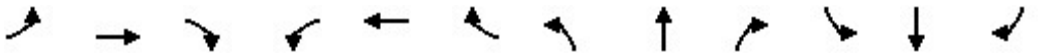
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	75	20	150	385	10	85	5	160	1155	225	80	1545
Future Volume (vph)	75	20	150	385	10	85	5	160	1155	225	80	1545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.96	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1465	1333	1561	1625	1418		1702	4891	1470	1619	4979
Flt Permitted		0.97	1.00	0.95	0.95	1.00		0.06	1.00	1.00	0.17	1.00
Satd. Flow (perm)		1465	1333	1561	1625	1418		105	4891	1470	290	4979
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	22	163	418	11	92	5	174	1255	245	87	1679
RTOR Reduction (vph)	0	9	54	0	0	77	0	0	0	121	0	1
Lane Group Flow (vph)	0	131	73	213	216	15	0	179	1255	124	87	1689
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		17.1	32.1	24.6	24.6	24.6		89.3	75.7	75.7	77.9	69.3
Effective Green, g (s)		17.1	32.1	24.6	24.6	24.6		89.3	75.7	75.7	77.9	69.3
Actuated g/C Ratio		0.11	0.21	0.16	0.16	0.16		0.60	0.50	0.50	0.52	0.46
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		167	285	256	266	232		222	2468	741	226	2300
v/s Ratio Prot		c0.09	0.03	c0.14	0.13			c0.08	0.26		0.02	0.34
v/s Ratio Perm			0.03			0.01		c0.40		0.08	0.18	
v/c Ratio		0.79	0.26	0.83	0.81	0.07		0.81	0.51	0.17	0.38	0.73
Uniform Delay, d1		64.7	49.0	60.7	60.5	53.0		41.5	24.8	20.1	19.1	32.9
Progression Factor		1.00	1.00	1.00	1.00	1.00		0.99	0.92	1.27	1.00	1.00
Incremental Delay, d2		21.1	0.5	20.0	16.9	0.1		18.3	0.7	0.5	1.1	2.1
Delay (s)		85.8	49.5	80.7	77.4	53.1		59.4	23.5	25.9	20.2	35.0
Level of Service		F	D	F	E	D		E	C	C	C	C
Approach Delay (s)		68.5			74.5				27.7			34.3
Approach LOS		E			E				C			C

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



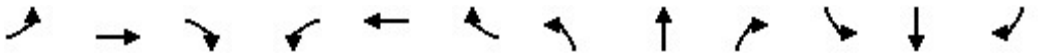
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	320	15	65	0	75	0	235	260	40	100	0
Future Volume (veh/h)	35	320	15	65	0	75	0	235	260	40	100	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	38	348	16	71	0	82	0	255	283	43	109	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	929	1805	83	0	0	0	0	439	372	207	494	0
Arrive On Green	0.52	0.52	0.52	0.00	0.00	0.00	0.00	0.23	0.23	0.23	0.23	0.00
Sat Flow, veh/h	1781	3460	159		0		0	1870	1585	317	2187	0
Grp Volume(v), veh/h	38	178	186		0.0		0	255	283	74	78	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1842				0	1870	1585	802	1617	0
Q Serve(g_s), s	0.4	2.3	2.3				0.0	5.2	7.2	0.3	1.7	0.0
Cycle Q Clear(g_c), s	0.4	2.3	2.3				0.0	5.2	7.2	5.5	1.7	0.0
Prop In Lane	1.00		0.09				0.00		1.00	0.58		0.00
Lane Grp Cap(c), veh/h	929	927	961				0	439	372	321	380	0
V/C Ratio(X)	0.04	0.19	0.19				0.00	0.58	0.76	0.23	0.21	0.00
Avail Cap(c_a), veh/h	929	927	961				0	564	478	395	487	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.0	5.5	5.5				0.0	14.6	15.4	13.3	13.3	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.4				0.0	1.2	5.3	0.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.7	0.8				0.0	2.0	2.7	0.5	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	5.9	5.9				0.0	15.8	20.6	13.7	13.5	0.0
LnGrp LOS	A	A	A				A	B	C	B	B	A
Approach Vol, veh/h		402						538			152	
Approach Delay, s/veh		5.9						18.4			13.6	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.1		28.0		15.1				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				13.0		22.5		13.0				
Max Q Clear Time (g_c+I1), s				7.5		4.3		9.2				
Green Ext Time (p_c), s				0.4		2.2		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		13.1	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	820	110	385	585	230	10	245	285	270	425	5
Future Volume (veh/h)	15	820	110	385	585	230	10	245	285	270	425	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	891	120	418	636	250	11	266	310	293	462	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	1304	582	449	2131	951	174	391	174	364	728	8
Arrive On Green	0.37	0.37	0.37	0.16	0.60	0.60	0.01	0.11	0.11	0.11	0.20	0.20
Sat Flow, veh/h	627	3554	1585	1781	3554	1585	1781	3554	1585	3456	3601	39
Grp Volume(v), veh/h	16	891	120	418	636	250	11	266	310	293	228	239
Grp Sat Flow(s),veh/h/ln	627	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1863
Q Serve(g_s), s	1.7	21.2	5.2	14.0	8.7	7.5	0.5	7.2	11.0	8.3	11.7	11.7
Cycle Q Clear(g_c), s	1.7	21.2	5.2	14.0	8.7	7.5	0.5	7.2	11.0	8.3	11.7	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	302	1304	582	449	2131	951	174	391	174	364	359	377
V/C Ratio(X)	0.05	0.68	0.21	0.93	0.30	0.26	0.06	0.68	1.78	0.81	0.63	0.64
Avail Cap(c_a), veh/h	302	1304	582	497	2131	951	239	391	174	622	418	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	26.7	21.7	19.6	9.8	9.5	38.7	42.8	44.5	43.7	36.5	36.5
Incr Delay (d2), s/veh	0.3	2.9	0.8	20.5	0.3	0.6	0.1	4.7	372.3	1.6	2.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	9.0	2.0	7.8	3.2	2.6	0.2	3.4	22.3	3.6	5.2	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	29.7	22.5	40.1	10.1	10.1	38.8	47.5	416.8	45.3	39.0	38.9
LnGrp LOS	C	C	C	D	B	B	D	D	F	D	D	D
Approach Vol, veh/h		1027			1304			587			760	
Approach Delay, s/veh		28.7			19.7			242.4			41.4	
Approach LOS		C			B			F			D	

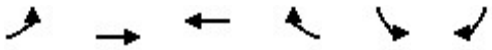
Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	66.5	6.8	26.7	23.3	43.2	16.0	17.5
Change Period (Y+Rc), s	6.5	5.5	6.5	7.0	* 6.5	5.5	* 6.5
Max Green Setting (Gmax), s	53.0	5.0	23.5	19.0	* 28	18.0	* 11
Max Q Clear Time (g_c+I1), s	10.7	2.5	13.7	16.0	23.2	10.3	13.0
Green Ext Time (p_c), s	12.5	0.0	1.8	0.2	3.2	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

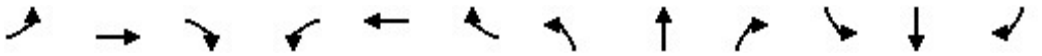
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	210	1165	1040	115	55	160
Future Volume (veh/h)	210	1165	1040	115	55	160
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	228	1266	1130	125	60	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	398	2717	2322	1036	223	296
Arrive On Green	0.06	0.76	0.65	0.65	0.13	0.13
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	228	1266	1130	125	60	174
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.9	13.0	16.2	3.0	3.0	10.0
Cycle Q Clear(g_c), s	3.9	13.0	16.2	3.0	3.0	10.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	398	2717	2322	1036	223	296
V/C Ratio(X)	0.57	0.47	0.49	0.12	0.27	0.59
Avail Cap(c_a), veh/h	557	2717	2322	1036	410	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.4	4.3	8.8	6.5	39.6	37.2
Incr Delay (d2), s/veh	0.2	0.3	0.7	0.2	0.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.5	5.4	0.9	1.4	8.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.7	4.6	9.5	6.8	40.2	39.0
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		1494	1255		234	
Approach Delay, s/veh		5.1	9.3		39.3	
Approach LOS		A	A		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.1	71.4		17.5		82.5
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	15.0	46.0		23.0		66.0
Max Q Clear Time (g_c+I1), s	5.9	18.2		12.0		15.0
Green Ext Time (p_c), s	0.2	5.9		0.5		7.6

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	630	10	420	865	160	155	275	410	300	160	25
Future Volume (veh/h)	5	630	10	420	865	160	155	275	410	300	160	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	685	11	457	940	174	168	299	446	326	174	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	1153	514	525	2062	920	347	426	190	397	420	64
Arrive On Green	0.32	0.32	0.32	0.19	0.58	0.58	0.10	0.12	0.12	0.11	0.14	0.14
Sat Flow, veh/h	506	3554	1585	1781	3554	1585	1781	3554	1585	3456	3091	472
Grp Volume(v), veh/h	5	685	11	457	940	174	168	299	446	326	99	102
Grp Sat Flow(s),veh/h/ln	506	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1785
Q Serve(g_s), s	0.7	16.1	0.5	16.2	15.1	5.2	8.1	8.1	12.0	9.2	5.1	5.2
Cycle Q Clear(g_c), s	0.7	16.1	0.5	16.2	15.1	5.2	8.1	8.1	12.0	9.2	5.1	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	236	1153	514	525	2062	920	347	426	190	397	241	242
V/C Ratio(X)	0.02	0.59	0.02	0.87	0.46	0.19	0.48	0.70	2.34	0.82	0.41	0.42
Avail Cap(c_a), veh/h	236	1153	514	604	2062	920	347	426	190	622	348	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	28.3	23.0	18.6	12.0	9.9	33.8	42.3	44.0	43.3	39.5	39.6
Incr Delay (d2), s/veh	0.2	2.3	0.1	8.0	0.5	0.3	0.4	5.1	621.2	2.5	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.9	0.2	7.3	5.6	1.8	3.5	3.8	37.5	4.0	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	30.5	23.1	26.6	12.5	10.2	34.1	47.3	665.2	45.8	40.7	40.8
LnGrp LOS	C	C	C	C	B	B	C	D	F	D	D	D
Approach Vol, veh/h		701			1571			913			527	
Approach Delay, s/veh		30.4			16.4			346.8			43.9	
Approach LOS		C			B			F			D	

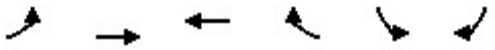
Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	64.5	15.4	20.1	25.6	38.9	17.0	18.5
Change Period (Y+Rc), s	6.5	5.5	6.5	7.0	* 6.5	5.5	* 6.5
Max Green Setting (Gmax), s	52.0	9.9	19.6	23.0	* 23	18.0	* 12
Max Q Clear Time (g_c+I1), s	17.1	10.1	7.2	18.2	18.1	11.2	14.0
Green Ext Time (p_c), s	16.5	0.0	0.8	0.4	2.5	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	104.2
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	1230	1075	40	175	370
Future Volume (veh/h)	110	1230	1075	40	175	370
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	1337	1168	43	190	402
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	291	2200	1849	825	483	507
Arrive On Green	0.05	0.62	0.52	0.52	0.27	0.27
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	120	1337	1168	43	190	402
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.0	23.0	23.5	1.3	8.7	23.1
Cycle Q Clear(g_c), s	3.0	23.0	23.5	1.3	8.7	23.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	291	2200	1849	825	483	507
V/C Ratio(X)	0.41	0.61	0.63	0.05	0.39	0.79
Avail Cap(c_a), veh/h	453	2200	1849	825	802	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	11.6	17.1	11.8	29.7	31.0
Incr Delay (d2), s/veh	0.2	0.8	1.7	0.1	0.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	8.3	9.1	0.5	3.8	19.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.7	12.4	18.8	11.9	30.3	34.0
LnGrp LOS	B	B	B	B	C	C
Approach Vol, veh/h		1457	1211		592	
Approach Delay, s/veh		12.5	18.6		32.8	
Approach LOS		B	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.9	58.0		32.1		67.9
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	14.0	25.0		45.0		44.0
Max Q Clear Time (g_c+I1), s	5.0	25.5		25.1		25.0
Green Ext Time (p_c), s	0.1	0.0		2.0		6.7

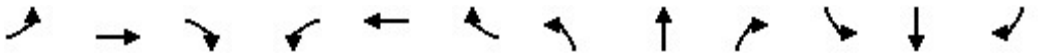
Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	1875	305	20	110	1745	40	65	5	170	15	5
Future Volume (vph)	5	1875	305	20	110	1745	40	65	5	170	15	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.98			1.00	1.00			1.00	0.85	1.00	0.93
Flt Protected	0.95	1.00			0.95	1.00			0.96	1.00	0.95	1.00
Satd. Flow (prot)	1906	5196			1585	5043			1661	1478	1770	1724
Flt Permitted	0.10	1.00			0.95	1.00			0.73	1.00	0.71	1.00
Satd. Flow (perm)	203	5196			1585	5043			1274	1478	1319	1724
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2038	332	22	120	1897	43	71	5	185	16	5
RTOR Reduction (vph)	0	16	0	0	0	2	0	0	0	165	0	4
Lane Group Flow (vph)	5	2354	0	0	142	1938	0	0	76	20	16	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	71.2	71.2			16.9	94.6			12.9	12.9	12.9	12.9
Effective Green, g (s)	71.2	71.2			16.9	94.6			12.9	12.9	12.9	12.9
Actuated g/C Ratio	0.59	0.59			0.14	0.79			0.11	0.11	0.11	0.11
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	120	3082			223	3975			136	158	141	185
v/s Ratio Prot		c0.45			c0.09	0.38						0.00
v/s Ratio Perm	0.02								c0.06	0.01	0.01	
v/c Ratio	0.04	0.76			0.64	0.49			0.56	0.13	0.11	0.03
Uniform Delay, d1	10.2	18.1			48.7	4.4			50.8	48.4	48.4	47.9
Progression Factor	1.00	1.00			1.23	0.70			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.9			6.9	0.4			6.0	0.5	0.5	0.1
Delay (s)	10.8	20.0			66.8	3.4			56.9	48.9	48.9	48.0
Level of Service	B	B			E	A			E	D	D	D
Approach Delay (s)		20.0				7.7			51.2			48.6
Approach LOS		B				A			D			D

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	5
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



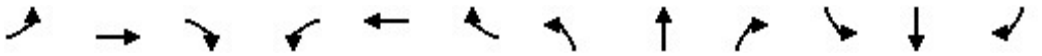
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1010	1070	0	1795	0	0	0	0	425	0	120
Future Volume (veh/h)	0	1010	1070	0	1795	0	0	0	0	425	0	120
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1098	0	0	1951	0				462	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2633		0	3722	0				551	0	
Arrive On Green	0.00	0.50	0.00	0.00	0.75	0.00				0.15	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1098	0	0	1951	0				462	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	23.6	0.0	0.0	19.4	0.0				15.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.6	0.0	0.0	19.4	0.0				15.0	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2633		0	3722	0				551	0	
V/C Ratio(X)	0.00	0.42		0.00	0.52	0.00				0.84	0.00	
Avail Cap(c_a), veh/h	0	2633		0	3722	0				911	0	
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.58	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.3	0.0	0.0	6.2	0.0				49.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.5	0.0				3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.0	0.0	0.0	5.3	0.0				7.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.6	0.0	0.0	6.7	0.0				53.0	0.0	0.0
LnGrp LOS	A	B		A	A	A				D	A	
Approach Vol, veh/h		1098	A		1951						462	A
Approach Delay, s/veh		13.6			6.7						53.0	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		96.0		24.0		96.0						
Change Period (Y+Rc), s		6.0		5.5		6.0						
Max Green Setting (Gmax), s		78.0		30.5		78.0						
Max Q Clear Time (g_c+I1), s		21.4		17.0		25.6						
Green Ext Time (p_c), s		2.9		1.4		1.3						

Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Notes

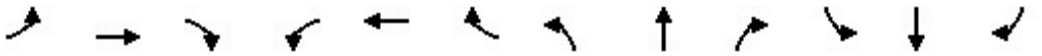
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	1010	0	0	785	15	0	145	215	25	0	265
Future Volume (vph)	320	1010	0	0	785	15	0	145	215	25	0	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5147			1867	1587	1783		1595
Flt Permitted	0.23	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	402	3504			5147			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	1098	0	0	853	16	0	158	234	27	0	288
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	107	0	0	18
Lane Group Flow (vph)	348	1098	0	0	868	0	0	158	127	27	0	270
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	72.4	72.4			45.2			21.9	21.9	7.2		63.8
Effective Green, g (s)	72.4	72.4			45.2			21.9	21.9	7.2		51.8
Actuated g/C Ratio	0.60	0.60			0.38			0.18	0.18	0.06		0.43
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	486	2114			1938			340	289	106		688
v/s Ratio Prot	c0.14	0.31			0.17			c0.08		0.02		c0.17
v/s Ratio Perm	c0.30								0.08			
v/c Ratio	0.72	0.52			0.45			0.46	0.44	0.25		0.39
Uniform Delay, d1	14.1	13.7			28.0			43.8	43.6	53.8		23.3
Progression Factor	1.09	0.57			0.91			1.00	1.00	1.00		1.00
Incremental Delay, d2	5.6	0.8			0.6			2.8	3.0	3.6		0.8
Delay (s)	20.9	8.7			26.2			46.6	46.6	57.4		24.1
Level of Service	C	A			C			D	D	E		C
Approach Delay (s)		11.6			26.2			46.6			27.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1240	5	5	765	10	10	5	10	75	5	25
Future Volume (vph)	5	1240	5	5	765	10	10	5	10	75	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	
Satd. Flow (prot)	1702	1852		1787	1815			1801	1531		1649	
Flt Permitted	0.29	1.00		0.07	1.00			0.86	1.00		0.78	
Satd. Flow (perm)	525	1852		140	1815			1597	1531		1327	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1348	5	5	832	11	11	5	11	82	5	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	10	0
Lane Group Flow (vph)	5	1353	0	5	843	0	0	16	1	0	104	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	97.6	97.6		97.6	97.6			14.4	14.4		14.4	
Effective Green, g (s)	97.6	97.6		97.6	97.6			14.4	14.4		14.4	
Actuated g/C Ratio	0.81	0.81		0.81	0.81			0.12	0.12		0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	427	1506		113	1476			191	183		159	
v/s Ratio Prot		c0.73			0.46							
v/s Ratio Perm	0.01			0.04				0.01	0.00		c0.08	
v/c Ratio	0.01	0.90		0.04	0.57			0.08	0.01		0.66	
Uniform Delay, d1	2.1	7.8		2.2	3.9			46.9	46.5		50.4	
Progression Factor	0.44	0.99		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	6.6		0.7	1.6			0.2	0.0		9.4	
Delay (s)	0.9	14.3		2.9	5.5			47.1	46.5		59.8	
Level of Service	A	B		A	A			D	D		E	
Approach Delay (s)		14.2			5.5			46.9			59.8	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

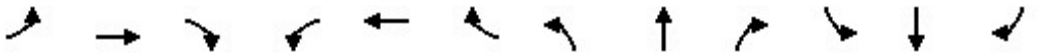
c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	2010	70	20	265	2160	15	85	5	140	35	5
Future Volume (vph)	5	2010	70	20	265	2160	15	85	5	140	35	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	1.00			1.00	0.85	1.00	0.90
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	1906	5281			1585	5055			1660	1478	1770	1671
Flt Permitted	0.07	1.00			0.95	1.00			0.73	1.00	0.69	1.00
Satd. Flow (perm)	135	5281			1585	5055			1261	1478	1294	1671
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2185	76	22	288	2348	16	92	5	152	38	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	134	0	10
Lane Group Flow (vph)	5	2258	0	0	310	2364	0	0	97	18	38	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	59.3	59.3			27.8	93.6			13.9	13.9	13.9	13.9
Effective Green, g (s)	59.3	59.3			27.8	93.6			13.9	13.9	13.9	13.9
Actuated g/C Ratio	0.49	0.49			0.23	0.78			0.12	0.12	0.12	0.12
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	66	2609			367	3942			146	171	149	193
v/s Ratio Prot		c0.43			c0.20	0.47						0.00
v/s Ratio Perm	0.04								c0.08	0.01	0.03	
v/c Ratio	0.08	0.87			0.84	0.60			0.66	0.10	0.26	0.03
Uniform Delay, d1	15.9	26.8			44.0	5.5			50.8	47.5	48.3	47.1
Progression Factor	1.00	1.00			1.39	0.62			1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	4.2			12.7	0.5			11.9	0.4	1.2	0.1
Delay (s)	18.2	31.0			73.7	3.8			62.7	47.8	49.6	47.2
Level of Service	B	C			E	A			E	D	D	D
Approach Delay (s)		30.9				11.9			53.6			48.9
Approach LOS		C				B			D			D

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



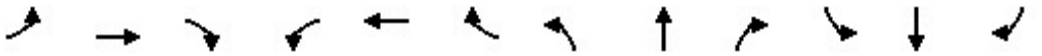
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	940	1265	0	2305	0	0	0	0	505	0	155
Future Volume (veh/h)	0	940	1265	0	2305	0	0	0	0	505	0	155
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1022	0	0	2505	0				549	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2550		0	3605	0				636	0	
Arrive On Green	0.00	0.49	0.00	0.00	0.73	0.00				0.18	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1022	0	0	2505	0				549	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	22.3	0.0	0.0	33.4	0.0				17.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	22.3	0.0	0.0	33.4	0.0				17.9	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2550		0	3605	0				636	0	
V/C Ratio(X)	0.00	0.40		0.00	0.69	0.00				0.86	0.00	
Avail Cap(c_a), veh/h	0	2550		0	3605	0				851	0	
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.44	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.1	0.0	0.0	9.1	0.0				47.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.1	0.0				7.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.4	0.0	0.0	9.7	0.0				8.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.3	0.0	0.0	10.2	0.0				55.1	0.0	0.0
LnGrp LOS	A	B		A	B	A				E	A	
Approach Vol, veh/h		1022	A		2505						549	A
Approach Delay, s/veh		14.3			10.2						55.1	
Approach LOS		B			B						E	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	93.2	26.8	93.2
Change Period (Y+Rc), s	6.0	5.5	6.0
Max Green Setting (Gmax), s	80.0	28.5	80.0
Max Q Clear Time (g_c+I1), s	35.4	19.9	24.3
Green Ext Time (p_c), s	4.3	1.4	1.2

Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Notes

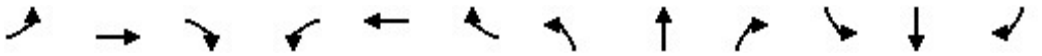
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1125	0	0	1145	35	0	275	175	30	0	415
Future Volume (vph)	220	1125	0	0	1145	35	0	275	175	30	0	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5139			1867	1587	1783		1595
Flt Permitted	0.10	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	175	3504			5139			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1223	0	0	1245	38	0	299	190	33	0	451
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	97	0	0	18
Lane Group Flow (vph)	239	1223	0	0	1280	0	0	299	93	33	0	433
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	67.5	67.5			43.6			28.4	28.4	5.6		65.4
Effective Green, g (s)	67.5	67.5			43.6			28.4	28.4	5.6		53.4
Actuated g/C Ratio	0.56	0.56			0.36			0.24	0.24	0.05		0.44
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	344	1971			1867			441	375	83		709
v/s Ratio Prot	c0.11	0.35			0.25			c0.16		0.02		c0.27
v/s Ratio Perm	c0.28								0.06			
v/c Ratio	0.69	0.62			0.69			0.68	0.25	0.40		0.61
Uniform Delay, d1	26.3	17.6			32.4			41.6	37.1	55.6		25.4
Progression Factor	1.04	0.44			0.87			1.00	1.00	1.00		1.00
Incremental Delay, d2	6.7	1.3			1.3			6.3	1.0	8.6		2.3
Delay (s)	34.1	9.1			29.6			47.9	38.1	64.2		27.6
Level of Service	C	A			C			D	D	E		C
Approach Delay (s)		13.1			29.6			44.1			30.1	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

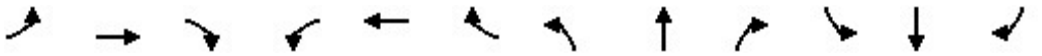
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1285	15	5	1110	10	5	5	10	20	5	65
Future Volume (vph)	30	1285	15	5	1110	10	5	5	10	20	5	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1702	1850		1787	1816			1817	1531		1574	
Flt Permitted	0.17	1.00		0.08	1.00			0.84	1.00		0.93	
Satd. Flow (perm)	297	1850		156	1816			1570	1531		1474	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1397	16	5	1207	11	5	5	11	22	5	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	65	0
Lane Group Flow (vph)	33	1413	0	5	1218	0	0	10	1	0	33	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	102.3	102.3		102.3	102.3			9.7	9.7		9.7	
Effective Green, g (s)	102.3	102.3		102.3	102.3			9.7	9.7		9.7	
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.08	0.08		0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	253	1577		132	1548			126	123		119	
v/s Ratio Prot		c0.76			0.67							
v/s Ratio Perm	0.11			0.03				0.01	0.00		c0.02	
v/c Ratio	0.13	0.90		0.04	0.79			0.08	0.01		0.28	
Uniform Delay, d1	1.5	5.5		1.3	4.0			51.0	50.7		51.8	
Progression Factor	0.12	1.77		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	5.9		0.5	4.1			0.3	0.0		1.3	
Delay (s)	0.4	15.7		1.9	8.1			51.3	50.7		53.1	
Level of Service	A	B		A	A			D	D		D	
Approach Delay (s)		15.3			8.1			51.0			53.1	
Approach LOS		B			A			D			D	

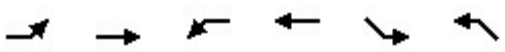
Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	830	120	500	455	100	145	130	150	440	740	250
Future Volume (vph)	115	830	120	500	455	100	145	130	150	440	740	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	298	3592	1607	944	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	902	130	543	495	109	158	141	163	478	804	272
RTOR Reduction (vph)	0	0	65	0	0	48	0	0	83	0	0	0
Lane Group Flow (vph)	125	902	65	543	495	61	158	141	80	478	804	272
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	15.5	48.3	61.0	25.3	58.6	83.6	38.1	25.4	73.6	57.4	38.2	150.0
Effective Green, g (s)	15.5	48.3	61.0	25.3	58.6	83.6	38.1	25.4	73.6	57.4	38.2	150.0
Actuated g/C Ratio	0.10	0.32	0.41	0.17	0.39	0.56	0.25	0.17	0.49	0.38	0.25	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	179	1116	631	590	1410	900	202	608	863	501	910	1599
v/s Ratio Prot	0.07	c0.26	0.01	c0.16	0.14	0.01	0.07	0.04	0.02	c0.16	0.22	
v/s Ratio Perm			0.03			0.03	0.13		0.03	c0.21		0.17
v/c Ratio	0.70	0.81	0.10	0.92	0.35	0.07	0.78	0.23	0.09	0.95	0.88	0.17
Uniform Delay, d1	65.0	46.6	27.6	61.4	32.3	15.3	46.9	53.9	20.4	41.9	53.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	6.3	0.1	19.8	0.7	0.0	17.7	0.2	0.0	28.7	10.2	0.2
Delay (s)	76.3	52.9	27.6	81.2	33.0	15.3	64.6	54.1	20.4	70.6	63.9	0.2
Level of Service	E	D	C	F	C	B	E	D	C	E	E	A
Approach Delay (s)		52.6			54.1			45.8			54.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Traffic Volume (vph)	550	345	610	315	185	55
Future Volume (vph)	550	345	610	315	185	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	1770	3539	3433	3539	1770	3433
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	1770	3539	3433	3539	1770	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	598	375	663	342	201	60
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	598	375	663	342	201	60
Turn Type	Prot	NA	Prot	NA	Prot	Prot
Protected Phases	1	5	6	2	4	8
Permitted Phases						
Actuated Green, G (s)	54.0	20.0	55.5	21.5	21.0	21.0
Effective Green, g (s)	54.0	20.0	55.5	21.5	21.0	21.0
Actuated g/C Ratio	0.45	0.17	0.46	0.18	0.18	0.18
Clearance Time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Grp Cap (vph)	796	589	1587	634	309	600
v/s Ratio Prot	c0.34	0.11	0.19	c0.10	c0.11	0.02
v/s Ratio Perm						
v/c Ratio	0.75	0.64	0.42	0.54	0.65	0.10
Uniform Delay, d1	27.4	46.6	21.5	44.8	46.1	41.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	5.2	0.8	3.3	10.2	0.3
Delay (s)	33.9	51.8	22.3	48.0	56.3	41.9
Level of Service	C	D	C	D	E	D
Approach Delay (s)		40.8		31.1		
Approach LOS		D		C		

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

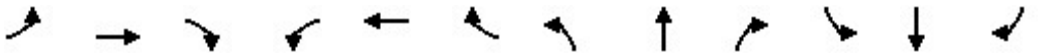
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	325	865	40	10	520	75	50	5	10	35	5
Future Volume (vph)	5	325	865	40	10	520	75	50	5	10	35	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	0.98		1.00	0.90			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.96
Satd. Flow (prot)		1770	3516		1805	3541		1736	1639			1724
Flt Permitted		0.29	1.00		0.29	1.00		0.75	1.00			0.74
Satd. Flow (perm)		537	3516		554	3541		1379	1639			1331
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	353	940	43	11	565	82	54	5	11	38	5
RTOR Reduction (vph)	0	0	2	0	0	8	0	0	10	0	0	0
Lane Group Flow (vph)	0	358	981	0	11	639	0	54	6	0	0	43
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		61.9	61.9		32.2	32.2		5.3	5.3			5.3
Effective Green, g (s)		61.9	61.9		32.2	32.2		5.3	5.3			5.3
Actuated g/C Ratio		0.78	0.78		0.40	0.40		0.07	0.07			0.07
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		783	2730		223	1430		91	108			88
v/s Ratio Prot		0.14	0.28			0.18			0.00			
v/s Ratio Perm		c0.22			0.02			0.04				0.03
v/c Ratio		0.46	0.36		0.05	0.45		0.59	0.05			0.49
Uniform Delay, d1		4.0	2.8		14.4	17.3		36.2	34.8			35.9
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		0.4	0.1		0.4	1.0		10.0	0.2			4.2
Delay (s)		4.4	2.8		14.9	18.3		46.1	35.1			40.1
Level of Service		A	A		B	B		D	D			D
Approach Delay (s)			3.3			18.2			43.6			42.5
Approach LOS			A			B			D			D

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	18.5
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

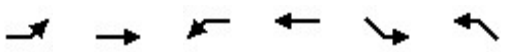
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	510
Future Volume (vph)	510
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	554
RTOR Reduction (vph)	48
Lane Group Flow (vph)	506
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	29.0
Effective Green, g (s)	29.0
Actuated g/C Ratio	0.36
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	557
v/s Ratio Prot	c0.27
v/s Ratio Perm	0.06
v/c Ratio	0.91
Uniform Delay, d1	24.1
Progression Factor	1.00
Incremental Delay, d2	18.6
Delay (s)	42.7
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	460	180	260	780	250	140	800	460	120	185	130
Future Volume (vph)	155	460	180	260	780	250	140	800	460	120	185	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.63	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	1183	3592	1607	169	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	500	196	283	848	272	152	870	500	130	201	141
RTOR Reduction (vph)	0	0	114	0	0	46	0	0	267	0	0	0
Lane Group Flow (vph)	168	500	82	283	848	226	152	870	233	130	201	141
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	18.3	52.5	62.5	17.4	52.1	65.1	51.1	41.1	69.9	57.6	44.6	150.0
Effective Green, g (s)	18.3	52.5	62.5	17.4	52.1	65.1	51.1	41.1	69.9	57.6	44.6	150.0
Actuated g/C Ratio	0.12	0.35	0.42	0.12	0.35	0.43	0.34	0.27	0.47	0.38	0.30	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	211	1213	646	406	1253	700	443	984	823	205	1062	1599
v/s Ratio Prot	c0.10	0.14	0.01	0.08	c0.23	0.03	0.02	c0.24	c0.03	c0.05	0.06	
v/s Ratio Perm			0.04			0.11	0.09		0.11	c0.19		0.09
v/c Ratio	0.80	0.41	0.13	0.70	0.68	0.32	0.34	0.88	0.28	0.63	0.19	0.09
Uniform Delay, d1	64.0	37.0	26.9	63.8	41.8	27.9	35.6	52.2	24.6	35.8	39.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.5	1.0	0.1	5.2	2.9	0.3	0.5	9.5	0.2	6.3	0.1	0.1
Delay (s)	82.5	38.1	27.0	68.9	44.7	28.2	36.1	61.7	24.8	42.1	39.3	0.1
Level of Service	F	D	C	E	D	C	D	E	C	D	D	A
Approach Delay (s)		44.2			46.4			47.0			28.4	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	44.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Traffic Volume (vph)	485	425	540	305	305	290
Future Volume (vph)	485	425	540	305	305	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	1770	3539	3433	3539	1770	3433
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	1770	3539	3433	3539	1770	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	527	462	587	332	332	315
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	527	462	587	332	332	315
Turn Type	Prot	NA	Prot	NA	Prot	Prot
Protected Phases	1	5	6	2	4	8
Permitted Phases						
Actuated Green, G (s)	71.0	32.5	66.0	27.5	48.0	48.0
Effective Green, g (s)	71.0	32.5	66.0	27.5	48.0	48.0
Actuated g/C Ratio	0.42	0.19	0.39	0.16	0.28	0.28
Clearance Time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Grp Cap (vph)	739	676	1332	572	499	969
v/s Ratio Prot	c0.30	0.13	0.17	c0.09	c0.19	0.09
v/s Ratio Perm						
v/c Ratio	0.71	0.68	0.44	0.58	0.67	0.33
Uniform Delay, d1	41.1	64.0	38.4	65.9	53.9	48.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	5.5	1.1	4.3	6.9	0.9
Delay (s)	46.8	69.5	39.4	70.2	60.8	49.1
Level of Service	D	E	D	E	E	D
Approach Delay (s)		57.4		50.5		
Approach LOS		E		D		

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

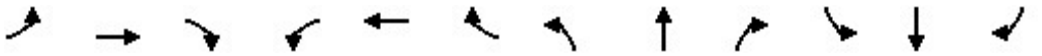
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	10	335	860	50	5	730	20	45	5	5	10	10
Future Volume (vph)	10	335	860	50	5	730	20	45	5	5	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	1.00		1.00	0.93			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.98
Satd. Flow (prot)		1770	3510		1805	3595		1736	1691			1757
Flt Permitted		0.25	1.00		0.29	1.00		0.74	1.00			0.84
Satd. Flow (perm)		461	3510		551	3595		1358	1691			1507
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	364	935	54	5	793	22	49	5	5	11	11
RTOR Reduction (vph)	0	0	2	0	0	1	0	0	5	0	0	0
Lane Group Flow (vph)	0	375	987	0	5	814	0	49	5	0	0	22
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		65.5	65.5		41.1	41.1		5.5	5.5			5.5
Effective Green, g (s)		65.5	65.5		41.1	41.1		5.5	5.5			5.5
Actuated g/C Ratio		0.78	0.78		0.49	0.49		0.07	0.07			0.07
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		650	2753		271	1769		89	111			99
v/s Ratio Prot		0.13	0.28			0.23			0.00			
v/s Ratio Perm		c0.33			0.01			0.04				0.01
v/c Ratio		0.58	0.36		0.02	0.46		0.55	0.05			0.22
Uniform Delay, d1		5.0	2.7		10.9	13.9		37.8	36.5			37.0
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		1.2	0.1		0.1	0.9		7.2	0.2			1.1
Delay (s)		6.2	2.8		11.0	14.8		45.0	36.7			38.1
Level of Service		A	A		B	B		D	D			D
Approach Delay (s)			3.7			14.8			43.6			46.5
Approach LOS			A			B			D			D

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	18.5
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	385
Future Volume (vph)	385
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	418
RTOR Reduction (vph)	31
Lane Group Flow (vph)	387
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	23.9
Effective Green, g (s)	23.9
Actuated g/C Ratio	0.29
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	438
v/s Ratio Prot	c0.19
v/s Ratio Perm	0.06
v/c Ratio	0.88
Uniform Delay, d1	28.5
Progression Factor	1.00
Incremental Delay, d2	18.5
Delay (s)	47.0
Level of Service	D
Approach Delay (s)	
Approach LOS	

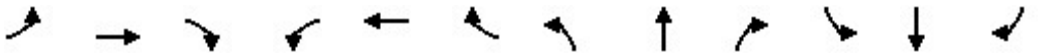
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	680	660	480	260	30	145	15	220	5	25	10
Future Volume (vph)	20	680	660	480	260	30	145	15	220	5	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3484		1681	1700	1583		1848	1583
Flt Permitted	0.56	1.00	1.00	0.16	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (perm)	1043	3539	1583	305	3484		1681	1700	1583		1848	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	739	717	522	283	33	158	16	239	5	27	11
RTOR Reduction (vph)	0	0	455	0	6	0	0	0	0	0	0	10
Lane Group Flow (vph)	22	739	262	522	310	0	87	87	239	0	32	1
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA	Free	Split	NA	Perm
Protected Phases		6	3	5	2		3	3		4	4	
Permitted Phases	6		6	2					Free			4
Actuated Green, G (s)	18.4	18.4	32.9	52.3	52.3		14.5	14.5	90.0		4.2	4.2
Effective Green, g (s)	18.4	18.4	32.9	52.3	52.3		14.5	14.5	90.0		4.2	4.2
Actuated g/C Ratio	0.20	0.20	0.37	0.58	0.58		0.16	0.16	1.00		0.05	0.05
Clearance Time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	213	723	578	631	2024		270	273	1583		86	73
v/s Ratio Prot		c0.21	c0.07	c0.26	0.09		0.05	0.05			0.02	
v/s Ratio Perm	0.02		0.09	0.22					c0.15			0.00
v/c Ratio	0.10	1.02	0.45	0.83	0.15		0.32	0.32	0.15		0.37	0.01
Uniform Delay, d1	29.1	35.8	21.7	20.4	8.7		33.4	33.4	0.0		41.6	40.9
Progression Factor	1.00	1.00	1.00	0.61	0.47		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	39.2	0.8	8.1	0.2		0.9	0.9	0.2		1.0	0.0
Delay (s)	30.1	75.0	22.5	20.6	4.2		34.3	34.3	0.2		42.6	40.9
Level of Service	C	E	C	C	A		C	C	A		D	D
Approach Delay (s)		48.8			14.5			14.6			42.2	
Approach LOS		D			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	655	230	565	710	25	55	20	430	10	20	5
Future Volume (veh/h)	20	655	230	565	710	25	55	20	430	10	20	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	712	0	614	772	27	60	22	0	11	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	1468		690	2074	925	241	322		196	236	
Arrive On Green	0.02	0.41	0.00	0.20	0.58	0.58	0.04	0.09	0.00	0.01	0.07	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	22	712	0	614	772	27	60	22	0	11	22	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.1	13.2	0.0	15.6	10.4	0.6	2.8	0.5	0.0	0.5	0.5	0.0
Cycle Q Clear(g_c), s	1.1	13.2	0.0	15.6	10.4	0.6	2.8	0.5	0.0	0.5	0.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	1468		690	2074	925	241	322		196	236	
V/C Ratio(X)	0.53	0.49		0.89	0.37	0.03	0.25	0.07		0.06	0.09	
Avail Cap(c_a), veh/h	148	1468		730	2074	925	352	513		350	513	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.4	19.4	0.0	35.1	10.0	7.9	36.9	37.4	0.0	38.3	39.5	0.0
Incr Delay (d2), s/veh	3.8	1.1	0.0	12.7	0.5	0.1	0.2	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.3	0.0	7.4	3.6	0.2	1.2	0.2	0.0	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	20.5	0.0	47.7	10.5	8.0	37.1	37.5	0.0	38.4	39.6	0.0
LnGrp LOS	D	C		D	B	A	D	D		D	D	
Approach Vol, veh/h		734	A		1413			82	A		33	A
Approach Delay, s/veh		21.3			26.6			37.2			39.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	59.0	7.2	14.2	25.0	43.7	9.4	12.0
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	7.5	* 36	9.0	13.0	19.0	23.5	9.5	13.0
Max Q Clear Time (g_c+I1), s	3.1	12.4	2.5	2.5	17.6	15.2	4.8	2.5
Green Ext Time (p_c), s	0.0	5.3	0.0	0.0	0.4	2.9	0.0	0.0

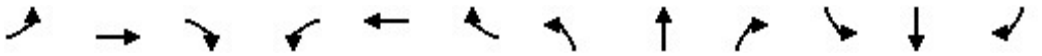
Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

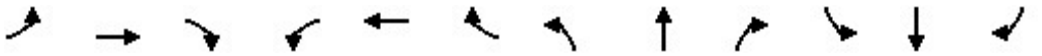
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	380	225	330	570	5	875	10	410	10	10	10
Future Volume (vph)	5	380	225	330	570	5	875	10	410	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3535		1681	1687	1583		1817	1583
Flt Permitted	0.41	1.00	1.00	0.30	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	773	3539	1583	567	3535		1681	1687	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	413	245	359	620	5	951	11	446	11	11	11
RTOR Reduction (vph)	0	0	120	0	1	0	0	0	0	0	0	11
Lane Group Flow (vph)	5	413	125	359	624	0	485	477	446	0	22	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA	Free	Split	NA	Perm
Protected Phases		6	3	5	2		3	3		4	4	
Permitted Phases	6		6	2					Free			4
Actuated Green, G (s)	18.4	18.4	45.9	39.7	39.7		27.5	27.5	90.0		3.8	3.8
Effective Green, g (s)	18.4	18.4	45.9	39.7	39.7		27.5	27.5	90.0		3.8	3.8
Actuated g/C Ratio	0.20	0.20	0.51	0.44	0.44		0.31	0.31	1.00		0.04	0.04
Clearance Time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	158	723	807	454	1559		513	515	1583		76	66
v/s Ratio Prot		0.12	0.05	c0.13	0.18		c0.29	0.28			0.01	
v/s Ratio Perm	0.01		0.03	c0.21					c0.28			0.00
v/c Ratio	0.03	0.57	0.15	0.79	0.40		0.95	0.93	0.28		0.29	0.01
Uniform Delay, d1	28.7	32.2	11.7	18.5	17.1		30.5	30.3	0.0		41.8	41.3
Progression Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	3.3	0.1	7.8	0.7		26.7	23.0	0.4		0.8	0.0
Delay (s)	29.0	35.5	11.9	26.4	16.9		57.2	53.3	0.4		42.6	41.3
Level of Service	C	D	B	C	B		E	D	A		D	D
Approach Delay (s)		26.7			20.4			37.9			42.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	740	45	245	710	25	180	10	860	50	25	15
Future Volume (veh/h)	15	740	45	245	710	25	180	10	860	50	25	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	804	0	266	772	27	196	11	0	54	27	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	1639		307	1870	834	345	446		266	284	
Arrive On Green	0.02	0.46	0.00	0.09	0.53	0.53	0.09	0.13	0.00	0.04	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	16	804	0	266	772	27	196	11	0	54	27	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.8	14.2	0.0	6.8	11.8	0.7	8.3	0.2	0.0	2.5	0.6	0.0
Cycle Q Clear(g_c), s	0.8	14.2	0.0	6.8	11.8	0.7	8.3	0.2	0.0	2.5	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	1639		307	1870	834	345	446		266	284	
V/C Ratio(X)	0.49	0.49		0.87	0.41	0.03	0.57	0.02		0.20	0.09	
Avail Cap(c_a), veh/h	99	1639		307	1870	834	345	1027		351	1035	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.8	16.9	0.0	40.5	12.9	10.3	34.2	34.5	0.0	35.8	38.4	0.0
Incr Delay (d2), s/veh	4.2	1.1	0.0	21.9	0.7	0.1	1.4	0.0	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.5	0.0	3.7	4.4	0.3	4.0	0.1	0.0	1.1	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	17.9	0.0	62.4	13.6	10.4	35.6	34.5	0.0	36.0	38.5	0.0
LnGrp LOS	D	B		E	B	B	D	C		D	D	
Approach Vol, veh/h		820	A		1065			207	A		81	A
Approach Delay, s/veh		18.5			25.7			35.6			36.8	
Approach LOS		B			C			D			D	

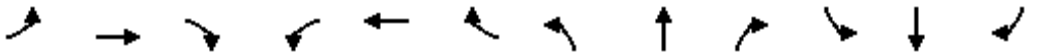
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	53.9	9.7	17.3	15.0	48.0	13.8	13.2
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	5.0	* 26	8.0	26.0	8.0	22.5	8.3	26.2
Max Q Clear Time (g_c+I1), s	2.8	13.8	4.5	2.2	8.8	16.2	10.3	2.6
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	2.7	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	240	55	395	200	115	15	200	620	450	640	65
Future Volume (vph)	65	240	55	395	200	115	15	200	620	450	640	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3392		1541	3275	1567	1601	3438	1644	3539	3407	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.36	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3392		1541	3275	1567	608	3438	1644	3539	3407	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	261	60	429	217	125	16	217	674	489	696	71
RTOR Reduction (vph)	0	16	0	0	0	72	0	0	0	0	6	0
Lane Group Flow (vph)	71	305	0	214	432	53	16	217	674	489	761	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	17.5	17.5		29.9	29.9	57.2	28.8	28.8	120.0	21.3	55.6	
Effective Green, g (s)	17.5	17.5		29.9	29.9	51.2	28.8	28.8	120.0	21.3	55.6	
Actuated g/C Ratio	0.15	0.15		0.25	0.25	0.43	0.24	0.24	1.00	0.18	0.46	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	263	494		383	816	668	145	825	1644	628	1578	
v/s Ratio Prot	0.04	c0.09		c0.14	0.13	0.03		0.06		c0.14	c0.22	
v/s Ratio Perm							0.03		0.41			
v/c Ratio	0.27	0.62		0.56	0.53	0.08	0.11	0.26	0.41	0.78	0.48	
Uniform Delay, d1	45.6	48.1		39.3	39.0	20.4	35.6	37.0	0.0	47.1	22.2	
Progression Factor	1.00	1.00		0.84	0.84	0.54	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	5.7		5.5	2.3	0.0	1.5	0.8	0.8	6.1	1.1	
Delay (s)	48.1	53.8		38.6	35.1	11.1	37.1	37.8	0.8	53.2	23.3	
Level of Service	D	D		D	D	B	D	D	A	D	C	
Approach Delay (s)		52.8			32.2			10.3			34.9	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1290	20	0	605	220	0	0	220	0	0	105
Future Vol, veh/h	0	1290	20	0	605	220	0	0	220	0	0	105
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1402	22	0	658	239	0	0	239	0	0	114

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	712	-	-	449
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	322	0	0	477
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	322	-	-	477
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

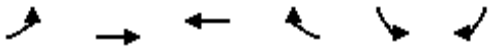
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	42.5	14.9
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	322	-	-	-	-	477
HCM Lane V/C Ratio	0.743	-	-	-	-	0.239
HCM Control Delay (s)	42.5	-	-	-	-	14.9
HCM Lane LOS	E	-	-	-	-	B
HCM 95th %tile Q(veh)	5.6	-	-	-	-	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	160	1230	0	0	2070	135	230	0	510	0	675
Future Volume (vph)	160	1230	0	0	2070	135	230	0	510	0	675
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	95	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1337	0	0	2250	147	250	0	554	0	734
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	415	0	0
Lane Group Flow (vph)	174	1337	0	0	2250	87	250	0	139	0	734
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	94.5	94.5			71.4	71.4	13.0		13.0		120.0
Effective Green, g (s)	94.5	94.5			71.4	71.4	13.0		13.0		107.5
Actuated g/C Ratio	0.79	0.79			0.60	0.60	0.11		0.11		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	325	2694			2969	956	379		307		1443
v/s Ratio Prot	0.08	0.39			c0.45		c0.07				
v/s Ratio Perm	0.34					0.05			0.05		c0.46
v/c Ratio	0.54	0.50			0.76	0.09	0.66		0.45		0.51
Uniform Delay, d1	29.4	4.4			17.9	10.4	51.4		50.2		1.2
Progression Factor	0.98	0.82			1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	4.0	0.7			1.9	0.2	8.7		4.8		0.8
Delay (s)	32.8	4.3			19.8	10.6	60.1		55.0		2.0
Level of Service	C	A			B	B	E		D		A
Approach Delay (s)		7.6			19.2		56.5			2.0	
Approach LOS		A			B		E			A	

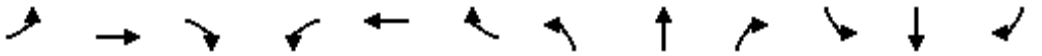
Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	2135	2200	5	0	5
Future Volume (vph)	0	2135	2200	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2321	2391	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2321	2396	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		95.7	95.7			109.7
Effective Green, g (s)		95.7	95.7			109.7
Actuated g/C Ratio		0.87	0.87			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4414	4501			1611
v/s Ratio Prot		0.46	c0.46			
v/s Ratio Perm						c0.00
v/c Ratio		0.53	0.53			0.00
Uniform Delay, d1		1.7	1.7			0.0
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.2	0.2			0.0
Delay (s)		1.9	1.9			0.0
Level of Service		A	A			A
Approach Delay (s)		1.9	1.9		0.0	
Approach LOS		A	A		A	

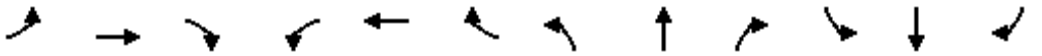
Intersection Summary			
HCM 2000 Control Delay	1.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2050	80	10	2025	10	120	5	25	30	5	60
Future Volume (veh/h)	5	2050	80	10	2025	10	120	5	25	30	5	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	5	2228	87	11	2201	11	130	5	27	33	5	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	3235	126	157	3617	18	237	41	224	273	18	233
Arrive On Green	0.01	0.64	0.64	0.01	0.65	0.65	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1776	5027	195	1818	5573	28	1331	264	1425	1373	114	1483
Grp Volume(v), veh/h	5	1501	814	11	1429	783	130	0	32	33	0	70
Grp Sat Flow(s),veh/h/ln	1776	1697	1829	1818	1809	1983	1331	0	1689	1373	0	1597
Q Serve(g_s), s	0.1	25.4	25.7	0.2	20.6	20.6	8.6	0.0	1.5	1.9	0.0	3.5
Cycle Q Clear(g_c), s	0.1	25.4	25.7	0.2	20.6	20.6	12.1	0.0	1.5	3.4	0.0	3.5
Prop In Lane	1.00		0.11	1.00		0.01	1.00		0.84	1.00		0.93
Lane Grp Cap(c), veh/h	162	2184	1177	157	2348	1287	237	0	265	273	0	251
V/C Ratio(X)	0.03	0.69	0.69	0.07	0.61	0.61	0.55	0.00	0.12	0.12	0.00	0.28
Avail Cap(c_a), veh/h	234	2184	1177	220	2348	1287	258	0	291	294	0	275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.9	10.3	10.3	9.4	9.2	9.2	38.8	0.0	32.6	34.1	0.0	33.5
Incr Delay (d2), s/veh	0.1	1.6	2.9	0.2	1.2	2.2	2.0	0.0	0.2	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	9.1	0.1	6.8	7.8	2.9	0.0	0.6	0.7	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	11.8	13.2	9.6	10.3	11.3	40.8	0.0	32.8	34.2	0.0	34.1
LnGrp LOS	A	B	B	A	B	B	D	A	C	C	A	C
Approach Vol, veh/h		2320			2223			162			103	
Approach Delay, s/veh		12.3			10.7			39.2			34.1	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	63.4		20.6	6.5	62.9		20.6				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	53.4		15.5	4.1	53.4		15.5				
Max Q Clear Time (g_c+I1), s	2.1	22.6		5.5	2.2	27.7		14.1				
Green Ext Time (p_c), s	0.0	20.4		0.3	0.0	18.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		12.9	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	670	15	30	245	20	645	10	65	5	5	5
Future Volume (vph)	15	670	15	30	245	20	645	10	65	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		1.00			0.99		1.00	1.00	0.85		0.95	
Flt Protected		1.00			0.99		0.95	0.95	1.00		0.98	
Satd. Flow (prot)		3524			3485		1681	1688	1583		1750	
Flt Permitted		0.94			0.84		0.95	0.95	1.00		0.98	
Satd. Flow (perm)		3328			2934		1681	1688	1583		1750	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	728	16	33	266	22	701	11	71	5	5	5
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	47	0	5	0
Lane Group Flow (vph)	0	758	0	0	315	0	358	354	24	0	10	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		19.9			20.4		19.4	19.4	19.4		0.9	
Effective Green, g (s)		19.9			20.4		19.4	19.4	19.4		0.9	
Actuated g/C Ratio		0.34			0.35		0.33	0.33	0.33		0.02	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1137			1028		560	562	527		27	
v/s Ratio Prot							c0.21	0.21			c0.01	
v/s Ratio Perm		c0.23			0.11				0.01			
v/c Ratio		0.67			0.31		0.64	0.63	0.04		0.37	
Uniform Delay, d1		16.3			13.7		16.4	16.4	13.1		28.4	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1.6			0.2		5.5	5.3	0.2		3.1	
Delay (s)		18.0			14.0		21.9	21.7	13.3		31.5	
Level of Service		B			B		C	C	B		C	
Approach Delay (s)		18.0			14.0			21.0			31.5	
Approach LOS		B			B			C			C	

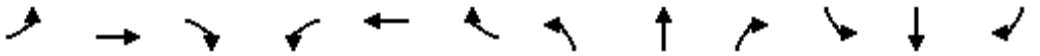
Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	5	845	50	40	695
Future Volume (vph)	5	5	845	50	40	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3261		3539	1583	1770	5085
Flt Permitted	0.98		1.00	1.00	0.30	1.00
Satd. Flow (perm)	3261		3539	1583	559	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	918	54	43	755
RTOR Reduction (vph)	5	0	0	17	0	0
Lane Group Flow (vph)	5	0	918	37	43	755
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	1.0		45.3	45.3	53.5	53.5
Effective Green, g (s)	1.0		45.3	45.3	53.5	53.5
Actuated g/C Ratio	0.02		0.68	0.68	0.80	0.80
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49		2410	1078	489	4090
v/s Ratio Prot	c0.00		c0.26		0.00	c0.15
v/s Ratio Perm				0.02	0.07	
v/c Ratio	0.10		0.38	0.03	0.09	0.18
Uniform Delay, d1	32.3		4.6	3.5	1.8	1.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.5	0.1	0.1	0.1
Delay (s)	33.2		5.0	3.5	1.9	1.6
Level of Service	C		A	A	A	A
Approach Delay (s)	33.2		4.9			1.6
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	350	35	710	610	515	70	590	535	175	385	85
Future Volume (vph)	65	350	35	710	610	515	70	590	535	175	385	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3442		1541	3305	1567	1601	3438	1644	3539	3362	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.46	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3442		1541	3305	1567	782	3438	1644	3539	3362	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	380	38	772	663	560	76	641	582	190	418	92
RTOR Reduction (vph)	0	6	0	0	0	116	0	0	0	0	16	0
Lane Group Flow (vph)	71	412	0	471	964	444	76	641	582	190	494	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	15.5	15.5		44.0	44.0	61.3	26.7	26.7	120.0	11.3	43.5	
Effective Green, g (s)	15.5	15.5		44.0	44.0	55.3	26.7	26.7	120.0	11.3	43.5	
Actuated g/C Ratio	0.13	0.13		0.37	0.37	0.46	0.22	0.22	1.00	0.09	0.36	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	233	444		565	1211	722	173	764	1644	333	1218	
v/s Ratio Prot	0.04	c0.12		c0.31	0.29	c0.28		c0.19		0.05	0.15	
v/s Ratio Perm							0.10		0.35			
v/c Ratio	0.30	0.93		0.83	0.80	0.62	0.44	0.84	0.35	0.57	0.41	
Uniform Delay, d1	47.4	51.7		34.7	34.0	24.3	40.2	44.6	0.0	52.0	28.6	
Progression Factor	1.00	1.00		0.83	0.83	0.49	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.3	28.0		12.4	5.0	1.4	0.7	7.7	0.6	2.4	1.0	
Delay (s)	50.7	79.7		41.3	33.2	13.3	40.9	52.3	0.6	54.4	29.6	
Level of Service	D	E		D	C	B	D	D	A	D	C	
Approach Delay (s)		75.5			29.6			28.5			36.3	
Approach LOS		E			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1040	20	0	1650	195	0	0	125	0	0	185
Future Vol, veh/h	0	1040	20	0	1650	195	0	0	125	0	0	185
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1130	22	0	1793	212	0	0	136	0	0	201

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	576	-	-	1003
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	394	0	0	206
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	394	-	-	206
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

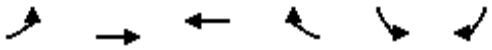
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18.9	104.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	394	-	-	-	-	206
HCM Lane V/C Ratio	0.345	-	-	-	-	0.976
HCM Control Delay (s)	18.9	-	-	-	-	104.9
HCM Lane LOS	C	-	-	-	-	F
HCM 95th %tile Q(veh)	1.5	-	-	-	-	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	85	1525	0	0	2680	190	130	0	270	0	535
Future Volume (vph)	85	1525	0	0	2680	190	130	0	270	0	535
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	81	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	1658	0	0	2913	207	141	0	293	0	582
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	221	0	0
Lane Group Flow (vph)	92	1658	0	0	2913	145	141	0	72	0	582
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	99.5	99.5			83.9	83.9	8.0		8.0		120.0
Effective Green, g (s)	99.5	99.5			83.9	83.9	8.0		8.0		107.5
Actuated g/C Ratio	0.83	0.83			0.70	0.70	0.07		0.07		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	217	2836			3488	1123	233		189		1443
v/s Ratio Prot	0.04	c0.48			c0.58		c0.04				
v/s Ratio Perm	0.31					0.09			0.03		0.36
v/c Ratio	0.42	0.58			0.84	0.13	0.61		0.38		0.40
Uniform Delay, d1	23.9	3.4			13.1	6.0	54.5		53.6		1.0
Progression Factor	0.84	1.14			0.50	0.00	1.00		1.00		1.00
Incremental Delay, d2	3.7	0.9			1.8	0.2	11.1		5.7		0.5
Delay (s)	23.7	4.7			8.4	0.2	65.6		59.3		1.5
Level of Service	C	A			A	A	E		E		A
Approach Delay (s)		5.7			7.8		61.4			1.5	
Approach LOS		A			A		E			A	

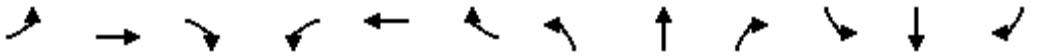
Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	2190	2865	5	0	5
Future Volume (vph)	0	2190	2865	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2380	3114	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2380	3119	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		99.8	99.8			120.0
Effective Green, g (s)		99.8	99.8			120.0
Actuated g/C Ratio		0.83	0.83			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4208	4291			1611
v/s Ratio Prot		0.47	c0.60			
v/s Ratio Perm						c0.00
v/c Ratio		0.57	0.73			0.00
Uniform Delay, d1		3.2	4.3			0.0
Progression Factor		0.82	1.00			1.00
Incremental Delay, d2		0.5	1.1			0.0
Delay (s)		3.1	5.4			0.0
Level of Service		A	A			A
Approach Delay (s)		3.1	5.4		0.0	
Approach LOS		A	A		A	

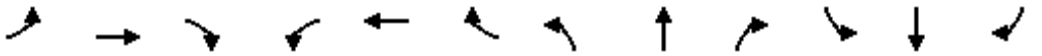
Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	2085	90	15	2785	20	65	10	20	20	5	20
Future Volume (veh/h)	15	2085	90	15	2785	20	65	10	20	20	5	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	16	2266	98	16	3027	22	71	11	22	22	5	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	3554	153	178	3947	29	178	50	100	174	26	114
Arrive On Green	0.01	0.71	0.71	0.01	0.71	0.71	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1776	5004	215	1818	5559	40	1383	579	1158	1372	301	1325
Grp Volume(v), veh/h	16	1533	831	16	1968	1081	71	0	33	22	0	27
Grp Sat Flow(s),veh/h/ln	1776	1697	1826	1818	1809	1981	1383	0	1737	1372	0	1626
Q Serve(g_s), s	0.2	21.5	21.8	0.2	31.1	31.4	4.5	0.0	1.6	1.4	0.0	1.4
Cycle Q Clear(g_c), s	0.2	21.5	21.8	0.2	31.1	31.4	5.9	0.0	1.6	3.0	0.0	1.4
Prop In Lane	1.00		0.12	1.00		0.02	1.00		0.67	1.00		0.81
Lane Grp Cap(c), veh/h	133	2410	1297	178	2569	1407	178	0	150	174	0	140
V/C Ratio(X)	0.12	0.64	0.64	0.09	0.77	0.77	0.40	0.00	0.22	0.13	0.00	0.19
Avail Cap(c_a), veh/h	188	2410	1297	235	2569	1407	195	0	172	191	0	161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	6.9	6.9	6.4	8.3	8.3	41.0	0.0	38.3	39.7	0.0	38.2
Incr Delay (d2), s/veh	0.3	1.1	2.0	0.2	2.2	4.1	1.4	0.0	0.7	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.8	6.7	0.1	9.2	10.9	1.6	0.0	0.7	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.7	8.0	9.0	6.6	10.5	12.4	42.4	0.0	39.0	40.0	0.0	38.9
LnGrp LOS	B	A	A	A	B	B	D	A	D	D	A	D
Approach Vol, veh/h		2380			3065			104			49	
Approach Delay, s/veh		8.3			11.2			41.3			39.4	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	68.9		14.3	6.8	68.9		14.3				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	60.0		8.9	4.1	60.0		8.9				
Max Q Clear Time (g_c+I1), s	2.2	33.4		5.0	2.2	23.8		7.9				
Green Ext Time (p_c), s	0.0	24.1		0.0	0.0	24.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		10.8	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	370	175	95	175	5	525	5	20	10	15	10
Future Volume (vph)	5	370	175	95	175	5	525	5	20	10	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.95			1.00		1.00	1.00	0.85		0.96	
Flt Protected		1.00			0.98		0.95	0.95	1.00		0.99	
Satd. Flow (prot)		3369			3470		1681	1687	1583		1764	
Flt Permitted		0.95			0.63		0.95	0.95	1.00		0.99	
Satd. Flow (perm)		3207			2208		1681	1687	1583		1764	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	402	190	103	190	5	571	5	22	11	16	11
RTOR Reduction (vph)	0	72	0	0	1	0	0	0	15	0	11	0
Lane Group Flow (vph)	0	525	0	0	297	0	285	291	7	0	27	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		18.0			18.5		19.6	19.6	19.6		2.3	
Effective Green, g (s)		18.0			18.5		19.6	19.6	19.6		2.3	
Actuated g/C Ratio		0.31			0.32		0.34	0.34	0.34		0.04	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		996			705		569	571	535		70	
v/s Ratio Prot							0.17	c0.17			c0.02	
v/s Ratio Perm		c0.16			0.13				0.00			
v/c Ratio		0.53			0.42		0.50	0.51	0.01		0.39	
Uniform Delay, d1		16.4			15.5		15.3	15.3	12.7		27.1	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.7			0.6		3.1	3.2	0.0		1.3	
Delay (s)		17.1			16.0		18.4	18.5	12.8		28.4	
Level of Service		B			B		B	B	B		C	
Approach Delay (s)		17.1			16.0			18.3			28.4	
Approach LOS		B			B			B			C	

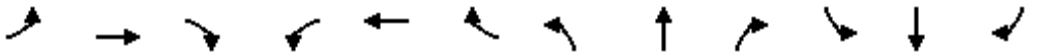
Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	25	695	15	25	515
Future Volume (vph)	35	25	695	15	25	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3292		3539	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.36	1.00
Satd. Flow (perm)	3292		3539	1583	676	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	27	755	16	27	560
RTOR Reduction (vph)	26	0	0	5	0	0
Lane Group Flow (vph)	39	0	755	11	27	560
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	3.0		43.3	43.3	50.5	50.5
Effective Green, g (s)	3.0		43.3	43.3	50.5	50.5
Actuated g/C Ratio	0.05		0.66	0.66	0.77	0.77
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150		2339	1046	541	3920
v/s Ratio Prot	c0.01		c0.21		0.00	c0.11
v/s Ratio Perm				0.01	0.04	
v/c Ratio	0.26		0.32	0.01	0.05	0.14
Uniform Delay, d1	30.2		4.8	3.8	1.9	1.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.4	0.0	0.0	0.1
Delay (s)	31.1		5.1	3.8	1.9	2.0
Level of Service	C		A	A	A	A
Approach Delay (s)	31.1		5.1			2.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

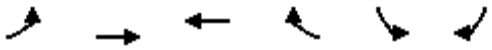
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	510	15	135	235	295	5	20	30	90	5	55
Future Volume (veh/h)	80	510	15	135	235	295	5	20	30	90	5	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	554	16	147	255	321	5	22	33	98	5	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	623	2371	68	651	1367	1220	179	85	128	191	16	187
Arrive On Green	0.67	0.67	0.67	0.04	0.77	0.77	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	837	3527	102	1781	1777	1585	1337	675	1013	1349	123	1480
Grp Volume(v), veh/h	87	279	291	147	255	321	5	0	55	98	0	65
Grp Sat Flow(s),veh/h/ln	837	1777	1852	1781	1777	1585	1337	0	1688	1349	0	1604
Q Serve(g_s), s	4.6	7.3	7.3	2.9	4.6	7.0	0.4	0.0	3.5	8.5	0.0	4.4
Cycle Q Clear(g_c), s	4.6	7.3	7.3	2.9	4.6	7.0	4.8	0.0	3.5	12.0	0.0	4.4
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.60	1.00		0.92
Lane Grp Cap(c), veh/h	623	1195	1245	651	1367	1220	179	0	213	191	0	203
V/C Ratio(X)	0.14	0.23	0.23	0.23	0.19	0.26	0.03	0.00	0.26	0.51	0.00	0.32
Avail Cap(c_a), veh/h	623	1195	1245	879	1367	1220	367	0	450	380	0	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	7.6	7.6	5.1	3.7	4.0	49.9	0.0	47.3	52.8	0.0	47.7
Incr Delay (d2), s/veh	0.5	0.5	0.4	0.1	0.2	0.4	0.1	0.0	1.4	4.5	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.8	2.9	1.0	1.5	2.1	0.1	0.0	1.6	3.1	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	8.1	8.1	5.3	3.9	4.4	50.1	0.0	48.7	57.3	0.0	49.7
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h		657			723			60			163	
Approach Delay, s/veh		8.0			4.4			48.8			54.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		98.8		21.2	11.7	87.2		21.2				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		75.5		32.0	20.5	48.5		32.0				
Max Q Clear Time (g_c+I1), s		9.0		14.0	4.9	9.3		6.8				
Green Ext Time (p_c), s		0.7		1.1	0.3	0.7		0.5				

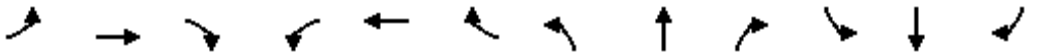
Intersection Summary												
HCM 6th Ctrl Delay			12.6									
HCM 6th LOS			B									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	540	565	50	270	100
Future Volume (vph)	90	540	565	50	270	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	5.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	3539	3539	1583	1731	
Flt Permitted	0.41	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	769	3539	3539	1583	1731	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	587	614	54	293	109
RTOR Reduction (vph)	0	0	0	39	17	0
Lane Group Flow (vph)	98	587	614	15	385	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		6	2		4	
Permitted Phases	6			2		
Actuated Green, G (s)	11.3	11.3	11.3	11.3	16.7	
Effective Green, g (s)	11.3	11.3	11.3	11.3	16.7	
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.42	
Clearance Time (s)	6.0	6.0	6.0	6.0	5.5	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	5.0	
Lane Grp Cap (vph)	219	1012	1012	452	731	
v/s Ratio Prot		0.17	c0.17		c0.22	
v/s Ratio Perm	0.13			0.01		
v/c Ratio	0.45	0.58	0.61	0.03	0.53	
Uniform Delay, d1	11.5	12.1	12.2	10.2	8.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.5	0.7	0.0	1.3	
Delay (s)	12.1	12.6	12.9	10.2	9.8	
Level of Service	B	B	B	B	A	
Approach Delay (s)		12.5	12.7		9.8	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	39.5	Sum of lost time (s)	11.5
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

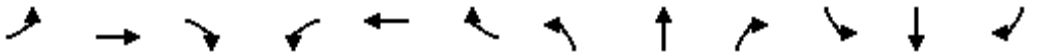
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	315	180	135	275	195	5	5	5	110	325	335
Future Volume (vph)	315	315	180	135	275	195	5	5	5	110	325	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.95		1.00	0.94			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3346		1770	3319			1817	1583	1681	1767	1583
Flt Permitted	0.21	1.00		0.45	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	400	3346		841	3319			1817	1583	1681	1767	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	342	196	147	299	212	5	5	5	120	353	364
RTOR Reduction (vph)	0	68	0	0	133	0	0	0	5	0	0	248
Lane Group Flow (vph)	342	470	0	147	378	0	0	10	0	108	365	116
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	48.1	34.9		28.4	20.2			3.5	3.5	31.9	31.9	31.9
Effective Green, g (s)	48.1	34.9		28.4	20.2			3.5	3.5	31.9	31.9	31.9
Actuated g/C Ratio	0.48	0.35		0.28	0.20			0.04	0.04	0.32	0.32	0.32
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	506	1167		315	670			63	55	536	563	504
v/s Ratio Prot	c0.15	0.14		0.04	0.11			c0.01		0.06	c0.21	
v/s Ratio Perm	c0.17			0.09					0.00			0.07
v/c Ratio	0.68	0.40		0.47	0.56			0.16	0.00	0.20	0.65	0.23
Uniform Delay, d1	18.2	24.7		28.0	35.9			46.8	46.6	24.8	29.2	25.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	1.0		1.1	3.4			2.5	0.0	0.4	3.5	0.5
Delay (s)	21.8	25.7		29.1	39.3			49.3	46.6	25.2	32.7	25.5
Level of Service	C	C		C	D			D	D	C	C	C
Approach Delay (s)		24.2			37.0			48.4			28.6	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

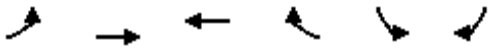
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	330	10	215	510	130	40	10	195	195	15	45
Future Volume (veh/h)	40	330	10	215	510	130	40	10	195	195	15	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	359	11	234	554	141	43	11	212	212	16	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	1524	47	594	1621	411	448	25	483	300	129	395
Arrive On Green	0.43	0.43	0.43	0.09	0.58	0.58	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	750	3520	108	1781	2807	712	1337	79	1518	1158	405	1242
Grp Volume(v), veh/h	43	181	189	234	350	345	43	0	223	212	0	65
Grp Sat Flow(s),veh/h/ln	750	1777	1851	1781	1777	1742	1337	0	1597	1158	0	1647
Q Serve(g_s), s	4.1	7.7	7.7	8.3	12.4	12.5	2.8	0.0	13.3	21.3	0.0	3.4
Cycle Q Clear(g_c), s	4.1	7.7	7.7	8.3	12.4	12.5	6.2	0.0	13.3	34.6	0.0	3.4
Prop In Lane	1.00		0.06	1.00		0.41	1.00		0.95	1.00		0.75
Lane Grp Cap(c), veh/h	384	769	801	594	1026	1006	448	0	508	300	0	524
V/C Ratio(X)	0.11	0.24	0.24	0.39	0.34	0.34	0.10	0.00	0.44	0.71	0.00	0.12
Avail Cap(c_a), veh/h	384	769	801	767	1026	1006	546	0	626	385	0	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	21.5	21.5	15.1	13.3	13.4	31.2	0.0	32.4	46.1	0.0	29.0
Incr Delay (d2), s/veh	0.6	0.7	0.7	0.4	0.8	0.9	0.2	0.0	1.3	7.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.4	3.5	3.4	5.1	5.1	0.9	0.0	5.3	6.7	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	22.2	22.2	15.5	14.2	14.2	31.4	0.0	33.7	53.1	0.0	29.3
LnGrp LOS	C	C	C	B	B	B	C	A	C	D	A	C
Approach Vol, veh/h		413			929			266			277	
Approach Delay, s/veh		22.1			14.5			33.3			47.5	
Approach LOS		C			B			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.8		44.2	17.4	58.4		44.2				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		60.5		47.0	22.5	31.5		47.0				
Max Q Clear Time (g_c+I1), s		14.5		36.6	10.3	9.7		15.3				
Green Ext Time (p_c), s		0.8		1.6	0.5	0.4		3.2				

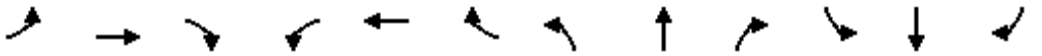
Intersection Summary												
HCM 6th Ctrl Delay			23.7									
HCM 6th LOS			C									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	250	470	690	540	75	165
Future Volume (vph)	250	470	690	540	75	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	5.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.91	
Flt Protected	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (prot)	1770	3539	3539	1583	1664	
Flt Permitted	0.36	1.00	1.00	1.00	0.98	
Satd. Flow (perm)	669	3539	3539	1583	1664	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	511	750	587	82	179
RTOR Reduction (vph)	0	0	0	254	88	0
Lane Group Flow (vph)	272	511	750	333	173	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		6	2		4	
Permitted Phases	6			2		
Actuated Green, G (s)	31.2	31.2	31.2	31.2	12.3	
Effective Green, g (s)	31.2	31.2	31.2	31.2	12.3	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.22	
Clearance Time (s)	6.0	6.0	6.0	6.0	5.5	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	5.0	
Lane Grp Cap (vph)	379	2007	2007	897	372	
v/s Ratio Prot		0.14	0.21		c0.10	
v/s Ratio Perm	c0.41			0.21		
v/c Ratio	0.72	0.25	0.37	0.37	0.47	
Uniform Delay, d1	8.7	6.0	6.5	6.5	18.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.3	0.0	0.0	0.1	1.9	
Delay (s)	14.0	6.0	6.6	6.6	20.4	
Level of Service	B	A	A	A	C	
Approach Delay (s)		8.8	6.6		20.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

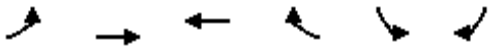
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	325	10	5	510	30	205	85	200	205	5	515
Future Volume (vph)	210	325	10	5	510	30	205	85	200	205	5	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3523		1770	3509			1799	1583	1681	1689	1583
Flt Permitted	0.21	1.00		0.53	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (perm)	386	3523		996	3509			1799	1583	1681	1689	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	353	11	5	554	33	223	92	217	223	5	560
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	173	0	0	196
Lane Group Flow (vph)	228	362	0	5	583	0	0	315	44	114	114	364
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	47.3	41.3		31.0	30.0			24.5	24.5	31.7	31.7	31.7
Effective Green, g (s)	47.3	41.3		31.0	30.0			24.5	24.5	31.7	31.7	31.7
Actuated g/C Ratio	0.39	0.34		0.26	0.25			0.20	0.20	0.26	0.26	0.26
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	294	1212		263	877			367	323	444	446	418
v/s Ratio Prot	c0.08	0.10		0.00	0.17			c0.18		0.07	0.07	
v/s Ratio Perm	c0.23			0.00					0.03			c0.23
v/c Ratio	0.78	0.30		0.02	0.67			0.86	0.14	0.26	0.26	0.87
Uniform Delay, d1	27.2	28.8		33.1	40.5			46.1	39.1	34.9	34.8	42.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	0.6		0.0	4.0			19.2	0.4	0.6	0.6	19.0
Delay (s)	39.3	29.4		33.1	44.5			65.3	39.5	35.5	35.5	61.2
Level of Service	D	C		C	D			E	D	D	D	E
Approach Delay (s)		33.2			44.4			54.8			53.8	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

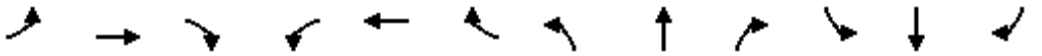
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1315	835	0	185	120
Future Volume (veh/h)	0	1315	835	0	185	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1429	908	0	201	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3930	4952	0	634	200
Arrive On Green	0.00	0.77	0.77	0.00	0.13	0.13
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	1429	908	0	201	130
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	10.7	4.5	0.0	4.4	9.4
Cycle Q Clear(g_c), s	0.0	10.7	4.5	0.0	4.4	9.4
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3930	4952	0	634	200
V/C Ratio(X)	0.00	0.36	0.18	0.00	0.32	0.65
Avail Cap(c_a), veh/h	0	3930	4952	0	1779	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.4	3.7	0.0	47.7	49.9
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	1.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	1.2	0.0	1.9	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.7	3.8	0.0	48.7	62.1
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		1429	908		331	
Approach Delay, s/veh		4.7	3.8		54.0	
Approach LOS		A	A		D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	98.4	21.6	98.4
Change Period (Y+Rc), s	6.0	6.5	6.0
Max Green Setting (Gmax), s	65.0	42.5	65.0
Max Q Clear Time (g_c+I1), s	12.7	11.4	6.5
Green Ext Time (p_c), s	14.9	3.8	7.7

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1175	325	0	600	0	0	0	0	405	0	235
Future Volume (vph)	0	1175	325	0	600	0	0	0	0	405	0	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0					7.0		7.0
Lane Util. Factor		0.91			0.91					0.97		1.00
Frt		0.97			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4920			5085					3433		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4920			5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1277	353	0	652	0	0	0	0	440	0	255
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	196
Lane Group Flow (vph)	0	1598	0	0	652	0	0	0	0	440	0	60
Turn Type		NA			NA					Prot		Prot
Protected Phases		2			6 1					4		4
Permitted Phases												
Actuated Green, G (s)		69.1			102.0					35.0		35.0
Effective Green, g (s)		69.1			102.0					35.0		35.0
Actuated g/C Ratio		0.46			0.68					0.23		0.23
Clearance Time (s)		6.0								7.0		7.0
Vehicle Extension (s)		0.2								3.0		3.0
Lane Grp Cap (vph)		2266			3457					801		369
v/s Ratio Prot		c0.32			c0.13					c0.13		0.04
v/s Ratio Perm												
v/c Ratio		0.71			0.19					0.55		0.16
Uniform Delay, d1		32.3			8.8					50.6		45.8
Progression Factor		1.00			0.92					1.00		1.00
Incremental Delay, d2		1.9			0.0					0.8		0.2
Delay (s)		34.2			8.1					51.3		46.0
Level of Service		C			A					D		D
Approach Delay (s)		34.2			8.1			0.0			49.4	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1580	0	305	600	0	0
Future Volume (vph)	1580	0	305	600	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.5	6.5		
Lane Util. Factor	0.91		0.97	0.91		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	5085		3433	5085		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	5085		3433	5085		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1717	0	332	652	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1717	0	332	652	0	0
Turn Type	NA		Prot	NA		
Protected Phases	2 4		1	1 4 6		
Permitted Phases						
Actuated Green, G (s)	110.1		26.4	150.0		
Effective Green, g (s)	110.1		26.4	137.0		
Actuated g/C Ratio	0.73		0.18	0.91		
Clearance Time (s)			6.5			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	3732		604	4644		
v/s Ratio Prot	c0.34		c0.10	0.13		
v/s Ratio Perm						
v/c Ratio	0.46		0.55	0.14		
Uniform Delay, d1	8.0		56.4	0.6		
Progression Factor	0.05		0.71	1.00		
Incremental Delay, d2	0.1		1.0	0.0		
Delay (s)	0.5		41.2	0.7		
Level of Service	A		D	A		
Approach Delay (s)	0.5			14.3	0.0	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1355	225	0	665	240	0
Future Volume (vph)	1355	225	0	665	240	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.98			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	4977			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	4977			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1473	245	0	723	261	0
RTOR Reduction (vph)	10	0	0	0	0	0
Lane Group Flow (vph)	1708	0	0	723	261	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	119.8			119.8	16.7	
Effective Green, g (s)	119.8			119.8	16.7	
Actuated g/C Ratio	0.80			0.80	0.11	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	3974			4061	382	
v/s Ratio Prot	c0.34			0.14	c0.08	
v/s Ratio Perm						
v/c Ratio	0.43			0.18	0.68	
Uniform Delay, d1	4.6			3.5	64.1	
Progression Factor	0.00			0.38	1.00	
Incremental Delay, d2	0.3			0.1	5.0	
Delay (s)	0.3			1.4	69.1	
Level of Service	A			A	E	
Approach Delay (s)	0.3			1.4	69.1	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1355	0	0	665	0	890
Future Volume (vph)	1355	0	0	665	0	890
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1473	0	0	723	0	967
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1473	0	0	723	0	967
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	71.2			150.0		67.3
Effective Green, g (s)	71.2			144.5		67.3
Actuated g/C Ratio	0.47			0.96		0.45
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	2413			4898		1250
v/s Ratio Prot	c0.29			0.14		c0.35
v/s Ratio Perm						
v/c Ratio	0.61			0.15		0.77
Uniform Delay, d1	29.1			0.1		34.9
Progression Factor	0.49			1.00		1.00
Incremental Delay, d2	1.1			0.0		3.0
Delay (s)	15.5			0.1		38.0
Level of Service	B			A		D
Approach Delay (s)	15.5			0.1	38.0	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

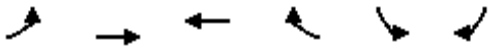
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	70	765	830	580	215	115	135	675	0	295	105	0
Future Volume (vph)	70	765	830	580	215	115	135	675	0	295	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	832	902	630	234	125	147	734	0	321	114	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	908	902	630	234	125	147	734	0	321	114	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		3			7	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		41.1	39.3	150.0	26.5	24.7	150.0	65.2		150.0	65.2	
Effective Green, g (s)		41.1	39.3	150.0	26.5	24.7	150.0	65.2		150.0	65.2	
Actuated g/C Ratio		0.27	0.26	1.00	0.18	0.16	1.00	0.43		1.00	0.43	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		940	1332	1583	312	837	1583	769		1583	1492	
v/s Ratio Prot		c0.26	0.18		c0.13	0.02		c0.41			0.03	
v/s Ratio Perm				c0.40			0.09			0.20		
v/c Ratio		0.97	0.68	0.40	0.75	0.15	0.09	0.95		0.20	0.08	
Uniform Delay, d1		53.8	49.7	0.0	58.6	53.7	0.0	41.0		0.0	24.8	
Progression Factor		0.92	0.92	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		18.0	2.1	0.6	9.7	0.4	0.1	21.9		0.3	0.0	
Delay (s)		67.5	47.6	0.6	68.3	54.0	0.1	62.8		0.3	24.8	
Level of Service		E	D	A	E	D	A	E		A	C	
Approach Delay (s)			42.9			45.0			43.8			9.9
Approach LOS			D			D			D			A

Intersection Summary			
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	160
Future Volume (vph)	160
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	174
RTOR Reduction (vph)	0
Lane Group Flow (vph)	174
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	150.0
Effective Green, g (s)	150.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.11
v/c Ratio	0.11
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	0.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

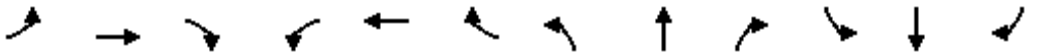
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (veh/h)	0	795	1510	0	310	120
Future Volume (veh/h)	0	795	1510	0	310	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	864	1641	0	337	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3859	4862	0	704	222
Arrive On Green	0.00	0.76	0.76	0.00	0.14	0.14
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	864	1641	0	337	130
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	6.0	10.0	0.0	7.4	9.2
Cycle Q Clear(g_c), s	0.0	6.0	10.0	0.0	7.4	9.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3859	4862	0	704	222
V/C Ratio(X)	0.00	0.22	0.34	0.00	0.48	0.59
Avail Cap(c_a), veh/h	0	3859	4862	0	1821	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.72	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.3	4.8	0.0	47.6	48.3
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	1.8	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	2.8	0.0	3.2	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.4	4.9	0.0	49.4	56.9
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		864	1641		467	
Approach Delay, s/veh		4.4	4.9		51.5	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		96.7		23.3		96.7
Change Period (Y+Rc), s		6.0		6.5		6.0
Max Green Setting (Gmax), s		64.0		43.5		64.0
Max Q Clear Time (g_c+I1), s		8.0		11.2		12.0
Green Ext Time (p_c), s		7.2		5.6		18.8

Intersection Summary		
HCM 6th Ctrl Delay		12.1
HCM 6th LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	965	140	0	850	0	0	0	0	405	0	660
Future Volume (vph)	0	965	140	0	850	0	0	0	0	405	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.5					7.0		7.0
Lane Util. Factor		0.91			0.91					0.97		1.00
Frt		0.98			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4989			5085					3433		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4989			5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1049	152	0	924	0	0	0	0	440	0	717
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	1188	0	0	924	0	0	0	0	440	0	672
Turn Type		NA			NA					Prot		Prot
Protected Phases		2			1 6					4		4
Permitted Phases												
Actuated Green, G (s)		39.6			71.1					65.9		65.9
Effective Green, g (s)		39.6			71.1					65.9		65.9
Actuated g/C Ratio		0.26			0.47					0.44		0.44
Clearance Time (s)		6.0								7.0		7.0
Vehicle Extension (s)		0.2								3.0		3.0
Lane Grp Cap (vph)		1317			2410					1508		695
v/s Ratio Prot		c0.24			c0.18					0.13		c0.42
v/s Ratio Perm												
v/c Ratio		0.90			0.38					0.29		0.97
Uniform Delay, d1		53.3			25.4					27.0		41.0
Progression Factor		1.00			0.73					1.00		1.00
Incremental Delay, d2		10.2			0.1					0.1		25.9
Delay (s)		63.6			18.5					27.2		66.9
Level of Service		E			B					C		E
Approach Delay (s)		63.6			18.5			0.0			51.8	
Approach LOS		E			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1370	0	510	850	0	0
Future Volume (vph)	1370	0	510	850	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.5	6.5		
Lane Util. Factor	0.91		0.97	0.91		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	5085		3433	5085		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	5085		3433	5085		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1489	0	554	924	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1489	0	554	924	0	0
Turn Type	NA		Prot	NA		
Protected Phases	2 4		1	1 4 6		
Permitted Phases						
Actuated Green, G (s)	112.5		25.0	150.0		
Effective Green, g (s)	105.5		25.0	137.0		
Actuated g/C Ratio	0.70		0.17	0.91		
Clearance Time (s)			6.5			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	3576		572	4644		
v/s Ratio Prot	c0.29		c0.16	0.18		
v/s Ratio Perm						
v/c Ratio	0.42		0.97	0.20		
Uniform Delay, d1	9.3		62.1	0.7		
Progression Factor	0.26		0.94	1.00		
Incremental Delay, d2	0.1		28.9	0.0		
Delay (s)	2.5		87.3	0.7		
Level of Service	A		F	A		
Approach Delay (s)	2.5			33.2	0.0	
Approach LOS	A			C	A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1115	255	0	1160	200	0
Future Volume (vph)	1115	255	0	1160	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.97			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	4943			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	4943			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1212	277	0	1261	217	0
RTOR Reduction (vph)	15	0	0	0	0	0
Lane Group Flow (vph)	1474	0	0	1261	217	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	121.7			121.7	14.8	
Effective Green, g (s)	121.7			121.7	14.8	
Actuated g/C Ratio	0.81			0.81	0.10	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	4010			4125	338	
v/s Ratio Prot	c0.30			0.25	c0.06	
v/s Ratio Perm						
v/c Ratio	0.37			0.31	0.64	
Uniform Delay, d1	3.8			3.6	65.1	
Progression Factor	0.20			1.00	1.00	
Incremental Delay, d2	0.2			0.2	4.1	
Delay (s)	1.0			3.7	69.2	
Level of Service	A			A	E	
Approach Delay (s)	1.0			3.7	69.2	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1115	0	0	1160	0	395
Future Volume (vph)	1115	0	0	1160	0	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1212	0	0	1261	0	429
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1212	0	0	1261	0	429
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	98.0			150.0		40.5
Effective Green, g (s)	98.0			144.5		40.5
Actuated g/C Ratio	0.65			0.96		0.27
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	3322			4898		752
v/s Ratio Prot	c0.24			0.25		c0.15
v/s Ratio Perm						
v/c Ratio	0.36			0.26		0.57
Uniform Delay, d1	11.8			0.1		47.2
Progression Factor	0.25			1.00		1.00
Incremental Delay, d2	0.3			0.0		1.0
Delay (s)	3.2			0.2		48.3
Level of Service	A			A		D
Approach Delay (s)	3.2			0.2	48.3	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

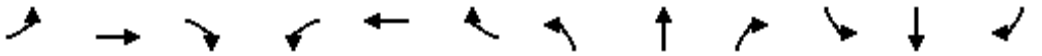
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	110	885	480	300	810	125	570	0	220	280	0
Future Volume (vph)	35	110	885	480	300	810	125	570	0	220	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	120	962	522	326	880	136	620	0	239	304	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	158	962	522	326	880	136	620	0	239	304	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		8			4	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		11.0	36.3	135.0	27.7	53.0	135.0	52.0		135.0	52.0	
Effective Green, g (s)		11.0	36.3	135.0	27.7	53.0	135.0	52.0		135.0	52.0	
Actuated g/C Ratio		0.08	0.27	1.00	0.21	0.39	1.00	0.39		1.00	0.39	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		279	1367	1583	363	1996	1583	681		1583	1322	
v/s Ratio Prot		0.05	c0.19		c0.18	0.17		c0.35			0.09	
v/s Ratio Perm				0.33			0.09			0.15		
v/c Ratio		0.57	0.70	0.33	0.90	0.44	0.09	0.91		0.15	0.23	
Uniform Delay, d1		59.7	44.5	0.0	52.3	30.1	0.0	39.3		0.0	28.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6	3.1	0.6	23.7	0.7	0.1	16.4		0.2	0.1	
Delay (s)		62.3	47.6	0.6	76.0	30.8	0.1	55.7		0.2	28.1	
Level of Service		E	D	A	E	C	A	E		A	C	
Approach Delay (s)			34.0			38.7			40.2			9.2
Approach LOS			C			D			D			A

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	640
Future Volume (vph)	640
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	696
RTOR Reduction (vph)	0
Lane Group Flow (vph)	696
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	135.0
Effective Green, g (s)	135.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.44
v/c Ratio	0.44
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.9
Delay (s)	0.9
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary



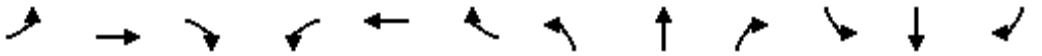
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	10	60	40	15	75	115	215	15	30	880	1205
Future Volume (veh/h)	210	10	60	40	15	75	115	215	15	30	880	1205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	228	11	65	43	16	82	125	234	16	33	957	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	226	192	56	129	109	398	2080	141	739	2030	
Arrive On Green	0.09	0.12	0.12	0.03	0.07	0.07	0.04	0.62	0.62	0.03	0.60	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3366	229	1692	3375	1505
Grp Volume(v), veh/h	228	11	65	43	16	82	125	122	128	33	957	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1823	1692	1687	1505
Q Serve(g_s), s	7.9	0.6	4.6	2.9	1.0	6.1	3.2	3.4	3.4	0.9	18.9	0.0
Cycle Q Clear(g_c), s	7.9	0.6	4.6	2.9	1.0	6.1	3.2	3.4	3.4	0.9	18.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	291	226	192	56	129	109	398	1094	1127	739	2030	
V/C Ratio(X)	0.78	0.05	0.34	0.76	0.12	0.75	0.31	0.11	0.11	0.04	0.47	
Avail Cap(c_a), veh/h	446	400	339	126	292	248	519	1094	1127	764	2030	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.00
Uniform Delay (d), s/veh	53.8	46.5	48.2	57.6	52.4	54.8	10.0	9.4	9.4	8.4	13.3	0.0
Incr Delay (d2), s/veh	5.0	0.1	1.0	18.9	0.4	9.9	0.4	0.2	0.2	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.3	1.8	1.6	0.5	2.7	1.2	1.4	1.4	0.3	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	46.6	49.2	76.5	52.9	64.7	10.4	9.6	9.6	8.4	14.0	0.0
LnGrp LOS	E	D	D	E	D	E	B	A	A	A	B	
Approach Vol, veh/h		304			141			375			990	A
Approach Delay, s/veh		56.3			67.0			9.9			13.8	
Approach LOS		E			E			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	80.6	15.7	14.8	10.8	78.7	9.3	21.2
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	5.1	56.4	15.7	18.8	13.5	48.0	8.5	26.0
Max Q Clear Time (g_c+I1), s	2.9	5.4	9.9	8.1	5.2	20.9	4.9	6.6
Green Ext Time (p_c), s	0.0	0.2	0.4	0.2	0.2	1.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	640	830	0	0	0	0	130	370	0	1285	0
Future Volume (vph)	5	640	830	0	0	0	0	130	370	0	1285	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3450	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3450	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	696	902	0	0	0	0	141	402	0	1397	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	701	902	0	0	0	0	141	402	0	1397	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		37.8	160.0					20.8	81.8		107.2	
Effective Green, g (s)		37.8	160.0					20.8	81.8		102.7	
Actuated g/C Ratio		0.24	1.00					0.13	0.51		0.64	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		815	1544					420	1349		3263	
v/s Ratio Prot								0.04	0.15		0.27	
v/s Ratio Perm		0.20	c0.58									
v/c Ratio		0.86	0.58					0.34	0.30		0.43	
Uniform Delay, d1		58.6	0.0					63.3	22.5		14.1	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		9.2	1.6					2.2	0.1		0.0	
Delay (s)		67.8	1.6					65.5	22.7		0.0	
Level of Service		E	A					E	C		A	
Approach Delay (s)		30.5			0.0			33.8			0.0	
Approach LOS		C			A			C			A	

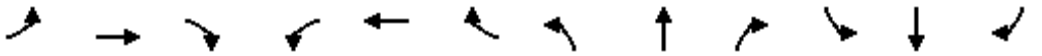
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	1285	585	135	0
Future Volume (vph)	0	0	1285	585	135	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			4.5	4.5	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.97	0.95	
Satd. Flow (prot)			1549	3178	3433	
Flt Permitted			0.95	0.97	0.95	
Satd. Flow (perm)			1549	3178	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1397	636	147	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	698	1335	147	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			80.4	80.4	66.6	
Effective Green, g (s)			80.4	80.4	58.6	
Actuated g/C Ratio			0.50	0.50	0.37	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			778	1596	1257	
v/s Ratio Prot			c0.45	0.42	c0.04	
v/s Ratio Perm						
v/c Ratio			0.90	0.84	0.12	
Uniform Delay, d1			36.1	34.2	33.6	
Progression Factor			1.00	1.00	0.01	
Incremental Delay, d2			13.0	4.0	0.0	
Delay (s)			49.1	38.1	0.3	
Level of Service			D	D	A	
Approach Delay (s)	0.0			41.8	0.3	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

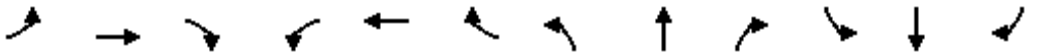
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	515	30	280	5	5	20	165	1070	5	40	1975	470
Future Volume (vph)	515	30	280	5	5	20	165	1070	5	40	1975	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1573	1575		1900		3285	4864		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1573	1575		1900		3285	4864		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	560	33	304	5	5	22	179	1163	5	43	2147	511
RTOR Reduction (vph)	0	0	89	0	21	0	0	0	0	0	0	169
Lane Group Flow (vph)	297	296	215	0	11	0	179	1168	0	43	2147	342
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	30.7	30.7	42.5		4.0		11.8	81.6		7.2	77.0	77.0
Effective Green, g (s)	30.7	30.7	42.5		4.0		11.8	81.6		7.2	77.0	77.0
Actuated g/C Ratio	0.20	0.20	0.28		0.03		0.08	0.54		0.05	0.51	0.51
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	319	321	446		50		258	2646		82	2523	867
v/s Ratio Prot	c0.19	0.19	0.04		c0.01		c0.05	0.24		0.03	c0.44	
v/s Ratio Perm			0.10									0.20
v/c Ratio	0.93	0.92	0.48		0.21		0.69	0.44		0.52	0.85	0.39
Uniform Delay, d1	58.6	58.5	44.6		71.5		67.3	20.5		69.7	31.5	22.3
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.02	1.01	1.36
Incremental Delay, d2	32.9	30.8	0.8		2.1		7.8	0.5		4.1	2.7	0.9
Delay (s)	91.5	89.3	45.4		73.6		75.2	21.1		75.2	34.7	31.3
Level of Service	F	F	D		E		E	C		E	C	C
Approach Delay (s)		75.2			73.6			28.2			34.7	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

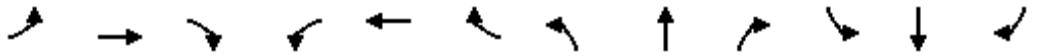
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	5	615	0	0	0	0	1430	175	230	1870	0
Future Volume (vph)	195	5	615	0	0	0	0	1430	175	230	1870	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1664	2412					8036		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1664	2412					8036		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	5	668	0	0	0	0	1554	190	250	2033	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	108	109	668	0	0	0	0	1731	0	250	2033	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	49.8	49.8	49.8					59.5		20.7	86.7	
Effective Green, g (s)	49.8	49.8	49.8					59.5		20.7	86.7	
Actuated g/C Ratio	0.33	0.33	0.33					0.40		0.14	0.58	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	531	552	800					3187		458	2841	
v/s Ratio Prot	0.07	0.07	c0.28					0.22		0.08	c0.41	
v/s Ratio Perm												
v/c Ratio	0.20	0.20	0.83					0.54		0.55	0.72	
Uniform Delay, d1	35.9	35.8	46.3					34.8		60.3	22.8	
Progression Factor	1.00	1.00	1.00					0.68		0.55	0.35	
Incremental Delay, d2	0.2	0.2	7.5					0.6		4.2	1.4	
Delay (s)	36.1	36.0	53.8					24.3		37.5	9.5	
Level of Service	D	D	D					C		D	A	
Approach Delay (s)		49.5			0.0			24.3			12.6	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	120	5	425	275	1350	0	0	1980	780
Future Volume (vph)	0	0	0	120	5	425	275	1350	0	0	1980	780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1704	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1704	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	130	5	462	299	1467	0	0	2152	848
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	68	67	462	299	1467	0	0	2152	848
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				12.5	12.5	150.0	20.2	123.5			96.8	150.0
Effective Green, g (s)				12.5	12.5	150.0	20.2	123.5			96.8	150.0
Actuated g/C Ratio				0.08	0.08	1.00	0.13	0.82			0.65	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)				136	142	1750	431	5099			4729	1591
v/s Ratio Prot				0.04	0.04		0.09	0.24			0.29	
v/s Ratio Perm						0.26						c0.53
v/c Ratio				0.50	0.47	0.26	0.69	0.29			0.46	0.53
Uniform Delay, d1				65.8	65.6	0.0	61.9	3.1			13.4	0.0
Progression Factor				1.00	1.00	1.00	1.41	0.26			0.45	1.00
Incremental Delay, d2				3.9	3.3	0.4	4.4	0.1			0.0	0.1
Delay (s)				69.7	69.0	0.4	91.6	0.9			6.1	0.1
Level of Service				E	E	A	F	A			A	A
Approach Delay (s)		0.0			16.0			16.3			4.4	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

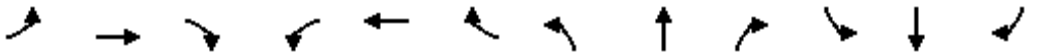
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	110	435	215	690	190	75	10	230	1060	475	30	1845
Future Volume (vph)	110	435	215	690	190	75	10	230	1060	475	30	1845
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3313		3172	3504	1567		1652	4916	1531	1719	4308
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.08	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3313		3172	3504	1567		141	4916	1531	1719	4308
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	473	234	750	207	82	11	250	1152	516	33	2005
RTOR Reduction (vph)	0	0	0	0	0	65	0	0	0	289	0	4
Lane Group Flow (vph)	120	707	0	750	207	17	0	261	1152	227	33	2115
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	33.0	33.0		22.5	22.5	30.2		60.8	60.8	60.8	7.7	57.0
Effective Green, g (s)	33.0	33.0		22.5	22.5	30.2		60.8	60.8	60.8	7.7	57.0
Actuated g/C Ratio	0.22	0.22		0.15	0.15	0.20		0.41	0.41	0.41	0.05	0.38
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	694	728		475	525	315		172	1992	620	88	1637
v/s Ratio Prot	0.04	c0.21		c0.24	0.06	0.01		c0.12	0.23		0.02	c0.49
v/s Ratio Perm								c0.50		0.15		
v/c Ratio	0.17	0.97		1.58	0.39	0.05		1.52	0.58	0.37	0.38	1.29
Uniform Delay, d1	47.4	58.0		63.8	57.6	48.4		64.7	34.6	31.1	68.8	46.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.63	0.46	0.61	1.00	1.00
Incremental Delay, d2	0.1	26.2		270.5	2.2	0.1		259.7	1.2	1.6	2.7	136.2
Delay (s)	47.6	84.3		334.2	59.8	48.4		300.2	17.0	20.6	71.5	182.7
Level of Service	D	F		F	E	D		F	B	C	E	F
Approach Delay (s)		78.9			257.0				56.3			181.0
Approach LOS		E			F				E			F

Intersection Summary			
HCM 2000 Control Delay	139.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	105
Future Volume (vph)	105
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	114
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



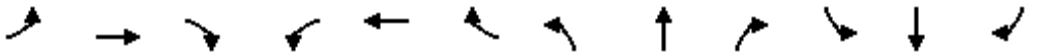
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	465	40	250	40	10	45	40	805	25	75	280	395
Future Volume (veh/h)	465	40	250	40	10	45	40	805	25	75	280	395
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	505	43	272	43	11	49	43	875	27	82	304	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	586	353	299	56	95	81	652	1887	58	351	1840	
Arrive On Green	0.17	0.19	0.19	0.03	0.05	0.05	0.03	0.54	0.54	0.04	0.55	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3508	108	1692	3375	1505
Grp Volume(v), veh/h	505	43	272	43	11	49	43	442	460	82	304	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1845	1692	1687	1505
Q Serve(g_s), s	17.3	2.3	20.4	2.9	0.7	3.6	1.3	18.4	18.4	2.6	5.4	0.0
Cycle Q Clear(g_c), s	17.3	2.3	20.4	2.9	0.7	3.6	1.3	18.4	18.4	2.6	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	586	353	299	56	95	81	652	953	993	351	1840	
V/C Ratio(X)	0.86	0.12	0.91	0.76	0.12	0.61	0.07	0.46	0.46	0.23	0.17	
Avail Cap(c_a), veh/h	816	426	361	146	138	117	675	953	993	442	1840	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	48.3	40.2	47.5	57.6	54.3	55.7	11.5	17.1	17.1	12.9	13.6	0.0
Incr Delay (d2), s/veh	6.9	0.2	23.3	18.9	0.5	7.1	0.0	1.6	1.6	0.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	1.1	9.9	1.6	0.3	1.6	0.5	7.8	8.1	1.0	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	40.3	70.8	76.5	54.9	62.8	11.5	18.7	18.6	13.3	13.8	0.0
LnGrp LOS	E	D	E	E	D	E	B	B	B	B	B	
Approach Vol, veh/h		820			103			945			386	A
Approach Delay, s/veh		59.6			67.7			18.3			13.7	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	71.1	26.1	12.6	9.3	71.9	9.3	29.5
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	11.1	47.3	28.7	8.9	5.3	53.1	9.9	27.7
Max Q Clear Time (g_c+I1), s	4.6	20.4	19.3	5.6	3.3	7.4	4.9	22.4
Green Ext Time (p_c), s	0.1	1.0	1.4	0.0	0.0	0.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	500	345	0	0	0	0	425	890	0	405	0
Future Volume (vph)	5	500	345	0	0	0	0	425	890	0	405	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3449	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3449	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	543	375	0	0	0	0	462	967	0	440	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	548	375	0	0	0	0	462	967	0	440	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		28.5	160.0					30.0	98.5		116.5	
Effective Green, g (s)		28.5	160.0					30.0	98.5		109.5	
Actuated g/C Ratio		0.18	1.00					0.19	0.62		0.68	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		614	1544					606	1625		3480	
v/s Ratio Prot								c0.14	c0.37		0.09	
v/s Ratio Perm		0.16	c0.24									
v/c Ratio		0.89	0.24					0.76	0.60		0.13	
Uniform Delay, d1		64.3	0.0					61.6	18.7		8.7	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		15.2	0.4					8.8	0.6		0.0	
Delay (s)		79.5	0.4					70.4	19.2		0.0	
Level of Service		E	A					E	B		A	
Approach Delay (s)		47.4			0.0			35.8			0.0	
Approach LOS		D			A			D			A	

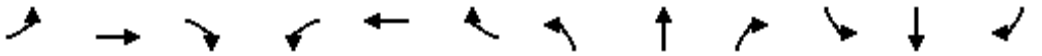
Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	405	1095	430	0
Future Volume (vph)	0	0	405	1095	430	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			7.0	7.0	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	1.00	0.95	
Satd. Flow (prot)			1549	3255	3433	
Flt Permitted			0.95	1.00	0.95	
Satd. Flow (perm)			1549	3255	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	440	1190	467	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	396	1234	467	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			80.5	80.5	66.5	
Effective Green, g (s)			80.5	80.5	58.5	
Actuated g/C Ratio			0.50	0.50	0.37	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			779	1637	1255	
v/s Ratio Prot			0.26	c0.38	c0.14	
v/s Ratio Perm						
v/c Ratio			0.51	0.75	0.37	
Uniform Delay, d1			26.5	31.8	37.3	
Progression Factor			1.01	0.99	0.00	
Incremental Delay, d2			0.5	2.0	0.1	
Delay (s)			27.3	33.6	0.1	
Level of Service			C	C	A	
Approach Delay (s)	0.0			32.1	0.1	
Approach LOS	A			C	A	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

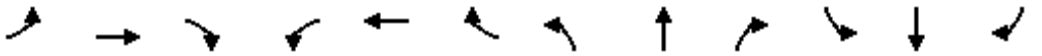
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	545	50	150	5	20	120	180	2230	10	100	1460	210
Future Volume (vph)	545	50	150	5	20	120	180	2230	10	100	1460	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1578	1575		1872		3285	4863		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1578	1575		1872		3285	4863		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	592	54	163	5	22	130	196	2424	11	109	1587	228
RTOR Reduction (vph)	0	0	79	0	101	0	0	1	0	0	0	102
Lane Group Flow (vph)	320	326	84	0	56	0	196	2434	0	109	1587	126
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	33.2	33.2	54.2		5.0		21.0	74.6		10.7	64.3	64.3
Effective Green, g (s)	33.2	33.2	54.2		5.0		21.0	74.6		10.7	64.3	64.3
Actuated g/C Ratio	0.22	0.22	0.36		0.03		0.14	0.50		0.07	0.43	0.43
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	345	349	569		62		459	2418		122	2107	724
v/s Ratio Prot	0.20	c0.21	0.02		c0.03		0.06	c0.50		0.06	c0.32	
v/s Ratio Perm			0.03									0.07
v/c Ratio	0.93	0.93	0.15		0.91		0.43	1.01		0.89	0.75	0.17
Uniform Delay, d1	57.2	57.3	32.3		72.3		59.0	37.7		69.1	36.2	26.5
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.72	1.26	2.48
Incremental Delay, d2	30.2	31.5	0.1		82.8		0.6	20.0		45.5	2.2	0.5
Delay (s)	87.4	88.8	32.4		155.1		59.6	57.7		95.3	47.7	66.1
Level of Service	F	F	C		F		E	E		F	D	E
Approach Delay (s)		76.9			155.1			57.8			52.5	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	61.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

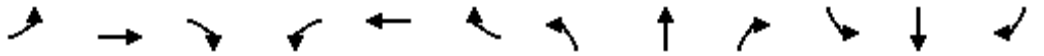
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	670	5	200	0	0	0	0	2650	245	115	1570	0
Future Volume (vph)	670	5	200	0	0	0	0	2650	245	115	1570	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1661	2412					8066		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1661	2412					8066		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	728	5	217	0	0	0	0	2880	266	125	1707	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	364	369	217	0	0	0	0	3135	0	125	1707	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	39.9	39.9	39.9					70.6		19.5	96.6	
Effective Green, g (s)	39.9	39.9	39.9					70.6		19.5	96.6	
Actuated g/C Ratio	0.27	0.27	0.27					0.47		0.13	0.64	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0	4.0					4.0		0.2	0.2	
Lane Grp Cap (vph)	425	441	641					3796		431	3165	
v/s Ratio Prot	c0.23	0.22	0.09					c0.39		0.04	c0.35	
v/s Ratio Perm												
v/c Ratio	0.86	0.84	0.34					0.83		0.29	0.54	
Uniform Delay, d1	52.3	52.0	44.4					34.4		59.0	14.6	
Progression Factor	1.00	1.00	1.00					0.49		0.42	0.56	
Incremental Delay, d2	16.0	13.5	0.4					0.6		1.6	0.6	
Delay (s)	68.3	65.4	44.8					17.4		26.3	8.7	
Level of Service	E	E	D					B		C	A	
Approach Delay (s)		61.8			0.0			17.4			9.9	
Approach LOS		E			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	80	5	255	630	2690	0	0	1605	590
Future Volume (vph)	0	0	0	80	5	255	630	2690	0	0	1605	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1707	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1707	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	87	5	277	685	2924	0	0	1745	641
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	46	46	277	685	2924	0	0	1745	641
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				9.2	9.2	150.0	40.2	126.8			80.1	150.0
Effective Green, g (s)				9.2	9.2	150.0	40.2	126.8			80.1	150.0
Actuated g/C Ratio				0.06	0.06	1.00	0.27	0.85			0.53	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	0.2			0.2	
Lane Grp Cap (vph)				100	104	1750	858	5235			3913	1591
v/s Ratio Prot				0.03	0.03		c0.21	c0.47			0.24	
v/s Ratio Perm						0.16						c0.40
v/c Ratio				0.46	0.44	0.16	0.80	0.56			0.45	0.40
Uniform Delay, d1				68.0	67.9	0.0	51.1	3.4			21.4	0.0
Progression Factor				1.00	1.00	1.00	1.38	0.92			0.69	1.00
Incremental Delay, d2				4.5	4.1	0.2	3.0	0.2			0.0	0.1
Delay (s)				72.5	72.0	0.2	73.6	3.4			14.7	0.1
Level of Service				E	E	A	E	A			B	A
Approach Delay (s)		0.0			18.2			16.7			10.8	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	300	260	145	470	305	100	20	245	2040	640	65	1560
Future Volume (vph)	300	260	145	470	305	100	20	245	2040	640	65	1560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3299		3172	3504	1567		1652	4916	1531	1719	4246
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.07	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3299		3172	3504	1567		126	4916	1531	1719	4246
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	283	158	511	332	109	22	266	2217	696	71	1696
RTOR Reduction (vph)	0	0	0	0	0	89	0	0	0	218	0	12
Lane Group Flow (vph)	326	441	0	511	332	20	0	288	2217	478	71	1983
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	26.9	26.9		17.5	17.5	27.6		69.5	69.5	69.5	10.1	65.1
Effective Green, g (s)	26.9	26.9		17.5	17.5	27.6		69.5	69.5	69.5	10.1	65.1
Actuated g/C Ratio	0.18	0.18		0.12	0.12	0.18		0.46	0.46	0.46	0.07	0.43
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	565	591		370	408	288		205	2277	709	115	1842
v/s Ratio Prot	0.10	c0.13		c0.16	0.09	0.01		c0.14	0.45		0.04	c0.47
v/s Ratio Perm								c0.51		0.31		
v/c Ratio	0.58	0.75		1.38	0.81	0.07		1.40	0.97	0.67	0.62	1.08
Uniform Delay, d1	56.3	58.3		66.2	64.7	50.6		63.2	39.4	31.4	68.1	42.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.64	0.44	0.40	1.00	1.00
Incremental Delay, d2	1.4	5.1		187.6	11.8	0.1		205.7	12.4	4.4	9.5	44.9
Delay (s)	57.8	63.4		253.9	76.4	50.7		246.2	29.9	16.9	77.5	87.3
Level of Service	E	E		F	E	D		F	C	B	E	F
Approach Delay (s)		61.0			168.7				46.5			87.0
Approach LOS		E			F				D			F

Intersection Summary			
HCM 2000 Control Delay	76.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		

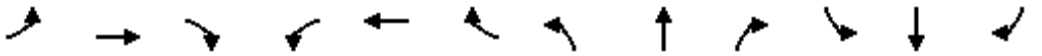
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	275
Future Volume (vph)	275
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	299
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	960	0	0	655	270	0
Future Volume (veh/h)	960	0	0	655	270	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1945	0
Adj Flow Rate, veh/h	1043	0	0	712	293	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	0
Cap, veh/h	3412	0	0	3412	0	0
Arrive On Green	0.96	0.00	0.00	0.96	0.00	0.00
Sat Flow, veh/h	3741	0	0	3741	0	0
Grp Volume(v), veh/h	1043	0	0	712	0	0
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	0	0
Q Serve(g_s), s	2.5	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	1.5	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	3412	0	0	3412	0	0
V/C Ratio(X)	0.31	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	3412	0	0	3412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.2	0.0	0.0	0.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.4	0.0	0.0	0.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	1043			712	0	
Approach Delay, s/veh	0.4			0.3	0.0	
Approach LOS	A			A		

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		150.0		0.0		150.0
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gmax), s		98.0		41.0		98.0
Max Q Clear Time (g_c+I1), s		3.5		0.0		4.5
Green Ext Time (p_c), s		0.9		0.0		1.5

Intersection Summary	
HCM 6th Ctrl Delay	0.4
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1880	25	5	1575	20	30	5	5	40	10	180
Future Volume (veh/h)	85	1880	25	5	1575	20	30	5	5	40	10	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	92	2043	27	5	1712	22	33	5	5	43	11	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	2811	1205	140	2588	1154	136	20	16	202	48	225
Arrive On Green	0.02	0.77	0.77	0.00	0.75	0.75	0.14	0.12	0.12	0.14	0.12	0.12
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	818	165	129	1347	389	1821
Grp Volume(v), veh/h	92	2043	27	5	1712	22	43	0	0	54	0	196
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1112	0	0	1736	0	1821
Q Serve(g_s), s	2.2	52.6	0.7	0.1	44.3	0.7	4.5	0.0	0.0	0.0	0.0	19.0
Cycle Q Clear(g_c), s	2.2	52.6	0.7	0.1	44.3	0.7	9.3	0.0	0.0	4.8	0.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	0.77		0.12	0.80		1.00
Lane Grp Cap(c), veh/h	222	2811	1205	140	2588	1154	188	0	0	274	0	225
V/C Ratio(X)	0.42	0.73	0.02	0.04	0.66	0.02	0.23	0.00	0.00	0.20	0.00	0.87
Avail Cap(c_a), veh/h	276	2811	1205	162	2588	1154	242	0	0	343	0	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	10.8	4.8	12.3	11.2	5.7	73.5	0.0	0.0	70.3	0.0	77.5
Incr Delay (d2), s/veh	2.6	1.7	0.0	0.2	1.3	0.0	1.3	0.0	0.0	0.7	0.0	24.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	20.1	0.2	0.1	16.5	0.2	1.9	0.0	0.0	2.3	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	12.5	4.9	12.5	12.5	5.8	74.8	0.0	0.0	71.1	0.0	101.8
LnGrp LOS	B	B	A	B	B	A	E	A	A	E	A	F
Approach Vol, veh/h		2162			1739			43			250	
Approach Delay, s/veh		12.5			12.5			74.8			95.2	
Approach LOS		B			B			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	140.9		28.7	6.7	144.6		28.7				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	10.0	122.0		29.5	3.0	129.0		29.5				
Max Q Clear Time (g_c+I1), s	4.2	46.3		11.3	2.1	54.6		21.0				
Green Ext Time (p_c), s	0.2	2.9		0.3	0.0	4.0		1.2				

Intersection Summary			
HCM 6th Ctrl Delay		18.1	
HCM 6th LOS		B	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	1195	30	10	115	660	140	20	40	305	545	125
Future Volume (vph)	20	1195	30	10	115	660	140	20	40	305	545	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	1.00			1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (prot)	1711	3526			1778	3557	1538	1694	1783	1776	1536	1620
Flt Permitted	0.38	1.00			0.06	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (perm)	683	3526			114	3557	1538	1694	1783	1776	1536	1620
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1299	33	11	125	717	152	22	43	332	592	136
RTOR Reduction (vph)	0	1	0	0	0	0	68	0	0	0	0	1
Lane Group Flow (vph)	22	1331	0	0	136	717	84	22	43	332	373	365
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	67.8	67.8			83.2	83.2	83.2	4.6	4.6	150.0	41.7	41.7
Effective Green, g (s)	67.8	67.8			83.2	83.2	83.2	4.6	4.6	150.0	41.7	41.7
Actuated g/C Ratio	0.45	0.45			0.55	0.55	0.55	0.03	0.03	1.00	0.28	0.28
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	308	1593			184	1972	853	51	54	1776	427	450
v/s Ratio Prot		c0.38			c0.05	0.20		0.01	c0.02		c0.24	0.23
v/s Ratio Perm	0.03				0.36		0.05			0.19		
v/c Ratio	0.07	0.84			0.74	0.36	0.10	0.43	0.80	0.19	0.87	0.81
Uniform Delay, d1	23.3	36.2			35.0	18.6	15.7	71.4	72.2	0.0	51.6	50.5
Progression Factor	1.00	1.00			1.46	0.66	0.09	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	5.4			14.1	0.5	0.2	11.8	60.5	0.2	18.9	12.0
Delay (s)	23.7	41.5			65.1	12.8	1.6	83.2	132.7	0.2	70.5	62.5
Level of Service	C	D			E	B	A	F	F	A	E	E
Approach Delay (s)		41.3				18.2			19.2			66.5
Approach LOS		D				B			B			E

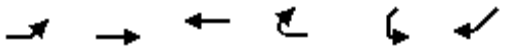
Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	960	0	0	655	270	0
Future Volume (vph)	960	0	0	655	270	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0			6.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3539			3539	3547	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3539			3539	3547	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1043	0	0	712	293	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1043	0	0	712	293	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	4	
Permitted Phases						
Actuated Green, G (s)	119.4			119.4	19.6	
Effective Green, g (s)	119.4			119.4	19.6	
Actuated g/C Ratio	0.80			0.80	0.13	
Clearance Time (s)	6.0			6.0	5.0	
Vehicle Extension (s)	0.2			0.2	5.0	
Lane Grp Cap (vph)	2817			2817	463	
v/s Ratio Prot	c0.29			0.20	c0.08	
v/s Ratio Perm						
v/c Ratio	0.37			0.25	0.63	
Uniform Delay, d1	4.4			3.9	61.8	
Progression Factor	0.52			1.00	1.00	
Incremental Delay, d2	0.3			0.2	3.9	
Delay (s)	2.6			4.1	65.7	
Level of Service	A			A	E	
Approach Delay (s)	2.6			4.1	65.7	
Approach LOS	A			A	E	

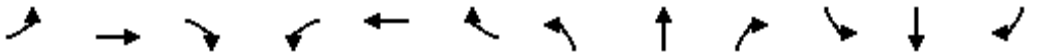
Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	275	1320	960	0	0	0
Future Volume (vph)	275	1320	960	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.0			
Lane Util. Factor	1.00	0.91	0.95			
Frt	1.00	1.00	1.00			
Flt Protected	0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085	3539			
Flt Permitted	0.27	1.00	1.00			
Satd. Flow (perm)	511	5085	3539			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	1435	1043	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	299	1435	1043	0	0	0
Turn Type	D.Pm	NA	NA			
Protected Phases		Free	2			
Permitted Phases	2					
Actuated Green, G (s)	150.0	150.0	150.0			
Effective Green, g (s)	150.0	150.0	150.0			
Actuated g/C Ratio	1.00	1.00	1.00			
Clearance Time (s)	6.0		6.0			
Vehicle Extension (s)	0.2		0.2			
Lane Grp Cap (vph)	511	5085	3539			
v/s Ratio Prot		0.28	0.29			
v/s Ratio Perm	c0.58					
v/c Ratio	0.59	0.28	0.29			
Uniform Delay, d1	0.0	0.0	0.0			
Progression Factor	1.00	1.00	1.00			
Incremental Delay, d2	4.8	0.1	0.2			
Delay (s)	4.8	0.1	0.2			
Level of Service	A	A	A			
Approach Delay (s)		0.9	0.2		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	0.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1880	25	5	1575	20	30	5	5	40	10	180
Future Volume (vph)	85	1880	25	5	1575	20	30	5	5	40	10	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1783			1959	1785
Flt Permitted	0.09	1.00	1.00	0.07	1.00	1.00		0.74			0.77	1.00
Satd. Flow (perm)	166	3621	1515	121	3370	1508		1371			1571	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	2043	27	5	1712	22	33	5	5	43	11	196
RTOR Reduction (vph)	0	0	6	0	0	6	0	3	0	0	0	81
Lane Group Flow (vph)	92	2043	21	5	1712	16	0	40	0	0	54	115
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	148.7	142.0	142.0	134.2	133.5	133.5		18.8			18.8	18.8
Effective Green, g (s)	148.7	142.0	142.0	134.2	133.5	133.5		18.8			18.8	18.8
Actuated g/C Ratio	0.83	0.79	0.79	0.75	0.74	0.74		0.10			0.10	0.10
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	215	2856	1195	96	2499	1118		143			164	186
v/s Ratio Prot	c0.02	c0.56		0.00	0.51							
v/s Ratio Perm	0.33		0.01	0.04		0.01		0.03			0.03	c0.06
v/c Ratio	0.43	0.72	0.02	0.05	0.69	0.01		0.28			0.33	0.62
Uniform Delay, d1	12.4	9.2	4.1	10.9	12.2	6.1		74.4			74.8	77.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	2.8	1.6	0.0	0.5	1.5	0.0		2.3			2.5	8.5
Delay (s)	15.3	10.8	4.1	11.3	13.8	6.1		76.6			77.2	85.6
Level of Service	B	B	A	B	B	A		E			E	F
Approach Delay (s)		10.9			13.7			76.6			83.8	
Approach LOS		B			B			E			F	

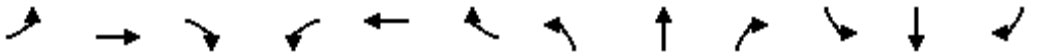
Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1105	0	0	2025	280	0
Future Volume (veh/h)	1105	0	0	2025	280	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1945	0
Adj Flow Rate, veh/h	1201	0	0	2201	304	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	0
Cap, veh/h	3412	0	0	3412	0	0
Arrive On Green	0.96	0.00	0.00	0.96	0.00	0.00
Sat Flow, veh/h	3741	0	0	3741	0	0
Grp Volume(v), veh/h	1201	0	0	2201	0	0
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	0	0
Q Serve(g_s), s	3.1	0.0	0.0	9.8	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.0	9.8	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	3412	0	0	3412	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	3412	0	0	3412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.2	0.0	0.0	0.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.5	0.0	0.0	1.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	1201			2201	0	
Approach Delay, s/veh	0.5			1.3	0.0	
Approach LOS	A			A		

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		150.0		0.0		150.0
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gmax), s		119.0		20.0		119.0
Max Q Clear Time (g_c+I1), s		11.8		0.0		5.1
Green Ext Time (p_c), s		88.4		0.0		30.2

Intersection Summary		
HCM 6th Ctrl Delay		1.0
HCM 6th LOS		A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	1570	55	5	2195	50	20	5	5	40	10	125
Future Volume (veh/h)	235	1570	55	5	2195	50	20	5	5	40	10	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	255	1707	60	5	2386	54	22	5	5	43	11	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	2944	1263	214	2322	1036	94	21	15	150	35	158
Arrive On Green	0.14	0.81	0.81	0.00	0.67	0.67	0.10	0.09	0.09	0.10	0.09	0.09
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	697	239	173	1322	399	1821
Grp Volume(v), veh/h	255	1707	60	5	2386	54	32	0	0	54	0	136
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1109	0	0	1720	0	1821
Q Serve(g_s), s	21.5	30.6	1.4	0.2	121.1	2.1	2.6	0.0	0.0	0.0	0.0	13.3
Cycle Q Clear(g_c), s	21.5	30.6	1.4	0.2	121.1	2.1	7.8	0.0	0.0	5.1	0.0	13.3
Prop In Lane	1.00		1.00	1.00		1.00	0.69		0.16	0.80		1.00
Lane Grp Cap(c), veh/h	283	2944	1263	214	2322	1036	145	0	0	209	0	158
V/C Ratio(X)	0.90	0.58	0.05	0.02	1.03	0.05	0.22	0.00	0.00	0.26	0.00	0.86
Avail Cap(c_a), veh/h	392	2944	1263	236	2322	1036	165	0	0	233	0	183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	69.4	6.3	3.5	9.6	29.5	10.0	78.4	0.0	0.0	76.4	0.0	81.1
Incr Delay (d2), s/veh	23.8	0.8	0.1	0.1	26.1	0.1	1.6	0.0	0.0	1.4	0.0	33.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	10.8	0.4	0.1	55.5	0.8	1.5	0.0	0.0	2.4	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.2	7.1	3.6	9.7	55.6	10.1	80.0	0.0	0.0	77.8	0.0	114.5
LnGrp LOS	F	A	A	A	F	B	F	A	A	E	A	F
Approach Vol, veh/h		2022			2445			32			190	
Approach Delay, s/veh		17.9			54.5			80.0			104.1	
Approach LOS		B			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.8	127.1		22.1	6.7	151.2		22.1				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	36.0	107.4		18.1	3.0	140.4		18.1				
Max Q Clear Time (g_c+I1), s	23.5	123.1		9.8	2.2	32.6		15.3				
Green Ext Time (p_c), s	1.3	0.0		0.1	0.0	2.9		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			40.9									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	25	685	25	15	260	1275	755	25	195	395	490	185
Future Volume (vph)	25	685	25	15	260	1275	755	25	195	395	490	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (prot)	1711	3521			1778	3557	1538	1694	1783	1776	1536	1620
Flt Permitted	0.10	1.00			0.11	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (perm)	184	3521			198	3557	1538	1694	1783	1776	1536	1620
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	745	27	16	283	1386	821	27	212	429	533	201
RTOR Reduction (vph)	0	1	0	0	0	0	441	0	0	0	0	2
Lane Group Flow (vph)	27	771	0	0	299	1386	380	27	212	429	336	429
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	39.2	39.2			65.6	65.6	65.6	20.9	20.9	150.0	43.0	43.0
Effective Green, g (s)	39.2	39.2			65.6	65.6	65.6	20.9	20.9	150.0	43.0	43.0
Actuated g/C Ratio	0.26	0.26			0.44	0.44	0.44	0.14	0.14	1.00	0.29	0.29
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	48	920			317	1555	672	236	248	1776	440	464
v/s Ratio Prot		0.22			0.14	c0.39		0.02	c0.12		0.22	c0.26
v/s Ratio Perm	0.15				c0.27		0.25			0.24		
v/c Ratio	0.56	0.84			0.94	0.89	0.57	0.11	0.85	0.24	0.76	0.92
Uniform Delay, d1	48.0	52.4			43.8	38.9	31.5	56.5	63.1	0.0	48.9	51.9
Progression Factor	1.00	1.00			0.94	0.89	0.48	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.1	9.0			26.6	5.4	2.2	0.5	25.8	0.3	9.0	25.1
Delay (s)	88.0	61.4			67.6	40.3	17.4	56.9	88.8	0.3	57.9	77.0
Level of Service	F	E			E	D	B	E	F	A	E	E
Approach Delay (s)		62.3				36.0			30.7			68.6
Approach LOS		E				D			C			E

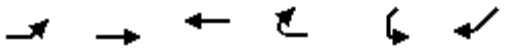
Intersection Summary			
HCM 2000 Control Delay	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	30
Future Volume (vph)	30
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	33
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1105	0	0	2025	280	0
Future Volume (vph)	1105	0	0	2025	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0			6.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3539			3539	3547	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3539			3539	3547	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1201	0	0	2201	304	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1201	0	0	2201	304	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	4	
Permitted Phases						
Actuated Green, G (s)	121.5			121.5	17.5	
Effective Green, g (s)	121.5			121.5	17.5	
Actuated g/C Ratio	0.81			0.81	0.12	
Clearance Time (s)	6.0			6.0	5.0	
Vehicle Extension (s)	5.0			5.0	3.0	
Lane Grp Cap (vph)	2866			2866	413	
v/s Ratio Prot	0.34			c0.62	c0.09	
v/s Ratio Perm						
v/c Ratio	0.42			0.77	0.74	
Uniform Delay, d1	4.1			7.2	64.0	
Progression Factor	0.19			0.49	1.00	
Incremental Delay, d2	0.3			2.0	6.7	
Delay (s)	1.1			5.5	70.7	
Level of Service	A			A	E	
Approach Delay (s)	1.1			5.5	70.7	
Approach LOS	A			A	E	

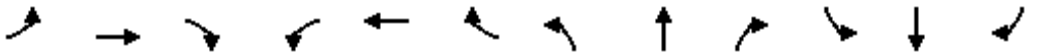
Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	335	1415	1425	0	0	0
Future Volume (vph)	335	1415	1425	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	6.0			
Lane Util. Factor	1.00	0.91	0.95			
Frt	1.00	1.00	1.00			
Flt Protected	0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085	3539			
Flt Permitted	0.13	1.00	1.00			
Satd. Flow (perm)	236	5085	3539			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1538	1549	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	364	1538	1549	0	0	0
Turn Type	D.P+P	NA	NA			
Protected Phases	1	Free	2			
Permitted Phases	2					
Actuated Green, G (s)	139.0	150.0	111.6			
Effective Green, g (s)	139.0	150.0	111.6			
Actuated g/C Ratio	0.93	1.00	0.74			
Clearance Time (s)	5.0		6.0			
Vehicle Extension (s)	3.0		0.2			
Lane Grp Cap (vph)	498	5085	2633			
v/s Ratio Prot	c0.13	0.30	0.44			
v/s Ratio Perm	c0.54					
v/c Ratio	0.73	0.30	0.59			
Uniform Delay, d1	26.2	0.0	8.7			
Progression Factor	0.71	1.00	1.00			
Incremental Delay, d2	5.4	0.2	1.0			
Delay (s)	24.1	0.2	9.7			
Level of Service	C	A	A			
Approach Delay (s)		4.7	9.7		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	119.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1570	55	5	2195	50	20	5	5	40	10	125
Future Volume (vph)	235	1570	55	5	2195	50	20	5	5	40	10	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1780			1959	1785
Flt Permitted	0.03	1.00	1.00	0.14	1.00	1.00		0.76			0.75	1.00
Satd. Flow (perm)	57	3621	1515	249	3370	1508		1401			1527	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	1707	60	5	2386	54	22	5	5	43	11	136
RTOR Reduction (vph)	0	0	11	0	0	18	0	4	0	0	0	126
Lane Group Flow (vph)	255	1707	49	5	2386	36	0	28	0	0	54	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	153.9	147.3	147.3	119.9	119.3	119.3		13.6			13.6	13.6
Effective Green, g (s)	153.9	147.3	147.3	119.9	119.3	119.3		13.6			13.6	13.6
Actuated g/C Ratio	0.86	0.82	0.82	0.67	0.66	0.66		0.08			0.08	0.08
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	308	2963	1239	170	2233	999		105			115	134
v/s Ratio Prot	c0.13	0.47		0.00	c0.71							
v/s Ratio Perm	0.58		0.03	0.02		0.02		0.02			c0.04	0.01
v/c Ratio	0.83	0.58	0.04	0.03	1.07	0.04		0.27			0.47	0.08
Uniform Delay, d1	66.8	5.6	3.1	10.2	30.4	10.5		78.5			79.7	77.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	18.3	0.8	0.1	0.1	40.4	0.1		2.9			6.2	0.5
Delay (s)	85.1	6.4	3.1	10.4	70.8	10.6		81.4			86.0	77.9
Level of Service	F	A	A	B	E	B		F			F	E
Approach Delay (s)		16.3			69.3			81.4			80.2	
Approach LOS		B			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		

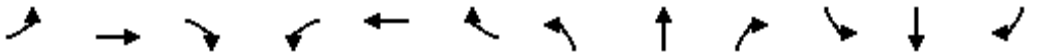
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	60	5	205	5	5	5	5	115	1260	5	5	2220
Future Volume (vph)	60	5	205	5	5	5	5	115	1260	5	5	2220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.95			1.00	1.00	0.85	1.00	1.00
Flt Protected		0.96	1.00		0.98			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1780	1583		1750			1770	5085	1583	1770	5067
Flt Permitted		0.73	1.00		0.89			0.04	1.00	1.00	0.19	1.00
Satd. Flow (perm)		1361	1583		1585			68	5085	1583	347	5067
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	5	223	5	5	5	5	125	1370	5	5	2413
RTOR Reduction (vph)	0	0	18	0	5	0	0	0	0	1	0	1
Lane Group Flow (vph)	0	70	205	0	10	0	0	130	1370	4	5	2472
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		13.1	26.5		13.6			123.4	123.4	123.4	104.5	104.5
Effective Green, g (s)		13.1	26.5		13.6			123.4	123.4	123.4	104.5	104.5
Actuated g/C Ratio		0.09	0.18		0.09			0.82	0.82	0.82	0.70	0.70
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		118	279		143			207	4183	1302	241	3530
v/s Ratio Prot			c0.07					0.06	0.27			c0.49
v/s Ratio Perm		0.05	0.06		0.01			0.46		0.00	0.01	
v/c Ratio		0.59	0.73		0.07			0.63	0.33	0.00	0.02	0.70
Uniform Delay, d1		65.9	58.4		62.4			41.4	3.2	2.4	7.0	13.5
Progression Factor		1.00	1.00		1.00			0.80	1.18	1.00	1.00	1.00
Incremental Delay, d2		11.5	9.6		0.5			5.3	0.2	0.0	0.2	1.2
Delay (s)		77.4	68.0		62.9			38.5	4.0	2.4	7.2	14.7
Level of Service		E	E		E			D	A	A	A	B
Approach Delay (s)		70.3			62.9				7.0			14.6
Approach LOS		E			E				A			B

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

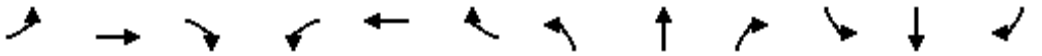
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	60
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	170	5	340	300	1045	0	0	1970	465
Future Volume (vph)	0	0	0	170	5	340	300	1045	0	0	1970	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1690	1583	1770	5085			4940	
Flt Permitted				0.95	0.95	1.00	0.05	1.00			1.00	
Satd. Flow (perm)				1681	1690	1583	86	5085			4940	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	185	5	370	326	1136	0	0	2141	505
RTOR Reduction (vph)	0	0	0	0	0	113	0	0	0	0	25	0
Lane Group Flow (vph)	0	0	0	94	96	257	326	1136	0	0	2621	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				27.3	27.3	27.3	110.7	110.7			80.2	
Effective Green, g (s)				27.3	27.3	27.3	110.7	110.7			80.2	
Actuated g/C Ratio				0.18	0.18	0.18	0.74	0.74			0.53	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				305	307	288	332	3752			2641	
v/s Ratio Prot							c0.16	0.22			0.53	
v/s Ratio Perm				0.06	0.06	c0.16	c0.57					
v/c Ratio				0.31	0.31	0.89	0.98	0.30			0.99	
Uniform Delay, d1				53.2	53.2	59.9	56.2	6.6			34.6	
Progression Factor				1.00	1.00	1.00	0.84	0.32			0.70	
Incremental Delay, d2				0.8	0.8	27.9	41.6	0.2			13.3	
Delay (s)				54.0	54.0	87.8	89.0	2.3			37.6	
Level of Service				D	D	F	F	A			D	
Approach Delay (s)		0.0			76.3			21.7			37.6	
Approach LOS		A			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

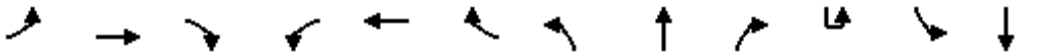
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	5	495	0	0	0	0	1170	165	210	1930	0
Future Volume (vph)	175	5	495	0	0	0	0	1170	165	210	1930	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1689	1583					4991		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.14	1.00	
Satd. Flow (perm)	1681	1689	1583					4991		257	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	5	538	0	0	0	0	1272	179	228	2098	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	97	98	538	0	0	0	0	1441	0	228	2098	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	16.4	16.4	150.0					91.1		121.6	121.6	
Effective Green, g (s)	16.4	16.4	150.0					91.1		121.6	121.6	
Actuated g/C Ratio	0.11	0.11	1.00					0.61		0.81	0.81	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	183	184	1583					3031		450	4122	
v/s Ratio Prot	0.06	c0.06						0.29		0.08	c0.41	
v/s Ratio Perm			0.34							0.33		
v/c Ratio	0.53	0.53	0.34					0.48		0.51	0.51	
Uniform Delay, d1	63.2	63.2	0.0					16.3		20.2	4.6	
Progression Factor	1.00	1.00	1.00					0.73		0.99	0.38	
Incremental Delay, d2	5.3	5.3	0.6					0.5		0.2	0.2	
Delay (s)	68.5	68.5	0.6					12.4		20.3	1.9	
Level of Service	E	E	A					B		C	A	
Approach Delay (s)		18.6			0.0			12.4			3.7	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	230	20	10	30	5	70	5	1025	15	10	95	2285
Future Volume (vph)	230	20	10	30	5	70	5	1025	15	10	95	2285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.99		1.00	1.00	0.85	1.00	1.00			1.00	1.00
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1775		1770	1863	1583	1770	5074			1770	5074
Flt Permitted		0.75		0.78	1.00	1.00	0.04	1.00			0.20	1.00
Satd. Flow (perm)		1385		1452	1863	1583	80	5074			375	5074
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	22	11	33	5	76	5	1114	16	11	103	2484
RTOR Reduction (vph)	0	1	0	0	0	61	0	1	0	0	0	1
Lane Group Flow (vph)	0	282	0	33	5	15	5	1129	0	0	114	2521
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		29.5		29.5	29.5	29.5	94.9	93.7			107.5	100.8
Effective Green, g (s)		29.5		29.5	29.5	29.5	94.9	93.7			107.5	100.8
Actuated g/C Ratio		0.20		0.20	0.20	0.20	0.63	0.62			0.72	0.67
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		272		285	366	311	64	3169			345	3409
v/s Ratio Prot					0.00		0.00	0.22			c0.02	c0.50
v/s Ratio Perm		c0.20		0.02		0.01	0.05				0.22	
v/c Ratio		1.04		0.12	0.01	0.05	0.08	0.36			0.33	0.74
Uniform Delay, d1		60.2		49.5	48.5	48.9	15.2	13.6			7.6	16.0
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			0.20	0.14
Incremental Delay, d2		64.7		0.2	0.0	0.1	0.5	0.3			0.5	1.3
Delay (s)		124.9		49.8	48.6	49.0	15.7	13.9			2.0	3.5
Level of Service		F		D	D	D	B	B			A	A
Approach Delay (s)		124.9			49.2			13.9				3.4
Approach LOS		F			D			B				A

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

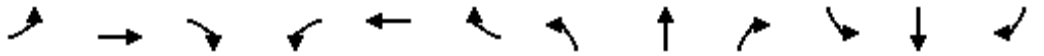
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	38
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	95	5	75	5	5	5	5	155	2495	5	5	1875
Future Volume (vph)	95	5	75	5	5	5	5	155	2495	5	5	1875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.95			1.00	1.00	0.85	1.00	0.99
Flt Protected		0.95	1.00		0.98			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1778	1583		1750			1770	5085	1583	1770	5054
Flt Permitted		0.73	1.00		0.90			0.05	1.00	1.00	0.04	1.00
Satd. Flow (perm)		1351	1583		1608			95	5085	1583	77	5054
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	5	82	5	5	5	5	168	2712	5	5	2038
RTOR Reduction (vph)	0	0	17	0	4	0	0	0	0	1	0	2
Lane Group Flow (vph)	0	108	65	0	11	0	0	173	2712	4	5	2123
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		19.4	33.7		19.9			117.1	117.1	117.1	97.3	97.3
Effective Green, g (s)		19.4	33.7		19.9			117.1	117.1	117.1	97.3	97.3
Actuated g/C Ratio		0.13	0.22		0.13			0.78	0.78	0.78	0.65	0.65
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		174	355		213			233	3969	1235	49	3278
v/s Ratio Prot			0.02					0.07	c0.53			0.42
v/s Ratio Perm		c0.08	0.02		0.01			c0.51		0.00	0.07	
v/c Ratio		0.62	0.18		0.05			0.74	0.68	0.00	0.10	0.65
Uniform Delay, d1		61.8	47.0		56.8			39.5	7.7	3.6	9.9	16.0
Progression Factor		1.00	1.00		1.00			0.71	1.62	1.00	1.00	1.00
Incremental Delay, d2		9.4	0.2		0.2			8.3	0.7	0.0	4.1	1.0
Delay (s)		71.2	47.3		57.0			36.4	13.2	3.6	14.0	17.0
Level of Service		E	D		E			D	B	A	B	B
Approach Delay (s)		60.9			57.0				14.6			17.0
Approach LOS		E			E				B			B

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

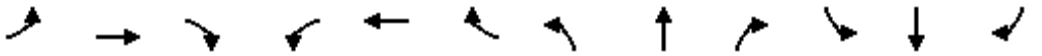
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	80
Future Volume (vph)	80
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	87
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	160	5	325	195	2335	0	0	1480	480
Future Volume (vph)	0	0	0	160	5	325	195	2335	0	0	1480	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.96	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1690	1583	1770	5085			4898	
Flt Permitted				0.95	0.95	1.00	0.04	1.00			1.00	
Satd. Flow (perm)				1681	1690	1583	81	5085			4898	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	174	5	353	212	2538	0	0	1609	522
RTOR Reduction (vph)	0	0	0	0	0	52	0	0	0	0	38	0
Lane Group Flow (vph)	0	0	0	89	90	301	212	2538	0	0	2093	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				31.1	31.1	31.1	106.9	106.9			85.4	
Effective Green, g (s)				31.1	31.1	31.1	106.9	106.9			85.4	
Actuated g/C Ratio				0.21	0.21	0.21	0.71	0.71			0.57	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				348	350	328	226	3623			2788	
v/s Ratio Prot							c0.09	0.50			0.43	
v/s Ratio Perm				0.05	0.05	c0.19	c0.57					
v/c Ratio				0.26	0.26	0.92	0.94	0.70			0.75	
Uniform Delay, d1				49.8	49.8	58.2	43.6	12.4			24.3	
Progression Factor				1.00	1.00	1.00	0.56	0.05			0.46	
Incremental Delay, d2				0.5	0.5	29.9	25.9	0.6			1.5	
Delay (s)				50.3	50.3	88.1	50.3	1.2			12.6	
Level of Service				D	D	F	D	A			B	
Approach Delay (s)		0.0			75.4			5.0			12.6	
Approach LOS		A			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

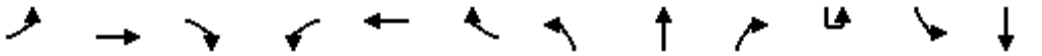
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	5	190	0	0	0	0	2165	135	180	1460	0
Future Volume (vph)	365	5	190	0	0	0	0	2165	135	180	1460	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1687	1583					5040		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.04	1.00	
Satd. Flow (perm)	1681	1687	1583					5040		84	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	397	5	207	0	0	0	0	2353	147	196	1587	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	202	200	207	0	0	0	0	2496	0	196	1587	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	25.0	25.0	150.0					82.5		113.0	113.0	
Effective Green, g (s)	25.0	25.0	150.0					82.5		113.0	113.0	
Actuated g/C Ratio	0.17	0.17	1.00					0.55		0.75	0.75	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	280	281	1583					2772		333	3830	
v/s Ratio Prot	c0.12	0.12						c0.50		c0.09	0.31	
v/s Ratio Perm			0.13							0.35		
v/c Ratio	0.72	0.71	0.13					0.90		0.59	0.41	
Uniform Delay, d1	59.2	59.1	0.0					30.1		45.7	6.6	
Progression Factor	1.00	1.00	1.00					0.70		1.05	0.34	
Incremental Delay, d2	10.7	10.1	0.2					4.3		1.7	0.2	
Delay (s)	69.9	69.2	0.2					25.5		49.7	2.5	
Level of Service	E	E	A					C		D	A	
Approach Delay (s)		46.0			0.0			25.5			7.7	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	45	5	10	10	5	35	10	2215	5	5	30	1535
Future Volume (vph)	45	5	10	10	5	35	10	2215	5	5	30	1535
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.98		1.00	1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1754		1770	1863	1583	1770	5084			1770	5047
Flt Permitted		0.78		0.75	1.00	1.00	0.11	1.00			0.04	1.00
Satd. Flow (perm)		1413		1391	1863	1583	210	5084			81	5047
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	5	11	11	5	38	11	2408	5	5	33	1668
RTOR Reduction (vph)	0	5	0	0	0	35	0	0	0	0	0	2
Lane Group Flow (vph)	0	60	0	11	5	3	11	2413	0	0	38	1753
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		13.3		13.3	13.3	13.3	115.5	113.1			120.9	115.8
Effective Green, g (s)		13.3		13.3	13.3	13.3	115.5	113.1			120.9	115.8
Actuated g/C Ratio		0.09		0.09	0.09	0.09	0.77	0.75			0.81	0.77
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		125		123	165	140	186	3833			122	3896
v/s Ratio Prot					0.00		0.00	c0.47			c0.01	c0.35
v/s Ratio Perm		c0.04		0.01		0.00	0.04				0.24	
v/c Ratio		0.48		0.09	0.03	0.02	0.06	0.63			0.31	0.45
Uniform Delay, d1		65.0		62.8	62.5	62.4	4.3	8.6			8.0	6.0
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			4.09	0.16
Incremental Delay, d2		3.9		0.4	0.1	0.1	0.1	0.8			1.4	0.4
Delay (s)		68.9		63.2	62.6	62.5	4.5	9.4			34.0	1.3
Level of Service		E		E	E	E	A	A			C	A
Approach Delay (s)		68.9			62.7			9.4				2.0
Approach LOS		E			E			A				A

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

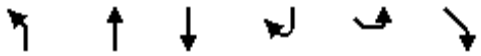
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	80
Future Volume (vph)	80
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	87
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	95	220	610	115	110	2120	105	1130
Future Volume (vph)	95	220	610	115	110	2120	105	1130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.93		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1726		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1726		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	239	663	125	120	2304	114	1228
RTOR Reduction (vph)	0	49	0	23	0	0	45	0
Lane Group Flow (vph)	103	190	663	222	0	2304	69	1228
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	17.7	30.6	53.8	30.6		83.7	83.7	83.7
Effective Green, g (s)	17.7	30.6	53.8	30.6		83.7	83.7	83.7
Actuated g/C Ratio	0.12	0.20	0.36	0.20		0.56	0.56	0.56
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	405	322	1231	352		2837	883	2014
v/s Ratio Prot	0.03		c0.19	c0.13		c0.45		0.34
v/s Ratio Perm		0.12					0.04	
v/c Ratio	0.25	0.59	0.54	0.63		0.81	0.08	0.61
Uniform Delay, d1	60.1	54.0	38.2	54.5		26.8	15.3	22.2
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	5.2	0.5	6.0		2.7	0.2	1.4
Delay (s)	60.5	59.2	38.7	60.6		29.5	15.5	23.6
Level of Service	E	E	D	E		C	B	C
Approach Delay (s)				44.6		28.8		
Approach LOS				D		C		

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

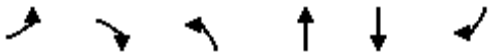
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	3150	0	0	465
Future Volume (vph)	0	0	3150	0	0	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	3424	0	0	505
RTOR Reduction (vph)	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	3424	0	0	503
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			128.1			39.9
Effective Green, g (s)			128.1			39.9
Actuated g/C Ratio			0.71			0.22
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4560			617
v/s Ratio Prot			c0.53			c0.18
v/s Ratio Perm						
v/c Ratio			0.75			0.82
Uniform Delay, d1			16.1			66.6
Progression Factor			1.00			1.00
Incremental Delay, d2			1.2			9.6
Delay (s)			17.2			76.2
Level of Service			B			E
Approach Delay (s)		0.0	17.2		76.2	
Approach LOS		A	B		E	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

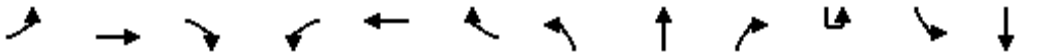
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	455	145	40	1725	3500	115
Future Volume (vph)	455	145	40	1725	3500	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	495	158	43	1875	3804	125
RTOR Reduction (vph)	0	75	0	0	0	23
Lane Group Flow (vph)	495	83	43	1875	3804	102
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	29.0	29.0	14.4	138.5	117.6	146.6
Effective Green, g (s)	29.0	29.0	14.4	138.5	117.6	146.6
Actuated g/C Ratio	0.16	0.16	0.08	0.77	0.65	0.81
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	553	255	141	3912	4186	1342
v/s Ratio Prot	c0.14		0.02	c0.37	c0.59	0.01
v/s Ratio Perm		0.05				0.05
v/c Ratio	0.90	0.33	0.30	0.48	0.91	0.08
Uniform Delay, d1	74.0	66.9	78.1	7.6	26.6	3.3
Progression Factor	1.00	1.00	1.00	0.25	0.58	0.52
Incremental Delay, d2	18.5	2.1	1.1	0.4	2.6	0.0
Delay (s)	92.5	69.0	78.8	2.3	18.1	1.7
Level of Service	F	E	E	A	B	A
Approach Delay (s)	86.8			4.0	17.5	
Approach LOS	F			A	B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	65	5	20	5	5	10	0	1385	5	305	5	3245
Future Volume (vph)	65	5	20	5	5	10	0	1385	5	305	5	3245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0			4.5	5.0
Lane Util. Factor		1.00			1.00			0.91			1.00	0.91
Frt		0.97			0.93			1.00			1.00	1.00
Flt Protected		0.97			0.99			1.00			0.95	1.00
Satd. Flow (prot)		1743			1711			5083			1770	5065
Flt Permitted		0.77			0.94			1.00			0.12	1.00
Satd. Flow (perm)		1395			1629			5083			224	5065
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	5	22	5	5	11	0	1505	5	332	5	3527
RTOR Reduction (vph)	0	2	0	0	10	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	96	0	0	11	0	0	1510	0	0	337	3624
Turn Type	Perm	NA		Perm	NA			NA		custom	pm+pt	NA
Protected Phases		8			4			6			5	2
Permitted Phases	8			4						5	2	
Actuated Green, G (s)		17.7			17.7			106.3			151.8	151.3
Effective Green, g (s)		17.7			17.7			106.3			151.8	151.3
Actuated g/C Ratio		0.10			0.10			0.59			0.84	0.84
Clearance Time (s)		6.0			6.0			5.0			4.5	5.0
Vehicle Extension (s)		3.0			3.0			0.2			3.0	0.2
Lane Grp Cap (vph)		137			160			3001			536	4257
v/s Ratio Prot								0.30			0.14	c0.72
v/s Ratio Perm		c0.07			0.01						0.39	
v/c Ratio		0.70			0.07			0.50			0.63	0.85
Uniform Delay, d1		78.6			73.7			21.5			24.7	8.0
Progression Factor		1.00			1.00			1.00			0.72	1.06
Incremental Delay, d2		15.0			0.2			0.6			1.0	1.1
Delay (s)		93.6			73.9			22.1			18.9	9.6
Level of Service		F			E			C			B	A
Approach Delay (s)		93.6			73.9			22.1				10.4
Approach LOS		F			E			C				B

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

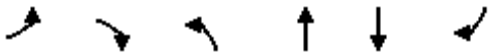
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	90
Future Volume (vph)	90
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	98
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	3150	0	0	465
Future Volume (veh/h)	0	0	3150	0	0	465
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			3424	0	0	505
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			3424	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			6.3	0.0		
Cycle Q Clear(g_c), s			6.3	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.55	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.2	0.0		
Incr Delay (d2), s/veh			0.4	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.2	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.5	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			3424			
Approach Delay, s/veh			0.5			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	123.5
Max Q Clear Time (g_c+I1), s	8.3
Green Ext Time (p_c), s	9.2

Intersection Summary	
HCM 6th Ctrl Delay	0.5
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	455	145	40	1725	3500	115
Future Volume (veh/h)	455	145	40	1725	3500	115
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	495	0	43	1875	3804	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	540		187	3954	4075	1251
Arrive On Green	0.16	0.00	0.10	0.77	0.63	0.63
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	495	0	43	1875	3804	125
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	25.4	0.0	4.0	23.6	95.5	3.2
Cycle Q Clear(g_c), s	25.4	0.0	4.0	23.6	95.5	3.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	540		187	3954	4075	1251
V/C Ratio(X)	0.92		0.23	0.47	0.93	0.10
Avail Cap(c_a), veh/h	557		187	3954	4075	1251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.8	0.0	73.9	7.2	29.6	4.3
Incr Delay (d2), s/veh	22.1	0.0	0.6	0.4	5.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	1.9	8.2	35.9	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	96.9	0.0	74.5	7.6	34.9	4.5
LnGrp LOS	F		E	A	C	A
Approach Vol, veh/h	495	A		1918	3929	
Approach Delay, s/veh	96.9			9.1	33.9	
Approach LOS	F			A	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		145.9		34.1	25.4	120.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		138.5		29.0	18.0	114.0
Max Q Clear Time (g_c+I1), s		25.6		27.4	6.0	97.5
Green Ext Time (p_c), s		28.5		0.7	0.0	9.0

Intersection Summary		
HCM 6th Ctrl Delay		31.3
HCM 6th LOS		C

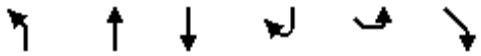
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	145	185	240	130	135	1700	115	1770
Future Volume (vph)	145	185	240	130	135	1700	115	1770
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.92		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1720		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1720		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	201	261	141	147	1848	125	1924
RTOR Reduction (vph)	0	62	0	24	0	0	50	0
Lane Group Flow (vph)	158	139	261	264	0	1848	75	1924
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	13.8	27.7	47.0	27.7		90.5	90.5	90.5
Effective Green, g (s)	13.8	27.7	47.0	27.7		90.5	90.5	90.5
Actuated g/C Ratio	0.09	0.18	0.31	0.18		0.60	0.60	0.60
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	315	292	1075	317		3067	955	2178
v/s Ratio Prot	c0.05		0.08	c0.15		0.36		c0.53
v/s Ratio Perm		0.09					0.05	
v/c Ratio	0.50	0.48	0.24	0.83		0.60	0.08	0.88
Uniform Delay, d1	64.8	54.7	38.3	58.9		18.5	12.4	25.3
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	3.4	0.1	19.1		0.9	0.2	5.7
Delay (s)	66.1	58.1	38.4	78.0		19.4	12.6	30.9
Level of Service	E	E	D	E		B	B	C
Approach Delay (s)				59.2		19.0		
Approach LOS				E		B		

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

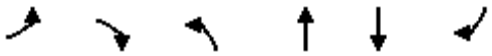
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	2195	0	0	320
Future Volume (vph)	0	0	2195	0	0	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2386	0	0	348
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	2386	0	0	335
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			138.1			29.9
Effective Green, g (s)			138.1			29.9
Actuated g/C Ratio			0.77			0.17
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4916			462
v/s Ratio Prot			c0.37			c0.12
v/s Ratio Perm						
v/c Ratio			0.49			0.72
Uniform Delay, d1			7.8			71.1
Progression Factor			1.00			1.00
Incremental Delay, d2			0.3			7.7
Delay (s)			8.1			78.9
Level of Service			A			E
Approach Delay (s)		0.0	8.1		78.9	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	245	65	60	3240	2210	305
Future Volume (vph)	245	65	60	3240	2210	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	71	65	3522	2402	332
RTOR Reduction (vph)	0	62	0	0	0	68
Lane Group Flow (vph)	266	9	65	3522	2402	264
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	20.4	20.4	18.0	147.1	122.6	143.0
Effective Green, g (s)	20.4	20.4	18.0	147.1	122.6	143.0
Actuated g/C Ratio	0.11	0.11	0.10	0.82	0.68	0.79
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	389	179	177	4155	4364	1310
v/s Ratio Prot	c0.08		0.04	c0.69	0.37	0.02
v/s Ratio Perm		0.01				0.14
v/c Ratio	0.68	0.05	0.37	0.85	0.55	0.20
Uniform Delay, d1	76.7	71.2	75.7	9.8	14.6	4.5
Progression Factor	1.00	1.00	0.86	0.22	0.74	0.34
Incremental Delay, d2	7.4	0.3	0.5	0.8	0.4	0.2
Delay (s)	84.1	71.5	65.7	3.0	11.3	1.7
Level of Service	F	E	E	A	B	A
Approach Delay (s)	81.4			4.2	10.1	
Approach LOS	F			A	B	

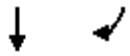
Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	90	5	15	10	5	5	5	10	2960	5	245	5
Future Volume (vph)	90	5	15	10	5	5	5	10	2960	5	245	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			4.5	5.0			4.5
Lane Util. Factor		1.00			1.00			1.00	0.91			1.00
Frt		0.98			0.97			1.00	1.00			1.00
Flt Protected		0.96			0.97			0.95	1.00			0.95
Satd. Flow (prot)		1757			1757			1770	5084			1770
Flt Permitted		0.75			0.87			0.06	1.00			0.03
Satd. Flow (perm)		1370			1568			111	5084			60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	5	16	11	5	5	5	11	3217	5	266	5
RTOR Reduction (vph)	0	4	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	115	0	0	17	0	0	16	3222	0	0	271
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		custom	pm+pt
Protected Phases		8			4		1	1	6			5
Permitted Phases	8			4			6	6			5	2
Actuated Green, G (s)		19.7			19.7			122.5	119.5			149.8
Effective Green, g (s)		19.7			19.7			122.5	119.5			149.8
Actuated g/C Ratio		0.11			0.11			0.68	0.66			0.83
Clearance Time (s)		6.0			6.0			4.5	5.0			4.5
Vehicle Extension (s)		3.0			3.0			3.0	0.2			3.0
Lane Grp Cap (vph)		149			171			103	3375			290
v/s Ratio Prot								0.00	c0.63			c0.13
v/s Ratio Perm		c0.08			0.01			0.10				0.65
v/c Ratio		0.77			0.10			0.16	0.95			0.93
Uniform Delay, d1		78.0			72.1			21.8	27.8			68.5
Progression Factor		1.00			1.00			1.00	1.00			0.98
Incremental Delay, d2		21.8			0.2			0.7	8.1			32.0
Delay (s)		99.8			72.4			22.5	35.8			98.9
Level of Service		F			E			C	D			F
Approach Delay (s)		99.8			72.4				35.8			
Approach LOS		F			E				D			

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



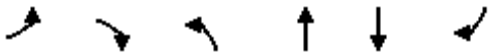
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1895	130
Future Volume (vph)	1895	130
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.91	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5036	
Flt Permitted	1.00	
Satd. Flow (perm)	5036	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	2060	141
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2197	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	141.8	
Effective Green, g (s)	141.8	
Actuated g/C Ratio	0.79	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	3967	
v/s Ratio Prot	0.44	
v/s Ratio Perm		
v/c Ratio	0.55	
Uniform Delay, d1	7.2	
Progression Factor	0.10	
Incremental Delay, d2	0.5	
Delay (s)	1.2	
Level of Service	A	
Approach Delay (s)	11.9	
Approach LOS	B	

Intersection Summary

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	2195	0	0	320
Future Volume (veh/h)	0	0	2195	0	0	320
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			2386	0	0	348
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			2386	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			3.2	0.0		
Cycle Q Clear(g_c), s			3.2	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.38	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.1	0.0		
Incr Delay (d2), s/veh			0.2	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.1	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.3	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			2386			
Approach Delay, s/veh			0.3			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	123.5
Max Q Clear Time (g_c+I1), s	5.2
Green Ext Time (p_c), s	4.0

Intersection Summary	
HCM 6th Ctrl Delay	0.3
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	245	65	60	3240	2210	305
Future Volume (veh/h)	245	65	60	3240	2210	305
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	266	0	65	3522	2402	332
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	320		221	4278	4361	1221
Arrive On Green	0.09	0.00	0.12	0.84	0.68	0.68
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	266	0	65	3522	2402	332
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	13.6	0.0	6.0	64.9	34.6	10.9
Cycle Q Clear(g_c), s	13.6	0.0	6.0	64.9	34.6	10.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	320		221	4278	4361	1221
V/C Ratio(X)	0.83		0.29	0.82	0.55	0.27
Avail Cap(c_a), veh/h	403		221	4278	4361	1221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.3	0.0	71.7	7.6	14.9	6.0
Incr Delay (d2), s/veh	18.9	0.0	0.7	1.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	2.8	19.7	12.2	5.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.1	0.0	72.4	9.5	15.4	6.5
LnGrp LOS	F		E	A	B	A
Approach Vol, veh/h	266	A		3587	2734	
Approach Delay, s/veh	99.1			10.7	14.3	
Approach LOS	F			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		157.3		22.7	28.8	128.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		146.5		21.0	18.0	122.0
Max Q Clear Time (g_c+I1), s		66.9		15.6	8.0	36.6
Green Ext Time (p_c), s		74.3		1.1	0.1	3.8

Intersection Summary		
HCM 6th Ctrl Delay	15.8	
HCM 6th LOS	B	

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

2027 PREFERRED ALTERNATIVE

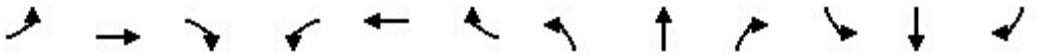
SYNCHRO ANALYSIS OUTPUTS

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	150	0	305	0	1615	330	395	1140	0	0	85
Future Volume (vph)	150	0	305	0	1615	330	395	1140	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	0	332	0	1755	359	429	1239	0	0	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	163	0	332	0	1755	359	429	1239	0	0	92
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		4 1		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	23.1		61.4		104.6	104.6	31.8	143.4			143.4
Effective Green, g (s)	23.1		61.4		104.6	104.6	31.8	143.4			143.4
Actuated g/C Ratio	0.13		0.34		0.58	0.58	0.18	0.80			0.80
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	440		950		2954	919	606	4051			1283
v/s Ratio Prot	0.05		c0.12		c0.35		c0.12	0.24			0.06
v/s Ratio Perm						0.23					
v/c Ratio	0.37		0.35		0.59	0.39	0.71	0.31			0.07
Uniform Delay, d1	71.8		44.4		24.1	20.4	69.7	4.9			3.9
Progression Factor	1.00		1.00		0.61	0.56	1.00	1.00			1.00
Incremental Delay, d2	0.7		0.3		0.7	1.0	4.7	0.2			0.1
Delay (s)	72.5		44.7		15.5	12.5	74.5	5.1			4.1
Level of Service	E		D		B	B	E	A			A
Approach Delay (s)	53.8				15.0			22.9		4.1	
Approach LOS	D				B			C		A	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

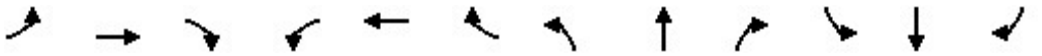
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	430	5	25	75	30	0	0	135	5
Future Volume (vph)	0	0	0	430	5	25	75	30	0	0	135	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1687	1583	1770	1863			3522	
Flt Permitted				0.95	0.95	1.00	0.66	1.00			1.00	
Satd. Flow (perm)				1681	1687	1583	1221	1863			3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	467	5	27	82	33	0	0	147	5
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	238	234	7	82	33	0	0	150	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				18.4	18.4	18.4	26.4	17.7			11.3	
Effective Green, g (s)				18.4	18.4	18.4	26.4	17.7			11.3	
Actuated g/C Ratio				0.27	0.27	0.27	0.39	0.26			0.17	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				456	458	430	622	487			587	
v/s Ratio Prot				c0.14	0.14		c0.04	0.02			c0.04	
v/s Ratio Perm						0.00	0.02					
v/c Ratio				0.52	0.51	0.02	0.13	0.07			0.25	
Uniform Delay, d1				20.9	20.8	18.0	13.5	18.8			24.5	
Progression Factor				1.00	1.00	1.00	0.18	0.13			1.00	
Incremental Delay, d2				2.0	1.9	0.0	0.2	0.1			0.1	
Delay (s)				23.0	22.8	18.1	2.7	2.6			24.6	
Level of Service				C	C	B	A	A			C	
Approach Delay (s)		0.0			22.6			2.7			24.6	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	25.5
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

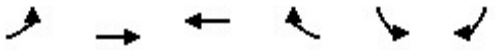
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	190	0	0	0	0	100	185	10	555	0
Future Volume (vph)	5	5	190	0	0	0	0	100	185	10	555	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.98	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1817	1583					1863	1583		3536	
Flt Permitted		0.98	1.00					1.00	1.00		0.95	
Satd. Flow (perm)		1817	1583					1863	1583		3380	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	207	0	0	0	0	109	201	11	603	0
RTOR Reduction (vph)	0	0	179	0	0	0	0	0	176	0	0	0
Lane Group Flow (vph)	0	10	28	0	0	0	0	109	25	0	614	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		9.3	9.3					8.4	8.4		36.8	
Effective Green, g (s)		9.3	9.3					8.4	8.4		36.8	
Actuated g/C Ratio		0.14	0.14					0.12	0.12		0.54	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		249	217					231	196		1896	
v/s Ratio Prot		0.01						c0.06			c0.12	
v/s Ratio Perm			c0.02						0.02		0.05	
v/c Ratio		0.04	0.13					0.47	0.13		0.32	
Uniform Delay, d1		25.3	25.7					27.6	26.4		8.6	
Progression Factor		1.00	1.00					1.00	1.00		0.42	
Incremental Delay, d2		0.1	0.6					0.6	0.1		0.0	
Delay (s)		25.5	26.2					28.1	26.5		3.6	
Level of Service		C	C					C	C		A	
Approach Delay (s)		26.2			0.0			27.1			3.6	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	25.5
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

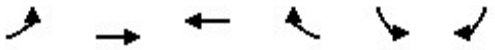
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2710	295	0	0	555
Future Volume (vph)	0	2710	295	0	0	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2946	321	0	0	603
RTOR Reduction (vph)	0	0	0	0	0	159
Lane Group Flow (vph)	0	2946	321	0	0	444
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	51.5			115.5
Effective Green, g (s)		180.0	51.5			115.5
Actuated g/C Ratio		1.00	0.29			0.64
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1454			1788
v/s Ratio Prot		c0.46	0.06			0.16
v/s Ratio Perm						
v/c Ratio		0.46	0.22			0.25
Uniform Delay, d1		0.0	49.0			13.7
Progression Factor		1.00	0.07			2.31
Incremental Delay, d2		0.1	0.3			0.2
Delay (s)		0.1	3.8			32.0
Level of Service		A	A			C
Approach Delay (s)		0.1	3.8		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

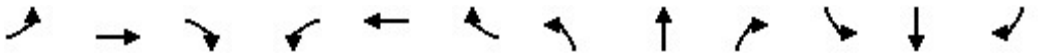
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	945	1765	295	0	410	0
Future Volume (vph)	945	1765	295	0	410	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1027	1918	321	0	446	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1027	1918	321	0	446	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	77.5	135.5	51.5		31.5	
Effective Green, g (s)	77.5	135.5	51.5		31.5	
Actuated g/C Ratio	0.43	0.75	0.29		0.18	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1478	2664	1454		600	
v/s Ratio Prot	0.30	c0.54	0.06		c0.13	
v/s Ratio Perm						
v/c Ratio	0.69	0.72	0.22		0.74	
Uniform Delay, d1	41.6	12.0	49.0		70.4	
Progression Factor	1.00	1.00	1.00		1.16	
Incremental Delay, d2	1.9	1.6	0.4		5.0	
Delay (s)	43.6	13.6	49.3		87.0	
Level of Service	D	B	D		F	
Approach Delay (s)		24.0	49.3		87.0	
Approach LOS		C	D		F	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	0	25	0	0	165	20	1210	85	90	940	345
Future Volume (vph)	570	0	25	0	0	165	20	1210	85	90	940	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	620	0	27	0	0	179	22	1315	92	98	1022	375
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	620	0	6	0	0	179	22	1315	92	98	1022	375
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	37.9		37.9			36.2	5.4	85.9	180.0	15.3	95.8	180.0
Effective Green, g (s)	37.9		37.9			30.7	5.4	85.9	180.0	15.3	95.8	180.0
Actuated g/C Ratio	0.21		0.21			0.17	0.03	0.48	1.00	0.09	0.53	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	722		333			475	53	2426	1583	150	2706	1583
v/s Ratio Prot	c0.18					c0.06	0.01	c0.26		c0.06	0.20	
v/s Ratio Perm			0.00						0.06			0.24
v/c Ratio	0.86		0.02			0.38	0.42	0.54	0.06	0.65	0.38	0.24
Uniform Delay, d1	68.5		56.3			66.2	85.7	33.2	0.0	79.8	24.6	0.0
Progression Factor	1.00		1.00			1.00	1.42	0.27	1.00	1.18	0.86	1.00
Incremental Delay, d2	10.0		0.0			0.5	4.6	0.8	0.1	9.6	0.4	0.3
Delay (s)	78.4		56.3			66.7	126.2	9.7	0.1	103.9	21.6	0.3
Level of Service	E		E			E	F	A	A	F	C	A
Approach Delay (s)		77.5			66.7			10.8			21.6	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

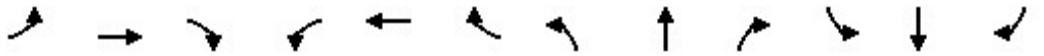
c Critical Lane Group

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	340	0	530	0	1620	265	530	2090	0	0	350
Future Volume (vph)	340	0	530	0	1620	265	530	2090	0	0	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	370	0	576	0	1761	288	576	2272	0	0	380
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	370	0	576	0	1761	288	576	2272	0	0	380
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		4 1		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	34.7		81.1		84.9	84.9	39.9	131.8			131.8
Effective Green, g (s)	34.7		81.1		84.9	84.9	39.9	131.8			131.8
Actuated g/C Ratio	0.19		0.45		0.47	0.47	0.22	0.73			0.73
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	661		1255		2398	746	760	3723			1179
v/s Ratio Prot	c0.11		0.21		c0.35		c0.17	0.45			0.24
v/s Ratio Perm						0.18					
v/c Ratio	0.56		0.46		0.73	0.39	0.76	0.61			0.32
Uniform Delay, d1	65.7		34.3		38.4	30.7	65.5	11.7			8.4
Progression Factor	1.00		1.00		0.72	0.71	1.00	1.00			1.00
Incremental Delay, d2	1.3		0.4		1.7	1.3	5.2	0.8			0.7
Delay (s)	67.0		34.6		29.5	22.9	70.7	12.4			9.2
Level of Service	E		C		C	C	E	B			A
Approach Delay (s)	47.3				28.6			24.2		9.2	
Approach LOS	D				C			C		A	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

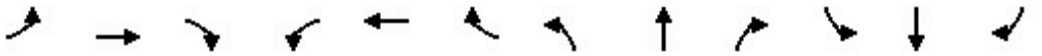
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	400	5	10	335	65	0	0	135	10
Future Volume (vph)	0	0	0	400	5	10	335	65	0	0	135	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1687	1583	1770	1863			3502	
Flt Permitted				0.95	0.95	1.00	0.65	1.00			1.00	
Satd. Flow (perm)				1681	1687	1583	1214	1863			3502	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	435	5	11	364	71	0	0	147	11
RTOR Reduction (vph)	0	0	0	0	0	9	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	222	218	2	364	71	0	0	152	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				18.8	18.8	18.8	60.4	41.4			9.9	
Effective Green, g (s)				18.8	18.8	18.8	60.4	41.4			9.9	
Actuated g/C Ratio				0.21	0.21	0.21	0.67	0.46			0.11	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				350	351	329	1068	855			384	
v/s Ratio Prot				c0.13	0.13		c0.16	0.04			0.04	
v/s Ratio Perm						0.00	c0.07					
v/c Ratio				0.63	0.62	0.01	0.34	0.08			0.40	
Uniform Delay, d1				32.6	32.5	28.3	7.0	13.7			37.4	
Progression Factor				1.00	1.00	1.00	0.31	0.23			1.00	
Incremental Delay, d2				5.2	4.8	0.0	0.3	0.1			0.2	
Delay (s)				37.7	37.2	28.3	2.4	3.2			37.6	
Level of Service				D	D	C	A	A			D	
Approach Delay (s)		0.0			37.3			2.6			37.6	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	25.5
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

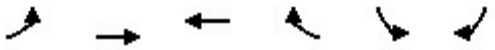
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	195	0	0	0	0	395	795	50	485	0
Future Volume (vph)	5	5	195	0	0	0	0	395	795	50	485	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.98	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1817	1583					1863	1583		3523	
Flt Permitted		0.98	1.00					1.00	1.00		0.58	
Satd. Flow (perm)		1817	1583					1863	1583		2050	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	212	0	0	0	0	429	864	54	527	0
RTOR Reduction (vph)	0	0	178	0	0	0	0	0	604	0	0	0
Lane Group Flow (vph)	0	10	34	0	0	0	0	429	260	0	581	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		14.3	14.3					27.1	27.1		34.2	
Effective Green, g (s)		14.3	14.3					27.1	27.1		34.2	
Actuated g/C Ratio		0.16	0.16					0.30	0.30		0.38	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		288	250					559	475		1174	
v/s Ratio Prot		0.01						c0.23			c0.13	
v/s Ratio Perm			c0.02						0.16		0.05	
v/c Ratio		0.03	0.13					0.77	0.55		0.49	
Uniform Delay, d1		32.1	32.6					28.7	26.4		21.4	
Progression Factor		1.00	1.00					1.00	1.00		0.79	
Incremental Delay, d2		0.1	0.5					5.6	0.7		0.1	
Delay (s)		32.2	33.1					34.3	27.1		17.0	
Level of Service		C	C					C	C		B	
Approach Delay (s)		33.1			0.0			29.5			17.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	25.5
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

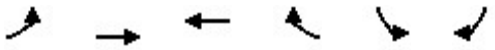
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1225	1370	0	0	1230
Future Volume (vph)	0	1225	1370	0	0	1230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1332	1489	0	0	1337
RTOR Reduction (vph)	0	0	0	0	0	3
Lane Group Flow (vph)	0	1332	1489	0	0	1334
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	65.5			101.5
Effective Green, g (s)		180.0	65.5			101.5
Actuated g/C Ratio		1.00	0.36			0.56
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1850			1571
v/s Ratio Prot		0.21	c0.29			c0.48
v/s Ratio Perm						
v/c Ratio		0.21	0.80			0.85
Uniform Delay, d1		0.0	51.5			32.9
Progression Factor		1.00	0.06			0.70
Incremental Delay, d2		0.0	2.2			4.1
Delay (s)		0.0	5.2			27.1
Level of Service		A	A			C
Approach Delay (s)		0.0	5.2		27.1	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

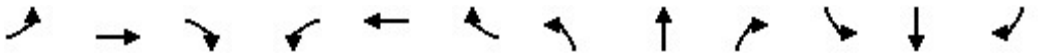
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	715	510	1370	0	275	0
Future Volume (vph)	715	510	1370	0	275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	777	554	1489	0	299	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	777	554	1489	0	299	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	72.5	144.5	65.5		22.5	
Effective Green, g (s)	72.5	144.5	65.5		22.5	
Actuated g/C Ratio	0.40	0.80	0.36		0.12	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1382	2841	1850		429	
v/s Ratio Prot	c0.23	0.16	c0.29		c0.09	
v/s Ratio Perm						
v/c Ratio	0.56	0.20	0.80		0.70	
Uniform Delay, d1	41.5	4.2	51.5		75.5	
Progression Factor	1.00	1.00	1.00		0.89	
Incremental Delay, d2	1.1	0.2	3.8		4.1	
Delay (s)	42.6	4.3	55.3		71.1	
Level of Service	D	A	E		E	
Approach Delay (s)		26.6	55.3		71.1	
Approach LOS		C	E		E	

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	0	20	0	0	300	85	1180	170	150	1485	1145
Future Volume (vph)	405	0	20	0	0	300	85	1180	170	150	1485	1145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	440	0	22	0	0	326	92	1283	185	163	1614	1245
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	440	0	3	0	0	326	92	1283	185	163	1614	1245
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	28.2		28.2			50.1	14.5	81.7	180.0	21.6	88.8	180.0
Effective Green, g (s)	28.2		28.2			44.6	14.5	81.7	180.0	21.6	88.8	180.0
Actuated g/C Ratio	0.16		0.16			0.25	0.08	0.45	1.00	0.12	0.49	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	537		248			690	142	2308	1583	212	2508	1583
v/s Ratio Prot	0.13					0.12	0.05	0.25		0.09	0.32	
v/s Ratio Perm			0.00						0.12			c0.79
v/c Ratio	0.82		0.01			0.47	0.65	0.56	0.12	0.77	0.64	0.79
Uniform Delay, d1	73.4		64.1			57.7	80.3	35.9	0.0	76.8	33.9	0.0
Progression Factor	1.00		1.00			1.00	0.78	1.61	1.00	0.90	0.90	1.00
Incremental Delay, d2	9.5		0.0			0.5	9.5	0.9	0.1	13.1	1.1	3.4
Delay (s)	82.9		64.2			58.2	72.4	58.8	0.1	82.6	31.5	3.4
Level of Service	F		E			E	E	E	A	F	C	A
Approach Delay (s)		82.0			58.2			52.7			22.7	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	1880	185	20	235	500	95	10	60	55	120	240
Future Volume (vph)	80	1880	185	20	235	500	95	10	60	55	120	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	2043	201	22	255	543	103	11	65	60	130	261
RTOR Reduction (vph)	0	0	91	0	0	0	44	0	0	52	0	0
Lane Group Flow (vph)	87	2043	110	0	277	543	59	11	65	8	130	261
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	12.7	81.8	81.8		17.0	86.1	86.1	1.6	21.1	21.1	8.1	27.6
Effective Green, g (s)	12.7	81.8	81.8		17.0	86.1	86.1	1.6	21.1	21.1	8.1	27.6
Actuated g/C Ratio	0.08	0.55	0.55		0.11	0.57	0.57	0.01	0.14	0.14	0.05	0.18
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	149	2773	863		389	2918	908	18	497	222	185	342
v/s Ratio Prot	0.05	c0.40			c0.08	c0.11		0.01	0.02		c0.04	c0.14
v/s Ratio Perm			0.07				0.04			0.01		
v/c Ratio	0.58	0.74	0.13		0.71	0.19	0.07	0.61	0.13	0.04	0.70	0.76
Uniform Delay, d1	66.1	25.9	16.7		64.1	15.2	14.1	73.9	56.4	55.7	69.8	58.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	1.8	0.3		6.1	0.1	0.1	48.7	0.2	0.1	11.4	10.3
Delay (s)	71.8	27.7	17.0		70.2	15.4	14.3	122.6	56.6	55.8	81.2	68.4
Level of Service	E	C	B		E	B	B	F	E	E	F	E
Approach Delay (s)		28.4				31.7			61.6			69.7
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	60
RTOR Reduction (vph)	49
Lane Group Flow (vph)	11
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	27.6
Effective Green, g (s)	27.6
Actuated g/C Ratio	0.18
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	291
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	50.3
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	50.4
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

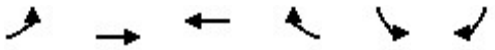
Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	205	135	160	0	0	800
Future Vol, veh/h	205	135	160	0	0	800
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	223	147	174	0	0	870

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	609	87	0	-	-	-
Stage 1	174	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	427	954	-	0	0	-
Stage 1	839	-	-	0	0	-
Stage 2	620	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	427	954	-	-	-	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.2	0	0
HCM LOS	C		

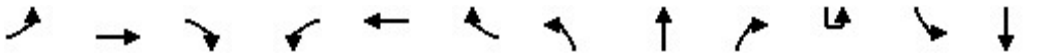
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	547	-
HCM Lane V/C Ratio	-	0.676	-
HCM Control Delay (s)	-	24.2	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	5.1	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	650	110	185	150	15
Future Volume (veh/h)	50	650	110	185	150	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	707	120	201	163	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	106	1855	548	489	427	290
Arrive On Green	0.06	0.52	0.31	0.31	0.12	0.12
Sat Flow, veh/h	1781	3647	1870	1585	3456	1585
Grp Volume(v), veh/h	54	707	120	201	163	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	1.0	3.9	1.6	3.3	1.4	0.3
Cycle Q Clear(g_c), s	1.0	3.9	1.6	3.3	1.4	0.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	106	1855	548	489	427	290
V/C Ratio(X)	0.51	0.38	0.22	0.41	0.38	0.06
Avail Cap(c_a), veh/h	604	5972	2109	1882	2558	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	4.6	8.3	8.9	13.1	10.9
Incr Delay (d2), s/veh	3.8	0.0	0.1	0.2	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.4	0.7	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.6	4.7	8.4	9.1	13.6	11.0
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		761	321		179	
Approach Delay, s/veh		5.7	8.8		13.4	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.9	15.5		10.0		22.4
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	11.0	38.5		24.0		54.5
Max Q Clear Time (g_c+I1), s	3.0	5.3		3.4		5.9
Green Ext Time (p_c), s	0.0	1.3		0.6		3.4

Intersection Summary	
HCM 6th Ctrl Delay	7.6
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	90	10	10	20	5	45	5	1115	20	115	315	1790
Future Volume (vph)	90	10	10	20	5	45	5	1115	20	115	315	1790
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected	0.95	0.96	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1604	1441		1730	1531	1685	4829			1643	4826
Flt Permitted	0.95	0.96	1.00		0.96	1.00	0.08	1.00			0.15	1.00
Satd. Flow (perm)	1584	1604	1441		1730	1531	145	4829			253	4826
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	11	11	22	5	49	5	1212	22	125	342	1946
RTOR Reduction (vph)	0	0	10	0	0	47	0	1	0	0	0	7
Lane Group Flow (vph)	54	55	1	0	27	2	5	1233	0	0	467	2129
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	8.6	8.6	8.6		5.9	5.9	72.5	72.5			116.5	116.5
Effective Green, g (s)	8.6	8.6	8.6		5.9	5.9	72.5	72.5			116.5	116.5
Actuated g/C Ratio	0.06	0.06	0.06		0.04	0.04	0.48	0.48			0.78	0.78
Clearance Time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	90	91	82		68	60	70	2334			562	3748
v/s Ratio Prot	0.03	c0.03			c0.02			0.26			c0.22	0.44
v/s Ratio Perm			0.00			0.00	0.03				c0.43	
v/c Ratio	0.60	0.60	0.01		0.40	0.03	0.07	0.53			0.83	0.57
Uniform Delay, d1	69.0	69.0	66.7		70.3	69.3	20.7	26.9			30.3	6.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.38	0.56
Incremental Delay, d2	10.3	10.8	0.0		3.8	0.2	2.0	0.9			7.6	0.5
Delay (s)	79.3	79.9	66.7		74.1	69.5	22.7	27.7			49.5	4.2
Level of Service	E	E	E		E	E	C	C			D	A
Approach Delay (s)		78.4			71.1			27.7				12.4
Approach LOS		E			E			C				B

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	175
Future Volume (vph)	175
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	190
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	415	825	0	960	1570	515
Future Volume (veh/h)	415	825	0	960	1570	515
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	451	897	0	1043	1707	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	1233	996	0	3575	2792	
Arrive On Green	0.37	0.37	0.00	0.56	0.75	0.00
Sat Flow, veh/h	3358	2711	0	6870	5125	1540
Grp Volume(v), veh/h	451	897	0	1043	1707	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1588	1654	1540
Q Serve(g_s), s	14.7	46.9	0.0	12.9	23.9	0.0
Cycle Q Clear(g_c), s	14.7	46.9	0.0	12.9	23.9	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	1233	996	0	3575	2792	
V/C Ratio(X)	0.37	0.90	0.00	0.29	0.61	
Avail Cap(c_a), veh/h	1567	1265	0	3575	2792	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.82	0.00
Uniform Delay (d), s/veh	34.7	44.9	0.0	17.2	11.3	0.0
Incr Delay (d2), s/veh	0.2	7.6	0.0	0.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	16.9	0.0	4.7	6.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.9	52.5	0.0	17.4	12.1	0.0
LnGrp LOS	C	D	A	B	B	
Approach Vol, veh/h	1348			1043	1707	A
Approach Delay, s/veh	46.6			17.4	12.1	
Approach LOS	D			B	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		89.9		60.1		89.9
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		69.5		70.0		69.5
Max Q Clear Time (g_c+I1), s		25.9		48.9		14.9
Green Ext Time (p_c), s		18.0		6.2		8.8

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	835	280	1030	345	0	1250
Future Volume (veh/h)	835	280	1030	345	0	1250
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	908	0	1120	0	0	1359
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1008		3197		0	4029
Arrive On Green	0.29	0.00	0.63	0.00	0.00	0.63
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	908	0	1120	0	0	1359
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	38.0	0.0	15.7	0.0	0.0	14.9
Cycle Q Clear(g_c), s	38.0	0.0	15.7	0.0	0.0	14.9
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1008		3197		0	4029
V/C Ratio(X)	0.90		0.35		0.00	0.34
Avail Cap(c_a), veh/h	1757		3197		0	4029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.96	0.00	0.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	12.9	0.0	0.0	12.8
Incr Delay (d2), s/veh	3.6	0.0	0.3	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	0.0	5.8	0.0	0.0	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.6	0.0	13.2	0.0	0.0	13.0
LnGrp LOS	D		B		A	B
Approach Vol, veh/h	908	A	1120	A		1359
Approach Delay, s/veh	54.6		13.2			13.0
Approach LOS	D		B			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		100.6		49.4		100.6
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		62.5		76.5		62.5
Max Q Clear Time (g_c+I1), s		16.9		40.0		17.7
Green Ext Time (p_c), s		12.8		3.9		9.6

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

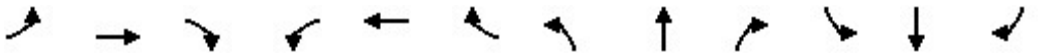
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	25	5	50	130	5	35	5	120	925	260	130	1405
Future Volume (vph)	25	5	50	130	5	35	5	120	925	260	130	1405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.96	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1457	1333	1561	1626	1418		1702	4891	1470	1619	4978
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.12	1.00	1.00	0.25	1.00
Satd. Flow (perm)		1457	1333	1561	1626	1418		219	4891	1470	429	4978
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	5	54	141	5	38	5	130	1005	283	141	1527
RTOR Reduction (vph)	0	10	36	0	0	35	0	0	0	104	0	0
Lane Group Flow (vph)	0	35	5	73	73	3	0	135	1005	179	141	1538
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		9.1	19.5	12.3	12.3	12.3		105.5	95.1	95.1	103.7	94.2
Effective Green, g (s)		9.1	19.5	12.3	12.3	12.3		105.5	95.1	95.1	103.7	94.2
Actuated g/C Ratio		0.06	0.13	0.08	0.08	0.08		0.70	0.63	0.63	0.69	0.63
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		88	173	128	133	116		256	3100	931	371	3126
v/s Ratio Prot		c0.02	0.00	c0.05	0.04			c0.04	0.21		0.02	0.31
v/s Ratio Perm			0.00			0.00		c0.33		0.12	0.24	
v/c Ratio		0.39	0.03	0.57	0.55	0.03		0.53	0.32	0.19	0.38	0.49
Uniform Delay, d1		67.8	57.0	66.3	66.2	63.3		9.8	12.6	11.4	8.1	15.0
Progression Factor		1.00	1.00	1.00	1.00	1.00		3.20	0.89	1.64	1.00	1.00
Incremental Delay, d2		2.9	0.1	6.0	4.6	0.1		1.9	0.3	0.4	0.7	0.6
Delay (s)		70.7	57.1	72.3	70.8	63.4		33.3	11.5	19.2	8.7	15.6
Level of Service		E	E	E	E	E		C	B	B	A	B
Approach Delay (s)		64.2			69.9				15.1			15.0
Approach LOS		E			E				B			B

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	145	60	155	0	20	0	45	55	70	325	0
Future Volume (veh/h)	40	145	60	155	0	20	0	45	55	70	325	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	43	158	65	168	0	22	0	49	60	76	353	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	970	1355	535	0	0	0	0	415	352	198	641	0
Arrive On Green	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.22	0.22	0.22	0.22	0.00
Sat Flow, veh/h	1781	2488	982		0		0	1870	1585	413	2971	0
Grp Volume(v), veh/h	43	111	112		0.0		0	49	60	231	198	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1694				0	1870	1585	1682	1617	0
Q Serve(g_s), s	0.5	1.4	1.5				0.0	0.9	1.4	3.1	4.9	0.0
Cycle Q Clear(g_c), s	0.5	1.4	1.5				0.0	0.9	1.4	5.4	4.9	0.0
Prop In Lane	1.00		0.58				0.00		1.00	0.33		0.00
Lane Grp Cap(c), veh/h	970	968	922				0	415	352	480	359	0
V/C Ratio(X)	0.04	0.11	0.12				0.00	0.12	0.17	0.48	0.55	0.00
Avail Cap(c_a), veh/h	970	968	922				0	873	740	878	755	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.8	5.0	5.0				0.0	14.0	14.2	15.6	15.5	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.3				0.0	0.1	0.2	0.8	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	0.4				0.0	0.4	0.4	2.0	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	5.2	5.3				0.0	14.1	14.4	16.4	16.8	0.0
LnGrp LOS	A	A	A				A	B	B	B	B	A
Approach Vol, veh/h		266						109			429	
Approach Delay, s/veh		5.2						14.3			16.6	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.0		30.0		15.0				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				21.0		24.5		21.0				
Max Q Clear Time (g_c+I1), s				7.4		3.5		3.4				
Green Ext Time (p_c), s				2.2		1.4		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	730	30	20	70	1930	195	150	330	305	100	100
Future Volume (vph)	80	730	30	20	70	1930	195	150	330	305	100	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	793	33	22	76	2098	212	163	359	332	109	109
RTOR Reduction (vph)	0	0	14	0	0	0	96	0	0	152	0	0
Lane Group Flow (vph)	87	793	19	0	98	2098	116	163	359	180	109	109
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	11.7	85.1	85.1		8.9	82.3	82.3	17.6	26.1	26.1	7.9	16.4
Effective Green, g (s)	11.7	85.1	85.1		8.9	82.3	82.3	17.6	26.1	26.1	7.9	16.4
Actuated g/C Ratio	0.08	0.57	0.57		0.06	0.55	0.55	0.12	0.17	0.17	0.05	0.11
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	138	2884	898		203	2789	868	207	615	275	180	203
v/s Ratio Prot	c0.05	c0.16			0.03	c0.41		c0.09	0.10		0.03	0.06
v/s Ratio Perm			0.01				0.07			c0.11		
v/c Ratio	0.63	0.27	0.02		0.48	0.75	0.13	0.79	0.58	0.65	0.61	0.54
Uniform Delay, d1	67.1	16.6	14.2		68.3	26.0	16.5	64.4	57.0	57.7	69.5	63.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	0.2	0.0		1.8	1.9	0.3	17.7	1.7	6.1	5.7	3.5
Delay (s)	76.1	16.9	14.3		70.1	27.9	16.8	82.1	58.6	63.8	75.2	66.7
Level of Service	E	B	B		E	C	B	F	E	E	E	E
Approach Delay (s)		22.4				28.7			65.1			68.3
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	185
Future Volume (vph)	185
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	201
RTOR Reduction (vph)	120
Lane Group Flow (vph)	81
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	16.4
Effective Green, g (s)	16.4
Actuated g/C Ratio	0.11
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	173
v/s Ratio Prot	
v/s Ratio Perm	0.05
v/c Ratio	0.47
Uniform Delay, d1	62.7
Progression Factor	1.00
Incremental Delay, d2	2.7
Delay (s)	65.4
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

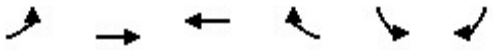
Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	115	1420	0	0	395
Future Vol, veh/h	20	115	1420	0	0	395
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	125	1543	0	0	429

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1758	772	0	-	-	-
Stage 1	1543	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	76	342	-	0	0	-
Stage 1	162	-	-	0	0	-
Stage 2	800	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	76	342	-	-	-	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	800	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	46.8	0	0
HCM LOS	E		

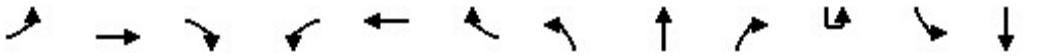
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	225	-
HCM Lane V/C Ratio	-	0.652	-
HCM Control Delay (s)	-	46.8	-
HCM Lane LOS	-	E	-
HCM 95th %tile Q(veh)	-	4	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	175	1070	465	220	80
Future Volume (veh/h)	20	175	1070	465	220	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	190	1163	505	239	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	45	2492	1453	608	391	220
Arrive On Green	0.03	0.70	0.60	0.60	0.11	0.11
Sat Flow, veh/h	1781	3647	2535	1022	3456	1585
Grp Volume(v), veh/h	22	190	834	834	239	87
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1686	1728	1585
Q Serve(g_s), s	0.8	1.0	22.2	24.5	4.1	3.1
Cycle Q Clear(g_c), s	0.8	1.0	22.2	24.5	4.1	3.1
Prop In Lane	1.00			0.61	1.00	1.00
Lane Grp Cap(c), veh/h	45	2492	1058	1004	391	220
V/C Ratio(X)	0.49	0.08	0.79	0.83	0.61	0.40
Avail Cap(c_a), veh/h	144	3926	1676	1591	1115	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	2.9	9.6	10.0	26.2	24.3
Incr Delay (d2), s/veh	7.8	0.0	0.5	1.1	1.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.2	6.2	6.6	1.7	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.7	2.9	10.1	11.1	27.7	25.5
LnGrp LOS	D	A	B	B	C	C
Approach Vol, veh/h		212	1668		326	
Approach Delay, s/veh		6.5	10.6		27.1	
Approach LOS		A	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.6	42.4		13.0		49.0
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	5.0	58.5		20.0		68.5
Max Q Clear Time (g_c+I1), s	2.8	26.5		6.1		3.0
Green Ext Time (p_c), s	0.0	10.4		1.0		0.8

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	160	5	20	60	5	305	15	1650	30	20	90	755
Future Volume (vph)	160	5	20	60	5	305	15	1650	30	20	90	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.98
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1593	1441		1721	1531	1685	4829			1643	4805
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.30	1.00			0.06	1.00
Satd. Flow (perm)	1584	1593	1441		1721	1531	523	4829			105	4805
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	5	22	65	5	332	16	1793	33	22	98	821
RTOR Reduction (vph)	0	0	20	0	0	126	0	1	0	0	0	9
Lane Group Flow (vph)	89	90	2	0	70	206	16	1825	0	0	120	921
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	12.3	12.3	12.3		24.4	24.4	80.4	80.4			95.8	95.8
Effective Green, g (s)	12.3	12.3	12.3		24.4	24.4	80.4	80.4			95.8	95.8
Actuated g/C Ratio	0.08	0.08	0.08		0.16	0.16	0.54	0.54			0.64	0.64
Clearance Time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	129	130	118		279	249	280	2588			178	3068
v/s Ratio Prot	0.06	c0.06			0.04			c0.38			c0.05	0.19
v/s Ratio Perm			0.00			c0.13	0.03				0.38	
v/c Ratio	0.69	0.69	0.02		0.25	0.83	0.06	0.71			0.67	0.30
Uniform Delay, d1	67.0	67.0	63.3		54.8	60.8	16.7	26.0			27.4	12.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.59	0.41
Incremental Delay, d2	14.3	14.8	0.1		0.5	19.8	0.4	1.6			9.3	0.2
Delay (s)	81.3	81.8	63.3		55.3	80.6	17.0	27.6			53.0	5.2
Level of Service	F	F	E		E	F	B	C			D	A
Approach Delay (s)		79.5			76.2			27.5				10.6
Approach LOS		E			E			C				B

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	100
Future Volume (vph)	100
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	109
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	245	315	0	1295	650	830
Future Volume (veh/h)	245	315	0	1295	650	830
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	266	342	0	1408	707	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	502	406	0	4958	3872	
Arrive On Green	0.15	0.15	0.00	0.78	1.00	0.00
Sat Flow, veh/h	3358	2711	0	6870	5125	1540
Grp Volume(v), veh/h	266	342	0	1408	707	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1588	1654	1540
Q Serve(g_s), s	11.0	18.4	0.0	9.4	0.0	0.0
Cycle Q Clear(g_c), s	11.0	18.4	0.0	9.4	0.0	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	502	406	0	4958	3872	
V/C Ratio(X)	0.53	0.84	0.00	0.28	0.18	
Avail Cap(c_a), veh/h	739	596	0	4958	3872	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.95	0.00
Uniform Delay (d), s/veh	58.9	62.1	0.0	4.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	7.2	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	6.8	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	59.8	69.2	0.0	4.8	0.1	0.0
LnGrp LOS	E	E	A	A	A	
Approach Vol, veh/h	608			1408	707	A
Approach Delay, s/veh	65.1			4.8	0.1	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		122.6		27.4		122.6
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		106.5		33.0		106.5
Max Q Clear Time (g_c+I1), s		2.0		20.4		11.4
Green Ext Time (p_c), s		5.4		2.0		14.6

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	275	645	870	670	0	1205
Future Volume (veh/h)	275	645	870	670	0	1205
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	299	0	946	0	0	1310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	360		4146		0	5224
Arrive On Green	0.10	0.00	1.00	0.00	0.00	0.82
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	299	0	946	0	0	1310
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	12.8	0.0	0.0	0.0	0.0	6.9
Cycle Q Clear(g_c), s	12.8	0.0	0.0	0.0	0.0	6.9
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	360		4146		0	5224
V/C Ratio(X)	0.83		0.23		0.00	0.25
Avail Cap(c_a), veh/h	677		4146		0	5224
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.96	0.00	0.00	1.00
Uniform Delay (d), s/veh	65.9	0.0	0.0	0.0	0.0	3.0
Incr Delay (d2), s/veh	5.0	0.0	0.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	0.0	0.0	0.0	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	70.9	0.0	0.1	0.0	0.0	3.1
LnGrp LOS	E		A		A	A
Approach Vol, veh/h	299	A	946	A		1310
Approach Delay, s/veh	70.9		0.1			3.1
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		128.8		21.2		128.8
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		109.5		29.5		109.5
Max Q Clear Time (g_c+I1), s		8.9		14.8		2.0
Green Ext Time (p_c), s		12.9		0.9		7.8

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

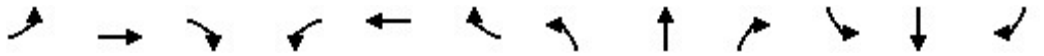
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	75	20	150	385	10	85	5	160	1130	220	80	1545
Future Volume (vph)	75	20	150	385	10	85	5	160	1130	220	80	1545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.96	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1465	1333	1561	1625	1418		1702	4891	1470	1619	4979
Flt Permitted		0.97	1.00	0.95	0.95	1.00		0.06	1.00	1.00	0.18	1.00
Satd. Flow (perm)		1465	1333	1561	1625	1418		105	4891	1470	303	4979
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	22	163	418	11	92	5	174	1228	239	87	1679
RTOR Reduction (vph)	0	9	54	0	0	77	0	0	0	118	0	1
Lane Group Flow (vph)	0	131	73	213	216	15	0	179	1228	121	87	1689
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		17.1	32.1	24.6	24.6	24.6		89.3	75.7	75.7	77.9	69.3
Effective Green, g (s)		17.1	32.1	24.6	24.6	24.6		89.3	75.7	75.7	77.9	69.3
Actuated g/C Ratio		0.11	0.21	0.16	0.16	0.16		0.60	0.50	0.50	0.52	0.46
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		167	285	256	266	232		222	2468	741	232	2300
v/s Ratio Prot		c0.09	0.03	c0.14	0.13			c0.08	0.25		0.02	0.34
v/s Ratio Perm			0.03			0.01		c0.40		0.08	0.17	
v/c Ratio		0.79	0.26	0.83	0.81	0.07		0.81	0.50	0.16	0.38	0.73
Uniform Delay, d1		64.7	49.0	60.7	60.5	53.0		41.5	24.6	20.0	19.0	32.9
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.29	0.72	0.45	1.00	1.00
Incremental Delay, d2		21.1	0.5	20.0	16.9	0.1		18.3	0.7	0.5	1.0	2.1
Delay (s)		85.8	49.5	80.7	77.4	53.1		71.8	18.4	9.5	20.0	35.0
Level of Service		F	D	F	E	D		E	B	A	B	C
Approach Delay (s)		68.5			74.5				22.9			34.3
Approach LOS		E			E				C			C

Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



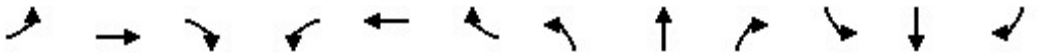
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	275	10	65	0	75	0	235	260	40	100	0
Future Volume (veh/h)	30	275	10	65	0	75	0	235	260	40	100	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	33	299	11	71	0	82	0	255	283	43	109	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	929	1824	67	0	0	0	0	439	372	207	494	0
Arrive On Green	0.52	0.52	0.52	0.00	0.00	0.00	0.00	0.23	0.23	0.23	0.23	0.00
Sat Flow, veh/h	1781	3496	128		0		0	1870	1585	317	2187	0
Grp Volume(v), veh/h	33	152	158		0.0		0	255	283	74	78	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1847				0	1870	1585	802	1617	0
Q Serve(g_s), s	0.4	1.9	1.9				0.0	5.2	7.2	0.3	1.7	0.0
Cycle Q Clear(g_c), s	0.4	1.9	1.9				0.0	5.2	7.2	5.5	1.7	0.0
Prop In Lane	1.00		0.07				0.00		1.00	0.58		0.00
Lane Grp Cap(c), veh/h	929	927	964				0	439	372	321	380	0
V/C Ratio(X)	0.04	0.16	0.16				0.00	0.58	0.76	0.23	0.21	0.00
Avail Cap(c_a), veh/h	929	927	964				0	564	478	395	487	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.0	5.4	5.4				0.0	14.6	15.4	13.3	13.3	0.0
Incr Delay (d2), s/veh	0.1	0.4	0.4				0.0	1.2	5.3	0.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.6	0.6				0.0	2.0	2.7	0.5	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	5.8	5.8				0.0	15.8	20.6	13.7	13.5	0.0
LnGrp LOS	A	A	A				A	B	C	B	B	A
Approach Vol, veh/h		343						538			152	
Approach Delay, s/veh		5.7						18.4			13.6	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.1		28.0		15.1				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				13.0		22.5		13.0				
Max Q Clear Time (g_c+I1), s				7.5		3.9		9.2				
Green Ext Time (p_c), s				0.4		1.8		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		13.5	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	800	110	385	570	260	10	245	270	275	425	5
Future Volume (veh/h)	15	800	110	385	570	260	10	245	270	275	425	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	870	120	418	620	283	11	266	293	299	462	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	1084	483	829	1926	859	163	349	536	370	691	7
Arrive On Green	0.02	0.31	0.31	0.40	0.91	0.91	0.01	0.10	0.10	0.11	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3601	39
Grp Volume(v), veh/h	16	870	120	418	620	283	11	266	293	299	228	239
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1863
Q Serve(g_s), s	0.9	22.5	4.6	9.1	2.3	2.4	0.6	7.3	3.7	8.5	11.9	11.9
Cycle Q Clear(g_c), s	0.9	22.5	4.6	9.1	2.3	2.4	0.6	7.3	3.7	8.5	11.9	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	32	1084	483	829	1926	859	163	349	536	370	341	358
V/C Ratio(X)	0.50	0.80	0.25	0.50	0.32	0.33	0.07	0.76	0.55	0.81	0.67	0.67
Avail Cap(c_a), veh/h	89	1084	483	829	1926	859	229	391	555	622	418	438
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	32.0	17.4	25.5	2.3	2.3	39.8	44.0	9.8	43.7	37.4	37.5
Incr Delay (d2), s/veh	11.6	6.3	1.2	0.1	0.3	0.8	0.1	7.7	1.1	1.6	3.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.1	2.3	3.3	0.7	0.8	0.2	3.6	2.8	3.6	5.3	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	38.3	18.6	25.7	2.6	3.1	39.8	51.7	10.8	45.3	40.4	40.3
LnGrp LOS	E	D	B	C	A	A	D	D	B	D	D	D
Approach Vol, veh/h		1006			1321			570			766	
Approach Delay, s/veh		36.3			10.0			30.5			42.3	
Approach LOS		D			B			C			D	

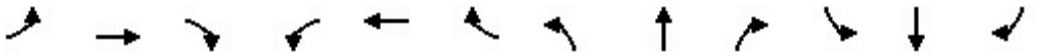
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	61.2	6.8	25.7	31.0	36.5	16.2	16.3
Change Period (Y+Rc), s	4.5	* 7	5.5	6.5	7.0	6.0	5.5	* 6.5
Max Green Setting (Gmax), s	5.0	* 44	5.0	23.5	16.0	30.5	18.0	* 11
Max Q Clear Time (g_c+I1), s	2.9	4.4	2.6	13.9	11.1	24.5	10.5	9.3
Green Ext Time (p_c), s	0.0	12.3	0.0	1.8	0.4	4.1	0.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

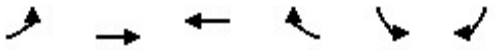
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1000	275	160	780	75	365	0	375	200	0	70
Future Volume (vph)	70	1000	275	160	780	75	365	0	375	200	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1583	3433	3492		1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1583	3433	3492		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1087	299	174	848	82	397	0	408	217	0	76
RTOR Reduction (vph)	0	0	106	0	7	0	0	0	133	0	0	71
Lane Group Flow (vph)	76	1087	193	174	923	0	397	0	275	217	0	5
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2	8	1	6		8		1	4		5
Permitted Phases			2									
Actuated Green, G (s)	7.0	39.7	64.5	19.5	52.2		24.8		19.5	24.8		7.0
Effective Green, g (s)	7.0	39.7	64.5	19.5	52.2		24.8		19.5	24.8		7.0
Actuated g/C Ratio	0.07	0.40	0.64	0.20	0.52		0.25		0.20	0.25		0.07
Clearance Time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	123	1404	1021	669	1822		438		308	438		110
v/s Ratio Prot	0.04	c0.31	0.05	0.05	0.26		c0.22		c0.17	0.12		0.00
v/s Ratio Perm			0.07									
v/c Ratio	0.62	0.77	0.19	0.26	0.51		0.91		0.89	0.50		0.05
Uniform Delay, d1	45.2	26.2	7.2	34.1	15.5		36.5		39.2	32.2		43.4
Progression Factor	1.08	0.62	0.62	0.72	1.10		1.00		1.00	1.00		1.00
Incremental Delay, d2	7.1	3.3	0.1	0.2	0.9		22.0		26.1	0.9		0.2
Delay (s)	55.7	19.5	4.5	24.6	18.0		58.4		65.4	33.1		43.6
Level of Service	E	B	A	C	B		E		E	C		D
Approach Delay (s)		18.4			19.1			62.0			35.8	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

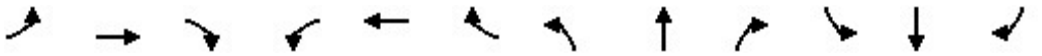
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	365	1210	835	110	55	180
Future Volume (veh/h)	365	1210	835	110	55	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	397	1315	908	120	60	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	518	2691	2128	949	236	382
Arrive On Green	0.14	1.00	0.60	0.60	0.13	0.13
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	397	1315	908	120	60	196
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	8.3	0.0	13.8	3.3	3.0	10.7
Cycle Q Clear(g_c), s	8.3	0.0	13.8	3.3	3.0	10.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	518	2691	2128	949	236	382
V/C Ratio(X)	0.77	0.49	0.43	0.13	0.25	0.51
Avail Cap(c_a), veh/h	806	2691	2128	949	410	536
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.54	0.54	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	0.0	10.8	8.7	38.9	32.9
Incr Delay (d2), s/veh	0.5	0.3	0.6	0.3	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.1	5.0	1.1	1.4	9.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.1	0.3	11.4	9.0	39.5	33.9
LnGrp LOS	A	A	B	A	D	C
Approach Vol, veh/h		1712	1028		256	
Approach Delay, s/veh		2.4	11.1		35.2	
Approach LOS		A	B		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.8	65.9		18.3		81.7
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	27.0	34.0		23.0		66.0
Max Q Clear Time (g_c+I1), s	10.3	15.8		12.7		2.0
Green Ext Time (p_c), s	0.5	4.1		0.6		8.2

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	605	10	385	895	175	155	275	410	305	160	25
Future Volume (veh/h)	5	605	10	385	895	175	155	275	410	305	160	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	658	11	418	973	190	168	299	446	332	174	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	12	924	412	925	1906	850	339	394	600	403	390	59
Arrive On Green	0.01	0.26	0.26	0.54	1.00	1.00	0.10	0.11	0.11	0.12	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3091	472
Grp Volume(v), veh/h	5	658	11	418	973	190	168	299	446	332	99	102
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1785
Q Serve(g_s), s	0.3	16.8	0.4	7.4	0.0	0.0	8.2	8.2	6.7	9.4	5.1	5.3
Cycle Q Clear(g_c), s	0.3	16.8	0.4	7.4	0.0	0.0	8.2	8.2	6.7	9.4	5.1	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	12	924	412	925	1906	850	339	394	600	403	224	225
V/C Ratio(X)	0.43	0.71	0.03	0.45	0.51	0.22	0.50	0.76	0.74	0.82	0.44	0.45
Avail Cap(c_a), veh/h	89	924	412	925	1906	850	345	444	622	622	346	348
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	33.6	13.8	18.7	0.0	0.0	34.4	43.2	9.2	43.2	40.4	40.5
Incr Delay (d2), s/veh	23.5	4.7	0.1	0.2	0.6	0.3	0.4	6.6	4.6	2.9	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.5	0.2	2.5	0.1	0.1	3.6	3.9	4.5	4.1	2.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.0	38.3	13.9	18.9	0.6	0.3	34.8	49.8	13.8	46.1	41.8	41.9
LnGrp LOS	E	D	B	B	A	A	C	D	B	D	D	D
Approach Vol, veh/h		674			1581			913			533	
Approach Delay, s/veh		38.1			5.4			29.5			44.5	
Approach LOS		D			A			C			D	

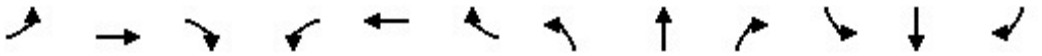
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	60.1	15.6	19.1	33.3	32.0	17.1	17.6
Change Period (Y+Rc), s	4.5	6.5	5.5	6.5	6.5	* 6	5.5	* 6.5
Max Green Setting (Gmax), s	5.0	42.0	10.5	19.5	21.5	* 26	18.0	* 13
Max Q Clear Time (g_c+I1), s	2.3	2.0	10.2	7.3	9.4	18.8	11.4	10.2
Green Ext Time (p_c), s	0.0	18.5	0.0	0.8	1.2	3.7	0.3	0.9

Intersection Summary	
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

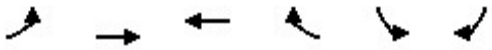
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	975	245	415	1085	100	350	0	225	240	0	20
Future Volume (vph)	100	975	245	415	1085	100	350	0	225	240	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1583	3433	3494		1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1583	3433	3494		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1060	266	451	1179	109	380	0	245	261	0	22
RTOR Reduction (vph)	0	0	25	0	7	0	0	0	135	0	0	20
Lane Group Flow (vph)	109	1060	241	451	1281	0	380	0	110	261	0	2
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2	8	1	6		8		1	4		5
Permitted Phases			2									
Actuated Green, G (s)	9.7	41.9	67.2	16.8	49.0		25.3		16.8	25.3		9.7
Effective Green, g (s)	9.7	41.9	67.2	16.8	49.0		25.3		16.8	25.3		9.7
Actuated g/C Ratio	0.10	0.42	0.67	0.17	0.49		0.25		0.17	0.25		0.10
Clearance Time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	171	1482	1063	576	1712		447		265	447		153
v/s Ratio Prot	0.06	0.30	0.06	c0.13	c0.37		c0.21		0.07	0.15		0.00
v/s Ratio Perm			0.09									
v/c Ratio	0.64	0.72	0.23	0.78	0.75		0.85		0.42	0.58		0.01
Uniform Delay, d1	43.5	24.1	6.3	39.9	20.5		35.5		37.2	32.7		40.8
Progression Factor	1.04	0.74	0.94	1.10	0.76		1.00		1.00	1.00		1.00
Incremental Delay, d2	6.1	2.4	0.1	4.8	2.1		14.3		1.1	1.9		0.0
Delay (s)	51.1	20.3	6.1	48.8	17.6		49.9		38.3	34.7		40.9
Level of Service	D	C	A	D	B		D		D	C		D
Approach Delay (s)		20.0			25.7			45.3			35.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	175	1265	1175	25	165	425
Future Volume (veh/h)	175	1265	1175	25	165	425
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	190	1375	1277	27	179	462
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	314	2345	1926	859	410	472
Arrive On Green	0.14	1.00	0.54	0.54	0.23	0.23
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	190	1375	1277	27	179	462
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	4.7	0.0	25.7	0.8	8.6	23.0
Cycle Q Clear(g_c), s	4.7	0.0	25.7	0.8	8.6	23.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	314	2345	1926	859	410	472
V/C Ratio(X)	0.61	0.59	0.66	0.03	0.44	0.98
Avail Cap(c_a), veh/h	513	2345	1926	859	410	472
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	16.4	10.7	33.0	34.8
Incr Delay (d2), s/veh	0.5	0.7	1.8	0.1	0.7	35.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.2	9.9	0.3	3.8	26.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.7	0.7	18.2	10.7	33.7	70.3
LnGrp LOS	B	A	B	B	C	E
Approach Vol, veh/h		1565	1304		641	
Approach Delay, s/veh		2.3	18.0		60.1	
Approach LOS		A	B		E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.8	60.2		28.0		72.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	18.0	43.0		23.0		66.0
Max Q Clear Time (g_c+I1), s	6.7	27.7		25.0		2.0
Green Ext Time (p_c), s	0.2	5.6		0.0		8.8

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

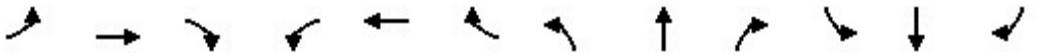
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	1890	305	15	110	1740	40	65	5	170	15	5
Future Volume (vph)	5	1890	305	15	110	1740	40	65	5	170	15	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.98			1.00	1.00			1.00	0.85	1.00	0.93
Flt Protected	0.95	1.00			0.95	1.00			0.96	1.00	0.95	1.00
Satd. Flow (prot)	1906	5197			1585	5043			1661	1478	1770	1724
Flt Permitted	0.10	1.00			0.95	1.00			0.73	1.00	0.71	1.00
Satd. Flow (perm)	204	5197			1585	5043			1274	1478	1319	1724
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2054	332	16	120	1891	43	71	5	185	16	5
RTOR Reduction (vph)	0	16	0	0	0	2	0	0	0	165	0	4
Lane Group Flow (vph)	5	2370	0	0	136	1932	0	0	76	20	16	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	71.5	71.5			16.4	94.4			13.1	13.1	13.1	13.1
Effective Green, g (s)	71.5	71.5			16.4	94.4			13.1	13.1	13.1	13.1
Actuated g/C Ratio	0.60	0.60			0.14	0.79			0.11	0.11	0.11	0.11
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	121	3096			216	3967			139	161	143	188
v/s Ratio Prot		c0.46			c0.09	0.38						0.00
v/s Ratio Perm	0.02								c0.06	0.01	0.01	
v/c Ratio	0.04	0.77			0.63	0.49			0.55	0.13	0.11	0.03
Uniform Delay, d1	10.0	18.0			48.9	4.4			50.6	48.3	48.2	47.8
Progression Factor	1.00	1.00			1.25	0.71			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.9			6.8	0.4			5.4	0.5	0.5	0.1
Delay (s)	10.7	19.9			68.0	3.5			56.1	48.8	48.7	47.9
Level of Service	B	B			E	A			E	D	D	D
Approach Delay (s)		19.9				7.8			50.9			48.4
Approach LOS		B				A			D			D

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	5
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary



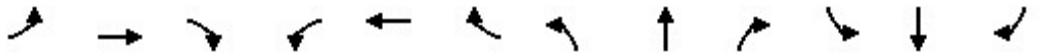
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1030	1060	0	1810	0	0	0	0	390	0	95
Future Volume (veh/h)	0	1030	1060	0	1810	0	0	0	0	390	0	95
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1120	0	0	1967	0				424	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2670		0	3776	0				513	0	
Arrive On Green	0.00	0.51	0.00	0.00	0.76	0.00				0.14	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1120	0	0	1967	0				424	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	23.9	0.0	0.0	18.8	0.0				13.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.9	0.0	0.0	18.8	0.0				13.8	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2670		0	3776	0				513	0	
V/C Ratio(X)	0.00	0.42		0.00	0.52	0.00				0.83	0.00	
Avail Cap(c_a), veh/h	0	2670		0	3776	0				940	0	
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.58	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.9	0.0	0.0	5.7	0.0				50.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.5	0.0				3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.0	0.0	0.0	5.0	0.0				6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.2	0.0	0.0	6.2	0.0				53.4	0.0	0.0
LnGrp LOS	A	B		A	A	A				D	A	
Approach Vol, veh/h		1120	A		1967						424	A
Approach Delay, s/veh		13.2			6.2						53.4	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		97.3		22.7		97.3						
Change Period (Y+Rc), s		6.0		5.5		6.0						
Max Green Setting (Gmax), s		77.0		31.5		77.0						
Max Q Clear Time (g_c+I1), s		20.8		15.8		25.9						
Green Ext Time (p_c), s		2.9		1.4		1.3						

Intersection Summary		
HCM 6th Ctrl Delay		14.1
HCM 6th LOS		B

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	980	0	0	780	15	0	135	215	25	0	265
Future Volume (vph)	320	980	0	0	780	15	0	135	215	25	0	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5147			1867	1587	1783		1595
Flt Permitted	0.23	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	402	3504			5147			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	1065	0	0	848	16	0	147	234	27	0	288
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	113	0	0	18
Lane Group Flow (vph)	348	1065	0	0	863	0	0	147	121	27	0	270
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	72.4	72.4			44.6			21.9	21.9	7.2		64.4
Effective Green, g (s)	72.4	72.4			44.6			21.9	21.9	7.2		52.4
Actuated g/C Ratio	0.60	0.60			0.37			0.18	0.18	0.06		0.44
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	493	2114			1912			340	289	106		696
v/s Ratio Prot	c0.14	0.30			0.17			c0.08		0.02		c0.17
v/s Ratio Perm	c0.29								0.08			
v/c Ratio	0.71	0.50			0.45			0.43	0.42	0.25		0.39
Uniform Delay, d1	14.0	13.6			28.5			43.5	43.4	53.8		22.9
Progression Factor	1.02	0.55			0.92			1.00	1.00	1.00		1.00
Incremental Delay, d2	5.2	0.8			0.6			2.5	2.8	3.6		0.8
Delay (s)	19.5	8.3			26.7			46.0	46.2	57.4		23.7
Level of Service	B	A			C			D	D	E		C
Approach Delay (s)		11.0			26.7			46.1			26.6	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1210	5	5	760	10	10	5	10	75	5	25
Future Volume (vph)	5	1210	5	5	760	10	10	5	10	75	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	
Satd. Flow (prot)	1702	1852		1787	1815			1801	1531		1649	
Flt Permitted	0.30	1.00		0.09	1.00			0.86	1.00		0.78	
Satd. Flow (perm)	529	1852		171	1815			1597	1531		1327	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1315	5	5	826	11	11	5	11	82	5	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	10	0
Lane Group Flow (vph)	5	1320	0	5	837	0	0	16	1	0	104	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	97.6	97.6		97.6	97.6			14.4	14.4		14.4	
Effective Green, g (s)	97.6	97.6		97.6	97.6			14.4	14.4		14.4	
Actuated g/C Ratio	0.81	0.81		0.81	0.81			0.12	0.12		0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	430	1506		139	1476			191	183		159	
v/s Ratio Prot		c0.71			0.46							
v/s Ratio Perm	0.01			0.03				0.01	0.00		c0.08	
v/c Ratio	0.01	0.88		0.04	0.57			0.08	0.01		0.66	
Uniform Delay, d1	2.1	7.3		2.2	3.9			46.9	46.5		50.4	
Progression Factor	0.42	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	5.4		0.5	1.6			0.2	0.0		9.4	
Delay (s)	0.9	12.6		2.6	5.5			47.1	46.5		59.8	
Level of Service	A	B		A	A			D	D		E	
Approach Delay (s)		12.6			5.4			46.9			59.8	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

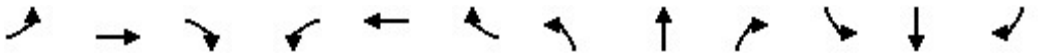
c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	2000	70	15	270	2190	15	85	5	140	40	5
Future Volume (vph)	5	2000	70	15	270	2190	15	85	5	140	40	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	1.00			1.00	0.85	1.00	0.90
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	1906	5280			1585	5055			1660	1478	1770	1671
Flt Permitted	0.07	1.00			0.95	1.00			0.73	1.00	0.69	1.00
Satd. Flow (perm)	135	5280			1585	5055			1261	1478	1294	1671
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2174	76	16	293	2380	16	92	5	152	43	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	134	0	10
Lane Group Flow (vph)	5	2247	0	0	309	2396	0	0	97	18	43	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	59.4	59.4			27.7	93.6			13.9	13.9	13.9	13.9
Effective Green, g (s)	59.4	59.4			27.7	93.6			13.9	13.9	13.9	13.9
Actuated g/C Ratio	0.49	0.49			0.23	0.78			0.12	0.12	0.12	0.12
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	66	2613			365	3942			146	171	149	193
v/s Ratio Prot		c0.43			c0.19	0.47						0.00
v/s Ratio Perm	0.04								c0.08	0.01	0.03	
v/c Ratio	0.08	0.86			0.85	0.61			0.66	0.10	0.29	0.03
Uniform Delay, d1	15.9	26.6			44.1	5.5			50.8	47.5	48.5	47.1
Progression Factor	1.00	1.00			1.32	0.65			1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	4.0			12.8	0.5			11.9	0.4	1.5	0.1
Delay (s)	18.1	30.6			70.9	4.1			62.7	47.8	50.0	47.2
Level of Service	B	C			E	A			E	D	D	D
Approach Delay (s)		30.6				11.7			53.6			49.2
Approach LOS		C				B			D			D

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



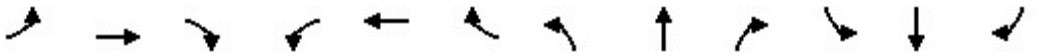
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	955	1240	0	2260	0	0	0	0	500	0	230
Future Volume (veh/h)	0	955	1240	0	2260	0	0	0	0	500	0	230
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1038	0	0	2457	0				543	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2549		0	3604	0				637	0	
Arrive On Green	0.00	0.24	0.00	0.00	0.73	0.00				0.18	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1038	0	0	2457	0				543	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	29.9	0.0	0.0	32.2	0.0				17.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	29.9	0.0	0.0	32.2	0.0				17.6	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2549		0	3604	0				637	0	
V/C Ratio(X)	0.00	0.41		0.00	0.68	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	2549		0	3604	0				970	0	
HCM Platoon Ratio	1.00	0.33	0.33	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.45	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	23.9	0.0	0.0	8.9	0.0				47.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.1	0.0				4.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.0	0.0	0.0	9.4	0.0				8.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.1	0.0	0.0	10.0	0.0				52.5	0.0	0.0
LnGrp LOS	A	C		A	A	A				D	A	
Approach Vol, veh/h		1038	A		2457						543	A
Approach Delay, s/veh		24.1			10.0						52.5	
Approach LOS		C			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	93.2	26.8	93.2
Change Period (Y+Rc), s	6.0	5.5	6.0
Max Green Setting (Gmax), s	76.0	32.5	76.0
Max Q Clear Time (g_c+I1), s	34.2	19.6	31.9
Green Ext Time (p_c), s	4.2	1.7	1.2

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

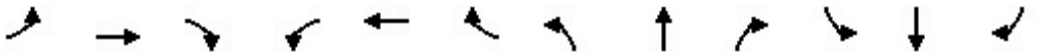
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1135	0	0	1115	40	0	260	175	30	0	405
Future Volume (vph)	220	1135	0	0	1115	40	0	260	175	30	0	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			0.99			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5135			1867	1587	1783		1595
Flt Permitted	0.10	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	186	3504			5135			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1234	0	0	1212	43	0	283	190	33	0	440
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	98	0	0	18
Lane Group Flow (vph)	239	1234	0	0	1252	0	0	283	92	33	0	422
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	67.5	67.5			43.6			27.4	27.4	6.6		65.4
Effective Green, g (s)	67.5	67.5			43.6			27.4	27.4	6.6		53.4
Actuated g/C Ratio	0.56	0.56			0.36			0.23	0.23	0.05		0.44
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	348	1971			1865			426	362	98		709
v/s Ratio Prot	c0.11	0.35			0.24			c0.15		0.02		c0.26
v/s Ratio Perm	c0.27								0.06			
v/c Ratio	0.69	0.63			0.67			0.66	0.25	0.34		0.60
Uniform Delay, d1	24.8	17.7			32.2			42.1	37.9	54.6		25.1
Progression Factor	1.04	0.44			0.88			1.00	1.00	1.00		1.00
Incremental Delay, d2	6.4	1.4			1.3			6.0	1.0	5.7		2.0
Delay (s)	32.2	9.2			29.5			48.2	39.0	60.3		27.2
Level of Service	C	A			C			D	D	E		C
Approach Delay (s)		12.9			29.5			44.5			29.5	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

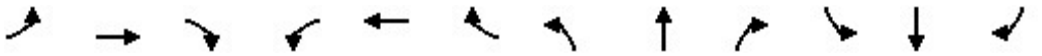
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1295	15	5	1085	10	5	5	10	20	5	65
Future Volume (vph)	30	1295	15	5	1085	10	5	5	10	20	5	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1702	1850		1787	1816			1817	1531		1574	
Flt Permitted	0.18	1.00		0.08	1.00			0.84	1.00		0.93	
Satd. Flow (perm)	316	1850		145	1816			1570	1531		1474	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1408	16	5	1179	11	5	5	11	22	5	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	65	0
Lane Group Flow (vph)	33	1424	0	5	1190	0	0	10	1	0	33	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	102.3	102.3		102.3	102.3			9.7	9.7		9.7	
Effective Green, g (s)	102.3	102.3		102.3	102.3			9.7	9.7		9.7	
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.08	0.08		0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	269	1577		123	1548			126	123		119	
v/s Ratio Prot		c0.77			0.66							
v/s Ratio Perm	0.10			0.03				0.01	0.00		c0.02	
v/c Ratio	0.12	0.90		0.04	0.77			0.08	0.01		0.28	
Uniform Delay, d1	1.5	5.7		1.4	3.8			51.0	50.7		51.8	
Progression Factor	0.12	1.78		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	6.3		0.6	3.7			0.3	0.0		1.3	
Delay (s)	0.3	16.4		2.0	7.5			51.3	50.7		53.1	
Level of Service	A	B		A	A			D	D		D	
Approach Delay (s)		16.1			7.5			51.0			53.1	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	830	105	465	455	105	130	125	160	425	735	255
Future Volume (vph)	115	830	105	465	455	105	130	125	160	425	735	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.18	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	342	3592	1607	917	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	902	114	505	495	114	141	136	174	462	799	277
RTOR Reduction (vph)	0	0	65	0	0	48	0	0	90	0	0	0
Lane Group Flow (vph)	125	902	49	505	495	66	141	136	84	462	799	277
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	15.2	47.5	60.1	24.9	57.7	87.2	34.7	22.1	72.4	58.6	39.5	150.0
Effective Green, g (s)	15.2	47.5	60.1	24.9	57.7	87.2	34.7	22.1	72.4	58.6	39.5	150.0
Actuated g/C Ratio	0.10	0.32	0.40	0.17	0.38	0.58	0.23	0.15	0.48	0.39	0.26	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	175	1098	621	581	1388	938	201	529	850	529	941	1599
v/s Ratio Prot	0.07	c0.26	0.01	c0.14	0.14	0.01	0.06	0.04	0.02	c0.17	0.22	
v/s Ratio Perm			0.02			0.03	0.10		0.04	c0.17		0.17
v/c Ratio	0.71	0.82	0.08	0.87	0.36	0.07	0.70	0.26	0.10	0.87	0.85	0.17
Uniform Delay, d1	65.3	47.3	27.8	61.0	32.9	13.7	48.7	56.7	21.1	38.5	52.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.9	6.9	0.1	13.1	0.7	0.0	10.5	0.3	0.1	14.8	7.2	0.2
Delay (s)	78.2	54.3	27.9	74.0	33.6	13.7	59.2	56.9	21.1	53.2	59.7	0.2
Level of Service	E	D	C	E	C	B	E	E	C	D	E	A
Approach Delay (s)		54.3			49.9			43.8			47.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

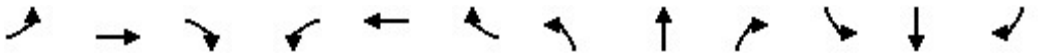
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	320	865	40	10	525	75	50	5	10	35	5
Future Volume (vph)	5	320	865	40	10	525	75	50	5	10	35	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	1.00		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	0.98		1.00	0.90			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.96
Satd. Flow (prot)		1770	1851		1805	3542		1736	1639			1724
Flt Permitted		0.30	1.00		0.31	1.00		0.73	1.00			0.74
Satd. Flow (perm)		554	1851		582	3542		1332	1639			1331
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	348	940	43	11	571	82	54	5	11	38	5
RTOR Reduction (vph)	0	0	1	0	0	8	0	0	10	0	0	0
Lane Group Flow (vph)	0	353	982	0	11	645	0	54	6	0	0	43
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		88.8	88.8		48.8	48.8		8.7	8.7			8.7
Effective Green, g (s)		88.8	88.8		48.8	48.8		8.7	8.7			8.7
Actuated g/C Ratio		0.81	0.81		0.44	0.44		0.08	0.08			0.08
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		823	1494		258	1571		105	129			105
v/s Ratio Prot		0.13	c0.53			0.18			0.00			
v/s Ratio Perm		0.21			0.02			0.04				0.03
v/c Ratio		0.43	0.66		0.04	0.41		0.51	0.05			0.41
Uniform Delay, d1		4.3	4.4		17.4	20.8		48.6	46.8			48.2
Progression Factor		0.79	0.62		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		0.3	2.1		0.3	0.8		4.2	0.1			2.6
Delay (s)		3.8	4.8		17.7	21.6		52.8	47.0			50.8
Level of Service		A	A		B	C		D	D			D
Approach Delay (s)			4.5			21.5			51.5			41.0
Approach LOS			A			C			D			D

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	510
Future Volume (vph)	510
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	554
RTOR Reduction (vph)	59
Lane Group Flow (vph)	495
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	42.7
Effective Green, g (s)	42.7
Actuated g/C Ratio	0.39
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	594
v/s Ratio Prot	c0.26
v/s Ratio Perm	0.07
v/c Ratio	0.83
Uniform Delay, d1	30.4
Progression Factor	1.00
Incremental Delay, d2	9.8
Delay (s)	40.2
Level of Service	D
Approach Delay (s)	
Approach LOS	

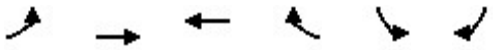
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	380	0	0	920	0	0	0	0
Future Volume (vph)	0	0	0	0	380	0	0	920	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5			4.5				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3539			3539				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3539			3539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	413	0	0	1000	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	413	0	0	1000	0	0	0	0
Turn Type					NA			NA				
Protected Phases					8			2				
Permitted Phases												
Actuated Green, G (s)					31.5			63.5				
Effective Green, g (s)					31.5			63.5				
Actuated g/C Ratio					0.29			0.58				
Clearance Time (s)					4.5			4.5				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)					1013			2042				
v/s Ratio Prot					c0.12			c0.28				
v/s Ratio Perm												
v/c Ratio					0.41			0.49				
Uniform Delay, d1					31.7			13.7				
Progression Factor					0.63			1.00				
Incremental Delay, d2					1.1			0.8				
Delay (s)					21.0			14.5				
Level of Service					C			B				
Approach Delay (s)		0.0			21.0			14.5			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	920	0	0	190	0
Future Volume (vph)	0	920	0	0	190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	
Lane Util. Factor		0.95			0.97	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		3539			3433	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		3539			3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1000	0	0	207	0
RTOR Reduction (vph)	0	0	0	0	148	0
Lane Group Flow (vph)	0	1000	0	0	59	0
Turn Type		NA			Prot	
Protected Phases		2 12			4	
Permitted Phases						
Actuated Green, G (s)		72.0			31.5	
Effective Green, g (s)		72.0			31.5	
Actuated g/C Ratio		0.65			0.29	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)		2316			983	
v/s Ratio Prot		c0.28			c0.02	
v/s Ratio Perm						
v/c Ratio		0.43			0.06	
Uniform Delay, d1		9.1			28.5	
Progression Factor		0.03			1.00	
Incremental Delay, d2		0.5			0.0	
Delay (s)		0.8			28.5	
Level of Service		A			C	
Approach Delay (s)		0.8	0.0		28.5	
Approach LOS		A	A		C	

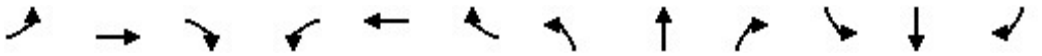
Intersection Summary			
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	935	60	0
Future Volume (vph)	0	0	0	935	60	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3539	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3539	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1016	65	0
RTOR Reduction (vph)	0	0	0	0	41	0
Lane Group Flow (vph)	0	0	0	1016	24	0
Turn Type				NA	Prot	
Protected Phases				6 16	8	
Permitted Phases						
Actuated Green, G (s)				63.0	40.5	
Effective Green, g (s)				63.0	40.5	
Actuated g/C Ratio				0.57	0.37	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				2026	1263	
v/s Ratio Prot				c0.29	c0.01	
v/s Ratio Perm						
v/c Ratio				0.50	0.02	
Uniform Delay, d1				14.1	22.1	
Progression Factor				0.00	1.00	
Incremental Delay, d2				0.7	0.0	
Delay (s)				0.7	22.1	
Level of Service				A	C	
Approach Delay (s)	0.0			0.7	22.1	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	2.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑	
Traffic Volume (vph)	0	535	0	0	0	0	0	0	0	0	935	0
Future Volume (vph)	0	535	0	0	0	0	0	0	0	0	935	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5									4.5	
Lane Util. Factor		0.95									0.95	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3539									3539	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3539									3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	582	0	0	0	0	0	0	0	0	1016	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	582	0	0	0	0	0	0	0	0	1016	0
Turn Type		NA									NA	
Protected Phases		4									6	
Permitted Phases												
Actuated Green, G (s)		34.5									54.5	
Effective Green, g (s)		34.5									54.5	
Actuated g/C Ratio		0.31									0.50	
Clearance Time (s)		4.5									4.5	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		1109									1753	
v/s Ratio Prot		c0.16									c0.29	
v/s Ratio Perm												
v/c Ratio		0.52									0.58	
Uniform Delay, d1		31.0									19.6	
Progression Factor		0.77									0.93	
Incremental Delay, d2		1.7									1.2	
Delay (s)		25.6									19.5	
Level of Service		C									B	
Approach Delay (s)		25.6			0.0			0.0			19.5	
Approach LOS		C			A			A			B	

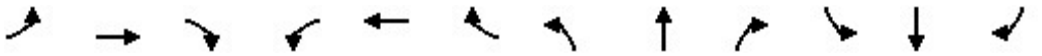
Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	535	0	0	0	0	695
Future Volume (vph)	535	0	0	0	0	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5					4.5
Lane Util. Factor	0.95					0.88
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	3539					2787
Flt Permitted	1.00					1.00
Satd. Flow (perm)	3539					2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	582	0	0	0	0	755
RTOR Reduction (vph)	0	0	0	0	0	108
Lane Group Flow (vph)	582	0	0	0	0	647
Turn Type	NA					Prot
Protected Phases	4 10					2
Permitted Phases						
Actuated Green, G (s)	43.0					60.5
Effective Green, g (s)	43.0					60.5
Actuated g/C Ratio	0.39					0.55
Clearance Time (s)						4.5
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)	1383					1532
v/s Ratio Prot	c0.16					c0.23
v/s Ratio Perm						
v/c Ratio	0.42					0.42
Uniform Delay, d1	24.4					14.5
Progression Factor	0.00					1.00
Incremental Delay, d2	0.8					0.2
Delay (s)	0.8					14.7
Level of Service	A					B
Approach Delay (s)	0.8			0.0	14.7	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	460	180	265	785	245	120	810	455	100	205	125
Future Volume (vph)	155	460	180	265	785	245	120	810	455	100	205	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.59	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	1118	3592	1607	174	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	500	196	288	853	266	130	880	495	109	223	136
RTOR Reduction (vph)	0	0	113	0	0	49	0	0	258	0	0	0
Lane Group Flow (vph)	168	500	83	288	853	217	130	880	237	109	223	136
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	18.5	54.2	63.7	17.5	53.7	64.2	51.3	41.8	71.7	53.8	43.3	150.0
Effective Green, g (s)	18.5	54.2	63.7	17.5	53.7	64.2	51.3	41.8	71.7	53.8	43.3	150.0
Actuated g/C Ratio	0.12	0.36	0.42	0.12	0.36	0.43	0.34	0.28	0.48	0.36	0.29	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	213	1253	659	408	1292	691	425	1000	843	175	1031	1599
v/s Ratio Prot	c0.10	0.14	0.01	0.08	c0.24	0.02	0.02	c0.24	c0.03	c0.04	0.06	
v/s Ratio Perm			0.05			0.11	0.09		0.11	0.18		c0.09
v/c Ratio	0.79	0.40	0.13	0.71	0.66	0.31	0.31	0.88	0.28	0.62	0.22	0.09
Uniform Delay, d1	63.9	35.7	26.2	63.8	40.5	28.3	35.0	51.7	23.6	37.4	40.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.4	1.0	0.1	5.5	2.7	0.3	0.4	9.1	0.2	6.7	0.1	0.1
Delay (s)	81.2	36.7	26.3	69.3	43.1	28.6	35.4	60.8	23.8	44.1	40.6	0.1
Level of Service	F	D	C	E	D	C	D	E	C	D	D	A
Approach Delay (s)		43.0			45.7			46.4			29.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

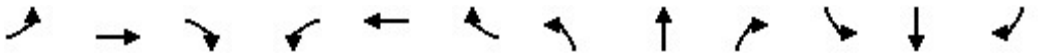
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	10	330	850	50	5	735	20	45	5	5	10	10
Future Volume (vph)	10	330	850	50	5	735	20	45	5	5	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	1.00		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	1.00		1.00	0.93			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.98
Satd. Flow (prot)		1770	1847		1805	3595		1736	1691			1757
Flt Permitted		0.26	1.00		0.31	1.00		0.74	1.00			0.84
Satd. Flow (perm)		480	1847		584	3595		1358	1691			1507
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	359	924	54	5	799	22	49	5	5	11	11
RTOR Reduction (vph)	0	0	1	0	0	1	0	0	5	0	0	0
Lane Group Flow (vph)	0	370	977	0	5	820	0	49	5	0	0	22
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		98.9	98.9		64.7	64.7		8.6	8.6			8.6
Effective Green, g (s)		98.9	98.9		64.7	64.7		8.6	8.6			8.6
Actuated g/C Ratio		0.82	0.82		0.54	0.54		0.07	0.07			0.07
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		698	1522		314	1938		97	121			108
v/s Ratio Prot		0.12	c0.53			0.23			0.00			
v/s Ratio Perm		0.31			0.01			0.04				0.01
v/c Ratio		0.53	0.64		0.02	0.42		0.51	0.04			0.20
Uniform Delay, d1		5.4	3.9		12.9	16.5		53.7	51.9			52.5
Progression Factor		0.73	0.65		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		0.7	1.9		0.1	0.7		4.1	0.2			0.9
Delay (s)		4.6	4.5		12.9	17.2		57.7	52.0			53.4
Level of Service		A	A		B	B		E	D			D
Approach Delay (s)			4.5			17.2			56.8			48.6
Approach LOS			A			B			E			D

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	385
Future Volume (vph)	385
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	418
RTOR Reduction (vph)	38
Lane Group Flow (vph)	380
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	36.8
Effective Green, g (s)	36.8
Actuated g/C Ratio	0.31
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	469
v/s Ratio Prot	c0.19
v/s Ratio Perm	0.06
v/c Ratio	0.81
Uniform Delay, d1	38.4
Progression Factor	1.00
Incremental Delay, d2	10.0
Delay (s)	48.3
Level of Service	D
Approach Delay (s)	
Approach LOS	

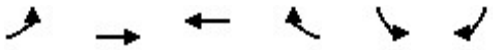
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	610	0	0	905	0	0	0	0
Future Volume (vph)	0	0	0	0	610	0	0	905	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5			4.5				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3539			3539				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3539			3539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	663	0	0	984	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	663	0	0	984	0	0	0	0
Turn Type					NA			NA				
Protected Phases					8			2				
Permitted Phases												
Actuated Green, G (s)					43.5			61.5				
Effective Green, g (s)					43.5			61.5				
Actuated g/C Ratio					0.36			0.51				
Clearance Time (s)					4.5			4.5				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)					1282			1813				
v/s Ratio Prot					c0.19			c0.28				
v/s Ratio Perm												
v/c Ratio					0.52			0.54				
Uniform Delay, d1					30.0			19.8				
Progression Factor					0.67			1.00				
Incremental Delay, d2					1.4			1.2				
Delay (s)					21.6			20.9				
Level of Service					C			C				
Approach Delay (s)		0.0			21.6			20.9			0.0	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	905	0	0	305	0
Future Volume (vph)	0	905	0	0	305	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	
Lane Util. Factor		0.95			0.97	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		3539			3433	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		3539			3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	984	0	0	332	0
RTOR Reduction (vph)	0	0	0	0	133	0
Lane Group Flow (vph)	0	984	0	0	199	0
Turn Type		NA			Prot	
Protected Phases		2 12			4	
Permitted Phases						
Actuated Green, G (s)		70.0			43.5	
Effective Green, g (s)		70.0			43.5	
Actuated g/C Ratio		0.58			0.36	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)		2064			1244	
v/s Ratio Prot		c0.28			c0.06	
v/s Ratio Perm						
v/c Ratio		0.48			0.16	
Uniform Delay, d1		14.4			25.9	
Progression Factor		0.02			1.00	
Incremental Delay, d2		0.7			0.1	
Delay (s)		1.0			25.9	
Level of Service		A			C	
Approach Delay (s)		1.0	0.0		25.9	
Approach LOS		A	A		C	

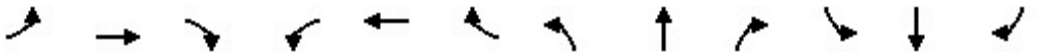
Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	860	270	0
Future Volume (vph)	0	0	0	860	270	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3539	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3539	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	935	293	0
RTOR Reduction (vph)	0	0	0	0	93	0
Lane Group Flow (vph)	0	0	0	935	200	0
Turn Type				NA	Prot	
Protected Phases				6 16	8	
Permitted Phases						
Actuated Green, G (s)				61.0	52.5	
Effective Green, g (s)				61.0	52.5	
Actuated g/C Ratio				0.51	0.44	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				1798	1501	
v/s Ratio Prot				c0.26	c0.06	
v/s Ratio Perm						
v/c Ratio				0.52	0.13	
Uniform Delay, d1				19.7	20.2	
Progression Factor				0.00	1.00	
Incremental Delay, d2				0.9	0.0	
Delay (s)				0.9	20.2	
Level of Service				A	C	
Approach Delay (s)	0.0			0.9	20.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑	
Traffic Volume (vph)	0	730	0	0	0	0	0	0	0	0	860	0
Future Volume (vph)	0	730	0	0	0	0	0	0	0	0	860	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5									4.5	
Lane Util. Factor		0.95									0.95	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3539									3539	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3539									3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	793	0	0	0	0	0	0	0	0	935	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	793	0	0	0	0	0	0	0	0	935	0
Turn Type		NA									NA	
Protected Phases		4									6	
Permitted Phases												
Actuated Green, G (s)		46.5									52.5	
Effective Green, g (s)		46.5									52.5	
Actuated g/C Ratio		0.39									0.44	
Clearance Time (s)		4.5									4.5	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		1371									1548	
v/s Ratio Prot		c0.22									c0.26	
v/s Ratio Perm												
v/c Ratio		0.58									0.60	
Uniform Delay, d1		29.0									25.8	
Progression Factor		0.76									0.89	
Incremental Delay, d2		1.7									1.6	
Delay (s)		23.8									24.6	
Level of Service		C									C	
Approach Delay (s)		23.8			0.0			0.0			24.6	
Approach LOS		C			A			A			C	

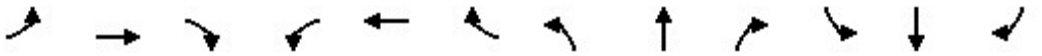
Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	0	0	0	0	510
Future Volume (vph)	730	0	0	0	0	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5					4.5
Lane Util. Factor	0.95					0.88
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	3539					2787
Flt Permitted	1.00					1.00
Satd. Flow (perm)	3539					2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	793	0	0	0	0	554
RTOR Reduction (vph)	0	0	0	0	0	89
Lane Group Flow (vph)	793	0	0	0	0	465
Turn Type	NA					Prot
Protected Phases	4 10					2
Permitted Phases						
Actuated Green, G (s)	55.0					58.5
Effective Green, g (s)	55.0					58.5
Actuated g/C Ratio	0.46					0.49
Clearance Time (s)						4.5
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)	1622					1358
v/s Ratio Prot	c0.22					c0.17
v/s Ratio Perm						
v/c Ratio	0.49					0.34
Uniform Delay, d1	22.7					18.9
Progression Factor	0.00					1.00
Incremental Delay, d2	0.9					0.2
Delay (s)	0.9					19.1
Level of Service	A					B
Approach Delay (s)	0.9			0.0	19.1	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

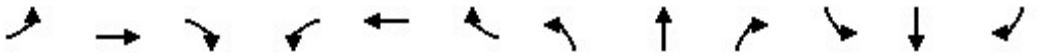
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	540	655	605	255	40	170	10	250	10	25	10
Future Volume (vph)	15	540	655	605	255	40	170	10	250	10	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3468		1681	1694	1583		1836	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3468		1681	1694	1583		1836	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	587	712	658	277	43	185	11	272	11	27	11
RTOR Reduction (vph)	0	0	402	0	9	0	0	0	0	0	0	10
Lane Group Flow (vph)	16	587	310	658	311	0	98	98	272	0	38	1
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Free	Split	NA	Perm
Protected Phases	1	6	3	5	2		3	3		4	4	
Permitted Phases			6						Free			4
Actuated Green, G (s)	1.6	21.4	36.7	23.9	45.2		15.3	15.3	90.0		4.4	4.4
Effective Green, g (s)	1.6	21.4	36.7	23.9	45.2		15.3	15.3	90.0		4.4	4.4
Actuated g/C Ratio	0.02	0.24	0.41	0.27	0.50		0.17	0.17	1.00		0.05	0.05
Clearance Time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	31	841	645	911	1741		285	287	1583		89	77
v/s Ratio Prot	0.01	c0.17	c0.08	c0.19	0.09		0.06	0.06			0.02	
v/s Ratio Perm			0.11						c0.17			0.00
v/c Ratio	0.52	0.70	0.48	0.72	0.18		0.34	0.34	0.17		0.43	0.01
Uniform Delay, d1	43.8	31.3	19.6	30.0	12.2		32.9	32.9	0.0		41.6	40.7
Progression Factor	1.00	1.00	1.00	0.78	0.46		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	13.7	4.8	0.8	2.2	0.2		1.0	1.0	0.2		1.2	0.0
Delay (s)	57.6	36.1	20.4	25.6	5.8		33.9	33.9	0.2		42.8	40.7
Level of Service	E	D	C	C	A		C	C	A		D	D
Approach Delay (s)		27.9			19.1			14.3			42.3	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	775	230	565	840	25	170	20	365	10	20	25
Future Volume (veh/h)	25	775	230	565	840	25	170	20	365	10	20	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	842	0	614	913	27	185	22	0	11	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	1284		653	1839	820	352	544		196	236	
Arrive On Green	0.05	0.72	0.00	0.19	0.52	0.52	0.11	0.15	0.00	0.01	0.07	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	27	842	0	614	913	27	185	22	0	11	22	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.3	11.2	0.0	15.8	15.0	0.8	8.4	0.5	0.0	0.5	0.5	0.0
Cycle Q Clear(g_c), s	1.3	11.2	0.0	15.8	15.0	0.8	8.4	0.5	0.0	0.5	0.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1284		653	1839	820	352	544		196	236	
V/C Ratio(X)	0.56	0.66		0.94	0.50	0.03	0.53	0.04		0.06	0.09	
Avail Cap(c_a), veh/h	99	1284		653	1839	820	352	592		350	592	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.0	9.5	0.0	36.0	14.1	10.7	32.6	32.5	0.0	38.3	39.5	0.0
Incr Delay (d2), s/veh	3.7	2.6	0.0	21.8	1.0	0.1	0.7	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.0	0.0	8.3	5.6	0.3	3.6	0.2	0.0	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	12.2	0.0	57.8	15.1	10.7	33.4	32.5	0.0	38.4	39.6	0.0
LnGrp LOS	D	B		E	B	B	C	C		D	D	
Approach Vol, veh/h		869	A		1554			207	A		33	A
Approach Delay, s/veh		13.2			31.9			33.3			39.2	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	53.1	7.2	19.8	24.0	39.0	15.0	12.0
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	5.0	* 36	9.0	15.0	17.0	23.5	9.5	15.0
Max Q Clear Time (g_c+I1), s	3.3	17.0	2.5	2.5	17.8	13.2	10.4	2.5
Green Ext Time (p_c), s	0.0	6.0	0.0	0.0	0.0	3.9	0.0	0.0

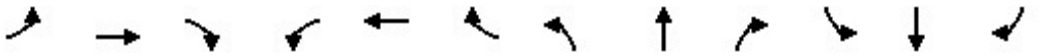
Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

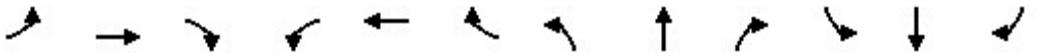
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	480	85	300	640	95	55	0	405	145	0	205
Future Volume (vph)	235	480	85	300	640	95	55	0	405	145	0	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	0.98		1.00	0.98		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3460		3433	3471		1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3460		3433	3471		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	522	92	326	696	103	60	0	440	158	0	223
RTOR Reduction (vph)	0	12	0	0	10	0	0	0	176	0	0	179
Lane Group Flow (vph)	255	602	0	326	789	0	60	0	264	158	0	44
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2		1	6		4		1	8		5
Permitted Phases												
Actuated Green, G (s)	17.8	42.9		20.4	45.5		13.2		20.4	13.2		17.8
Effective Green, g (s)	17.8	42.9		20.4	45.5		13.2		20.4	13.2		17.8
Actuated g/C Ratio	0.20	0.48		0.23	0.51		0.15		0.23	0.15		0.20
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	350	1649		778	1754		259		358	259		313
v/s Ratio Prot	0.14	0.17		0.09	c0.23		0.03		c0.17	c0.09		0.03
v/s Ratio Perm												
v/c Ratio	0.73	0.37		0.42	0.45		0.23		0.74	0.61		0.14
Uniform Delay, d1	33.8	14.9		29.7	14.2		33.9		32.3	36.0		29.8
Progression Factor	0.57	1.16		1.27	0.69		1.00		1.00	1.00		1.00
Incremental Delay, d2	6.7	0.6		0.3	0.8		0.5		7.8	4.2		0.2
Delay (s)	26.0	17.8		38.0	10.6		34.4		40.1	40.2		30.0
Level of Service	C	B		D	B		C		D	D		C
Approach Delay (s)		20.2			18.5			39.4			34.2	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	375	250	310	410	5	880	10	455	10	10	5
Future Volume (vph)	5	375	250	310	410	5	880	10	455	10	10	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3533		1681	1687	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3533		1681	1687	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	408	272	337	446	5	957	11	495	11	11	5
RTOR Reduction (vph)	0	0	135	0	1	0	0	0	0	0	0	5
Lane Group Flow (vph)	5	408	137	337	450	0	488	480	495	0	22	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Free	Split	NA	Perm
Protected Phases	1	6	3	5	2		3	3		4	4	
Permitted Phases			6						Free			4
Actuated Green, G (s)	1.3	17.7	45.2	17.1	35.0		27.5	27.5	90.0		2.7	2.7
Effective Green, g (s)	1.3	17.7	45.2	17.1	35.0		27.5	27.5	90.0		2.7	2.7
Actuated g/C Ratio	0.01	0.20	0.50	0.19	0.39		0.31	0.31	1.00		0.03	0.03
Clearance Time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	25	696	795	652	1373		513	515	1583		54	47
v/s Ratio Prot	0.00	c0.12	0.05	c0.10	0.13		c0.29	0.28			0.01	
v/s Ratio Perm			0.03						c0.31			0.00
v/c Ratio	0.20	0.59	0.17	0.52	0.33		0.95	0.93	0.31		0.41	0.00
Uniform Delay, d1	43.8	32.8	12.2	32.7	19.3		30.6	30.3	0.0		42.9	42.3
Progression Factor	1.00	1.00	1.00	1.11	1.08		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	3.6	0.1	0.3	0.6		28.0	24.2	0.5		1.8	0.0
Delay (s)	47.8	36.4	12.3	36.5	21.3		58.6	54.5	0.5		44.7	42.4
Level of Service	D	D	B	D	C		E	D	A		D	D
Approach Delay (s)		26.9			27.8			37.6			44.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1000	155	270	1005	20	185	10	795	50	25	35
Future Volume (veh/h)	30	1000	155	270	1005	20	185	10	795	50	25	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1087	0	293	1092	22	201	11	0	54	27	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	1631		307	1816	810	349	454		266	284	
Arrive On Green	0.03	0.46	0.00	0.09	0.51	0.51	0.09	0.13	0.00	0.04	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	33	1087	0	293	1092	22	201	11	0	54	27	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.6	21.5	0.0	7.6	19.5	0.6	8.5	0.2	0.0	2.5	0.6	0.0
Cycle Q Clear(g_c), s	1.6	21.5	0.0	7.6	19.5	0.6	8.5	0.2	0.0	2.5	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	1631		307	1816	810	349	454		266	284	
V/C Ratio(X)	0.59	0.67		0.95	0.60	0.03	0.58	0.02		0.20	0.09	
Avail Cap(c_a), veh/h	99	1631		307	1816	810	349	1027		351	1027	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.0	19.0	0.0	40.8	15.5	10.9	34.0	34.3	0.0	35.8	38.4	0.0
Incr Delay (d2), s/veh	3.7	2.2	0.0	39.0	1.5	0.1	1.5	0.0	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.5	0.0	4.8	7.4	0.2	4.1	0.1	0.0	1.1	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	21.2	0.0	79.8	17.0	11.0	35.5	34.4	0.0	36.0	38.5	0.0
LnGrp LOS	D	C		E	B	B	D	C		D	D	
Approach Vol, veh/h		1120	A		1407			212	A		81	A
Approach Delay, s/veh		21.9			30.0			35.4			36.8	
Approach LOS		C			C			D			D	

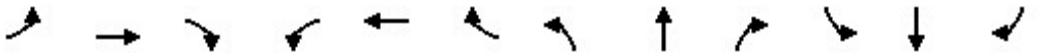
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	52.5	9.7	17.5	15.0	47.8	14.0	13.2
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	5.0	* 26	8.0	26.0	8.0	22.5	8.5	26.0
Max Q Clear Time (g_c+I1), s	3.6	21.5	4.5	2.2	9.6	23.5	10.5	2.6
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	645	45	600	455	170	125	0	340	200	0	145
Future Volume (vph)	150	645	45	600	455	170	125	0	340	200	0	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	0.96		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3505		3433	3395		1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3505		3433	3395		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	701	49	652	495	185	136	0	370	217	0	158
RTOR Reduction (vph)	0	5	0	0	37	0	0	0	114	0	0	135
Lane Group Flow (vph)	163	745	0	652	643	0	136	0	256	217	0	23
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2		1	6		4		1	8		5
Permitted Phases												
Actuated Green, G (s)	13.0	37.5		23.3	47.8		15.7		23.3	15.7		13.0
Effective Green, g (s)	13.0	37.5		23.3	47.8		15.7		23.3	15.7		13.0
Actuated g/C Ratio	0.14	0.42		0.26	0.53		0.17		0.26	0.17		0.14
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	255	1460		888	1803		308		409	308		228
v/s Ratio Prot	0.09	c0.21		c0.19	0.19		0.08		0.16	c0.12		0.01
v/s Ratio Perm												
v/c Ratio	0.64	0.51		0.73	0.36		0.44		0.63	0.70		0.10
Uniform Delay, d1	36.3	19.4		30.5	12.2		33.2		29.5	35.0		33.4
Progression Factor	1.08	0.55		0.88	0.68		1.00		1.00	1.00		1.00
Incremental Delay, d2	4.9	1.2		2.7	0.5		1.0		3.0	7.1		0.2
Delay (s)	44.0	11.9		29.5	8.7		34.2		32.5	42.1		33.6
Level of Service	D	B		C	A		C		C	D		C
Approach Delay (s)		17.6			18.9			32.9			38.5	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	230	55	395	200	115	15	200	600	435	640	65
Future Volume (vph)	65	230	55	395	200	115	15	200	600	435	640	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3388		1541	3275	1567	1601	3438	1644	3539	3407	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.36	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3388		1541	3275	1567	608	3438	1644	3539	3407	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	250	60	429	217	125	16	217	652	473	696	71
RTOR Reduction (vph)	0	17	0	0	0	71	0	0	0	0	7	0
Lane Group Flow (vph)	71	293	0	214	432	54	16	217	652	473	760	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	17.5	17.5		31.0	31.0	57.6	28.4	28.4	120.0	20.6	54.5	
Effective Green, g (s)	17.5	17.5		31.0	31.0	51.6	28.4	28.4	120.0	20.6	54.5	
Actuated g/C Ratio	0.15	0.15		0.26	0.26	0.43	0.24	0.24	1.00	0.17	0.45	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	263	494		398	846	673	143	813	1644	607	1547	
v/s Ratio Prot	0.04	c0.09		c0.14	0.13	0.03		0.06		c0.13	c0.22	
v/s Ratio Perm							0.03		0.40			
v/c Ratio	0.27	0.59		0.54	0.51	0.08	0.11	0.27	0.40	0.78	0.49	
Uniform Delay, d1	45.6	47.9		38.3	38.0	20.2	35.9	37.3	0.0	47.5	23.0	
Progression Factor	1.00	1.00		0.85	0.85	0.70	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	5.2		4.8	2.1	0.0	1.6	0.8	0.7	6.3	1.1	
Delay (s)	48.1	53.1		37.6	34.4	14.2	37.5	38.1	0.7	53.8	24.1	
Level of Service	D	D		D	C	B	D	D	A	D	C	
Approach Delay (s)		52.2			32.0			10.6			35.5	
Approach LOS		D			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1245	20	0	605	225	0	0	215	0	0	105
Future Vol, veh/h	0	1245	20	0	605	225	0	0	215	0	0	105
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1353	22	0	658	245	0	0	234	0	0	114

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	688	-	-	452
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	333	0	0	474
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	333	-	-	474
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

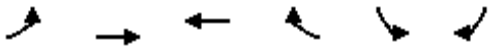
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	37.7	15
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	333	-	-	-	-	474
HCM Lane V/C Ratio	0.702	-	-	-	-	0.241
HCM Control Delay (s)	37.7	-	-	-	-	15
HCM Lane LOS	E	-	-	-	-	C
HCM 95th %tile Q(veh)	5	-	-	-	-	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	80	1305	0	0	2075	125	210	0	485	0	615
Future Volume (vph)	80	1305	0	0	2075	125	210	0	485	0	615
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	91	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1418	0	0	2255	136	228	0	527	0	668
RTOR Reduction (vph)	0	0	0	0	0	51	0	0	304	0	0
Lane Group Flow (vph)	87	1418	0	0	2255	85	228	0	223	0	668
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	92.5	92.5			74.6	74.6	15.0		15.0		120.0
Effective Green, g (s)	92.5	92.5			74.6	74.6	15.0		15.0		107.5
Actuated g/C Ratio	0.77	0.77			0.62	0.62	0.12		0.12		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	251	2637			3102	999	437		355		1443
v/s Ratio Prot	0.04	c0.41			c0.45		0.07				
v/s Ratio Perm	0.23					0.05			c0.08		0.41
v/c Ratio	0.35	0.54			0.73	0.08	0.52		0.63		0.46
Uniform Delay, d1	14.8	5.4			15.7	9.1	49.1		49.9		1.1
Progression Factor	1.01	0.83			1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	2.3	0.8			1.5	0.2	4.4		8.2		0.7
Delay (s)	17.3	5.3			17.2	9.2	53.5		58.1		1.8
Level of Service	B	A			B	A	D		E		A
Approach Delay (s)		6.0			16.7		56.7			1.8	
Approach LOS		A			B		E			A	

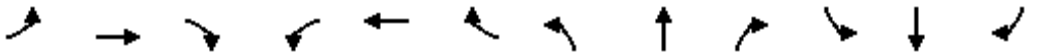
Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↱			↱
Traffic Volume (vph)	0	2130	2195	5	0	5
Future Volume (vph)	0	2130	2195	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2315	2386	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2315	2391	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		95.7	95.7			109.7
Effective Green, g (s)		95.7	95.7			109.7
Actuated g/C Ratio		0.87	0.87			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4414	4501			1611
v/s Ratio Prot		0.46	c0.46			
v/s Ratio Perm						c0.00
v/c Ratio		0.52	0.53			0.00
Uniform Delay, d1		1.6	1.7			0.0
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.2	0.2			0.0
Delay (s)		1.9	1.9			0.0
Level of Service		A	A			A
Approach Delay (s)		1.9	1.9		0.0	
Approach LOS		A	A		A	

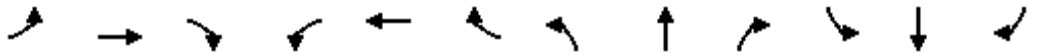
Intersection Summary			
HCM 2000 Control Delay	1.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2045	80	10	2020	10	120	5	25	30	5	60
Future Volume (veh/h)	5	2045	80	10	2020	10	120	5	25	30	5	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	5	2223	87	11	2196	11	130	5	27	33	5	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	3235	126	157	3617	18	237	41	224	273	18	233
Arrive On Green	0.01	0.64	0.64	0.01	0.65	0.65	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1776	5027	196	1818	5573	28	1331	264	1425	1373	114	1483
Grp Volume(v), veh/h	5	1498	812	11	1425	782	130	0	32	33	0	70
Grp Sat Flow(s),veh/h/ln	1776	1697	1829	1818	1809	1983	1331	0	1689	1373	0	1597
Q Serve(g_s), s	0.1	25.3	25.6	0.2	20.5	20.6	8.6	0.0	1.5	1.9	0.0	3.5
Cycle Q Clear(g_c), s	0.1	25.3	25.6	0.2	20.5	20.6	12.1	0.0	1.5	3.4	0.0	3.5
Prop In Lane	1.00		0.11	1.00		0.01	1.00		0.84	1.00		0.93
Lane Grp Cap(c), veh/h	163	2184	1177	157	2348	1287	237	0	265	273	0	251
V/C Ratio(X)	0.03	0.69	0.69	0.07	0.61	0.61	0.55	0.00	0.12	0.12	0.00	0.28
Avail Cap(c_a), veh/h	235	2184	1177	221	2348	1287	258	0	291	294	0	275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.9	10.2	10.3	9.3	9.1	9.2	38.8	0.0	32.6	34.1	0.0	33.5
Incr Delay (d2), s/veh	0.1	1.5	2.9	0.2	1.2	2.1	2.0	0.0	0.2	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.9	9.1	0.1	6.8	7.8	2.9	0.0	0.6	0.7	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	11.8	13.2	9.5	10.3	11.3	40.8	0.0	32.8	34.2	0.0	34.1
LnGrp LOS	A	B	B	A	B	B	D	A	C	C	A	C
Approach Vol, veh/h		2315			2218			162			103	
Approach Delay, s/veh		12.3			10.7			39.2			34.1	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	63.4		20.6	6.5	62.9		20.6				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	53.4		15.5	4.1	53.4		15.5				
Max Q Clear Time (g_c+I1), s	2.1	22.6		5.5	2.2	27.6		14.1				
Green Ext Time (p_c), s	0.0	20.4		0.3	0.0	18.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		12.9	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	630	25	20	170	15	610	10	60	5	5	5
Future Volume (vph)	15	630	25	20	170	15	610	10	60	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.99			0.99		1.00	1.00	0.85		0.95	
Flt Protected		1.00			1.00		0.95	0.95	1.00		0.98	
Satd. Flow (prot)		3516			3484		1681	1688	1583		1750	
Flt Permitted		0.95			0.86		0.95	0.95	1.00		0.98	
Satd. Flow (perm)		3327			3014		1681	1688	1583		1750	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	685	27	22	185	16	663	11	65	5	5	5
RTOR Reduction (vph)	0	3	0	0	7	0	0	0	43	0	5	0
Lane Group Flow (vph)	0	725	0	0	216	0	338	336	22	0	10	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		19.6			20.1		19.4	19.4	19.4		0.9	
Effective Green, g (s)		19.6			20.1		19.4	19.4	19.4		0.9	
Actuated g/C Ratio		0.34			0.35		0.34	0.34	0.34		0.02	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1126			1046		563	565	530		27	
v/s Ratio Prot							c0.20	0.20			c0.01	
v/s Ratio Perm		c0.22			0.07				0.01			
v/c Ratio		0.64			0.21		0.60	0.59	0.04		0.37	
Uniform Delay, d1		16.2			13.3		16.0	16.0	13.0		28.2	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1.4			0.1		4.7	4.6	0.1		3.1	
Delay (s)		17.6			13.4		20.7	20.5	13.1		31.4	
Level of Service		B			B		C	C	B		C	
Approach Delay (s)		17.6			13.4			20.0			31.4	
Approach LOS		B			B			B			C	

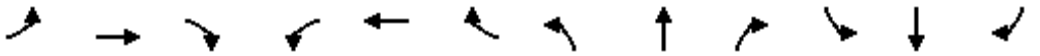
Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	5	735	50	40	665
Future Volume (vph)	5	5	735	50	40	665
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3261		3539	1583	1770	5085
Flt Permitted	0.98		1.00	1.00	0.35	1.00
Satd. Flow (perm)	3261		3539	1583	646	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	799	54	43	723
RTOR Reduction (vph)	5	0	0	17	0	0
Lane Group Flow (vph)	5	0	799	37	43	723
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	1.0		45.3	45.3	53.5	53.5
Effective Green, g (s)	1.0		45.3	45.3	53.5	53.5
Actuated g/C Ratio	0.02		0.68	0.68	0.80	0.80
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49		2410	1078	556	4090
v/s Ratio Prot	c0.00		c0.23		0.00	c0.14
v/s Ratio Perm				0.02	0.06	
v/c Ratio	0.10		0.33	0.03	0.08	0.18
Uniform Delay, d1	32.3		4.4	3.5	1.5	1.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.4	0.1	0.1	0.1
Delay (s)	33.2		4.7	3.5	1.5	1.6
Level of Service	C		A	A	A	A
Approach Delay (s)	33.2		4.7			1.6
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	315	35	715	610	520	70	590	490	160	385	85
Future Volume (vph)	65	315	35	715	610	520	70	590	490	160	385	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3437		1541	3304	1567	1601	3438	1644	3539	3362	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.46	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3437		1541	3304	1567	782	3438	1644	3539	3362	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	342	38	777	663	565	76	641	533	174	418	92
RTOR Reduction (vph)	0	7	0	0	0	105	0	0	0	0	16	0
Lane Group Flow (vph)	71	373	0	466	974	460	76	641	533	174	494	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	14.5	14.5		44.0	44.0	61.1	27.9	27.9	120.0	11.1	44.5	
Effective Green, g (s)	14.5	14.5		44.0	44.0	55.1	27.9	27.9	120.0	11.1	44.5	
Actuated g/C Ratio	0.12	0.12		0.37	0.37	0.46	0.23	0.23	1.00	0.09	0.37	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	218	415		565	1211	719	181	799	1644	327	1246	
v/s Ratio Prot	0.04	c0.11		c0.30	0.29	c0.29		c0.19		0.05	0.15	
v/s Ratio Perm							0.10		0.32			
v/c Ratio	0.33	0.90		0.82	0.80	0.64	0.42	0.80	0.32	0.53	0.40	
Uniform Delay, d1	48.3	52.0		34.5	34.1	24.8	39.2	43.4	0.0	52.0	27.8	
Progression Factor	1.00	1.00		0.81	0.81	0.57	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	24.9		11.8	5.2	1.7	0.6	5.5	0.5	1.7	0.9	
Delay (s)	52.2	76.9		39.7	32.8	15.9	39.7	49.0	0.5	53.6	28.8	
Level of Service	D	E		D	C	B	D	D	A	D	C	
Approach Delay (s)		73.0			29.7			27.7			35.1	
Approach LOS		E			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	945	20	0	1660	190	0	0	130	0	0	185
Future Vol, veh/h	0	945	20	0	1660	190	0	0	130	0	0	185
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1027	22	0	1804	207	0	0	141	0	0	201

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	525	-	-	1006
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	426	0	0	206
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	426	-	-	206
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

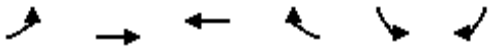
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	17.6	104.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	426	-	-	-	-	206
HCM Lane V/C Ratio	0.332	-	-	-	-	0.976
HCM Control Delay (s)	17.6	-	-	-	-	104.9
HCM Lane LOS	C	-	-	-	-	F
HCM 95th %tile Q(veh)	1.4	-	-	-	-	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	65	1475	0	0	2660	180	125	0	300	0	505
Future Volume (vph)	65	1475	0	0	2660	180	125	0	300	0	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	86	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	1603	0	0	2891	196	136	0	326	0	549
RTOR Reduction (vph)	0	0	0	0	0	66	0	0	146	0	0
Lane Group Flow (vph)	71	1603	0	0	2891	130	136	0	180	0	549
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	91.5	91.5			79.5	79.5	16.0		16.0		120.0
Effective Green, g (s)	91.5	91.5			79.5	79.5	16.0		16.0		107.5
Actuated g/C Ratio	0.76	0.76			0.66	0.66	0.13		0.13		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	167	2608			3305	1064	466		378		1443
v/s Ratio Prot	0.03	c0.47			c0.58		0.04				
v/s Ratio Perm	0.30					0.08			c0.06		0.34
v/c Ratio	0.43	0.61			0.87	0.12	0.29		0.47		0.38
Uniform Delay, d1	21.5	6.4			16.3	7.4	46.9		48.1		1.0
Progression Factor	0.85	1.07			0.57	0.02	1.00		1.00		1.00
Incremental Delay, d2	4.8	1.1			2.6	0.2	1.6		4.2		0.5
Delay (s)	23.2	7.9			11.9	0.3	48.5		52.3		1.5
Level of Service	C	A			B	A	D		D		A
Approach Delay (s)		8.5			11.2		51.2			1.5	
Approach LOS		A			B		D			A	

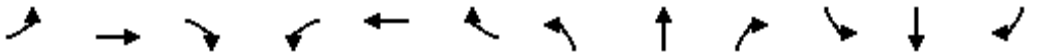
Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	2105	2835	5	0	5
Future Volume (vph)	0	2105	2835	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2288	3082	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2288	3087	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		99.8	99.8			120.0
Effective Green, g (s)		99.8	99.8			120.0
Actuated g/C Ratio		0.83	0.83			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4208	4291			1611
v/s Ratio Prot		0.45	c0.60			
v/s Ratio Perm						c0.00
v/c Ratio		0.54	0.72			0.00
Uniform Delay, d1		3.1	4.2			0.0
Progression Factor		0.62	1.00			1.00
Incremental Delay, d2		0.4	1.1			0.0
Delay (s)		2.4	5.3			0.0
Level of Service		A	A			A
Approach Delay (s)		2.4	5.3		0.0	
Approach LOS		A	A		A	

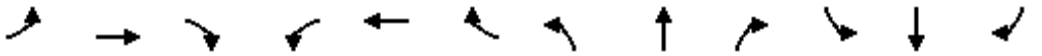
Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2010	85	15	2755	20	65	10	20	20	5	20
Future Volume (veh/h)	10	2010	85	15	2755	20	65	10	20	20	5	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	11	2185	92	16	2995	22	71	11	22	22	5	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	3558	149	188	3969	29	178	50	100	174	26	114
Arrive On Green	0.01	0.71	0.71	0.01	0.71	0.71	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1776	5010	210	1818	5558	41	1383	579	1158	1372	301	1325
Grp Volume(v), veh/h	11	1477	800	16	1947	1070	71	0	33	22	0	27
Grp Sat Flow(s),veh/h/ln	1776	1697	1827	1818	1809	1981	1383	0	1737	1372	0	1626
Q Serve(g_s), s	0.2	20.1	20.3	0.2	30.0	30.2	4.5	0.0	1.6	1.4	0.0	1.4
Cycle Q Clear(g_c), s	0.2	20.1	20.3	0.2	30.0	30.2	5.9	0.0	1.6	3.0	0.0	1.4
Prop In Lane	1.00		0.11	1.00		0.02	1.00		0.67	1.00		0.81
Lane Grp Cap(c), veh/h	128	2410	1297	188	2584	1414	178	0	150	174	0	140
V/C Ratio(X)	0.09	0.61	0.62	0.09	0.75	0.76	0.40	0.00	0.22	0.13	0.00	0.19
Avail Cap(c_a), veh/h	190	2410	1297	244	2584	1414	195	0	172	191	0	161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	6.7	6.7	6.0	8.0	8.0	41.0	0.0	38.3	39.7	0.0	38.2
Incr Delay (d2), s/veh	0.2	1.0	1.9	0.2	2.1	3.8	1.4	0.0	0.7	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.4	6.2	0.1	8.8	10.4	1.6	0.0	0.7	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	7.7	8.6	6.2	10.1	11.8	42.4	0.0	39.0	40.0	0.0	38.9
LnGrp LOS	A	A	A	A	B	B	D	A	D	D	A	D
Approach Vol, veh/h		2288			3033			104			49	
Approach Delay, s/veh		8.0			10.7			41.3			39.4	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	69.3		14.3	6.8	68.9		14.3				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	60.0		8.9	4.1	60.0		8.9				
Max Q Clear Time (g_c+I1), s	2.2	32.2		5.0	2.2	22.3		7.9				
Green Ext Time (p_c), s	0.0	24.8		0.0	0.0	24.2		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			10.4									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	395	190	85	155	5	475	5	20	10	15	10
Future Volume (vph)	5	395	190	85	155	5	475	5	20	10	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.95			1.00		1.00	1.00	0.85		0.96	
Flt Protected		1.00			0.98		0.95	0.95	1.00		0.99	
Satd. Flow (prot)		3366			3469		1681	1687	1583		1764	
Flt Permitted		0.95			0.62		0.95	0.95	1.00		0.99	
Satd. Flow (perm)		3206			2191		1681	1687	1583		1764	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	429	207	92	168	5	516	5	22	11	16	11
RTOR Reduction (vph)	0	73	0	0	2	0	0	0	15	0	11	0
Lane Group Flow (vph)	0	568	0	0	263	0	258	263	7	0	27	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		18.8			19.3		19.6	19.6	19.6		2.3	
Effective Green, g (s)		18.8			19.3		19.6	19.6	19.6		2.3	
Actuated g/C Ratio		0.32			0.33		0.33	0.33	0.33		0.04	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1026			720		561	563	528		69	
v/s Ratio Prot							0.15	c0.16			c0.02	
v/s Ratio Perm		c0.18			0.12				0.00			
v/c Ratio		0.55			0.37		0.46	0.47	0.01		0.40	
Uniform Delay, d1		16.5			15.0		15.4	15.4	13.1		27.5	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.8			0.4		2.7	2.8	0.0		1.4	
Delay (s)		17.3			15.5		18.1	18.2	13.1		28.9	
Level of Service		B			B		B	B	B		C	
Approach Delay (s)		17.3			15.5			17.9			28.9	
Approach LOS		B			B			B			C	

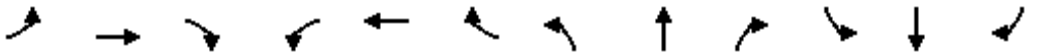
Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	25	625	15	25	555
Future Volume (vph)	35	25	625	15	25	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3292		3539	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.39	1.00
Satd. Flow (perm)	3292		3539	1583	733	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	27	679	16	27	603
RTOR Reduction (vph)	26	0	0	5	0	0
Lane Group Flow (vph)	39	0	679	11	27	603
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	3.0		43.3	43.3	50.5	50.5
Effective Green, g (s)	3.0		43.3	43.3	50.5	50.5
Actuated g/C Ratio	0.05		0.66	0.66	0.77	0.77
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150		2339	1046	584	3920
v/s Ratio Prot	c0.01		c0.19		0.00	c0.12
v/s Ratio Perm				0.01	0.03	
v/c Ratio	0.26		0.29	0.01	0.05	0.15
Uniform Delay, d1	30.2		4.7	3.8	1.8	1.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.3	0.0	0.0	0.1
Delay (s)	31.1		5.0	3.8	1.8	2.0
Level of Service	C		A	A	A	A
Approach Delay (s)	31.1		4.9			2.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

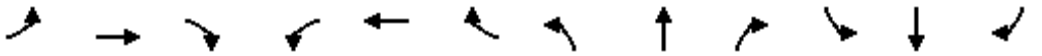
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	520	15	150	255	320	5	20	30	30	5	55
Future Volume (veh/h)	80	520	15	150	255	320	5	20	30	30	5	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	565	16	163	277	348	5	22	33	33	5	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	638	2551	72	693	1455	1298	111	52	78	122	10	114
Arrive On Green	0.72	0.72	0.72	0.04	0.82	0.82	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	800	3529	100	1781	1777	1585	1337	675	1013	1349	123	1480
Grp Volume(v), veh/h	87	284	297	163	277	348	5	0	55	33	0	65
Grp Sat Flow(s),veh/h/ln	800	1777	1852	1781	1777	1585	1337	0	1688	1349	0	1604
Q Serve(g_s), s	4.1	6.3	6.3	2.6	4.0	6.1	0.4	0.0	3.7	2.9	0.0	4.7
Cycle Q Clear(g_c), s	4.1	6.3	6.3	2.6	4.0	6.1	5.1	0.0	3.7	6.6	0.0	4.7
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.60	1.00		0.92
Lane Grp Cap(c), veh/h	638	1284	1339	693	1455	1298	111	0	130	122	0	124
V/C Ratio(X)	0.14	0.22	0.22	0.24	0.19	0.27	0.05	0.00	0.42	0.27	0.00	0.53
Avail Cap(c_a), veh/h	638	1284	1339	967	1455	1298	320	0	394	333	0	374
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.2	5.5	5.5	3.5	2.3	2.5	55.7	0.0	52.8	56.0	0.0	53.3
Incr Delay (d2), s/veh	0.4	0.4	0.4	0.1	0.2	0.4	0.4	0.0	4.6	2.5	0.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.3	2.4	0.8	1.1	1.6	0.2	0.0	1.8	1.1	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.6	5.9	5.9	3.7	2.6	2.9	56.1	0.0	57.4	58.5	0.0	60.5
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		668			788			60			98	
Approach Delay, s/veh		5.8			3.0			57.3			59.8	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		104.7		15.3	11.5	93.2		15.3				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		79.5		28.0	23.5	49.5		28.0				
Max Q Clear Time (g_c+I1), s		8.1		8.6	4.6	8.3		7.1				
Green Ext Time (p_c), s		0.8		0.7	0.4	0.7		0.4				

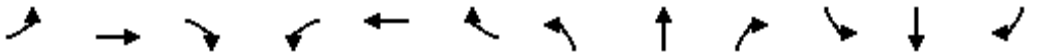
Intersection Summary												
HCM 6th Ctrl Delay			9.6									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	400	30	115	490	110	80	0	180	315	0	155
Future Volume (vph)	150	400	30	115	490	110	80	0	180	315	0	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0		4.5	6.0	6.0		5.5			5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	
Frt	1.00	0.99		1.00	1.00	0.85		0.91			0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.97	
Satd. Flow (prot)	1770	3502		1770	3539	1583		1663			1722	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.78			0.61	
Satd. Flow (perm)	1770	3502		1770	3539	1583		1319			1089	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	435	33	125	533	120	87	0	196	342	0	168
RTOR Reduction (vph)	0	5	0	0	0	86	0	88	0	0	85	0
Lane Group Flow (vph)	163	463	0	125	533	34	0	195	0	0	425	0
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases						2	8			4		
Actuated Green, G (s)	13.5	31.4		10.5	28.4	28.4		42.1			42.1	
Effective Green, g (s)	13.5	31.4		10.5	28.4	28.4		42.1			42.1	
Actuated g/C Ratio	0.14	0.31		0.10	0.28	0.28		0.42			0.42	
Clearance Time (s)	4.5	6.0		4.5	6.0	6.0		5.5			5.5	
Vehicle Extension (s)	3.0	0.2		3.0	0.2	0.2		0.2			5.0	
Lane Grp Cap (vph)	238	1099		185	1005	449		555			458	
v/s Ratio Prot	c0.09	0.13		c0.07	c0.15							
v/s Ratio Perm						0.02		0.15			c0.39	
v/c Ratio	0.68	0.42		0.68	0.53	0.08		0.35			0.93	
Uniform Delay, d1	41.2	27.1		43.1	30.2	26.2		19.7			27.5	
Progression Factor	1.00	1.00		0.79	0.74	0.39		1.00			1.00	
Incremental Delay, d2	7.9	1.2		7.8	1.7	0.3		0.1			25.9	
Delay (s)	49.1	28.3		42.0	23.9	10.6		19.8			53.4	
Level of Service	D	C		D	C	B		B			D	
Approach Delay (s)		33.7			24.8			19.8			53.4	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

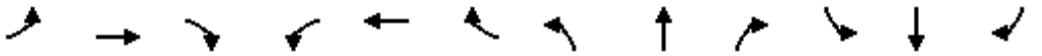
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	350	200	135	315	195	10	5	5	110	325	390
Future Volume (vph)	345	350	200	135	315	195	10	5	5	110	325	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.95		1.00	0.94			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3346		1770	3336			1801	1583	1681	1767	1583
Flt Permitted	0.17	1.00		0.43	1.00			0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	311	3346		794	3336			1801	1583	1681	1767	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	375	380	217	147	342	212	11	5	5	120	353	424
RTOR Reduction (vph)	0	69	0	0	99	0	0	0	5	0	0	287
Lane Group Flow (vph)	375	528	0	147	455	0	0	16	0	108	365	137
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	47.3	34.1		27.4	19.2			3.8	3.8	32.4	32.4	32.4
Effective Green, g (s)	47.3	34.1		27.4	19.2			3.8	3.8	32.4	32.4	32.4
Actuated g/C Ratio	0.47	0.34		0.27	0.19			0.04	0.04	0.32	0.32	0.32
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	484	1140		297	640			68	60	544	572	512
v/s Ratio Prot	c0.18	0.16		0.04	0.14			c0.01		0.06	c0.21	
v/s Ratio Perm	c0.19			0.09					0.00			0.09
v/c Ratio	0.77	0.46		0.49	0.71			0.24	0.00	0.20	0.64	0.27
Uniform Delay, d1	22.4	25.8		28.7	37.8			46.7	46.3	24.4	28.8	25.0
Progression Factor	0.87	0.93		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	1.1		1.3	6.6			3.7	0.0	0.4	3.2	0.6
Delay (s)	25.9	25.0		30.0	44.4			50.4	46.3	24.8	32.0	25.6
Level of Service	C	C		C	D			D	D	C	C	C
Approach Delay (s)		25.3			41.4			49.4			28.1	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

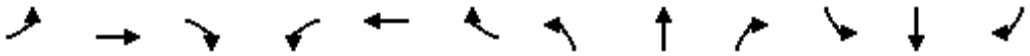
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	345	10	220	520	135	40	10	205	205	15	45
Future Volume (veh/h)	40	345	10	220	520	135	40	10	205	205	15	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	375	11	239	565	147	43	11	223	223	16	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	1437	42	571	1565	406	472	25	511	314	136	417
Arrive On Green	0.41	0.41	0.41	0.20	1.00	1.00	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	738	3525	103	1781	2793	724	1337	75	1521	1146	405	1242
Grp Volume(v), veh/h	43	189	197	239	359	353	43	0	234	223	0	65
Grp Sat Flow(s),veh/h/ln	738	1777	1852	1781	1777	1740	1337	0	1596	1146	0	1647
Q Serve(g_s), s	4.4	8.4	8.5	9.4	0.0	0.0	2.8	0.0	13.7	22.6	0.0	3.3
Cycle Q Clear(g_c), s	4.4	8.4	8.5	9.4	0.0	0.0	6.0	0.0	13.7	36.3	0.0	3.3
Prop In Lane	1.00		0.06	1.00		0.42	1.00		0.95	1.00		0.75
Lane Grp Cap(c), veh/h	361	724	755	571	995	975	472	0	536	314	0	553
V/C Ratio(X)	0.12	0.26	0.26	0.42	0.36	0.36	0.09	0.00	0.44	0.71	0.00	0.12
Avail Cap(c_a), veh/h	361	724	755	700	995	975	603	0	692	426	0	714
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	23.6	23.6	14.7	0.0	0.0	29.7	0.0	31.0	45.1	0.0	27.6
Incr Delay (d2), s/veh	0.7	0.9	0.8	0.4	0.8	0.9	0.2	0.0	1.2	6.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.7	3.9	3.2	0.2	0.2	0.9	0.0	5.5	7.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	24.4	24.4	15.1	0.8	0.9	29.8	0.0	32.2	51.7	0.0	27.8
LnGrp LOS	C	C	C	B	A	A	C	A	C	D	A	C
Approach Vol, veh/h		429			951			277			288	
Approach Delay, s/veh		24.3			4.4			31.9			46.3	
Approach LOS		C			A			C			D	

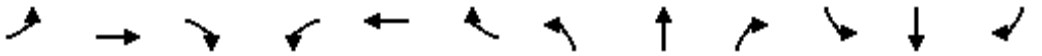
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		73.7		46.3	18.3	55.4		46.3				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		55.5		52.0	20.5	28.5		52.0				
Max Q Clear Time (g_c+I1), s		2.0		38.3	11.4	10.5		15.7				
Green Ext Time (p_c), s		0.8		2.0	0.5	0.4		3.5				

Intersection Summary												
HCM 6th Ctrl Delay			18.9									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	380	65	180	630	505	50	0	90	125	0	195
Future Volume (vph)	310	380	65	180	630	505	50	0	90	125	0	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	12	12
Total Lost time (s)	4.5	6.0		4.5	6.0	6.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	
Frt	1.00	0.98		1.00	1.00	0.85		0.91			0.92	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.98	
Satd. Flow (prot)	1770	3461		1770	3539	1583		1894			1677	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.71			0.76	
Satd. Flow (perm)	1770	3461		1770	3539	1583		1364			1300	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	413	71	196	685	549	54	0	98	136	0	212
RTOR Reduction (vph)	0	10	0	0	0	354	0	96	0	0	96	0
Lane Group Flow (vph)	337	474	0	196	685	195	0	56	0	0	252	0
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases						2	8			4		
Actuated Green, G (s)	35.5	59.9		18.2	42.6	42.6		26.4			26.4	
Effective Green, g (s)	35.5	59.9		18.2	42.6	42.6		26.4			26.4	
Actuated g/C Ratio	0.30	0.50		0.15	0.36	0.36		0.22			0.22	
Clearance Time (s)	4.5	6.0		4.5	6.0	6.0		5.0			5.0	
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0		3.0			3.0	
Lane Grp Cap (vph)	523	1727		268	1256	561		300			286	
v/s Ratio Prot	c0.19	0.14		c0.11	c0.19							
v/s Ratio Perm						0.12		0.04			c0.19	
v/c Ratio	0.64	0.27		0.73	0.55	0.35		0.19			0.88	
Uniform Delay, d1	36.8	17.4		48.6	31.0	28.5		38.1			45.3	
Progression Factor	0.94	0.89		0.83	0.78	0.66		1.00			1.00	
Incremental Delay, d2	2.6	0.4		5.9	1.0	1.0		0.3			25.5	
Delay (s)	37.1	15.9		46.0	25.1	19.8		38.4			70.8	
Level of Service	D	B		D	C	B		D			E	
Approach Delay (s)		24.6			25.9			38.4			70.8	
Approach LOS		C			C			D			E	

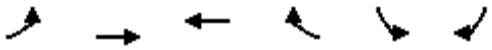
Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	350	15	5	545	30	220	85	200	205	5	550
Future Volume (vph)	230	350	15	5	545	30	220	85	200	205	5	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3518		1770	3511			1798	1583	1681	1689	1583
Flt Permitted	0.18	1.00		0.52	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (perm)	343	3518		966	3511			1798	1583	1681	1689	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	380	16	5	592	33	239	92	217	223	5	598
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	172	0	0	282
Lane Group Flow (vph)	250	394	0	5	622	0	0	331	45	114	114	316
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	50.3	44.0		31.5	30.2			24.8	24.8	28.4	28.4	28.4
Effective Green, g (s)	50.3	44.0		31.5	30.2			24.8	24.8	28.4	28.4	28.4
Actuated g/C Ratio	0.42	0.37		0.26	0.25			0.21	0.21	0.24	0.24	0.24
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	323	1289		262	883			371	327	397	399	374
v/s Ratio Prot	c0.10	0.11		0.00	0.18			c0.18		0.07	0.07	
v/s Ratio Perm	c0.23			0.00					0.03			c0.20
v/c Ratio	0.77	0.31		0.02	0.70			0.89	0.14	0.29	0.29	0.84
Uniform Delay, d1	25.9	27.1		32.7	40.8			46.3	38.9	37.5	37.5	43.7
Progression Factor	0.92	0.92		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	0.6		0.0	4.7			23.9	0.4	0.8	0.8	17.3
Delay (s)	34.3	25.5		32.8	45.5			70.2	39.3	38.3	38.3	61.0
Level of Service	C	C		C	D			E	D	D	D	E
Approach Delay (s)		28.9			45.4			57.9			54.7	
Approach LOS		C			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

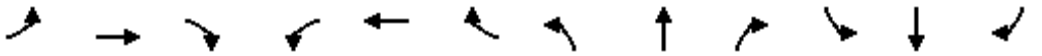
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1305	865	0	185	120
Future Volume (veh/h)	0	1305	865	0	185	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1418	940	0	201	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3931	4953	0	633	200
Arrive On Green	0.00	0.77	0.77	0.00	0.13	0.13
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	1418	940	0	201	130
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	10.6	4.7	0.0	4.4	9.4
Cycle Q Clear(g_c), s	0.0	10.6	4.7	0.0	4.4	9.4
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3931	4953	0	633	200
V/C Ratio(X)	0.00	0.36	0.19	0.00	0.32	0.65
Avail Cap(c_a), veh/h	0	3931	4953	0	1737	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.4	3.7	0.0	47.7	49.9
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	1.0	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	1.3	0.0	1.9	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.7	3.8	0.0	48.8	62.2
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		1418	940		331	
Approach Delay, s/veh		4.7	3.8		54.1	
Approach LOS		A	A		D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	98.4	21.6	98.4
Change Period (Y+Rc), s	6.0	6.5	6.0
Max Green Setting (Gmax), s	66.0	41.5	66.0
Max Q Clear Time (g_c+I1), s	12.6	11.4	6.7
Green Ext Time (p_c), s	14.8	3.7	8.1

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1170	320	270	645	0	0	0	0	380	0	220
Future Volume (vph)	0	1170	320	270	645	0	0	0	0	380	0	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.5	6.0					7.0		7.0
Lane Util. Factor		0.91		0.97	0.91					0.97		1.00
Frt		0.97		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		4921		3433	5085					3433		1583
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		4921		3433	5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1272	348	293	701	0	0	0	0	413	0	239
RTOR Reduction (vph)	0	29	0	0	0	0	0	0	0	0	0	201
Lane Group Flow (vph)	0	1591	0	293	701	0	0	0	0	413	0	38
Turn Type		NA		Prot	NA					Prot		Prot
Protected Phases		2		1	6					4		4
Permitted Phases												
Actuated Green, G (s)		84.4		24.5	113.4					23.6		23.6
Effective Green, g (s)		84.4		24.5	113.4					23.6		23.6
Actuated g/C Ratio		0.56		0.16	0.76					0.16		0.16
Clearance Time (s)		6.0		4.5	6.0					7.0		7.0
Vehicle Extension (s)		0.2		3.0	0.2					3.0		3.0
Lane Grp Cap (vph)		2768		560	3844					540		249
v/s Ratio Prot		c0.32		c0.09	0.14					c0.12		0.02
v/s Ratio Perm												
v/c Ratio		0.57		0.52	0.18					0.76		0.15
Uniform Delay, d1		21.2		57.4	5.2					60.5		54.6
Progression Factor		1.00		0.77	0.27					1.00		1.00
Incremental Delay, d2		0.9		0.9	0.1					6.4		0.3
Delay (s)		22.1		44.8	1.5					66.9		54.8
Level of Service		C		D	A					E		D
Approach Delay (s)		22.1			14.3			0.0			62.5	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
Description:			
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1380	170	0	675	240	0
Future Volume (vph)	1380	170	0	675	240	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.98			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	5002			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	5002			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1500	185	0	734	261	0
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	1679	0	0	734	261	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	119.7			119.7	16.8	
Effective Green, g (s)	119.7			119.7	16.8	
Actuated g/C Ratio	0.80			0.80	0.11	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	3991			4057	384	
v/s Ratio Prot	c0.34			0.14	c0.08	
v/s Ratio Perm						
v/c Ratio	0.42			0.18	0.68	
Uniform Delay, d1	4.6			3.6	64.0	
Progression Factor	1.07			0.73	1.00	
Incremental Delay, d2	0.3			0.1	4.7	
Delay (s)	5.2			2.7	68.8	
Level of Service	A			A	E	
Approach Delay (s)	5.2			2.7	68.8	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1380	0	0	675	0	855
Future Volume (vph)	1380	0	0	675	0	855
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1500	0	0	734	0	929
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1500	0	0	734	0	929
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	74.2			150.0		64.3
Effective Green, g (s)	74.2			144.5		64.3
Actuated g/C Ratio	0.49			0.96		0.43
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	2515			4898		1194
v/s Ratio Prot	c0.29			0.14		c0.33
v/s Ratio Perm						
v/c Ratio	0.60			0.15		0.78
Uniform Delay, d1	27.2			0.1		36.7
Progression Factor	0.35			1.00		1.00
Incremental Delay, d2	1.0			0.0		3.3
Delay (s)	10.6			0.1		40.0
Level of Service	B			A		D
Approach Delay (s)	10.6			0.1	40.0	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

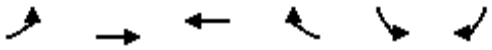
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	70	765	820	580	215	115	135	655	0	295	105	0
Future Volume (vph)	70	765	820	580	215	115	135	655	0	295	105	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	832	891	630	234	125	147	712	0	321	114	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	908	891	630	234	125	147	712	0	321	114	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		3			7	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		41.9	41.6	150.0	26.7	26.4	150.0	62.7		150.0	62.7	
Effective Green, g (s)		41.9	41.6	150.0	26.7	26.4	150.0	62.7		150.0	62.7	
Actuated g/C Ratio		0.28	0.28	1.00	0.18	0.18	1.00	0.42		1.00	0.42	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		958	1410	1583	315	894	1583	739		1583	1434	
v/s Ratio Prot		c0.26	0.18		c0.13	0.02		c0.40			0.03	
v/s Ratio Perm				c0.40			0.09			0.20		
v/c Ratio		0.95	0.63	0.40	0.74	0.14	0.09	0.96		0.20	0.08	
Uniform Delay, d1		53.0	47.5	0.0	58.4	52.2	0.0	42.5		0.0	26.3	
Progression Factor		0.75	0.74	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		14.7	1.7	0.6	9.1	0.3	0.1	24.3		0.3	0.0	
Delay (s)		54.4	36.6	0.6	67.5	52.5	0.1	66.8		0.3	26.3	
Level of Service		D	D	A	E	D	A	E		A	C	
Approach Delay (s)			33.9			44.2			46.1			10.7
Approach LOS			C			D			D			B

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	155
Future Volume (vph)	155
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	168
RTOR Reduction (vph)	0
Lane Group Flow (vph)	168
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	150.0
Effective Green, g (s)	150.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.11
v/c Ratio	0.11
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	0.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

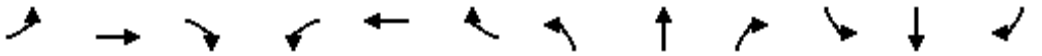
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (veh/h)	0	795	1580	0	310	120
Future Volume (veh/h)	0	795	1580	0	310	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	864	1717	0	337	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3865	4870	0	698	220
Arrive On Green	0.00	0.76	0.76	0.00	0.14	0.14
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	864	1717	0	337	130
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	5.9	10.6	0.0	7.4	9.2
Cycle Q Clear(g_c), s	0.0	5.9	10.6	0.0	7.4	9.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3865	4870	0	698	220
V/C Ratio(X)	0.00	0.22	0.35	0.00	0.48	0.59
Avail Cap(c_a), veh/h	0	3865	4870	0	1695	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.74	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.3	4.8	0.0	47.7	48.5
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	1.9	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	3.0	0.0	3.2	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.4	5.0	0.0	49.6	57.3
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		864	1717		467	
Approach Delay, s/veh		4.4	5.0		51.7	
Approach LOS		A	A		D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	96.8	23.2	96.8
Change Period (Y+Rc), s	6.0	6.5	6.0
Max Green Setting (Gmax), s	67.0	40.5	67.0
Max Q Clear Time (g_c+I1), s	7.9	11.2	12.6
Green Ext Time (p_c), s	7.2	5.4	20.6

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	920	185	470	960	0	0	0	0	410	0	620
Future Volume (vph)	0	920	185	470	960	0	0	0	0	410	0	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.5	6.0					7.0		7.0
Lane Util. Factor		0.91		0.97	0.91					0.97		1.00
Frt		0.97		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		4958		3433	5085					3433		1583
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		4958		3433	5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1000	201	511	1043	0	0	0	0	446	0	674
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	0	40
Lane Group Flow (vph)	0	1181	0	511	1043	0	0	0	0	446	0	634
Turn Type		NA		Prot	NA					Prot		Prot
Protected Phases		2		1	6					4		4
Permitted Phases												
Actuated Green, G (s)		40.3		26.5	73.3					63.7		63.7
Effective Green, g (s)		40.3		26.5	73.3					63.7		63.7
Actuated g/C Ratio		0.27		0.18	0.49					0.42		0.42
Clearance Time (s)		6.0		6.5	6.0					7.0		7.0
Vehicle Extension (s)		0.2		3.0	0.2					3.0		3.0
Lane Grp Cap (vph)		1332		606	2484					1457		672
v/s Ratio Prot		c0.24		c0.15	0.21					0.13		c0.40
v/s Ratio Perm												
v/c Ratio		0.89		0.84	0.42					0.31		0.94
Uniform Delay, d1		52.7		59.7	24.7					28.5		41.4
Progression Factor		1.00		0.93	0.71					1.00		1.00
Incremental Delay, d2		9.0		10.0	0.5					0.1		21.8
Delay (s)		61.7		65.7	18.1					28.7		63.3
Level of Service		E		E	B					C		E
Approach Delay (s)		61.7			33.8			0.0			49.5	
Approach LOS		E			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1075	255	0	1200	230	0
Future Volume (vph)	1075	255	0	1200	230	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.97			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	4939			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	4939			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1168	277	0	1304	250	0
RTOR Reduction (vph)	14	0	0	0	0	0
Lane Group Flow (vph)	1431	0	0	1304	250	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	120.2			120.2	16.3	
Effective Green, g (s)	120.2			120.2	16.3	
Actuated g/C Ratio	0.80			0.80	0.11	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	3957			4074	373	
v/s Ratio Prot	c0.29			0.26	c0.07	
v/s Ratio Perm						
v/c Ratio	0.36			0.32	0.67	
Uniform Delay, d1	4.2			4.0	64.3	
Progression Factor	0.43			1.00	1.00	
Incremental Delay, d2	0.2			0.2	4.7	
Delay (s)	2.0			4.2	68.9	
Level of Service	A			A	E	
Approach Delay (s)	2.0			4.2	68.9	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↱↱
Traffic Volume (vph)	1075	0	0	1200	0	340
Future Volume (vph)	1075	0	0	1200	0	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1168	0	0	1304	0	370
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1168	0	0	1304	0	370
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	101.4			150.0		37.1
Effective Green, g (s)	101.4			144.5		37.1
Actuated g/C Ratio	0.68			0.96		0.25
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	3437			4898		689
v/s Ratio Prot	c0.23			0.26		c0.13
v/s Ratio Perm						
v/c Ratio	0.34			0.27		0.54
Uniform Delay, d1	10.2			0.1		49.0
Progression Factor	0.27			1.00		1.00
Incremental Delay, d2	0.3			0.0		0.8
Delay (s)	3.0			0.2		49.8
Level of Service	A			A		D
Approach Delay (s)	3.0			0.2	49.8	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

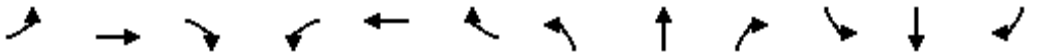
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	100	830	450	300	800	125	570	0	220	280	0
Future Volume (vph)	35	100	830	450	300	800	125	570	0	220	280	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	109	902	489	326	870	136	620	0	239	304	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	147	902	489	326	870	136	620	0	239	304	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		8			4	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		10.8	33.0	135.0	28.9	51.1	135.0	54.1		135.0	54.1	
Effective Green, g (s)		10.8	33.0	135.0	28.9	51.1	135.0	54.1		135.0	54.1	
Actuated g/C Ratio		0.08	0.24	1.00	0.21	0.38	1.00	0.40		1.00	0.40	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		274	1243	1583	378	1924	1583	709		1583	1375	
v/s Ratio Prot		0.04	c0.18		c0.18	0.17		c0.35			0.09	
v/s Ratio Perm				0.31			0.09			0.15		
v/c Ratio		0.54	0.73	0.31	0.86	0.45	0.09	0.87		0.15	0.22	
Uniform Delay, d1		59.7	46.8	0.0	51.1	31.5	0.0	37.3		0.0	26.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.0	3.7	0.5	18.0	0.8	0.1	11.6		0.2	0.1	
Delay (s)		61.7	50.6	0.5	69.1	32.2	0.1	48.9		0.2	26.7	
Level of Service		E	D	A	E	C	A	D		A	C	
Approach Delay (s)			35.7			38.0			35.4			8.7
Approach LOS			D			D			D			A

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	640
Future Volume (vph)	640
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	696
RTOR Reduction (vph)	0
Lane Group Flow (vph)	696
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	135.0
Effective Green, g (s)	135.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.44
v/c Ratio	0.44
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.9
Delay (s)	0.9
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary



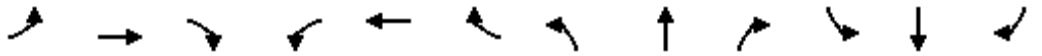
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	10	60	40	15	75	115	230	15	25	850	1160
Future Volume (veh/h)	220	10	60	40	15	75	115	230	15	25	850	1160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	239	11	65	43	16	82	125	250	16	27	924	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	232	197	56	129	109	408	2089	133	722	2018	
Arrive On Green	0.09	0.13	0.13	0.03	0.07	0.07	0.04	0.62	0.62	0.02	0.60	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3382	215	1692	3375	1505
Grp Volume(v), veh/h	239	11	65	43	16	82	125	130	136	27	924	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1826	1692	1687	1505
Q Serve(g_s), s	8.2	0.6	4.5	2.9	1.0	6.1	3.2	3.6	3.7	0.7	18.2	0.0
Cycle Q Clear(g_c), s	8.2	0.6	4.5	2.9	1.0	6.1	3.2	3.6	3.7	0.7	18.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	302	232	197	56	129	109	408	1094	1128	722	2018	
V/C Ratio(X)	0.79	0.05	0.33	0.76	0.12	0.75	0.31	0.12	0.12	0.04	0.46	
Avail Cap(c_a), veh/h	446	400	339	126	292	248	529	1094	1128	753	2018	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.00
Uniform Delay (d), s/veh	53.6	46.1	47.8	57.6	52.4	54.8	10.0	9.5	9.5	8.7	13.4	0.0
Incr Delay (d2), s/veh	5.8	0.1	1.0	18.9	0.4	9.9	0.4	0.2	0.2	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.3	1.8	1.6	0.5	2.7	1.3	1.5	1.5	0.3	6.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	46.2	48.8	76.5	52.9	64.7	10.4	9.7	9.7	8.7	14.0	0.0
LnGrp LOS	E	D	D	E	D	E	B	A	A	A	B	
Approach Vol, veh/h		315			141			391			951	A
Approach Delay, s/veh		56.8			67.0			9.9			13.9	
Approach LOS		E			E			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	80.6	16.1	14.8	10.8	78.3	9.3	21.6
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	5.1	56.4	15.7	18.8	13.5	48.0	8.5	26.0
Max Q Clear Time (g_c+I1), s	2.7	5.7	10.2	8.1	5.2	20.2	4.9	6.5
Green Ext Time (p_c), s	0.0	0.3	0.4	0.2	0.2	1.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	655	785	0	0	0	0	140	385	0	1250	0
Future Volume (vph)	5	655	785	0	0	0	0	140	385	0	1250	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3450	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3450	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	712	853	0	0	0	0	152	418	0	1359	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	717	853	0	0	0	0	152	418	0	1359	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		39.9	160.0					20.5	79.3		105.1	
Effective Green, g (s)		39.9	160.0					20.5	79.3		100.6	
Actuated g/C Ratio		0.25	1.00					0.13	0.50		0.63	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		860	1544					414	1308		3197	
v/s Ratio Prot								0.05	0.16		0.27	
v/s Ratio Perm		0.21	c0.55									
v/c Ratio		0.83	0.55					0.37	0.32		0.43	
Uniform Delay, d1		56.9	0.0					63.8	24.2		15.0	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		7.0	1.4					2.5	0.1		0.0	
Delay (s)		63.9	1.4					66.3	24.3		0.0	
Level of Service		E	A					E	C		A	
Approach Delay (s)		30.0			0.0			35.5			0.0	
Approach LOS		C			A			D			A	

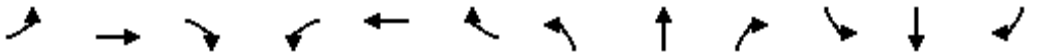
Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	1250	575	145	0
Future Volume (vph)	0	0	1250	575	145	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			4.5	4.5	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.97	0.95	
Satd. Flow (prot)			1549	3178	3433	
Flt Permitted			0.95	0.97	0.95	
Satd. Flow (perm)			1549	3178	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1359	625	158	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	679	1305	158	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			78.6	78.6	68.4	
Effective Green, g (s)			78.6	78.6	60.4	
Actuated g/C Ratio			0.49	0.49	0.38	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			760	1561	1295	
v/s Ratio Prot			c0.44	0.41	c0.05	
v/s Ratio Perm						
v/c Ratio			0.89	0.84	0.12	
Uniform Delay, d1			36.9	35.1	32.5	
Progression Factor			1.00	1.00	0.01	
Incremental Delay, d2			12.9	4.1	0.0	
Delay (s)			49.8	39.1	0.2	
Level of Service			D	D	A	
Approach Delay (s)	0.0			42.8	0.2	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

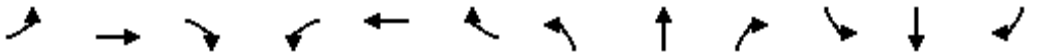
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	495	30	280	5	5	20	165	1040	5	40	2055	490
Future Volume (vph)	495	30	280	5	5	20	165	1040	5	40	2055	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1574	1575		1900		3285	4863		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1574	1575		1900		3285	4863		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	538	33	304	5	5	22	179	1130	5	43	2234	533
RTOR Reduction (vph)	0	0	90	0	21	0	0	0	0	0	0	169
Lane Group Flow (vph)	285	286	214	0	11	0	179	1135	0	43	2234	364
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	30.0	30.0	41.3		4.0		11.3	82.1		7.4	78.2	78.2
Effective Green, g (s)	30.0	30.0	41.3		4.0		11.3	82.1		7.4	78.2	78.2
Actuated g/C Ratio	0.20	0.20	0.28		0.03		0.08	0.55		0.05	0.52	0.52
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	312	314	433		50		247	2661		84	2562	880
v/s Ratio Prot	c0.18	0.18	0.04		c0.01		c0.05	0.23		0.03	c0.45	
v/s Ratio Perm			0.10									0.22
v/c Ratio	0.91	0.91	0.49		0.21		0.72	0.43		0.51	0.87	0.41
Uniform Delay, d1	58.7	58.7	45.6		71.5		67.8	20.0		69.5	31.5	21.9
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.03	0.98	1.24
Incremental Delay, d2	29.6	29.1	0.9		2.1		10.1	0.5		3.4	2.9	0.9
Delay (s)	88.3	87.8	46.5		73.6		77.9	20.5		75.0	33.9	28.1
Level of Service	F	F	D		E		E	C		E	C	C
Approach Delay (s)		73.6			73.6			28.4			33.4	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

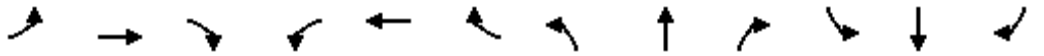
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	5	605	0	0	0	0	1390	165	220	1980	0
Future Volume (vph)	235	5	605	0	0	0	0	1390	165	220	1980	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1663	2412					8040		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1663	2412					8040		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	5	658	0	0	0	0	1511	179	239	2152	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	130	130	658	0	0	0	0	1677	0	239	2152	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	47.8	47.8	47.8					62.3		19.9	88.7	
Effective Green, g (s)	47.8	47.8	47.8					62.3		19.9	88.7	
Actuated g/C Ratio	0.32	0.32	0.32					0.42		0.13	0.59	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	510	529	768					3339		440	2906	
v/s Ratio Prot	0.08	0.08	c0.27					0.21		0.07	c0.44	
v/s Ratio Perm												
v/c Ratio	0.25	0.25	0.86					0.50		0.54	0.74	
Uniform Delay, d1	37.9	37.8	47.9					32.4		60.8	22.3	
Progression Factor	1.00	1.00	1.00					0.69		0.56	0.33	
Incremental Delay, d2	0.3	0.2	9.3					0.5		4.3	1.6	
Delay (s)	38.2	38.0	57.2					22.7		38.2	8.9	
Level of Service	D	D	E					C		D	A	
Approach Delay (s)		51.8			0.0			22.7			11.9	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	125	5	405	265	1360	0	0	2075	770
Future Volume (vph)	0	0	0	125	5	405	265	1360	0	0	2075	770
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1704	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1704	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	136	5	440	288	1478	0	0	2255	837
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	71	70	440	288	1478	0	0	2255	837
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				12.8	12.8	150.0	19.7	123.2			97.0	150.0
Effective Green, g (s)				12.8	12.8	150.0	19.7	123.2			97.0	150.0
Actuated g/C Ratio				0.09	0.09	1.00	0.13	0.82			0.65	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)				139	145	1750	420	5087			4739	1591
v/s Ratio Prot				0.04	0.04		0.09	0.24			0.31	
v/s Ratio Perm						0.25						c0.53
v/c Ratio				0.51	0.48	0.25	0.69	0.29			0.48	0.53
Uniform Delay, d1				65.6	65.4	0.0	62.2	3.1			13.5	0.0
Progression Factor				1.00	1.00	1.00	1.42	0.30			0.45	1.00
Incremental Delay, d2				4.2	3.4	0.3	4.4	0.1			0.0	0.1
Delay (s)				69.8	68.9	0.3	92.9	1.1			6.1	0.1
Level of Service				E	E	A	F	A			A	A
Approach Delay (s)		0.0			17.1			16.0			4.5	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

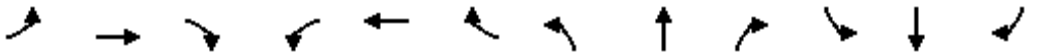
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	110	435	225	710	190	75	5	225	1065	470	30	1905
Future Volume (vph)	110	435	225	710	190	75	5	225	1065	470	30	1905
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3308		3172	3504	1567		1652	4916	1531	1719	4309
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.08	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3308		3172	3504	1567		141	4916	1531	1719	4309
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	473	245	772	207	82	5	245	1158	511	33	2071
RTOR Reduction (vph)	0	0	0	0	0	65	0	0	0	289	0	4
Lane Group Flow (vph)	120	718	0	772	207	17	0	250	1158	222	33	2181
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	33.0	33.0		22.5	22.5	30.2		60.8	60.8	60.8	7.7	57.0
Effective Green, g (s)	33.0	33.0		22.5	22.5	30.2		60.8	60.8	60.8	7.7	57.0
Actuated g/C Ratio	0.22	0.22		0.15	0.15	0.20		0.41	0.41	0.41	0.05	0.38
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	694	727		475	525	315		172	1992	620	88	1637
v/s Ratio Prot	0.04	c0.22		c0.24	0.06	0.01		c0.11	0.24		0.02	c0.51
v/s Ratio Perm								c0.47		0.15		
v/c Ratio	0.17	0.99		1.63	0.39	0.05		1.45	0.58	0.36	0.38	1.33
Uniform Delay, d1	47.4	58.3		63.8	57.6	48.4		64.7	34.7	31.0	68.8	46.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.66	0.48	0.51	1.00	1.00
Incremental Delay, d2	0.1	30.0		290.9	2.2	0.1		232.7	1.2	1.6	2.7	153.9
Delay (s)	47.6	88.3		354.6	59.8	48.4		275.3	17.9	17.4	71.5	200.4
Level of Service	D	F		F	E	D		F	B	B	E	F
Approach Delay (s)		82.4			273.5				51.3			198.5
Approach LOS		F			F				D			F

Intersection Summary			
HCM 2000 Control Delay	148.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	113.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	105
Future Volume (vph)	105
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	114
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



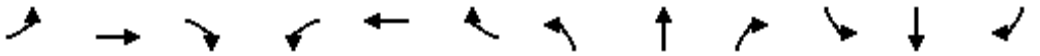
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	40	250	40	10	50	40	850	25	90	335	480
Future Volume (veh/h)	490	40	250	40	10	50	40	850	25	90	335	480
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	533	43	272	43	11	54	43	924	27	98	364	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	613	366	310	56	94	80	606	1854	54	333	1816	
Arrive On Green	0.18	0.20	0.20	0.03	0.05	0.05	0.03	0.53	0.53	0.04	0.54	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3515	103	1692	3375	1505
Grp Volume(v), veh/h	533	43	272	43	11	54	43	466	485	98	364	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1846	1692	1687	1505
Q Serve(g_s), s	18.2	2.3	20.2	2.9	0.7	4.0	1.3	20.2	20.2	3.2	6.7	0.0
Cycle Q Clear(g_c), s	18.2	2.3	20.2	2.9	0.7	4.0	1.3	20.2	20.2	3.2	6.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	613	366	310	56	94	80	606	934	974	333	1816	
V/C Ratio(X)	0.87	0.12	0.88	0.76	0.12	0.68	0.07	0.50	0.50	0.29	0.20	
Avail Cap(c_a), veh/h	802	414	351	144	131	111	631	934	974	440	1816	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	47.9	39.5	46.7	57.6	54.4	56.0	12.1	18.2	18.2	13.8	14.3	0.0
Incr Delay (d2), s/veh	8.2	0.1	19.7	18.9	0.5	9.6	0.0	1.9	1.8	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	1.1	9.5	1.6	0.3	1.8	0.5	8.6	9.0	1.2	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	39.6	66.3	76.5	55.0	65.6	12.1	20.1	20.0	14.3	14.6	0.0
LnGrp LOS	E	D	E	E	D	E	B	C	B	B	B	
Approach Vol, veh/h		848			108			994			462	A
Approach Delay, s/veh		58.5			68.9			19.7			14.5	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	69.8	27.0	12.6	9.3	71.1	9.3	30.3
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	12.7	46.7	28.2	8.4	5.5	53.9	9.7	26.9
Max Q Clear Time (g_c+I1), s	5.2	22.2	20.2	6.0	3.3	8.7	4.9	22.2
Green Ext Time (p_c), s	0.1	1.0	1.3	0.0	0.0	0.5	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	505	495	0	0	0	0	480	910	0	410	0
Future Volume (vph)	5	505	495	0	0	0	0	480	910	0	410	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3449	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3449	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	549	538	0	0	0	0	522	989	0	446	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	554	538	0	0	0	0	522	989	0	446	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		33.5	160.0					31.0	93.1		111.5	
Effective Green, g (s)		33.5	160.0					31.0	93.1		104.5	
Actuated g/C Ratio		0.21	1.00					0.19	0.58		0.65	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		722	1544					627	1536		3321	
v/s Ratio Prot								c0.16	c0.37		0.09	
v/s Ratio Perm		0.16	c0.35									
v/c Ratio		0.77	0.35					0.83	0.64		0.13	
Uniform Delay, d1		59.6	0.0					62.0	22.4		10.6	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		4.9	0.6					12.3	0.9		0.0	
Delay (s)		64.5	0.6					74.3	23.3		0.0	
Level of Service		E	A					E	C		A	
Approach Delay (s)		33.0			0.0			40.9			0.0	
Approach LOS		C			A			D			A	

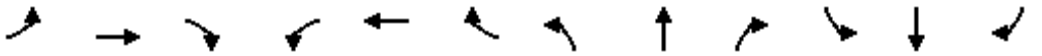
Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	410	1080	485	0
Future Volume (vph)	0	0	410	1080	485	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			7.0	7.0	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	1.00	0.95	
Satd. Flow (prot)			1549	3255	3433	
Flt Permitted			0.95	1.00	0.95	
Satd. Flow (perm)			1549	3255	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	446	1174	527	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	401	1219	527	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			74.5	74.5	72.5	
Effective Green, g (s)			74.5	74.5	64.5	
Actuated g/C Ratio			0.47	0.47	0.40	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			721	1515	1383	
v/s Ratio Prot			0.26	c0.37	c0.15	
v/s Ratio Perm						
v/c Ratio			0.56	0.80	0.38	
Uniform Delay, d1			30.8	36.5	33.7	
Progression Factor			1.01	1.00	0.00	
Incremental Delay, d2			0.9	3.2	0.1	
Delay (s)			32.0	39.6	0.1	
Level of Service			C	D	A	
Approach Delay (s)	0.0			37.7	0.1	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

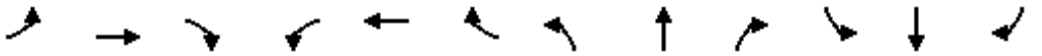
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	540	50	150	5	20	120	180	2220	10	100	1520	215
Future Volume (vph)	540	50	150	5	20	120	180	2220	10	100	1520	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1578	1575		1872		3285	4863		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1578	1575		1872		3285	4863		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	587	54	163	5	22	130	196	2413	11	109	1652	234
RTOR Reduction (vph)	0	0	79	0	101	0	0	1	0	0	0	101
Lane Group Flow (vph)	317	324	84	0	56	0	196	2423	0	109	1652	133
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	33.2	33.2	55.0		5.0		21.8	74.6		10.7	63.5	63.5
Effective Green, g (s)	33.2	33.2	55.0		5.0		21.8	74.6		10.7	63.5	63.5
Actuated g/C Ratio	0.22	0.22	0.37		0.03		0.15	0.50		0.07	0.42	0.42
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	345	349	577		62		477	2418		122	2081	715
v/s Ratio Prot	0.20	c0.21	0.02		c0.03		0.06	c0.50		0.06	c0.34	
v/s Ratio Perm			0.03									0.08
v/c Ratio	0.92	0.93	0.15		0.91		0.41	1.00		0.89	0.79	0.19
Uniform Delay, d1	57.1	57.2	31.8		72.3		58.3	37.7		69.1	37.6	27.1
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.70	1.07	1.69
Incremental Delay, d2	28.4	30.1	0.1		82.8		0.6	18.8		45.3	2.8	0.5
Delay (s)	85.5	87.4	31.9		155.1		58.8	56.5		94.0	43.0	46.3
Level of Service	F	F	C		F		E	E		F	D	D
Approach Delay (s)		75.4			155.1			56.7			46.2	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	58.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

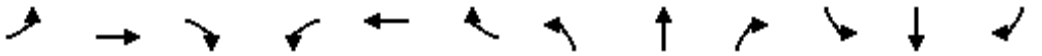
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	630	5	265	0	0	0	0	2660	220	125	1570	0
Future Volume (vph)	630	5	265	0	0	0	0	2660	220	125	1570	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1661	2412					8076		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1661	2412					8076		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	685	5	288	0	0	0	0	2891	239	136	1707	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	342	348	288	0	0	0	0	3121	0	136	1707	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	40.9	40.9	40.9					69.6		19.5	95.6	
Effective Green, g (s)	40.9	40.9	40.9					69.6		19.5	95.6	
Actuated g/C Ratio	0.27	0.27	0.27					0.46		0.13	0.64	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0	4.0					4.0		0.2	0.2	
Lane Grp Cap (vph)	436	452	657					3747		431	3133	
v/s Ratio Prot	c0.21	0.21	0.12					c0.39		0.04	c0.35	
v/s Ratio Perm												
v/c Ratio	0.78	0.77	0.44					0.83		0.32	0.54	
Uniform Delay, d1	50.5	50.2	45.1					35.1		59.2	15.1	
Progression Factor	1.00	1.00	1.00					0.67		0.35	0.47	
Incremental Delay, d2	9.5	8.2	0.6					0.6		1.7	0.6	
Delay (s)	59.9	58.4	45.7					24.2		22.6	7.8	
Level of Service	E	E	D					C		C	A	
Approach Delay (s)		55.2			0.0			24.2			8.9	
Approach LOS		E			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	100	5	220	620	2670	0	0	1595	600
Future Volume (vph)	0	0	0	100	5	220	620	2670	0	0	1595	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1705	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1705	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	109	5	239	674	2902	0	0	1734	652
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	57	57	239	674	2902	0	0	1734	652
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				11.5	11.5	150.0	39.1	124.5			78.9	150.0
Effective Green, g (s)				11.5	11.5	150.0	39.1	124.5			78.9	150.0
Actuated g/C Ratio				0.08	0.08	1.00	0.26	0.83			0.53	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	0.2			0.2	
Lane Grp Cap (vph)				125	130	1750	835	5141			3855	1591
v/s Ratio Prot				0.03	0.03		c0.21	c0.47			0.24	
v/s Ratio Perm						0.14						c0.41
v/c Ratio				0.46	0.44	0.14	0.81	0.56			0.45	0.41
Uniform Delay, d1				66.3	66.2	0.0	51.9	4.1			22.1	0.0
Progression Factor				1.00	1.00	1.00	1.38	0.95			0.76	1.00
Incremental Delay, d2				3.6	3.2	0.2	3.3	0.3			0.0	0.1
Delay (s)				69.8	69.4	0.2	75.2	4.1			16.7	0.1
Level of Service				E	E	A	E	A			B	A
Approach Delay (s)		0.0			22.6			17.5			12.2	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	300	260	145	470	305	100	20	240	2005	625	65	1560
Future Volume (vph)	300	260	145	470	305	100	20	240	2005	625	65	1560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3299		3172	3504	1567		1652	4916	1531	1719	4246
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.07	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3299		3172	3504	1567		126	4916	1531	1719	4246
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	283	158	511	332	109	22	261	2179	679	71	1696
RTOR Reduction (vph)	0	0	0	0	0	89	0	0	0	217	0	12
Lane Group Flow (vph)	326	441	0	511	332	20	0	283	2179	462	71	1983
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	26.9	26.9		17.5	17.5	27.6		69.5	69.5	69.5	10.1	65.1
Effective Green, g (s)	26.9	26.9		17.5	17.5	27.6		69.5	69.5	69.5	10.1	65.1
Actuated g/C Ratio	0.18	0.18		0.12	0.12	0.18		0.46	0.46	0.46	0.07	0.43
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	565	591		370	408	288		205	2277	709	115	1842
v/s Ratio Prot	0.10	c0.13		c0.16	0.09	0.01		c0.13	0.44		0.04	c0.47
v/s Ratio Perm								c0.50		0.30		
v/c Ratio	0.58	0.75		1.38	0.81	0.07		1.38	0.96	0.65	0.62	1.08
Uniform Delay, d1	56.3	58.3		66.2	64.7	50.6		63.2	38.8	30.9	68.1	42.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.58	0.34	0.20	1.00	1.00
Incremental Delay, d2	1.4	5.1		187.6	11.8	0.1		195.2	10.0	4.0	9.5	44.9
Delay (s)	57.8	63.4		253.9	76.4	50.7		231.5	23.0	10.3	77.5	87.3
Level of Service	E	E		F	E	D		F	C	B	E	F
Approach Delay (s)		61.0			168.7				39.0			87.0
Approach LOS		E			F				D			F

Intersection Summary			
HCM 2000 Control Delay	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

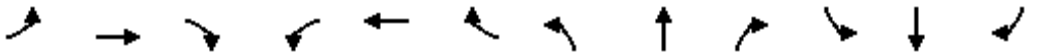
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	275
Future Volume (vph)	275
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	299
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	1055	30	5	105	595	125	20	40	270	480	125
Future Volume (vph)	20	1055	30	5	105	595	125	20	40	270	480	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	1.00			1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (prot)	1711	3524			1778	3557	1538	1694	1783	1776	1536	1622
Flt Permitted	0.41	1.00			0.11	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (perm)	731	3524			202	3557	1538	1694	1783	1776	1536	1622
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1147	33	5	114	647	136	22	43	293	522	136
RTOR Reduction (vph)	0	1	0	0	0	0	59	0	0	0	0	1
Lane Group Flow (vph)	22	1179	0	0	119	647	77	22	43	293	329	339
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	69.8	69.8			84.4	84.4	84.4	6.0	6.0	150.0	39.1	39.1
Effective Green, g (s)	69.8	69.8			84.4	84.4	84.4	6.0	6.0	150.0	39.1	39.1
Actuated g/C Ratio	0.47	0.47			0.56	0.56	0.56	0.04	0.04	1.00	0.26	0.26
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	340	1639			219	2001	865	67	71	1776	400	422
v/s Ratio Prot		c0.33			c0.04	0.18		0.01	c0.02		c0.21	0.21
v/s Ratio Perm	0.03				0.27		0.05			0.16		
v/c Ratio	0.06	0.72			0.54	0.32	0.09	0.33	0.61	0.16	0.82	0.80
Uniform Delay, d1	22.1	32.2			22.9	17.5	15.1	70.0	70.8	0.0	52.2	51.9
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.8			2.7	0.4	0.2	5.9	19.6	0.2	14.2	12.0
Delay (s)	22.5	35.0			25.6	18.0	15.3	76.0	90.5	0.2	66.4	63.9
Level of Service	C	C			C	B	B	E	F	A	E	E
Approach Delay (s)		34.8				18.6			15.7			65.1
Approach LOS		C				B			B			E

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

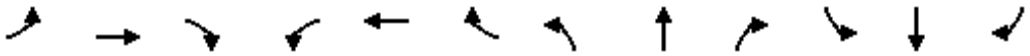
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	970	840	365	650	0	0	0	0	585	0	180
Future Volume (vph)	0	970	840	365	650	0	0	0	0	585	0	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	12	12	12	12	12
Total Lost time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Lane Util. Factor		0.91	0.88	0.97	0.91					0.94		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5085	2787	3433	5085					4990		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5085	2787	3433	5085					4990		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1054	913	397	707	0	0	0	0	636	0	196
RTOR Reduction (vph)	0	0	501	0	0	0	0	0	0	0	0	164
Lane Group Flow (vph)	0	1054	412	397	707	0	0	0	0	636	0	32
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		2	2	1	6					7		7
Permitted Phases												
Actuated Green, G (s)		40.6	40.6	13.4	62.0					14.5		14.5
Effective Green, g (s)		40.6	40.6	13.4	62.0					14.5		14.5
Actuated g/C Ratio		0.45	0.45	0.15	0.69					0.16		0.16
Clearance Time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Vehicle Extension (s)		2.0	2.0	0.5	2.0					0.5		0.5
Lane Grp Cap (vph)		2293	1257	511	3503					803		255
v/s Ratio Prot		c0.21	0.15	c0.12	0.14					c0.13		0.02
v/s Ratio Perm												
v/c Ratio		0.46	0.33	0.78	0.20					0.79		0.12
Uniform Delay, d1		17.1	15.9	36.9	5.1					36.3		32.3
Progression Factor		1.00	1.00	0.67	0.62					1.00		1.00
Incremental Delay, d2		0.7	0.7	6.4	0.1					5.0		0.1
Delay (s)		17.8	16.6	31.1	3.3					41.3		32.4
Level of Service		B	B	C	A					D		C
Approach Delay (s)		17.2			13.3			0.0			39.2	
Approach LOS		B			B			A			D	

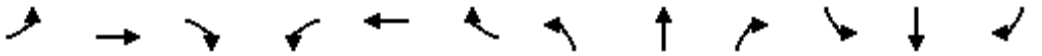
Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1535	0	0	1060	0	240	0	695	0	0	0
Future Volume (vph)	125	1535	0	0	1060	0	240	0	695	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0			6.0		6.5		6.0			
Lane Util. Factor	1.00	0.91			0.91		0.94		0.88			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1770	5085			5085		4990		2787			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1770	5085			5085		4990		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1668	0	0	1152	0	261	0	755	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	88	0	0	0
Lane Group Flow (vph)	136	1668	0	0	1152	0	261	0	667	0	0	0
Turn Type	Prot	NA			NA		Prot		Prot			
Protected Phases	5	2			6		3		8			
Permitted Phases												
Actuated Green, G (s)	9.7	52.6			37.9		23.9		24.4			
Effective Green, g (s)	9.7	52.6			37.9		23.9		24.4			
Actuated g/C Ratio	0.11	0.58			0.42		0.27		0.27			
Clearance Time (s)	6.0	7.0			6.0		6.5		6.0			
Vehicle Extension (s)	0.5	2.0			2.0		0.5		0.2			
Lane Grp Cap (vph)	190	2971			2141		1325		755			
v/s Ratio Prot	0.08	c0.33			0.23		0.05		c0.24			
v/s Ratio Perm												
v/c Ratio	0.72	0.56			0.54		0.20		0.88			
Uniform Delay, d1	38.8	11.6			19.5		25.6		31.4			
Progression Factor	1.59	0.09			0.91		1.00		1.00			
Incremental Delay, d2	8.1	0.6			0.7		0.0		11.6			
Delay (s)	70.0	1.7			18.3		25.6		43.0			
Level of Service	E	A			B		C		D			
Approach Delay (s)		6.8			18.3			38.6			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

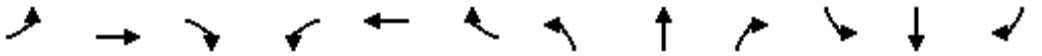
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	2110	25	5	1690	20	30	5	5	40	10	190
Future Volume (vph)	95	2110	25	5	1690	20	30	5	5	40	10	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1783			1959	1785
Flt Permitted	0.07	1.00	1.00	0.04	1.00	1.00		0.74			0.77	1.00
Satd. Flow (perm)	129	3621	1515	71	3370	1508		1371			1568	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	2293	27	5	1837	22	33	5	5	43	11	207
RTOR Reduction (vph)	0	0	6	0	0	6	0	3	0	0	0	81
Lane Group Flow (vph)	103	2293	21	5	1837	16	0	40	0	0	54	126
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	147.8	141.2	141.2	131.9	131.3	131.3		19.7			19.7	19.7
Effective Green, g (s)	147.8	141.2	141.2	131.9	131.3	131.3		19.7			19.7	19.7
Actuated g/C Ratio	0.82	0.78	0.78	0.73	0.73	0.73		0.11			0.11	0.11
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	197	2840	1188	57	2458	1100		150			171	195
v/s Ratio Prot	c0.03	c0.63		0.00	0.55							
v/s Ratio Perm	0.40		0.01	0.06		0.01		0.03			0.03	c0.07
v/c Ratio	0.52	0.81	0.02	0.09	0.75	0.01		0.27			0.32	0.65
Uniform Delay, d1	19.8	11.4	4.2	17.9	14.5	6.7		73.5			73.9	76.8
Progression Factor	1.07	0.96	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	3.7	2.1	0.0	1.4	2.1	0.0		2.0			2.2	9.7
Delay (s)	25.0	13.0	4.3	19.3	16.6	6.7		75.6			76.2	86.5
Level of Service	C	B	A	B	B	A		E			E	F
Approach Delay (s)		13.4			16.5			75.6			84.3	
Approach LOS		B			B			E			F	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	1410	10	345	875	80	20	0	110	140	0	120
Future Volume (vph)	135	1410	10	345	875	80	20	0	110	140	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	1533	11	375	951	87	22	0	120	152	0	130
RTOR Reduction (vph)	0	0	5	0	0	31	0	0	99	0	0	120
Lane Group Flow (vph)	147	1533	6	375	951	56	22	0	21	152	0	10
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot		Over	Prot		Over
Protected Phases	5	2	3	1	6	7	3		1	7		5
Permitted Phases			2			6						
Actuated Green, G (s)	7.2	43.3	50.6	15.9	51.0	58.3	7.3		15.9	7.3		7.2
Effective Green, g (s)	7.2	43.3	50.6	15.9	51.0	58.3	7.3		15.9	7.3		7.2
Actuated g/C Ratio	0.08	0.48	0.56	0.18	0.57	0.65	0.08		0.18	0.08		0.08
Clearance Time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Vehicle Extension (s)	0.5	2.0	0.5	0.5	2.0	0.5	0.5		0.5	0.5		0.5
Lane Grp Cap (vph)	274	2446	1030	606	2881	1025	278		279	278		126
v/s Ratio Prot	0.04	c0.30	0.00	c0.11	0.19	0.00	0.01		0.01	c0.04		0.01
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.54	0.63	0.01	0.62	0.33	0.05	0.08		0.08	0.55		0.08
Uniform Delay, d1	39.8	17.3	8.7	34.2	10.4	5.8	38.2		30.9	39.8		38.3
Progression Factor	0.51	0.58	1.00	0.71	0.27	0.07	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.9	1.1	0.0	1.1	0.3	0.0	0.0		0.0	1.2		0.1
Delay (s)	21.2	11.2	8.7	25.3	3.1	0.4	38.3		31.0	40.9		38.4
Level of Service	C	B	A	C	A	A	D		C	D		D
Approach Delay (s)		12.0			8.9			32.1			39.8	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

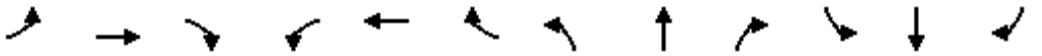
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	970	840	365	650	0	0	0	0	585	0	180
Future Volume (veh/h)	0	970	840	365	650	0	0	0	0	585	0	180
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1054	913	397	707	0				636	0	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2435	1330	468	3552	0				748	0	236
Arrive On Green	0.00	0.48	0.48	0.14	0.70	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5274	2790	3456	5274	0				5023	0	1585
Grp Volume(v), veh/h	0	1054	913	397	707	0				636	0	196
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1674	0	1585
Q Serve(g_s), s	0.0	12.2	22.9	10.1	4.4	0.0				11.1	0.0	10.8
Cycle Q Clear(g_c), s	0.0	12.2	22.9	10.1	4.4	0.0				11.1	0.0	10.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2435	1330	468	3552	0				748	0	236
V/C Ratio(X)	0.00	0.43	0.69	0.85	0.20	0.00				0.85	0.00	0.83
Avail Cap(c_a), veh/h	0	2435	1330	710	3552	0				1144	0	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.73	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.5	18.3	38.0	4.8	0.0				37.3	0.0	37.2
Incr Delay (d2), s/veh	0.0	0.4	2.1	3.6	0.1	0.0				2.4	0.0	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	7.2	4.4	1.3	0.0				4.6	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.9	20.4	41.6	5.0	0.0				39.8	0.0	42.8
LnGrp LOS	A	B	C	D	A	A				D	A	D
Approach Vol, veh/h		1967			1104						832	
Approach Delay, s/veh		18.0			18.1						40.5	
Approach LOS		B			B						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	19.7	49.4		20.9		69.1
Change Period (Y+Rc), s	7.5	6.5		7.5		* 6.5
Max Green Setting (Gmax), s	18.5	29.5		20.5		* 56
Max Q Clear Time (g_c+I1), s	12.1	24.9		13.1		6.4
Green Ext Time (p_c), s	0.1	3.1		0.3		3.5

Intersection Summary		
HCM 6th Ctrl Delay		22.8
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



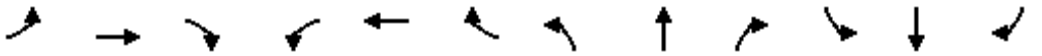
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1535	0	0	1060	0	240	0	695	0	0	0
Future Volume (veh/h)	125	1535	0	0	1060	0	240	0	695	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	136	1668	0	0	1152	0	261	0	755			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	0	2	0	2			
Cap, veh/h	167	2859	0	0	2039	0	1457	0	809			
Arrive On Green	0.09	0.56	0.00	0.00	0.40	0.00	0.29	0.00	0.29			
Sat Flow, veh/h	1781	5274	0	0	5443	0	5023	0	2790			
Grp Volume(v), veh/h	136	1668	0	0	1152	0	261	0	755			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1702	0	1674	0	1395			
Q Serve(g_s), s	6.7	19.2	0.0	0.0	15.8	0.0	3.5	0.0	23.7			
Cycle Q Clear(g_c), s	6.7	19.2	0.0	0.0	15.8	0.0	3.5	0.0	23.7			
Prop In Lane	1.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	167	2859	0	0	2039	0	1457	0	809			
V/C Ratio(X)	0.81	0.58	0.00	0.00	0.57	0.00	0.18	0.00	0.93			
Avail Cap(c_a), veh/h	257	2859	0	0	2039	0	1702	0	945			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.77	0.77	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	40.0	12.9	0.0	0.0	21.0	0.0	23.9	0.0	31.1			
Incr Delay (d2), s/veh	4.5	0.7	0.0	0.0	1.1	0.0	0.0	0.0	13.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	6.7	0.0	0.0	6.1	0.0	1.4	0.0	9.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	13.6	0.0	0.0	22.1	0.0	23.9	0.0	44.6			
LnGrp LOS	D	B	A	A	C	A	C	A	D			
Approach Vol, veh/h		1804			1152			1016				
Approach Delay, s/veh		15.9			22.1			39.3				
Approach LOS		B			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		57.4			14.5	42.9		32.6				
Change Period (Y+Rc), s		7.0			6.0	* 7		6.5				
Max Green Setting (Gmax), s		46.0			13.0	* 28		30.5				
Max Q Clear Time (g_c+I1), s		21.2			8.7	17.8		25.7				
Green Ext Time (p_c), s		9.6			0.0	4.1		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			23.7									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	2110	25	5	1690	20	30	5	5	40	10	190
Future Volume (veh/h)	95	2110	25	5	1690	20	30	5	5	40	10	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	103	2293	27	5	1837	22	33	5	5	43	11	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	2791	1197	102	2561	1142	141	21	17	209	50	234
Arrive On Green	0.03	0.76	0.76	0.00	0.74	0.74	0.14	0.13	0.13	0.14	0.13	0.13
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	819	164	129	1347	387	1821
Grp Volume(v), veh/h	103	2293	27	5	1837	22	43	0	0	54	0	207
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1113	0	0	1735	0	1821
Q Serve(g_s), s	2.6	71.6	0.7	0.1	52.8	0.7	4.5	0.0	0.0	0.0	0.0	20.1
Cycle Q Clear(g_c), s	2.6	71.6	0.7	0.1	52.8	0.7	9.2	0.0	0.0	4.7	0.0	20.1
Prop In Lane	1.00		1.00	1.00		1.00	0.77		0.12	0.80		1.00
Lane Grp Cap(c), veh/h	196	2791	1197	102	2561	1142	194	0	0	283	0	234
V/C Ratio(X)	0.52	0.82	0.02	0.05	0.72	0.02	0.22	0.00	0.00	0.19	0.00	0.88
Avail Cap(c_a), veh/h	267	2791	1197	125	2561	1142	236	0	0	338	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	13.4	5.1	18.9	12.8	6.1	72.6	0.0	0.0	69.5	0.0	77.1
Incr Delay (d2), s/veh	4.6	2.9	0.0	0.4	1.8	0.0	1.2	0.0	0.0	0.7	0.0	26.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	27.8	0.2	0.1	19.9	0.2	1.9	0.0	0.0	2.3	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	16.3	5.1	19.3	14.6	6.1	73.8	0.0	0.0	70.1	0.0	103.5
LnGrp LOS	C	B	A	B	B	A	E	A	A	E	A	F
Approach Vol, veh/h		2423			1864			43			261	
Approach Delay, s/veh		16.4			14.5			73.8			96.6	
Approach LOS		B			B			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	139.5		29.7	6.7	143.7		29.7				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	12.0	120.5		29.0	3.0	129.5		29.0				
Max Q Clear Time (g_c+I1), s	4.6	54.8		11.2	2.1	73.6		22.1				
Green Ext Time (p_c), s	0.3	3.3		0.3	0.0	5.0		1.1				

Intersection Summary			
HCM 6th Ctrl Delay		20.7	
HCM 6th LOS		C	

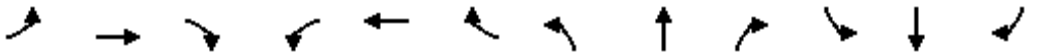
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	25	695	25	15	260	1280	760	25	195	400	500	185
Future Volume (vph)	25	695	25	15	260	1280	760	25	195	400	500	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (prot)	1711	3521			1778	3557	1538	1694	1783	1776	1536	1620
Flt Permitted	0.10	1.00			0.11	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (perm)	178	3521			208	3557	1538	1694	1783	1776	1536	1620
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	755	27	16	283	1391	826	27	212	435	543	201
RTOR Reduction (vph)	0	1	0	0	0	0	295	0	0	0	0	2
Lane Group Flow (vph)	27	781	0	0	299	1391	531	27	212	435	342	433
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	40.5	40.5			66.8	66.8	66.8	20.2	20.2	150.0	42.5	42.5
Effective Green, g (s)	40.5	40.5			66.8	66.8	66.8	20.2	20.2	150.0	42.5	42.5
Actuated g/C Ratio	0.27	0.27			0.45	0.45	0.45	0.13	0.13	1.00	0.28	0.28
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	48	950			320	1584	684	228	240	1776	435	459
v/s Ratio Prot		0.22			0.14	c0.39		0.02	c0.12		0.22	c0.27
v/s Ratio Perm	0.15				c0.28		0.35			0.24		
v/c Ratio	0.56	0.82			0.93	0.88	0.78	0.12	0.88	0.24	0.79	0.94
Uniform Delay, d1	47.1	51.4			42.3	37.9	35.3	57.1	63.7	0.0	49.6	52.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.1	7.9			33.4	7.2	8.4	0.5	31.2	0.3	10.4	28.8
Delay (s)	87.2	59.3			75.7	45.1	43.7	57.6	94.9	0.3	60.0	81.3
Level of Service	F	E			E	D	D	E	F	A	E	F
Approach Delay (s)		60.2				48.3			32.4			71.9
Approach LOS		E				D			C			E

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

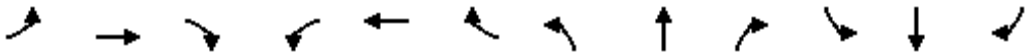
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	30
Future Volume (vph)	30
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	33
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1305	305	445	2080	0	0	0	0	510	0	235
Future Volume (vph)	0	1305	305	445	2080	0	0	0	0	510	0	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	12	12	12	12	12
Total Lost time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Lane Util. Factor		0.91	0.88	0.97	0.91					0.94		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5085	2787	3433	5085					4990		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5085	2787	3433	5085					4990		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1418	332	484	2261	0	0	0	0	554	0	255
RTOR Reduction (vph)	0	0	184	0	0	0	0	0	0	0	0	113
Lane Group Flow (vph)	0	1418	148	484	2261	0	0	0	0	554	0	142
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		2	2	1	6					7		7
Permitted Phases												
Actuated Green, G (s)		40.0	40.0	15.1	63.1					13.4		13.4
Effective Green, g (s)		40.0	40.0	15.1	63.1					13.4		13.4
Actuated g/C Ratio		0.44	0.44	0.17	0.70					0.15		0.15
Clearance Time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Vehicle Extension (s)		2.0	2.0	0.5	2.0					0.5		0.5
Lane Grp Cap (vph)		2260	1238	575	3565					742		235
v/s Ratio Prot		0.28	0.05	0.14	c0.44					c0.11		0.09
v/s Ratio Perm												
v/c Ratio		0.63	0.12	0.84	0.63					0.75		0.60
Uniform Delay, d1		19.3	14.7	36.3	7.2					36.7		35.8
Progression Factor		1.00	1.00	0.82	0.59					1.00		1.00
Incremental Delay, d2		1.3	0.2	4.1	0.4					3.6		3.0
Delay (s)		20.6	14.9	34.0	4.7					40.3		38.8
Level of Service		C	B	C	A					D		D
Approach Delay (s)		19.5			9.9			0.0			39.8	
Approach LOS		B			A			A			D	

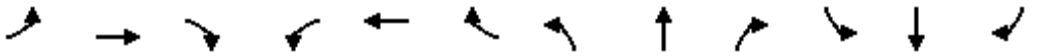
Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	1610	0	0	1605	0	705	0	225	0	0	0
Future Volume (vph)	145	1610	0	0	1605	0	705	0	225	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0			6.0		6.5		6.0			
Lane Util. Factor	1.00	0.91			0.91		0.94		0.88			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1770	5085			5085		4990		2787			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1770	5085			5085		4990		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	1750	0	0	1745	0	766	0	245	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	98	0	0	0
Lane Group Flow (vph)	158	1750	0	0	1745	0	766	0	147	0	0	0
Turn Type	Prot	NA			NA		Prot		Prot			
Protected Phases	5	2			6		3		8			
Permitted Phases												
Actuated Green, G (s)	10.4	60.2			44.8		16.3		16.8			
Effective Green, g (s)	10.4	60.2			44.8		16.3		16.8			
Actuated g/C Ratio	0.12	0.67			0.50		0.18		0.19			
Clearance Time (s)	6.0	7.0			6.0		6.5		6.0			
Vehicle Extension (s)	0.5	2.0			2.0		0.5		0.2			
Lane Grp Cap (vph)	204	3401			2531		903		520			
v/s Ratio Prot	c0.09	0.34			c0.34		c0.15		0.05			
v/s Ratio Perm												
v/c Ratio	0.77	0.51			0.69		0.85		0.28			
Uniform Delay, d1	38.7	7.5			17.3		35.7		31.4			
Progression Factor	1.03	0.99			0.97		1.00		1.00			
Incremental Delay, d2	12.5	0.5			0.1		7.2		0.1			
Delay (s)	52.2	7.9			17.0		42.8		31.5			
Level of Service	D	A			B		D		C			
Approach Delay (s)		11.6			17.0			40.1			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

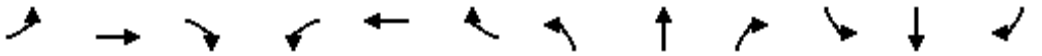
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1545	55	5	2300	50	25	5	5	40	10	130
Future Volume (vph)	235	1545	55	5	2300	50	25	5	5	40	10	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1782			1959	1785
Flt Permitted	0.03	1.00	1.00	0.14	1.00	1.00		0.75			0.78	1.00
Satd. Flow (perm)	59	3621	1515	256	3370	1508		1385			1598	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	1679	60	5	2500	54	27	5	5	43	11	141
RTOR Reduction (vph)	0	0	11	0	0	19	0	4	0	0	0	90
Lane Group Flow (vph)	255	1679	49	5	2500	35	0	33	0	0	54	51
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	151.7	145.1	145.1	116.1	115.5	115.5		15.8			15.8	15.8
Effective Green, g (s)	151.7	145.1	145.1	116.1	115.5	115.5		15.8			15.8	15.8
Actuated g/C Ratio	0.84	0.81	0.81	0.64	0.64	0.64		0.09			0.09	0.09
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	324	2918	1221	169	2162	967		121			140	156
v/s Ratio Prot	c0.13	0.46		0.00	c0.74							
v/s Ratio Perm	0.53		0.03	0.02		0.02		0.02			c0.03	0.03
v/c Ratio	0.79	0.58	0.04	0.03	1.16	0.04		0.28			0.39	0.32
Uniform Delay, d1	64.9	6.3	3.5	11.6	32.2	11.8		76.8			77.5	77.1
Progression Factor	0.90	1.16	1.58	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	12.2	0.7	0.1	0.1	76.0	0.1		2.6			3.7	2.5
Delay (s)	70.4	8.1	5.6	11.7	108.3	11.9		79.3			81.2	79.6
Level of Service	E	A	A	B	F	B		E			F	E
Approach Delay (s)		16.0			106.1			79.3			80.1	
Approach LOS		B			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	67.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		

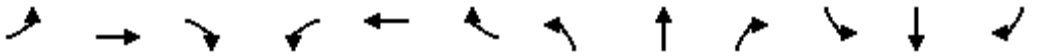
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	1335	175	225	2065	20	365	0	145	275	0	95
Future Volume (vph)	305	1335	175	225	2065	20	365	0	145	275	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	332	1451	190	245	2245	22	397	0	158	299	0	103
RTOR Reduction (vph)	0	0	33	0	0	8	0	0	138	0	0	91
Lane Group Flow (vph)	332	1451	157	245	2245	14	397	0	20	299	0	12
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot		Over	Prot		Over
Protected Phases	5	2	3	1	6	7	3		1	7		5
Permitted Phases			2			6						
Actuated Green, G (s)	10.1	42.2	54.9	11.6	42.7	55.4	12.7		11.6	12.7		10.1
Effective Green, g (s)	10.1	42.2	54.9	11.6	42.7	55.4	12.7		11.6	12.7		10.1
Actuated g/C Ratio	0.11	0.47	0.61	0.13	0.47	0.62	0.14		0.13	0.14		0.11
Clearance Time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Vehicle Extension (s)	0.5	2.0	0.5	0.5	2.0	0.5	0.5		0.5	0.5		0.5
Lane Grp Cap (vph)	385	2384	1106	442	2412	974	484		204	484		177
v/s Ratio Prot	0.10	c0.29	0.02	0.07	c0.44	0.00	c0.12		0.01	0.09		0.01
v/s Ratio Perm			0.08			0.01						
v/c Ratio	0.86	0.61	0.14	0.55	0.93	0.01	0.82		0.10	0.62		0.07
Uniform Delay, d1	39.3	17.8	7.5	36.8	22.3	6.7	37.5		34.6	36.4		35.7
Progression Factor	0.53	0.48	0.07	1.09	0.63	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	13.9	0.9	0.0	0.6	5.8	0.0	10.2		0.1	1.7		0.1
Delay (s)	34.9	9.4	0.5	40.7	19.9	6.7	47.7		34.7	38.0		35.8
Level of Service	C	A	A	D	B	A	D		C	D		D
Approach Delay (s)		12.8			21.8			44.0			37.4	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



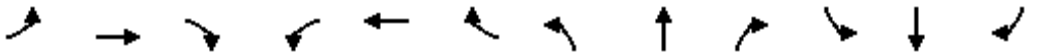
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1305	305	445	2080	0	0	0	0	510	0	235
Future Volume (veh/h)	0	1305	305	445	2080	0	0	0	0	510	0	235
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1418	332	484	2261	0				554	0	255
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2140	1169	557	3387	0				909	0	287
Arrive On Green	0.00	0.42	0.42	0.11	0.44	0.00				0.18	0.00	0.18
Sat Flow, veh/h	0	5274	2790	3456	5274	0				5023	0	1585
Grp Volume(v), veh/h	0	1418	332	484	2261	0				554	0	255
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1674	0	1585
Q Serve(g_s), s	0.0	20.1	7.1	12.4	31.5	0.0				9.1	0.0	14.1
Cycle Q Clear(g_c), s	0.0	20.1	7.1	12.4	31.5	0.0				9.1	0.0	14.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2140	1169	557	3387	0				909	0	287
V/C Ratio(X)	0.00	0.66	0.28	0.87	0.67	0.00				0.61	0.00	0.89
Avail Cap(c_a), veh/h	0	2140	1169	672	3387	0				1033	0	326
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.71	0.71	0.34	0.34	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.0	17.2	39.2	17.2	0.0				33.9	0.0	36.0
Incr Delay (d2), s/veh	0.0	1.2	0.4	3.4	0.4	0.0				0.5	0.0	21.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.7	2.2	5.7	12.8	0.0				3.7	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.2	17.7	42.6	17.5	0.0				34.4	0.0	57.1
LnGrp LOS	A	C	B	D	B	A				C	A	E
Approach Vol, veh/h		1750			2745						809	
Approach Delay, s/veh		21.3			21.9						41.5	
Approach LOS		C			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.0	44.2		23.8		66.2
Change Period (Y+Rc), s	7.5	6.5		7.5		* 6.5
Max Green Setting (Gmax), s	17.5	32.5		18.5		* 58
Max Q Clear Time (g_c+I1), s	14.4	22.1		16.1		33.5
Green Ext Time (p_c), s	0.1	5.7		0.2		14.5

Intersection Summary		
HCM 6th Ctrl Delay		24.7
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

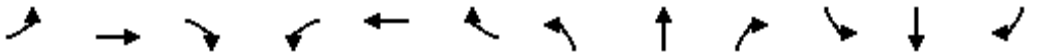


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1610	0	0	1605	0	705	0	225	0	0	0
Future Volume (veh/h)	145	1610	0	0	1605	0	705	0	225	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	158	1750	0	0	1745	0	766	0	245			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	0	2	0	2			
Cap, veh/h	193	3451	0	0	2558	0	874	0	486			
Arrive On Green	0.04	0.22	0.00	0.00	0.50	0.00	0.17	0.00	0.17			
Sat Flow, veh/h	1781	5274	0	0	5443	0	5023	0	2790			
Grp Volume(v), veh/h	158	1750	0	0	1745	0	766	0	245			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1702	0	1674	0	1395			
Q Serve(g_s), s	7.9	27.0	0.0	0.0	23.3	0.0	13.4	0.0	7.2			
Cycle Q Clear(g_c), s	7.9	27.0	0.0	0.0	23.3	0.0	13.4	0.0	7.2			
Prop In Lane	1.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	193	3451	0	0	2558	0	874	0	486			
V/C Ratio(X)	0.82	0.51	0.00	0.00	0.68	0.00	0.88	0.00	0.50			
Avail Cap(c_a), veh/h	257	3451	0	0	2558	0	1033	0	573			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.78	0.78	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.5	21.8	0.0	0.0	17.0	0.0	36.2	0.0	33.7			
Incr Delay (d2), s/veh	8.6	0.4	0.0	0.0	1.5	0.0	6.8	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.1	12.2	0.0	0.0	8.6	0.0	5.9	0.0	2.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	22.2	0.0	0.0	18.5	0.0	43.0	0.0	34.0			
LnGrp LOS	D	C	A	A	B	A	D	A	C			
Approach Vol, veh/h		1908			1745			1011				
Approach Delay, s/veh		24.6			18.5			40.8				
Approach LOS		C			B			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		67.8			15.8	52.1		22.2				
Change Period (Y+Rc), s		7.0			6.0	* 7		6.5				
Max Green Setting (Gmax), s		58.0			13.0	* 40		18.5				
Max Q Clear Time (g_c+I1), s		29.0			9.9	25.3		15.4				
Green Ext Time (p_c), s		10.9			0.0	7.8		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	1545	55	5	2300	50	25	5	5	40	10	130
Future Volume (veh/h)	235	1545	55	5	2300	50	25	5	5	40	10	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	255	1679	60	5	2500	54	27	5	5	43	11	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	2919	1252	216	2448	1092	105	19	14	161	37	171
Arrive On Green	0.09	0.80	0.80	0.00	0.71	0.71	0.11	0.09	0.09	0.11	0.09	0.09
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	752	202	149	1331	397	1821
Grp Volume(v), veh/h	255	1679	60	5	2500	54	37	0	0	54	0	141
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1103	0	0	1728	0	1821
Q Serve(g_s), s	17.0	30.7	1.4	0.1	127.6	1.9	3.5	0.0	0.0	0.0	0.0	13.7
Cycle Q Clear(g_c), s	17.0	30.7	1.4	0.1	127.6	1.9	8.5	0.0	0.0	5.0	0.0	13.7
Prop In Lane	1.00		1.00	1.00		1.00	0.73		0.14	0.80		1.00
Lane Grp Cap(c), veh/h	206	2919	1252	216	2448	1092	153	0	0	222	0	171
V/C Ratio(X)	1.24	0.58	0.05	0.02	1.02	0.05	0.24	0.00	0.00	0.24	0.00	0.83
Avail Cap(c_a), veh/h	206	2919	1252	239	2448	1092	247	0	0	337	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	73.4	6.7	3.7	8.0	26.2	7.9	77.9	0.0	0.0	75.2	0.0	80.1
Incr Delay (d2), s/veh	141.2	0.8	0.1	0.1	23.7	0.1	1.7	0.0	0.0	1.2	0.0	18.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	11.1	0.5	0.1	56.2	0.7	1.7	0.0	0.0	2.4	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	214.5	7.5	3.8	8.1	49.9	8.0	79.7	0.0	0.0	76.4	0.0	98.9
LnGrp LOS	F	A	A	A	F	A	E	A	A	E	A	F
Approach Vol, veh/h		1994			2559			37			195	
Approach Delay, s/veh		33.9			48.9			79.7			92.6	
Approach LOS		C			D			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	133.6		23.4	6.7	150.0		23.4				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	17.0	115.5		29.0	3.0	129.5		29.0				
Max Q Clear Time (g_c+I1), s	19.0	129.6		10.5	2.1	32.7		15.7				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	2.8		1.2				

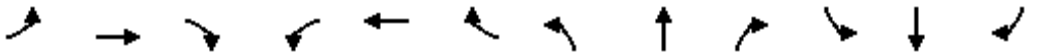
Intersection Summary												
HCM 6th Ctrl Delay			44.7									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	60	5	205	5	5	5	5	120	1290	5	5	2215
Future Volume (vph)	60	5	205	5	5	5	5	120	1290	5	5	2215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.95			1.00	1.00	0.85	1.00	1.00
Flt Protected		0.96	1.00		0.98			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1780	1583		1750			1770	5085	1583	1770	5067
Flt Permitted		0.73	1.00		0.89			0.04	1.00	1.00	0.18	1.00
Satd. Flow (perm)		1361	1583		1585			68	5085	1583	335	5067
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	5	223	5	5	5	5	130	1402	5	5	2408
RTOR Reduction (vph)	0	0	18	0	5	0	0	0	0	1	0	1
Lane Group Flow (vph)	0	70	205	0	10	0	0	135	1402	4	5	2467
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		13.1	26.8		13.6			123.4	123.4	123.4	104.2	104.2
Effective Green, g (s)		13.1	26.8		13.6			123.4	123.4	123.4	104.2	104.2
Actuated g/C Ratio		0.09	0.18		0.09			0.82	0.82	0.82	0.69	0.69
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		118	282		143			211	4183	1302	232	3519
v/s Ratio Prot			c0.07					0.06	0.28			c0.49
v/s Ratio Perm		0.05	0.06		0.01			0.47		0.00	0.01	
v/c Ratio		0.59	0.73		0.07			0.64	0.34	0.00	0.02	0.70
Uniform Delay, d1		65.9	58.1		62.4			42.2	3.3	2.4	7.1	13.6
Progression Factor		1.00	1.00		1.00			0.71	0.85	1.00	1.00	1.00
Incremental Delay, d2		11.5	9.0		0.5			5.7	0.2	0.0	0.2	1.2
Delay (s)		77.4	67.1		62.9			35.5	3.0	2.4	7.3	14.8
Level of Service		E	E		E			D	A	A	A	B
Approach Delay (s)		69.6			62.9				5.8			14.8
Approach LOS		E			E				A			B

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

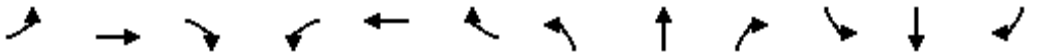
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	55
Future Volume (vph)	55
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	60
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	170	5	335	305	1085	0	0	1950	480
Future Volume (vph)	0	0	0	170	5	335	305	1085	0	0	1950	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1690	1583	1770	5085			4935	
Flt Permitted				0.95	0.95	1.00	0.05	1.00			1.00	
Satd. Flow (perm)				1681	1690	1583	86	5085			4935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	185	5	364	332	1179	0	0	2120	522
RTOR Reduction (vph)	0	0	0	0	0	109	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	94	96	255	332	1179	0	0	2615	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				26.2	26.2	26.2	111.8	111.8			80.3	
Effective Green, g (s)				26.2	26.2	26.2	111.8	111.8			80.3	
Actuated g/C Ratio				0.17	0.17	0.17	0.75	0.75			0.54	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				293	295	276	344	3790			2641	
v/s Ratio Prot							c0.16	0.23			0.53	
v/s Ratio Perm				0.06	0.06	c0.16	c0.56					
v/c Ratio				0.32	0.33	0.92	0.97	0.31			0.99	
Uniform Delay, d1				54.1	54.2	60.9	55.3	6.3			34.5	
Progression Factor				1.00	1.00	1.00	0.92	0.41			0.71	
Incremental Delay, d2				0.9	0.9	34.9	35.2	0.2			12.8	
Delay (s)				55.0	55.0	95.8	85.9	2.8			37.3	
Level of Service				D	E	F	F	A			D	
Approach Delay (s)		0.0			81.8			21.0			37.3	
Approach LOS		A			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

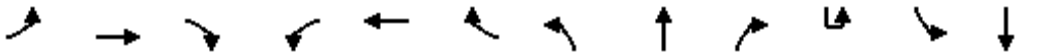
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	5	515	0	0	0	0	1200	150	215	1905	0
Future Volume (vph)	190	5	515	0	0	0	0	1200	150	215	1905	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1689	1583					5001		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.12	1.00	
Satd. Flow (perm)	1681	1689	1583					5001		225	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	5	560	0	0	0	0	1304	163	234	2071	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	106	106	560	0	0	0	0	1458	0	234	2071	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	17.0	17.0	150.0					79.5		121.0	121.0	
Effective Green, g (s)	17.0	17.0	150.0					79.5		121.0	121.0	
Actuated g/C Ratio	0.11	0.11	1.00					0.53		0.81	0.81	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	190	191	1583					2650		542	4101	
v/s Ratio Prot	c0.06	0.06						c0.29		0.10	c0.41	
v/s Ratio Perm			0.35							0.25		
v/c Ratio	0.56	0.55	0.35					0.55		0.43	0.50	
Uniform Delay, d1	62.9	62.9	0.0					23.4		21.0	4.7	
Progression Factor	1.00	1.00	1.00					0.71		0.87	0.33	
Incremental Delay, d2	5.9	5.8	0.6					0.8		0.1	0.2	
Delay (s)	68.9	68.7	0.6					17.3		18.6	1.7	
Level of Service	E	E	A					B		B	A	
Approach Delay (s)		19.3			0.0			17.3			3.4	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	230	20	10	30	5	70	5	1040	15	10	95	2280
Future Volume (vph)	230	20	10	30	5	70	5	1040	15	10	95	2280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.99		1.00	1.00	0.85	1.00	1.00			1.00	1.00
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1775		1770	1863	1583	1770	5075			1770	5074
Flt Permitted		0.75		0.73	1.00	1.00	0.05	1.00			0.19	1.00
Satd. Flow (perm)		1385		1364	1863	1583	86	5075			352	5074
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	22	11	33	5	76	5	1130	16	11	103	2478
RTOR Reduction (vph)	0	1	0	0	0	58	0	1	0	0	0	1
Lane Group Flow (vph)	0	282	0	33	5	18	5	1145	0	0	114	2515
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		36.0		36.0	36.0	36.0	87.3	86.6			101.0	94.8
Effective Green, g (s)		36.0		36.0	36.0	36.0	87.3	86.6			101.0	94.8
Actuated g/C Ratio		0.24		0.24	0.24	0.24	0.58	0.58			0.67	0.63
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		332		327	447	379	57	2929			321	3206
v/s Ratio Prot					0.00		0.00	0.23			c0.02	c0.50
v/s Ratio Perm		c0.20		0.02		0.01	0.05				0.22	
v/c Ratio		0.85		0.10	0.01	0.05	0.09	0.39			0.36	0.78
Uniform Delay, d1		54.4		44.4	43.4	43.8	19.6	17.3			10.1	20.1
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			0.21	0.19
Incremental Delay, d2		19.0		0.2	0.0	0.1	0.7	0.4			0.6	1.8
Delay (s)		73.4		44.6	43.5	43.9	20.2	17.7			2.7	5.6
Level of Service		E		D	D	D	C	B			A	A
Approach Delay (s)		73.4			44.1			17.7				5.5
Approach LOS		E			D			B				A

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

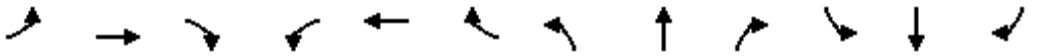
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	38
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	95	5	75	5	5	5	5	160	2535	5	5	1875
Future Volume (vph)	95	5	75	5	5	5	5	160	2535	5	5	1875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.95			1.00	1.00	0.85	1.00	0.99
Flt Protected		0.95	1.00		0.98			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1778	1583		1750			1770	5085	1583	1770	5054
Flt Permitted		0.73	1.00		0.90			0.05	1.00	1.00	0.04	1.00
Satd. Flow (perm)		1351	1583		1608			93	5085	1583	77	5054
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	5	82	5	5	5	5	174	2755	5	5	2038
RTOR Reduction (vph)	0	0	17	0	4	0	0	0	0	1	0	2
Lane Group Flow (vph)	0	108	65	0	11	0	0	179	2755	4	5	2123
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		19.4	34.5		19.9			117.1	117.1	117.1	96.5	96.5
Effective Green, g (s)		19.4	34.5		19.9			117.1	117.1	117.1	96.5	96.5
Actuated g/C Ratio		0.13	0.23		0.13			0.78	0.78	0.78	0.64	0.64
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		174	364		213			241	3969	1235	49	3251
v/s Ratio Prot			0.02					0.07	c0.54			0.42
v/s Ratio Perm		c0.08	0.02		0.01			c0.50		0.00	0.06	
v/c Ratio		0.62	0.18		0.05			0.74	0.69	0.00	0.10	0.65
Uniform Delay, d1		61.8	46.4		56.8			40.6	7.9	3.6	10.2	16.5
Progression Factor		1.00	1.00		1.00			0.66	1.65	1.00	1.00	1.00
Incremental Delay, d2		9.4	0.2		0.2			7.8	0.7	0.0	4.1	1.0
Delay (s)		71.2	46.6		57.0			34.4	13.7	3.6	14.3	17.5
Level of Service		E	D		E			C	B	A	B	B
Approach Delay (s)		60.6			57.0				14.9			17.5
Approach LOS		E			E				B			B

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

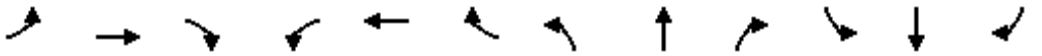
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	80
Future Volume (vph)	80
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	87
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	165	5	340	215	2365	0	0	1480	480
Future Volume (vph)	0	0	0	165	5	340	215	2365	0	0	1480	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.96	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1690	1583	1770	5085			4898	
Flt Permitted				0.95	0.95	1.00	0.05	1.00			1.00	
Satd. Flow (perm)				1681	1690	1583	92	5085			4898	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	179	5	370	234	2571	0	0	1609	522
RTOR Reduction (vph)	0	0	0	0	0	50	0	0	0	0	37	0
Lane Group Flow (vph)	0	0	0	91	93	320	234	2571	0	0	2094	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				34.3	34.3	34.3	103.7	103.7			74.2	
Effective Green, g (s)				34.3	34.3	34.3	103.7	103.7			74.2	
Actuated g/C Ratio				0.23	0.23	0.23	0.69	0.69			0.49	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				384	386	361	320	3515			2422	
v/s Ratio Prot							0.11	c0.51			c0.43	
v/s Ratio Perm				0.05	0.06	c0.20	0.39					
v/c Ratio				0.24	0.24	0.89	0.73	0.73			0.86	
Uniform Delay, d1				47.2	47.2	56.0	46.3	14.5			33.5	
Progression Factor				1.00	1.00	1.00	0.56	0.20			0.51	
Incremental Delay, d2				0.4	0.4	22.4	6.4	0.7			3.5	
Delay (s)				47.6	47.7	78.4	32.4	3.6			20.5	
Level of Service				D	D	E	C	A			C	
Approach Delay (s)		0.0			68.2			6.0			20.5	
Approach LOS		A			E			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

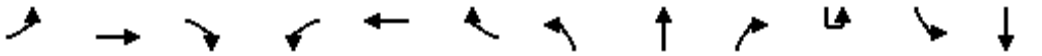
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	5	210	0	0	0	0	2125	165	190	1455	0
Future Volume (vph)	455	5	210	0	0	0	0	2125	165	190	1455	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1687	1583					5030		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.04	1.00	
Satd. Flow (perm)	1681	1687	1583					5030		83	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	495	5	228	0	0	0	0	2310	179	207	1582	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	247	253	228	0	0	0	0	2483	0	207	1582	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	27.9	27.9	150.0					83.6		110.1	110.1	
Effective Green, g (s)	27.9	27.9	150.0					83.6		110.1	110.1	
Actuated g/C Ratio	0.19	0.19	1.00					0.56		0.73	0.73	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	312	313	1583					2803		285	3732	
v/s Ratio Prot	0.15	c0.15						c0.49		c0.10	0.31	
v/s Ratio Perm			0.14							0.44		
v/c Ratio	0.79	0.81	0.14					0.89		0.73	0.42	
Uniform Delay, d1	58.3	58.5	0.0					29.0		48.2	7.7	
Progression Factor	1.00	1.00	1.00					0.69		0.92	0.50	
Incremental Delay, d2	14.6	16.0	0.2					3.8		4.3	0.2	
Delay (s)	72.9	74.4	0.2					23.9		48.7	4.0	
Level of Service	E	E	A					C		D	A	
Approach Delay (s)		50.7			0.0			23.9			9.2	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

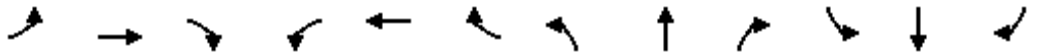


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	45	5	10	10	5	35	10	2205	5	5	30	1550
Future Volume (vph)	45	5	10	10	5	35	10	2205	5	5	30	1550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.98		1.00	1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1754		1770	1863	1583	1770	5084			1770	5048
Flt Permitted		0.78		0.75	1.00	1.00	0.11	1.00			0.04	1.00
Satd. Flow (perm)		1413		1391	1863	1583	207	5084			83	5048
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	5	11	11	5	38	11	2397	5	5	33	1685
RTOR Reduction (vph)	0	5	0	0	0	35	0	0	0	0	0	2
Lane Group Flow (vph)	0	60	0	11	5	3	11	2402	0	0	38	1770
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		13.3		13.3	13.3	13.3	115.2	113.2			121.2	116.2
Effective Green, g (s)		13.3		13.3	13.3	13.3	115.2	113.2			121.2	116.2
Actuated g/C Ratio		0.09		0.09	0.09	0.09	0.77	0.75			0.81	0.77
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		125		123	165	140	179	3836			123	3910
v/s Ratio Prot					0.00		0.00	c0.47			c0.01	c0.35
v/s Ratio Perm		c0.04		0.01		0.00	0.05				0.24	
v/c Ratio		0.48		0.09	0.03	0.02	0.06	0.63			0.31	0.45
Uniform Delay, d1		65.0		62.8	62.5	62.4	4.4	8.6			7.9	5.9
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			4.70	0.10
Incremental Delay, d2		3.9		0.4	0.1	0.1	0.1	0.8			1.3	0.4
Delay (s)		68.9		63.2	62.6	62.5	4.5	9.3			38.2	0.9
Level of Service		E		E	E	E	A	A			D	A
Approach Delay (s)		68.9			62.7			9.3				1.7
Approach LOS		E			E			A				A

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	80
Future Volume (vph)	80
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	87
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



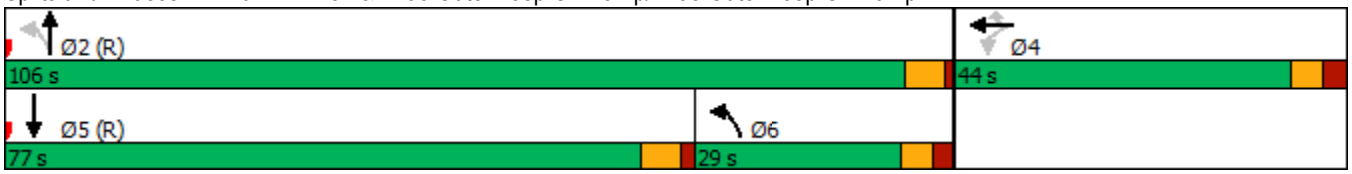
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	165	5	340	215	2365	0	0	1480	480
Future Volume (vph)	0	0	0	165	5	340	215	2365	0	0	1480	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	65		100	150		0	0		175
Storage Lanes	0		0	1		1	1		0	0		0
Taper Length (ft)	25			25			100			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Frt						0.850					0.963	
Flt Protected				0.950	0.955		0.950					
Satd. Flow (prot)	0	0	0	1681	1690	1583	1770	5085	0	0	4897	0
Flt Permitted				0.950	0.955		0.050					
Satd. Flow (perm)	0	0	0	1681	1690	1583	93	5085	0	0	4897	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						65					74	
Link Speed (mph)		25			25			35			40	
Link Distance (ft)		922			1207			533			1762	
Travel Time (s)		25.1			32.9			10.4			30.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	179	5	370	234	2571	0	0	1609	522
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	0	0	0	91	93	370	234	2571	0	0	2131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			20			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		25	20		9	15		25
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Detector Phase				4	4	4	6	2			5	
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0	3.0	10.0			10.0	
Minimum Split (s)				32.5	32.5	32.5	9.0	22.5			29.0	
Total Split (s)				44.0	44.0	44.0	29.0	106.0			77.0	
Total Split (%)				29.3%	29.3%	29.3%	19.3%	70.7%			51.3%	
Maximum Green (s)				37.5	37.5	37.5	23.0	100.5			71.0	
Yellow Time (s)				3.5	3.5	3.5	3.5	4.5			4.5	
All-Red Time (s)				3.0	3.0	3.0	2.5	1.0			1.5	
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	
Total Lost Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lead/Lag							Lag				Lead	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Recall Mode				None	None	None	Max	C-Max			C-Max	
Walk Time (s)				7.0	7.0	7.0		7.0			7.0	

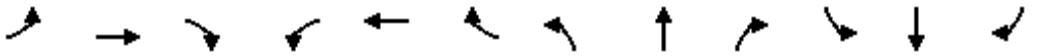
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)				19.0	19.0	19.0		10.0			16.0	
Pedestrian Calls (#/hr)				1	1	1		3			4	
Act Effct Green (s)				34.3	34.3	34.3	103.2	103.7			74.2	
Actuated g/C Ratio				0.23	0.23	0.23	0.69	0.69			0.49	
v/c Ratio				0.24	0.24	0.90	0.73	0.73			0.87	
Control Delay				47.7	47.8	70.9	34.9	3.8			20.5	
Queue Delay				0.0	0.0	0.0	0.0	0.6			0.0	
Total Delay				47.7	47.8	70.9	34.9	4.4			20.5	
LOS				D	D	E	C	A			C	
Approach Delay					63.2			6.9			20.5	
Approach LOS					E			A			C	
Queue Length 50th (ft)				74	76	291	188	190			120	
Queue Length 95th (ft)				129	131	#459	m209	198			128	
Internal Link Dist (ft)		842			1127			453			1682	
Turn Bay Length (ft)				65		100	150					
Base Capacity (vph)				420	422	444	321	3516			2460	
Starvation Cap Reductn				0	0	0	0	512			0	
Spillback Cap Reductn				0	0	0	0	0			0	
Storage Cap Reductn				0	0	0	0	0			0	
Reduced v/c Ratio				0.22	0.22	0.83	0.73	0.86			0.87	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 72 (48%), Referenced to phase 2:NBTL and 5:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 83.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1201: MD 187 & I-495 Outer Loop On Ramp/I-495 Outer Loop Off Ramp





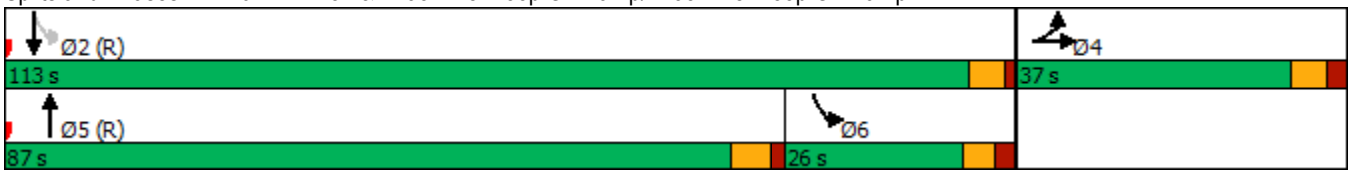
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	5	210	0	0	0	0	2125	165	190	1455	0
Future Volume (vph)	455	5	210	0	0	0	0	2125	165	190	1455	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		100	0		0	0		160	225		0
Storage Lanes	1		1	0		0	0		0	1		0
Taper Length (ft)	100			25			25			100		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Frt			0.850					0.989				
Flt Protected	0.950	0.953								0.950		
Satd. Flow (prot)	1681	1686	1583	0	0	0	0	5029	0	1770	5085	0
Flt Permitted	0.950	0.953								0.044		
Satd. Flow (perm)	1681	1686	1583	0	0	0	0	5029	0	82	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113					13				
Link Speed (mph)		25			25			35			40	
Link Distance (ft)		1316			667			876			533	
Travel Time (s)		35.9			18.2			17.1			9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	495	5	228	0	0	0	0	2310	179	207	1582	0
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	247	253	228	0	0	0	0	2489	0	207	1582	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		25	15		9	15		25	15		9
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Detector Phase	4	4						5		6	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0						10.0		3.0	10.0	
Minimum Split (s)	30.5	30.5						23.0		9.0	22.5	
Total Split (s)	37.0	37.0						87.0		26.0	113.0	
Total Split (%)	24.7%	24.7%						58.0%		17.3%	75.3%	
Maximum Green (s)	30.5	30.5						81.0		20.0	107.5	
Yellow Time (s)	4.0	4.0						4.5		3.5	4.0	
All-Red Time (s)	2.5	2.5						1.5		2.5	1.5	
Lost Time Adjust (s)	0.0	0.0						0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5						6.0		6.0	5.5	
Lead/Lag								Lead		Lag		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Recall Mode	None	None						C-Max		None	C-Max	
Walk Time (s)	7.0	7.0						7.0			7.0	

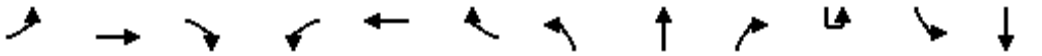
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	17.0	17.0						10.0			10.0	
Pedestrian Calls (#/hr)	1	1						1			1	
Act Effct Green (s)	27.9	27.9	150.0					83.6		109.6	110.1	
Actuated g/C Ratio	0.19	0.19	1.00					0.56		0.73	0.73	
v/c Ratio	0.79	0.81	0.14					0.89		0.73	0.42	
Control Delay	76.5	78.1	0.2					24.5		53.8	4.2	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.5	
Total Delay	76.5	78.1	0.2					24.5		53.8	4.7	
LOS	E	E	A					C		D	A	
Approach Delay		53.2						24.5			10.4	
Approach LOS		D						C			B	
Queue Length 50th (ft)	240	247	0					791		172	73	
Queue Length 95th (ft)	349	#357	0					235		m205	79	
Internal Link Dist (ft)		1236			587			796			453	
Turn Bay Length (ft)	75		100							225		
Base Capacity (vph)	341	342	1583					2809		284	3733	
Starvation Cap Reductn	0	0	0					0		0	1519	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.72	0.74	0.14					0.89		0.73	0.71	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 76 (51%), Referenced to phase 2:SBTL and 5:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 23.6		Intersection LOS: C	
Intersection Capacity Utilization 83.4%		ICU Level of Service E	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1202: MD 187 & I-495 Inner Loop Off Ramp/I-495 Inner Loop On Ramp





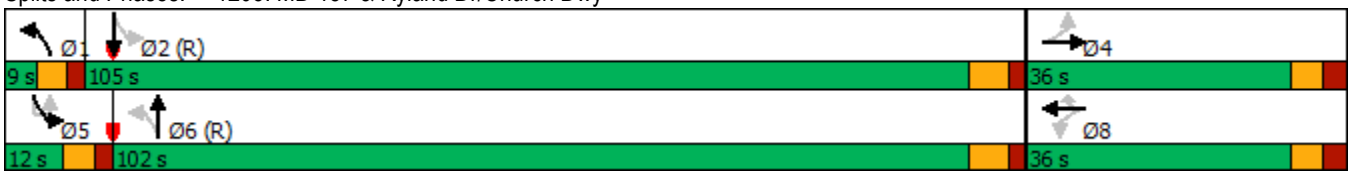
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	45	5	10	10	5	35	10	2205	5	5	30	1550
Future Volume (vph)	45	5	10	10	5	35	10	2205	5	5	30	1550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		60	150		0		140	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (ft)	25			25			100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.91
Frt		0.977				0.850						0.993
Flt Protected		0.964		0.950			0.950				0.950	
Satd. Flow (prot)	0	1754	0	1770	1863	1583	1770	5085	0	0	1770	5050
Flt Permitted		0.776		0.747			0.111				0.044	
Satd. Flow (perm)	0	1412	0	1391	1863	1583	207	5085	0	0	82	5050
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		6				65						11
Link Speed (mph)		25			25			35				40
Link Distance (ft)		1111			409			1367				876
Travel Time (s)		30.3			11.2			26.6				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	5	11	11	5	38	11	2397	5	5	33	1685
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	11	5	38	11	2402	0	0	38	1772
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	Left
Median Width(ft)		0			16			18				18
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Detector Phase	4	4		8	8	8	1	6		5	5	2
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	7.0		3.0	3.0	7.0
Minimum Split (s)	35.5	35.5		9.5	9.5	9.5	8.5	13.5		8.5	8.5	13.5
Total Split (s)	36.0	36.0		36.0	36.0	36.0	9.0	102.0		12.0	12.0	105.0
Total Split (%)	24.0%	24.0%		24.0%	24.0%	24.0%	6.0%	68.0%		8.0%	8.0%	70.0%
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	3.5	95.5		6.5	6.5	98.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	4.5		3.5	3.5	4.5
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lead/Lag							Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	3.0	0.2		3.0	3.0	0.2
Recall Mode	None	None		None	None	None	None	C-Max		None	None	C-Max
Walk Time (s)	7.0	7.0										

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	80
Future Volume (vph)	80
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	0.91
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	87
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Flash Dont Walk (s)	22.0	22.0										
Pedestrian Calls (#/hr)	2	2										
Act Effct Green (s)		14.8		14.6	14.6	14.6	120.8	116.9			124.5	122.1
Actuated g/C Ratio		0.10		0.10	0.10	0.10	0.81	0.78			0.83	0.81
v/c Ratio		0.45		0.08	0.03	0.18	0.05	0.61			0.28	0.43
Control Delay		65.1		57.5	55.4	4.9	4.6	10.7			22.9	0.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		65.1		57.5	55.4	4.9	4.6	10.8			22.9	0.9
LOS		E		E	E	A	A	B			C	A
Approach Delay		65.1			20.3			10.7				1.4
Approach LOS		E			C			B				A
Queue Length 50th (ft)		56		10	5	0	1	359			1	13
Queue Length 95th (ft)		96		28	17	11	8	615			33	30
Internal Link Dist (ft)		1031			329			1287				796
Turn Bay Length (ft)				60		60	150				140	
Base Capacity (vph)		282		273	366	363	221	3962			142	4113
Starvation Cap Reductn		0		0	0	0	0	0			0	0
Spillback Cap Reductn		0		0	0	0	0	51			0	0
Storage Cap Reductn		0		0	0	0	0	0			0	0
Reduced v/c Ratio		0.23		0.04	0.01	0.10	0.05	0.61			0.27	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 77 (51%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 7.8		Intersection LOS: A	
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1203: MD 187 & Ryland Dr/Church Dwy



Lane Group	SBR
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	110	220	620	105	110	2140	125	1175
Future Volume (vph)	110	220	620	105	110	2140	125	1175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.92		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1719		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1719		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	239	674	114	120	2326	136	1277
RTOR Reduction (vph)	0	49	0	25	0	0	53	0
Lane Group Flow (vph)	120	190	674	209	0	2326	83	1277
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	17.7	30.6	53.8	30.6		83.7	83.7	83.7
Effective Green, g (s)	17.7	30.6	53.8	30.6		83.7	83.7	83.7
Actuated g/C Ratio	0.12	0.20	0.36	0.20		0.56	0.56	0.56
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	405	322	1231	350		2837	883	2014
v/s Ratio Prot	0.03		c0.20	c0.12		c0.46		0.35
v/s Ratio Perm		0.12					0.05	
v/c Ratio	0.30	0.59	0.55	0.60		0.82	0.09	0.63
Uniform Delay, d1	60.5	54.0	38.4	54.1		27.0	15.5	22.7
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	5.2	0.5	5.0		2.8	0.2	1.5
Delay (s)	60.9	59.2	38.9	59.2		29.8	15.7	24.2
Level of Service	E	E	D	E		C	B	C
Approach Delay (s)				44.1		29.0		
Approach LOS				D		C		

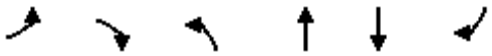
Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	3180	0	0	470
Future Volume (vph)	0	0	3180	0	0	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	3457	0	0	511
RTOR Reduction (vph)	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	3457	0	0	509
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			128.3			39.7
Effective Green, g (s)			128.3			39.7
Actuated g/C Ratio			0.71			0.22
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4567			614
v/s Ratio Prot			c0.54			c0.18
v/s Ratio Perm						
v/c Ratio			0.76			0.83
Uniform Delay, d1			16.1			66.9
Progression Factor			1.00			1.00
Incremental Delay, d2			1.2			10.6
Delay (s)			17.3			77.5
Level of Service			B			E
Approach Delay (s)		0.0	17.3		77.5	
Approach LOS		A	B		E	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

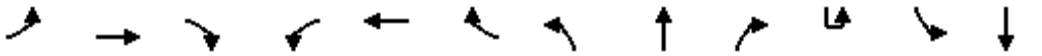
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	455	175	50	1715	3530	120
Future Volume (vph)	455	175	50	1715	3530	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	495	190	54	1864	3837	130
RTOR Reduction (vph)	0	89	0	0	0	24
Lane Group Flow (vph)	495	101	54	1864	3837	106
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	29.9	29.9	14.4	137.6	116.7	146.6
Effective Green, g (s)	29.9	29.9	14.4	137.6	116.7	146.6
Actuated g/C Ratio	0.17	0.17	0.08	0.76	0.65	0.81
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	570	262	141	3887	4154	1342
v/s Ratio Prot	c0.14		0.03	c0.37	c0.60	0.01
v/s Ratio Perm		0.06				0.05
v/c Ratio	0.87	0.38	0.38	0.48	0.92	0.08
Uniform Delay, d1	73.1	66.9	78.6	7.9	27.7	3.3
Progression Factor	1.00	1.00	1.01	0.31	0.59	0.50
Incremental Delay, d2	14.9	2.6	1.5	0.4	3.0	0.0
Delay (s)	88.0	69.5	81.1	2.8	19.5	1.7
Level of Service	F	E	F	A	B	A
Approach Delay (s)	82.9			5.0	19.0	
Approach LOS	F			A	B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	65	5	20	5	5	10	0	1395	5	295	5	3310
Future Volume (vph)	65	5	20	5	5	10	0	1395	5	295	5	3310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0			4.5	5.0
Lane Util. Factor		1.00			1.00			0.91			1.00	0.91
Frt		0.97			0.93			1.00			1.00	1.00
Flt Protected		0.97			0.99			1.00			0.95	1.00
Satd. Flow (prot)		1743			1711			5083			1770	5064
Flt Permitted		0.77			0.94			1.00			0.12	1.00
Satd. Flow (perm)		1395			1629			5083			217	5064
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	5	22	5	5	11	0	1516	5	321	5	3598
RTOR Reduction (vph)	0	2	0	0	10	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	96	0	0	11	0	0	1521	0	0	326	3700
Turn Type	Perm	NA		Perm	NA			NA		custom	pm+pt	NA
Protected Phases		8			4			6			5	2
Permitted Phases	8			4						5	2	
Actuated Green, G (s)		17.7			17.7			104.3			151.8	151.3
Effective Green, g (s)		17.7			17.7			104.3			151.8	151.3
Actuated g/C Ratio		0.10			0.10			0.58			0.84	0.84
Clearance Time (s)		6.0			6.0			5.0			4.5	5.0
Vehicle Extension (s)		3.0			3.0			0.2			3.0	0.2
Lane Grp Cap (vph)		137			160			2945			549	4256
v/s Ratio Prot								0.30			0.14	c0.73
v/s Ratio Perm		c0.07			0.01						0.36	
v/c Ratio		0.70			0.07			0.52			0.59	0.87
Uniform Delay, d1		78.6			73.7			22.7			24.7	8.5
Progression Factor		1.00			1.00			1.00			0.65	1.16
Incremental Delay, d2		15.0			0.2			0.7			0.7	1.2
Delay (s)		93.6			73.9			23.4			16.8	11.0
Level of Service		F			E			C			B	B
Approach Delay (s)		93.6			73.9			23.4				11.5
Approach LOS		F			E			C				B

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

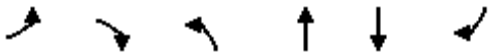
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	95
Future Volume (vph)	95
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	103
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	3180	0	0	470
Future Volume (veh/h)	0	0	3180	0	0	470
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			3457	0	0	511
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			3457	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			6.4	0.0		
Cycle Q Clear(g_c), s			6.4	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.55	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.2	0.0		
Incr Delay (d2), s/veh			0.4	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.2	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.5	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			3457			
Approach Delay, s/veh			0.5			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	124.5
Max Q Clear Time (g_c+I1), s	8.4
Green Ext Time (p_c), s	9.5

Intersection Summary	
HCM 6th Ctrl Delay	0.5
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	455	175	50	1715	3530	120
Future Volume (veh/h)	455	175	50	1715	3530	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	495	0	54	1864	3837	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	547		193	3944	4039	1246
Arrive On Green	0.16	0.00	0.11	0.77	0.63	0.63
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	495	0	54	1864	3837	130
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	25.3	0.0	5.0	23.6	99.0	3.4
Cycle Q Clear(g_c), s	25.3	0.0	5.0	23.6	99.0	3.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	547		193	3944	4039	1246
V/C Ratio(X)	0.91		0.28	0.47	0.95	0.10
Avail Cap(c_a), veh/h	576		193	3944	4039	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.4	0.0	73.8	7.3	30.9	4.5
Incr Delay (d2), s/veh	20.1	0.0	0.8	0.4	6.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	0.0	2.4	8.2	37.6	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	94.5	0.0	74.6	7.8	37.4	4.7
LnGrp LOS	F		E	A	D	A
Approach Vol, veh/h	495	A		1918	3967	
Approach Delay, s/veh	94.5			9.6	36.4	
Approach LOS	F			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		145.5		34.5	26.0	119.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		137.5		30.0	18.0	113.0
Max Q Clear Time (g_c+I1), s		25.6		27.3	7.0	101.0
Green Ext Time (p_c), s		28.1		1.1	0.1	7.5

Intersection Summary		
HCM 6th Ctrl Delay		32.8
HCM 6th LOS		C

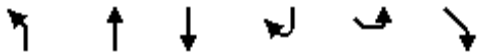
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	155	175	225	145	135	1625	125	1770
Future Volume (vph)	155	175	225	145	135	1625	125	1770
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.93		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1728		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1728		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	190	245	158	147	1766	136	1924
RTOR Reduction (vph)	0	68	0	22	0	0	55	0
Lane Group Flow (vph)	168	122	245	283	0	1766	81	1924
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	13.2	29.3	48.0	29.3		89.5	89.5	89.5
Effective Green, g (s)	13.2	29.3	48.0	29.3		89.5	89.5	89.5
Actuated g/C Ratio	0.09	0.20	0.32	0.20		0.60	0.60	0.60
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	302	309	1098	337		3034	944	2153
v/s Ratio Prot	c0.05		0.07	c0.16		0.35		c0.53
v/s Ratio Perm		0.08					0.05	
v/c Ratio	0.56	0.40	0.22	0.84		0.58	0.09	0.89
Uniform Delay, d1	65.6	52.6	37.3	58.1		18.7	12.9	26.1
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	2.3	0.1	19.3		0.8	0.2	6.2
Delay (s)	67.8	55.0	37.4	77.3		19.5	13.0	32.4
Level of Service	E	D	D	E		B	B	C
Approach Delay (s)				59.5		19.1		
Approach LOS				E		B		

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

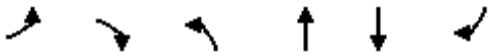
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	2170	0	0	345
Future Volume (vph)	0	0	2170	0	0	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2359	0	0	375
RTOR Reduction (vph)	0	0	0	0	0	10
Lane Group Flow (vph)	0	0	2359	0	0	365
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			136.0			32.0
Effective Green, g (s)			136.0			32.0
Actuated g/C Ratio			0.76			0.18
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4841			495
v/s Ratio Prot			c0.37			c0.13
v/s Ratio Perm						
v/c Ratio			0.49			0.74
Uniform Delay, d1			8.5			70.0
Progression Factor			1.00			1.00
Incremental Delay, d2			0.4			7.7
Delay (s)			8.9			77.8
Level of Service			A			E
Approach Delay (s)		0.0	8.9		77.8	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	240	70	65	3160	2210	305
Future Volume (vph)	240	70	65	3160	2210	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	76	71	3435	2402	332
RTOR Reduction (vph)	0	67	0	0	0	68
Lane Group Flow (vph)	261	9	71	3435	2402	264
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	20.4	20.4	18.0	147.1	122.6	143.0
Effective Green, g (s)	20.4	20.4	18.0	147.1	122.6	143.0
Actuated g/C Ratio	0.11	0.11	0.10	0.82	0.68	0.79
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	389	179	177	4155	4364	1310
v/s Ratio Prot	c0.08		0.04	c0.68	0.37	0.02
v/s Ratio Perm		0.01				0.14
v/c Ratio	0.67	0.05	0.40	0.83	0.55	0.20
Uniform Delay, d1	76.6	71.1	75.9	9.3	14.6	4.5
Progression Factor	1.00	1.00	0.87	0.18	0.73	0.30
Incremental Delay, d2	6.9	0.3	0.6	0.8	0.4	0.2
Delay (s)	83.5	71.5	67.0	2.6	11.1	1.5
Level of Service	F	E	E	A	B	A
Approach Delay (s)	80.8			3.9	10.0	
Approach LOS	F			A	A	

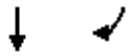
Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	90	5	15	10	5	5	5	10	2900	5	230	5
Future Volume (vph)	90	5	15	10	5	5	5	10	2900	5	230	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			4.5	5.0			4.5
Lane Util. Factor		1.00			1.00			1.00	0.91			1.00
Frt		0.98			0.97			1.00	1.00			1.00
Flt Protected		0.96			0.97			0.95	1.00			0.95
Satd. Flow (prot)		1757			1757			1770	5084			1770
Flt Permitted		0.75			0.87			0.06	1.00			0.03
Satd. Flow (perm)		1370			1568			108	5084			58
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	5	16	11	5	5	5	11	3152	5	250	5
RTOR Reduction (vph)	0	4	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	115	0	0	17	0	0	16	3157	0	0	255
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		custom	pm+pt
Protected Phases		8			4		1	1	6			5
Permitted Phases	8			4			6	6			5	2
Actuated Green, G (s)		19.7			19.7			125.5	122.5			149.8
Effective Green, g (s)		19.7			19.7			125.5	122.5			149.8
Actuated g/C Ratio		0.11			0.11			0.70	0.68			0.83
Clearance Time (s)		6.0			6.0			4.5	5.0			4.5
Vehicle Extension (s)		3.0			3.0			3.0	0.2			3.0
Lane Grp Cap (vph)		149			171			103	3459			260
v/s Ratio Prot								0.00	0.62			c0.12
v/s Ratio Perm		c0.08			0.01			0.11				c0.69
v/c Ratio		0.77			0.10			0.16	0.91			0.98
Uniform Delay, d1		78.0			72.1			20.6	24.2			64.1
Progression Factor		1.00			1.00			1.00	1.00			0.97
Incremental Delay, d2		21.8			0.2			0.7	4.8			46.0
Delay (s)		99.8			72.4			21.3	29.1			108.2
Level of Service		F			E			C	C			F
Approach Delay (s)		99.8			72.4				29.0			
Approach LOS		F			E				C			

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



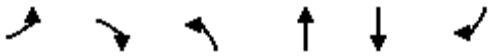
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1915	130
Future Volume (vph)	1915	130
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.91	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5037	
Flt Permitted	1.00	
Satd. Flow (perm)	5037	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	2082	141
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2219	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	141.8	
Effective Green, g (s)	141.8	
Actuated g/C Ratio	0.79	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	3968	
v/s Ratio Prot	0.44	
v/s Ratio Perm		
v/c Ratio	0.56	
Uniform Delay, d1	7.2	
Progression Factor	0.12	
Incremental Delay, d2	0.5	
Delay (s)	1.4	
Level of Service	A	
Approach Delay (s)	12.4	
Approach LOS	B	

Intersection Summary

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	2170	0	0	345
Future Volume (veh/h)	0	0	2170	0	0	345
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			2359	0	0	375
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			2359	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			3.2	0.0		
Cycle Q Clear(g_c), s			3.2	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.38	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.1	0.0		
Incr Delay (d2), s/veh			0.2	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.1	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.3	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			2359			
Approach Delay, s/veh			0.3			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	116.5
Max Q Clear Time (g_c+I1), s	5.2
Green Ext Time (p_c), s	3.9

Intersection Summary	
HCM 6th Ctrl Delay	0.3
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	240	70	65	3160	2210	305
Future Volume (veh/h)	240	70	65	3160	2210	305
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	261	0	71	3435	2402	332
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	316		223	4285	4361	1219
Arrive On Green	0.09	0.00	0.13	0.84	0.68	0.68
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	261	0	71	3435	2402	332
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	13.4	0.0	6.5	59.5	34.6	11.0
Cycle Q Clear(g_c), s	13.4	0.0	6.5	59.5	34.6	11.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	316		223	4285	4361	1219
V/C Ratio(X)	0.83		0.32	0.80	0.55	0.27
Avail Cap(c_a), veh/h	403		223	4285	4361	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.4	0.0	71.7	7.1	14.9	6.1
Incr Delay (d2), s/veh	18.7	0.0	0.8	1.7	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	3.1	17.9	12.2	5.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.1	0.0	72.5	8.8	15.4	6.6
LnGrp LOS	F		E	A	B	A
Approach Vol, veh/h	261	A		3506	2734	
Approach Delay, s/veh	99.1			10.1	14.3	
Approach LOS	F			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		157.6		22.4	29.1	128.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		146.5		21.0	18.0	122.0
Max Q Clear Time (g_c+I1), s		61.5		15.4	8.5	36.6
Green Ext Time (p_c), s		77.7		1.1	0.1	3.8

Intersection Summary		
HCM 6th Ctrl Delay		15.4
HCM 6th LOS		B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

2045 NO BUILD CONDITIONS

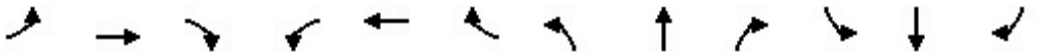
SYNCHRO ANALYSIS OUTPUTS

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	165	0	320	0	1695	360	440	1265	0	0	85
Future Volume (vph)	165	0	320	0	1695	360	440	1265	0	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	0	348	0	1842	391	478	1375	0	0	92
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	179	0	348	0	1842	391	478	1375	0	0	92
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		4 1		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	23.5		64.4		101.6	101.6	34.4	143.0			143.0
Effective Green, g (s)	23.5		64.4		101.6	101.6	34.4	143.0			143.0
Actuated g/C Ratio	0.13		0.36		0.56	0.56	0.19	0.79			0.79
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	448		997		2870	893	656	4039			1279
v/s Ratio Prot	0.05		c0.12		c0.36		c0.14	0.27			0.06
v/s Ratio Perm						0.25					
v/c Ratio	0.40		0.35		0.64	0.44	0.73	0.34			0.07
Uniform Delay, d1	71.8		42.4		26.8	22.7	68.4	5.2			4.0
Progression Factor	1.00		1.00		0.65	0.60	1.00	1.00			1.00
Incremental Delay, d2	0.8		0.3		0.9	1.2	5.0	0.2			0.1
Delay (s)	72.6		42.7		18.3	14.7	73.4	5.4			4.1
Level of Service	E		D		B	B	E	A			A
Approach Delay (s)	52.9				17.6			23.0		4.1	
Approach LOS	D				B			C		A	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

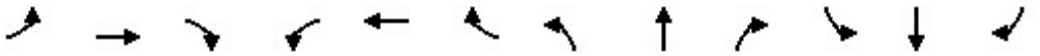
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	360	15	150	35	215	0	0	440	35
Future Volume (vph)	0	0	0	360	15	150	35	215	0	0	440	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1692	1583	1770	1863			3500	
Flt Permitted				0.95	0.96	1.00	0.43	1.00			1.00	
Satd. Flow (perm)				1681	1692	1583	806	1863			3500	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	391	16	163	38	234	0	0	478	38
RTOR Reduction (vph)	0	0	0	0	0	124	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	203	204	39	38	234	0	0	510	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				19.8	19.8	19.8	50.1	51.4			21.4	
Effective Green, g (s)				19.8	19.8	19.8	50.1	42.4			21.4	
Actuated g/C Ratio				0.24	0.24	0.24	0.61	0.52			0.26	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				404	407	381	737	960			911	
v/s Ratio Prot				c0.12	0.12		c0.01	c0.13			c0.15	
v/s Ratio Perm						0.02	0.02					
v/c Ratio				0.50	0.50	0.10	0.05	0.24			0.56	
Uniform Delay, d1				26.9	26.9	24.3	7.3	11.0			26.3	
Progression Factor				1.00	1.00	1.00	0.11	0.12			1.00	
Incremental Delay, d2				2.1	2.0	0.2	0.1	0.3			0.4	
Delay (s)				29.0	29.0	24.5	0.9	1.6			26.7	
Level of Service				C	C	C	A	A			C	
Approach Delay (s)		0.0			27.7			1.5			26.7	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	29.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

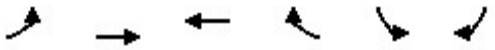
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	5	135	0	0	0	0	185	100	95	705	0
Future Volume (vph)	65	5	135	0	0	0	0	185	100	95	705	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.96	1.00					1.00	1.00		0.99	
Satd. Flow (prot)		1780	1583					1863	1583		3518	
Flt Permitted		0.96	1.00					1.00	1.00		0.88	
Satd. Flow (perm)		1780	1583					1863	1583		3099	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	5	147	0	0	0	0	201	109	103	766	0
RTOR Reduction (vph)	0	0	123	0	0	0	0	0	70	0	0	0
Lane Group Flow (vph)	0	76	24	0	0	0	0	201	39	0	869	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		13.3	13.3					29.1	29.1		41.2	
Effective Green, g (s)		13.3	13.3					29.1	29.1		41.2	
Actuated g/C Ratio		0.16	0.16					0.35	0.35		0.50	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		288	256					659	560		1654	
v/s Ratio Prot		c0.04						0.11			c0.13	
v/s Ratio Perm			0.02						0.02		c0.14	
v/c Ratio		0.26	0.09					0.31	0.07		0.53	
Uniform Delay, d1		30.2	29.3					19.2	17.6		13.9	
Progression Factor		1.00	1.00					1.00	1.00		0.29	
Incremental Delay, d2		1.0	0.3					0.1	0.0		0.1	
Delay (s)		31.2	29.6					19.3	17.6		4.2	
Level of Service		C	C					B	B		A	
Approach Delay (s)		30.2			0.0			18.7			4.2	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	29.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

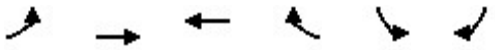
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2930	320	0	0	620
Future Volume (vph)	0	2930	320	0	0	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	3185	348	0	0	674
RTOR Reduction (vph)	0	0	0	0	0	127
Lane Group Flow (vph)	0	3185	348	0	0	547
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	49.5			117.5
Effective Green, g (s)		180.0	49.5			117.5
Actuated g/C Ratio		1.00	0.28			0.65
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1398			1819
v/s Ratio Prot		c0.50	0.07			0.20
v/s Ratio Perm						
v/c Ratio		0.50	0.25			0.30
Uniform Delay, d1		0.0	50.8			13.5
Progression Factor		1.00	0.07			2.09
Incremental Delay, d2		0.2	0.4			0.2
Delay (s)		0.2	3.9			28.4
Level of Service		A	A			C
Approach Delay (s)		0.2	3.9		28.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

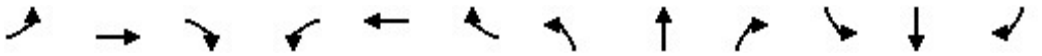
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1000	1930	320	0	450	0
Future Volume (vph)	1000	1930	320	0	450	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1087	2098	348	0	489	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1087	2098	348	0	489	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	80.5	136.5	49.5		30.5	
Effective Green, g (s)	80.5	136.5	49.5		30.5	
Actuated g/C Ratio	0.45	0.76	0.28		0.17	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1535	2683	1398		581	
v/s Ratio Prot	0.32	c0.59	0.07		c0.14	
v/s Ratio Perm						
v/c Ratio	0.71	0.78	0.25		0.84	
Uniform Delay, d1	40.2	12.9	50.8		72.4	
Progression Factor	1.00	1.00	1.00		1.11	
Incremental Delay, d2	2.0	2.1	0.4		10.4	
Delay (s)	42.2	15.0	51.2		90.7	
Level of Service	D	B	D		F	
Approach Delay (s)		24.3	51.2		90.7	
Approach LOS		C	D		F	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	605	0	30	0	0	175	20	1275	95	100	1040	375
Future Volume (vph)	605	0	30	0	0	175	20	1275	95	100	1040	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	658	0	33	0	0	190	22	1386	103	109	1130	408
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	658	0	7	0	0	190	22	1386	103	109	1130	408
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	39.4		39.4			37.8	5.4	82.8	180.0	16.4	93.8	180.0
Effective Green, g (s)	39.4		39.4			32.3	5.4	82.8	180.0	16.4	93.8	180.0
Actuated g/C Ratio	0.22		0.22			0.18	0.03	0.46	1.00	0.09	0.52	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	751		346			500	53	2339	1583	161	2649	1583
v/s Ratio Prot	c0.19					c0.07	0.01	c0.27		c0.06	0.22	
v/s Ratio Perm			0.00						0.07			0.26
v/c Ratio	0.88		0.02			0.38	0.42	0.59	0.07	0.68	0.43	0.26
Uniform Delay, d1	67.9		55.2			65.0	85.7	36.1	0.0	79.2	26.5	0.0
Progression Factor	1.00		1.00			1.00	1.45	0.30	1.00	1.19	0.86	1.00
Incremental Delay, d2	11.2		0.0			0.5	4.5	1.0	0.1	10.4	0.5	0.4
Delay (s)	79.1		55.2			65.5	128.7	11.9	0.1	104.5	23.3	0.4
Level of Service	E		E			E	F	B	A	F	C	A
Approach Delay (s)		78.0			65.5			12.8			23.0	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

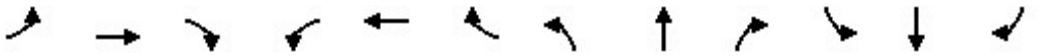
c Critical Lane Group

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	375	0	555	0	1680	285	555	2190	0	0	355
Future Volume (vph)	375	0	555	0	1680	285	555	2190	0	0	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		7.0		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	408	0	603	0	1826	310	603	2380	0	0	386
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	408	0	603	0	1826	310	603	2380	0	0	386
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		1 4		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	35.6		82.9		83.1	83.1	40.8	130.9			130.9
Effective Green, g (s)	35.6		76.4		83.1	83.1	40.8	130.9			130.9
Actuated g/C Ratio	0.20		0.42		0.46	0.46	0.23	0.73			0.73
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	678		1182		2347	730	778	3697			1171
v/s Ratio Prot	c0.12		0.22		c0.36		c0.18	0.47			0.24
v/s Ratio Perm						0.20					
v/c Ratio	0.60		0.51		0.78	0.42	0.78	0.64			0.33
Uniform Delay, d1	65.7		38.1		40.7	32.4	65.3	12.6			8.8
Progression Factor	1.00		1.00		0.70	0.69	1.00	1.00			1.00
Incremental Delay, d2	1.7		0.7		2.1	1.5	5.7	0.9			0.8
Delay (s)	67.5		38.8		30.8	23.8	71.0	13.5			9.6
Level of Service	E		D		C	C	E	B			A
Approach Delay (s)	50.4				29.8			25.1		9.6	
Approach LOS	D				C			C		A	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

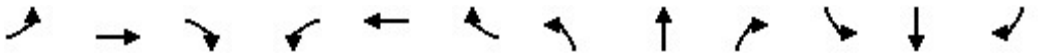
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	300	65	50	205	315	0	0	365	85
Future Volume (vph)	0	0	0	300	65	50	205	315	0	0	365	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.97	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1714	1583	1770	1863			3439	
Flt Permitted				0.95	0.97	1.00	0.43	1.00			1.00	
Satd. Flow (perm)				1681	1714	1583	807	1863			3439	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	326	71	54	223	342	0	0	397	92
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	196	201	12	223	342	0	0	469	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				19.4	19.4	19.4	60.5	60.5			21.4	
Effective Green, g (s)				19.4	19.4	19.4	60.5	51.5			21.4	
Actuated g/C Ratio				0.21	0.21	0.21	0.67	0.57			0.24	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				358	365	337	855	1055			809	
v/s Ratio Prot				0.12	c0.12		c0.09	c0.18			c0.14	
v/s Ratio Perm						0.01	0.09					
v/c Ratio				0.55	0.55	0.03	0.26	0.32			0.58	
Uniform Delay, d1				31.8	31.9	28.3	8.0	10.5			30.8	
Progression Factor				1.00	1.00	1.00	0.06	0.05			1.00	
Incremental Delay, d2				3.0	3.0	0.1	0.3	0.3			0.6	
Delay (s)				34.8	34.9	28.4	0.7	0.8			31.4	
Level of Service				C	C	C	A	A			C	
Approach Delay (s)		0.0			34.1			0.8			31.4	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	29.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

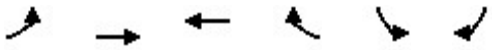
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	5	140	0	0	0	0	460	750	115	550	0
Future Volume (vph)	60	5	140	0	0	0	0	460	750	115	550	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.96	1.00					1.00	1.00		0.99	
Satd. Flow (prot)		1780	1583					1863	1583		3509	
Flt Permitted		0.96	1.00					1.00	1.00		0.57	
Satd. Flow (perm)		1780	1583					1863	1583		2003	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	5	152	0	0	0	0	500	815	125	598	0
RTOR Reduction (vph)	0	0	123	0	0	0	0	0	456	0	0	0
Lane Group Flow (vph)	0	70	29	0	0	0	0	500	359	0	723	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		17.1	17.1					34.4	34.4		40.8	
Effective Green, g (s)		17.1	17.1					34.4	34.4		40.8	
Actuated g/C Ratio		0.19	0.19					0.38	0.38		0.45	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		334	297					705	599		1220	
v/s Ratio Prot		c0.04						c0.27			c0.13	
v/s Ratio Perm			0.02						0.23		0.14	
v/c Ratio		0.21	0.10					0.71	0.60		0.59	
Uniform Delay, d1		31.2	30.5					24.0	22.7		18.8	
Progression Factor		1.00	1.00					1.00	1.00		0.67	
Incremental Delay, d2		0.7	0.3					2.7	1.1		0.5	
Delay (s)		31.8	30.8					26.7	23.8		13.1	
Level of Service		C	C					C	C		B	
Approach Delay (s)		31.1			0.0			24.9			13.1	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	29.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

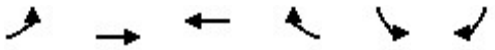
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1305	1495	0	0	1300
Future Volume (vph)	0	1305	1495	0	0	1300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1418	1625	0	0	1413
RTOR Reduction (vph)	0	0	0	0	0	2
Lane Group Flow (vph)	0	1418	1625	0	0	1411
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	67.3			99.7
Effective Green, g (s)		180.0	67.3			99.7
Actuated g/C Ratio		1.00	0.37			0.55
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1901			1543
v/s Ratio Prot		0.22	c0.32			c0.51
v/s Ratio Perm						
v/c Ratio		0.22	0.85			0.91
Uniform Delay, d1		0.0	51.9			36.3
Progression Factor		1.00	0.07			0.68
Incremental Delay, d2		0.0	2.6			7.2
Delay (s)		0.0	6.2			31.9
Level of Service		A	A			C
Approach Delay (s)		0.0	6.2		31.9	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

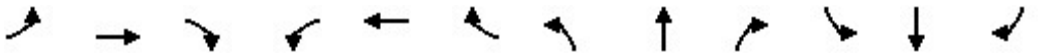
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	750	555	1495	0	290	0
Future Volume (vph)	750	555	1495	0	290	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	815	603	1625	0	315	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	815	603	1625	0	315	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	72.5	146.3	67.3		20.7	
Effective Green, g (s)	72.5	146.3	67.3		20.7	
Actuated g/C Ratio	0.40	0.81	0.37		0.11	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1382	2876	1901		394	
v/s Ratio Prot	c0.24	0.17	c0.32		c0.09	
v/s Ratio Perm						
v/c Ratio	0.59	0.21	0.85		0.80	
Uniform Delay, d1	42.1	3.8	51.9		77.6	
Progression Factor	1.00	1.00	1.00		0.94	
Incremental Delay, d2	1.2	0.2	5.2		8.5	
Delay (s)	43.3	4.0	57.0		81.1	
Level of Service	D	A	E		F	
Approach Delay (s)		26.6	57.0		81.1	
Approach LOS		C	E		F	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	0	25	0	0	315	90	1230	185	155	1565	1200
Future Volume (vph)	420	0	25	0	0	315	90	1230	185	155	1565	1200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	457	0	27	0	0	342	98	1337	201	168	1701	1304
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	457	0	4	0	0	342	98	1337	201	168	1701	1304
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	28.6		28.6			51.2	15.0	80.2	180.0	22.0	87.2	180.0
Effective Green, g (s)	28.6		28.6			45.7	15.0	80.2	180.0	22.0	87.2	180.0
Actuated g/C Ratio	0.16		0.16			0.25	0.08	0.45	1.00	0.12	0.48	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	545		251			707	147	2265	1583	216	2463	1583
v/s Ratio Prot	0.13					0.12	0.06	0.26		0.09	0.33	
v/s Ratio Perm			0.00						0.13			c0.82
v/c Ratio	0.84		0.02			0.48	0.67	0.59	0.13	0.78	0.69	0.82
Uniform Delay, d1	73.5		63.8			57.1	80.1	37.5	0.0	76.6	35.9	0.0
Progression Factor	1.00		1.00			1.00	0.78	1.59	1.00	0.92	0.90	1.00
Incremental Delay, d2	10.9		0.0			0.5	10.6	1.1	0.2	13.3	1.3	4.1
Delay (s)	84.3		63.9			57.6	73.3	60.8	0.2	84.1	33.6	4.1
Level of Service	F		E			E	E	E	A	F	C	A
Approach Delay (s)		83.2			57.6			54.1			24.2	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	85	2055	200	20	255	545	105	10	65	60	130	270
Future Volume (vph)	85	2055	200	20	255	545	105	10	65	60	130	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	2234	217	22	277	592	114	11	71	65	141	293
RTOR Reduction (vph)	0	0	103	0	0	0	50	0	0	55	0	0
Lane Group Flow (vph)	92	2234	114	0	299	592	64	11	71	10	141	293
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	12.7	78.9	78.9		17.5	83.7	83.7	1.6	23.6	23.6	8.0	30.0
Effective Green, g (s)	12.7	78.9	78.9		17.5	83.7	83.7	1.6	23.6	23.6	8.0	30.0
Actuated g/C Ratio	0.08	0.53	0.53		0.12	0.56	0.56	0.01	0.16	0.16	0.05	0.20
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	149	2674	832		400	2837	883	18	556	249	183	372
v/s Ratio Prot	0.05	c0.44			c0.09	0.12		0.01	0.02		c0.04	c0.16
v/s Ratio Perm			0.07				0.04			0.01		
v/c Ratio	0.62	0.84	0.14		0.75	0.21	0.07	0.61	0.13	0.04	0.77	0.79
Uniform Delay, d1	66.3	30.1	18.2		64.1	16.6	15.3	73.9	54.3	53.6	70.1	57.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	3.3	0.3		7.5	0.2	0.2	48.7	0.1	0.1	17.9	11.1
Delay (s)	73.7	33.3	18.5		71.6	16.8	15.4	122.6	54.5	53.7	88.0	68.1
Level of Service	E	C	B		E	B	B	F	D	D	F	E
Approach Delay (s)		33.5				32.9			59.2			71.2
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	65
RTOR Reduction (vph)	52
Lane Group Flow (vph)	13
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	30.0
Effective Green, g (s)	30.0
Actuated g/C Ratio	0.20
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	316
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	48.4
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	48.5
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

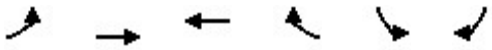
Intersection	
Int Delay, s/veh	9.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	230	145	180	0	0	875
Future Vol, veh/h	230	145	180	0	0	875
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	250	158	196	0	0	951

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	672	98	0	-	-	-
Stage 1	196	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	389	939	-	0	0	-
Stage 1	818	-	-	0	0	-
Stage 2	591	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	389	939	-	-	-	-
Mov Cap-2 Maneuver	389	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	591	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.1	0	0
HCM LOS	E		

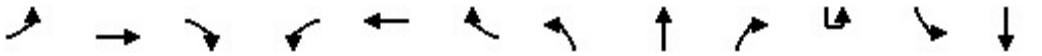
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	503	-
HCM Lane V/C Ratio	-	0.81	-
HCM Control Delay (s)	-	36.1	-
HCM Lane LOS	-	E	-
HCM 95th %tile Q(veh)	-	7.8	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	710	120	205	165	15
Future Volume (veh/h)	55	710	120	205	165	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	772	130	223	179	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	114	1856	542	484	438	303
Arrive On Green	0.06	0.52	0.31	0.31	0.13	0.13
Sat Flow, veh/h	1781	3647	1870	1585	3456	1585
Grp Volume(v), veh/h	60	772	130	223	179	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	1.1	4.3	1.8	3.7	1.6	0.3
Cycle Q Clear(g_c), s	1.1	4.3	1.8	3.7	1.6	0.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	114	1856	542	484	438	303
V/C Ratio(X)	0.52	0.42	0.24	0.46	0.41	0.05
Avail Cap(c_a), veh/h	653	5913	2034	1815	2532	1263
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	4.8	8.5	9.2	13.2	10.8
Incr Delay (d2), s/veh	3.7	0.1	0.1	0.3	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	0.5	0.9	0.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.5	4.8	8.6	9.5	13.8	10.9
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		832	353		195	
Approach Delay, s/veh		5.8	9.1		13.5	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.1	15.5		10.2		22.6
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	12.0	37.5		24.0		54.5
Max Q Clear Time (g_c+I1), s	3.1	5.7		3.6		6.3
Green Ext Time (p_c), s	0.1	1.4		0.6		3.8

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	100	10	10	25	5	50	5	1265	25	120	325	1855
Future Volume (vph)	100	10	10	25	5	50	5	1265	25	120	325	1855
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected	0.95	0.96	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1602	1441		1728	1531	1685	4828			1643	4825
Flt Permitted	0.95	0.96	1.00		0.96	1.00	0.07	1.00			0.10	1.00
Satd. Flow (perm)	1584	1602	1441		1728	1531	133	4828			176	4825
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	11	11	27	5	54	5	1375	27	130	353	2016
RTOR Reduction (vph)	0	0	10	0	0	52	0	1	0	0	0	7
Lane Group Flow (vph)	60	60	1	0	32	2	5	1401	0	0	483	2210
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	9.9	9.9	9.9		5.4	5.4	67.8	67.8			115.7	115.7
Effective Green, g (s)	9.9	9.9	9.9		5.4	5.4	67.8	67.8			115.7	115.7
Actuated g/C Ratio	0.07	0.07	0.07		0.04	0.04	0.45	0.45			0.77	0.77
Clearance Time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	104	105	95		62	55	60	2182			560	3721
v/s Ratio Prot	c0.04	0.04			c0.02			0.29			c0.25	0.46
v/s Ratio Perm			0.00			0.00	0.04				c0.41	
v/c Ratio	0.58	0.57	0.01		0.52	0.04	0.08	0.64			0.86	0.59
Uniform Delay, d1	68.0	68.0	65.5		71.0	69.8	23.4	31.7			37.2	7.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.16	0.66
Incremental Delay, d2	7.5	7.3	0.0		7.1	0.3	2.7	1.5			9.4	0.5
Delay (s)	75.6	75.3	65.5		78.1	70.0	26.1	33.2			52.6	5.3
Level of Service	E	E	E		E	E	C	C			D	A
Approach Delay (s)		74.6			73.0			33.2				13.7
Approach LOS		E			E			C				B

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	185
Future Volume (vph)	185
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	201
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	410	885	0	1085	1600	535
Future Volume (veh/h)	410	885	0	1085	1600	535
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	446	962	0	1179	1739	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	1313	1060	0	2717	2674	
Arrive On Green	0.39	0.39	0.00	0.54	0.72	0.00
Sat Flow, veh/h	3358	2711	0	5374	5125	1540
Grp Volume(v), veh/h	446	962	0	1179	1739	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1681	1654	1540
Q Serve(g_s), s	14.0	50.3	0.0	21.1	27.9	0.0
Cycle Q Clear(g_c), s	14.0	50.3	0.0	21.1	27.9	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	1313	1060	0	2717	2674	
V/C Ratio(X)	0.34	0.91	0.00	0.43	0.65	
Avail Cap(c_a), veh/h	1612	1301	0	2717	2674	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.81	0.00
Uniform Delay (d), s/veh	32.1	43.1	0.0	20.8	13.7	0.0
Incr Delay (d2), s/veh	0.2	8.2	0.0	0.5	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	18.2	0.0	8.3	8.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.2	51.3	0.0	21.3	14.7	0.0
LnGrp LOS	C	D	A	C	B	
Approach Vol, veh/h	1408			1179	1739	A
Approach Delay, s/veh	45.3			21.3	14.7	
Approach LOS	D			C	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		86.3		63.7		86.3
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		67.5		72.0		67.5
Max Q Clear Time (g_c+I1), s		29.9		52.3		23.1
Green Ext Time (p_c), s		17.5		6.4		10.3

Intersection Summary		
HCM 6th Ctrl Delay		26.5
HCM 6th LOS		C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

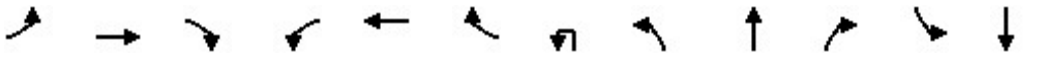
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	860	315	1100	395	0	1275
Future Volume (veh/h)	860	315	1100	395	0	1275
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	935	0	1196	0	0	1386
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	1036		3156		0	3977
Arrive On Green	0.30	0.00	0.83	0.00	0.00	0.63
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	935	0	1196	0	0	1386
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	39.1	0.0	8.7	0.0	0.0	15.7
Cycle Q Clear(g_c), s	39.1	0.0	8.7	0.0	0.0	15.7
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1036		3156		0	3977
V/C Ratio(X)	0.90		0.38		0.00	0.35
Avail Cap(c_a), veh/h	1734		3156		0	3977
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.91	0.00	0.00	1.00
Uniform Delay (d), s/veh	50.3	0.0	5.4	0.0	0.0	13.4
Incr Delay (d2), s/veh	4.1	0.0	0.3	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	0.0	2.5	0.0	0.0	5.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.4	0.0	5.7	0.0	0.0	13.7
LnGrp LOS	D		A		A	B
Approach Vol, veh/h	935	A	1196	A		1386
Approach Delay, s/veh	54.4		5.7			13.7
Approach LOS	D		A			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		99.4		50.6		99.4
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		63.5		75.5		63.5
Max Q Clear Time (g_c+I1), s		17.7		41.1		10.7
Green Ext Time (p_c), s		13.2		4.0		10.7

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



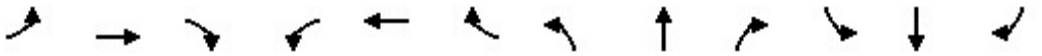
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	10	65	185	10	55	5	130	1000	280	145	1435
Future Volume (vph)	35	10	65	185	10	55	5	130	1000	280	145	1435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.97	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1472	1333	1561	1629	1418		1702	4891	1470	1619	4978
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.11	1.00	1.00	0.22	1.00
Satd. Flow (perm)		1472	1333	1561	1629	1418		193	4891	1470	380	4978
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	11	71	201	11	60	5	141	1087	304	158	1560
RTOR Reduction (vph)	0	7	48	0	0	54	0	0	0	124	0	0
Lane Group Flow (vph)	0	56	9	107	105	6	0	146	1087	180	158	1571
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		10.9	23.3	15.6	15.6	15.6		101.3	88.9	88.9	97.7	87.1
Effective Green, g (s)		10.9	23.3	15.6	15.6	15.6		101.3	88.9	88.9	97.7	87.1
Actuated g/C Ratio		0.07	0.16	0.10	0.10	0.10		0.68	0.59	0.59	0.65	0.58
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		106	207	162	169	147		255	2898	871	335	2890
v/s Ratio Prot		c0.04	0.00	c0.07	0.06			c0.05	0.22		0.03	0.32
v/s Ratio Perm			0.00			0.00		c0.34		0.12	0.27	
v/c Ratio		0.52	0.04	0.66	0.62	0.04		0.57	0.38	0.21	0.47	0.54
Uniform Delay, d1		67.1	53.9	64.7	64.4	60.5		13.3	16.0	14.2	10.6	19.3
Progression Factor		1.00	1.00	1.00	1.00	1.00		2.43	0.98	2.07	1.00	1.00
Incremental Delay, d2		4.6	0.1	9.7	6.9	0.1		2.9	0.4	0.5	1.1	0.7
Delay (s)		71.7	54.0	74.3	71.3	60.6		35.4	16.0	29.9	11.6	20.0
Level of Service		E	D	E	E	E		D	B	C	B	C
Approach Delay (s)		63.3			70.1				20.6			19.2
Approach LOS		E			E				C			B

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	430	170	170	0	25	0	50	60	80	355	0
Future Volume (veh/h)	110	430	170	170	0	25	0	50	60	80	355	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	120	467	185	185	0	27	0	54	65	87	386	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	958	1340	527	0	0	0	0	433	367	209	657	0
Arrive On Green	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.23	0.23	0.23	0.23	0.00
Sat Flow, veh/h	1781	2491	980		0		0	1870	1585	443	2922	0
Grp Volume(v), veh/h	120	332	320		0.0		0	54	65	254	219	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1694				0	1870	1585	1663	1617	0
Q Serve(g_s), s	1.5	4.8	4.9				0.0	1.0	1.5	4.0	5.5	0.0
Cycle Q Clear(g_c), s	1.5	4.8	4.9				0.0	1.0	1.5	6.1	5.5	0.0
Prop In Lane	1.00		0.58				0.00		1.00	0.34		0.00
Lane Grp Cap(c), veh/h	958	956	911				0	433	367	491	375	0
V/C Ratio(X)	0.13	0.35	0.35				0.00	0.12	0.18	0.52	0.59	0.00
Avail Cap(c_a), veh/h	958	956	911				0	862	731	861	745	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.2	6.0	6.0				0.0	13.8	14.0	15.7	15.6	0.0
Incr Delay (d2), s/veh	0.3	1.0	1.1				0.0	0.1	0.2	0.8	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.6	1.5				0.0	0.4	0.5	2.2	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	7.0	7.1				0.0	14.0	14.2	16.5	17.0	0.0
LnGrp LOS	A	A	A				A	B	B	B	B	A
Approach Vol, veh/h		772						119			473	
Approach Delay, s/veh		6.8						14.1			16.8	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.6		30.0		15.6				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				21.0		24.5		21.0				
Max Q Clear Time (g_c+I1), s				8.1		6.9		3.5				
Green Ext Time (p_c), s				2.4		4.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		10.9	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	85	795	30	20	75	2115	215	165	360	335	110	110
Future Volume (vph)	85	795	30	20	75	2115	215	165	360	335	110	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	864	33	22	82	2299	234	179	391	364	120	120
RTOR Reduction (vph)	0	0	15	0	0	0	109	0	0	132	0	0
Lane Group Flow (vph)	92	864	18	0	104	2299	125	179	391	232	120	120
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	11.2	82.7	82.7		8.7	80.2	80.2	17.9	29.0	29.0	7.6	18.7
Effective Green, g (s)	11.2	82.7	82.7		8.7	80.2	80.2	17.9	29.0	29.0	7.6	18.7
Actuated g/C Ratio	0.07	0.55	0.55		0.06	0.53	0.53	0.12	0.19	0.19	0.05	0.12
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	132	2803	872		199	2718	846	211	684	306	173	232
v/s Ratio Prot	c0.05	0.17			0.03	c0.45		c0.10	0.11		0.03	0.06
v/s Ratio Perm			0.01				0.08			c0.15		
v/c Ratio	0.70	0.31	0.02		0.52	0.85	0.15	0.85	0.57	0.76	0.69	0.52
Uniform Delay, d1	67.7	18.2	15.3		68.6	29.6	17.6	64.7	54.9	57.2	70.1	61.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	0.3	0.0		2.5	3.5	0.4	25.8	1.4	10.8	11.4	2.6
Delay (s)	82.6	18.5	15.3		71.1	33.1	18.0	90.5	56.3	68.0	81.5	64.0
Level of Service	F	B	B		E	C	B	F	E	E	F	E
Approach Delay (s)		24.3				33.3			67.4			69.7
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	205
Future Volume (vph)	205
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	223
RTOR Reduction (vph)	111
Lane Group Flow (vph)	112
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	18.7
Effective Green, g (s)	18.7
Actuated g/C Ratio	0.12
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	197
v/s Ratio Prot	
v/s Ratio Perm	0.07
v/c Ratio	0.57
Uniform Delay, d1	61.8
Progression Factor	1.00
Incremental Delay, d2	4.5
Delay (s)	66.3
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

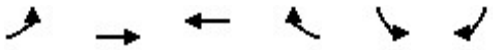
Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	130	1550	0	0	440
Future Vol, veh/h	25	130	1550	0	0	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	141	1685	0	0	478

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1924	843	0	-	-	-
Stage 1	1685	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	59	307	-	0	0	-
Stage 1	136	-	-	0	0	-
Stage 2	778	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	59	307	-	-	-	-
Mov Cap-2 Maneuver	59	-	-	-	-	-
Stage 1	136	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	98.8	0	0
HCM LOS	F		

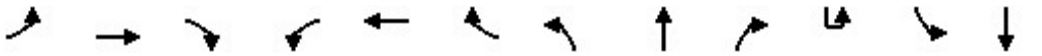
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	183	-
HCM Lane V/C Ratio	-	0.921	-
HCM Control Delay (s)	-	98.8	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	7.1	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	195	1170	510	245	85
Future Volume (veh/h)	20	195	1170	510	245	85
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	212	1272	554	266	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	44	2573	1545	637	400	223
Arrive On Green	0.02	0.72	0.63	0.63	0.12	0.12
Sat Flow, veh/h	1781	3647	2548	1011	3456	1585
Grp Volume(v), veh/h	22	212	901	925	266	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1688	1728	1585
Q Serve(g_s), s	0.9	1.3	27.4	32.2	5.3	3.8
Cycle Q Clear(g_c), s	0.9	1.3	27.4	32.2	5.3	3.8
Prop In Lane	1.00			0.60	1.00	1.00
Lane Grp Cap(c), veh/h	44	2573	1119	1063	400	223
V/C Ratio(X)	0.50	0.08	0.81	0.87	0.66	0.41
Avail Cap(c_a), veh/h	124	3389	1447	1375	962	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	2.9	10.0	10.9	30.4	28.2
Incr Delay (d2), s/veh	8.5	0.0	2.0	4.2	1.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	8.5	10.0	2.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.1	2.9	12.0	15.1	32.3	29.4
LnGrp LOS	D	A	B	B	C	C
Approach Vol, veh/h		234	1826		358	
Approach Delay, s/veh		6.7	13.6		31.6	
Approach LOS		A	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.8	50.7		14.3		57.5
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	5.0	58.5		20.0		68.5
Max Q Clear Time (g_c+I1), s	2.9	34.2		7.3		3.3
Green Ext Time (p_c), s	0.0	11.0		1.0		0.9

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	165	5	25	65	5	320	15	1725	35	20	100	825
Future Volume (vph)	165	5	25	65	5	320	15	1725	35	20	100	825
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.98
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1593	1441		1720	1531	1685	4828			1643	4805
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.27	1.00			0.05	1.00
Satd. Flow (perm)	1584	1593	1441		1720	1531	478	4828			84	4805
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	5	27	71	5	348	16	1875	38	22	109	897
RTOR Reduction (vph)	0	0	25	0	0	118	0	1	0	0	0	10
Lane Group Flow (vph)	91	93	2	0	76	230	16	1912	0	0	131	1007
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	12.0	12.0	12.0		26.2	26.2	78.3	78.3			94.3	94.3
Effective Green, g (s)	12.0	12.0	12.0		26.2	26.2	78.3	78.3			94.3	94.3
Actuated g/C Ratio	0.08	0.08	0.08		0.17	0.17	0.52	0.52			0.63	0.63
Clearance Time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	126	127	115		300	267	249	2520			172	3020
v/s Ratio Prot	0.06	c0.06			0.04			0.40			c0.06	0.21
v/s Ratio Perm			0.00			c0.15	0.03				c0.42	
v/c Ratio	0.72	0.73	0.02		0.25	0.86	0.06	0.76			0.76	0.33
Uniform Delay, d1	67.4	67.4	63.6		53.5	60.1	17.7	28.4			39.5	13.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.56	0.40
Incremental Delay, d2	18.4	19.4	0.1		0.4	23.6	0.5	2.2			17.2	0.3
Delay (s)	85.8	86.9	63.6		53.9	83.7	18.2	30.6			78.9	5.5
Level of Service	F	F	E		D	F	B	C			E	A
Approach Delay (s)		83.4			78.4			30.5				13.9
Approach LOS		F			E			C				B

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	110
Future Volume (vph)	110
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	120
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	275	375	0	1365	680	830
Future Volume (veh/h)	275	375	0	1365	680	830
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	299	408	0	1484	739	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	591	477	0	3801	3740	
Arrive On Green	0.18	0.18	0.00	0.75	1.00	0.00
Sat Flow, veh/h	3358	2711	0	5374	5125	1540
Grp Volume(v), veh/h	299	408	0	1484	739	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1681	1654	1540
Q Serve(g_s), s	12.1	21.9	0.0	15.4	0.0	0.0
Cycle Q Clear(g_c), s	12.1	21.9	0.0	15.4	0.0	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	591	477	0	3801	3740	
V/C Ratio(X)	0.51	0.85	0.00	0.39	0.20	
Avail Cap(c_a), veh/h	851	687	0	3801	3740	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.93	0.00
Uniform Delay (d), s/veh	55.9	59.9	0.0	6.4	0.0	0.0
Incr Delay (d2), s/veh	0.7	7.3	0.0	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	8.1	0.0	5.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.6	67.2	0.0	6.7	0.1	0.0
LnGrp LOS	E	E	A	A	A	
Approach Vol, veh/h	707			1484	739	A
Approach Delay, s/veh	62.7			6.7	0.1	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		118.6		31.4		118.6
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		101.5		38.0		101.5
Max Q Clear Time (g_c+I1), s		2.0		23.9		17.4
Green Ext Time (p_c), s		5.7		2.5		16.0

Intersection Summary		
HCM 6th Ctrl Delay		18.6
HCM 6th LOS		B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

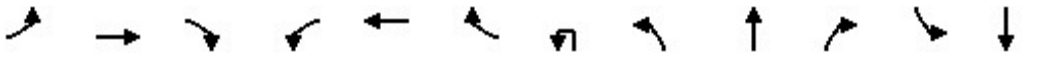
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	370	720	905	735	0	1140
Future Volume (veh/h)	370	720	905	735	0	1140
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	402	0	984	0	0	1239
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	469		3986		0	5023
Arrive On Green	0.14	0.00	1.00	0.00	0.00	0.79
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	402	0	984	0	0	1239
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	17.1	0.0	0.0	0.0	0.0	7.6
Cycle Q Clear(g_c), s	17.1	0.0	0.0	0.0	0.0	7.6
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	469		3986		0	5023
V/C Ratio(X)	0.86		0.25		0.00	0.25
Avail Cap(c_a), veh/h	792		3986		0	5023
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.92	0.00	0.00	1.00
Uniform Delay (d), s/veh	63.4	0.0	0.0	0.0	0.0	4.1
Incr Delay (d2), s/veh	4.9	0.0	0.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.1	0.0	0.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	68.3	0.0	0.1	0.0	0.0	4.2
LnGrp LOS	E		A		A	A
Approach Vol, veh/h	402	A	984	A		1239
Approach Delay, s/veh	68.3		0.1			4.2
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		124.1		25.9		124.1
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		104.5		34.5		104.5
Max Q Clear Time (g_c+I1), s		9.6		19.1		2.0
Green Ext Time (p_c), s		11.7		1.3		8.2

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



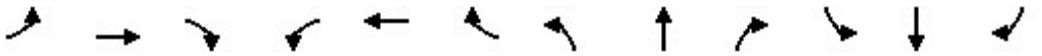
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	110	30	195	495	20	130	5	170	1215	235	85	1455
Future Volume (vph)	110	30	195	495	20	130	5	170	1215	235	85	1455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.97	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1476	1333	1561	1627	1418		1702	4891	1470	1619	4978
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.06	1.00	1.00	0.13	1.00
Satd. Flow (perm)		1476	1333	1561	1627	1418		113	4891	1470	223	4978
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	33	212	538	22	141	5	185	1321	255	92	1582
RTOR Reduction (vph)	0	6	52	0	0	112	0	0	0	130	0	1
Lane Group Flow (vph)	0	185	122	280	280	29	0	190	1321	125	92	1592
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		21.7	37.1	30.5	30.5	30.5		78.8	64.4	64.4	67.8	58.4
Effective Green, g (s)		21.7	37.1	30.5	30.5	30.5		78.8	64.4	64.4	67.8	58.4
Actuated g/C Ratio		0.14	0.25	0.20	0.20	0.20		0.53	0.43	0.43	0.45	0.39
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		213	329	317	330	288		222	2099	631	188	1938
v/s Ratio Prot		c0.13	0.04	c0.18	0.17			c0.09	0.27		0.03	0.32
v/s Ratio Perm			0.05			0.02		c0.36		0.09	0.19	
v/c Ratio		0.87	0.37	0.88	0.85	0.10		0.86	0.63	0.20	0.49	0.82
Uniform Delay, d1		62.8	46.8	58.0	57.5	48.6		43.8	33.5	26.7	25.6	41.1
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.49	0.74	0.53	1.00	1.00
Incremental Delay, d2		29.1	0.7	23.9	18.0	0.2		25.2	1.4	0.7	2.0	4.1
Delay (s)		91.8	47.5	81.9	75.5	48.7		90.7	26.0	14.9	27.6	45.2
Level of Service		F	D	F	E	D		F	C	B	C	D
Approach Delay (s)		70.7			72.7				31.4			44.2
Approach LOS		E			E				C			D

Intersection Summary			
HCM 2000 Control Delay	45.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



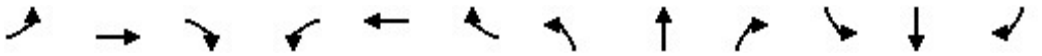
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	365	15	75	0	85	0	260	285	45	110	0
Future Volume (veh/h)	40	365	15	75	0	85	0	260	285	45	110	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	43	397	16	82	0	92	0	283	310	49	120	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	913	1785	72	0	0	0	0	464	393	207	500	0
Arrive On Green	0.51	0.51	0.51	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.00
Sat Flow, veh/h	1781	3482	140		0		0	1870	1585	298	2099	0
Grp Volume(v), veh/h	43	202	211		0.0		0	283	310	79	90	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1845				0	1870	1585	694	1617	0
Q Serve(g_s), s	0.5	2.7	2.8				0.0	5.9	8.0	0.8	1.9	0.0
Cycle Q Clear(g_c), s	0.5	2.7	2.8				0.0	5.9	8.0	6.7	1.9	0.0
Prop In Lane	1.00		0.08				0.00		1.00	0.62		0.00
Lane Grp Cap(c), veh/h	913	911	946				0	464	393	305	401	0
V/C Ratio(X)	0.05	0.22	0.22				0.00	0.61	0.79	0.26	0.22	0.00
Avail Cap(c_a), veh/h	913	911	946				0	554	469	355	479	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.3	5.9	5.9				0.0	14.6	15.4	13.8	13.1	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.5				0.0	1.4	7.4	0.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.9	0.9				0.0	2.3	3.2	0.6	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	6.4	6.4				0.0	16.0	22.8	14.3	13.4	0.0
LnGrp LOS	A	A	A				A	B	C	B	B	A
Approach Vol, veh/h		456						593			169	
Approach Delay, s/veh		6.3						19.6			13.8	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.9		28.0		15.9				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				13.0		22.5		13.0				
Max Q Clear Time (g_c+I1), s				8.7		4.8		10.0				
Green Ext Time (p_c), s				0.4		2.5		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		13.8	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	790	110	460	630	230	10	245	290	340	425	5
Future Volume (veh/h)	15	790	110	460	630	230	10	245	290	340	425	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	859	120	500	685	250	11	266	315	370	462	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	1022	456	499	2053	916	197	391	174	440	807	9
Arrive On Green	0.29	0.29	0.29	0.22	0.58	0.58	0.01	0.11	0.11	0.13	0.22	0.22
Sat Flow, veh/h	599	3554	1585	1781	3554	1585	1781	3554	1585	3456	3601	39
Grp Volume(v), veh/h	16	859	120	500	685	250	11	266	315	370	228	239
Grp Sat Flow(s),veh/h/ln	599	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1863
Q Serve(g_s), s	2.0	22.7	5.8	22.0	10.1	7.9	0.5	7.2	11.0	10.5	11.4	11.4
Cycle Q Clear(g_c), s	2.0	22.7	5.8	22.0	10.1	7.9	0.5	7.2	11.0	10.5	11.4	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	244	1022	456	499	2053	916	197	391	174	440	398	418
V/C Ratio(X)	0.07	0.84	0.26	1.00	0.33	0.27	0.06	0.68	1.81	0.84	0.57	0.57
Avail Cap(c_a), veh/h	244	1022	456	499	2053	916	263	391	174	622	418	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	33.5	27.4	26.3	11.0	10.6	38.7	42.8	44.5	42.6	34.5	34.5
Incr Delay (d2), s/veh	0.5	8.3	1.4	37.1	0.4	0.6	0.0	4.7	384.8	5.1	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	10.5	2.4	13.9	3.8	2.8	0.2	3.4	22.9	4.7	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	41.8	28.9	63.4	11.4	11.2	38.7	47.5	429.3	47.8	36.2	36.2
LnGrp LOS	C	D	C	F	B	B	D	D	F	D	D	D
Approach Vol, veh/h		995			1435			592			837	
Approach Delay, s/veh		40.0			29.5			250.5			41.3	
Approach LOS		D			C			F			D	

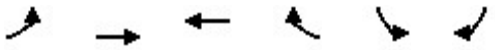
Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	64.3	6.8	28.9	29.0	35.3	18.2	17.5
Change Period (Y+Rc), s	6.5	5.5	6.5	7.0	* 6.5	5.5	* 6.5
Max Green Setting (Gmax), s	53.0	5.0	23.5	22.0	* 25	18.0	* 11
Max Q Clear Time (g_c+I1), s	12.1	2.5	13.4	24.0	24.7	12.5	13.0
Green Ext Time (p_c), s	13.4	0.0	1.9	0.0	0.0	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	68.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

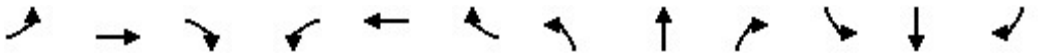
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	245	1175	1125	125	65	195
Future Volume (veh/h)	245	1175	1125	125	65	195
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	266	1277	1223	136	71	212
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	371	2642	2205	983	261	348
Arrive On Green	0.07	0.74	0.62	0.62	0.15	0.15
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	266	1277	1223	136	71	212
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	5.0	14.4	19.9	3.6	3.5	12.1
Cycle Q Clear(g_c), s	5.0	14.4	19.9	3.6	3.5	12.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	371	2642	2205	983	261	348
V/C Ratio(X)	0.72	0.48	0.55	0.14	0.27	0.61
Avail Cap(c_a), veh/h	544	2642	2205	983	410	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.38	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	5.1	11.0	7.9	37.9	35.2
Incr Delay (d2), s/veh	0.4	0.2	1.0	0.3	0.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.1	7.0	1.1	1.6	10.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	5.4	12.0	8.2	38.5	36.9
LnGrp LOS	B	A	B	A	D	D
Approach Vol, veh/h		1543	1359		283	
Approach Delay, s/veh		6.6	11.6		37.3	
Approach LOS		A	B		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.3	68.0		19.7		80.3
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	17.0	44.0		23.0		66.0
Max Q Clear Time (g_c+I1), s	7.0	21.9		14.1		16.4
Green Ext Time (p_c), s	0.3	6.2		0.6		7.7

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	710	10	435	865	200	155	275	425	320	160	25
Future Volume (veh/h)	5	710	10	435	865	200	155	275	425	320	160	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	772	11	473	940	217	168	299	462	348	174	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	1146	511	506	2075	926	330	391	174	418	476	73
Arrive On Green	0.32	0.32	0.32	0.19	0.58	0.58	0.08	0.11	0.11	0.12	0.15	0.15
Sat Flow, veh/h	486	3554	1585	1781	3554	1585	1781	3554	1585	3456	3091	472
Grp Volume(v), veh/h	5	772	11	473	940	217	168	299	462	348	99	102
Grp Sat Flow(s),veh/h/ln	486	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1785
Q Serve(g_s), s	0.7	18.8	0.5	16.8	15.0	6.6	7.7	8.2	11.0	9.8	5.0	5.1
Cycle Q Clear(g_c), s	0.7	18.8	0.5	16.8	15.0	6.6	7.7	8.2	11.0	9.8	5.0	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	229	1146	511	506	2075	926	330	391	174	418	274	275
V/C Ratio(X)	0.02	0.67	0.02	0.93	0.45	0.23	0.51	0.76	2.65	0.83	0.36	0.37
Avail Cap(c_a), veh/h	229	1146	511	557	2075	926	330	391	174	622	370	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	29.3	23.1	19.3	11.8	10.0	36.6	43.2	44.5	43.0	37.9	38.0
Incr Delay (d2), s/veh	0.2	3.2	0.1	16.2	0.5	0.4	0.5	8.7	758.6	3.8	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.1	0.2	8.6	5.5	2.3	3.7	4.0	41.0	4.3	2.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	32.5	23.2	35.5	12.3	10.4	37.1	52.0	803.1	46.8	38.7	38.8
LnGrp LOS	C	C	C	D	B	B	D	D	F	D	D	D
Approach Vol, veh/h		788			1630			929			549	
Approach Delay, s/veh		32.3			18.8			422.8			43.8	
Approach LOS		C			B			F			D	

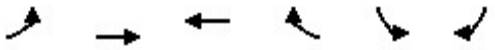
Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	64.9	13.2	21.9	26.1	38.7	17.6	17.5
Change Period (Y+Rc), s	6.5	5.5	6.5	7.0	* 6.5	5.5	* 6.5
Max Green Setting (Gmax), s	53.0	7.7	20.8	22.0	* 25	18.0	* 11
Max Q Clear Time (g_c+I1), s	17.0	9.7	7.1	18.8	20.8	11.8	13.0
Green Ext Time (p_c), s	17.3	0.0	0.8	0.3	2.4	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	121.4
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	1325	1100	30	200	400
Future Volume (veh/h)	130	1325	1100	30	200	400
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	1440	1196	33	217	435
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	272	2126	1771	790	520	542
Arrive On Green	0.05	0.60	0.50	0.50	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	141	1440	1196	33	217	435
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.7	27.4	25.4	1.1	9.8	24.9
Cycle Q Clear(g_c), s	3.7	27.4	25.4	1.1	9.8	24.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	272	2126	1771	790	520	542
V/C Ratio(X)	0.52	0.68	0.68	0.04	0.42	0.80
Avail Cap(c_a), veh/h	272	2126	1771	790	873	856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	13.6	19.0	12.9	28.6	29.9
Incr Delay (d2), s/veh	0.4	0.8	2.1	0.1	0.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	10.0	10.0	0.4	4.2	20.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.0	14.4	21.1	12.9	29.1	32.9
LnGrp LOS	B	B	C	B	C	C
Approach Vol, veh/h		1581	1229		652	
Approach Delay, s/veh		14.5	20.8		31.6	
Approach LOS		B	C		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	55.8		34.2		65.8
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	5.0	30.0		49.0		40.0
Max Q Clear Time (g_c+I1), s	5.7	27.4		26.9		29.4
Green Ext Time (p_c), s	0.0	1.5		2.3		5.4

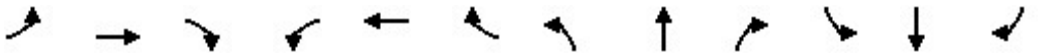
Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	1955	335	15	120	1865	45	70	5	175	15	5
Future Volume (vph)	5	1955	335	15	120	1865	45	70	5	175	15	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.98			1.00	1.00			1.00	0.85	1.00	0.93
Flt Protected	0.95	1.00			0.95	1.00			0.96	1.00	0.95	1.00
Satd. Flow (prot)	1906	5191			1585	5042			1661	1478	1770	1724
Flt Permitted	0.09	1.00			0.95	1.00			0.73	1.00	0.70	1.00
Satd. Flow (perm)	175	5191			1585	5042			1273	1478	1313	1724
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2125	364	16	130	2027	49	76	5	190	16	5
RTOR Reduction (vph)	0	18	0	0	0	2	0	0	0	169	0	4
Lane Group Flow (vph)	5	2471	0	0	146	2074	0	0	81	21	16	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	71.2	71.2			16.6	94.3			13.2	13.2	13.2	13.2
Effective Green, g (s)	71.2	71.2			16.6	94.3			13.2	13.2	13.2	13.2
Actuated g/C Ratio	0.59	0.59			0.14	0.79			0.11	0.11	0.11	0.11
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	103	3079			219	3962			140	162	144	189
v/s Ratio Prot		c0.48			c0.09	0.41						0.00
v/s Ratio Perm	0.03								c0.06	0.01	0.01	
v/c Ratio	0.05	0.80			0.67	0.52			0.58	0.13	0.11	0.03
Uniform Delay, d1	10.2	18.9			49.1	4.7			50.8	48.2	48.1	47.7
Progression Factor	1.00	1.00			1.19	0.63			1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	2.3			8.2	0.4			6.8	0.5	0.5	0.1
Delay (s)	11.1	21.3			66.7	3.4			57.5	48.7	48.6	47.8
Level of Service	B	C			E	A			E	D	D	D
Approach Delay (s)		21.2				7.5			51.3			48.3
Approach LOS		C				A			D			D

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	5
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



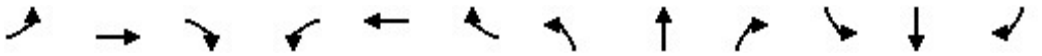
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1085	1075	0	1860	0	0	0	0	340	0	185
Future Volume (veh/h)	0	1085	1075	0	1860	0	0	0	0	340	0	185
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1179	0	0	2022	0				370	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2726		0	3854	0				456	0	
Arrive On Green	0.00	0.52	0.00	0.00	0.78	0.00				0.13	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1179	0	0	2022	0				370	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	24.9	0.0	0.0	18.4	0.0				12.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	24.9	0.0	0.0	18.4	0.0				12.1	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2726		0	3854	0				456	0	
V/C Ratio(X)	0.00	0.43		0.00	0.52	0.00				0.81	0.00	
Avail Cap(c_a), veh/h	0	2726		0	3854	0				940	0	
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.53	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.4	0.0	0.0	5.0	0.0				51.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.5	0.0				3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.4	0.0	0.0	4.6	0.0				5.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.7	0.0	0.0	5.6	0.0				54.5	0.0	0.0
LnGrp LOS	A	B		A	A	A				D	A	
Approach Vol, veh/h		1179	A		2022						370	A
Approach Delay, s/veh		12.7			5.6						54.5	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	99.2	20.8	99.2
Change Period (Y+Rc), s	6.0	5.5	6.0
Max Green Setting (Gmax), s	77.0	31.5	77.0
Max Q Clear Time (g_c+I1), s	20.4	14.1	26.9
Green Ext Time (p_c), s	3.0	1.2	1.4

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

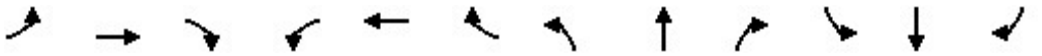
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	1005	0	0	850	15	0	160	250	25	0	275
Future Volume (vph)	330	1005	0	0	850	15	0	160	250	25	0	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5148			1867	1587	1783		1595
Flt Permitted	0.19	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	335	3504			5148			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	1092	0	0	924	16	0	174	272	27	0	299
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	105	0	0	17
Lane Group Flow (vph)	359	1092	0	0	939	0	0	174	167	27	0	282
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	71.4	71.4			41.8			22.9	22.9	7.2		67.2
Effective Green, g (s)	71.4	71.4			41.8			22.9	22.9	7.2		55.2
Actuated g/C Ratio	0.60	0.60			0.35			0.19	0.19	0.06		0.46
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	483	2084			1793			356	302	106		733
v/s Ratio Prot	c0.16	0.31			0.18			0.09		0.02		c0.18
v/s Ratio Perm	c0.29								c0.11			
v/c Ratio	0.74	0.52			0.52			0.49	0.55	0.25		0.38
Uniform Delay, d1	17.7	14.3			31.2			43.3	43.9	53.8		21.3
Progression Factor	0.93	0.50			0.90			1.00	1.00	1.00		1.00
Incremental Delay, d2	6.7	0.9			0.9			3.0	4.7	3.6		0.7
Delay (s)	23.1	8.0			29.1			46.3	48.6	57.4		22.0
Level of Service	C	A			C			D	D	E		C
Approach Delay (s)		11.8			29.1			47.7			24.9	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1270	5	5	825	10	10	5	10	80	5	30
Future Volume (vph)	5	1270	5	5	825	10	10	5	10	80	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	
Satd. Flow (prot)	1702	1852		1787	1815			1801	1531		1645	
Flt Permitted	0.26	1.00		0.05	1.00			0.85	1.00		0.78	
Satd. Flow (perm)	471	1852		100	1815			1588	1531		1332	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1380	5	5	897	11	11	5	11	87	5	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	11	0
Lane Group Flow (vph)	5	1385	0	5	908	0	0	16	1	0	114	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	97.1	97.1		97.1	97.1			14.9	14.9		14.9	
Effective Green, g (s)	97.1	97.1		97.1	97.1			14.9	14.9		14.9	
Actuated g/C Ratio	0.81	0.81		0.81	0.81			0.12	0.12		0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	381	1498		80	1468			197	190		165	
v/s Ratio Prot		c0.75			0.50							
v/s Ratio Perm	0.01			0.05				0.01	0.00		c0.09	
v/c Ratio	0.01	0.92		0.06	0.62			0.08	0.01		0.69	
Uniform Delay, d1	2.2	8.7		2.3	4.4			46.5	46.1		50.3	
Progression Factor	0.48	1.01		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	8.7		1.5	2.0			0.2	0.0		11.3	
Delay (s)	1.1	17.5		3.8	6.3			46.7	46.1		61.7	
Level of Service	A	B		A	A			D	D		E	
Approach Delay (s)		17.4			6.3			46.4			61.7	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

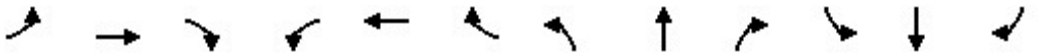
c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	2075	75	20	285	2285	15	90	5	145	40	5
Future Volume (vph)	5	2075	75	20	285	2285	15	90	5	145	40	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	1.00			1.00	0.85	1.00	0.90
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	1906	5279			1585	5055			1660	1478	1770	1671
Flt Permitted	0.07	1.00			0.95	1.00			0.72	1.00	0.69	1.00
Satd. Flow (perm)	137	5279			1585	5055			1260	1478	1287	1671
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2255	82	22	310	2484	16	98	5	158	43	5
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	139	0	10
Lane Group Flow (vph)	5	2334	0	0	332	2500	0	0	103	19	43	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	58.4	58.4			28.4	93.3			14.2	14.2	14.2	14.2
Effective Green, g (s)	58.4	58.4			28.4	93.3			14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.49	0.49			0.24	0.78			0.12	0.12	0.12	0.12
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	66	2569			375	3930			149	174	152	197
v/s Ratio Prot		c0.44			c0.21	0.49						0.00
v/s Ratio Perm	0.04								c0.08	0.01	0.03	
v/c Ratio	0.08	0.91			0.89	0.64			0.69	0.11	0.28	0.03
Uniform Delay, d1	16.4	28.3			44.2	5.9			50.8	47.2	48.3	46.8
Progression Factor	1.00	1.00			1.36	0.61			1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	6.1			15.7	0.5			13.9	0.4	1.4	0.1
Delay (s)	18.6	34.4			76.0	4.1			64.7	47.6	49.7	46.9
Level of Service	B	C			E	A			E	D	D	D
Approach Delay (s)		34.4				12.5			54.4			48.9
Approach LOS		C				B			D			D

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



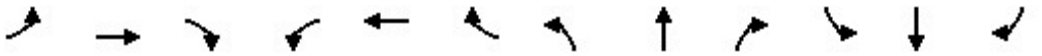
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	975	1305	0	2405	0	0	0	0	520	0	200
Future Volume (veh/h)	0	975	1305	0	2405	0	0	0	0	520	0	200
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1060	0	0	2614	0				565	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2534		0	3583	0				652	0	
Arrive On Green	0.00	0.48	0.00	0.00	0.72	0.00				0.18	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1060	0	0	2614	0				565	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	23.5	0.0	0.0	37.1	0.0				18.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.5	0.0	0.0	37.1	0.0				18.4	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2534		0	3583	0				652	0	
V/C Ratio(X)	0.00	0.42		0.00	0.73	0.00				0.87	0.00	
Avail Cap(c_a), veh/h	0	2534		0	3583	0				857	0	
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.37	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.7	0.0	0.0	9.8	0.0				47.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.3	0.0				7.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.9	0.0	0.0	11.0	0.0				8.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.8	0.0	0.0	11.1	0.0				55.1	0.0	0.0
LnGrp LOS	A	B		A	B	A				E	A	
Approach Vol, veh/h		1060	A		2614						565	A
Approach Delay, s/veh		14.8			11.1						55.1	
Approach LOS		B			B						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		92.7		27.3		92.7						
Change Period (Y+Rc), s		6.0		5.5		6.0						
Max Green Setting (Gmax), s		79.8		28.7		79.8						
Max Q Clear Time (g_c+I1), s		39.1		20.4		25.5						
Green Ext Time (p_c), s		4.7		1.5		1.2						

Intersection Summary		
HCM 6th Ctrl Delay		17.9
HCM 6th LOS		B

Notes

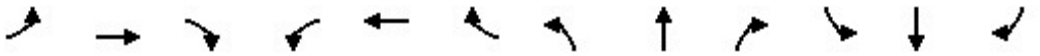
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1165	0	0	1165	40	0	315	170	35	0	445
Future Volume (vph)	220	1165	0	0	1165	40	0	315	170	35	0	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5136			1867	1587	1783		1595
Flt Permitted	0.09	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	154	3504			5136			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	1266	0	0	1266	43	0	342	185	38	0	484
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	95	0	0	17
Lane Group Flow (vph)	239	1266	0	0	1306	0	0	342	90	38	0	467
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	65.5	65.5			41.9			30.4	30.4	5.6		67.1
Effective Green, g (s)	65.5	65.5			41.9			30.4	30.4	5.6		55.1
Actuated g/C Ratio	0.55	0.55			0.35			0.25	0.25	0.05		0.46
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	329	1912			1793			472	402	83		732
v/s Ratio Prot	c0.12	0.36			0.25			c0.18		0.02		c0.29
v/s Ratio Perm	c0.28								0.06			
v/c Ratio	0.73	0.66			0.73			0.72	0.22	0.46		0.64
Uniform Delay, d1	29.8	19.4			34.1			41.0	35.5	55.7		24.8
Progression Factor	1.03	0.45			0.88			1.00	1.00	1.00		1.00
Incremental Delay, d2	8.3	1.6			1.6			7.6	0.8	10.9		2.5
Delay (s)	38.9	10.3			31.5			48.6	36.3	66.6		27.4
Level of Service	D	B			C			D	D	E		C
Approach Delay (s)		14.8			31.5			44.3			30.2	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

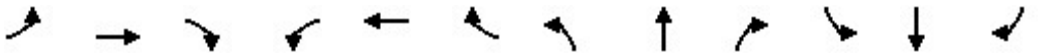
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1320	15	5	1135	10	5	5	10	25	5	65
Future Volume (vph)	35	1320	15	5	1135	10	5	5	10	25	5	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1702	1850		1787	1816			1817	1531		1580	
Flt Permitted	0.15	1.00		0.06	1.00			0.84	1.00		0.91	
Satd. Flow (perm)	275	1850		113	1816			1569	1531		1459	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1435	16	5	1234	11	5	5	11	27	5	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	65	0
Lane Group Flow (vph)	38	1451	0	5	1245	0	0	10	1	0	38	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	102.0	102.0		102.0	102.0			10.0	10.0		10.0	
Effective Green, g (s)	102.0	102.0		102.0	102.0			10.0	10.0		10.0	
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.08	0.08		0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	233	1572		96	1543			130	127		121	
v/s Ratio Prot		c0.78			0.69							
v/s Ratio Perm	0.14			0.04				0.01	0.00		c0.03	
v/c Ratio	0.16	0.92		0.05	0.81			0.08	0.01		0.31	
Uniform Delay, d1	1.6	6.3		1.4	4.3			50.7	50.4		51.8	
Progression Factor	0.11	1.91		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	7.7		1.0	4.6			0.3	0.0		1.5	
Delay (s)	0.4	19.7		2.4	8.9			51.0	50.5		53.3	
Level of Service	A	B		A	A			D	D		D	
Approach Delay (s)		19.2			8.9			50.7			53.3	
Approach LOS		B			A			D			D	

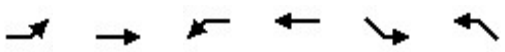
Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	860	105	510	455	100	145	140	160	510	725	275
Future Volume (vph)	115	860	105	510	455	100	145	140	160	510	725	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.18	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	338	3592	1607	880	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	935	114	554	495	109	158	152	174	554	788	299
RTOR Reduction (vph)	0	0	67	0	0	46	0	0	89	0	0	0
Lane Group Flow (vph)	125	935	47	554	495	63	158	152	85	554	788	299
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	15.5	46.4	57.9	27.2	58.6	86.6	33.9	22.4	73.6	57.4	39.4	150.0
Effective Green, g (s)	15.5	46.4	57.9	27.2	58.6	86.6	33.9	22.4	73.6	57.4	39.4	150.0
Actuated g/C Ratio	0.10	0.31	0.39	0.18	0.39	0.58	0.23	0.15	0.49	0.38	0.26	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	179	1072	599	635	1410	932	188	536	863	506	939	1599
v/s Ratio Prot	0.07	c0.27	0.01	c0.16	0.14	0.01	0.06	0.04	0.02	c0.20	0.22	
v/s Ratio Perm			0.02			0.03	0.13		0.04	c0.21		0.19
v/c Ratio	0.70	0.87	0.08	0.87	0.35	0.07	0.84	0.28	0.10	1.09	0.84	0.19
Uniform Delay, d1	65.0	49.0	29.2	59.7	32.3	13.9	49.8	56.7	20.4	42.8	52.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	9.8	0.1	12.6	0.7	0.0	27.2	0.3	0.1	68.3	6.7	0.3
Delay (s)	76.3	58.8	29.2	72.3	33.0	14.0	77.1	57.0	20.5	111.1	59.0	0.3
Level of Service	E	E	C	E	C	B	E	E	C	F	E	A
Approach Delay (s)		57.8			50.0			50.4			65.9	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Traffic Volume (vph)	580	355	650	325	185	50
Future Volume (vph)	580	355	650	325	185	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	1770	3539	3433	3539	1770	3433
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	1770	3539	3433	3539	1770	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	630	386	707	353	201	54
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	630	386	707	353	201	54
Turn Type	Prot	NA	Prot	NA	Prot	Prot
Protected Phases	1	5	6	2	4	8
Permitted Phases						
Actuated Green, G (s)	54.0	20.0	55.5	21.5	21.0	21.0
Effective Green, g (s)	54.0	20.0	55.5	21.5	21.0	21.0
Actuated g/C Ratio	0.45	0.17	0.46	0.18	0.18	0.18
Clearance Time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Grp Cap (vph)	796	589	1587	634	309	600
v/s Ratio Prot	c0.36	0.11	0.21	c0.10	c0.11	0.02
v/s Ratio Perm						
v/c Ratio	0.79	0.66	0.45	0.56	0.65	0.09
Uniform Delay, d1	28.2	46.8	21.8	44.9	46.1	41.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	5.6	0.9	3.5	10.2	0.3
Delay (s)	36.1	52.4	22.7	48.4	56.3	41.8
Level of Service	D	D	C	D	E	D
Approach Delay (s)		42.3		31.3		
Approach LOS		D		C		

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	330	880	35	10	545	80	50	5	10	40	5
Future Volume (vph)	5	330	880	35	10	545	80	50	5	10	40	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	0.98		1.00	0.90			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.96
Satd. Flow (prot)		1770	3519		1805	3541		1736	1639			1723
Flt Permitted		0.27	1.00		0.29	1.00		0.74	1.00			0.74
Satd. Flow (perm)		499	3519		547	3541		1354	1639			1327
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	359	957	38	11	592	87	54	5	11	43	5
RTOR Reduction (vph)	0	0	2	0	0	9	0	0	10	0	0	0
Lane Group Flow (vph)	0	364	993	0	11	670	0	54	6	0	0	48
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		63.6	63.6		32.2	32.2		5.4	5.4			5.4
Effective Green, g (s)		63.6	63.6		32.2	32.2		5.4	5.4			5.4
Actuated g/C Ratio		0.78	0.78		0.40	0.40		0.07	0.07			0.07
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		785	2746		216	1399		89	108			87
v/s Ratio Prot		0.14	0.28			0.19			0.00			
v/s Ratio Perm		c0.22			0.02			0.04				0.04
v/c Ratio		0.46	0.36		0.05	0.48		0.61	0.05			0.55
Uniform Delay, d1		4.3	2.7		15.2	18.4		37.0	35.7			36.9
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		0.4	0.1		0.4	1.2		11.2	0.2			7.4
Delay (s)		4.7	2.8		15.7	19.6		48.2	35.9			44.2
Level of Service		A	A		B	B		D	D			D
Approach Delay (s)			3.3			19.5			45.4			45.0
Approach LOS			A			B			D			D

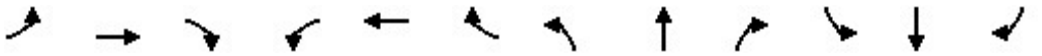
Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	18.5
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

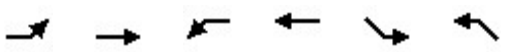
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	530
Future Volume (vph)	530
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	576
RTOR Reduction (vph)	41
Lane Group Flow (vph)	535
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	30.8
Effective Green, g (s)	30.8
Actuated g/C Ratio	0.38
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	578
v/s Ratio Prot	c0.29
v/s Ratio Perm	0.06
v/c Ratio	0.93
Uniform Delay, d1	24.3
Progression Factor	1.00
Incremental Delay, d2	20.8
Delay (s)	45.1
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	490	155	250	820	295	110	755	485	130	195	140
Future Volume (vph)	175	490	155	250	820	295	110	755	485	130	195	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.62	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	1170	3592	1607	171	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	533	168	272	891	321	120	821	527	141	212	152
RTOR Reduction (vph)	0	0	97	0	0	46	0	0	274	0	0	0
Lane Group Flow (vph)	190	533	71	272	891	275	120	821	253	141	212	152
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	20.1	54.9	63.2	17.2	52.5	65.8	46.9	38.6	72.1	57.4	44.1	150.0
Effective Green, g (s)	20.1	54.9	63.2	17.2	52.5	65.8	46.9	38.6	72.1	57.4	44.1	150.0
Actuated g/C Ratio	0.13	0.37	0.42	0.11	0.35	0.44	0.31	0.26	0.48	0.38	0.29	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	232	1269	653	401	1263	708	400	924	847	208	1051	1599
v/s Ratio Prot	c0.11	0.15	0.01	0.08	c0.25	0.03	0.02	c0.23	c0.03	c0.06	0.06	
v/s Ratio Perm			0.04			0.14	0.08		0.12	0.20		0.10
v/c Ratio	0.82	0.42	0.11	0.68	0.71	0.39	0.30	0.89	0.30	0.68	0.20	0.10
Uniform Delay, d1	63.2	35.6	26.3	63.7	42.1	28.5	38.0	53.6	23.6	36.2	39.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.7	1.0	0.1	4.5	3.3	0.4	0.4	10.4	0.2	8.5	0.1	0.1
Delay (s)	82.9	36.6	26.4	68.3	45.4	28.8	38.4	64.0	23.8	44.6	39.8	0.1
Level of Service	F	D	C	E	D	C	D	E	C	D	D	A
Approach Delay (s)		44.6			46.0			47.5			29.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Traffic Volume (vph)	500	445	580	325	310	325
Future Volume (vph)	500	445	580	325	310	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Util. Factor	1.00	0.95	0.97	0.95	1.00	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	1770	3539	3433	3539	1770	3433
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	1770	3539	3433	3539	1770	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	543	484	630	353	337	353
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	543	484	630	353	337	353
Turn Type	Prot	NA	Prot	NA	Prot	Prot
Protected Phases	1	5	6	2	4	8
Permitted Phases						
Actuated Green, G (s)	71.0	33.5	65.0	27.5	48.0	48.0
Effective Green, g (s)	71.0	33.5	65.0	27.5	48.0	48.0
Actuated g/C Ratio	0.42	0.20	0.38	0.16	0.28	0.28
Clearance Time (s)	9.0	7.5	9.0	7.5	7.0	7.0
Lane Grp Cap (vph)	739	697	1312	572	499	969
v/s Ratio Prot	c0.31	0.14	0.18	c0.10	c0.19	0.10
v/s Ratio Perm						
v/c Ratio	0.73	0.69	0.48	0.62	0.68	0.36
Uniform Delay, d1	41.6	63.5	39.7	66.3	54.1	48.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	5.6	1.3	4.9	7.2	1.1
Delay (s)	48.0	69.1	41.0	71.3	61.2	49.9
Level of Service	D	E	D	E	E	D
Approach Delay (s)		58.0		51.9		
Approach LOS		E		D		

Intersection Summary			
HCM 2000 Control Delay	55.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

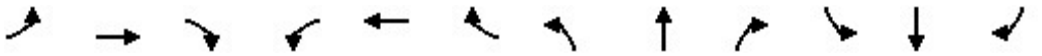
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	10	355	920	55	5	770	25	50	5	5	10	10
Future Volume (vph)	10	355	920	55	5	770	25	50	5	5	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	0.95		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	1.00		1.00	0.93			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.98
Satd. Flow (prot)		1770	3509		1805	3593		1736	1691			1757
Flt Permitted		0.22	1.00		0.27	1.00		0.74	1.00			0.84
Satd. Flow (perm)		401	3509		513	3593		1358	1691			1507
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	386	1000	60	5	837	27	54	5	5	11	11
RTOR Reduction (vph)	0	0	3	0	0	2	0	0	5	0	0	0
Lane Group Flow (vph)	0	397	1057	0	5	862	0	54	5	0	0	22
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		67.0	67.0		40.2	40.2		7.6	7.6			7.6
Effective Green, g (s)		67.0	67.0		40.2	40.2		7.6	7.6			7.6
Actuated g/C Ratio		0.77	0.77		0.46	0.46		0.09	0.09			0.09
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		635	2699		236	1658		118	147			131
v/s Ratio Prot		0.15	0.30			0.24			0.00			
v/s Ratio Perm		c0.33			0.01			0.04				0.01
v/c Ratio		0.63	0.39		0.02	0.52		0.46	0.04			0.17
Uniform Delay, d1		7.1	3.3		12.8	16.6		37.8	36.4			36.8
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		1.9	0.1		0.2	1.2		2.8	0.1			0.6
Delay (s)		9.0	3.4		12.9	17.8		40.6	36.5			37.4
Level of Service		A	A		B	B		D	D			D
Approach Delay (s)			4.9			17.8			40.0			39.7
Approach LOS			A			B			D			D

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	18.5
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	410
Future Volume (vph)	410
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	446
RTOR Reduction (vph)	24
Lane Group Flow (vph)	422
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	28.4
Effective Green, g (s)	28.4
Actuated g/C Ratio	0.33
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	499
v/s Ratio Prot	c0.20
v/s Ratio Perm	0.07
v/c Ratio	0.85
Uniform Delay, d1	27.3
Progression Factor	1.00
Incremental Delay, d2	12.5
Delay (s)	39.9
Level of Service	D
Approach Delay (s)	
Approach LOS	

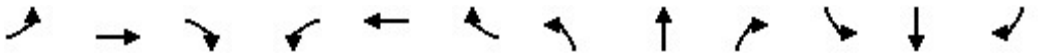
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	665	665	565	255	30	155	15	235	5	25	10
Future Volume (vph)	25	665	665	565	255	30	155	15	235	5	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3483		1681	1699	1583		1848	1583
Flt Permitted	0.56	1.00	1.00	0.16	1.00		0.95	0.96	1.00		0.99	1.00
Satd. Flow (perm)	1049	3539	1583	305	3483		1681	1699	1583		1848	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	723	723	614	277	33	168	16	255	5	27	11
RTOR Reduction (vph)	0	0	457	0	7	0	0	0	0	0	0	10
Lane Group Flow (vph)	27	723	266	614	303	0	92	92	255	0	32	1
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA	Free	Split	NA	Perm
Protected Phases		6	3	5	2		3	3		4	4	
Permitted Phases	6		6	2					Free			4
Actuated Green, G (s)	18.4	18.4	33.1	52.1	52.1		14.7	14.7	90.0		4.2	4.2
Effective Green, g (s)	18.4	18.4	33.1	52.1	52.1		14.7	14.7	90.0		4.2	4.2
Actuated g/C Ratio	0.20	0.20	0.37	0.58	0.58		0.16	0.16	1.00		0.05	0.05
Clearance Time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	214	723	582	627	2016		274	277	1583		86	73
v/s Ratio Prot		0.20	c0.07	c0.30	0.09		0.05	0.05			0.02	
v/s Ratio Perm	0.03		0.09	c0.26					c0.16			0.00
v/c Ratio	0.13	1.00	0.46	0.98	0.15		0.34	0.33	0.16		0.37	0.01
Uniform Delay, d1	29.2	35.8	21.6	23.5	8.7		33.3	33.3	0.0		41.6	40.9
Progression Factor	1.00	1.00	1.00	0.65	0.45		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	33.5	0.8	29.5	0.2		1.0	1.0	0.2		1.0	0.0
Delay (s)	30.4	69.3	22.4	44.8	4.1		34.3	34.3	0.2		42.6	40.9
Level of Service	C	E	C	D	A		C	C	A		D	D
Approach Delay (s)		45.6			31.2			14.5			42.2	
Approach LOS		D			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	640	245	560	780	20	65	20	495	10	20	5
Future Volume (veh/h)	20	640	245	560	780	20	65	20	495	10	20	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	696	0	609	848	22	71	22	0	11	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	1451		686	2053	916	252	343		196	236	
Arrive On Green	0.02	0.41	0.00	0.20	0.58	0.58	0.05	0.10	0.00	0.01	0.07	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	22	696	0	609	848	22	71	22	0	11	22	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.1	13.0	0.0	15.4	11.9	0.5	3.3	0.5	0.0	0.5	0.5	0.0
Cycle Q Clear(g_c), s	1.1	13.0	0.0	15.4	11.9	0.5	3.3	0.5	0.0	0.5	0.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	1451		686	2053	916	252	343		196	236	
V/C Ratio(X)	0.53	0.48		0.89	0.41	0.02	0.28	0.06		0.06	0.09	
Avail Cap(c_a), veh/h	148	1451		730	2053	916	352	513		350	513	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.4	19.6	0.0	35.1	10.5	8.1	36.7	37.0	0.0	38.3	39.5	0.0
Incr Delay (d2), s/veh	3.8	1.1	0.0	12.4	0.6	0.0	0.2	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.2	0.0	7.3	4.2	0.2	1.4	0.2	0.0	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	20.7	0.0	47.5	11.2	8.2	36.9	37.0	0.0	38.4	39.6	0.0
LnGrp LOS	D	C		D	B	A	D	D		D	D	
Approach Vol, veh/h		718	A		1479			93	A		33	A
Approach Delay, s/veh		21.5			26.1			36.9			39.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	58.5	7.2	14.7	24.9	43.2	9.9	12.0
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	7.5	* 36	9.0	13.0	19.0	23.5	9.5	13.0
Max Q Clear Time (g_c+I1), s	3.1	13.9	2.5	2.5	17.4	15.0	5.3	2.5
Green Ext Time (p_c), s	0.0	5.8	0.0	0.0	0.4	2.8	0.0	0.0

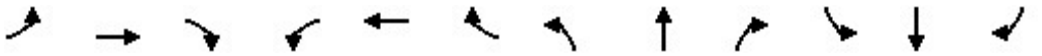
Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

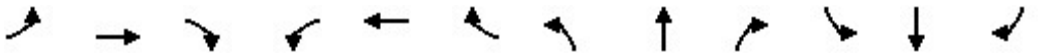
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	360	215	365	500	5	855	10	485	10	5	10
Future Volume (vph)	10	360	215	365	500	5	855	10	485	10	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3534		1681	1687	1583		1801	1583
Flt Permitted	0.45	1.00	1.00	0.31	1.00		0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	833	3539	1583	575	3534		1681	1687	1583		1801	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	391	234	397	543	5	929	11	527	11	5	11
RTOR Reduction (vph)	0	0	118	0	1	0	0	0	0	0	0	11
Lane Group Flow (vph)	11	391	116	397	547	0	474	466	527	0	16	0
Turn Type	Perm	NA	pm+ov	pm+pt	NA		Split	NA	Free	Split	NA	Perm
Protected Phases		6	3	5	2		3	3		4	4	
Permitted Phases	6		6	2					Free			4
Actuated Green, G (s)	17.1	17.1	44.6	41.0	41.0		27.5	27.5	90.0		2.5	2.5
Effective Green, g (s)	17.1	17.1	44.6	41.0	41.0		27.5	27.5	90.0		2.5	2.5
Actuated g/C Ratio	0.19	0.19	0.50	0.46	0.46		0.31	0.31	1.00		0.03	0.03
Clearance Time (s)	6.0	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	158	672	784	499	1609		513	515	1583		50	43
v/s Ratio Prot		0.11	0.05	c0.16	0.15		c0.28	0.28			0.01	
v/s Ratio Perm	0.01		0.03	c0.20					c0.33			0.00
v/c Ratio	0.07	0.58	0.15	0.80	0.34		0.92	0.90	0.33		0.32	0.01
Uniform Delay, d1	29.9	33.2	12.4	18.0	15.8		30.2	30.0	0.0		42.9	42.5
Progression Factor	1.00	1.00	1.00	0.96	0.88		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	3.7	0.1	7.5	0.5		22.7	19.6	0.6		1.3	0.0
Delay (s)	30.8	36.9	12.5	24.8	14.5		53.0	49.6	0.6		44.3	42.6
Level of Service	C	D	B	C	B		D	D	A		D	D
Approach Delay (s)		27.8			18.8			33.1			43.6	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	780	60	245	700	30	160	5	885	50	25	10
Future Volume (veh/h)	15	780	60	245	700	30	160	5	885	50	25	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	848	0	266	761	33	174	5	0	54	27	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	1644		307	1875	836	343	441		264	279	
Arrive On Green	0.02	0.46	0.00	0.09	0.53	0.53	0.09	0.12	0.00	0.04	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	16	848	0	266	761	33	174	5	0	54	27	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.8	15.2	0.0	6.8	11.6	0.9	8.0	0.1	0.0	2.5	0.6	0.0
Cycle Q Clear(g_c), s	0.8	15.2	0.0	6.8	11.6	0.9	8.0	0.1	0.0	2.5	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	1644		307	1875	836	343	441		264	279	
V/C Ratio(X)	0.49	0.52		0.87	0.41	0.04	0.51	0.01		0.20	0.10	
Avail Cap(c_a), veh/h	99	1644		307	1875	836	343	1027		349	1035	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.8	17.1	0.0	40.5	12.8	10.3	33.8	34.6	0.0	36.0	38.5	0.0
Incr Delay (d2), s/veh	4.2	1.2	0.0	21.9	0.7	0.1	0.5	0.0	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.9	0.0	3.7	4.3	0.3	3.4	0.0	0.0	1.1	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	18.2	0.0	62.4	13.4	10.3	34.3	34.6	0.0	36.1	38.7	0.0
LnGrp LOS	D	B		E	B	B	C	C		D	D	
Approach Vol, veh/h		864	A		1060			179	A		81	A
Approach Delay, s/veh		18.8			25.6			34.3			37.0	
Approach LOS		B			C			C			D	

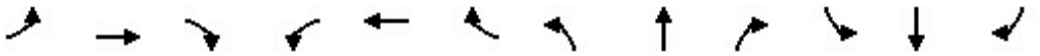
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	54.0	9.7	17.2	15.0	48.1	13.8	13.1
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	5.0	* 26	8.0	26.0	8.0	22.5	8.3	26.2
Max Q Clear Time (g_c+I1), s	2.8	13.6	4.5	2.1	8.8	17.2	10.0	2.6
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	2.5	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	245	55	410	210	120	15	220	635	460	700	70
Future Volume (vph)	70	245	55	410	210	120	15	220	635	460	700	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3393		1541	3275	1567	1601	3438	1644	3539	3408	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.34	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3393		1541	3275	1567	568	3438	1644	3539	3408	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	266	60	446	228	130	16	239	690	500	761	76
RTOR Reduction (vph)	0	16	0	0	0	74	0	0	0	0	6	0
Lane Group Flow (vph)	76	310	0	223	451	56	16	239	690	500	831	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	17.5	17.5		29.9	29.9	57.4	28.6	28.6	120.0	21.5	55.6	
Effective Green, g (s)	17.5	17.5		29.9	29.9	51.4	28.6	28.6	120.0	21.5	55.6	
Actuated g/C Ratio	0.15	0.15		0.25	0.25	0.43	0.24	0.24	1.00	0.18	0.46	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	263	494		383	816	671	135	819	1644	634	1579	
v/s Ratio Prot	0.04	c0.09		c0.14	0.14	0.04		0.07		c0.14	c0.24	
v/s Ratio Perm							0.03		0.42			
v/c Ratio	0.29	0.63		0.58	0.55	0.08	0.12	0.29	0.42	0.79	0.53	
Uniform Delay, d1	45.7	48.2		39.6	39.2	20.3	35.8	37.4	0.0	47.1	22.8	
Progression Factor	1.00	1.00		0.84	0.84	0.51	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	5.9		6.0	2.5	0.1	1.8	0.9	0.8	6.5	1.3	
Delay (s)	48.5	54.1		39.2	35.4	10.4	37.6	38.3	0.8	53.5	24.1	
Level of Service	D	D		D	D	B	D	D	A	D	C	
Approach Delay (s)		53.0			32.4			10.9			35.1	
Approach LOS		D			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1315	25	0	625	235	0	0	225	0	0	115
Future Vol, veh/h	0	1315	25	0	625	235	0	0	225	0	0	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1429	27	0	679	255	0	0	245	0	0	125

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	728	-	-	467
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	314	0	0	464
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	314	-	-	464
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

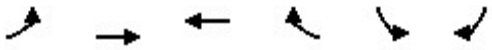
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	47.3	15.6
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	314	-	-	-	-	464
HCM Lane V/C Ratio	0.779	-	-	-	-	0.269
HCM Control Delay (s)	47.3	-	-	-	-	15.6
HCM Lane LOS	E	-	-	-	-	C
HCM 95th %tile Q(veh)	6.2	-	-	-	-	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	175	1240	0	0	2190	170	255	0	515	0	780
Future Volume (vph)	175	1240	0	0	2190	170	255	0	515	0	780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	96	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	1348	0	0	2380	185	277	0	560	0	848
RTOR Reduction (vph)	0	0	0	0	0	76	0	0	413	0	0
Lane Group Flow (vph)	190	1348	0	0	2380	109	277	0	147	0	848
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	94.5	94.5			70.5	70.5	13.0		13.0		120.0
Effective Green, g (s)	94.5	94.5			70.5	70.5	13.0		13.0		107.5
Actuated g/C Ratio	0.79	0.79			0.59	0.59	0.11		0.11		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	338	2694			2931	944	379		307		1443
v/s Ratio Prot	0.09	0.39			c0.48		c0.08				
v/s Ratio Perm	0.35					0.07			0.05		c0.53
v/c Ratio	0.56	0.50			0.81	0.12	0.73		0.48		0.59
Uniform Delay, d1	31.2	4.5			19.5	11.0	51.8		50.3		1.4
Progression Factor	0.99	0.82			1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	4.4	0.7			2.6	0.2	11.8		5.3		1.2
Delay (s)	35.3	4.3			22.1	11.2	63.6		55.6		2.6
Level of Service	D	A			C	B	E		E		A
Approach Delay (s)		8.2			21.3		58.2			2.6	
Approach LOS		A			C		E			A	

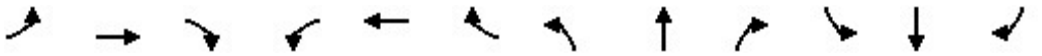
Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	2275	2355	5	0	5
Future Volume (vph)	0	2275	2355	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2473	2560	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2473	2565	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		95.7	95.7			109.7
Effective Green, g (s)		95.7	95.7			109.7
Actuated g/C Ratio		0.87	0.87			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4414	4501			1611
v/s Ratio Prot		0.49	c0.50			
v/s Ratio Perm						c0.00
v/c Ratio		0.56	0.57			0.00
Uniform Delay, d1		1.7	1.8			0.0
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.3	0.3			0.0
Delay (s)		2.0	2.1			0.0
Level of Service		A	A			A
Approach Delay (s)		2.0	2.1		0.0	
Approach LOS		A	A		A	

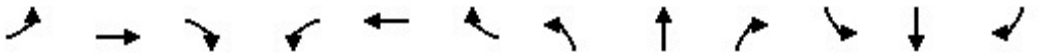
Intersection Summary			
HCM 2000 Control Delay	2.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2185	85	10	2170	10	125	5	30	35	5	65
Future Volume (veh/h)	5	2185	85	10	2170	10	125	5	30	35	5	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	5	2375	92	11	2359	11	136	5	33	38	5	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	3197	123	142	3575	17	243	36	241	279	17	246
Arrive On Green	0.01	0.64	0.64	0.01	0.64	0.64	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1776	5029	194	1818	5575	26	1323	221	1461	1365	105	1491
Grp Volume(v), veh/h	5	1598	869	11	1530	840	136	0	38	38	0	76
Grp Sat Flow(s),veh/h/ln	1776	1697	1830	1818	1809	1983	1323	0	1682	1365	0	1596
Q Serve(g_s), s	0.1	29.2	29.7	0.2	23.7	23.7	9.0	0.0	1.7	2.2	0.0	3.8
Cycle Q Clear(g_c), s	0.1	29.2	29.7	0.2	23.7	23.7	12.8	0.0	1.7	3.9	0.0	3.8
Prop In Lane	1.00		0.11	1.00		0.01	1.00		0.87	1.00		0.93
Lane Grp Cap(c), veh/h	146	2157	1163	142	2320	1272	243	0	277	279	0	263
V/C Ratio(X)	0.03	0.74	0.75	0.08	0.66	0.66	0.56	0.00	0.14	0.14	0.00	0.29
Avail Cap(c_a), veh/h	217	2157	1163	205	2320	1272	253	0	290	289	0	275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.9	11.3	11.4	11.0	10.0	10.1	38.6	0.0	32.1	33.8	0.0	33.0
Incr Delay (d2), s/veh	0.1	2.0	3.7	0.2	1.5	2.7	2.6	0.0	0.2	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.3	10.7	0.1	7.9	9.1	3.1	0.0	0.7	0.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	13.3	15.1	11.2	11.5	12.8	41.1	0.0	32.3	34.0	0.0	33.6
LnGrp LOS	A	B	B	B	B	B	D	A	C	C	A	C
Approach Vol, veh/h		2472			2381			174			114	
Approach Delay, s/veh		13.9			12.0			39.2			33.7	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	62.7		21.3	6.5	62.2		21.3				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	53.4		15.5	4.1	53.4		15.5				
Max Q Clear Time (g_c+I1), s	2.1	25.7		5.9	2.2	31.7		14.8				
Green Ext Time (p_c), s	0.0	20.4		0.3	0.0	17.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		14.3	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	700	40	10	315	20	640	10	65	5	5	5
Future Volume (vph)	20	700	40	10	315	20	640	10	65	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.99			0.99		1.00	1.00	0.85		0.95	
Flt Protected		1.00			1.00		0.95	0.95	1.00		0.98	
Satd. Flow (prot)		3507			3503		1681	1688	1583		1750	
Flt Permitted		0.94			0.92		0.95	0.95	1.00		0.98	
Satd. Flow (perm)		3290			3243		1681	1688	1583		1750	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	761	43	11	342	22	696	11	71	5	5	5
RTOR Reduction (vph)	0	4	0	0	6	0	0	0	48	0	5	0
Lane Group Flow (vph)	0	822	0	0	369	0	355	352	23	0	10	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		21.4			21.9		19.4	19.4	19.4		1.0	
Effective Green, g (s)		21.4			21.9		19.4	19.4	19.4		1.0	
Actuated g/C Ratio		0.36			0.37		0.32	0.32	0.32		0.02	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1177			1187		545	547	513		29	
v/s Ratio Prot							c0.21	0.21			c0.01	
v/s Ratio Perm		c0.25			0.11				0.01			
v/c Ratio		0.70			0.31		0.65	0.64	0.04		0.35	
Uniform Delay, d1		16.4			13.6		17.3	17.2	13.8		29.1	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		2.0			0.2		5.9	5.7	0.2		2.6	
Delay (s)		18.4			13.8		23.2	23.0	14.0		31.7	
Level of Service		B			B		C	C	B		C	
Approach Delay (s)		18.4			13.8			22.3			31.7	
Approach LOS		B			B			C			C	

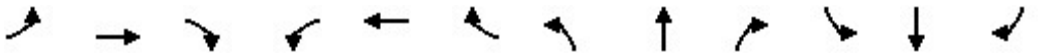
Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	5	880	80	50	755
Future Volume (vph)	5	5	880	80	50	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3261		3539	1583	1770	5085
Flt Permitted	0.98		1.00	1.00	0.28	1.00
Satd. Flow (perm)	3261		3539	1583	526	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	957	87	54	821
RTOR Reduction (vph)	5	0	0	30	0	0
Lane Group Flow (vph)	5	0	957	57	54	821
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	1.0		42.3	42.3	51.7	51.7
Effective Green, g (s)	1.0		42.3	42.3	51.7	51.7
Actuated g/C Ratio	0.02		0.65	0.65	0.80	0.80
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	50		2313	1034	485	4063
v/s Ratio Prot	c0.00		c0.27		0.01	c0.16
v/s Ratio Perm				0.04	0.08	
v/c Ratio	0.10		0.41	0.06	0.11	0.20
Uniform Delay, d1	31.4		5.3	4.0	2.1	1.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.5	0.1	0.1	0.1
Delay (s)	32.3		5.9	4.1	2.2	1.7
Level of Service	C		A	A	A	A
Approach Delay (s)	32.3		5.7			1.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	350	40	715	615	525	75	645	540	180	420	90
Future Volume (vph)	70	350	40	715	615	525	75	645	540	180	420	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3436		1541	3305	1567	1601	3438	1644	3539	3364	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.44	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3436		1541	3305	1567	748	3438	1644	3539	3364	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	380	43	777	668	571	82	701	587	196	457	98
RTOR Reduction (vph)	0	7	0	0	0	108	0	0	0	0	15	0
Lane Group Flow (vph)	76	416	0	474	971	463	82	701	587	196	540	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	15.5	15.5		44.0	44.0	61.4	26.6	26.6	120.0	11.4	43.5	
Effective Green, g (s)	15.5	15.5		44.0	44.0	55.4	26.6	26.6	120.0	11.4	43.5	
Actuated g/C Ratio	0.13	0.13		0.37	0.37	0.46	0.22	0.22	1.00	0.10	0.36	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	233	443		565	1211	723	165	762	1644	336	1219	
v/s Ratio Prot	0.04	c0.12		c0.31	0.29	c0.30		c0.20		0.06	0.16	
v/s Ratio Perm							0.11		0.36			
v/c Ratio	0.33	0.94		0.84	0.80	0.64	0.50	0.92	0.36	0.58	0.44	
Uniform Delay, d1	47.5	51.8		34.8	34.1	24.7	40.8	45.7	0.0	52.0	29.0	
Progression Factor	1.00	1.00		0.85	0.84	0.53	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.7	29.9		12.9	5.2	1.8	0.9	15.8	0.6	2.6	1.2	
Delay (s)	51.2	81.7		42.4	34.0	14.8	41.7	61.5	0.6	54.6	30.2	
Level of Service	D	F		D	C	B	D	E	A	D	C	
Approach Delay (s)		77.1			30.5			34.2			36.6	
Approach LOS		E			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1045	25	0	1645	200	0	0	135	0	0	210
Future Vol, veh/h	0	1045	25	0	1645	200	0	0	135	0	0	210
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1136	27	0	1788	217	0	0	147	0	0	228

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	582	-	-	1003
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	391	0	0	~ 206
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	391	-	-	~ 206
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	19.6	143.3
HCM LOS			C	F

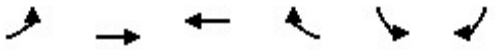
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	391	-	-	-	-	206
HCM Lane V/C Ratio	0.375	-	-	-	-	1.108
HCM Control Delay (s)	19.6	-	-	-	-	143.3
HCM Lane LOS	C	-	-	-	-	F
HCM 95th %tile Q(veh)	1.7	-	-	-	-	10.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	115	1585	0	0	2790	195	175	0	260	0	565
Future Volume (vph)	115	1585	0	0	2790	195	175	0	260	0	565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	82	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	1723	0	0	3033	212	190	0	283	0	614
RTOR Reduction (vph)	0	0	0	0	0	64	0	0	220	0	0
Lane Group Flow (vph)	125	1723	0	0	3033	148	190	0	63	0	614
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	99.5	99.5			83.8	83.8	8.0		8.0		120.0
Effective Green, g (s)	99.5	99.5			83.8	83.8	8.0		8.0		107.5
Actuated g/C Ratio	0.83	0.83			0.70	0.70	0.07		0.07		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	220	2836			3484	1122	233		189		1443
v/s Ratio Prot	0.05	c0.50			c0.61		c0.05				
v/s Ratio Perm	0.42					0.09			0.02		0.38
v/c Ratio	0.57	0.61			0.87	0.13	0.82		0.33		0.43
Uniform Delay, d1	32.7	3.5			13.9	6.0	55.3		53.4		1.1
Progression Factor	0.87	1.13			0.50	0.00	1.00		1.00		1.00
Incremental Delay, d2	6.8	1.0			2.3	0.2	26.0		4.7		0.6
Delay (s)	35.2	5.0			9.3	0.2	81.3		58.1		1.6
Level of Service	D	A			A	A	F		E		A
Approach Delay (s)		7.0			8.7		67.4			1.6	
Approach LOS		A			A		E			A	

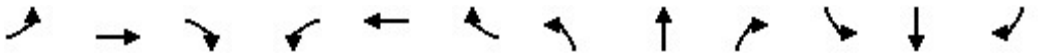
Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	2325	2980	5	0	5
Future Volume (vph)	0	2325	2980	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2527	3239	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2527	3244	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		99.8	99.8			120.0
Effective Green, g (s)		99.8	99.8			120.0
Actuated g/C Ratio		0.83	0.83			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4208	4291			1611
v/s Ratio Prot		0.50	c0.63			
v/s Ratio Perm						c0.00
v/c Ratio		0.60	0.76			0.00
Uniform Delay, d1		3.4	4.6			0.0
Progression Factor		0.87	1.00			1.00
Incremental Delay, d2		0.5	1.3			0.0
Delay (s)		3.5	5.9			0.0
Level of Service		A	A			A
Approach Delay (s)		3.5	5.9		0.0	
Approach LOS		A	A		A	

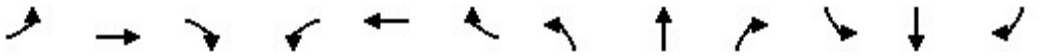
Intersection Summary			
HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2220	95	15	2895	25	70	10	25	25	5	20
Future Volume (veh/h)	10	2220	95	15	2895	25	70	10	25	25	5	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	11	2413	103	16	3147	27	76	11	27	27	5	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	3536	150	163	3942	34	184	45	111	175	27	120
Arrive On Green	0.01	0.71	0.71	0.01	0.71	0.71	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1776	5007	212	1818	5550	47	1383	499	1225	1365	301	1325
Grp Volume(v), veh/h	11	1629	887	16	2048	1126	76	0	38	27	0	27
Grp Sat Flow(s),veh/h/ln	1776	1697	1826	1818	1809	1979	1383	0	1725	1365	0	1626
Q Serve(g_s), s	0.2	24.4	24.9	0.2	34.0	34.4	4.8	0.0	1.8	1.7	0.0	1.4
Cycle Q Clear(g_c), s	0.2	24.4	24.9	0.2	34.0	34.4	6.2	0.0	1.8	3.5	0.0	1.4
Prop In Lane	1.00		0.12	1.00		0.02	1.00		0.71	1.00		0.81
Lane Grp Cap(c), veh/h	121	2396	1290	163	2570	1406	184	0	156	175	0	147
V/C Ratio(X)	0.09	0.68	0.69	0.10	0.80	0.80	0.41	0.00	0.24	0.15	0.00	0.18
Avail Cap(c_a), veh/h	183	2396	1290	219	2570	1406	196	0	171	187	0	161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	7.5	7.5	7.5	8.7	8.8	40.8	0.0	38.1	39.7	0.0	37.9
Incr Delay (d2), s/veh	0.3	1.3	2.4	0.3	2.7	4.9	1.5	0.0	0.8	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.7	7.8	0.1	10.2	12.1	1.7	0.0	0.8	0.6	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	8.7	10.0	7.7	11.4	13.6	42.2	0.0	38.9	40.1	0.0	38.5
LnGrp LOS	B	A	A	A	B	B	D	A	D	D	A	D
Approach Vol, veh/h		2527			3190			114			54	
Approach Delay, s/veh		9.2			12.2			41.1			39.3	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	68.9		14.6	6.8	68.6		14.6				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	60.0		8.9	4.1	60.0		8.9				
Max Q Clear Time (g_c+I1), s	2.2	36.4		5.5	2.2	26.9		8.2				
Green Ext Time (p_c), s	0.0	22.0		0.0	0.0	24.9		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			11.7									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	400	90	205	100	5	535	5	25	10	20	15
Future Volume (vph)	5	400	90	205	100	5	535	5	25	10	20	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.97			1.00		1.00	1.00	0.85		0.96	
Flt Protected		1.00			0.97		0.95	0.95	1.00		0.99	
Satd. Flow (prot)		3441			3418		1681	1687	1583		1761	
Flt Permitted		0.95			0.61		0.95	0.95	1.00		0.99	
Satd. Flow (perm)		3273			2150		1681	1687	1583		1761	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	435	98	223	109	5	582	5	27	11	22	16
RTOR Reduction (vph)	0	25	0	0	1	0	0	0	18	0	15	0
Lane Group Flow (vph)	0	513	0	0	336	0	291	296	9	0	34	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		17.4			17.9		19.5	19.5	19.5		3.6	
Effective Green, g (s)		17.4			17.9		19.5	19.5	19.5		3.6	
Actuated g/C Ratio		0.30			0.31		0.33	0.33	0.33		0.06	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		973			657		560	562	527		108	
v/s Ratio Prot							0.17	c0.18			c0.02	
v/s Ratio Perm		c0.16			0.16				0.01			
v/c Ratio		0.53			0.91dl		0.52	0.53	0.02		0.31	
Uniform Delay, d1		17.1			16.7		15.7	15.8	13.1		26.3	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		0.7			0.9		3.4	3.5	0.1		0.6	
Delay (s)		17.8			17.6		19.1	19.3	13.1		26.9	
Level of Service		B			B		B	B	B		C	
Approach Delay (s)		17.8			17.6			18.9			26.9	
Approach LOS		B			B			B			C	

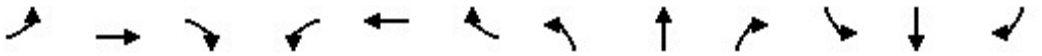
Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	58.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	30	645	5	30	450
Future Volume (vph)	45	30	645	5	30	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3297		3539	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.38	1.00
Satd. Flow (perm)	3297		3539	1583	717	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	33	701	5	33	489
RTOR Reduction (vph)	31	0	0	2	0	0
Lane Group Flow (vph)	51	0	701	3	33	489
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	3.1		39.9	39.9	48.2	48.2
Effective Green, g (s)	3.1		39.9	39.9	48.2	48.2
Actuated g/C Ratio	0.05		0.63	0.63	0.76	0.76
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	161		2230	997	584	3871
v/s Ratio Prot	c0.02		c0.20		0.00	c0.10
v/s Ratio Perm				0.00	0.04	
v/c Ratio	0.31		0.31	0.00	0.06	0.13
Uniform Delay, d1	29.1		5.4	4.3	1.9	2.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		0.4	0.0	0.0	0.1
Delay (s)	30.2		5.8	4.3	1.9	2.1
Level of Service	C		A	A	A	A
Approach Delay (s)	30.2		5.8			2.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

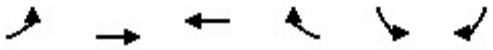
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	590	15	140	240	300	5	20	35	105	5	60
Future Volume (veh/h)	90	590	15	140	240	300	5	20	35	105	5	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	641	16	152	261	326	5	22	38	114	5	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	2319	58	590	1340	1196	196	87	150	207	16	210
Arrive On Green	0.65	0.65	0.65	0.05	0.75	0.75	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	829	3543	88	1781	1777	1585	1331	616	1063	1343	114	1488
Grp Volume(v), veh/h	98	321	336	152	261	326	5	0	60	114	0	70
Grp Sat Flow(s),veh/h/ln	829	1777	1854	1781	1777	1585	1331	0	1679	1343	0	1603
Q Serve(g_s), s	5.6	9.1	9.2	3.2	5.1	7.6	0.4	0.0	3.8	9.9	0.0	4.7
Cycle Q Clear(g_c), s	5.6	9.1	9.2	3.2	5.1	7.6	5.1	0.0	3.8	13.7	0.0	4.7
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.63	1.00		0.93
Lane Grp Cap(c), veh/h	603	1163	1214	590	1340	1196	196	0	237	207	0	227
V/C Ratio(X)	0.16	0.28	0.28	0.26	0.19	0.27	0.03	0.00	0.25	0.55	0.00	0.31
Avail Cap(c_a), veh/h	603	1163	1214	813	1340	1196	363	0	448	375	0	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.1	8.7	8.7	5.9	4.2	4.6	48.5	0.0	45.9	52.0	0.0	46.2
Incr Delay (d2), s/veh	0.6	0.6	0.6	0.2	0.2	0.4	0.1	0.0	1.2	4.8	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.6	3.7	1.1	1.7	2.3	0.1	0.0	1.7	3.6	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.7	9.3	9.3	6.1	4.5	5.0	48.7	0.0	47.0	56.8	0.0	47.9
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h		755			739			65			184	
Approach Delay, s/veh		9.2			5.0			47.2			53.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		97.0		23.0	12.0	85.1		23.0				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		75.5		32.0	20.5	48.5		32.0				
Max Q Clear Time (g_c+I1), s		9.6		15.7	5.2	11.2		7.1				
Green Ext Time (p_c), s		0.7		1.2	0.3	0.8		0.5				

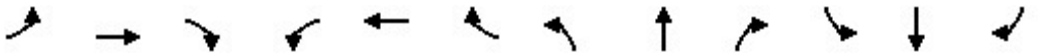
Intersection Summary												
HCM 6th Ctrl Delay			13.5									
HCM 6th LOS			B									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	640	585	60	365	95
Future Volume (vph)	90	640	585	60	365	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	5.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	3539	3539	1583	1742	
Flt Permitted	0.37	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	684	3539	3539	1583	1742	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	696	636	65	397	103
RTOR Reduction (vph)	0	0	0	46	11	0
Lane Group Flow (vph)	98	696	636	19	489	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		6	2		4	
Permitted Phases	6			2		
Actuated Green, G (s)	13.6	13.6	13.6	13.6	21.0	
Effective Green, g (s)	13.6	13.6	13.6	13.6	21.0	
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.46	
Clearance Time (s)	6.0	6.0	6.0	6.0	5.5	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	5.0	
Lane Grp Cap (vph)	201	1044	1044	467	793	
v/s Ratio Prot		c0.20	0.18		c0.28	
v/s Ratio Perm	0.14			0.01		
v/c Ratio	0.49	0.67	0.61	0.04	0.62	
Uniform Delay, d1	13.4	14.3	14.0	11.6	9.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	1.3	0.7	0.0	2.1	
Delay (s)	14.1	15.5	14.7	11.6	11.6	
Level of Service	B	B	B	B	B	
Approach Delay (s)		15.3	14.4		11.6	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	11.5
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

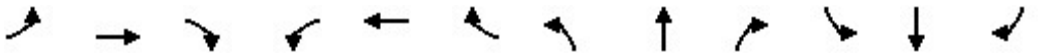
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	395	220	145	290	210	5	5	5	120	355	350
Future Volume (vph)	390	395	220	145	290	210	5	5	5	120	355	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.95		1.00	0.94			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3349		1770	3316			1817	1583	1681	1767	1583
Flt Permitted	0.18	1.00		0.40	1.00			0.98	1.00	0.95	1.00	1.00
Satd. Flow (perm)	327	3349		741	3316			1817	1583	1681	1767	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	429	239	158	315	228	5	5	5	130	386	380
RTOR Reduction (vph)	0	67	0	0	136	0	0	0	5	0	0	250
Lane Group Flow (vph)	424	601	0	158	407	0	0	10	0	117	399	130
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	45.7	31.4		28.5	19.2			3.5	3.5	34.3	34.3	34.3
Effective Green, g (s)	45.7	31.4		28.5	19.2			3.5	3.5	34.3	34.3	34.3
Actuated g/C Ratio	0.46	0.31		0.28	0.19			0.04	0.04	0.34	0.34	0.34
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	459	1051		306	636			63	55	576	606	542
v/s Ratio Prot	c0.20	0.18		0.05	0.12			c0.01		0.07	c0.23	
v/s Ratio Perm	c0.22			0.10					0.00			0.08
v/c Ratio	0.92	0.57		0.52	0.64			0.16	0.00	0.20	0.66	0.24
Uniform Delay, d1	25.4	28.7		28.1	37.2			46.8	46.6	23.2	27.9	23.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.3	2.3		1.5	4.9			2.5	0.0	0.4	3.5	0.5
Delay (s)	49.7	30.9		29.5	42.1			49.3	46.6	23.6	31.3	24.0
Level of Service	D	C		C	D			D	D	C	C	C
Approach Delay (s)		38.2			39.3			48.4			27.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

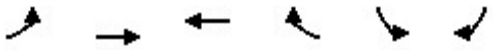
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	340	10	230	545	140	45	10	200	200	15	50
Future Volume (veh/h)	45	340	10	230	545	140	45	10	200	200	15	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	370	11	250	592	152	49	11	217	217	16	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	360	1477	44	585	1599	409	453	25	494	305	122	412
Arrive On Green	0.42	0.42	0.42	0.10	0.57	0.57	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	716	3524	105	1781	2801	717	1331	77	1520	1153	375	1267
Grp Volume(v), veh/h	49	186	195	250	375	369	49	0	228	217	0	70
Grp Sat Flow(s),veh/h/ln	716	1777	1852	1781	1777	1741	1331	0	1597	1153	0	1642
Q Serve(g_s), s	5.1	8.2	8.2	9.1	13.8	13.8	3.2	0.0	13.5	21.9	0.0	3.6
Cycle Q Clear(g_c), s	5.1	8.2	8.2	9.1	13.8	13.8	6.8	0.0	13.5	35.4	0.0	3.6
Prop In Lane	1.00		0.06	1.00		0.41	1.00		0.95	1.00		0.77
Lane Grp Cap(c), veh/h	360	745	776	585	1014	994	453	0	519	305	0	534
V/C Ratio(X)	0.14	0.25	0.25	0.43	0.37	0.37	0.11	0.00	0.44	0.71	0.00	0.13
Avail Cap(c_a), veh/h	360	745	776	746	1014	994	541	0	625	382	0	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	22.6	22.6	15.8	14.0	14.0	31.0	0.0	31.9	45.8	0.0	28.6
Incr Delay (d2), s/veh	0.8	0.8	0.8	0.5	1.0	1.0	0.2	0.0	1.3	7.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.6	3.7	3.7	5.7	5.6	1.1	0.0	5.4	6.9	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	23.4	23.4	16.2	15.0	15.0	31.2	0.0	33.1	53.2	0.0	28.8
LnGrp LOS	C	C	C	B	B	B	C	A	C	D	A	C
Approach Vol, veh/h		430			994			277			287	
Approach Delay, s/veh		23.3			15.3			32.8			47.2	
Approach LOS		C			B			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.0		45.0	18.2	56.8		45.0				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		60.5		47.0	22.5	31.5		47.0				
Max Q Clear Time (g_c+I1), s		15.8		37.4	11.1	10.2		15.5				
Green Ext Time (p_c), s		0.8		1.6	0.5	0.5		3.3				

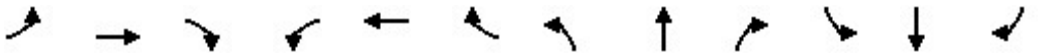
Intersection Summary												
HCM 6th Ctrl Delay			24.1									
HCM 6th LOS			C									



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	260	480	745	570	85	170
Future Volume (vph)	260	480	745	570	85	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	5.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.91	
Flt Protected	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (prot)	1770	3539	3539	1583	1667	
Flt Permitted	0.33	1.00	1.00	1.00	0.98	
Satd. Flow (perm)	612	3539	3539	1583	1667	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	522	810	620	92	185
RTOR Reduction (vph)	0	0	0	266	80	0
Lane Group Flow (vph)	283	522	810	354	197	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		6	2		4	
Permitted Phases	6			2		
Actuated Green, G (s)	32.7	32.7	32.7	32.7	13.1	
Effective Green, g (s)	32.7	32.7	32.7	32.7	13.1	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.23	
Clearance Time (s)	6.0	6.0	6.0	6.0	5.5	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	5.0	
Lane Grp Cap (vph)	349	2019	2019	903	381	
v/s Ratio Prot		0.15	0.23		c0.12	
v/s Ratio Perm	c0.46			0.22		
v/c Ratio	0.81	0.26	0.40	0.39	0.52	
Uniform Delay, d1	9.8	6.2	6.8	6.8	19.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.7	0.0	0.0	0.1	2.3	
Delay (s)	22.5	6.2	6.9	6.9	21.7	
Level of Service	C	A	A	A	C	
Approach Delay (s)		11.9	6.9		21.7	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

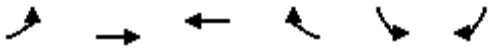
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	330	15	5	545	35	220	95	220	225	5	550
Future Volume (vph)	220	330	15	5	545	35	220	95	220	225	5	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3517		1770	3507			1800	1583	1681	1689	1583
Flt Permitted	0.14	1.00		0.53	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (perm)	270	3517		985	3507			1800	1583	1681	1689	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	359	16	5	592	38	239	103	239	245	5	598
RTOR Reduction (vph)	0	3	0	0	4	0	0	0	189	0	0	181
Lane Group Flow (vph)	239	372	0	5	626	0	0	342	50	125	125	417
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	44.6	38.6		27.7	26.7			25.2	25.2	33.7	33.7	33.7
Effective Green, g (s)	44.6	38.6		27.7	26.7			25.2	25.2	33.7	33.7	33.7
Actuated g/C Ratio	0.37	0.32		0.23	0.22			0.21	0.21	0.28	0.28	0.28
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	261	1131		233	780			378	332	472	474	444
v/s Ratio Prot	c0.10	0.11		0.00	0.18			c0.19		0.07	0.07	
v/s Ratio Perm	c0.24			0.00					0.03			c0.26
v/c Ratio	0.92	0.33		0.02	0.80			0.90	0.15	0.26	0.26	0.94
Uniform Delay, d1	29.9	30.9		35.6	44.2			46.2	38.7	33.5	33.5	42.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.9	0.8		0.0	8.6			25.5	0.4	0.6	0.6	28.9
Delay (s)	63.8	31.7		35.6	52.7			71.7	39.1	34.2	34.1	71.1
Level of Service	E	C		D	D			E	D	C	C	E
Approach Delay (s)		44.2			52.6			58.3			60.2	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1335	875	0	190	130
Future Volume (veh/h)	0	1335	875	0	190	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1451	951	0	207	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3889	4900	0	674	213
Arrive On Green	0.00	0.76	0.76	0.00	0.13	0.13
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	1451	951	0	207	141
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	11.4	5.0	0.0	4.5	10.1
Cycle Q Clear(g_c), s	0.0	11.4	5.0	0.0	4.5	10.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3889	4900	0	674	213
V/C Ratio(X)	0.00	0.37	0.19	0.00	0.31	0.66
Avail Cap(c_a), veh/h	0	3889	4900	0	1779	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.8	4.0	0.0	46.9	49.4
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	0.9	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	1.4	0.0	1.9	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.0	4.1	0.0	47.8	61.5
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		1451	951		348	
Approach Delay, s/veh		5.0	4.1		53.4	
Approach LOS		A	A		D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	97.4	22.6	97.4
Change Period (Y+Rc), s	6.0	6.5	6.0
Max Green Setting (Gmax), s	65.0	42.5	65.0
Max Q Clear Time (g_c+I1), s	13.4	12.1	7.0
Green Ext Time (p_c), s	15.3	4.0	8.2

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

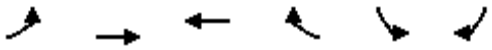
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1440	235	0	760	240	0
Future Volume (veh/h)	1440	235	0	760	240	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	0
Adj Flow Rate, veh/h	1565	0	0	826	261	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	0
Cap, veh/h	4885		0	4885	0	0
Arrive On Green	1.00	0.00	0.00	1.00	0.00	0.00
Sat Flow, veh/h	5443	0	0	5443	0	0
Grp Volume(v), veh/h	1565	0	0	826	0	0
Grp Sat Flow(s),veh/h/ln	1702	0	0	1702	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	4885		0	4885	0	0
V/C Ratio(X)	0.32		0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	4885		0	4885	0	0
HCM Platoon Ratio	2.00	2.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	0.87	0.00	0.00	0.99	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.2	0.0	0.0	0.1	0.0	0.0
LnGrp LOS	A		A	A	A	A
Approach Vol, veh/h	1565	A		826	0	
Approach Delay, s/veh	0.2			0.1	0.0	
Approach LOS	A			A		

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	150.0			150.0	0.0
Change Period (Y+Rc), s	6.5			6.5	7.0
Max Green Setting (Gmax), s	105.5			105.5	31.0
Max Q Clear Time (g_c+I1), s	2.0			2.0	0.0
Green Ext Time (p_c), s	6.8			19.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.1
HCM 6th LOS	A

Notes

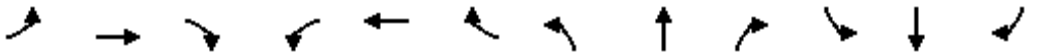
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (vph)	0	1335	875	0	190	130
Future Volume (vph)	0	1335	875	0	190	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.5	6.5
Lane Util. Factor		0.91	0.86		0.94	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5085	6408		4990	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5085	6408		4990	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1451	951	0	207	141
RTOR Reduction (vph)	0	0	0	0	0	94
Lane Group Flow (vph)	0	1451	951	0	207	47
Turn Type		NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases						
Actuated Green, G (s)		93.3	93.3		14.2	14.2
Effective Green, g (s)		93.3	93.3		14.2	14.2
Actuated g/C Ratio		0.78	0.78		0.12	0.12
Clearance Time (s)		6.0	6.0		6.5	6.5
Vehicle Extension (s)		3.0	3.0		6.0	6.0
Lane Grp Cap (vph)		3953	4982		590	187
v/s Ratio Prot		c0.29	0.15		c0.04	0.03
v/s Ratio Perm						
v/c Ratio		0.37	0.19		0.35	0.25
Uniform Delay, d1		4.2	3.5		48.7	48.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.1		1.0	2.0
Delay (s)		4.4	3.6		49.7	50.0
Level of Service		A	A		D	D
Approach Delay (s)		4.4	3.6		49.8	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1200	325	0	625	0	0	0	0	475	0	250
Future Volume (vph)	0	1200	325	0	625	0	0	0	0	475	0	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0					7.0		7.0
Lane Util. Factor		0.91			0.91					0.97		1.00
Frt		0.97			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		4923			5085					3433		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		4923			5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1304	353	0	679	0	0	0	0	516	0	272
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0	0	209
Lane Group Flow (vph)	0	1625	0	0	679	0	0	0	0	516	0	63
Turn Type		NA			NA					Prot		Prot
Protected Phases		2			6 1					4		4
Permitted Phases												
Actuated Green, G (s)		67.9			102.0					35.0		35.0
Effective Green, g (s)		67.9			102.0					35.0		35.0
Actuated g/C Ratio		0.45			0.68					0.23		0.23
Clearance Time (s)		6.0								7.0		7.0
Vehicle Extension (s)		0.2								3.0		3.0
Lane Grp Cap (vph)		2228			3457					801		369
v/s Ratio Prot		c0.33			c0.13					c0.15		0.04
v/s Ratio Perm												
v/c Ratio		0.73			0.20					0.64		0.17
Uniform Delay, d1		33.5			8.9					51.9		45.9
Progression Factor		1.00			0.62					1.00		1.00
Incremental Delay, d2		2.1			0.0					1.8		0.2
Delay (s)		35.7			5.5					53.7		46.1
Level of Service		D			A					D		D
Approach Delay (s)		35.7			5.5			0.0			51.1	
Approach LOS		D			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↰↑↑	↑↑↑		
Traffic Volume (vph)	1675	0	375	625	0	0
Future Volume (vph)	1675	0	375	625	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.5	6.5		
Lane Util. Factor	0.91		0.97	0.91		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	5085		3433	5085		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	5085		3433	5085		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1821	0	408	679	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1821	0	408	679	0	0
Turn Type	NA		Prot	NA		
Protected Phases	2 4		1	1 4 6		
Permitted Phases						
Actuated Green, G (s)	108.9		27.6	150.0		
Effective Green, g (s)	108.9		27.6	137.0		
Actuated g/C Ratio	0.73		0.18	0.91		
Clearance Time (s)			6.5			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	3691		631	4644		
v/s Ratio Prot	c0.36		c0.12	0.13		
v/s Ratio Perm						
v/c Ratio	0.49		0.65	0.15		
Uniform Delay, d1	8.8		56.7	0.7		
Progression Factor	0.05		0.60	1.00		
Incremental Delay, d2	0.1		2.3	0.0		
Delay (s)	0.5		36.1	0.7		
Level of Service	A		D	A		
Approach Delay (s)	0.5			14.0	0.0	
Approach LOS	A			B	A	

Intersection Summary			
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1440	235	0	760	240	0
Future Volume (vph)	1440	235	0	760	240	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.98			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	4978			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	4978			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1565	255	0	826	261	0
RTOR Reduction (vph)	10	0	0	0	0	0
Lane Group Flow (vph)	1810	0	0	826	261	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	119.8			119.8	16.7	
Effective Green, g (s)	119.8			119.8	16.7	
Actuated g/C Ratio	0.80			0.80	0.11	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	3975			4061	382	
v/s Ratio Prot	c0.36			0.16	c0.08	
v/s Ratio Perm						
v/c Ratio	0.46			0.20	0.68	
Uniform Delay, d1	4.8			3.6	64.1	
Progression Factor	0.00			0.32	1.00	
Incremental Delay, d2	0.3			0.1	5.0	
Delay (s)	0.3			1.3	69.1	
Level of Service	A			A	E	
Approach Delay (s)	0.3			1.3	69.1	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↱↱
Traffic Volume (vph)	1440	0	0	760	0	955
Future Volume (vph)	1440	0	0	760	0	955
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1565	0	0	826	0	1038
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1565	0	0	826	0	1038
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	67.5			150.0		71.0
Effective Green, g (s)	67.5			144.5		71.0
Actuated g/C Ratio	0.45			0.96		0.47
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	2288			4898		1319
v/s Ratio Prot	c0.31			0.16		c0.37
v/s Ratio Perm						
v/c Ratio	0.68			0.17		0.79
Uniform Delay, d1	32.8			0.1		33.2
Progression Factor	0.55			1.00		1.00
Incremental Delay, d2	1.5			0.0		3.2
Delay (s)	19.7			0.1		36.3
Level of Service	B			A		D
Approach Delay (s)	19.7			0.1	36.3	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

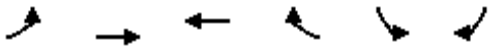
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	820	875	620	235	105	150	755	0	405	145	0
Future Volume (vph)	80	820	875	620	235	105	150	755	0	405	145	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	891	951	674	255	114	163	821	0	440	158	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	978	951	674	255	114	163	821	0	440	158	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		3			7	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		40.5	37.0	150.0	26.5	23.0	150.0	67.5		150.0	67.5	
Effective Green, g (s)		40.5	37.0	150.0	26.5	23.0	150.0	67.5		150.0	67.5	
Actuated g/C Ratio		0.27	0.25	1.00	0.18	0.15	1.00	0.45		1.00	0.45	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		926	1254	1583	312	779	1583	796		1583	1544	
v/s Ratio Prot		c0.28	0.19		c0.14	0.02		c0.46			0.05	
v/s Ratio Perm				c0.43			0.10			0.28		
v/c Ratio		1.06	0.76	0.43	0.82	0.15	0.10	1.03		0.28	0.10	
Uniform Delay, d1		54.8	52.4	0.0	59.4	55.0	0.0	41.2		0.0	23.8	
Progression Factor		0.82	0.83	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		41.0	3.1	0.6	15.2	0.4	0.1	40.2		0.4	0.0	
Delay (s)		86.2	46.3	0.6	74.6	55.4	0.1	81.5		0.4	23.8	
Level of Service		F	D	A	E	E	A	F		A	C	
Approach Delay (s)			49.4			47.7			53.2			10.6
Approach LOS			D			D			D			B

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	185
Future Volume (vph)	185
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	201
RTOR Reduction (vph)	0
Lane Group Flow (vph)	201
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	150.0
Effective Green, g (s)	150.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.13
v/c Ratio	0.13
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	0.2
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (veh/h)	0	710	1715	0	275	130
Future Volume (veh/h)	0	710	1715	0	275	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	772	1864	0	299	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3841	4840	0	721	228
Arrive On Green	0.00	0.75	0.75	0.00	0.14	0.14
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	772	1864	0	299	141
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	5.3	12.1	0.0	6.5	10.0
Cycle Q Clear(g_c), s	0.0	5.3	12.1	0.0	6.5	10.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3841	4840	0	721	228
V/C Ratio(X)	0.00	0.20	0.39	0.00	0.41	0.62
Avail Cap(c_a), veh/h	0	3841	4840	0	1821	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.63	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.3	5.2	0.0	46.8	48.3
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	1.4	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	3.4	0.0	2.8	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.5	5.3	0.0	48.2	57.9
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		772	1864		440	
Approach Delay, s/veh		4.5	5.3		51.3	
Approach LOS		A	A		D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	96.3	23.7	96.3
Change Period (Y+Rc), s	6.0	6.5	6.0
Max Green Setting (Gmax), s	64.0	43.5	64.0
Max Q Clear Time (g_c+I1), s	7.3	12.0	14.1
Green Ext Time (p_c), s	6.2	5.2	22.9

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

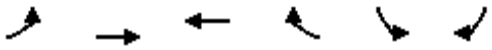
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1055	255	0	1305	210	0
Future Volume (veh/h)	1055	255	0	1305	210	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	0
Adj Flow Rate, veh/h	1147	0	0	1418	228	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	0
Cap, veh/h	4885		0	4885	0	0
Arrive On Green	1.00	0.00	0.00	0.96	0.00	0.00
Sat Flow, veh/h	5443	0	0	5443	0	0
Grp Volume(v), veh/h	1147	0	0	1418	0	0
Grp Sat Flow(s),veh/h/ln	1702	0	0	1702	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.5	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	4885		0	4885	0	0
V/C Ratio(X)	0.23		0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	4885		0	4885	0	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.00	0.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.1	0.0	0.0	0.3	0.0	0.0
LnGrp LOS	A		A	A	A	A
Approach Vol, veh/h	1147	A		1418	0	
Approach Delay, s/veh	0.1			0.3	0.0	
Approach LOS	A			A		

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	150.0			150.0	0.0
Change Period (Y+Rc), s	6.5			6.5	7.0
Max Green Setting (Gmax), s	102.5			102.5	34.0
Max Q Clear Time (g_c+I1), s	4.5			2.0	0.0
Green Ext Time (p_c), s	15.7			10.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.2
HCM 6th LOS	A

Notes

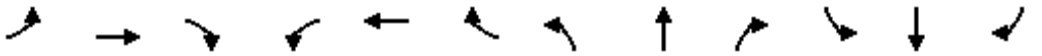
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	710	1715	0	275	130
Future Volume (vph)	0	710	1715	0	275	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.5	6.5
Lane Util. Factor		0.91	0.86		0.94	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5085	6408		4990	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5085	6408		4990	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	772	1864	0	299	141
RTOR Reduction (vph)	0	0	0	0	0	8
Lane Group Flow (vph)	0	772	1864	0	299	133
Turn Type		NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases						
Actuated Green, G (s)		88.1	88.1		19.4	19.4
Effective Green, g (s)		88.1	88.1		19.4	19.4
Actuated g/C Ratio		0.73	0.73		0.16	0.16
Clearance Time (s)		6.0	6.0		6.5	6.5
Vehicle Extension (s)		3.0	3.0		6.0	6.0
Lane Grp Cap (vph)		3733	4704		806	255
v/s Ratio Prot		0.15	c0.29		0.06	c0.08
v/s Ratio Perm						
v/c Ratio		0.21	0.40		0.37	0.52
Uniform Delay, d1		5.0	6.0		44.9	46.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.3		0.8	4.8
Delay (s)		5.1	6.2		45.7	50.9
Level of Service		A	A		D	D
Approach Delay (s)		5.1	6.2		47.3	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	875	110	0	990	0	0	0	0	435	0	725
Future Volume (vph)	0	875	110	0	990	0	0	0	0	435	0	725
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.5					7.0		7.0
Lane Util. Factor		0.91			0.91					0.97		1.00
Frt		0.98			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		5000			5085					3433		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		5000			5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	951	120	0	1076	0	0	0	0	473	0	788
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	1061	0	0	1076	0	0	0	0	473	0	749
Turn Type		NA			NA					Prot		Prot
Protected Phases		2			1 6					4		4
Permitted Phases												
Actuated Green, G (s)		39.6			71.1					65.9		65.9
Effective Green, g (s)		39.6			71.1					65.9		65.9
Actuated g/C Ratio		0.26			0.47					0.44		0.44
Clearance Time (s)		6.0								7.0		7.0
Vehicle Extension (s)		0.2								3.0		3.0
Lane Grp Cap (vph)		1320			2410					1508		695
v/s Ratio Prot		c0.21			c0.21					0.14		c0.47
v/s Ratio Perm												
v/c Ratio		0.80			0.45					0.31		1.08
Uniform Delay, d1		51.6			26.3					27.3		42.0
Progression Factor		1.00			0.75					1.00		1.00
Incremental Delay, d2		5.3			0.1					0.1		57.2
Delay (s)		56.8			19.9					27.5		99.2
Level of Service		E			B					C		F
Approach Delay (s)		56.8			19.9			0.0			72.3	
Approach LOS		E			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1310	0	525	990	0	0
Future Volume (vph)	1310	0	525	990	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.5	6.5		
Lane Util. Factor	0.91		0.97	0.91		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	5085		3433	5085		
Flt Permitted	1.00		0.95	1.00		
Satd. Flow (perm)	5085		3433	5085		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1424	0	571	1076	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1424	0	571	1076	0	0
Turn Type	NA		Prot	NA		
Protected Phases	2 4		1	1 4 6		
Permitted Phases						
Actuated Green, G (s)	112.5		25.0	150.0		
Effective Green, g (s)	105.5		25.0	137.0		
Actuated g/C Ratio	0.70		0.17	0.91		
Clearance Time (s)			6.5			
Vehicle Extension (s)			3.0			
Lane Grp Cap (vph)	3576		572	4644		
v/s Ratio Prot	c0.28		c0.17	0.21		
v/s Ratio Perm						
v/c Ratio	0.40		1.00	0.23		
Uniform Delay, d1	9.2		62.5	0.7		
Progression Factor	0.17		0.94	1.00		
Incremental Delay, d2	0.1		36.1	0.0		
Delay (s)	1.6		94.6	0.7		
Level of Service	A		F	A		
Approach Delay (s)	1.6			33.3	0.0	
Approach LOS	A			C	A	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1055	255	0	1305	210	0
Future Volume (vph)	1055	255	0	1305	210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.97			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	4937			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	4937			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1147	277	0	1418	228	0
RTOR Reduction (vph)	17	0	0	0	0	0
Lane Group Flow (vph)	1407	0	0	1418	228	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	121.2			121.2	15.3	
Effective Green, g (s)	121.2			121.2	15.3	
Actuated g/C Ratio	0.81			0.81	0.10	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	3989			4108	350	
v/s Ratio Prot	c0.29			0.28	c0.07	
v/s Ratio Perm						
v/c Ratio	0.35			0.35	0.65	
Uniform Delay, d1	3.9			3.8	64.8	
Progression Factor	0.24			1.00	1.00	
Incremental Delay, d2	0.2			0.2	4.3	
Delay (s)	1.1			4.1	69.1	
Level of Service	A			A	E	
Approach Delay (s)	1.1			4.1	69.1	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1055	0	0	1305	0	525
Future Volume (vph)	1055	0	0	1305	0	525
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1147	0	0	1418	0	571
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1147	0	0	1418	0	571
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	85.9			150.0		52.6
Effective Green, g (s)	85.9			144.5		52.6
Actuated g/C Ratio	0.57			0.96		0.35
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	2912			4898		977
v/s Ratio Prot	c0.23			0.28		c0.20
v/s Ratio Perm						
v/c Ratio	0.39			0.29		0.58
Uniform Delay, d1	17.7			0.1		39.8
Progression Factor	0.32			1.00		1.00
Incremental Delay, d2	0.4			0.0		0.9
Delay (s)	6.0			0.2		40.7
Level of Service	A			A		D
Approach Delay (s)	6.0			0.2	40.7	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

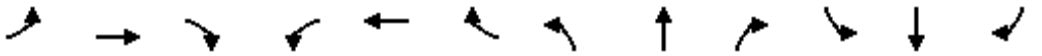
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	115	925	505	330	800	140	710	0	300	380	0
Future Volume (vph)	35	115	925	505	330	800	140	710	0	300	380	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	125	1005	549	359	870	152	772	0	326	413	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	163	1005	549	359	870	152	772	0	326	413	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		8			4	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		11.1	31.0	135.0	27.5	47.4	135.0	57.5		135.0	57.5	
Effective Green, g (s)		11.1	31.0	135.0	27.5	47.4	135.0	57.5		135.0	57.5	
Actuated g/C Ratio		0.08	0.23	1.00	0.20	0.35	1.00	0.43		1.00	0.43	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		282	1167	1583	360	1785	1583	753		1583	1462	
v/s Ratio Prot		0.05	c0.20		c0.20	0.17		c0.44			0.12	
v/s Ratio Perm				0.35			0.10			0.21		
v/c Ratio		0.58	0.86	0.35	1.00	0.49	0.10	1.03		0.21	0.28	
Uniform Delay, d1		59.7	49.9	0.0	53.7	34.3	0.0	38.8		0.0	25.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.9	8.4	0.6	46.4	1.0	0.1	39.4		0.3	0.1	
Delay (s)		62.6	58.4	0.6	100.1	35.2	0.1	78.1		0.3	25.4	
Level of Service		E	E	A	F	D	A	E		A	C	
Approach Delay (s)			40.3			48.2			55.0			9.1
Approach LOS			D			D			E			A

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	795
Future Volume (vph)	795
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	864
RTOR Reduction (vph)	0
Lane Group Flow (vph)	864
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	135.0
Effective Green, g (s)	135.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.55
v/c Ratio	0.55
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	1.4
Delay (s)	1.4
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary



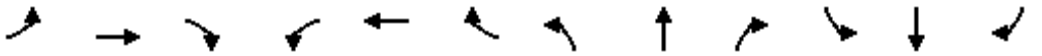
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	15	75	55	25	85	150	260	25	30	980	1335
Future Volume (veh/h)	245	15	75	55	25	85	150	260	25	30	980	1335
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	266	16	82	60	27	92	163	283	27	33	1065	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	237	201	77	141	120	357	1963	186	678	1931	
Arrive On Green	0.10	0.13	0.13	0.04	0.08	0.08	0.06	0.60	0.60	0.03	0.57	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3270	310	1692	3375	1505
Grp Volume(v), veh/h	266	16	82	60	27	92	163	152	158	33	1065	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1809	1692	1687	1505
Q Serve(g_s), s	9.2	0.9	5.8	4.0	1.6	6.9	4.5	4.5	4.6	1.0	23.7	0.0
Cycle Q Clear(g_c), s	9.2	0.9	5.8	4.0	1.6	6.9	4.5	4.5	4.6	1.0	23.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	328	237	201	77	141	120	357	1063	1086	678	1931	
V/C Ratio(X)	0.81	0.07	0.41	0.78	0.19	0.77	0.46	0.14	0.15	0.05	0.55	
Avail Cap(c_a), veh/h	446	400	339	126	292	248	458	1063	1086	703	1931	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.00
Uniform Delay (d), s/veh	53.2	46.0	48.1	56.8	52.0	54.4	12.5	10.5	10.5	9.8	16.0	0.0
Incr Delay (d2), s/veh	7.9	0.1	1.3	15.2	0.6	9.8	0.9	0.3	0.3	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.4	0.1	2.1	0.8	3.1	1.8	1.8	1.9	0.4	9.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	46.1	49.4	72.1	52.7	64.3	13.4	10.8	10.8	9.8	17.0	0.0
LnGrp LOS	E	D	D	E	D	E	B	B	B	A	B	
Approach Vol, veh/h		364			179			473			1098	A
Approach Delay, s/veh		57.7			65.1			11.7			16.8	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	78.5	17.0	15.6	12.2	75.2	10.7	21.9
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	5.1	56.4	15.7	18.8	13.5	48.0	8.5	26.0
Max Q Clear Time (g_c+I1), s	3.0	6.6	11.2	8.9	6.5	25.7	6.0	7.8
Green Ext Time (p_c), s	0.0	0.3	0.4	0.2	0.2	1.7	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

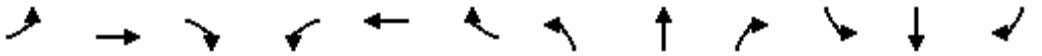
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	15	75	55	25	85	150	260	25	30	980	1335
Future Volume (vph)	245	15	75	55	25	85	150	260	25	30	980	1335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	10	11	11	10	10	11	12	10	12	11
Grade (%)		2%			1%			1%			4%	
Total Lost time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3399	1783	1463	1702	1792	1470	1643	3360		1619	3468	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.17	1.00		0.56	1.00	1.00
Satd. Flow (perm)	3399	1783	1463	1702	1792	1470	296	3360		960	3468	1500
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	16	82	60	27	92	163	283	27	33	1065	1451
RTOR Reduction (vph)	0	0	71	0	0	85	0	5	0	0	0	0
Lane Group Flow (vph)	266	16	11	60	27	7	163	305	0	33	1065	1451
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Free
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4	2			6		Free
Actuated Green, G (s)	13.9	15.7	15.7	6.7	8.5	8.5	79.1	69.5		67.0	62.9	120.0
Effective Green, g (s)	13.9	15.7	15.7	6.7	8.5	8.5	79.1	69.5		67.0	62.9	120.0
Actuated g/C Ratio	0.12	0.13	0.13	0.06	0.07	0.07	0.66	0.58		0.56	0.52	1.00
Clearance Time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	393	233	191	95	126	104	315	1946		558	1817	1500
v/s Ratio Prot	0.08	0.01		0.04	0.02		0.05	0.09		0.00	0.31	
v/s Ratio Perm			0.01			0.00	0.29			0.03		c0.97
v/c Ratio	0.68	0.07	0.06	0.63	0.21	0.06	0.52	0.16		0.06	0.59	0.97
Uniform Delay, d1	50.9	45.7	45.7	55.4	52.6	52.0	11.7	11.7		11.9	19.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	0.1	0.1	12.9	0.9	0.3	1.4	0.2		0.0	1.4	16.7
Delay (s)	55.5	45.9	45.8	68.3	53.5	52.3	13.1	11.9		12.0	21.0	16.7
Level of Service	E	D	D	E	D	D	B	B		B	C	B
Approach Delay (s)		52.9			57.8			12.3			18.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	700	1000	0	0	0	0	155	435	0	1345	0
Future Volume (vph)	5	700	1000	0	0	0	0	155	435	0	1345	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3450	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3450	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	761	1087	0	0	0	0	168	473	0	1462	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	766	1087	0	0	0	0	168	473	0	1462	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		39.7	160.0					18.5	81.5		105.3	
Effective Green, g (s)		39.7	160.0					18.5	81.5		100.8	
Actuated g/C Ratio		0.25	1.00					0.12	0.51		0.63	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		856	1544					374	1344		3203	
v/s Ratio Prot								0.05	0.18		0.29	
v/s Ratio Perm		0.22	c0.70									
v/c Ratio		0.89	0.70					0.45	0.35		0.46	
Uniform Delay, d1		58.1	0.0					66.0	23.5		15.4	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		11.8	2.7					3.9	0.2		0.0	
Delay (s)		69.9	2.7					69.9	23.6		0.0	
Level of Service		E	A					E	C		A	
Approach Delay (s)		30.5			0.0			35.7			0.0	
Approach LOS		C			A			D			A	

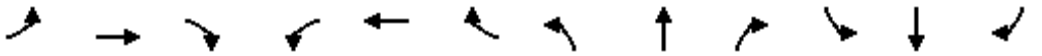
Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	1345	650	160	0
Future Volume (vph)	0	0	1345	650	160	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			4.5	4.5	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.98	0.95	
Satd. Flow (prot)			1549	3180	3433	
Flt Permitted			0.95	0.98	0.95	
Satd. Flow (perm)			1549	3180	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1462	707	174	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	731	1438	174	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			80.8	80.8	66.2	
Effective Green, g (s)			80.8	80.8	58.2	
Actuated g/C Ratio			0.50	0.50	0.36	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			782	1605	1248	
v/s Ratio Prot			c0.47	0.45	c0.05	
v/s Ratio Perm						
v/c Ratio			0.93	0.90	0.14	
Uniform Delay, d1			37.1	35.8	34.1	
Progression Factor			1.00	1.00	0.01	
Incremental Delay, d2			18.1	6.9	0.0	
Delay (s)			55.3	42.7	0.2	
Level of Service			E	D	A	
Approach Delay (s)	0.0			46.9	0.2	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

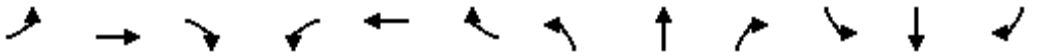
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	575	35	335	5	5	20	180	1105	5	40	2180	520
Future Volume (vph)	575	35	335	5	5	20	180	1105	5	40	2180	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1574	1575		1900		3285	4864		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1574	1575		1900		3285	4864		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	625	38	364	5	5	22	196	1201	5	43	2370	565
RTOR Reduction (vph)	0	0	87	0	21	0	0	0	0	0	0	175
Lane Group Flow (vph)	331	332	277	0	11	0	196	1206	0	43	2370	390
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	32.9	32.9	44.8		4.0		11.9	79.4		7.2	74.7	74.7
Effective Green, g (s)	32.9	32.9	44.8		4.0		11.9	79.4		7.2	74.7	74.7
Actuated g/C Ratio	0.22	0.22	0.30		0.03		0.08	0.53		0.05	0.50	0.50
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	342	345	470		50		260	2574		82	2448	841
v/s Ratio Prot	c0.21	0.21	0.05		c0.01		c0.06	0.25		0.03	c0.48	
v/s Ratio Perm			0.13									0.23
v/c Ratio	0.97	0.96	0.59		0.21		0.75	0.47		0.52	0.97	0.46
Uniform Delay, d1	58.0	57.9	44.8		71.5		67.6	22.1		69.7	36.5	24.6
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.03	0.99	1.33
Incremental Delay, d2	39.6	38.3	1.9		2.1		11.7	0.6		3.3	8.0	1.0
Delay (s)	97.7	96.2	46.7		73.6		79.3	22.7		74.8	44.2	33.8
Level of Service	F	F	D		E		E	C		E	D	C
Approach Delay (s)		79.1			73.6			30.6			42.7	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

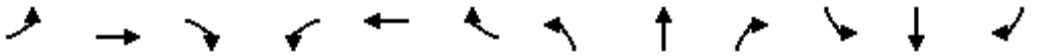
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	5	695	0	0	0	0	1515	185	235	2045	0
Future Volume (vph)	205	5	695	0	0	0	0	1515	185	235	2045	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1664	2412					8037		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1664	2412					8037		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	5	755	0	0	0	0	1647	201	255	2223	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	114	114	755	0	0	0	0	1834	0	255	2223	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	54.1	54.1	54.1					55.2		20.7	82.4	
Effective Green, g (s)	54.1	54.1	54.1					55.2		20.7	82.4	
Actuated g/C Ratio	0.36	0.36	0.36					0.37		0.14	0.55	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	577	600	869					2957		458	2700	
v/s Ratio Prot	0.07	0.07	c0.31					0.23		0.08	c0.45	
v/s Ratio Perm												
v/c Ratio	0.20	0.19	0.87					0.62		0.56	0.82	
Uniform Delay, d1	33.0	32.9	44.6					38.8		60.4	27.8	
Progression Factor	1.00	1.00	1.00					0.68		0.53	0.38	
Incremental Delay, d2	0.2	0.2	9.2					0.8		4.2	2.7	
Delay (s)	33.2	33.1	53.9					27.0		36.3	13.2	
Level of Service	C	C	D					C		D	B	
Approach Delay (s)		49.0			0.0			27.0			15.6	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	160	5	430	315	1405	0	0	2120	770
Future Volume (vph)	0	0	0	160	5	430	315	1405	0	0	2120	770
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1702	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1702	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	174	5	467	342	1527	0	0	2304	837
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	89	90	467	342	1527	0	0	2304	837
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				14.4	14.4	150.0	22.1	121.6			93.0	150.0
Effective Green, g (s)				14.4	14.4	150.0	22.1	121.6			93.0	150.0
Actuated g/C Ratio				0.10	0.10	1.00	0.15	0.81			0.62	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)				157	163	1750	472	5021			4543	1591
v/s Ratio Prot				0.05	0.05		c0.11	0.25			0.31	
v/s Ratio Perm						0.27						c0.53
v/c Ratio				0.57	0.55	0.27	0.72	0.30			0.51	0.53
Uniform Delay, d1				64.8	64.7	0.0	61.0	3.6			15.8	0.0
Progression Factor				1.00	1.00	1.00	1.44	0.27			0.46	1.00
Incremental Delay, d2				5.6	4.9	0.4	4.6	0.1			0.0	0.1
Delay (s)				70.4	69.6	0.4	92.3	1.1			7.3	0.1
Level of Service				E	E	A	F	A			A	A
Approach Delay (s)		0.0			19.7			17.8			5.4	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

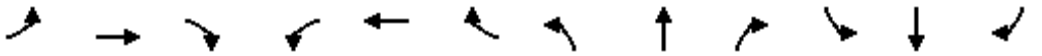
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	120	475	225	725	205	80	10	235	1100	490	35	1930
Future Volume (vph)	120	475	225	725	205	80	10	235	1100	490	35	1930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3318		3172	3504	1567		1652	4916	1531	1719	4307
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.08	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3318		3172	3504	1567		142	4916	1531	1719	4307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	516	245	788	223	87	11	255	1196	533	38	2098
RTOR Reduction (vph)	0	0	0	0	0	69	0	0	0	281	0	4
Lane Group Flow (vph)	130	761	0	788	223	18	0	266	1196	252	38	2219
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	33.0	33.0		22.5	22.5	30.4		60.6	60.6	60.6	7.9	57.0
Effective Green, g (s)	33.0	33.0		22.5	22.5	30.4		60.6	60.6	60.6	7.9	57.0
Actuated g/C Ratio	0.22	0.22		0.15	0.15	0.20		0.40	0.40	0.40	0.05	0.38
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	694	729		475	525	317		173	1986	618	90	1636
v/s Ratio Prot	0.04	c0.23		c0.25	0.06	0.01		c0.12	0.24		0.02	c0.52
v/s Ratio Perm								c0.50		0.16		
v/c Ratio	0.19	1.04		1.66	0.42	0.06		1.54	0.60	0.41	0.42	1.36
Uniform Delay, d1	47.6	58.5		63.8	57.9	48.2		64.7	35.2	31.9	68.8	46.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.60	0.45	0.57	1.00	1.00
Incremental Delay, d2	0.1	45.3		305.8	2.5	0.1		268.0	1.3	1.9	3.2	164.5
Delay (s)	47.7	103.8		369.5	60.4	48.3		306.7	17.2	20.0	72.0	211.0
Level of Service	D	F		F	E	D		F	B	C	E	F
Approach Delay (s)		95.6			281.3				56.5			208.7
Approach LOS		F			F				E			F

Intersection Summary			
HCM 2000 Control Delay	156.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	116.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	115
Future Volume (vph)	115
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	125
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	55	325	55	15	50	55	910	30	100	360	515
Future Volume (veh/h)	520	55	325	55	15	50	55	910	30	100	360	515
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	565	60	353	60	16	54	60	989	33	109	391	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	645	426	361	77	159	135	542	1668	56	284	1652	
Arrive On Green	0.19	0.23	0.23	0.04	0.09	0.09	0.04	0.48	0.48	0.05	0.49	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3498	117	1692	3375	1505
Grp Volume(v), veh/h	565	60	353	60	16	54	60	501	521	109	391	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1843	1692	1687	1505
Q Serve(g_s), s	19.3	3.1	26.9	4.0	0.9	3.9	2.0	24.7	24.8	3.9	8.0	0.0
Cycle Q Clear(g_c), s	19.3	3.1	26.9	4.0	0.9	3.9	2.0	24.7	24.8	3.9	8.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	645	426	361	77	159	135	542	844	879	284	1652	
V/C Ratio(X)	0.88	0.14	0.98	0.78	0.10	0.40	0.11	0.59	0.59	0.38	0.24	
Avail Cap(c_a), veh/h	816	426	361	146	159	135	557	844	879	358	1652	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	47.3	36.7	45.8	56.8	50.6	52.0	14.9	22.9	22.9	17.7	17.7	0.0
Incr Delay (d2), s/veh	8.8	0.1	41.1	15.1	0.3	1.9	0.1	3.1	2.9	0.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	1.4	14.5	2.1	0.5	1.6	0.8	10.9	11.3	1.6	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.1	36.8	86.9	71.9	50.9	53.9	15.0	26.0	25.8	18.5	18.0	0.0
LnGrp LOS	E	D	F	E	D	D	B	C	C	B	B	
Approach Vol, veh/h		978			130			1082			500	A
Approach Delay, s/veh		66.1			61.8			25.3			18.1	
Approach LOS		E			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	63.7	28.2	16.8	9.8	65.3	10.7	34.2
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	11.1	47.3	28.7	8.9	5.3	53.1	9.9	27.7
Max Q Clear Time (g_c+I1), s	5.9	26.8	21.3	5.9	4.0	10.0	6.0	28.9
Green Ext Time (p_c), s	0.1	1.1	1.4	0.0	0.0	0.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

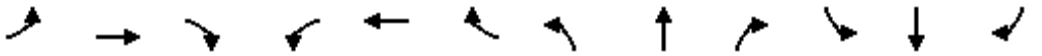
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	55	325	55	15	50	55	910	30	100	360	515
Future Volume (vph)	520	55	325	55	15	50	55	910	30	100	360	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	10	11	11	10	10	11	12	10	12	11
Grade (%)		2%			1%			1%			4%	
Total Lost time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3399	1783	1463	1702	1792	1470	1643	3388		1619	3468	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.52	1.00		0.17	1.00	1.00
Satd. Flow (perm)	3399	1783	1463	1702	1792	1470	901	3388		289	3468	1500
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	565	60	353	60	16	54	60	989	33	109	391	560
RTOR Reduction (vph)	0	0	286	0	0	51	0	2	0	0	0	0
Lane Group Flow (vph)	565	60	67	60	16	3	60	1020	0	109	391	560
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Free
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4	2			6		Free
Actuated Green, G (s)	24.6	22.7	22.7	7.5	5.6	5.6	62.4	56.8		69.2	60.2	120.0
Effective Green, g (s)	24.6	22.7	22.7	7.5	5.6	5.6	62.4	56.8		69.2	60.2	120.0
Actuated g/C Ratio	0.21	0.19	0.19	0.06	0.05	0.05	0.52	0.47		0.58	0.50	1.00
Clearance Time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	696	337	276	106	83	68	503	1603		266	1739	1500
v/s Ratio Prot	c0.17	0.03		0.04	0.01		0.01	c0.30		0.03	0.11	
v/s Ratio Perm			0.05			0.00	0.06			0.21		c0.37
v/c Ratio	0.81	0.18	0.24	0.57	0.19	0.04	0.12	0.64		0.41	0.22	0.37
Uniform Delay, d1	45.5	40.8	41.3	54.7	55.0	54.6	14.3	23.8		14.6	16.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.2	0.3	0.5	6.8	1.1	0.2	0.1	1.9		1.0	0.3	0.7
Delay (s)	52.7	41.1	41.8	61.4	56.2	54.8	14.5	25.8		15.6	17.1	0.7
Level of Service	D	D	D	E	E	D	B	C		B	B	A
Approach Delay (s)		48.0			58.0			25.1			8.3	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	585	495	0	0	0	0	480	1000	0	480	0
Future Volume (vph)	5	585	495	0	0	0	0	480	1000	0	480	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3449	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3449	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	636	538	0	0	0	0	522	1087	0	522	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	641	538	0	0	0	0	522	1087	0	522	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		29.0	160.0					30.0	97.1		116.0	
Effective Green, g (s)		29.0	160.0					30.0	97.1		109.0	
Actuated g/C Ratio		0.18	1.00					0.19	0.61		0.68	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		625	1544					606	1602		3464	
v/s Ratio Prot								c0.16	c0.41		0.10	
v/s Ratio Perm		0.19	c0.35									
v/c Ratio		1.03	0.35					0.86	0.68		0.15	
Uniform Delay, d1		65.5	0.0					63.0	21.0		9.1	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		42.7	0.6					14.9	1.2		0.0	
Delay (s)		108.2	0.6					77.9	22.2		0.0	
Level of Service		F	A					E	C		A	
Approach Delay (s)		59.1			0.0			40.2			0.0	
Approach LOS		E			A			D			A	

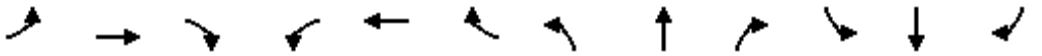
Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	480	1325	485	0
Future Volume (vph)	0	0	480	1325	485	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			7.0	7.0	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	1.00	0.95	
Satd. Flow (prot)			1549	3255	3433	
Flt Permitted			0.95	1.00	0.95	
Satd. Flow (perm)			1549	3255	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	522	1440	527	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	470	1492	527	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			80.0	80.0	67.0	
Effective Green, g (s)			80.0	80.0	59.0	
Actuated g/C Ratio			0.50	0.50	0.37	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			774	1627	1265	
v/s Ratio Prot			0.30	c0.46	c0.15	
v/s Ratio Perm						
v/c Ratio			0.61	0.92	0.42	
Uniform Delay, d1			28.7	36.9	37.7	
Progression Factor			1.01	1.00	0.00	
Incremental Delay, d2			1.4	8.5	0.1	
Delay (s)			30.4	45.3	0.2	
Level of Service			C	D	A	
Approach Delay (s)	0.0			41.7	0.2	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		

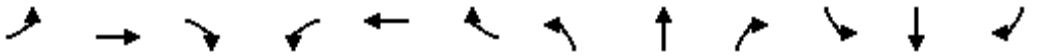
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	675	60	180	5	25	150	195	2525	10	105	1600	225
Future Volume (vph)	675	60	180	5	25	150	195	2525	10	105	1600	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1577	1575		1870		3285	4864		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1577	1575		1870		3285	4864		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	734	65	196	5	27	163	212	2745	11	114	1739	245
RTOR Reduction (vph)	0	0	78	0	94	0	0	1	0	0	0	102
Lane Group Flow (vph)	396	403	118	0	101	0	212	2755	0	114	1739	144
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	34.5	34.5	55.5		5.0		21.0	74.5		9.5	63.0	63.0
Effective Green, g (s)	34.5	34.5	55.5		5.0		21.0	74.5		9.5	63.0	63.0
Actuated g/C Ratio	0.23	0.23	0.37		0.03		0.14	0.50		0.06	0.42	0.42
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	359	362	582		62		459	2415		108	2064	709
v/s Ratio Prot	0.25	c0.26	0.03		c0.05		0.06	c0.57		0.07	c0.35	
v/s Ratio Perm			0.05									0.08
v/c Ratio	1.10	1.11	0.20		1.63		0.46	1.14		1.06	0.84	0.20
Uniform Delay, d1	57.8	57.8	32.2		72.5		59.3	37.8		70.2	39.0	27.6
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.74	1.11	2.02
Incremental Delay, d2	78.2	81.5	0.2		346.3		0.7	69.0		94.5	3.7	0.5
Delay (s)	136.0	139.3	32.4		418.8		60.0	106.7		146.6	47.1	56.3
Level of Service	F	F	C		F		E	F		F	D	E
Approach Delay (s)		116.9			418.8			103.4			53.6	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	98.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

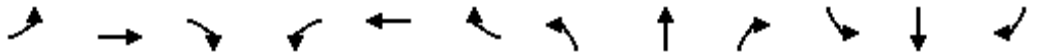
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	750	5	230	0	0	0	0	2975	375	110	1700	0
Future Volume (vph)	750	5	230	0	0	0	0	2975	375	110	1700	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1661	2412					8033		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1661	2412					8033		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	815	5	250	0	0	0	0	3234	408	120	1848	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	407	413	250	0	0	0	0	3627	0	120	1848	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	41.8	41.8	41.8					68.7		19.5	94.7	
Effective Green, g (s)	41.8	41.8	41.8					68.7		19.5	94.7	
Actuated g/C Ratio	0.28	0.28	0.28					0.46		0.13	0.63	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0	4.0					4.0		0.2	0.2	
Lane Grp Cap (vph)	446	462	672					3679		431	3103	
v/s Ratio Prot	c0.25	0.25	0.10					c0.45		0.04	c0.38	
v/s Ratio Perm												
v/c Ratio	0.91	0.89	0.37					0.99		0.28	0.60	
Uniform Delay, d1	52.3	52.0	43.5					40.2		58.9	16.3	
Progression Factor	1.00	1.00	1.00					0.65		0.45	1.08	
Incremental Delay, d2	23.2	19.7	0.5					2.3		1.3	0.7	
Delay (s)	75.5	71.6	44.0					28.4		27.6	18.4	
Level of Service	E	E	D					C		C	B	
Approach Delay (s)		66.7			0.0			28.4			19.0	
Approach LOS		E			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	145	5	265	875	2850	0	0	1665	605
Future Volume (vph)	0	0	0	145	5	265	875	2850	0	0	1665	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1703	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1703	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	158	5	288	951	3098	0	0	1810	658
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	82	81	288	951	3098	0	0	1810	658
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				13.4	13.4	150.0	53.0	122.6			63.1	150.0
Effective Green, g (s)				13.4	13.4	150.0	53.0	122.6			63.1	150.0
Actuated g/C Ratio				0.09	0.09	1.00	0.35	0.82			0.42	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	0.2			0.2	
Lane Grp Cap (vph)				146	152	1750	1132	5062			3083	1591
v/s Ratio Prot				0.05	0.05		c0.30	c0.50			0.25	
v/s Ratio Perm						0.16						c0.41
v/c Ratio				0.56	0.53	0.16	0.84	0.61			0.59	0.41
Uniform Delay, d1				65.5	65.3	0.0	44.6	5.0			33.4	0.0
Progression Factor				1.00	1.00	1.00	1.13	0.85			0.56	1.00
Incremental Delay, d2				5.9	4.5	0.2	1.6	0.2			0.1	0.1
Delay (s)				71.4	69.8	0.2	52.1	4.4			18.8	0.1
Level of Service				E	E	A	D	A			B	A
Approach Delay (s)		0.0			25.6			15.6			13.8	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	330	280	150	485	335	110	20	255	2165	675	70	1615
Future Volume (vph)	330	280	150	485	335	110	20	255	2165	675	70	1615
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3304		3172	3504	1567		1652	4916	1531	1719	4241
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.07	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3304		3172	3504	1567		129	4916	1531	1719	4241
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	304	163	527	364	120	22	277	2353	734	76	1755
RTOR Reduction (vph)	0	0	0	0	0	98	0	0	0	220	0	14
Lane Group Flow (vph)	359	467	0	527	364	22	0	299	2353	514	76	2067
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	27.8	27.8		17.5	17.5	27.7		68.5	68.5	68.5	10.2	64.2
Effective Green, g (s)	27.8	27.8		17.5	17.5	27.7		68.5	68.5	68.5	10.2	64.2
Actuated g/C Ratio	0.19	0.19		0.12	0.12	0.18		0.46	0.46	0.46	0.07	0.43
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	584	612		370	408	289		206	2244	699	116	1815
v/s Ratio Prot	0.11	c0.14		c0.17	0.10	0.01		c0.14	0.48		0.04	c0.49
v/s Ratio Perm								c0.52		0.34		
v/c Ratio	0.61	0.76		1.42	0.89	0.08		1.45	1.05	0.74	0.66	1.14
Uniform Delay, d1	56.2	58.0		66.2	65.3	50.6		63.2	40.8	33.4	68.2	42.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.59	0.38	0.62	1.00	1.00
Incremental Delay, d2	1.9	5.6		206.1	21.0	0.1		224.2	31.7	5.7	12.5	69.8
Delay (s)	58.1	63.6		272.3	86.3	50.7		261.4	47.4	26.2	80.7	112.7
Level of Service	E	E		F	F	D		F	D	C	F	F
Approach Delay (s)		61.2			179.0				61.7			111.6
Approach LOS		E			F				E			F

Intersection Summary			
HCM 2000 Control Delay	92.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	300
Future Volume (vph)	300
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	326
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	1225	30	15	130	745	155	25	45	330	590	140
Future Volume (vph)	20	1225	30	15	130	745	155	25	45	330	590	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	1.00			1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (prot)	1711	3526			1778	3557	1538	1694	1783	1776	1536	1621
Flt Permitted	0.35	1.00			0.06	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (perm)	623	3526			107	3557	1538	1694	1783	1776	1536	1621
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1332	33	16	141	810	168	27	49	359	641	152
RTOR Reduction (vph)	0	1	0	0	0	0	76	0	0	0	0	1
Lane Group Flow (vph)	22	1364	0	0	157	810	92	27	49	359	404	399
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	65.8	65.8			81.9	81.9	81.9	4.6	4.6	150.0	43.0	43.0
Effective Green, g (s)	65.8	65.8			81.9	81.9	81.9	4.6	4.6	150.0	43.0	43.0
Actuated g/C Ratio	0.44	0.44			0.55	0.55	0.55	0.03	0.03	1.00	0.29	0.29
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	273	1546			187	1942	839	51	54	1776	440	464
v/s Ratio Prot		c0.39			c0.06	0.23		0.02	c0.03		c0.26	0.25
v/s Ratio Perm	0.04				0.39		0.06			0.20		
v/c Ratio	0.08	0.88			0.84	0.42	0.11	0.53	0.91	0.20	0.92	0.86
Uniform Delay, d1	24.5	38.6			42.3	20.0	16.4	71.6	72.5	0.0	51.8	50.7
Progression Factor	1.00	1.00			1.38	0.64	0.06	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	7.6			26.1	0.6	0.3	17.6	91.8	0.3	24.9	16.2
Delay (s)	25.1	46.2			84.7	13.5	1.2	89.2	164.3	0.3	76.7	66.9
Level of Service	C	D			F	B	A	F	F	A	E	E
Approach Delay (s)		45.8				21.6			24.3			71.8
Approach LOS		D				C			C			E

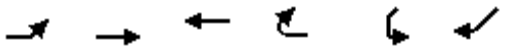
Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	880	0	0	735	310	0
Future Volume (vph)	880	0	0	735	310	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0			6.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3539			3539	3547	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3539			3539	3547	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	957	0	0	799	337	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	957	0	0	799	337	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	4	
Permitted Phases						
Actuated Green, G (s)	117.4			117.4	21.6	
Effective Green, g (s)	117.4			117.4	21.6	
Actuated g/C Ratio	0.78			0.78	0.14	
Clearance Time (s)	6.0			6.0	5.0	
Vehicle Extension (s)	0.2			0.2	5.0	
Lane Grp Cap (vph)	2769			2769	510	
v/s Ratio Prot	c0.27			0.23	c0.09	
v/s Ratio Perm						
v/c Ratio	0.35			0.29	0.66	
Uniform Delay, d1	4.9			4.6	60.7	
Progression Factor	0.48			1.00	1.00	
Incremental Delay, d2	0.2			0.3	4.2	
Delay (s)	2.6			4.8	65.0	
Level of Service	A			A	E	
Approach Delay (s)	2.6			4.8	65.0	
Approach LOS	A			A	E	

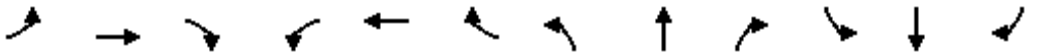
Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	215	1380	1095	0	0	0
Future Volume (vph)	215	1380	1095	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	4.0	6.0			
Lane Util. Factor	1.00	0.91	0.95			
Frt	1.00	1.00	1.00			
Flt Protected	0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085	3539			
Flt Permitted	0.24	1.00	1.00			
Satd. Flow (perm)	442	5085	3539			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	234	1500	1190	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	234	1500	1190	0	0	0
Turn Type	D.Pm	NA	NA			
Protected Phases		Free	2			
Permitted Phases	2					
Actuated Green, G (s)	150.0	150.0	150.0			
Effective Green, g (s)	150.0	150.0	150.0			
Actuated g/C Ratio	1.00	1.00	1.00			
Clearance Time (s)	6.0		6.0			
Vehicle Extension (s)	0.2		0.2			
Lane Grp Cap (vph)	442	5085	3539			
v/s Ratio Prot		0.29	0.34			
v/s Ratio Perm	c0.53					
v/c Ratio	0.53	0.29	0.34			
Uniform Delay, d1	0.0	0.0	0.0			
Progression Factor	1.00	1.00	1.00			
Incremental Delay, d2	4.4	0.1	0.3			
Delay (s)	4.4	0.1	0.3			
Level of Service	A	A	A			
Approach Delay (s)		0.7	0.3		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	0.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1930	25	5	1725	20	35	5	5	45	10	210
Future Volume (vph)	85	1930	25	5	1725	20	35	5	5	45	10	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1784			1957	1785
Flt Permitted	0.07	1.00	1.00	0.06	1.00	1.00		0.73			0.76	1.00
Satd. Flow (perm)	117	3621	1515	103	3370	1508		1355			1542	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	2098	27	5	1875	22	38	5	5	49	11	228
RTOR Reduction (vph)	0	0	6	0	0	6	0	3	0	0	0	80
Lane Group Flow (vph)	92	2098	21	5	1875	16	0	45	0	0	60	148
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	145.9	139.3	139.3	130.8	130.2	130.2		21.6			21.6	21.6
Effective Green, g (s)	145.9	139.3	139.3	130.8	130.2	130.2		21.6			21.6	21.6
Actuated g/C Ratio	0.81	0.77	0.77	0.73	0.72	0.72		0.12			0.12	0.12
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	179	2802	1172	80	2437	1090		162			185	214
v/s Ratio Prot	c0.03	c0.58		0.00	c0.56							
v/s Ratio Perm	0.39		0.01	0.05		0.01		0.03			0.04	c0.08
v/c Ratio	0.51	0.75	0.02	0.06	0.77	0.01		0.28			0.32	0.69
Uniform Delay, d1	21.4	10.9	4.7	13.8	15.5	7.0		72.1			72.5	76.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	4.9	1.9	0.0	0.7	2.4	0.0		2.0			2.1	11.6
Delay (s)	26.3	12.8	4.7	14.4	17.9	7.0		74.1			74.7	87.6
Level of Service	C	B	A	B	B	A		E			E	F
Approach Delay (s)		13.3			17.8			74.1			84.9	
Approach LOS		B			B			E			F	

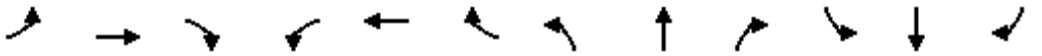
Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	880	0	0	735	310	0
Future Volume (veh/h)	880	0	0	735	310	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1945	0
Adj Flow Rate, veh/h	957	0	0	799	337	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	0
Cap, veh/h	3412	0	0	3412	0	0
Arrive On Green	0.96	0.00	0.00	0.96	0.00	0.00
Sat Flow, veh/h	3741	0	0	3741	0	0
Grp Volume(v), veh/h	957	0	0	799	0	0
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	0	0
Q Serve(g_s), s	2.2	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0	1.7	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	3412	0	0	3412	0	0
V/C Ratio(X)	0.28	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	3412	0	0	3412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.2	0.0	0.0	0.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.4	0.0	0.0	0.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	957			799	0	
Approach Delay, s/veh	0.4			0.3	0.0	
Approach LOS	A			A		

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		150.0		0.0		150.0
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gmax), s		98.0		41.0		98.0
Max Q Clear Time (g_c+I1), s		3.7		0.0		4.2
Green Ext Time (p_c), s		1.1		0.0		1.3

Intersection Summary	
HCM 6th Ctrl Delay	0.3
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	1930	25	5	1725	20	35	5	5	45	10	210
Future Volume (veh/h)	85	1930	25	5	1725	20	35	5	5	45	10	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	92	2098	27	5	1875	22	38	5	5	49	11	228
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	2751	1180	124	2529	1128	150	20	16	230	48	254
Arrive On Green	0.03	0.75	0.75	0.00	0.73	0.73	0.15	0.14	0.14	0.15	0.14	0.14
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	821	141	112	1388	346	1821
Grp Volume(v), veh/h	92	2098	27	5	1875	22	48	0	0	60	0	228
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1074	0	0	1734	0	1821
Q Serve(g_s), s	2.4	59.9	0.8	0.1	57.2	0.7	5.3	0.0	0.0	0.0	0.0	22.2
Cycle Q Clear(g_c), s	2.4	59.9	0.8	0.1	57.2	0.7	10.6	0.0	0.0	5.2	0.0	22.2
Prop In Lane	1.00		1.00	1.00		1.00	0.79		0.10	0.82		1.00
Lane Grp Cap(c), veh/h	182	2751	1180	124	2529	1128	201	0	0	303	0	254
V/C Ratio(X)	0.51	0.76	0.02	0.04	0.74	0.02	0.24	0.00	0.00	0.20	0.00	0.90
Avail Cap(c_a), veh/h	235	2751	1180	147	2529	1128	232	0	0	344	0	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	12.8	5.5	15.3	14.1	6.5	71.7	0.0	0.0	67.9	0.0	76.2
Incr Delay (d2), s/veh	4.6	2.1	0.0	0.3	2.0	0.0	1.3	0.0	0.0	0.7	0.0	28.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	23.5	0.3	0.1	21.8	0.2	2.1	0.0	0.0	2.5	0.0	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	14.9	5.6	15.5	16.1	6.6	73.0	0.0	0.0	68.6	0.0	104.5
LnGrp LOS	C	B	A	B	B	A	E	A	A	E	A	F
Approach Vol, veh/h		2217			1902			48			288	
Approach Delay, s/veh		15.2			16.0			73.0			97.0	
Approach LOS		B			B			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	137.8		31.6	6.7	141.7		31.6				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	10.0	122.0		29.5	3.0	129.0		29.5				
Max Q Clear Time (g_c+I1), s	4.4	59.2		12.6	2.1	61.9		24.2				
Green Ext Time (p_c), s	0.2	3.4		0.3	0.0	4.2		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	25	680	25	15	265	1300	770	30	215	415	520	200
Future Volume (vph)	25	680	25	15	265	1300	770	30	215	415	520	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (prot)	1711	3521			1778	3557	1538	1694	1783	1776	1536	1619
Flt Permitted	0.11	1.00			0.10	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (perm)	194	3521			180	3557	1538	1694	1783	1776	1536	1619
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	739	27	16	288	1413	837	33	234	451	565	217
RTOR Reduction (vph)	0	2	0	0	0	0	444	0	0	0	0	2
Lane Group Flow (vph)	27	764	0	0	304	1413	393	33	234	451	356	462
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	37.2	37.2			64.0	64.0	64.0	21.5	21.5	150.0	44.0	44.0
Effective Green, g (s)	37.2	37.2			64.0	64.0	64.0	21.5	21.5	150.0	44.0	44.0
Actuated g/C Ratio	0.25	0.25			0.43	0.43	0.43	0.14	0.14	1.00	0.29	0.29
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	48	873			314	1517	656	242	255	1776	450	474
v/s Ratio Prot		0.22			0.14	c0.40		0.02	c0.13		0.23	c0.29
v/s Ratio Perm	0.14				c0.27		0.26			0.25		
v/c Ratio	0.56	0.88			0.97	0.93	0.60	0.14	0.92	0.25	0.79	0.97
Uniform Delay, d1	49.3	54.2			46.7	40.9	33.1	56.1	63.4	0.0	48.8	52.4
Progression Factor	1.00	1.00			0.94	0.89	0.47	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.1	12.0			31.5	7.9	2.5	0.5	36.2	0.3	10.5	34.8
Delay (s)	89.4	66.1			75.2	44.5	18.1	56.7	99.6	0.3	59.3	87.3
Level of Service	F	E			E	D	B	E	F	A	E	F
Approach Delay (s)		66.9				39.5			35.3			75.1
Approach LOS		E				D			D			E

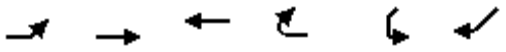
Intersection Summary			
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	38
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1145	0	0	2065	285	0
Future Volume (vph)	1145	0	0	2065	285	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0			6.0	5.0	
Lane Util. Factor	0.95			0.95	0.97	
Frt	1.00			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	3539			3539	3547	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	3539			3539	3547	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1245	0	0	2245	310	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1245	0	0	2245	310	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	4	
Permitted Phases						
Actuated Green, G (s)	121.3			121.3	17.7	
Effective Green, g (s)	121.3			121.3	17.7	
Actuated g/C Ratio	0.81			0.81	0.12	
Clearance Time (s)	6.0			6.0	5.0	
Vehicle Extension (s)	5.0			5.0	3.0	
Lane Grp Cap (vph)	2861			2861	418	
v/s Ratio Prot	0.35			c0.63	c0.09	
v/s Ratio Perm						
v/c Ratio	0.44			0.78	0.74	
Uniform Delay, d1	4.2			7.5	63.9	
Progression Factor	0.19			0.73	1.00	
Incremental Delay, d2	0.3			2.2	7.0	
Delay (s)	1.1			7.7	70.9	
Level of Service	A			A	E	
Approach Delay (s)	1.1			7.7	70.9	
Approach LOS	A			A	E	

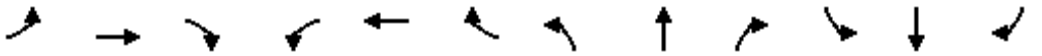
Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	290	1500	1310	0	0	0
Future Volume (vph)	290	1500	1310	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	6.0			
Lane Util. Factor	1.00	0.91	0.95			
Frt	1.00	1.00	1.00			
Flt Protected	0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085	3539			
Flt Permitted	0.16	1.00	1.00			
Satd. Flow (perm)	300	5085	3539			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1630	1424	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	315	1630	1424	0	0	0
Turn Type	D.P+P	NA	NA			
Protected Phases	1	Free	2			
Permitted Phases	2					
Actuated Green, G (s)	139.0	150.0	118.3			
Effective Green, g (s)	139.0	150.0	118.3			
Actuated g/C Ratio	0.93	1.00	0.79			
Clearance Time (s)	5.0		6.0			
Vehicle Extension (s)	3.0		0.2			
Lane Grp Cap (vph)	480	5085	2791			
v/s Ratio Prot	c0.09	0.32	0.40			
v/s Ratio Perm	c0.52					
v/c Ratio	0.66	0.32	0.51			
Uniform Delay, d1	9.5	0.0	5.6			
Progression Factor	0.80	1.00	1.00			
Incremental Delay, d2	3.1	0.2	0.7			
Delay (s)	10.8	0.2	6.3			
Level of Service	B	A	A			
Approach Delay (s)		1.9	6.3		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	125.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	1690	60	5	2235	55	25	5	5	45	10	135
Future Volume (vph)	255	1690	60	5	2235	55	25	5	5	45	10	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1782			1957	1785
Flt Permitted	0.03	1.00	1.00	0.12	1.00	1.00		0.75			0.79	1.00
Satd. Flow (perm)	58	3621	1515	213	3370	1508		1378			1603	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1837	65	5	2429	60	27	5	5	49	11	147
RTOR Reduction (vph)	0	0	12	0	0	21	0	3	0	0	0	136
Lane Group Flow (vph)	277	1837	53	5	2429	39	0	34	0	0	60	11
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	153.6	147.0	147.0	117.8	117.2	117.2		13.9			13.9	13.9
Effective Green, g (s)	153.6	147.0	147.0	117.8	117.2	117.2		13.9			13.9	13.9
Actuated g/C Ratio	0.85	0.82	0.82	0.65	0.65	0.65		0.08			0.08	0.08
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	325	2957	1237	144	2194	981		106			123	137
v/s Ratio Prot	c0.14	0.51		0.00	c0.72							
v/s Ratio Perm	0.58		0.04	0.02		0.03		0.02			c0.04	0.01
v/c Ratio	0.85	0.62	0.04	0.03	1.11	0.04		0.32			0.49	0.08
Uniform Delay, d1	66.4	6.1	3.1	11.9	31.4	11.2		78.6			79.6	77.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	20.5	1.0	0.1	0.2	55.6	0.1		3.7			6.2	0.5
Delay (s)	87.0	7.1	3.2	12.1	87.0	11.3		82.3			85.9	77.7
Level of Service	F	A	A	B	F	B		F			F	E
Approach Delay (s)		17.2			85.0			82.3			80.1	
Approach LOS		B			F			F			F	

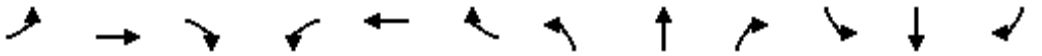
Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1145	0	0	2065	285	0
Future Volume (veh/h)	1145	0	0	2065	285	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1945	0
Adj Flow Rate, veh/h	1245	0	0	2245	310	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	0	2	2	0
Cap, veh/h	3412	0	0	3412	0	0
Arrive On Green	0.96	0.00	0.00	0.96	0.00	0.00
Sat Flow, veh/h	3741	0	0	3741	0	0
Grp Volume(v), veh/h	1245	0	0	2245	0	0
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	0	0
Q Serve(g_s), s	3.2	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	10.3	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	3412	0	0	3412	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	3412	0	0	3412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.2	0.0	0.0	0.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.5	0.0	0.0	1.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	1245			2245	0	
Approach Delay, s/veh	0.5			1.3	0.0	
Approach LOS	A			A		

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		150.0		0.0		150.0
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gmax), s		119.0		20.0		119.0
Max Q Clear Time (g_c+I1), s		12.3		0.0		5.2
Green Ext Time (p_c), s		89.9		0.0		32.5

Intersection Summary		
HCM 6th Ctrl Delay		1.0
HCM 6th LOS		A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	1690	60	5	2235	55	25	5	5	45	10	135
Future Volume (veh/h)	255	1690	60	5	2235	55	25	5	5	45	10	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	277	1837	65	5	2429	60	27	5	5	49	11	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	2924	1254	185	2261	1009	100	18	13	161	33	168
Arrive On Green	0.15	0.80	0.80	0.00	0.65	0.65	0.11	0.09	0.09	0.11	0.09	0.09
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	707	195	141	1356	355	1821
Grp Volume(v), veh/h	277	1837	65	5	2429	60	37	0	0	60	0	147
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1043	0	0	1711	0	1821
Q Serve(g_s), s	23.7	36.2	1.5	0.2	117.9	2.5	3.5	0.0	0.0	0.0	0.0	14.3
Cycle Q Clear(g_c), s	23.7	36.2	1.5	0.2	117.9	2.5	9.3	0.0	0.0	5.7	0.0	14.3
Prop In Lane	1.00		1.00	1.00		1.00	0.73		0.14	0.82		1.00
Lane Grp Cap(c), veh/h	304	2924	1254	185	2261	1009	145	0	0	218	0	168
V/C Ratio(X)	0.91	0.63	0.05	0.03	1.07	0.06	0.25	0.00	0.00	0.28	0.00	0.88
Avail Cap(c_a), veh/h	392	2924	1254	207	2261	1009	157	0	0	232	0	183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.6	7.1	3.7	10.8	31.1	11.2	78.7	0.0	0.0	75.8	0.0	80.7
Incr Delay (d2), s/veh	25.3	1.0	0.1	0.1	42.5	0.1	1.9	0.0	0.0	1.4	0.0	36.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.7	13.0	0.5	0.1	59.7	0.9	1.7	0.0	0.0	2.7	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.9	8.2	3.8	10.9	73.5	11.3	80.7	0.0	0.0	77.2	0.0	116.8
LnGrp LOS	F	A	A	B	F	B	F	A	A	E	A	F
Approach Vol, veh/h		2179			2494			37			207	
Approach Delay, s/veh		18.9			71.9			80.7			105.4	
Approach LOS		B			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.0	123.9		23.1	6.7	150.2		23.1				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	36.0	107.4		18.1	3.0	140.4		18.1				
Max Q Clear Time (g_c+I1), s	25.7	119.9		11.3	2.2	38.2		16.3				
Green Ext Time (p_c), s	1.3	0.0		0.1	0.0	3.3		0.2				

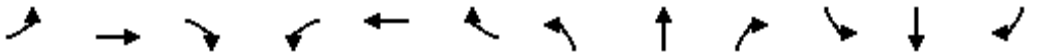
Intersection Summary			
HCM 6th Ctrl Delay		49.9	
HCM 6th LOS		D	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	5	305	10	5	5	5	125	1335	5	5	2715
Future Volume (vph)	80	5	305	10	5	5	5	125	1335	5	5	2715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.97			1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1779	1583		1757			1770	5085	1583	1770	5069
Flt Permitted		0.72	1.00		0.83			0.04	1.00	1.00	0.17	1.00
Satd. Flow (perm)		1346	1583		1495			72	5085	1583	318	5069
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	5	332	11	5	5	5	136	1451	5	5	2951
RTOR Reduction (vph)	0	0	17	0	4	0	0	0	0	1	0	1
Lane Group Flow (vph)	0	92	315	0	17	0	0	141	1451	4	5	3015
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		17.4	32.5		17.9			119.1	119.1	119.1	98.5	98.5
Effective Green, g (s)		17.4	32.5		17.9			119.1	119.1	119.1	98.5	98.5
Actuated g/C Ratio		0.12	0.22		0.12			0.79	0.79	0.79	0.66	0.66
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		156	342		178			228	4037	1256	208	3328
v/s Ratio Prot			c0.09					0.06	0.29			c0.59
v/s Ratio Perm		0.07	0.11		0.01			0.43		0.00	0.02	
v/c Ratio		0.59	0.92		0.09			0.62	0.36	0.00	0.02	0.91
Uniform Delay, d1		62.9	57.5		58.8			47.7	4.5	3.2	9.0	21.8
Progression Factor		1.00	1.00		1.00			0.71	0.70	1.00	1.00	1.00
Incremental Delay, d2		8.6	29.2		0.5			4.4	0.2	0.0	0.2	4.7
Delay (s)		71.5	86.7		59.3			38.5	3.4	3.2	9.2	26.5
Level of Service		E	F		E			D	A	A	A	C
Approach Delay (s)		83.4			59.3				6.5			26.5
Approach LOS		F			E				A			C

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

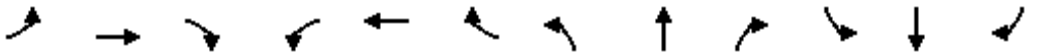
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	65
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	175	5	330	390	1140	0	0	2390	645
Future Volume (vph)	0	0	0	175	5	330	390	1140	0	0	2390	645
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1689	1583	1770	5085			4923	
Flt Permitted				0.95	0.95	1.00	0.05	1.00			1.00	
Satd. Flow (perm)				1681	1689	1583	84	5085			4923	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	190	5	359	424	1239	0	0	2598	701
RTOR Reduction (vph)	0	0	0	0	0	101	0	0	0	0	32	0
Lane Group Flow (vph)	0	0	0	97	98	258	424	1239	0	0	3267	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				25.7	25.7	25.7	112.3	112.3			81.8	
Effective Green, g (s)				25.7	25.7	25.7	112.3	112.3			81.8	
Actuated g/C Ratio				0.17	0.17	0.17	0.75	0.75			0.55	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				288	289	271	332	3806			2684	
v/s Ratio Prot							c0.20	0.24			0.66	
v/s Ratio Perm				0.06	0.06	c0.16	c0.75					
v/c Ratio				0.34	0.34	0.95	1.28	0.33			1.22	
Uniform Delay, d1				54.7	54.7	61.5	58.5	6.3			34.1	
Progression Factor				1.00	1.00	1.00	1.00	0.70			0.56	
Incremental Delay, d2				0.9	1.0	41.7	142.3	0.2			99.3	
Delay (s)				55.6	55.6	103.2	200.6	4.5			118.4	
Level of Service				E	E	F	F	A			F	
Approach Delay (s)		0.0			86.5			54.5			118.4	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	96.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	102.6%	ICU Level of Service	G
Analysis Period (min)	15		

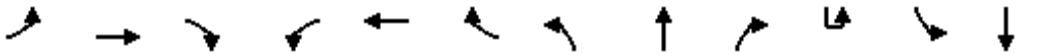
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	5	385	0	0	0	0	1355	145	200	2365	0
Future Volume (vph)	175	5	385	0	0	0	0	1355	145	200	2365	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1689	1583					5011		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.10	1.00	
Satd. Flow (perm)	1681	1689	1583					5011		178	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	5	418	0	0	0	0	1473	158	217	2571	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	97	98	418	0	0	0	0	1624	0	217	2571	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	16.4	16.4	150.0					81.1		121.6	121.6	
Effective Green, g (s)	16.4	16.4	150.0					81.1		121.6	121.6	
Actuated g/C Ratio	0.11	0.11	1.00					0.54		0.81	0.81	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	183	184	1583					2709		505	4122	
v/s Ratio Prot	0.06	c0.06						0.32		0.10	c0.51	
v/s Ratio Perm			0.26							0.25		
v/c Ratio	0.53	0.53	0.26					0.60		0.43	0.62	
Uniform Delay, d1	63.2	63.2	0.0					23.4		23.0	5.4	
Progression Factor	1.00	1.00	1.00					0.70		0.69	0.14	
Incremental Delay, d2	5.3	5.3	0.4					0.9		0.1	0.1	
Delay (s)	68.5	68.5	0.4					17.4		16.0	0.8	
Level of Service	E	E	A					B		B	A	
Approach Delay (s)		22.1			0.0			17.4			2.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	102.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	260	20	10	30	5	75	5	1155	15	10	110	2590
Future Volume (vph)	260	20	10	30	5	75	5	1155	15	10	110	2590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		1.00		1.00	1.00	0.85	1.00	1.00			1.00	1.00
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1775		1770	1863	1583	1770	5076			1770	5074
Flt Permitted		0.74		0.74	1.00	1.00	0.05	1.00			0.16	1.00
Satd. Flow (perm)		1381		1383	1863	1583	88	5076			293	5074
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	22	11	33	5	82	5	1255	16	11	120	2815
RTOR Reduction (vph)	0	1	0	0	0	62	0	1	0	0	0	1
Lane Group Flow (vph)	0	315	0	33	5	20	5	1270	0	0	131	2857
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		36.9		36.9	36.9	36.9	85.8	85.1			100.1	93.9
Effective Green, g (s)		36.9		36.9	36.9	36.9	85.8	85.1			100.1	93.9
Actuated g/C Ratio		0.25		0.25	0.25	0.25	0.57	0.57			0.67	0.63
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		339		340	458	389	58	2879			289	3176
v/s Ratio Prot					0.00		0.00	0.25			c0.03	c0.56
v/s Ratio Perm		c0.23		0.02		0.01	0.05				0.27	
v/c Ratio		0.93		0.10	0.01	0.05	0.09	0.44			0.45	0.90
Uniform Delay, d1		55.3		43.7	42.8	43.2	27.1	18.7			11.3	24.0
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			0.40	0.13
Incremental Delay, d2		31.4		0.2	0.0	0.1	0.6	0.5			0.9	3.9
Delay (s)		86.7		43.9	42.8	43.3	27.7	19.2			5.4	7.0
Level of Service		F		D	D	D	C	B			A	A
Approach Delay (s)		86.7			43.4			19.3				6.9
Approach LOS		F			D			B				A

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

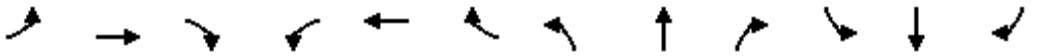
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	40
Future Volume (vph)	40
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	43
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	120	5	95	10	5	5	5	170	2680	5	5	1940
Future Volume (vph)	120	5	95	10	5	5	5	170	2680	5	5	1940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.97			1.00	1.00	0.85	1.00	0.99
Flt Protected		0.95	1.00		0.97			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1777	1583		1757			1770	5085	1583	1770	5053
Flt Permitted		0.72	1.00		0.83			0.04	1.00	1.00	0.04	1.00
Satd. Flow (perm)		1339	1583		1495			77	5085	1583	80	5053
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	5	103	11	5	5	5	185	2913	5	5	2109
RTOR Reduction (vph)	0	0	17	0	3	0	0	0	0	1	0	3
Lane Group Flow (vph)	0	135	86	0	18	0	0	190	2913	4	5	2198
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		21.6	37.4		22.1			114.9	114.9	114.9	93.6	93.6
Effective Green, g (s)		21.6	37.4		22.1			114.9	114.9	114.9	93.6	93.6
Actuated g/C Ratio		0.14	0.25		0.15			0.77	0.77	0.77	0.62	0.62
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		192	394		220			237	3895	1212	49	3153
v/s Ratio Prot			0.02					0.08	c0.57			0.44
v/s Ratio Perm		c0.10	0.03		0.01			c0.53		0.00	0.06	
v/c Ratio		0.70	0.22		0.08			0.80	0.75	0.00	0.10	0.70
Uniform Delay, d1		61.1	44.7		55.2			47.0	9.6	4.1	11.3	18.8
Progression Factor		1.00	1.00		1.00			0.66	1.58	1.00	1.00	1.00
Incremental Delay, d2		13.7	0.3		0.3			12.0	0.9	0.0	4.1	1.3
Delay (s)		74.8	45.0		55.5			43.0	16.1	4.1	15.5	20.1
Level of Service		E	D		E			D	B	A	B	C
Approach Delay (s)		61.9			55.5				17.7			20.1
Approach LOS		E			E				B			C

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

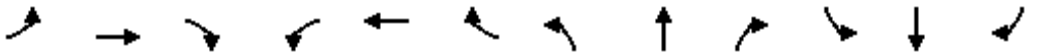
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	85
Future Volume (vph)	85
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	92
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	130	5	245	160	2615	0	0	1570	480
Future Volume (vph)	0	0	0	130	5	245	160	2615	0	0	1570	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.96	
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1691	1583	1770	5085			4907	
Flt Permitted				0.95	0.96	1.00	0.04	1.00			1.00	
Satd. Flow (perm)				1681	1691	1583	83	5085			4907	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	5	266	174	2842	0	0	1707	522
RTOR Reduction (vph)	0	0	0	0	0	54	0	0	0	0	34	0
Lane Group Flow (vph)	0	0	0	73	73	212	174	2842	0	0	2195	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				25.1	25.1	25.1	112.9	112.9			83.4	
Effective Green, g (s)				25.1	25.1	25.1	112.9	112.9			83.4	
Actuated g/C Ratio				0.17	0.17	0.17	0.75	0.75			0.56	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				281	282	264	321	3827			2728	
v/s Ratio Prot							0.08	c0.56			c0.45	
v/s Ratio Perm				0.04	0.04	c0.13	0.33					
v/c Ratio				0.26	0.26	0.80	0.54	0.74			0.80	
Uniform Delay, d1				54.4	54.4	60.1	39.3	10.4			26.8	
Progression Factor				1.00	1.00	1.00	0.68	0.17			0.35	
Incremental Delay, d2				0.7	0.7	16.8	2.8	0.6			2.0	
Delay (s)				55.0	55.0	76.9	29.4	2.4			11.2	
Level of Service				E	E	E	C	A			B	
Approach Delay (s)		0.0			69.1			4.0			11.2	
Approach LOS		A			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

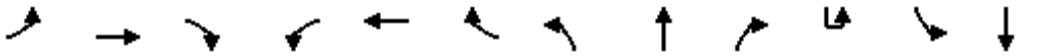
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	5	225	0	0	0	0	2465	100	190	1510	0
Future Volume (vph)	310	5	225	0	0	0	0	2465	100	190	1510	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1688	1583					5055		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.04	1.00	
Satd. Flow (perm)	1681	1688	1583					5055		76	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	5	245	0	0	0	0	2679	109	207	1641	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	172	170	245	0	0	0	0	2785	0	207	1641	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	21.4	21.4	150.0					92.1		116.6	116.6	
Effective Green, g (s)	21.4	21.4	150.0					92.1		116.6	116.6	
Actuated g/C Ratio	0.14	0.14	1.00					0.61		0.78	0.78	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	239	240	1583					3103		262	3952	
v/s Ratio Prot	c0.10	0.10						c0.55		c0.09	0.32	
v/s Ratio Perm			0.15							0.52		
v/c Ratio	0.72	0.71	0.15					0.90		0.79	0.42	
Uniform Delay, d1	61.4	61.3	0.0					24.9		49.6	5.5	
Progression Factor	1.00	1.00	1.00					0.59		0.92	0.34	
Incremental Delay, d2	12.2	11.4	0.2					3.4		9.0	0.2	
Delay (s)	73.6	72.7	0.2					17.9		54.9	2.1	
Level of Service	E	E	A					B		D	A	
Approach Delay (s)		42.7			0.0			17.9			8.0	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	55	5	10	10	5	35	10	2470	5	5	30	1615
Future Volume (vph)	55	5	10	10	5	35	10	2470	5	5	30	1615
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.98		1.00	1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1757		1770	1863	1583	1770	5084			1770	5047
Flt Permitted		0.77		0.74	1.00	1.00	0.10	1.00			0.04	1.00
Satd. Flow (perm)		1403		1374	1863	1583	185	5084			65	5047
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	5	11	11	5	38	11	2685	5	5	33	1755
RTOR Reduction (vph)	0	4	0	0	0	34	0	0	0	0	0	3
Lane Group Flow (vph)	0	72	0	11	5	4	11	2690	0	0	38	1844
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		15.8		15.8	15.8	15.8	112.7	110.9			118.7	113.9
Effective Green, g (s)		15.8		15.8	15.8	15.8	112.7	110.9			118.7	113.9
Actuated g/C Ratio		0.11		0.11	0.11	0.11	0.75	0.74			0.79	0.76
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		147		144	196	166	158	3758			105	3832
v/s Ratio Prot					0.00		0.00	c0.53			c0.01	c0.37
v/s Ratio Perm		c0.05		0.01		0.00	0.05				0.27	
v/c Ratio		0.49		0.08	0.03	0.02	0.07	0.72			0.36	0.48
Uniform Delay, d1		63.3		60.5	60.2	60.2	5.2	10.8			13.3	6.8
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			2.31	0.50
Incremental Delay, d2		3.4		0.3	0.1	0.1	0.2	1.2			2.0	0.4
Delay (s)		66.7		60.8	60.3	60.3	5.4	12.0			32.7	3.8
Level of Service		E		E	E	E	A	B			C	A
Approach Delay (s)		66.7			60.4			12.0				4.4
Approach LOS		E			E			B				A

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

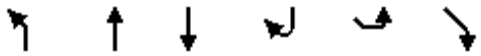
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	85
Future Volume (vph)	85
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	92
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	100	220	620	135	115	2125	110	1200
Future Volume (vph)	100	220	620	135	115	2125	110	1200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.93		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1734		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1734		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	239	674	147	125	2310	120	1304
RTOR Reduction (vph)	0	49	0	21	0	0	47	0
Lane Group Flow (vph)	109	190	674	251	0	2310	73	1304
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	17.7	31.1	54.3	31.1		83.2	83.2	83.2
Effective Green, g (s)	17.7	31.1	54.3	31.1		83.2	83.2	83.2
Actuated g/C Ratio	0.12	0.21	0.36	0.21		0.55	0.55	0.55
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	405	328	1242	359		2820	878	2002
v/s Ratio Prot	0.03		c0.20	c0.14		c0.45		0.36
v/s Ratio Perm		0.12					0.05	
v/c Ratio	0.27	0.58	0.54	0.70		0.82	0.08	0.65
Uniform Delay, d1	60.3	53.6	38.0	55.1		27.3	15.6	23.3
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	4.9	0.5	8.8		2.8	0.2	1.7
Delay (s)	60.6	58.4	38.5	63.9		30.1	15.8	24.9
Level of Service	E	E	D	E		C	B	C
Approach Delay (s)				45.8		29.3		
Approach LOS				D		C		

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

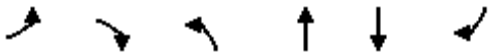
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	3305	0	0	460
Future Volume (vph)	0	0	3305	0	0	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	3592	0	0	500
RTOR Reduction (vph)	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	3592	0	0	499
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			128.2			39.8
Effective Green, g (s)			128.2			39.8
Actuated g/C Ratio			0.71			0.22
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4563			616
v/s Ratio Prot			c0.56			c0.18
v/s Ratio Perm						
v/c Ratio			0.79			0.81
Uniform Delay, d1			17.0			66.5
Progression Factor			1.00			1.00
Incremental Delay, d2			1.4			9.4
Delay (s)			18.4			75.9
Level of Service			B			E
Approach Delay (s)		0.0	18.4		75.9	
Approach LOS		A	B		E	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

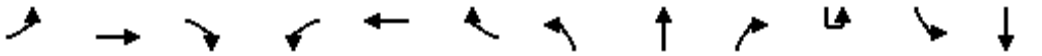
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	500	150	40	1875	3645	120
Future Volume (vph)	500	150	40	1875	3645	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	543	163	43	2038	3962	130
RTOR Reduction (vph)	0	70	0	0	0	24
Lane Group Flow (vph)	543	93	43	2038	3962	106
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	29.0	29.0	14.4	138.5	117.6	146.6
Effective Green, g (s)	29.0	29.0	14.4	138.5	117.6	146.6
Actuated g/C Ratio	0.16	0.16	0.08	0.77	0.65	0.81
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	553	255	141	3912	4186	1342
v/s Ratio Prot	c0.16		0.02	c0.40	c0.62	0.01
v/s Ratio Perm		0.06				0.05
v/c Ratio	0.98	0.37	0.30	0.52	0.95	0.08
Uniform Delay, d1	75.2	67.3	78.1	8.0	28.3	3.3
Progression Factor	1.00	1.00	1.03	0.41	0.60	0.53
Incremental Delay, d2	33.8	2.5	1.0	0.4	3.9	0.0
Delay (s)	109.1	69.8	81.1	3.7	21.0	1.8
Level of Service	F	E	F	A	C	A
Approach Delay (s)	100.0			5.3	20.4	
Approach LOS	F			A	C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	70	5	20	5	5	15	0	1515	5	315	5	3380
Future Volume (vph)	70	5	20	5	5	15	0	1515	5	315	5	3380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0			4.5	5.0
Lane Util. Factor		1.00			1.00			0.91			1.00	0.91
Frt		0.97			0.92			1.00			1.00	1.00
Flt Protected		0.96			0.99			1.00			0.95	1.00
Satd. Flow (prot)		1745			1692			5083			1770	5064
Flt Permitted		0.77			0.95			1.00			0.10	1.00
Satd. Flow (perm)		1386			1625			5083			181	5064
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	5	22	5	5	16	0	1647	5	342	5	3674
RTOR Reduction (vph)	0	2	0	0	14	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	101	0	0	12	0	0	1652	0	0	347	3776
Turn Type	Perm	NA		Perm	NA			NA		custom	pm+pt	NA
Protected Phases		8			4			6			5	2
Permitted Phases	8			4						5	2	
Actuated Green, G (s)		18.2			18.2			105.8			151.3	150.8
Effective Green, g (s)		18.2			18.2			105.8			151.3	150.8
Actuated g/C Ratio		0.10			0.10			0.59			0.84	0.84
Clearance Time (s)		6.0			6.0			5.0			4.5	5.0
Vehicle Extension (s)		3.0			3.0			0.2			3.0	0.2
Lane Grp Cap (vph)		140			164			2987			509	4242
v/s Ratio Prot								0.33			0.15	c0.75
v/s Ratio Perm		c0.07			0.01						0.42	
v/c Ratio		0.72			0.07			0.55			0.68	0.89
Uniform Delay, d1		78.5			73.2			22.7			28.5	9.3
Progression Factor		1.00			1.00			1.00			0.62	1.18
Incremental Delay, d2		16.8			0.2			0.7			1.5	1.3
Delay (s)		95.2			73.4			23.4			19.0	12.3
Level of Service		F			E			C			B	B
Approach Delay (s)		95.2			73.4			23.4				12.8
Approach LOS		F			E			C				B

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

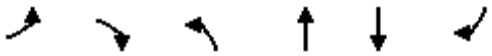
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	95
Future Volume (vph)	95
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	103
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	3305	0	0	460
Future Volume (veh/h)	0	0	3305	0	0	460
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			3592	0	0	500
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			3592	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			7.0	0.0		
Cycle Q Clear(g_c), s			7.0	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.58	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.2	0.0		
Incr Delay (d2), s/veh			0.4	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.2	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.6	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			3592			
Approach Delay, s/veh			0.6			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	123.5
Max Q Clear Time (g_c+I1), s	9.0
Green Ext Time (p_c), s	10.8

Intersection Summary	
HCM 6th Ctrl Delay	0.6
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	500	150	40	1875	3645	120
Future Volume (veh/h)	500	150	40	1875	3645	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	543	0	43	2038	3962	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	557		178	3929	4075	1259
Arrive On Green	0.16	0.00	0.10	0.77	0.63	0.63
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	543	0	43	2038	3962	130
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	28.2	0.0	4.0	27.6	105.8	3.3
Cycle Q Clear(g_c), s	28.2	0.0	4.0	27.6	105.8	3.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	557		178	3929	4075	1259
V/C Ratio(X)	0.98		0.24	0.52	0.97	0.10
Avail Cap(c_a), veh/h	557		178	3929	4075	1259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.1	0.0	74.7	8.0	31.5	4.1
Incr Delay (d2), s/veh	32.3	0.0	0.7	0.5	9.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	0.0	1.9	9.7	40.6	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	107.5	0.0	75.4	8.5	40.5	4.3
LnGrp LOS	F		E	A	D	A
Approach Vol, veh/h	543	A		2081	4092	
Approach Delay, s/veh	107.5			9.8	39.3	
Approach LOS	F			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		145.0		35.0	24.5	120.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		138.5		29.0	18.0	114.0
Max Q Clear Time (g_c+I1), s		29.6		30.2	6.0	107.8
Green Ext Time (p_c), s		34.7		0.0	0.0	4.8

Intersection Summary		
HCM 6th Ctrl Delay		35.7
HCM 6th LOS		D

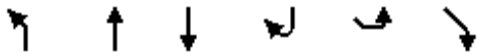
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	150	190	240	145	145	1710	120	1900
Future Volume (vph)	150	190	240	145	145	1710	120	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.93		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1723		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1723		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	207	261	158	158	1859	130	2065
RTOR Reduction (vph)	0	61	0	23	0	0	53	0
Lane Group Flow (vph)	163	147	261	293	0	1859	77	2065
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	13.7	29.0	48.2	29.0		89.3	89.3	89.3
Effective Green, g (s)	13.7	29.0	48.2	29.0		89.3	89.3	89.3
Actuated g/C Ratio	0.09	0.19	0.32	0.19		0.60	0.60	0.60
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	313	306	1103	333		3027	942	2149
v/s Ratio Prot	c0.05		0.08	c0.17		0.37		c0.57
v/s Ratio Perm		0.09					0.05	
v/c Ratio	0.52	0.48	0.24	0.88		0.61	0.08	0.96
Uniform Delay, d1	65.0	53.8	37.4	58.8		19.4	12.9	28.7
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	3.3	0.1	24.4		0.9	0.2	12.2
Delay (s)	66.6	57.1	37.5	83.2		20.3	13.1	40.9
Level of Service	E	E	D	F		C	B	D
Approach Delay (s)				62.5		19.8		
Approach LOS				E		B		

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

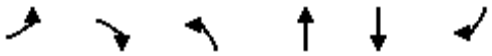
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	2405	0	0	310
Future Volume (vph)	0	0	2405	0	0	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2614	0	0	337
RTOR Reduction (vph)	0	0	0	0	0	8
Lane Group Flow (vph)	0	0	2614	0	0	329
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			138.7			29.3
Effective Green, g (s)			138.7			29.3
Actuated g/C Ratio			0.77			0.16
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4937			453
v/s Ratio Prot			c0.41			c0.12
v/s Ratio Perm						
v/c Ratio			0.53			0.73
Uniform Delay, d1			8.0			71.5
Progression Factor			1.00			1.00
Incremental Delay, d2			0.4			7.9
Delay (s)			8.4			79.5
Level of Service			A			E
Approach Delay (s)		0.0	8.4		79.5	
Approach LOS		A	A		E	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	250	70	65	3305	2390	325
Future Volume (vph)	250	70	65	3305	2390	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	76	71	3592	2598	353
RTOR Reduction (vph)	0	66	0	0	0	73
Lane Group Flow (vph)	272	10	71	3592	2598	280
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	20.5	20.5	18.0	147.0	122.5	143.0
Effective Green, g (s)	20.5	20.5	18.0	147.0	122.5	143.0
Actuated g/C Ratio	0.11	0.11	0.10	0.82	0.68	0.79
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	390	180	177	4152	4361	1310
v/s Ratio Prot	c0.08		0.04	c0.71	0.41	0.02
v/s Ratio Perm		0.01				0.15
v/c Ratio	0.70	0.06	0.40	0.87	0.60	0.21
Uniform Delay, d1	76.8	71.1	75.9	10.3	15.4	4.6
Progression Factor	1.00	1.00	0.86	0.26	0.73	0.36
Incremental Delay, d2	7.9	0.4	0.5	0.9	0.5	0.2
Delay (s)	84.7	71.5	65.4	3.6	11.8	1.9
Level of Service	F	E	E	A	B	A
Approach Delay (s)	81.8			4.8	10.6	
Approach LOS	F			A	B	

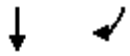
Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	90	5	15	10	5	5	5	10	3010	5	265	5
Future Volume (vph)	90	5	15	10	5	5	5	10	3010	5	265	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			4.5	5.0			4.5
Lane Util. Factor		1.00			1.00			1.00	0.91			1.00
Frt		0.98			0.97			1.00	1.00			1.00
Flt Protected		0.96			0.97			0.95	1.00			0.95
Satd. Flow (prot)		1757			1757			1770	5084			1770
Flt Permitted		0.75			0.87			0.05	1.00			0.03
Satd. Flow (perm)		1370			1568			86	5084			60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	5	16	11	5	5	5	11	3272	5	288	5
RTOR Reduction (vph)	0	4	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	115	0	0	17	0	0	16	3277	0	0	293
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		custom	pm+pt
Protected Phases		8			4		1	1	6			5
Permitted Phases	8			4			6	6			5	2
Actuated Green, G (s)		19.7			19.7			122.5	119.5			149.8
Effective Green, g (s)		19.7			19.7			122.5	119.5			149.8
Actuated g/C Ratio		0.11			0.11			0.68	0.66			0.83
Clearance Time (s)		6.0			6.0			4.5	5.0			4.5
Vehicle Extension (s)		3.0			3.0			3.0	0.2			3.0
Lane Grp Cap (vph)		149			171			86	3375			290
v/s Ratio Prot								0.00	0.64			c0.14
v/s Ratio Perm		c0.08			0.01			0.12				c0.70
v/c Ratio		0.77			0.10			0.19	0.97			1.01
Uniform Delay, d1		78.0			72.1			25.2	28.6			72.0
Progression Factor		1.00			1.00			1.00	1.00			0.96
Incremental Delay, d2		21.8			0.2			1.0	10.1			50.3
Delay (s)		99.8			72.4			26.2	38.7			119.4
Level of Service		F			E			C	D			F
Approach Delay (s)		99.8			72.4				38.6			
Approach LOS		F			E				D			

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



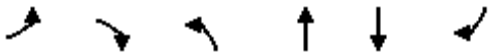
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2050	140
Future Volume (vph)	2050	140
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.91	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5037	
Flt Permitted	1.00	
Satd. Flow (perm)	5037	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	2228	152
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2376	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	141.8	
Effective Green, g (s)	141.8	
Actuated g/C Ratio	0.79	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	3968	
v/s Ratio Prot	0.47	
v/s Ratio Perm		
v/c Ratio	0.60	
Uniform Delay, d1	7.7	
Progression Factor	0.12	
Incremental Delay, d2	0.5	
Delay (s)	1.5	
Level of Service	A	
Approach Delay (s)	14.4	
Approach LOS	B	

Intersection Summary

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	2405	0	0	310
Future Volume (veh/h)	0	0	2405	0	0	310
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			2614	0	0	337
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			2614	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			3.8	0.0		
Cycle Q Clear(g_c), s			3.8	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.42	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.1	0.0		
Incr Delay (d2), s/veh			0.2	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.1	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.3	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			2614			
Approach Delay, s/veh			0.3			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	123.5
Max Q Clear Time (g_c+I1), s	5.8
Green Ext Time (p_c), s	4.7

Intersection Summary	
HCM 6th Ctrl Delay	0.3
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	250	70	65	3305	2390	325
Future Volume (veh/h)	250	70	65	3305	2390	325
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	272	0	71	3592	2598	353
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	326		218	4270	4361	1224
Arrive On Green	0.09	0.00	0.12	0.84	0.68	0.68
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	272	0	71	3592	2598	353
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	13.9	0.0	6.6	69.9	39.3	11.8
Cycle Q Clear(g_c), s	13.9	0.0	6.6	69.9	39.3	11.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	326		218	4270	4361	1224
V/C Ratio(X)	0.84		0.33	0.84	0.60	0.29
Avail Cap(c_a), veh/h	403		218	4270	4361	1224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.1	0.0	72.2	8.1	15.7	6.0
Incr Delay (d2), s/veh	19.1	0.0	0.9	2.2	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	3.1	21.4	13.8	5.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.3	0.0	73.1	10.3	16.3	6.6
LnGrp LOS	F		E	B	B	A
Approach Vol, veh/h	272	A		3663	2951	
Approach Delay, s/veh	99.3			11.5	15.1	
Approach LOS	F			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		157.0		23.0	28.5	128.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		146.5		21.0	18.0	122.0
Max Q Clear Time (g_c+I1), s		71.9		15.9	8.6	41.3
Green Ext Time (p_c), s		70.7		1.0	0.1	4.4

Intersection Summary		
HCM 6th Ctrl Delay		16.5
HCM 6th LOS		B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

2045 PREFERRED ALTERNATIVE

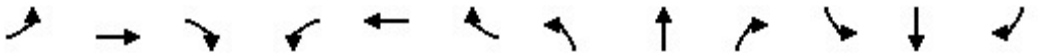
SYNCHRO ANALYSIS OUTPUTS

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	165	0	325	0	1740	360	410	1175	0	0	90
Future Volume (vph)	165	0	325	0	1740	360	410	1175	0	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	0	353	0	1891	391	446	1277	0	0	98
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	179	0	353	0	1891	391	446	1277	0	0	98
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		4 1		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	24.0		63.3		102.7	102.7	32.8	142.5			142.5
Effective Green, g (s)	24.0		63.3		102.7	102.7	32.8	142.5			142.5
Actuated g/C Ratio	0.13		0.35		0.57	0.57	0.18	0.79			0.79
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	457		980		2901	903	625	4025			1275
v/s Ratio Prot	0.05		c0.13		c0.37		c0.13	0.25			0.06
v/s Ratio Perm						0.25					
v/c Ratio	0.39		0.36		0.65	0.43	0.71	0.32			0.08
Uniform Delay, d1	71.3		43.3		26.4	22.0	69.2	5.2			4.2
Progression Factor	1.00		1.00		0.66	0.60	1.00	1.00			1.00
Incremental Delay, d2	0.8		0.3		0.9	1.2	4.8	0.2			0.1
Delay (s)	72.1		43.6		18.2	14.4	74.0	5.4			4.3
Level of Service	E		D		B	B	E	A			A
Approach Delay (s)	53.2				17.6			23.2		4.3	
Approach LOS	D				B			C		A	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

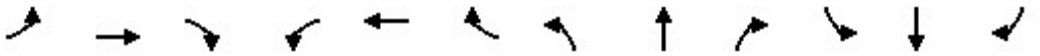
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	505	5	30	80	20	0	0	155	5
Future Volume (vph)	0	0	0	505	5	30	80	20	0	0	155	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1687	1583	1770	1863			3524	
Flt Permitted				0.95	0.95	1.00	0.64	1.00			1.00	
Satd. Flow (perm)				1681	1687	1583	1197	1863			3524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	549	5	33	87	22	0	0	168	5
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	274	280	9	87	22	0	0	171	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				19.1	19.1	19.1	26.5	17.8			12.2	
Effective Green, g (s)				19.1	19.1	19.1	26.5	17.8			12.2	
Actuated g/C Ratio				0.27	0.27	0.27	0.38	0.26			0.18	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				461	463	435	606	477			618	
v/s Ratio Prot				0.16	c0.17		c0.04	0.01			c0.05	
v/s Ratio Perm						0.01	0.02					
v/c Ratio				0.59	0.60	0.02	0.14	0.05			0.28	
Uniform Delay, d1				21.8	21.9	18.4	14.3	19.5			24.8	
Progression Factor				1.00	1.00	1.00	0.33	0.14			1.00	
Incremental Delay, d2				3.1	3.3	0.0	0.2	0.1			0.1	
Delay (s)				24.9	25.2	18.4	5.0	2.8			24.9	
Level of Service				C	C	B	A	A			C	
Approach Delay (s)		0.0			24.7			4.6			24.9	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

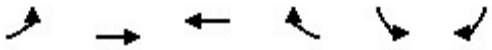
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	205	0	0	0	0	95	195	10	650	0
Future Volume (vph)	5	5	205	0	0	0	0	95	195	10	650	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.98	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1817	1583					1863	1583		3537	
Flt Permitted		0.98	1.00					1.00	1.00		0.95	
Satd. Flow (perm)		1817	1583					1863	1583		3380	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	223	0	0	0	0	103	212	11	707	0
RTOR Reduction (vph)	0	0	193	0	0	0	0	0	187	0	0	0
Lane Group Flow (vph)	0	10	30	0	0	0	0	103	25	0	718	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		9.5	9.5					8.3	8.3		39.4	
Effective Green, g (s)		9.5	9.5					8.3	8.3		39.4	
Actuated g/C Ratio		0.14	0.14					0.12	0.12		0.57	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		248	216					222	189		1977	
v/s Ratio Prot		0.01						0.06			c0.14	
v/s Ratio Perm			c0.02						0.02		c0.06	
v/c Ratio		0.04	0.14					0.46	0.13		0.36	
Uniform Delay, d1		26.0	26.4					28.5	27.4		8.2	
Progression Factor		1.00	1.00					1.00	1.00		0.43	
Incremental Delay, d2		0.1	0.6					0.6	0.1		0.0	
Delay (s)		26.2	27.0					29.1	27.5		3.6	
Level of Service		C	C					C	C		A	
Approach Delay (s)		27.0			0.0			28.0			3.6	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

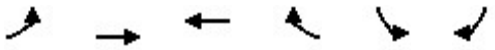
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	2950	320	0	0	585
Future Volume (vph)	0	2950	320	0	0	585
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	3207	348	0	0	636
RTOR Reduction (vph)	0	0	0	0	0	127
Lane Group Flow (vph)	0	3207	348	0	0	509
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	49.5			117.5
Effective Green, g (s)		180.0	49.5			117.5
Actuated g/C Ratio		1.00	0.28			0.65
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1398			1819
v/s Ratio Prot		c0.50	0.07			0.18
v/s Ratio Perm						
v/c Ratio		0.50	0.25			0.28
Uniform Delay, d1		0.0	50.8			13.3
Progression Factor		1.00	0.07			2.13
Incremental Delay, d2		0.2	0.4			0.2
Delay (s)		0.2	3.9			28.5
Level of Service		A	A			C
Approach Delay (s)		0.2	3.9		28.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

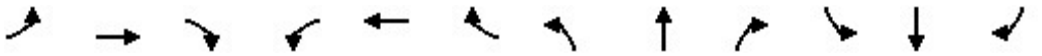
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1020	1930	320	0	425	0
Future Volume (vph)	1020	1930	320	0	425	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1109	2098	348	0	462	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1109	2098	348	0	462	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	80.5	136.5	49.5		30.5	
Effective Green, g (s)	80.5	136.5	49.5		30.5	
Actuated g/C Ratio	0.45	0.76	0.28		0.17	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1535	2683	1398		581	
v/s Ratio Prot	0.32	c0.59	0.07		c0.13	
v/s Ratio Perm						
v/c Ratio	0.72	0.78	0.25		0.80	
Uniform Delay, d1	40.6	12.9	50.8		71.8	
Progression Factor	1.00	1.00	1.00		1.11	
Incremental Delay, d2	2.1	2.1	0.4		7.4	
Delay (s)	42.7	15.0	51.2		86.9	
Level of Service	D	B	D		F	
Approach Delay (s)		24.6	51.2		86.9	
Approach LOS		C	D		F	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	615	0	30	0	0	180	20	1305	95	90	980	360
Future Volume (vph)	615	0	30	0	0	180	20	1305	95	90	980	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	668	0	33	0	0	196	22	1418	103	98	1065	391
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	668	0	7	0	0	196	22	1418	103	98	1065	391
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	39.8		39.8			37.2	5.4	83.0	180.0	15.3	92.9	180.0
Effective Green, g (s)	39.8		39.8			31.7	5.4	83.0	180.0	15.3	92.9	180.0
Actuated g/C Ratio	0.22		0.22			0.18	0.03	0.46	1.00	0.09	0.52	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	759		350			490	53	2344	1583	150	2624	1583
v/s Ratio Prot	c0.19					c0.07	0.01	c0.28		c0.06	0.21	
v/s Ratio Perm			0.00						0.07			0.25
v/c Ratio	0.88		0.02			0.40	0.42	0.60	0.07	0.65	0.41	0.25
Uniform Delay, d1	67.8		54.9			65.7	85.7	36.2	0.0	79.8	26.7	0.0
Progression Factor	1.00		1.00			1.00	1.45	0.30	1.00	1.20	0.86	1.00
Incremental Delay, d2	11.6		0.0			0.5	4.5	1.0	0.1	9.5	0.5	0.4
Delay (s)	79.4		54.9			66.3	128.8	11.9	0.1	105.0	23.4	0.4
Level of Service	E		D			E	F	B	A	F	C	A
Approach Delay (s)		78.2			66.3			12.7			22.7	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

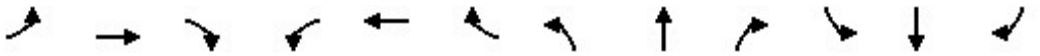
c Critical Lane Group

Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	375	0	555	0	1685	285	550	2170	0	0	365
Future Volume (vph)	375	0	555	0	1685	285	550	2170	0	0	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		7.0	7.0	7.0	7.0			7.0
Lane Util. Factor	0.97		0.88		0.91	1.00	0.97	0.91			1.00
Frt	1.00		0.85		1.00	0.85	1.00	1.00			0.86
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (prot)	3433		2787		5085	1583	3433	5085			1611
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00			1.00
Satd. Flow (perm)	3433		2787		5085	1583	3433	5085			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	408	0	603	0	1832	310	598	2359	0	0	397
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	408	0	603	0	1832	310	598	2359	0	0	397
Turn Type	Prot		pt+ov		NA	Perm	Prot	NA			Prot
Protected Phases	4		4 1		2		1	6!			6!
Permitted Phases						2					
Actuated Green, G (s)	35.6		82.8		83.2	83.2	40.7	130.9			130.9
Effective Green, g (s)	35.6		82.8		83.2	83.2	40.7	130.9			130.9
Actuated g/C Ratio	0.20		0.46		0.46	0.46	0.23	0.73			0.73
Clearance Time (s)	6.5				7.0	7.0	7.0	7.0			7.0
Vehicle Extension (s)	4.0				2.0	2.0	5.0	2.0			2.0
Lane Grp Cap (vph)	678		1282		2350	731	776	3697			1171
v/s Ratio Prot	c0.12		0.22		c0.36		c0.17	0.46			0.25
v/s Ratio Perm						0.20					
v/c Ratio	0.60		0.47		0.78	0.42	0.77	0.64			0.34
Uniform Delay, d1	65.7		33.5		40.7	32.4	65.3	12.5			8.9
Progression Factor	1.00		1.00		0.70	0.69	1.00	1.00			1.00
Incremental Delay, d2	1.7		0.4		2.1	1.5	5.5	0.9			0.8
Delay (s)	67.5		33.9		30.8	23.8	70.8	13.3			9.7
Level of Service	E		C		C	C	E	B			A
Approach Delay (s)	47.4				29.8			25.0		9.7	
Approach LOS	D				C			C		A	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

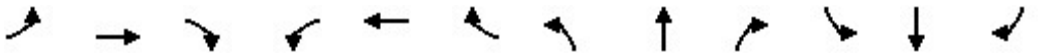
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	410	5	10	350	60	0	0	140	10
Future Volume (vph)	0	0	0	410	5	10	350	60	0	0	140	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.5	5.5	5.5	5.5	5.5			9.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1687	1583	1770	1863			3503	
Flt Permitted				0.95	0.95	1.00	0.65	1.00			1.00	
Satd. Flow (perm)				1681	1687	1583	1208	1863			3503	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	446	5	11	380	65	0	0	152	11
RTOR Reduction (vph)	0	0	0	0	0	9	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	227	224	2	380	65	0	0	157	0
Turn Type				Split	NA	Perm	custom	NA			NA	
Protected Phases				3	3		1 4	4 5			2	
Permitted Phases						3	5					
Actuated Green, G (s)				18.9	18.9	18.9	60.5	41.5			10.2	
Effective Green, g (s)				18.9	18.9	18.9	60.5	41.5			10.2	
Actuated g/C Ratio				0.21	0.21	0.21	0.67	0.46			0.11	
Clearance Time (s)				5.5	5.5	5.5					9.0	
Vehicle Extension (s)				5.0	5.0	5.0					2.0	
Lane Grp Cap (vph)				351	352	330	1065	855			395	
v/s Ratio Prot				c0.14	0.13		c0.16	0.03			0.04	
v/s Ratio Perm						0.00	c0.08					
v/c Ratio				0.65	0.64	0.01	0.36	0.08			0.40	
Uniform Delay, d1				32.7	32.6	28.3	7.2	13.7			37.2	
Progression Factor				1.00	1.00	1.00	0.36	0.24			1.00	
Incremental Delay, d2				5.5	5.2	0.0	0.3	0.0			0.2	
Delay (s)				38.2	37.8	28.3	2.8	3.4			37.5	
Level of Service				D	D	C	A	A			D	
Approach Delay (s)		0.0			37.8			2.9			37.5	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	25.5
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

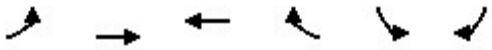
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	195	0	0	0	0	405	815	50	500	0
Future Volume (vph)	5	5	195	0	0	0	0	405	815	50	500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5					9.0	9.0		9.0	
Lane Util. Factor		1.00	1.00					1.00	1.00		0.95	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		0.98	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		1817	1583					1863	1583		3523	
Flt Permitted		0.98	1.00					1.00	1.00		0.58	
Satd. Flow (perm)		1817	1583					1863	1583		2053	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	212	0	0	0	0	440	886	54	543	0
RTOR Reduction (vph)	0	0	178	0	0	0	0	0	620	0	0	0
Lane Group Flow (vph)	0	10	34	0	0	0	0	440	266	0	597	0
Turn Type	Split	NA	Perm					NA	Perm	custom	NA	
Protected Phases	4	4						5		3 6	2 3	
Permitted Phases			4						5	2		
Actuated Green, G (s)		14.4	14.4					27.1	27.1		34.6	
Effective Green, g (s)		14.4	14.4					27.1	27.1		34.6	
Actuated g/C Ratio		0.16	0.16					0.30	0.30		0.38	
Clearance Time (s)		5.5	5.5					9.0	9.0			
Vehicle Extension (s)		5.0	5.0					2.0	2.0			
Lane Grp Cap (vph)		289	252					558	474		1182	
v/s Ratio Prot		0.01						c0.24			c0.14	
v/s Ratio Perm			c0.02						0.17		0.06	
v/c Ratio		0.03	0.13					0.79	0.56		0.51	
Uniform Delay, d1		32.1	32.6					29.0	26.6		21.3	
Progression Factor		1.00	1.00					1.00	1.00		0.79	
Incremental Delay, d2		0.1	0.5					6.7	0.9		0.1	
Delay (s)		32.2	33.2					35.8	27.5		17.0	
Level of Service		C	C					D	C		B	
Approach Delay (s)		33.1			0.0			30.3			17.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	25.5
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

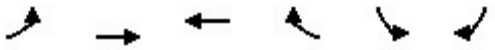
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1305	1495	0	0	1295
Future Volume (vph)	0	1305	1495	0	0	1295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5			6.5
Lane Util. Factor		0.86	0.91			0.88
Frt		1.00	1.00			0.85
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		6408	5085			2787
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		6408	5085			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1418	1625	0	0	1408
RTOR Reduction (vph)	0	0	0	0	0	2
Lane Group Flow (vph)	0	1418	1625	0	0	1406
Turn Type		NA	NA			custom
Protected Phases		1 2 4 6	2			1 4
Permitted Phases						
Actuated Green, G (s)		180.0	67.3			99.7
Effective Green, g (s)		180.0	67.3			99.7
Actuated g/C Ratio		1.00	0.37			0.55
Clearance Time (s)			6.5			
Vehicle Extension (s)			2.0			
Lane Grp Cap (vph)		6408	1901			1543
v/s Ratio Prot		0.22	c0.32			c0.50
v/s Ratio Perm						
v/c Ratio		0.22	0.85			0.91
Uniform Delay, d1		0.0	51.9			36.2
Progression Factor		1.00	0.07			0.68
Incremental Delay, d2		0.0	2.6			7.0
Delay (s)		0.0	6.2			31.4
Level of Service		A	A			C
Approach Delay (s)		0.0	6.2		31.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

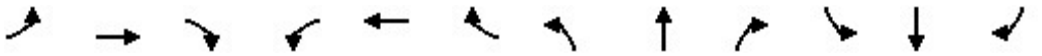
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	750	555	1495	0	290	0
Future Volume (vph)	750	555	1495	0	290	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5		6.5	
Lane Util. Factor	0.97	0.95	0.91		0.97	
Frt	1.00	1.00	1.00		1.00	
Flt Protected	0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	5085		3433	
Flt Permitted	0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	5085		3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	815	603	1625	0	315	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	815	603	1625	0	315	0
Turn Type	Prot	NA	NA		Prot	
Protected Phases	1	6	2		4	
Permitted Phases						
Actuated Green, G (s)	72.5	146.3	67.3		20.7	
Effective Green, g (s)	72.5	146.3	67.3		20.7	
Actuated g/C Ratio	0.40	0.81	0.37		0.11	
Clearance Time (s)	6.5	6.5	6.5		6.5	
Vehicle Extension (s)	6.0	2.0	2.0		4.0	
Lane Grp Cap (vph)	1382	2876	1901		394	
v/s Ratio Prot	c0.24	0.17	c0.32		c0.09	
v/s Ratio Perm						
v/c Ratio	0.59	0.21	0.85		0.80	
Uniform Delay, d1	42.1	3.8	51.9		77.6	
Progression Factor	1.00	1.00	1.00		0.94	
Incremental Delay, d2	1.2	0.2	5.2		8.5	
Delay (s)	43.3	4.0	57.0		81.3	
Level of Service	D	A	E		F	
Approach Delay (s)		26.6	57.0		81.3	
Approach LOS		C	E		F	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	0	25	0	0	315	90	1230	185	155	1560	1195
Future Volume (vph)	425	0	25	0	0	315	90	1230	185	155	1560	1195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0		8.0			5.0	5.0	7.0	4.0	5.0	7.0	4.0
Lane Util. Factor	0.97		1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00		0.85			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Flt Permitted	0.95		1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433		1583			2787	1770	5085	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	462	0	27	0	0	342	98	1337	201	168	1696	1299
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	462	0	4	0	0	342	98	1337	201	168	1696	1299
Turn Type	Prot		Perm			pt+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	3					1 4	5	2		1	6	
Permitted Phases			3						Free			Free
Actuated Green, G (s)	28.8		28.8			51.2	15.0	80.0	180.0	22.0	87.0	180.0
Effective Green, g (s)	28.8		28.8			45.7	15.0	80.0	180.0	22.0	87.0	180.0
Actuated g/C Ratio	0.16		0.16			0.25	0.08	0.44	1.00	0.12	0.48	1.00
Clearance Time (s)	8.0		8.0				5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0		3.0				3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	549		253			707	147	2260	1583	216	2457	1583
v/s Ratio Prot	0.13					0.12	0.06	0.26		0.09	0.33	
v/s Ratio Perm			0.00						0.13			c0.82
v/c Ratio	0.84		0.02			0.48	0.67	0.59	0.13	0.78	0.69	0.82
Uniform Delay, d1	73.4		63.7			57.1	80.1	37.7	0.0	76.6	36.1	0.0
Progression Factor	1.00		1.00			1.00	0.78	1.59	1.00	0.92	0.90	1.00
Incremental Delay, d2	11.2		0.0			0.5	10.6	1.1	0.2	13.4	1.3	4.0
Delay (s)	84.6		63.7			57.6	73.4	61.0	0.2	83.5	33.9	4.0
Level of Service	F		E			E	E	E	A	F	C	A
Approach Delay (s)		83.4			57.6			54.3			24.3	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	85	2055	200	20	255	545	105	10	65	60	130	260
Future Volume (vph)	85	2055	200	20	255	545	105	10	65	60	130	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	2234	217	22	277	592	114	11	71	65	141	283
RTOR Reduction (vph)	0	0	102	0	0	0	50	0	0	55	0	0
Lane Group Flow (vph)	92	2234	115	0	299	592	64	11	71	10	141	283
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	12.9	79.6	79.6		17.8	84.5	84.5	1.6	22.6	22.6	8.0	29.0
Effective Green, g (s)	12.9	79.6	79.6		17.8	84.5	84.5	1.6	22.6	22.6	8.0	29.0
Actuated g/C Ratio	0.09	0.53	0.53		0.12	0.56	0.56	0.01	0.15	0.15	0.05	0.19
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	152	2698	840		407	2864	891	18	533	238	183	360
v/s Ratio Prot	0.05	c0.44			c0.09	0.12		0.01	0.02		c0.04	c0.15
v/s Ratio Perm			0.07				0.04			0.01		
v/c Ratio	0.61	0.83	0.14		0.73	0.21	0.07	0.61	0.13	0.04	0.77	0.79
Uniform Delay, d1	66.1	29.5	17.8		63.8	16.2	14.9	73.9	55.2	54.4	70.1	57.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	3.1	0.3		6.7	0.2	0.2	48.7	0.2	0.1	17.9	11.4
Delay (s)	72.7	32.6	18.2		70.6	16.3	15.1	122.6	55.4	54.5	88.0	68.9
Level of Service	E	C	B		E	B	B	F	E	D	F	E
Approach Delay (s)		32.8				32.3			60.0			71.8
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	65
RTOR Reduction (vph)	52
Lane Group Flow (vph)	13
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	29.0
Effective Green, g (s)	29.0
Actuated g/C Ratio	0.19
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	306
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	49.2
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	49.3
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

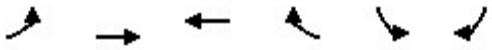
Intersection	
Int Delay, s/veh	8.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	215	140	185	0	0	875
Future Vol, veh/h	215	140	185	0	0	875
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	234	152	201	0	0	951

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	677	101	0	-	-	-
Stage 1	201	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	386	935	-	0	0	-
Stage 1	813	-	-	0	0	-
Stage 2	591	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	386	935	-	-	-	-
Mov Cap-2 Maneuver	386	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	591	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.2	0	0
HCM LOS	D		

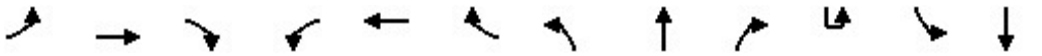
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	502	-
HCM Lane V/C Ratio	-	0.769	-
HCM Control Delay (s)	-	32.2	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	6.8	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	710	120	205	165	15
Future Volume (veh/h)	55	710	120	205	165	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	772	130	223	179	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	114	1856	542	484	438	303
Arrive On Green	0.06	0.52	0.31	0.31	0.13	0.13
Sat Flow, veh/h	1781	3647	1870	1585	3456	1585
Grp Volume(v), veh/h	60	772	130	223	179	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	1.1	4.3	1.8	3.7	1.6	0.3
Cycle Q Clear(g_c), s	1.1	4.3	1.8	3.7	1.6	0.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	114	1856	542	484	438	303
V/C Ratio(X)	0.52	0.42	0.24	0.46	0.41	0.05
Avail Cap(c_a), veh/h	653	5913	2034	1815	2532	1263
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	4.8	8.5	9.2	13.2	10.8
Incr Delay (d2), s/veh	3.7	0.1	0.1	0.3	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	0.5	0.9	0.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.5	4.8	8.6	9.5	13.8	10.9
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		832	353		195	
Approach Delay, s/veh		5.8	9.1		13.5	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.1	15.5		10.2		22.6
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	12.0	37.5		24.0		54.5
Max Q Clear Time (g_c+I1), s	3.1	5.7		3.6		6.3
Green Ext Time (p_c), s	0.1	1.4		0.6		3.8

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	95	10	10	25	5	45	5	1180	25	110	305	1750
Future Volume (vph)	95	10	10	25	5	45	5	1180	25	110	305	1750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected	0.95	0.96	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1603	1441		1728	1531	1685	4827			1643	4826
Flt Permitted	0.95	0.96	1.00		0.96	1.00	0.09	1.00			0.13	1.00
Satd. Flow (perm)	1584	1603	1441		1728	1531	153	4827			220	4826
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	11	11	27	5	49	5	1283	27	120	332	1902
RTOR Reduction (vph)	0	0	10	0	0	47	0	1	0	0	0	7
Lane Group Flow (vph)	57	57	1	0	32	2	5	1309	0	0	452	2080
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	10.0	10.0	10.0		6.0	6.0	71.1	71.1			115.0	115.0
Effective Green, g (s)	10.0	10.0	10.0		6.0	6.0	71.1	71.1			115.0	115.0
Actuated g/C Ratio	0.07	0.07	0.07		0.04	0.04	0.47	0.47			0.77	0.77
Clearance Time (s)	6.5	6.5	6.5		6.5	6.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	105	106	96		69	61	72	2287			542	3699
v/s Ratio Prot	c0.04	0.04			c0.02			0.27			c0.22	0.43
v/s Ratio Perm			0.00			0.00	0.03				c0.42	
v/c Ratio	0.54	0.54	0.01		0.46	0.03	0.07	0.57			0.83	0.56
Uniform Delay, d1	67.8	67.8	65.4		70.4	69.2	21.5	28.5			33.2	7.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.25	0.44
Incremental Delay, d2	5.6	5.2	0.0		4.9	0.2	1.9	1.0			8.1	0.5
Delay (s)	73.4	72.9	65.4		75.3	69.4	23.3	29.5			49.6	3.6
Level of Service	E	E	E		E	E	C	C			D	A
Approach Delay (s)		72.5			71.7			29.5				11.8
Approach LOS		E			E			C				B

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	170
Future Volume (vph)	170
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	185
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	445	870	0	1025	1465	600
Future Volume (veh/h)	445	870	0	1025	1465	600
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	484	946	0	1114	1592	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	1297	1047	0	3454	2698	
Arrive On Green	0.39	0.39	0.00	0.54	1.00	0.00
Sat Flow, veh/h	3358	2711	0	6870	5125	1540
Grp Volume(v), veh/h	484	946	0	1114	1592	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1588	1654	1540
Q Serve(g_s), s	15.5	49.4	0.0	14.6	0.0	0.0
Cycle Q Clear(g_c), s	15.5	49.4	0.0	14.6	0.0	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	1297	1047	0	3454	2698	
V/C Ratio(X)	0.37	0.90	0.00	0.32	0.59	
Avail Cap(c_a), veh/h	1612	1301	0	3454	2698	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.84	0.00
Uniform Delay (d), s/veh	33.0	43.4	0.0	18.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	7.8	0.0	0.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	17.8	0.0	5.4	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.2	51.2	0.0	19.2	0.8	0.0
LnGrp LOS	C	D	A	B	A	
Approach Vol, veh/h	1430			1114	1592	A
Approach Delay, s/veh	45.1			19.2	0.8	
Approach LOS	D			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		87.1		62.9		87.1
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		67.5		72.0		67.5
Max Q Clear Time (g_c+I1), s		2.0		51.4		16.6
Green Ext Time (p_c), s		17.8		6.6		9.6

Intersection Summary		
HCM 6th Ctrl Delay		21.1
HCM 6th LOS		C

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	760	265	1130	340	0	1305
Future Volume (veh/h)	760	265	1130	340	0	1305
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	826	0	1228	0	0	1418
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	921		3324		0	4189
Arrive On Green	0.27	0.00	0.88	0.00	0.00	0.66
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	826	0	1228	0	0	1418
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	34.7	0.0	6.7	0.0	0.0	14.7
Cycle Q Clear(g_c), s	34.7	0.0	6.7	0.0	0.0	14.7
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	921		3324		0	4189
V/C Ratio(X)	0.90		0.37		0.00	0.34
Avail Cap(c_a), veh/h	1642		3324		0	4189
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.95	0.00	0.00	1.00
Uniform Delay (d), s/veh	53.0	0.0	3.6	0.0	0.0	11.2
Incr Delay (d2), s/veh	3.5	0.0	0.3	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	0.0	1.9	0.0	0.0	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.4	0.0	3.9	0.0	0.0	11.4
LnGrp LOS	E		A		A	B
Approach Vol, veh/h	826	A	1228	A		1418
Approach Delay, s/veh	56.4		3.9			11.4
Approach LOS	E		A			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		104.4		45.6		104.4
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		67.5		71.5		67.5
Max Q Clear Time (g_c+I1), s		16.7		36.7		8.7
Green Ext Time (p_c), s		13.9		3.4		11.3

Intersection Summary						
HCM 6th Ctrl Delay			19.5			
HCM 6th LOS			B			

Notes

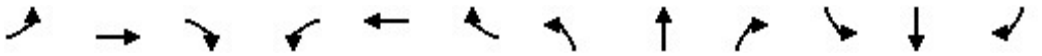
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	35	10	65	185	10	55	5	130	985	275	145	1445
Future Volume (vph)	35	10	65	185	10	55	5	130	985	275	145	1445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.97	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1472	1333	1561	1629	1418		1702	4891	1470	1619	4978
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.11	1.00	1.00	0.23	1.00
Satd. Flow (perm)		1472	1333	1561	1629	1418		191	4891	1470	388	4978
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	11	71	201	11	60	5	141	1071	299	158	1571
RTOR Reduction (vph)	0	7	48	0	0	54	0	0	0	121	0	0
Lane Group Flow (vph)	0	56	9	107	105	6	0	146	1071	178	158	1582
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		10.5	22.7	15.5	15.5	15.5		101.6	89.4	89.4	98.4	87.8
Effective Green, g (s)		10.5	22.7	15.5	15.5	15.5		101.6	89.4	89.4	98.4	87.8
Actuated g/C Ratio		0.07	0.15	0.10	0.10	0.10		0.68	0.60	0.60	0.66	0.59
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		103	201	161	168	146		252	2915	876	341	2913
v/s Ratio Prot		c0.04	0.00	c0.07	0.06			c0.05	0.22		0.03	0.32
v/s Ratio Perm			0.00			0.00		c0.34		0.12	0.27	
v/c Ratio		0.54	0.04	0.66	0.62	0.04		0.58	0.37	0.20	0.46	0.54
Uniform Delay, d1		67.4	54.4	64.7	64.5	60.6		13.2	15.7	13.9	10.3	18.9
Progression Factor		1.00	1.00	1.00	1.00	1.00		2.40	0.93	1.98	1.00	1.00
Incremental Delay, d2		5.3	0.1	9.9	7.1	0.1		3.1	0.3	0.5	1.0	0.7
Delay (s)		72.8	54.5	74.6	71.5	60.7		34.7	14.8	28.1	11.3	19.6
Level of Service		E	D	E	E	E		C	B	C	B	B
Approach Delay (s)		64.1			70.4				19.4			18.9
Approach LOS		E			E				B			B

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	115	45	170	0	25	0	50	60	80	355	0
Future Volume (veh/h)	30	115	45	170	0	25	0	50	60	80	355	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	33	125	49	185	0	27	0	54	65	87	386	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	941	1336	501	0	0	0	0	440	373	212	669	0
Arrive On Green	0.53	0.53	0.53	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.24	0.00
Sat Flow, veh/h	1781	2528	948		0		0	1870	1585	440	2926	0
Grp Volume(v), veh/h	33	86	88		0.0		0	54	65	254	219	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1700				0	1870	1585	1664	1617	0
Q Serve(g_s), s	0.4	1.1	1.1				0.0	1.0	1.5	3.8	5.3	0.0
Cycle Q Clear(g_c), s	0.4	1.1	1.1				0.0	1.0	1.5	5.9	5.3	0.0
Prop In Lane	1.00		0.56				0.00		1.00	0.34		0.00
Lane Grp Cap(c), veh/h	941	939	898				0	440	373	501	381	0
V/C Ratio(X)	0.04	0.09	0.10				0.00	0.12	0.17	0.51	0.58	0.00
Avail Cap(c_a), veh/h	941	939	898				0	925	784	918	800	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.0	5.2	5.2				0.0	13.4	13.6	15.2	15.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.2				0.0	0.1	0.2	0.8	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.3				0.0	0.4	0.5	2.1	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	5.4	5.4				0.0	13.5	13.8	16.0	16.4	0.0
LnGrp LOS	A	A	A				A	B	B	B	B	A
Approach Vol, veh/h		207						119			473	
Approach Delay, s/veh		5.4						13.7			16.2	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.5		29.0		15.5				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				22.0		23.5		22.0				
Max Q Clear Time (g_c+I1), s				7.9		3.1		3.5				
Green Ext Time (p_c), s				2.5		1.0		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			13.0									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	85	795	30	20	75	2115	215	165	360	335	110	110
Future Volume (vph)	85	795	30	20	75	2115	215	165	360	335	110	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Lane Util. Factor	1.00	0.91	1.00		0.97	0.91	1.00	1.00	0.95	1.00	0.97	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	5085	1583		3433	5085	1583	1770	3539	1583	3433	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	864	33	22	82	2299	234	179	391	364	120	120
RTOR Reduction (vph)	0	0	15	0	0	0	109	0	0	132	0	0
Lane Group Flow (vph)	92	864	18	0	104	2299	125	179	391	232	120	120
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	11.2	82.7	82.7		8.7	80.2	80.2	17.9	29.0	29.0	7.6	18.7
Effective Green, g (s)	11.2	82.7	82.7		8.7	80.2	80.2	17.9	29.0	29.0	7.6	18.7
Actuated g/C Ratio	0.07	0.55	0.55		0.06	0.53	0.53	0.12	0.19	0.19	0.05	0.12
Clearance Time (s)	4.5	6.0	6.0		4.5	6.0	6.0	5.0	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	2.0	2.0		3.0	2.0	2.0	3.0	4.0	4.0	3.0	4.0
Lane Grp Cap (vph)	132	2803	872		199	2718	846	211	684	306	173	232
v/s Ratio Prot	c0.05	0.17			0.03	c0.45		c0.10	0.11		0.03	0.06
v/s Ratio Perm			0.01				0.08			c0.15		
v/c Ratio	0.70	0.31	0.02		0.52	0.85	0.15	0.85	0.57	0.76	0.69	0.52
Uniform Delay, d1	67.7	18.2	15.3		68.6	29.6	17.6	64.7	54.9	57.2	70.1	61.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	0.3	0.0		2.5	3.5	0.4	25.8	1.4	10.8	11.4	2.6
Delay (s)	82.6	18.5	15.3		71.1	33.1	18.0	90.5	56.3	68.0	81.5	64.0
Level of Service	F	B	B		E	C	B	F	E	E	F	E
Approach Delay (s)		24.3				33.3			67.4			69.7
Approach LOS		C				C			E			E

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	205
Future Volume (vph)	205
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	223
RTOR Reduction (vph)	111
Lane Group Flow (vph)	112
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	18.7
Effective Green, g (s)	18.7
Actuated g/C Ratio	0.12
Clearance Time (s)	6.5
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	197
v/s Ratio Prot	
v/s Ratio Perm	0.07
v/c Ratio	0.57
Uniform Delay, d1	61.8
Progression Factor	1.00
Incremental Delay, d2	4.5
Delay (s)	66.3
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

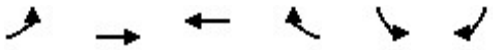
Intersection	
Int Delay, s/veh	6.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	125	1555	0	0	440
Future Vol, veh/h	25	125	1555	0	0	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	136	1690	0	0	478

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1929	845	0	-	-	-
Stage 1	1690	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	58	306	-	0	0	-
Stage 1	135	-	-	0	0	-
Stage 2	778	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	58	306	-	-	-	-
Mov Cap-2 Maneuver	58	-	-	-	-	-
Stage 1	135	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	98	0	0
HCM LOS	F		

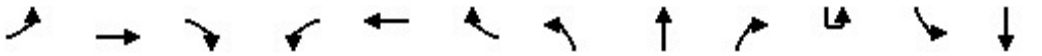
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	179	-
HCM Lane V/C Ratio	-	0.911	-
HCM Control Delay (s)	-	98	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	6.9	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	195	1170	510	245	85
Future Volume (veh/h)	20	195	1170	510	245	85
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	212	1272	554	266	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	44	2573	1545	637	400	223
Arrive On Green	0.02	0.72	0.63	0.63	0.12	0.12
Sat Flow, veh/h	1781	3647	2548	1011	3456	1585
Grp Volume(v), veh/h	22	212	901	925	266	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1688	1728	1585
Q Serve(g_s), s	0.9	1.3	27.4	32.2	5.3	3.8
Cycle Q Clear(g_c), s	0.9	1.3	27.4	32.2	5.3	3.8
Prop In Lane	1.00			0.60	1.00	1.00
Lane Grp Cap(c), veh/h	44	2573	1119	1063	400	223
V/C Ratio(X)	0.50	0.08	0.81	0.87	0.66	0.41
Avail Cap(c_a), veh/h	124	3389	1447	1375	962	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	2.9	10.0	10.9	30.4	28.2
Incr Delay (d2), s/veh	8.5	0.0	2.0	4.2	1.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	8.5	10.0	2.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.1	2.9	12.0	15.1	32.3	29.4
LnGrp LOS	D	A	B	B	C	C
Approach Vol, veh/h		234	1826		358	
Approach Delay, s/veh		6.7	13.6		31.6	
Approach LOS		A	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.8	50.7		14.3		57.5
Change Period (Y+Rc), s	5.0	5.5		6.0		5.5
Max Green Setting (Gmax), s	5.0	58.5		20.0		68.5
Max Q Clear Time (g_c+I1), s	2.9	34.2		7.3		3.3
Green Ext Time (p_c), s	0.0	11.0		1.0		0.9

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	160	5	25	65	5	305	15	1655	35	20	85	730
Future Volume (vph)	160	5	25	65	5	305	15	1655	35	20	85	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	10	12	11	11	11	11	12	12	10	11
Grade (%)		5%			0%			3%				1%
Total Lost time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91			1.00	0.91
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00			1.00	0.98
Flt Protected	0.95	0.95	1.00		0.96	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	1584	1593	1441		1720	1531	1685	4827			1643	4807
Flt Permitted	0.95	0.95	1.00		0.96	1.00	0.31	1.00			0.06	1.00
Satd. Flow (perm)	1584	1593	1441		1720	1531	542	4827			102	4807
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	5	27	71	5	332	16	1799	38	22	92	793
RTOR Reduction (vph)	0	0	25	0	0	116	0	1	0	0	0	9
Lane Group Flow (vph)	89	90	2	0	76	216	16	1836	0	0	114	887
Turn Type	Split	NA	Perm	Split	NA	Perm	Perm	NA		pm+pt	pm+pt	NA
Protected Phases	4	4		8	8			6		5	5	2
Permitted Phases			4			8	6			2	2	
Actuated Green, G (s)	12.3	12.3	12.3		25.2	25.2	80.0	80.0			95.0	95.0
Effective Green, g (s)	12.3	12.3	12.3		25.2	25.2	80.0	80.0			95.0	95.0
Actuated g/C Ratio	0.08	0.08	0.08		0.17	0.17	0.53	0.53			0.63	0.63
Clearance Time (s)	6.0	6.0	6.0		5.5	5.5	6.0	6.0			4.5	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	129	130	118		288	257	289	2574			172	3044
v/s Ratio Prot	0.06	c0.06			0.04			c0.38			c0.05	0.18
v/s Ratio Perm			0.00			c0.14	0.03				0.37	
v/c Ratio	0.69	0.69	0.02		0.26	0.84	0.06	0.71			0.66	0.29
Uniform Delay, d1	67.0	67.0	63.3		54.3	60.4	16.8	26.4			26.9	12.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.70	0.44
Incremental Delay, d2	14.3	14.8	0.1		0.5	20.6	0.4	1.7			8.9	0.2
Delay (s)	81.3	81.8	63.4		54.8	81.1	17.2	28.1			54.6	5.7
Level of Service	F	F	E		D	F	B	C			D	A
Approach Delay (s)		79.2			76.2			28.0				11.2
Approach LOS		E			E			C				B

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	95
Future Volume (vph)	95
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	103
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	315	310	0	1315	620	840
Future Volume (veh/h)	315	310	0	1315	620	840
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1817	1817	0	1847	1817	1817
Adj Flow Rate, veh/h	342	337	0	1429	674	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2
Cap, veh/h	502	405	0	4959	3873	
Arrive On Green	0.15	0.15	0.00	0.78	1.00	0.00
Sat Flow, veh/h	3358	2711	0	6870	5125	1540
Grp Volume(v), veh/h	342	337	0	1429	674	0
Grp Sat Flow(s),veh/h/ln	1679	1355	0	1588	1654	1540
Q Serve(g_s), s	14.5	18.1	0.0	9.6	0.0	0.0
Cycle Q Clear(g_c), s	14.5	18.1	0.0	9.6	0.0	0.0
Prop In Lane	1.00	1.00	0.00			1.00
Lane Grp Cap(c), veh/h	502	405	0	4959	3873	
V/C Ratio(X)	0.68	0.83	0.00	0.29	0.17	
Avail Cap(c_a), veh/h	739	596	0	4959	3873	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.95	0.00
Uniform Delay (d), s/veh	60.4	62.0	0.0	4.7	0.0	0.0
Incr Delay (d2), s/veh	1.6	6.5	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	6.7	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.1	68.4	0.0	4.8	0.1	0.0
LnGrp LOS	E	E	A	A	A	
Approach Vol, veh/h	679			1429	674	A
Approach Delay, s/veh	65.2			4.8	0.1	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		122.6		27.4		122.6
Change Period (Y+Rc), s		5.5		5.0		5.5
Max Green Setting (Gmax), s		106.5		33.0		106.5
Max Q Clear Time (g_c+I1), s		2.0		20.1		11.6
Green Ext Time (p_c), s		5.1		2.3		15.0

Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	245	615	980	650	0	1215
Future Volume (veh/h)	245	615	980	650	0	1215
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1864	1939	1847	1847	0	1847
Adj Flow Rate, veh/h	266	0	1065	0	0	1321
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	325		4196		0	5288
Arrive On Green	0.09	0.00	1.00	0.00	0.00	0.83
Sat Flow, veh/h	3445	1643	5208	1565	0	6870
Grp Volume(v), veh/h	266	0	1065	0	0	1321
Grp Sat Flow(s),veh/h/ln	1722	1643	1681	1565	0	1588
Q Serve(g_s), s	11.4	0.0	0.0	0.0	0.0	6.6
Cycle Q Clear(g_c), s	11.4	0.0	0.0	0.0	0.0	6.6
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	325		4196		0	5288
V/C Ratio(X)	0.82		0.25		0.00	0.25
Avail Cap(c_a), veh/h	655		4196		0	5288
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.94	0.00	0.00	1.00
Uniform Delay (d), s/veh	66.7	0.0	0.0	0.0	0.0	2.7
Incr Delay (d2), s/veh	5.1	0.0	0.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.1	0.0	0.0	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.7	0.0	0.1	0.0	0.0	2.8
LnGrp LOS	E		A		A	A
Approach Vol, veh/h	266	A	1065	A		1321
Approach Delay, s/veh	71.7		0.1			2.8
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		130.4		19.6		130.4
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		110.5		28.5		110.5
Max Q Clear Time (g_c+I1), s		8.6		13.4		2.0
Green Ext Time (p_c), s		13.0		0.8		9.2

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

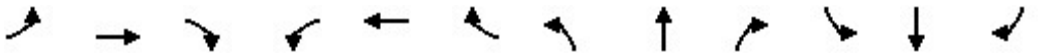
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	110	30	195	495	20	130	5	165	1195	230	85	1455
Future Volume (vph)	110	30	195	495	20	130	5	165	1195	230	85	1455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	9	9	10	11	9	12	11	11	10	10	12
Grade (%)		3%			1%				1%			4%
Total Lost time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Lane Util. Factor		0.95	0.95	0.95	0.95	1.00		1.00	0.91	1.00	1.00	0.91
Frt		0.97	0.85	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.97	1.00	0.95	0.96	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1476	1333	1561	1627	1418		1702	4891	1470	1619	4978
Flt Permitted		0.97	1.00	0.95	0.96	1.00		0.06	1.00	1.00	0.14	1.00
Satd. Flow (perm)		1476	1333	1561	1627	1418		113	4891	1470	234	4978
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	33	212	538	22	141	5	179	1299	250	92	1582
RTOR Reduction (vph)	0	6	52	0	0	112	0	0	0	130	0	1
Lane Group Flow (vph)	0	185	122	280	280	29	0	184	1299	120	92	1592
Turn Type	Split	NA	pm+ov	Split	NA	Perm	custom	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	8	8	1!	4	4			1	6		5	2
Permitted Phases			8			4	1!	6		6	2	
Actuated Green, G (s)		21.7	36.9	30.5	30.5	30.5		78.8	64.8	64.8	67.6	58.6
Effective Green, g (s)		21.7	36.9	30.5	30.5	30.5		78.8	64.8	64.8	67.6	58.6
Actuated g/C Ratio		0.14	0.25	0.20	0.20	0.20		0.53	0.43	0.43	0.45	0.39
Clearance Time (s)		6.5	5.0	6.5	6.5	6.5		5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		213	327	317	330	288		220	2112	635	188	1944
v/s Ratio Prot		c0.13	0.04	c0.18	0.17			c0.08	0.27		0.03	0.32
v/s Ratio Perm			0.05			0.02		c0.36		0.08	0.19	
v/c Ratio		0.87	0.37	0.88	0.85	0.10		0.84	0.62	0.19	0.49	0.82
Uniform Delay, d1		62.8	46.9	58.0	57.5	48.6		43.1	33.0	26.3	25.5	41.0
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.49	0.67	0.32	1.00	1.00
Incremental Delay, d2		29.1	0.7	23.9	18.0	0.2		22.5	1.3	0.6	2.0	4.0
Delay (s)		91.8	47.7	81.9	75.5	48.7		86.7	23.3	9.0	27.5	44.9
Level of Service		F	D	F	E	D		F	C	A	C	D
Approach Delay (s)		70.8			72.7				28.0			44.0
Approach LOS		E			E				C			D

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



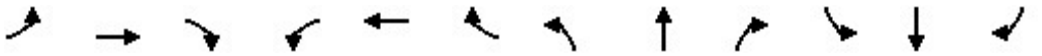
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	210	10	75	0	85	0	260	285	45	110	0
Future Volume (veh/h)	25	210	10	75	0	85	0	260	285	45	110	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870	0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	27	228	11	82	0	92	0	283	310	49	120	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	913	1769	85	0	0	0	0	464	393	207	500	0
Arrive On Green	0.51	0.51	0.51	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.00
Sat Flow, veh/h	1781	3452	166		0		0	1870	1585	298	2099	0
Grp Volume(v), veh/h	27	117	122		0.0		0	283	310	79	90	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1841				0	1870	1585	694	1617	0
Q Serve(g_s), s	0.3	1.5	1.5				0.0	5.9	8.0	0.8	1.9	0.0
Cycle Q Clear(g_c), s	0.3	1.5	1.5				0.0	5.9	8.0	6.7	1.9	0.0
Prop In Lane	1.00		0.09				0.00		1.00	0.62		0.00
Lane Grp Cap(c), veh/h	913	911	943				0	464	393	305	401	0
V/C Ratio(X)	0.03	0.13	0.13				0.00	0.61	0.79	0.26	0.22	0.00
Avail Cap(c_a), veh/h	913	911	943				0	554	469	355	479	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.3	5.6	5.6				0.0	14.6	15.4	13.8	13.1	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.3				0.0	1.4	7.4	0.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.5				0.0	2.3	3.2	0.6	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	5.9	5.9				0.0	16.0	22.8	14.3	13.4	0.0
LnGrp LOS	A	A	A				A	B	C	B	B	A
Approach Vol, veh/h		266						593			169	
Approach Delay, s/veh		5.8						19.6			13.8	
Approach LOS		A						B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.9		28.0		15.9				
Change Period (Y+Rc), s				5.0		5.5		5.0				
Max Green Setting (Gmax), s				13.0		22.5		13.0				
Max Q Clear Time (g_c+I1), s				8.7		3.5		10.0				
Green Ext Time (p_c), s				0.4		1.4		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	885	110	485	815	325	10	245	240	355	425	5
Future Volume (veh/h)	15	885	110	485	815	325	10	245	240	355	425	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	962	120	527	886	353	11	266	261	386	462	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	995	444	830	1838	820	186	348	536	456	780	8
Arrive On Green	0.02	0.28	0.28	0.48	1.00	1.00	0.01	0.10	0.10	0.13	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3601	39
Grp Volume(v), veh/h	16	962	120	527	886	353	11	266	261	386	228	239
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1863
Q Serve(g_s), s	0.9	26.7	4.8	11.4	0.0	0.0	0.6	7.3	3.7	10.9	11.5	11.5
Cycle Q Clear(g_c), s	0.9	26.7	4.8	11.4	0.0	0.0	0.6	7.3	3.7	10.9	11.5	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	32	995	444	830	1838	820	186	348	536	456	385	404
V/C Ratio(X)	0.50	0.97	0.27	0.63	0.48	0.43	0.06	0.76	0.49	0.85	0.59	0.59
Avail Cap(c_a), veh/h	89	995	444	830	1838	820	252	391	555	622	418	438
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.48	0.48	0.48	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	35.5	18.9	22.7	0.0	0.0	39.8	44.0	9.0	42.4	35.2	35.2
Incr Delay (d2), s/veh	11.6	21.6	1.5	0.6	0.4	0.8	0.0	7.8	0.7	6.1	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	13.9	2.4	3.7	0.1	0.2	0.2	3.6	2.1	5.0	5.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	57.1	20.4	23.3	0.4	0.8	39.8	51.8	9.7	48.5	37.1	37.1
LnGrp LOS	E	E	C	C	A	A	D	D	A	D	D	D
Approach Vol, veh/h		1098			1766			538			853	
Approach Delay, s/veh		53.1			7.3			31.1			42.3	
Approach LOS		D			A			C			D	

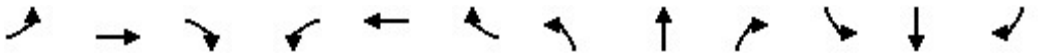
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	58.7	6.8	28.2	31.0	34.0	18.7	16.3
Change Period (Y+Rc), s	4.5	* 7	5.5	6.5	7.0	6.0	5.5	* 6.5
Max Green Setting (Gmax), s	5.0	* 44	5.0	23.5	18.5	28.0	18.0	* 11
Max Q Clear Time (g_c+I1), s	2.9	2.0	2.6	13.5	13.4	28.7	12.9	9.3
Green Ext Time (p_c), s	0.0	19.3	0.0	1.9	0.6	0.0	0.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

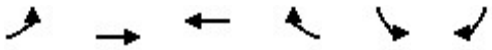
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1100	300	225	1105	110	435	0	420	220	0	85
Future Volume (vph)	80	1100	300	225	1105	110	435	0	420	220	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1583	3433	3491		1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1583	3433	3491		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1196	326	245	1201	120	473	0	457	239	0	92
RTOR Reduction (vph)	0	0	105	0	7	0	0	0	123	0	0	84
Lane Group Flow (vph)	87	1196	221	245	1314	0	473	0	334	239	0	8
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2	8	1	6		8		1	4		5
Permitted Phases			2									
Actuated Green, G (s)	8.4	34.6	61.6	22.4	48.6		27.0		22.4	27.0		8.4
Effective Green, g (s)	8.4	34.6	61.6	22.4	48.6		27.0		22.4	27.0		8.4
Actuated g/C Ratio	0.08	0.35	0.62	0.22	0.49		0.27		0.22	0.27		0.08
Clearance Time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	148	1224	975	768	1696		477		354	477		132
v/s Ratio Prot	0.05	c0.34	0.06	0.07	0.38		c0.27		c0.21	0.14		0.00
v/s Ratio Perm			0.08									
v/c Ratio	0.59	0.98	0.23	0.32	0.77		0.99		0.94	0.50		0.06
Uniform Delay, d1	44.1	32.3	8.6	32.4	21.2		36.4		38.2	30.8		42.2
Progression Factor	1.10	0.68	0.38	0.79	0.84		1.00		1.00	1.00		1.00
Incremental Delay, d2	3.8	15.9	0.1	0.2	2.6		38.9		33.5	0.8		0.2
Delay (s)	52.2	38.0	3.4	25.9	20.4		75.2		71.7	31.6		42.3
Level of Service	D	D	A	C	C		E		E	C		D
Approach Delay (s)		31.7			21.3			73.5			34.6	
Approach LOS		C			C			E			C	

Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

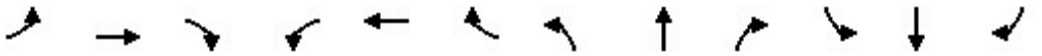
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	420	1320	1185	115	50	255
Future Volume (veh/h)	420	1320	1185	115	50	255
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	457	1435	1288	125	54	277
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	477	2578	1745	778	293	553
Arrive On Green	0.37	1.00	0.49	0.49	0.16	0.16
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	457	1435	1288	125	54	277
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	16.1	0.0	28.9	4.4	2.6	13.8
Cycle Q Clear(g_c), s	16.1	0.0	28.9	4.4	2.6	13.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	477	2578	1745	778	293	553
V/C Ratio(X)	0.96	0.56	0.74	0.16	0.18	0.50
Avail Cap(c_a), veh/h	541	2578	1745	778	410	657
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.29	0.29	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	20.3	14.1	36.0	25.7
Incr Delay (d2), s/veh	11.2	0.3	2.8	0.4	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.1	11.6	1.6	1.2	12.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.7	0.3	23.1	14.5	36.3	26.4
LnGrp LOS	C	A	C	B	D	C
Approach Vol, veh/h		1892	1413		331	
Approach Delay, s/veh		6.9	22.4		28.0	
Approach LOS		A	C		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.4	55.1		21.5		78.5
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	22.0	39.0		23.0		66.0
Max Q Clear Time (g_c+I1), s	18.1	30.9		15.8		2.0
Green Ext Time (p_c), s	0.3	4.0		0.7		9.5

Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	865	10	355	1000	240	155	275	420	385	160	25
Future Volume (veh/h)	5	865	10	355	1000	240	155	275	420	385	160	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	940	11	386	1087	261	168	299	457	418	174	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	12	1116	498	672	1838	820	337	375	476	487	517	79
Arrive On Green	0.01	0.31	0.31	0.39	1.00	1.00	0.08	0.11	0.11	0.14	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3091	472
Grp Volume(v), veh/h	5	940	11	386	1087	261	168	299	457	418	99	102
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1785
Q Serve(g_s), s	0.3	24.7	0.3	8.8	0.0	0.0	7.9	8.2	7.9	11.8	4.9	5.1
Cycle Q Clear(g_c), s	0.3	24.7	0.3	8.8	0.0	0.0	7.9	8.2	7.9	11.8	4.9	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	12	1116	498	672	1838	820	337	375	476	487	297	299
V/C Ratio(X)	0.43	0.84	0.02	0.57	0.59	0.32	0.50	0.80	0.96	0.86	0.33	0.34
Avail Cap(c_a), veh/h	89	1116	498	672	1838	820	337	391	483	622	366	368
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.43	0.43	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	32.0	12.2	27.3	0.0	0.0	36.7	43.7	12.5	42.0	36.7	36.8
Incr Delay (d2), s/veh	23.5	7.8	0.1	0.5	0.6	0.4	0.4	10.7	30.9	7.9	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	11.2	0.2	3.1	0.2	0.1	3.7	4.1	8.9	5.5	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.0	39.8	12.3	27.8	0.6	0.4	37.1	54.3	43.4	49.9	37.4	37.4
LnGrp LOS	E	D	B	C	A	A	D	D	D	D	D	D
Approach Vol, veh/h		956			1734			924			619	
Approach Delay, s/veh		39.6			6.6			45.8			45.8	
Approach LOS		D			A			D			D	

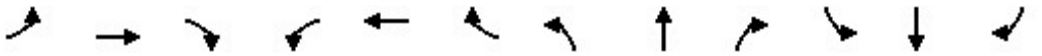
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	58.2	13.4	23.2	26.0	37.4	19.6	17.1
Change Period (Y+Rc), s	4.5	6.5	5.5	6.5	6.5	* 6	5.5	* 6.5
Max Green Setting (Gmax), s	5.0	43.5	7.9	20.6	17.6	* 31	18.0	* 11
Max Q Clear Time (g_c+I1), s	2.3	2.0	9.9	7.1	10.8	26.7	13.8	10.2
Green Ext Time (p_c), s	0.0	22.4	0.0	0.8	0.8	3.4	0.3	0.3

Intersection Summary	
HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

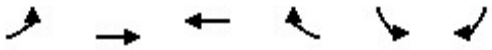
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1235	305	470	1215	110	360	0	270	290	0	20
Future Volume (vph)	130	1235	305	470	1215	110	360	0	270	290	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3539	1583	3433	3495		1770		1583	1770		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3539	1583	3433	3495		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	1342	332	511	1321	120	391	0	293	315	0	22
RTOR Reduction (vph)	0	0	25	0	7	0	0	0	72	0	0	20
Lane Group Flow (vph)	141	1342	307	511	1434	0	391	0	221	315	0	2
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2	8	1	6		8		1	4		5
Permitted Phases			2									
Actuated Green, G (s)	10.5	43.0	67.2	16.8	49.3		24.2		16.8	24.2		10.5
Effective Green, g (s)	10.5	43.0	67.2	16.8	49.3		24.2		16.8	24.2		10.5
Actuated g/C Ratio	0.10	0.43	0.67	0.17	0.49		0.24		0.17	0.24		0.10
Clearance Time (s)	5.0	6.0	5.0	5.0	6.0		5.0		5.0	5.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	185	1521	1063	576	1723		428		265	428		166
v/s Ratio Prot	0.08	c0.38	0.07	c0.15	0.41		c0.22		0.14	0.18		0.00
v/s Ratio Perm			0.12									
v/c Ratio	0.76	0.88	0.29	0.89	0.83		0.91		0.83	0.74		0.01
Uniform Delay, d1	43.5	26.2	6.7	40.7	21.8		36.9		40.2	35.0		40.1
Progression Factor	1.00	0.63	1.22	0.74	1.20		1.00		1.00	1.00		1.00
Incremental Delay, d2	11.2	5.2	0.1	8.0	2.3		23.7		19.5	6.5		0.0
Delay (s)	54.6	21.7	8.2	37.9	28.5		60.5		59.8	41.4		40.1
Level of Service	D	C	A	D	C		E		E	D		D
Approach Delay (s)		21.8			31.0			60.2			41.3	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	340	1455	1215	20	165	580
Future Volume (veh/h)	340	1455	1215	20	165	580
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	370	1582	1321	22	179	630
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	404	2274	1499	668	445	663
Arrive On Green	0.11	0.43	0.42	0.42	0.25	0.25
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	370	1582	1321	22	179	630
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	14.6	36.2	34.2	0.8	8.4	25.0
Cycle Q Clear(g_c), s	14.6	36.2	34.2	0.8	8.4	25.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	404	2274	1499	668	445	663
V/C Ratio(X)	0.92	0.70	0.88	0.03	0.40	0.95
Avail Cap(c_a), veh/h	461	2274	1499	668	445	663
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	20.6	26.6	17.0	31.3	28.1
Incr Delay (d2), s/veh	9.8	0.7	7.8	0.1	0.6	23.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	15.8	15.0	0.3	3.6	32.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.8	21.4	34.4	17.0	31.9	51.5
LnGrp LOS	D	C	C	B	C	D
Approach Vol, veh/h		1952	1343		809	
Approach Delay, s/veh		24.8	34.1		47.1	
Approach LOS		C	C		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	21.8	48.2		30.0		70.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	20.0	39.0		25.0		64.0
Max Q Clear Time (g_c+I1), s	16.6	36.2		27.0		38.2
Green Ext Time (p_c), s	0.2	1.7		0.0		9.6

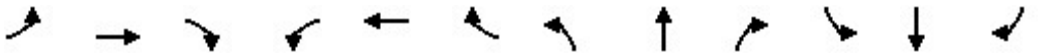
Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	1975	335	20	140	2170	50	70	5	180	15	5
Future Volume (vph)	5	1975	335	20	140	2170	50	70	5	180	15	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.98			1.00	1.00			1.00	0.85	1.00	0.93
Flt Protected	0.95	1.00			0.95	1.00			0.96	1.00	0.95	1.00
Satd. Flow (prot)	1906	5192			1585	5043			1661	1478	1770	1724
Flt Permitted	0.06	1.00			0.95	1.00			0.73	1.00	0.70	1.00
Satd. Flow (perm)	121	5192			1585	5043			1273	1478	1313	1724
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2147	364	22	152	2359	54	76	5	196	16	5
RTOR Reduction (vph)	0	18	0	0	0	2	0	0	0	174	0	4
Lane Group Flow (vph)	5	2493	0	0	174	2411	0	0	81	22	16	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	69.7	69.7			18.1	94.3			13.2	13.2	13.2	13.2
Effective Green, g (s)	69.7	69.7			18.1	94.3			13.2	13.2	13.2	13.2
Actuated g/C Ratio	0.58	0.58			0.15	0.79			0.11	0.11	0.11	0.11
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	70	3015			239	3962			140	162	144	189
v/s Ratio Prot		c0.48			0.11	c0.48						0.00
v/s Ratio Perm	0.04								c0.06	0.01	0.01	
v/c Ratio	0.07	0.83			0.73	0.61			0.58	0.13	0.11	0.03
Uniform Delay, d1	11.0	20.3			48.6	5.3			50.8	48.2	48.1	47.7
Progression Factor	1.00	1.00			1.20	0.59			1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	2.8			9.7	0.5			6.8	0.5	0.5	0.1
Delay (s)	13.0	23.0			68.3	3.6			57.5	48.7	48.6	47.8
Level of Service	B	C			E	A			E	D	D	D
Approach Delay (s)		23.0				8.0			51.3			48.3
Approach LOS		C				A			D			D

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	5
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



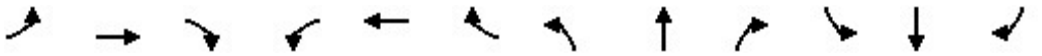
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1135	1055	0	2195	0	0	0	0	280	0	185
Future Volume (veh/h)	0	1135	1055	0	2195	0	0	0	0	280	0	185
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1234	0	0	2386	0				304	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2796		0	3953	0				385	0	
Arrive On Green	0.00	1.00	0.00	0.00	0.80	0.00				0.11	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1234	0	0	2386	0				304	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	0.0	0.0	0.0	22.6	0.0				9.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	22.6	0.0				9.9	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2796		0	3953	0				385	0	
V/C Ratio(X)	0.00	0.44		0.00	0.60	0.00				0.79	0.00	
Avail Cap(c_a), veh/h	0	2796		0	3953	0				851	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.49	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	4.8	0.0				52.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.7	0.0				3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	5.2	0.0				4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	5.5	0.0				55.9	0.0	0.0
LnGrp LOS	A	A		A	A	A				E	A	
Approach Vol, veh/h		1234	A		2386						304	A
Approach Delay, s/veh		0.2			5.5						55.9	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		101.6		18.4		101.6						
Change Period (Y+Rc), s		6.0		5.5		6.0						
Max Green Setting (Gmax), s		80.0		28.5		80.0						
Max Q Clear Time (g_c+I1), s		24.6		11.9		2.0						
Green Ext Time (p_c), s		4.0		0.9		1.5						

Intersection Summary		
HCM 6th Ctrl Delay	7.7	
HCM 6th LOS	A	

Notes

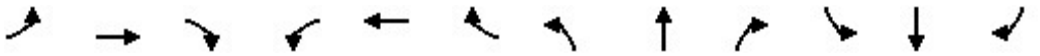
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	985	0	0	850	15	0	120	220	30	0	270
Future Volume (vph)	335	985	0	0	850	15	0	120	220	30	0	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			1.00			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5148			1867	1587	1783		1595
Flt Permitted	0.20	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	354	3504			5148			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1071	0	0	924	16	0	130	239	33	0	293
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	113	0	0	18
Lane Group Flow (vph)	364	1071	0	0	939	0	0	130	126	33	0	275
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	74.0	74.0			44.8			20.7	20.7	6.8		64.2
Effective Green, g (s)	74.0	74.0			44.8			20.7	20.7	6.8		52.2
Actuated g/C Ratio	0.62	0.62			0.37			0.17	0.17	0.06		0.44
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	494	2160			1921			322	273	101		693
v/s Ratio Prot	c0.15	0.31			0.18			0.07		0.02		c0.17
v/s Ratio Perm	c0.30								c0.08			
v/c Ratio	0.74	0.50			0.49			0.40	0.46	0.33		0.40
Uniform Delay, d1	15.3	12.7			28.8			44.2	44.7	54.4		23.1
Progression Factor	0.89	0.38			0.90			1.00	1.00	1.00		1.00
Incremental Delay, d2	6.2	0.7			0.7			2.3	3.5	5.3		0.8
Delay (s)	19.9	5.5			26.7			46.5	48.1	59.7		23.9
Level of Service	B	A			C			D	D	E		C
Approach Delay (s)		9.2			26.7			47.6			27.5	
Approach LOS		A			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1225	5	5	825	10	10	5	10	80	5	30
Future Volume (vph)	5	1225	5	5	825	10	10	5	10	80	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00		0.97	
Satd. Flow (prot)	1702	1852		1787	1815			1801	1531		1645	
Flt Permitted	0.26	1.00		0.08	1.00			0.85	1.00		0.78	
Satd. Flow (perm)	471	1852		148	1815			1588	1531		1332	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1332	5	5	897	11	11	5	11	87	5	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	11	0
Lane Group Flow (vph)	5	1337	0	5	908	0	0	16	1	0	114	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	97.1	97.1		97.1	97.1			14.9	14.9		14.9	
Effective Green, g (s)	97.1	97.1		97.1	97.1			14.9	14.9		14.9	
Actuated g/C Ratio	0.81	0.81		0.81	0.81			0.12	0.12		0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	381	1498		119	1468			197	190		165	
v/s Ratio Prot		c0.72			0.50							
v/s Ratio Perm	0.01			0.03				0.01	0.00		c0.09	
v/c Ratio	0.01	0.89		0.04	0.62			0.08	0.01		0.69	
Uniform Delay, d1	2.2	7.9		2.3	4.4			46.5	46.1		50.3	
Progression Factor	0.47	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	6.3		0.7	2.0			0.2	0.0		11.3	
Delay (s)	1.1	14.2		2.9	6.3			46.7	46.1		61.7	
Level of Service	A	B		A	A			D	D		E	
Approach Delay (s)		14.1			6.3			46.4			61.7	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

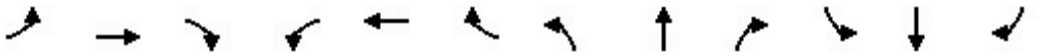
c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	2070	75	20	290	2340	20	90	5	145	35	5
Future Volume (vph)	5	2070	75	20	290	2340	20	90	5	145	35	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	13	13	12	9	12	12	10	10	10	11	11
Grade (%)		-2%				1%			0%			-7%
Total Lost time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.91			1.00	0.91			1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	1.00			1.00	0.85	1.00	0.90
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	0.95	1.00
Satd. Flow (prot)	1906	5279			1585	5053			1660	1478	1770	1671
Flt Permitted	0.07	1.00			0.95	1.00			0.72	1.00	0.69	1.00
Satd. Flow (perm)	138	5279			1585	5053			1260	1478	1287	1671
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2250	82	22	315	2543	22	98	5	158	38	5
RTOR Reduction (vph)	0	3	0	0	0	1	0	0	0	139	0	10
Lane Group Flow (vph)	5	2329	0	0	337	2564	0	0	103	19	38	6
Turn Type	Perm	NA		Prot	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6							4		4	8	
Actuated Green, G (s)	58.2	58.2			28.6	93.3			14.2	14.2	14.2	14.2
Effective Green, g (s)	58.2	58.2			28.6	93.3			14.2	14.2	14.2	14.2
Actuated g/C Ratio	0.49	0.49			0.24	0.78			0.12	0.12	0.12	0.12
Clearance Time (s)	6.0	6.0			6.5	6.0			6.5	6.5	6.5	6.5
Vehicle Extension (s)	0.2	0.2			5.0	0.2			4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	66	2560			377	3928			149	174	152	197
v/s Ratio Prot		c0.44			c0.21	0.51						0.00
v/s Ratio Perm	0.04								c0.08	0.01	0.03	
v/c Ratio	0.08	0.91			0.89	0.65			0.69	0.11	0.25	0.03
Uniform Delay, d1	16.5	28.5			44.2	6.0			50.8	47.2	48.1	46.8
Progression Factor	1.00	1.00			1.30	0.75			1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	6.2			16.1	0.5			13.9	0.4	1.2	0.1
Delay (s)	18.7	34.6			73.6	5.0			64.7	47.6	49.2	46.9
Level of Service	B	C			E	A			E	D	D	D
Approach Delay (s)		34.6				13.0			54.4			48.6
Approach LOS		C				B			D			D

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



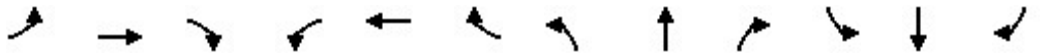
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1050	1220	0	2430	0	0	0	0	495	0	240
Future Volume (veh/h)	0	1050	1220	0	2430	0	0	0	0	495	0	240
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1847	1921	0	1817	0				1939	0	1790
Adj Flow Rate, veh/h	0	1141	0	0	2641	0				538	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	0				2	0	2
Cap, veh/h	0	2551		0	3606	0				635	0	
Arrive On Green	0.00	0.24	0.00	0.00	0.73	0.00				0.18	0.00	0.00
Sat Flow, veh/h	0	3601	1628	0	5288	0				3583	0	1517
Grp Volume(v), veh/h	0	1141	0	0	2641	0				538	0	0
Grp Sat Flow(s),veh/h/ln	0	1754	1628	0	1654	0				1791	0	1517
Q Serve(g_s), s	0.0	33.2	0.0	0.0	37.3	0.0				17.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	33.2	0.0	0.0	37.3	0.0				17.4	0.0	0.0
Prop In Lane	0.00		1.00	0.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2551		0	3606	0				635	0	
V/C Ratio(X)	0.00	0.45		0.00	0.73	0.00				0.85	0.00	
Avail Cap(c_a), veh/h	0	2551		0	3606	0				1060	0	
HCM Platoon Ratio	1.00	0.33	0.33	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.36	0.00	0.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.1	0.0	0.0	9.6	0.0				47.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.4	0.0				3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.5	0.0	0.0	10.9	0.0				8.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.3	0.0	0.0	10.9	0.0				51.2	0.0	0.0
LnGrp LOS	A	C		A	B	A				D	A	
Approach Vol, veh/h		1141	A		2641						538	A
Approach Delay, s/veh		25.3			10.9						51.2	
Approach LOS		C			B						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		93.2		26.8		93.2						
Change Period (Y+Rc), s		6.0		5.5		6.0						
Max Green Setting (Gmax), s		73.0		35.5		73.0						
Max Q Clear Time (g_c+I1), s		39.3		19.4		35.2						
Green Ext Time (p_c), s		4.8		1.8		1.3						

Intersection Summary		
HCM 6th Ctrl Delay		19.7
HCM 6th LOS		B

Notes

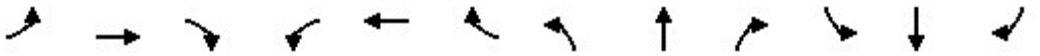
Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	1180	0	0	1055	45	0	275	165	35	0	415
Future Volume (vph)	225	1180	0	0	1055	45	0	275	165	35	0	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	13	13	13	13	13	13
Grade (%)		2%			-3%			6%			5%	
Total Lost time (s)	4.5	6.5			6.5			6.0	6.0	6.0		4.5
Lane Util. Factor	1.00	0.95			0.91			1.00	1.00	1.00		1.00
Frt	1.00	1.00			0.99			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (prot)	1694	3504			5130			1867	1587	1783		1595
Flt Permitted	0.12	1.00			1.00			1.00	1.00	0.95		1.00
Satd. Flow (perm)	209	3504			5130			1867	1587	1783		1595
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1283	0	0	1147	49	0	299	179	38	0	451
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	98	0	0	18
Lane Group Flow (vph)	245	1283	0	0	1192	0	0	299	81	38	0	433
Turn Type	pm+pt	NA			NA			NA	Perm	Prot		custom
Protected Phases	1	6			2			4		3		1 3 4
Permitted Phases	6								4			
Actuated Green, G (s)	67.5	67.5			43.2			27.6	27.6	6.4		65.8
Effective Green, g (s)	67.5	67.5			43.2			27.6	27.6	6.4		53.8
Actuated g/C Ratio	0.56	0.56			0.36			0.23	0.23	0.05		0.45
Clearance Time (s)	4.5	6.5			6.5			6.0	6.0	6.0		
Vehicle Extension (s)	5.0	0.2			0.2			6.0	6.0	6.0		
Lane Grp Cap (vph)	362	1971			1846			429	365	95		715
v/s Ratio Prot	0.11	c0.37			0.23			c0.16		0.02		c0.27
v/s Ratio Perm	c0.27								0.05			
v/c Ratio	0.68	0.65			0.65			0.70	0.22	0.40		0.61
Uniform Delay, d1	22.3	18.1			32.0			42.4	37.5	54.9		25.1
Progression Factor	1.04	0.39			0.88			1.00	1.00	1.00		1.00
Incremental Delay, d2	5.7	1.5			1.2			7.2	0.9	7.6		2.1
Delay (s)	29.0	8.6			29.3			49.6	38.4	62.6		27.2
Level of Service	C	A			C			D	D	E		C
Approach Delay (s)		11.9			29.3			45.4			30.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

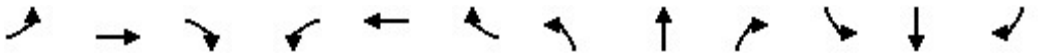
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1330	15	5	1035	10	5	5	10	25	5	60
Future Volume (vph)	35	1330	15	5	1035	10	5	5	10	25	5	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	11	11	12	12	11	10	10	10
Grade (%)		1%			-2%			0%			-3%	
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00		0.99	
Satd. Flow (prot)	1702	1850		1787	1816			1817	1531		1583	
Flt Permitted	0.20	1.00		0.05	1.00			0.86	1.00		0.91	
Satd. Flow (perm)	350	1850		101	1816			1609	1531		1455	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1446	16	5	1125	11	5	5	11	27	5	65
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	60	0
Lane Group Flow (vph)	38	1462	0	5	1136	0	0	10	1	0	37	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)	102.0	102.0		102.0	102.0			10.0	10.0		10.0	
Effective Green, g (s)	102.0	102.0		102.0	102.0			10.0	10.0		10.0	
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.08	0.08		0.08	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	297	1572		85	1543			134	127		121	
v/s Ratio Prot		c0.79			0.63							
v/s Ratio Perm	0.11			0.05				0.01	0.00		c0.03	
v/c Ratio	0.13	0.93		0.06	0.74			0.07	0.01		0.31	
Uniform Delay, d1	1.5	6.4		1.4	3.6			50.7	50.4		51.8	
Progression Factor	0.12	1.77		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	8.3		1.3	3.2			0.2	0.0		1.5	
Delay (s)	0.3	19.7		2.7	6.8			51.0	50.5		53.2	
Level of Service	A	B		A	A			D	D		D	
Approach Delay (s)		19.2			6.8			50.7			53.2	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	930	60	390	500	105	90	125	370	460	715	290
Future Volume (vph)	105	930	60	390	500	105	90	125	370	460	715	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.20	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	382	3592	1607	884	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	1011	65	424	543	114	98	136	402	500	777	315
RTOR Reduction (vph)	0	0	37	0	0	46	0	0	133	0	0	0
Lane Group Flow (vph)	114	1011	28	424	543	68	98	136	269	500	777	315
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	14.6	52.5	63.5	22.2	60.6	90.1	30.8	19.8	74.7	56.3	38.8	150.0
Effective Green, g (s)	14.6	52.5	63.5	22.2	60.6	90.1	30.8	19.8	74.7	56.3	38.8	150.0
Actuated g/C Ratio	0.10	0.35	0.42	0.15	0.40	0.60	0.21	0.13	0.50	0.38	0.26	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	168	1213	657	518	1458	970	182	474	875	509	924	1599
v/s Ratio Prot	0.07	c0.29	0.00	c0.12	0.15	0.01	0.04	0.04	0.05	c0.19	0.22	
v/s Ratio Perm			0.01			0.03	0.07		0.12	c0.18		0.20
v/c Ratio	0.68	0.83	0.04	0.82	0.37	0.07	0.54	0.29	0.31	0.98	0.84	0.20
Uniform Delay, d1	65.4	44.7	25.4	61.9	31.4	12.5	50.4	58.7	22.3	42.8	52.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.4	6.8	0.0	9.7	0.7	0.0	3.0	0.3	0.2	35.1	7.0	0.3
Delay (s)	75.8	51.5	25.4	71.7	32.1	12.5	53.5	59.1	22.5	77.9	59.7	0.3
Level of Service	E	D	C	E	C	B	D	E	C	E	E	A
Approach Delay (s)		52.4			45.6			35.1			53.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	325	875	35	10	555	80	50	5	10	40	5
Future Volume (vph)	5	325	875	35	10	555	80	50	5	10	40	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	1.00		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	0.98		1.00	0.90			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.96
Satd. Flow (prot)		1770	1852		1805	3542		1736	1639			1723
Flt Permitted		0.26	1.00		0.30	1.00		0.73	1.00			0.74
Satd. Flow (perm)		487	1852		578	3542		1326	1639			1327
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	353	951	38	11	603	87	54	5	11	43	5
RTOR Reduction (vph)	0	0	1	0	0	8	0	0	10	0	0	0
Lane Group Flow (vph)	0	358	988	0	11	682	0	54	6	0	0	48
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		88.8	88.8		44.4	44.4		8.7	8.7			8.7
Effective Green, g (s)		88.8	88.8		44.4	44.4		8.7	8.7			8.7
Actuated g/C Ratio		0.81	0.81		0.40	0.40		0.08	0.08			0.08
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		841	1495		233	1429		104	129			104
v/s Ratio Prot		0.15	c0.53			0.19			0.00			
v/s Ratio Perm		0.20			0.02			0.04				0.04
v/c Ratio		0.43	0.66		0.05	0.48		0.52	0.05			0.46
Uniform Delay, d1		5.0	4.4		19.9	24.2		48.6	46.8			48.4
Progression Factor		0.85	0.55		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		0.3	2.1		0.4	1.1		4.3	0.1			3.2
Delay (s)		4.6	4.5		20.3	25.4		53.0	47.0			51.6
Level of Service		A	A		C	C		D	D			D
Approach Delay (s)			4.5			25.3			51.6			38.4
Approach LOS			A			C			D			D

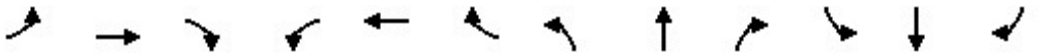
Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	535
Future Volume (vph)	535
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	582
RTOR Reduction (vph)	32
Lane Group Flow (vph)	550
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	47.1
Effective Green, g (s)	47.1
Actuated g/C Ratio	0.43
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	655
v/s Ratio Prot	c0.29
v/s Ratio Perm	0.07
v/c Ratio	0.84
Uniform Delay, d1	28.1
Progression Factor	1.00
Incremental Delay, d2	9.3
Delay (s)	37.4
Level of Service	D
Approach Delay (s)	
Approach LOS	

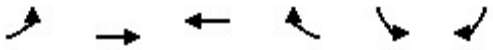
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	460	0	0	1090	0	0	0	0
Future Volume (vph)	0	0	0	0	460	0	0	1090	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5			4.5				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3539			3539				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3539			3539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	500	0	0	1185	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	500	0	0	1185	0	0	0	0
Turn Type					NA			NA				
Protected Phases					8			2				
Permitted Phases												
Actuated Green, G (s)					30.5			64.5				
Effective Green, g (s)					30.5			64.5				
Actuated g/C Ratio					0.28			0.59				
Clearance Time (s)					4.5			4.5				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)					981			2075				
v/s Ratio Prot					c0.14			c0.33				
v/s Ratio Perm												
v/c Ratio					0.51			0.57				
Uniform Delay, d1					33.5			14.1				
Progression Factor					0.60			1.00				
Incremental Delay, d2					1.7			1.1				
Delay (s)					21.9			15.3				
Level of Service					C			B				
Approach Delay (s)		0.0			21.9			15.3			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1090	0	0	190	0
Future Volume (vph)	0	1090	0	0	190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	
Lane Util. Factor		0.95			0.97	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		3539			3433	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		3539			3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1185	0	0	207	0
RTOR Reduction (vph)	0	0	0	0	132	0
Lane Group Flow (vph)	0	1185	0	0	75	0
Turn Type		NA			Prot	
Protected Phases		2 12			4	
Permitted Phases						
Actuated Green, G (s)		73.0			30.5	
Effective Green, g (s)		73.0			30.5	
Actuated g/C Ratio		0.66			0.28	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)		2348			951	
v/s Ratio Prot		c0.33			c0.02	
v/s Ratio Perm						
v/c Ratio		0.50			0.08	
Uniform Delay, d1		9.4			29.4	
Progression Factor		0.02			1.00	
Incremental Delay, d2		0.6			0.0	
Delay (s)		0.9			29.4	
Level of Service		A			C	
Approach Delay (s)		0.9	0.0		29.4	
Approach LOS		A	A		C	

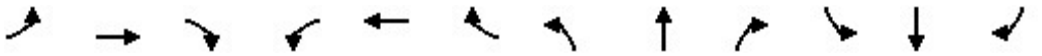
Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1000	110	0
Future Volume (vph)	0	0	0	1000	110	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3539	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3539	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1087	120	0
RTOR Reduction (vph)	0	0	0	0	74	0
Lane Group Flow (vph)	0	0	0	1087	46	0
Turn Type				NA	Prot	
Protected Phases				6 16	8	
Permitted Phases						
Actuated Green, G (s)				61.0	42.5	
Effective Green, g (s)				61.0	42.5	
Actuated g/C Ratio				0.55	0.39	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				1962	1326	
v/s Ratio Prot				c0.31	c0.01	
v/s Ratio Perm						
v/c Ratio				0.55	0.03	
Uniform Delay, d1				15.8	21.0	
Progression Factor				0.00	1.00	
Incremental Delay, d2				0.9	0.0	
Delay (s)				0.9	21.0	
Level of Service				A	C	
Approach Delay (s)	0.0			0.9	21.0	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑	
Traffic Volume (vph)	0	640	0	0	0	0	0	0	0	0	1000	0
Future Volume (vph)	0	640	0	0	0	0	0	0	0	0	1000	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5									4.5	
Lane Util. Factor		0.95									0.95	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3539									3539	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3539									3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	696	0	0	0	0	0	0	0	0	1087	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	696	0	0	0	0	0	0	0	0	1087	0
Turn Type		NA									NA	
Protected Phases		4									6	
Permitted Phases												
Actuated Green, G (s)		36.5									52.5	
Effective Green, g (s)		36.5									52.5	
Actuated g/C Ratio		0.33									0.48	
Clearance Time (s)		4.5									4.5	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		1174									1689	
v/s Ratio Prot		c0.20									c0.31	
v/s Ratio Perm												
v/c Ratio		0.59									0.64	
Uniform Delay, d1		30.6									21.7	
Progression Factor		0.85									0.93	
Incremental Delay, d2		2.0									1.6	
Delay (s)		28.1									21.7	
Level of Service		C									C	
Approach Delay (s)		28.1			0.0			0.0			21.7	
Approach LOS		C			A			A			C	

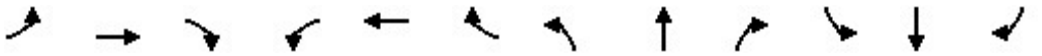
Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	640	0	0	0	0	600
Future Volume (vph)	640	0	0	0	0	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5					4.5
Lane Util. Factor	0.95					0.88
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	3539					2787
Flt Permitted	1.00					1.00
Satd. Flow (perm)	3539					2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	696	0	0	0	0	652
RTOR Reduction (vph)	0	0	0	0	0	82
Lane Group Flow (vph)	696	0	0	0	0	570
Turn Type	NA					Prot
Protected Phases	4 10					2
Permitted Phases						
Actuated Green, G (s)	45.0					58.5
Effective Green, g (s)	45.0					58.5
Actuated g/C Ratio	0.41					0.53
Clearance Time (s)						4.5
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)	1447					1482
v/s Ratio Prot	c0.20					c0.20
v/s Ratio Perm						
v/c Ratio	0.48					0.38
Uniform Delay, d1	23.9					15.2
Progression Factor	0.00					1.00
Incremental Delay, d2	0.9					0.2
Delay (s)	0.9					15.3
Level of Service	A					B
Approach Delay (s)	0.9			0.0	15.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	500	160	265	870	285	50	790	485	100	260	125
Future Volume (vph)	175	500	160	265	870	285	50	790	485	100	260	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		4%			-4%			-3%			-2%	
Total Lost time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1734	3468	1552	3502	3610	1615	1796	3592	1607	1787	3575	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.55	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	1734	3468	1552	3502	3610	1615	1033	3592	1607	176	3575	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	543	174	288	946	310	54	859	527	109	283	136
RTOR Reduction (vph)	0	0	100	0	0	44	0	0	266	0	0	0
Lane Group Flow (vph)	190	543	74	288	946	266	54	859	261	109	283	136
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	custom	pm+pt	NA	Free
Protected Phases	1	6	3	5	2	7	3	8	5	7	4	
Permitted Phases			6			2	8		6	4		Free
Actuated Green, G (s)	20.1	56.9	64.2	17.5	54.8	64.6	47.1	39.8	74.4	52.6	42.8	150.0
Effective Green, g (s)	20.1	56.9	64.2	17.5	54.8	64.6	47.1	39.8	74.4	52.6	42.8	150.0
Actuated g/C Ratio	0.13	0.38	0.43	0.12	0.37	0.43	0.31	0.27	0.50	0.35	0.29	1.00
Clearance Time (s)	6.5	7.5	6.5	7.0	7.5	7.0	6.5	4.5	7.0	7.0	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	232	1315	664	408	1318	695	361	953	872	166	1020	1599
v/s Ratio Prot	c0.11	0.16	0.01	0.08	c0.26	0.02	0.01	c0.24	c0.03	c0.04	0.08	
v/s Ratio Perm			0.04			0.14	0.04		0.13	c0.19		0.09
v/c Ratio	0.82	0.41	0.11	0.71	0.72	0.38	0.15	0.90	0.30	0.66	0.28	0.09
Uniform Delay, d1	63.2	34.3	25.8	63.8	40.9	29.1	36.4	53.2	22.4	38.4	41.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.7	1.0	0.1	5.5	3.4	0.4	0.2	11.5	0.2	9.0	0.1	0.1
Delay (s)	82.9	35.2	25.9	69.3	44.3	29.5	36.6	64.7	22.6	47.4	41.7	0.1
Level of Service	F	D	C	E	D	C	D	E	C	D	D	A
Approach Delay (s)		43.4			46.0			48.2			32.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

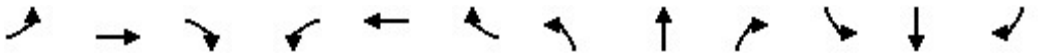
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	10	355	905	55	5	830	25	50	5	5	10	10
Future Volume (vph)	10	355	905	55	5	830	25	50	5	5	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Grade (%)			0%			-4%			-3%			0%
Total Lost time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Lane Util. Factor		1.00	1.00		1.00	0.95		1.00	1.00			1.00
Frt		1.00	0.99		1.00	1.00		1.00	0.93			1.00
Flt Protected		0.95	1.00		0.95	1.00		0.95	1.00			0.98
Satd. Flow (prot)		1770	1847		1805	3594		1736	1691			1757
Flt Permitted		0.20	1.00		0.29	1.00		0.74	1.00			0.84
Satd. Flow (perm)		367	1847		549	3594		1358	1691			1507
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	386	984	60	5	902	27	54	5	5	11	11
RTOR Reduction (vph)	0	0	1	0	0	2	0	0	5	0	0	0
Lane Group Flow (vph)	0	397	1043	0	5	927	0	54	5	0	0	22
Turn Type	pm+pt	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA
Protected Phases	1!	1	6			2			8			4
Permitted Phases	6!	6			2			8			4	
Actuated Green, G (s)		98.5	98.5		58.1	58.1		9.0	9.0			9.0
Effective Green, g (s)		98.5	98.5		58.1	58.1		9.0	9.0			9.0
Actuated g/C Ratio		0.82	0.82		0.48	0.48		0.08	0.08			0.08
Clearance Time (s)		6.0	6.0		6.0	6.0		6.5	6.5			6.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)		703	1516		265	1740		101	126			113
v/s Ratio Prot		0.16	c0.56			0.26			0.00			
v/s Ratio Perm		0.30			0.01			0.04				0.01
v/c Ratio		0.56	0.69		0.02	0.53		0.53	0.04			0.19
Uniform Delay, d1		10.7	4.4		16.1	21.5		53.5	51.5			52.1
Progression Factor		0.93	0.63		1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		0.9	2.3		0.1	1.2		5.4	0.1			0.8
Delay (s)		10.9	5.1		16.2	22.7		58.8	51.6			52.9
Level of Service		B	A		B	C		E	D			D
Approach Delay (s)			6.7			22.7			57.7			45.6
Approach LOS			A			C			E			D

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	440
Future Volume (vph)	440
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1531
Flt Permitted	1.00
Satd. Flow (perm)	1531
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	478
RTOR Reduction (vph)	19
Lane Group Flow (vph)	459
Turn Type	pm+ov
Protected Phases	1!
Permitted Phases	4
Actuated Green, G (s)	43.4
Effective Green, g (s)	43.4
Actuated g/C Ratio	0.36
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	553
v/s Ratio Prot	c0.24
v/s Ratio Perm	0.06
v/c Ratio	0.83
Uniform Delay, d1	35.0
Progression Factor	1.00
Incremental Delay, d2	10.3
Delay (s)	45.2
Level of Service	D
Approach Delay (s)	
Approach LOS	

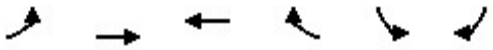
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	725	0	0	960	0	0	0	0
Future Volume (vph)	0	0	0	0	725	0	0	960	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5			4.5				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3539			3539				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3539			3539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	788	0	0	1043	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	788	0	0	1043	0	0	0	0
Turn Type					NA			NA				
Protected Phases					8			2				
Permitted Phases												
Actuated Green, G (s)					45.5			59.5				
Effective Green, g (s)					45.5			59.5				
Actuated g/C Ratio					0.38			0.50				
Clearance Time (s)					4.5			4.5				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)					1341			1754				
v/s Ratio Prot					c0.22			c0.29				
v/s Ratio Perm												
v/c Ratio					0.59			0.59				
Uniform Delay, d1					29.8			21.6				
Progression Factor					0.86			1.00				
Incremental Delay, d2					1.7			1.5				
Delay (s)					27.4			23.1				
Level of Service					C			C				
Approach Delay (s)		0.0			27.4			23.1			0.0	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	960	0	0	305	0
Future Volume (vph)	0	960	0	0	305	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	
Lane Util. Factor		0.95			0.97	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		3539			3433	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		3539			3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1043	0	0	332	0
RTOR Reduction (vph)	0	0	0	0	104	0
Lane Group Flow (vph)	0	1043	0	0	228	0
Turn Type		NA			Prot	
Protected Phases		2 12			4	
Permitted Phases						
Actuated Green, G (s)		68.0			45.5	
Effective Green, g (s)		68.0			45.5	
Actuated g/C Ratio		0.57			0.38	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)		2005			1301	
v/s Ratio Prot		c0.29			c0.07	
v/s Ratio Perm						
v/c Ratio		0.52			0.18	
Uniform Delay, d1		16.0			24.8	
Progression Factor		0.02			1.00	
Incremental Delay, d2		0.8			0.1	
Delay (s)		1.1			24.8	
Level of Service		A			C	
Approach Delay (s)		1.1	0.0		24.8	
Approach LOS		A	A		C	

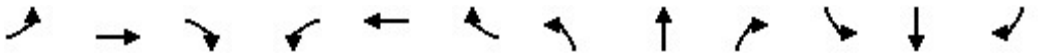
Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1015	365	0
Future Volume (vph)	0	0	0	1015	365	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5	
Lane Util. Factor				0.95	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				3539	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				3539	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1103	397	0
RTOR Reduction (vph)	0	0	0	0	65	0
Lane Group Flow (vph)	0	0	0	1103	332	0
Turn Type				NA	Prot	
Protected Phases				6 16	8	
Permitted Phases						
Actuated Green, G (s)				63.0	50.5	
Effective Green, g (s)				63.0	50.5	
Actuated g/C Ratio				0.52	0.42	
Clearance Time (s)					4.5	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				1857	1444	
v/s Ratio Prot				c0.31	c0.10	
v/s Ratio Perm						
v/c Ratio				0.59	0.23	
Uniform Delay, d1				19.7	22.3	
Progression Factor				0.00	1.00	
Incremental Delay, d2				1.0	0.1	
Delay (s)				1.0	22.4	
Level of Service				A	C	
Approach Delay (s)	0.0			1.0	22.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑	
Traffic Volume (vph)	0	785	0	0	0	0	0	0	0	0	1015	0
Future Volume (vph)	0	785	0	0	0	0	0	0	0	0	1015	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5									4.5	
Lane Util. Factor		0.95									0.95	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		3539									3539	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		3539									3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	853	0	0	0	0	0	0	0	0	1103	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	853	0	0	0	0	0	0	0	0	1103	0
Turn Type		NA									NA	
Protected Phases		4									6	
Permitted Phases												
Actuated Green, G (s)		44.5									54.5	
Effective Green, g (s)		44.5									54.5	
Actuated g/C Ratio		0.37									0.45	
Clearance Time (s)		4.5									4.5	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		1312									1607	
v/s Ratio Prot		c0.24									c0.31	
v/s Ratio Perm												
v/c Ratio		0.65									0.69	
Uniform Delay, d1		31.3									26.0	
Progression Factor		0.76									0.85	
Incremental Delay, d2		2.3									2.0	
Delay (s)		26.2									24.0	
Level of Service		C									C	
Approach Delay (s)		26.2			0.0			0.0			24.0	
Approach LOS		C			A			A			C	

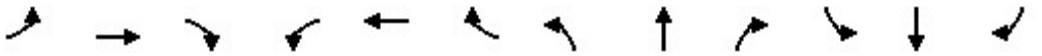
Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	785	0	0	0	0	540
Future Volume (vph)	785	0	0	0	0	540
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5					4.5
Lane Util. Factor	0.95					0.88
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	3539					2787
Flt Permitted	1.00					1.00
Satd. Flow (perm)	3539					2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	853	0	0	0	0	587
RTOR Reduction (vph)	0	0	0	0	0	64
Lane Group Flow (vph)	853	0	0	0	0	523
Turn Type	NA					Prot
Protected Phases	4 10					2
Permitted Phases						
Actuated Green, G (s)	53.0					60.5
Effective Green, g (s)	53.0					60.5
Actuated g/C Ratio	0.44					0.50
Clearance Time (s)						4.5
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)	1563					1405
v/s Ratio Prot	c0.24					c0.19
v/s Ratio Perm						
v/c Ratio	0.55					0.37
Uniform Delay, d1	24.6					18.2
Progression Factor	0.00					1.00
Incremental Delay, d2	1.0					0.2
Delay (s)	1.0					18.3
Level of Service	A					B
Approach Delay (s)	1.0			0.0	18.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

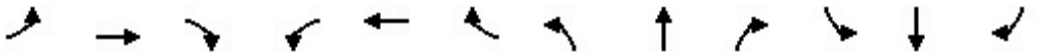
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	455	660	635	255	60	230	10	325	25	25	10
Future Volume (vph)	20	455	660	635	255	60	230	10	325	25	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3438		1681	1692	1583		1817	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.98	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3438		1681	1692	1583		1817	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	495	717	690	277	65	250	11	353	27	27	11
RTOR Reduction (vph)	0	0	382	0	17	0	0	0	0	0	0	10
Lane Group Flow (vph)	22	495	335	690	325	0	130	131	353	0	54	1
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Free	Split	NA	Perm
Protected Phases	1	6	3	5	2		3	3		4	4	
Permitted Phases			6						Free			4
Actuated Green, G (s)	3.1	22.8	39.4	19.4	40.6		16.6	16.6	90.0		6.2	6.2
Effective Green, g (s)	3.1	22.8	39.4	19.4	40.6		16.6	16.6	90.0		6.2	6.2
Actuated g/C Ratio	0.03	0.25	0.44	0.22	0.45		0.18	0.18	1.00		0.07	0.07
Clearance Time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	60	896	693	740	1550		310	312	1583		125	109
v/s Ratio Prot	0.01	c0.14	c0.09	c0.20	0.09		0.08	0.08			0.03	
v/s Ratio Perm			0.12						c0.22			0.00
v/c Ratio	0.37	0.55	0.48	0.93	0.21		0.42	0.42	0.22		0.43	0.01
Uniform Delay, d1	42.5	29.2	18.0	34.7	15.0		32.4	32.4	0.0		40.2	39.0
Progression Factor	1.00	1.00	1.00	0.81	0.60		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.8	2.5	0.7	17.0	0.3		1.3	1.2	0.3		0.9	0.0
Delay (s)	46.3	31.6	18.8	45.1	9.3		33.7	33.7	0.3		41.1	39.0
Level of Service	D	C	B	D	A		C	C	A		D	D
Approach Delay (s)		24.4			33.2			14.5			40.7	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	835	240	565	865	20	175	20	280	10	25	75
Future Volume (veh/h)	25	835	240	565	865	20	175	20	280	10	25	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	908	0	614	940	22	190	22	0	11	27	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	1275		653	1829	816	354	553		200	245	
Arrive On Green	0.05	0.72	0.00	0.19	0.51	0.51	0.11	0.16	0.00	0.01	0.07	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	27	908	0	614	940	22	190	22	0	11	27	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.3	13.3	0.0	15.8	15.7	0.6	8.6	0.5	0.0	0.5	0.6	0.0
Cycle Q Clear(g_c), s	1.3	13.3	0.0	15.8	15.7	0.6	8.6	0.5	0.0	0.5	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	1275		653	1829	816	354	553		200	245	
V/C Ratio(X)	0.56	0.71		0.94	0.51	0.03	0.54	0.04		0.06	0.11	
Avail Cap(c_a), veh/h	99	1275		653	1829	816	354	592		354	592	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.0	10.0	0.0	36.0	14.4	10.7	32.5	32.3	0.0	38.1	39.3	0.0
Incr Delay (d2), s/veh	3.7	3.4	0.0	21.8	1.0	0.1	0.9	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.5	0.0	8.3	5.9	0.2	3.7	0.2	0.0	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	13.4	0.0	57.8	15.4	10.8	33.4	32.3	0.0	38.2	39.5	0.0
LnGrp LOS	D	B		E	B	B	C	C		D	D	
Approach Vol, veh/h		935	A		1576			212	A		38	A
Approach Delay, s/veh		14.4			31.9			33.3			39.1	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	52.8	7.2	20.0	24.0	38.8	15.0	12.2
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	5.0	* 36	9.0	15.0	17.0	23.5	9.5	15.0
Max Q Clear Time (g_c+I1), s	3.3	17.7	2.5	2.5	17.8	15.3	10.6	2.6
Green Ext Time (p_c), s	0.0	6.1	0.0	0.0	0.0	3.7	0.0	0.1

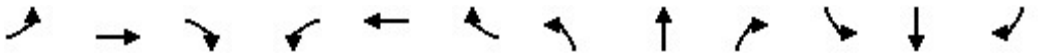
Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

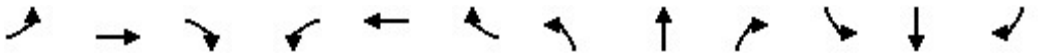
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	480	85	325	685	105	55	0	455	165	0	210
Future Volume (vph)	240	480	85	325	685	105	55	0	455	165	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	0.98		1.00	0.98		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3460		3433	3469		1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3460		3433	3469		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	522	92	353	745	114	60	0	495	179	0	228
RTOR Reduction (vph)	0	13	0	0	11	0	0	0	141	0	0	182
Lane Group Flow (vph)	261	601	0	353	848	0	60	0	354	179	0	46
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2		1	6		4		1	8		5
Permitted Phases												
Actuated Green, G (s)	18.0	37.7		24.8	44.5		14.0		24.8	14.0		18.0
Effective Green, g (s)	18.0	37.7		24.8	44.5		14.0		24.8	14.0		18.0
Actuated g/C Ratio	0.20	0.42		0.28	0.49		0.16		0.28	0.16		0.20
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	354	1449		945	1715		275		436	275		316
v/s Ratio Prot	0.15	0.17		0.10	c0.24		0.03		c0.22	c0.10		0.03
v/s Ratio Perm												
v/c Ratio	0.74	0.41		0.37	0.49		0.22		0.81	0.65		0.14
Uniform Delay, d1	33.8	18.4		26.3	15.2		33.2		30.4	35.7		29.7
Progression Factor	0.70	1.07		1.23	0.75		1.00		1.00	1.00		1.00
Incremental Delay, d2	7.3	0.8		0.2	0.9		0.4		10.9	5.4		0.2
Delay (s)	31.0	20.4		32.6	12.4		33.6		41.4	41.1		29.9
Level of Service	C	C		C	B		C		D	D		C
Approach Delay (s)		23.6			18.3			40.5			34.8	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

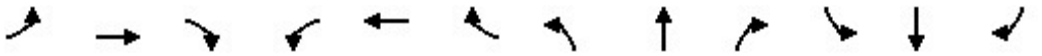
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	375	295	290	475	15	875	10	480	20	10	10
Future Volume (vph)	5	375	295	290	475	15	875	10	480	20	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5	4.0		6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3523		1681	1687	1583		1803	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3523		1681	1687	1583		1803	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	408	321	315	516	16	951	11	522	22	11	11
RTOR Reduction (vph)	0	0	160	0	2	0	0	0	0	0	0	10
Lane Group Flow (vph)	5	408	161	315	530	0	485	477	522	0	33	1
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Free	Split	NA	Perm
Protected Phases	1	6	3	5	2		3	3		4	4	
Permitted Phases			6						Free			4
Actuated Green, G (s)	1.3	17.7	45.2	15.5	33.4		27.5	27.5	90.0		4.3	4.3
Effective Green, g (s)	1.3	17.7	45.2	15.5	33.4		27.5	27.5	90.0		4.3	4.3
Actuated g/C Ratio	0.01	0.20	0.50	0.17	0.37		0.31	0.31	1.00		0.05	0.05
Clearance Time (s)	4.5	6.0	6.5	6.0	6.0		6.5	6.5			6.5	6.5
Vehicle Extension (s)	3.0	3.0	4.0	2.0	3.0		4.0	4.0			2.0	2.0
Lane Grp Cap (vph)	25	696	795	591	1307		513	515	1583		86	75
v/s Ratio Prot	0.00	c0.12	0.06	c0.09	0.15		c0.29	0.28			0.02	
v/s Ratio Perm			0.04						c0.33			0.00
v/c Ratio	0.20	0.59	0.20	0.53	0.41		0.95	0.93	0.33		0.38	0.01
Uniform Delay, d1	43.8	32.8	12.4	34.0	21.0		30.5	30.3	0.0		41.6	40.8
Progression Factor	1.00	1.00	1.00	1.13	1.09		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	3.6	0.2	0.4	0.9		26.7	23.0	0.6		1.0	0.0
Delay (s)	47.8	36.4	12.6	39.0	23.6		57.2	53.3	0.6		42.6	40.8
Level of Service	D	D	B	D	C		E	D	A		D	D
Approach Delay (s)		26.1			29.3			36.0			42.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1020	190	320	1070	10	185	5	690	50	25	75
Future Volume (veh/h)	65	1020	190	320	1070	10	185	5	690	50	25	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	1109	0	348	1163	11	201	5	0	54	27	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1636		307	1750	781	347	449		264	279	
Arrive On Green	0.05	0.46	0.00	0.09	0.49	0.49	0.09	0.13	0.00	0.04	0.08	0.00
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	71	1109	0	348	1163	11	201	5	0	54	27	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.5	22.0	0.0	8.0	22.2	0.3	8.5	0.1	0.0	2.5	0.6	0.0
Cycle Q Clear(g_c), s	3.5	22.0	0.0	8.0	22.2	0.3	8.5	0.1	0.0	2.5	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	1636		307	1750	781	347	449		264	279	
V/C Ratio(X)	0.78	0.68		1.13	0.66	0.01	0.58	0.01		0.20	0.10	
Avail Cap(c_a), veh/h	99	1636		307	1750	781	347	1027		349	1027	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.2	19.0	0.0	41.0	17.2	11.7	34.1	34.4	0.0	36.0	38.5	0.0
Incr Delay (d2), s/veh	26.4	2.3	0.0	92.2	2.0	0.0	1.6	0.0	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.7	0.0	7.2	8.5	0.1	4.1	0.0	0.0	1.1	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.6	21.3	0.0	133.2	19.2	11.7	35.7	34.4	0.0	36.1	38.7	0.0
LnGrp LOS	E	C		F	B	B	D	C		D	D	
Approach Vol, veh/h		1180	A		1522			206	A		81	A
Approach Delay, s/veh		24.2			45.2			35.7			37.0	
Approach LOS		C			D			D			D	

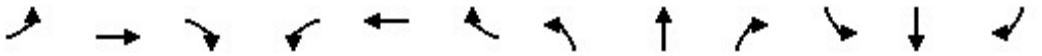
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	50.8	9.7	17.4	15.0	47.9	14.0	13.1
Change Period (Y+Rc), s	7.5	* 6.5	6.0	6.0	7.0	6.5	5.5	6.0
Max Green Setting (Gmax), s	5.0	* 26	8.0	26.0	8.0	22.5	8.5	26.0
Max Q Clear Time (g_c+I1), s	5.5	24.2	4.5	2.1	10.0	24.0	10.5	2.6
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	36.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

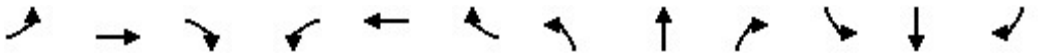
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	670	45	650	495	185	130	0	385	220	0	155
Future Volume (vph)	160	670	45	650	495	185	130	0	385	220	0	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	0.96		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3506		3433	3395		1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3506		3433	3395		1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	728	49	707	538	201	141	0	418	239	0	168
RTOR Reduction (vph)	0	5	0	0	38	0	0	0	96	0	0	143
Lane Group Flow (vph)	174	772	0	707	701	0	141	0	322	239	0	25
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	5	2		1	6		4		1	8		5
Permitted Phases												
Actuated Green, G (s)	13.5	35.1		25.0	46.6		16.4		25.0	16.4		13.5
Effective Green, g (s)	13.5	35.1		25.0	46.6		16.4		25.0	16.4		13.5
Actuated g/C Ratio	0.15	0.39		0.28	0.52		0.18		0.28	0.18		0.15
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5		4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	265	1367		953	1757		322		439	322		237
v/s Ratio Prot	0.10	c0.22		c0.21	0.21		0.08		0.20	c0.14		0.02
v/s Ratio Perm												
v/c Ratio	0.66	0.56		0.74	0.40		0.44		0.73	0.74		0.11
Uniform Delay, d1	36.1	21.5		29.6	13.2		32.7		29.5	34.8		33.0
Progression Factor	1.08	0.58		0.89	0.53		1.00		1.00	1.00		1.00
Incremental Delay, d2	5.4	1.6		2.5	0.5		1.0		6.2	8.9		0.2
Delay (s)	44.2	14.1		28.9	7.6		33.7		35.7	43.7		33.2
Level of Service	D	B		C	A		C		D	D		C
Approach Delay (s)		19.6			18.0			35.2			39.4	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	235	55	395	200	120	15	220	595	430	700	70
Future Volume (vph)	70	235	55	395	200	120	15	220	595	430	700	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3390		1541	3275	1567	1601	3438	1644	3539	3408	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.34	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3390		1541	3275	1567	568	3438	1644	3539	3408	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	255	60	429	217	130	16	239	647	467	761	76
RTOR Reduction (vph)	0	17	0	0	0	74	0	0	0	0	6	0
Lane Group Flow (vph)	76	298	0	214	432	56	16	239	647	467	831	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	17.5	17.5		31.0	31.0	57.5	28.5	28.5	120.0	20.5	54.5	
Effective Green, g (s)	17.5	17.5		31.0	31.0	51.5	28.5	28.5	120.0	20.5	54.5	
Actuated g/C Ratio	0.15	0.15		0.26	0.26	0.43	0.24	0.24	1.00	0.17	0.45	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	263	494		398	846	672	134	816	1644	604	1547	
v/s Ratio Prot	0.04	c0.09		c0.14	0.13	0.04		0.07		c0.13	c0.24	
v/s Ratio Perm							0.03		0.39			
v/c Ratio	0.29	0.60		0.54	0.51	0.08	0.12	0.29	0.39	0.77	0.54	
Uniform Delay, d1	45.7	48.0		38.3	38.0	20.3	35.9	37.5	0.0	47.5	23.6	
Progression Factor	1.00	1.00		0.83	0.83	0.69	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	5.4		4.8	2.0	0.0	1.8	0.9	0.7	6.1	1.3	
Delay (s)	48.5	53.4		36.7	33.7	14.1	37.7	38.4	0.7	53.6	25.0	
Level of Service	D	D		D	C	B	D	D	A	D	C	
Approach Delay (s)		52.4			31.3			11.4			35.2	
Approach LOS		D			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1235	25	0	595	240	0	0	210	0	0	120
Future Vol, veh/h	0	1235	25	0	595	240	0	0	210	0	0	120
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1342	27	0	647	261	0	0	228	0	0	130

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	685	-	-	454
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	335	0	0	473
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	335	-	-	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

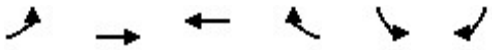
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	35.9	15.5
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	335	-	-	-	-	473
HCM Lane V/C Ratio	0.681	-	-	-	-	0.276
HCM Control Delay (s)	35.9	-	-	-	-	15.5
HCM Lane LOS	E	-	-	-	-	C
HCM 95th %tile Q(veh)	4.7	-	-	-	-	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	65	1425	0	0	2240	125	190	0	475	0	620
Future Volume (vph)	65	1425	0	0	2240	125	190	0	475	0	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	91	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	1549	0	0	2435	136	207	0	516	0	674
RTOR Reduction (vph)	0	0	0	0	0	51	0	0	301	0	0
Lane Group Flow (vph)	71	1549	0	0	2435	85	207	0	215	0	674
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	92.5	92.5			74.8	74.8	15.0		15.0		120.0
Effective Green, g (s)	92.5	92.5			74.8	74.8	15.0		15.0		107.5
Actuated g/C Ratio	0.77	0.77			0.62	0.62	0.12		0.12		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	248	2637			3110	1001	437		355		1443
v/s Ratio Prot	0.03	c0.45			c0.49		0.06				
v/s Ratio Perm	0.19					0.05			c0.08		0.42
v/c Ratio	0.29	0.59			0.78	0.08	0.47		0.61		0.47
Uniform Delay, d1	15.1	5.8			16.6	9.0	48.8		49.7		1.1
Progression Factor	1.03	0.84			1.00	1.00	1.00		1.00		1.00
Incremental Delay, d2	1.8	1.0			2.0	0.2	3.7		7.5		0.7
Delay (s)	17.3	5.8			18.7	9.2	52.5		57.2		1.8
Level of Service	B	A			B	A	D		E		A
Approach Delay (s)		6.3			18.2		55.8			1.8	
Approach LOS		A			B		E			A	

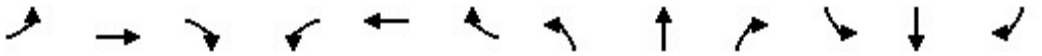
Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↱			↱
Traffic Volume (vph)	0	2235	2360	5	0	5
Future Volume (vph)	0	2235	2360	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2429	2565	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2429	2570	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		95.7	95.7			109.7
Effective Green, g (s)		95.7	95.7			109.7
Actuated g/C Ratio		0.87	0.87			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4414	4501			1611
v/s Ratio Prot		0.48	c0.50			
v/s Ratio Perm						c0.00
v/c Ratio		0.55	0.57			0.00
Uniform Delay, d1		1.7	1.8			0.0
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.3	0.3			0.0
Delay (s)		2.0	2.1			0.0
Level of Service		A	A			A
Approach Delay (s)		2.0	2.1		0.0	
Approach LOS		A	A		A	

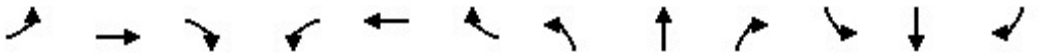
Intersection Summary			
HCM 2000 Control Delay	2.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2150	80	10	2175	10	125	5	30	35	5	65
Future Volume (veh/h)	5	2150	80	10	2175	10	125	5	30	35	5	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	5	2337	87	11	2364	11	136	5	33	38	5	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	3202	119	145	3575	17	243	36	241	279	17	246
Arrive On Green	0.01	0.64	0.64	0.01	0.64	0.64	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1776	5038	187	1818	5575	26	1323	221	1461	1365	105	1491
Grp Volume(v), veh/h	5	1570	854	11	1534	841	136	0	38	38	0	76
Grp Sat Flow(s),veh/h/ln	1776	1697	1831	1818	1809	1983	1323	0	1682	1365	0	1596
Q Serve(g_s), s	0.1	28.2	28.7	0.2	23.8	23.8	9.0	0.0	1.7	2.2	0.0	3.8
Cycle Q Clear(g_c), s	0.1	28.2	28.7	0.2	23.8	23.8	12.8	0.0	1.7	3.9	0.0	3.8
Prop In Lane	1.00		0.10	1.00		0.01	1.00		0.87	1.00		0.93
Lane Grp Cap(c), veh/h	145	2157	1164	145	2320	1272	243	0	277	279	0	263
V/C Ratio(X)	0.03	0.73	0.73	0.08	0.66	0.66	0.56	0.00	0.14	0.14	0.00	0.29
Avail Cap(c_a), veh/h	217	2157	1164	209	2320	1272	253	0	290	289	0	275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.9	11.1	11.2	10.6	10.1	10.1	38.6	0.0	32.1	33.8	0.0	33.0
Incr Delay (d2), s/veh	0.1	1.9	3.5	0.2	1.5	2.7	2.6	0.0	0.2	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	10.4	0.1	8.0	9.2	3.1	0.0	0.7	0.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	13.0	14.7	10.8	11.6	12.8	41.1	0.0	32.3	34.0	0.0	33.6
LnGrp LOS	A	B	B	B	B	B	D	A	C	C	A	C
Approach Vol, veh/h		2429			2386			174			114	
Approach Delay, s/veh		13.6			12.0			39.2			33.7	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	62.7		21.3	6.5	62.2		21.3				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	53.4		15.5	4.1	53.4		15.5				
Max Q Clear Time (g_c+I1), s	2.1	25.8		5.9	2.2	30.7		14.8				
Green Ext Time (p_c), s	0.0	20.4		0.3	0.0	17.9		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			14.2									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	605	40	20	155	15	570	15	55	5	5	5
Future Volume (vph)	20	605	40	20	155	15	570	15	55	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.99			0.99		1.00	1.00	0.85		0.95	
Flt Protected		1.00			0.99		0.95	0.95	1.00		0.98	
Satd. Flow (prot)		3502			3479		1681	1689	1583		1750	
Flt Permitted		0.94			0.86		0.95	0.95	1.00		0.98	
Satd. Flow (perm)		3300			2995		1681	1689	1583		1750	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	658	43	22	168	16	620	16	60	5	5	5
RTOR Reduction (vph)	0	6	0	0	8	0	0	0	40	0	5	0
Lane Group Flow (vph)	0	717	0	0	198	0	316	320	20	0	10	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		19.5			20.0		19.4	19.4	19.4		0.9	
Effective Green, g (s)		19.5			20.0		19.4	19.4	19.4		0.9	
Actuated g/C Ratio		0.34			0.35		0.34	0.34	0.34		0.02	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1113			1036		564	566	531		27	
v/s Ratio Prot							0.19	c0.19			c0.01	
v/s Ratio Perm		c0.22			0.07				0.01			
v/c Ratio		0.64			0.19		0.56	0.57	0.04		0.37	
Uniform Delay, d1		16.2			13.2		15.7	15.7	12.9		28.2	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1.4			0.1		4.0	4.1	0.1		3.1	
Delay (s)		17.7			13.4		19.7	19.8	13.1		31.3	
Level of Service		B			B		B	B	B		C	
Approach Delay (s)		17.7			13.4			19.2			31.3	
Approach LOS		B			B			B			C	

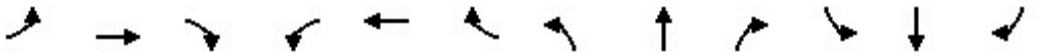
Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	5	670	60	50	660
Future Volume (vph)	5	5	670	60	50	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3261		3539	1583	1770	5085
Flt Permitted	0.98		1.00	1.00	0.37	1.00
Satd. Flow (perm)	3261		3539	1583	698	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	5	728	65	54	717
RTOR Reduction (vph)	5	0	0	23	0	0
Lane Group Flow (vph)	5	0	728	42	54	717
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	1.0		42.3	42.3	51.7	51.7
Effective Green, g (s)	1.0		42.3	42.3	51.7	51.7
Actuated g/C Ratio	0.02		0.65	0.65	0.80	0.80
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	50		2313	1034	614	4063
v/s Ratio Prot	c0.00		c0.21		0.00	c0.14
v/s Ratio Perm				0.03	0.07	
v/c Ratio	0.10		0.31	0.04	0.09	0.18
Uniform Delay, d1	31.4		4.9	4.0	1.4	1.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9		0.4	0.1	0.1	0.1
Delay (s)	32.3		5.2	4.1	1.5	1.6
Level of Service	C		A	A	A	A
Approach Delay (s)	32.3		5.1			1.6
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	310	40	740	640	540	75	645	485	160	420	90
Future Volume (vph)	70	310	40	740	640	540	75	645	485	160	420	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	9	11	13	12	11	11
Grade (%)		-4%			2%			-1%			-2%	
Total Lost time (s)	5.5	5.5		6.0	6.0	5.5	5.5	5.5	4.0	5.5	5.5	
Lane Util. Factor	1.00	0.95		0.91	0.91	1.00	1.00	0.95	1.00	*0.99	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3430		1541	3305	1567	1601	3438	1644	3539	3364	
Flt Permitted	0.95	1.00		0.95	0.98	1.00	0.44	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	3430		1541	3305	1567	748	3438	1644	3539	3364	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	337	43	804	696	587	82	701	527	174	457	98
RTOR Reduction (vph)	0	8	0	0	0	98	0	0	0	0	15	0
Lane Group Flow (vph)	76	372	0	490	1010	489	82	701	527	174	540	0
Turn Type	Split	NA		Split	NA	pt+ov	Perm	NA	Free	Prot	NA	
Protected Phases	3	3		4	4	1 4		2		1	6	
Permitted Phases							2		Free			
Actuated Green, G (s)	14.5	14.5		44.0	44.0	61.1	27.9	27.9	120.0	11.1	44.5	
Effective Green, g (s)	14.5	14.5		44.0	44.0	55.1	27.9	27.9	120.0	11.1	44.5	
Actuated g/C Ratio	0.12	0.12		0.37	0.37	0.46	0.23	0.23	1.00	0.09	0.37	
Clearance Time (s)	5.5	5.5		6.0	6.0		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		0.2	0.2		3.0	0.2	
Lane Grp Cap (vph)	218	414		565	1211	719	173	799	1644	327	1247	
v/s Ratio Prot	0.04	c0.11		c0.32	0.31	c0.31		c0.20		0.05	0.16	
v/s Ratio Perm							0.11		0.32			
v/c Ratio	0.35	0.90		0.87	0.83	0.68	0.47	0.88	0.32	0.53	0.43	
Uniform Delay, d1	48.4	52.0		35.3	34.7	25.5	39.7	44.4	0.0	52.0	28.3	
Progression Factor	1.00	1.00		0.84	0.84	0.56	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	24.9		14.8	6.1	2.4	0.7	10.4	0.5	1.7	1.1	
Delay (s)	52.8	77.0		44.6	35.3	16.7	40.5	54.8	0.5	53.6	29.4	
Level of Service	D	E		D	D	B	D	D	A	D	C	
Approach Delay (s)		72.9			32.3			32.1			35.2	
Approach LOS		E			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	930	25	0	1710	190	0	0	145	0	0	210
Future Vol, veh/h	0	930	25	0	1710	190	0	0	145	0	0	210
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	2	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1011	27	0	1859	207	0	0	158	0	0	228

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	519	-	-	1033
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	429	0	0	~ 197
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	429	-	-	~ 197
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18.2	162.9
HCM LOS			C	F

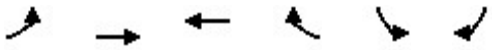
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	429	-	-	-	-	197
HCM Lane V/C Ratio	0.367	-	-	-	-	1.159
HCM Control Delay (s)	18.2	-	-	-	-	162.9
HCM Lane LOS	C	-	-	-	-	F
HCM 95th %tile Q(veh)	1.7	-	-	-	-	11.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER
Lane Configurations											
Traffic Volume (vph)	60	1570	0	0	2785	165	165	0	375	0	520
Future Volume (vph)	60	1570	0	0	2785	165	165	0	375	0	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	11	12	12	12	12	12	12
Grade (%)		0%			-3%		-4%			0%	
Total Lost time (s)	4.5	6.5			6.5	6.5	6.0		6.0		4.5
Lane Util. Factor	1.00	0.95			0.91	1.00	0.97		0.88		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85		0.86
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (prot)	1711	3421			4990	1607	3502		2842		1611
Flt Permitted	0.05	1.00			1.00	1.00	0.95		1.00		1.00
Satd. Flow (perm)	86	3421			4990	1607	3502		2842		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1707	0	0	3027	179	179	0	408	0	565
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	146	0	0
Lane Group Flow (vph)	65	1707	0	0	3027	119	179	0	262	0	565
Turn Type	pm+pt	NA			NA	Perm	Prot		Perm		Perm
Protected Phases	1	6			2		4				
Permitted Phases	6					2			4		1 2 4 6
Actuated Green, G (s)	91.5	91.5			79.5	79.5	16.0		16.0		120.0
Effective Green, g (s)	91.5	91.5			79.5	79.5	16.0		16.0		107.5
Actuated g/C Ratio	0.76	0.76			0.66	0.66	0.13		0.13		0.90
Clearance Time (s)	4.5	6.5			6.5	6.5	6.0		6.0		
Vehicle Extension (s)	6.0	0.2			0.2	0.2	3.0		3.0		
Lane Grp Cap (vph)	167	2608			3305	1064	466		378		1443
v/s Ratio Prot	0.02	c0.50			c0.61		0.05				
v/s Ratio Perm	0.27					0.07			c0.09		0.35
v/c Ratio	0.39	0.65			0.92	0.11	0.38		0.69		0.39
Uniform Delay, d1	23.9	6.8			17.4	7.4	47.5		49.7		1.0
Progression Factor	0.79	1.12			0.57	0.02	1.00		1.00		1.00
Incremental Delay, d2	4.2	1.3			3.7	0.1	2.4		10.1		0.5
Delay (s)	23.0	8.9			13.7	0.3	49.9		59.7		1.5
Level of Service	C	A			B	A	D		E		A
Approach Delay (s)		9.4			13.0		56.7			1.5	
Approach LOS		A			B		E			A	

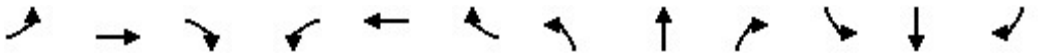
Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	2255	2945	5	0	5
Future Volume (vph)	0	2255	2945	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-3%		0%	
Total Lost time (s)		5.0	5.0			4.0
Lane Util. Factor		0.91	0.91			1.00
Frt		1.00	1.00			0.86
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		5060	5160			1611
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		5060	5160			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2451	3201	5	0	5
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2451	3206	0	0	5
Turn Type		NA	NA			Free
Protected Phases		2	6			
Permitted Phases						Free
Actuated Green, G (s)		99.8	99.8			120.0
Effective Green, g (s)		99.8	99.8			120.0
Actuated g/C Ratio		0.83	0.83			1.00
Clearance Time (s)		5.0	5.0			
Vehicle Extension (s)		5.0	5.0			
Lane Grp Cap (vph)		4208	4291			1611
v/s Ratio Prot		0.48	c0.62			
v/s Ratio Perm						c0.00
v/c Ratio		0.58	0.75			0.00
Uniform Delay, d1		3.3	4.5			0.0
Progression Factor		0.62	1.00			1.00
Incremental Delay, d2		0.5	1.2			0.0
Delay (s)		2.5	5.7			0.0
Level of Service		A	A			A
Approach Delay (s)		2.5	5.7		0.0	
Approach LOS		A	A		A	

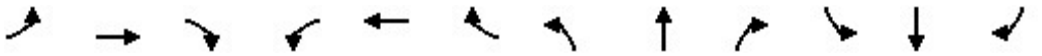
Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2150	95	15	2860	25	70	10	25	25	5	20
Future Volume (veh/h)	10	2150	95	15	2860	25	70	10	25	25	5	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1908	1988	1988	1870	1945	1945	1864	1864	1864
Adj Flow Rate, veh/h	11	2337	103	16	3109	27	76	11	27	27	5	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	3531	155	170	3941	34	184	45	111	175	27	120
Arrive On Green	0.01	0.71	0.71	0.01	0.71	0.71	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1776	4999	219	1818	5549	48	1383	499	1225	1365	301	1325
Grp Volume(v), veh/h	11	1581	859	16	2024	1112	76	0	38	27	0	27
Grp Sat Flow(s),veh/h/ln	1776	1697	1825	1818	1809	1979	1383	0	1725	1365	0	1626
Q Serve(g_s), s	0.2	23.1	23.5	0.2	33.1	33.4	4.8	0.0	1.8	1.7	0.0	1.4
Cycle Q Clear(g_c), s	0.2	23.1	23.5	0.2	33.1	33.4	6.2	0.0	1.8	3.5	0.0	1.4
Prop In Lane	1.00		0.12	1.00		0.02	1.00		0.71	1.00		0.81
Lane Grp Cap(c), veh/h	122	2396	1289	170	2570	1406	184	0	156	175	0	147
V/C Ratio(X)	0.09	0.66	0.67	0.09	0.79	0.79	0.41	0.00	0.24	0.15	0.00	0.18
Avail Cap(c_a), veh/h	184	2396	1289	226	2570	1406	196	0	171	187	0	161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.9	7.3	7.3	7.0	8.6	8.6	40.8	0.0	38.1	39.7	0.0	37.9
Incr Delay (d2), s/veh	0.3	1.2	2.2	0.2	2.5	4.6	1.5	0.0	0.8	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.3	7.3	0.1	9.9	11.7	1.7	0.0	0.8	0.6	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	8.4	9.6	7.2	11.1	13.2	42.2	0.0	38.9	40.1	0.0	38.5
LnGrp LOS	B	A	A	A	B	B	D	A	D	D	A	D
Approach Vol, veh/h		2451			3152			114			54	
Approach Delay, s/veh		8.8			11.8			41.1			39.3	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	68.9		14.6	6.8	68.6		14.6				
Change Period (Y+Rc), s	5.5	5.0		6.5	5.5	5.0		6.5				
Max Green Setting (Gmax), s	4.1	60.0		8.9	4.1	60.0		8.9				
Max Q Clear Time (g_c+I1), s	2.2	35.4		5.5	2.2	25.5		8.2				
Green Ext Time (p_c), s	0.0	22.6		0.0	0.0	24.8		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			11.4									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	515	230	75	145	5	390	5	15	10	20	15
Future Volume (vph)	5	515	230	75	145	5	390	5	15	10	20	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Lane Util. Factor		0.95			0.95		0.95	0.95	1.00		1.00	
Frt		0.95			1.00		1.00	1.00	0.85		0.96	
Flt Protected		1.00			0.98		0.95	0.95	1.00		0.99	
Satd. Flow (prot)		3375			3470		1681	1687	1583		1761	
Flt Permitted		0.95			0.60		0.95	0.95	1.00		0.99	
Satd. Flow (perm)		3218			2099		1681	1687	1583		1761	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	560	250	82	158	5	424	5	16	11	22	16
RTOR Reduction (vph)	0	62	0	0	2	0	0	0	11	0	15	0
Lane Group Flow (vph)	0	753	0	0	243	0	216	213	5	0	34	0
Turn Type	Perm	NA		Perm	NA		Split	NA	Perm	Split	NA	
Protected Phases		8			4		2	2		6	6	
Permitted Phases	8			4					2			
Actuated Green, G (s)		22.0			22.5		19.7	19.7	19.7		3.6	
Effective Green, g (s)		22.0			22.5		19.7	19.7	19.7		3.6	
Actuated g/C Ratio		0.35			0.36		0.31	0.31	0.31		0.06	
Clearance Time (s)		6.0			5.5		6.0	6.0	6.0		6.0	
Vehicle Extension (s)		4.0			4.0		2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1118			746		523	525	492		100	
v/s Ratio Prot							c0.13	0.13			c0.02	
v/s Ratio Perm		c0.23			0.12				0.00			
v/c Ratio		0.67			0.33		0.41	0.41	0.01		0.34	
Uniform Delay, d1		17.6			14.9		17.2	17.2	15.1		28.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2		1.8			0.3		2.4	2.3	0.0		0.7	
Delay (s)		19.4			15.2		19.6	19.5	15.1		29.4	
Level of Service		B			B		B	B	B		C	
Approach Delay (s)		19.4			15.2			19.4			29.4	
Approach LOS		B			B			B			C	

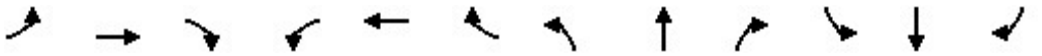
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	30	535	15	30	705
Future Volume (vph)	45	30	535	15	30	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.97		0.95	1.00	1.00	0.91
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	3297		3539	1583	1770	5085
Flt Permitted	0.97		1.00	1.00	0.43	1.00
Satd. Flow (perm)	3297		3539	1583	806	5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	33	582	16	33	766
RTOR Reduction (vph)	31	0	0	6	0	0
Lane Group Flow (vph)	51	0	582	10	33	766
Turn Type	Prot		NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	3.1		39.9	39.9	48.2	48.2
Effective Green, g (s)	3.1		39.9	39.9	48.2	48.2
Actuated g/C Ratio	0.05		0.63	0.63	0.76	0.76
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	161		2230	997	648	3871
v/s Ratio Prot	c0.02		c0.16		0.00	c0.15
v/s Ratio Perm				0.01	0.04	
v/c Ratio	0.31		0.26	0.01	0.05	0.20
Uniform Delay, d1	29.1		5.2	4.4	1.9	2.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		0.3	0.0	0.0	0.1
Delay (s)	30.2		5.5	4.4	1.9	2.2
Level of Service	C		A	A	A	A
Approach Delay (s)	30.2		5.4			2.2
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

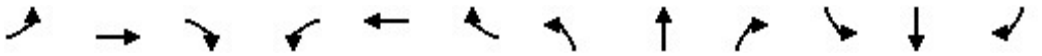
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	550	15	150	255	325	5	20	30	30	5	60
Future Volume (veh/h)	90	550	15	150	255	325	5	20	30	30	5	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	598	16	163	277	353	5	22	33	33	5	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	635	2554	68	672	1454	1297	107	52	79	123	9	115
Arrive On Green	0.72	0.72	0.72	0.04	0.82	0.82	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	796	3536	95	1781	1777	1585	1331	675	1013	1349	114	1488
Grp Volume(v), veh/h	98	300	314	163	277	353	5	0	55	33	0	70
Grp Sat Flow(s),veh/h/ln	796	1777	1853	1781	1777	1585	1331	0	1688	1349	0	1603
Q Serve(g_s), s	4.7	6.8	6.8	2.7	4.0	6.2	0.4	0.0	3.7	2.9	0.0	5.1
Cycle Q Clear(g_c), s	4.7	6.8	6.8	2.7	4.0	6.2	5.5	0.0	3.7	6.6	0.0	5.1
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.60	1.00		0.93
Lane Grp Cap(c), veh/h	635	1283	1339	672	1454	1297	107	0	131	123	0	124
V/C Ratio(X)	0.15	0.23	0.23	0.24	0.19	0.27	0.05	0.00	0.42	0.27	0.00	0.56
Avail Cap(c_a), veh/h	635	1283	1339	932	1454	1297	314	0	394	333	0	374
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.3	5.6	5.6	3.6	2.3	2.6	56.0	0.0	52.8	55.9	0.0	53.4
Incr Delay (d2), s/veh	0.5	0.4	0.4	0.1	0.2	0.4	0.4	0.0	4.5	2.5	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.5	2.6	0.8	1.1	1.6	0.2	0.0	1.7	1.1	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.8	6.0	6.0	3.7	2.6	3.0	56.4	0.0	57.3	58.4	0.0	61.7
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		712			793			60			103	
Approach Delay, s/veh		6.0			3.0			57.2			60.6	
Approach LOS		A			A			E			E	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		104.7		15.3	11.5	93.2		15.3				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		79.5		28.0	22.5	50.5		28.0				
Max Q Clear Time (g_c+I1), s		8.2		8.6	4.7	8.8		7.5				
Green Ext Time (p_c), s		0.8		0.8	0.4	0.8		0.4				

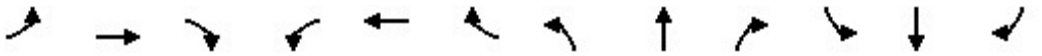
Intersection Summary												
HCM 6th Ctrl Delay			9.8									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	425	30	170	495	140	80	0	190	350	0	155
Future Volume (vph)	155	425	30	170	495	140	80	0	190	350	0	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0		4.5	6.0	6.0		5.5			5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	
Frt	1.00	0.99		1.00	1.00	0.85		0.90			0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3504		1770	3539	1583		1661			1726	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.78			0.60	
Satd. Flow (perm)	1770	3504		1770	3539	1583		1312			1076	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	462	33	185	538	152	87	0	207	380	0	168
RTOR Reduction (vph)	0	5	0	0	0	110	0	88	0	0	81	0
Lane Group Flow (vph)	168	490	0	185	538	42	0	206	0	0	467	0
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases						2	8			4		
Actuated Green, G (s)	11.5	26.6		12.3	27.4	27.4		45.1			45.1	
Effective Green, g (s)	11.5	26.6		12.3	27.4	27.4		45.1			45.1	
Actuated g/C Ratio	0.12	0.27		0.12	0.27	0.27		0.45			0.45	
Clearance Time (s)	4.5	6.0		4.5	6.0	6.0		5.5			5.5	
Vehicle Extension (s)	3.0	0.2		3.0	0.2	0.2		0.2			5.0	
Lane Grp Cap (vph)	203	932		217	969	433		591			485	
v/s Ratio Prot	c0.09	c0.14		c0.10	0.15							
v/s Ratio Perm						0.03		0.16			c0.43	
v/c Ratio	0.83	0.53		0.85	0.56	0.10		0.35			0.96	
Uniform Delay, d1	43.3	31.3		43.0	31.1	27.1		17.9			26.7	
Progression Factor	1.00	1.00		0.77	0.69	0.32		1.00			1.00	
Incremental Delay, d2	23.3	2.1		21.5	1.8	0.3		0.1			31.9	
Delay (s)	66.6	33.4		54.6	23.4	8.9		18.0			58.6	
Level of Service	E	C		D	C	A		B			E	
Approach Delay (s)		41.8			27.5			18.0			58.6	
Approach LOS		D			C			B			E	

Intersection Summary			
HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

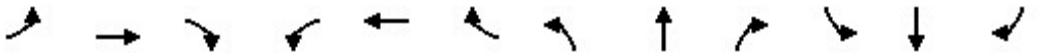
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	375	215	145	360	210	10	5	5	120	355	435
Future Volume (vph)	375	375	215	145	360	210	10	5	5	120	355	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.95		1.00	0.94			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3346		1770	3344			1801	1583	1681	1767	1583
Flt Permitted	0.17	1.00		0.41	1.00			0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	308	3346		760	3344			1801	1583	1681	1767	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	408	408	234	158	391	228	11	5	5	130	386	473
RTOR Reduction (vph)	0	73	0	0	87	0	0	0	5	0	0	308
Lane Group Flow (vph)	408	569	0	158	532	0	0	16	0	117	399	165
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	44.8	30.8		28.2	19.2			3.8	3.8	34.9	34.9	34.9
Effective Green, g (s)	44.8	30.8		28.2	19.2			3.8	3.8	34.9	34.9	34.9
Actuated g/C Ratio	0.45	0.31		0.28	0.19			0.04	0.04	0.35	0.35	0.35
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	439	1030		305	642			68	60	586	616	552
v/s Ratio Prot	c0.19	0.17		0.05	0.16			c0.01		0.07	c0.23	
v/s Ratio Perm	c0.22			0.10					0.00			0.10
v/c Ratio	0.93	0.55		0.52	0.83			0.24	0.00	0.20	0.65	0.30
Uniform Delay, d1	26.4	28.9		28.3	38.8			46.7	46.3	22.8	27.4	23.7
Progression Factor	0.81	0.91		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.1	1.6		1.5	11.7			3.7	0.0	0.4	3.2	0.6
Delay (s)	42.6	27.9		29.8	50.6			50.4	46.3	23.1	30.6	24.3
Level of Service	D	C		C	D			D	D	C	C	C
Approach Delay (s)		33.6			46.3			49.4			26.7	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

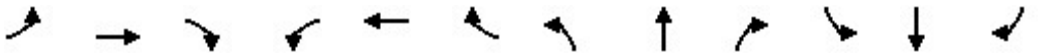
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	400	10	230	540	140	45	10	235	235	15	50
Future Volume (veh/h)	45	400	10	230	540	140	45	10	235	235	15	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	435	11	250	587	152	49	11	255	255	16	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	1257	32	504	1449	374	525	25	577	342	142	478
Arrive On Green	0.35	0.35	0.35	0.22	1.00	1.00	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	720	3542	89	1781	2795	722	1331	66	1529	1113	375	1267
Grp Volume(v), veh/h	49	218	228	250	373	366	49	0	266	255	0	70
Grp Sat Flow(s),veh/h/ln	720	1777	1854	1781	1777	1740	1331	0	1595	1113	0	1642
Q Serve(g_s), s	5.7	10.8	10.9	10.7	0.0	0.0	3.0	0.0	14.9	26.6	0.0	3.3
Cycle Q Clear(g_c), s	5.7	10.8	10.9	10.7	0.0	0.0	6.3	0.0	14.9	41.6	0.0	3.3
Prop In Lane	1.00		0.05	1.00		0.41	1.00		0.96	1.00		0.77
Lane Grp Cap(c), veh/h	315	631	658	504	921	902	525	0	602	342	0	620
V/C Ratio(X)	0.16	0.35	0.35	0.50	0.40	0.41	0.09	0.00	0.44	0.75	0.00	0.11
Avail Cap(c_a), veh/h	315	631	658	614	921	902	600	0	691	404	0	712
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	28.5	28.5	17.4	0.0	0.0	26.3	0.0	27.9	43.4	0.0	24.3
Incr Delay (d2), s/veh	1.0	1.5	1.4	0.6	1.0	1.1	0.2	0.0	1.1	8.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.9	5.1	3.7	0.3	0.3	1.0	0.0	5.9	8.1	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	30.0	29.9	18.0	1.0	1.1	26.5	0.0	29.0	52.1	0.0	24.5
LnGrp LOS	C	C	C	B	A	A	C	A	C	D	A	C
Approach Vol, veh/h		495			989			315			325	
Approach Delay, s/veh		29.7			5.3			28.6			46.2	
Approach LOS		C			A			C			D	

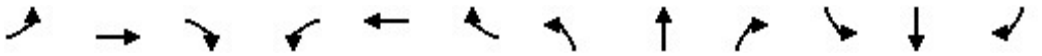
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		68.7		51.3	19.6	49.1		51.3				
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5		6.0				
Max Green Setting (Gmax), s		55.5		52.0	20.5	28.5		52.0				
Max Q Clear Time (g_c+I1), s		2.0		43.6	12.7	12.9		16.9				
Green Ext Time (p_c), s		0.8		1.7	0.4	0.5		4.0				

Intersection Summary												
HCM 6th Ctrl Delay			20.7									
HCM 6th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	435	75	190	650	530	55	0	105	125	0	205
Future Volume (vph)	360	435	75	190	650	530	55	0	105	125	0	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	12	12
Total Lost time (s)	4.5	6.0		4.5	6.0	6.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	
Frt	1.00	0.98		1.00	1.00	0.85		0.91			0.92	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.98	
Satd. Flow (prot)	1770	3461		1770	3539	1583		1892			1675	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.70			0.75	
Satd. Flow (perm)	1770	3461		1770	3539	1583		1356			1277	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	473	82	207	707	576	60	0	114	136	0	223
RTOR Reduction (vph)	0	10	0	0	0	379	0	94	0	0	94	0
Lane Group Flow (vph)	391	545	0	207	707	197	0	80	0	0	265	0
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases						2	8			4		
Actuated Green, G (s)	35.5	57.8		18.7	41.0	41.0		28.0			28.0	
Effective Green, g (s)	35.5	57.8		18.7	41.0	41.0		28.0			28.0	
Actuated g/C Ratio	0.30	0.48		0.16	0.34	0.34		0.23			0.23	
Clearance Time (s)	4.5	6.0		4.5	6.0	6.0		5.0			5.0	
Vehicle Extension (s)	3.0	2.0		3.0	2.0	2.0		3.0			3.0	
Lane Grp Cap (vph)	523	1667		275	1209	540		316			297	
v/s Ratio Prot	c0.22	0.16		c0.12	c0.20							
v/s Ratio Perm						0.12		0.06			c0.21	
v/c Ratio	0.75	0.33		0.75	0.58	0.36		0.25			0.89	
Uniform Delay, d1	38.2	19.1		48.4	32.5	29.7		37.5			44.5	
Progression Factor	0.90	0.85		0.85	0.78	0.58		1.00			1.00	
Incremental Delay, d2	5.4	0.5		5.3	1.0	0.9		0.4			26.5	
Delay (s)	39.9	16.8		46.3	26.2	18.2		37.9			71.1	
Level of Service	D	B		D	C	B		D			E	
Approach Delay (s)		26.3			25.9			37.9			71.1	
Approach LOS		C			C			D			E	

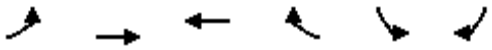
Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	390	15	5	570	35	230	95	220	225	5	570
Future Volume (vph)	260	390	15	5	570	35	230	95	220	225	5	570
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	3520		1770	3509			1799	1583	1681	1689	1583
Flt Permitted	0.13	1.00		0.50	1.00			0.97	1.00	0.95	0.95	1.00
Satd. Flow (perm)	240	3520		925	3509			1799	1583	1681	1689	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	424	16	5	620	38	250	103	239	245	5	620
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	183	0	0	271
Lane Group Flow (vph)	283	438	0	5	654	0	0	353	56	125	125	349
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases	6			2					3			4
Actuated Green, G (s)	47.9	41.6		28.2	26.9			25.5	25.5	30.1	30.1	30.1
Effective Green, g (s)	47.9	41.6		28.2	26.9			25.5	25.5	30.1	30.1	30.1
Actuated g/C Ratio	0.40	0.35		0.23	0.22			0.21	0.21	0.25	0.25	0.25
Clearance Time (s)	5.0	5.5		5.0	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0	0.2		3.0	0.2			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	299	1220		226	786			382	336	421	423	397
v/s Ratio Prot	c0.13	0.12		0.00	0.19			c0.20		0.07	0.07	
v/s Ratio Perm	c0.25			0.00					0.04			c0.22
v/c Ratio	0.95	0.36		0.02	0.83			0.92	0.17	0.30	0.30	0.88
Uniform Delay, d1	32.4	29.3		35.2	44.4			46.3	38.6	36.4	36.4	43.2
Progression Factor	0.91	0.90		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.8	0.8		0.0	10.0			28.7	0.5	0.8	0.8	20.6
Delay (s)	65.2	27.0		35.3	54.4			75.0	39.1	37.2	37.2	63.8
Level of Service	E	C		D	D			E	D	D	D	E
Approach Delay (s)		42.0			54.3			60.5			56.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

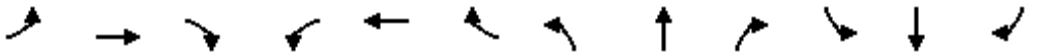
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1390	900	0	200	130
Future Volume (veh/h)	0	1390	900	0	200	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1511	978	0	217	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3885	4896	0	678	214
Arrive On Green	0.00	0.76	0.76	0.00	0.13	0.13
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	1511	978	0	217	141
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	12.1	5.1	0.0	4.7	10.1
Cycle Q Clear(g_c), s	0.0	12.1	5.1	0.0	4.7	10.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3885	4896	0	678	214
V/C Ratio(X)	0.00	0.39	0.20	0.00	0.32	0.66
Avail Cap(c_a), veh/h	0	3885	4896	0	1737	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.9	4.0	0.0	46.9	49.3
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	1.0	11.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	1.4	0.0	2.0	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.2	4.1	0.0	47.9	61.2
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		1511	978		358	
Approach Delay, s/veh		5.2	4.1		53.1	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		97.3		22.7		97.3
Change Period (Y+Rc), s		6.0		6.5		6.0
Max Green Setting (Gmax), s		66.0		41.5		66.0
Max Q Clear Time (g_c+I1), s		14.1		12.1		7.1
Green Ext Time (p_c), s		16.3		4.1		8.5

Intersection Summary		
HCM 6th Ctrl Delay		10.8
HCM 6th LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1220	370	295	765	0	0	0	0	445	0	135
Future Volume (veh/h)	0	1220	370	295	765	0	0	0	0	445	0	135
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1326	0	321	832	0				484	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2553		740	3851	0				550	0	
Arrive On Green	0.00	0.50	0.00	0.43	1.00	0.00				0.16	0.00	0.00
Sat Flow, veh/h	0	5443	0	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1326	0	321	832	0				484	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	0	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	26.3	0.0	9.8	0.0	0.0				20.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	26.3	0.0	9.8	0.0	0.0				20.5	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2553		740	3851	0				550	0	
V/C Ratio(X)	0.00	0.52		0.43	0.22	0.00				0.88	0.00	
Avail Cap(c_a), veh/h	0	2553		740	3851	0				760	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.93	0.00	0.95	0.95	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	25.3	0.0	36.5	0.0	0.0				61.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.4	0.1	0.0				8.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.7	0.0	3.7	0.0	0.0				9.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.0	0.0	36.9	0.1	0.0				70.5	0.0	0.0
LnGrp LOS	A	C		D	A	A				E	A	
Approach Vol, veh/h		1326	A		1153						484	A
Approach Delay, s/veh		26.0			10.4						70.5	
Approach LOS		C			B						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	38.1	81.0		30.9		119.1
Change Period (Y+Rc), s	6.0	* 6		7.0		6.0
Max Green Setting (Gmax), s	24.5	* 75		33.0		104.0
Max Q Clear Time (g_c+I1), s	11.8	28.3		22.5		2.0
Green Ext Time (p_c), s	0.9	2.1		1.3		1.2

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

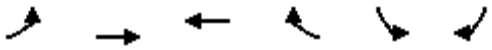
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1495	170	0	770	290	0
Future Volume (veh/h)	1495	170	0	770	290	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	0
Adj Flow Rate, veh/h	1625	0	0	837	315	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	0
Cap, veh/h	4885		0	4885	0	0
Arrive On Green	1.00	0.00	0.00	1.00	0.00	0.00
Sat Flow, veh/h	5443	0	0	5443	0	0
Grp Volume(v), veh/h	1625	0	0	837	0	0
Grp Sat Flow(s),veh/h/ln	1702	0	0	1702	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	4885		0	4885	0	0
V/C Ratio(X)	0.33		0.00	0.17	0.00	0.00
Avail Cap(c_a), veh/h	4885		0	4885	0	0
HCM Platoon Ratio	2.00	2.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	0.68	0.00	0.00	0.99	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.1	0.0	0.0	0.1	0.0	0.0
LnGrp LOS	A		A	A	A	A
Approach Vol, veh/h	1625	A		837	0	
Approach Delay, s/veh	0.1			0.1	0.0	
Approach LOS	A			A		

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	150.0			150.0	0.0
Change Period (Y+Rc), s	6.5			6.5	7.0
Max Green Setting (Gmax), s	101.5			101.5	35.0
Max Q Clear Time (g_c+I1), s	2.0			2.0	0.0
Green Ext Time (p_c), s	7.0			20.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.1
HCM 6th LOS	A

Notes

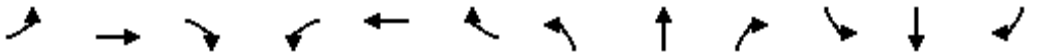
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (vph)	0	1390	900	0	200	130
Future Volume (vph)	0	1390	900	0	200	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.5	6.5
Lane Util. Factor		0.91	0.86		0.94	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5085	6408		4990	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5085	6408		4990	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1511	978	0	217	141
RTOR Reduction (vph)	0	0	0	0	0	91
Lane Group Flow (vph)	0	1511	978	0	217	50
Turn Type		NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases						
Actuated Green, G (s)		93.0	93.0		14.5	14.5
Effective Green, g (s)		93.0	93.0		14.5	14.5
Actuated g/C Ratio		0.78	0.78		0.12	0.12
Clearance Time (s)		6.0	6.0		6.5	6.5
Vehicle Extension (s)		3.0	3.0		6.0	6.0
Lane Grp Cap (vph)		3940	4966		602	191
v/s Ratio Prot		c0.30	0.15		c0.04	0.03
v/s Ratio Perm						
v/c Ratio		0.38	0.20		0.36	0.26
Uniform Delay, d1		4.3	3.6		48.5	47.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.1		1.0	2.1
Delay (s)		4.6	3.7		49.5	50.0
Level of Service		A	A		D	D
Approach Delay (s)		4.6	3.7		49.7	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1220	370	295	765	0	0	0	0	445	0	135
Future Volume (vph)	0	1220	370	295	765	0	0	0	0	445	0	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.5	6.0					7.0		7.0
Lane Util. Factor		0.91		0.97	0.91					0.97		1.00
Frt		0.97		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		4908		3433	5085					3433		1583
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		4908		3433	5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1326	402	321	832	0	0	0	0	484	0	147
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	0	0	121
Lane Group Flow (vph)	0	1695	0	321	832	0	0	0	0	484	0	26
Turn Type		NA		Prot	NA					Prot		Prot
Protected Phases		2		1	6					4		4
Permitted Phases												
Actuated Green, G (s)		81.5		24.5	110.5					26.5		26.5
Effective Green, g (s)		81.5		24.5	110.5					26.5		26.5
Actuated g/C Ratio		0.54		0.16	0.74					0.18		0.18
Clearance Time (s)		6.0		4.5	6.0					7.0		7.0
Vehicle Extension (s)		0.2		3.0	0.2					3.0		3.0
Lane Grp Cap (vph)		2666		560	3745					606		279
v/s Ratio Prot		c0.35		c0.09	0.16					c0.14		0.02
v/s Ratio Perm												
v/c Ratio		0.64		0.57	0.22					0.80		0.09
Uniform Delay, d1		23.9		57.9	6.2					59.2		51.7
Progression Factor		1.00		0.73	0.30					1.00		1.00
Incremental Delay, d2		1.2		1.4	0.1					7.3		0.1
Delay (s)		25.1		44.0	2.0					66.5		51.8
Level of Service		C		D	A					E		D
Approach Delay (s)		25.1			13.7			0.0			63.1	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
Description:			
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1495	170	0	770	290	0
Future Volume (vph)	1495	170	0	770	290	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.98			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	5007			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	5007			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1625	185	0	837	315	0
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	1804	0	0	837	315	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	117.4			117.4	19.1	
Effective Green, g (s)	117.4			117.4	19.1	
Actuated g/C Ratio	0.78			0.78	0.13	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	3918			3979	437	
v/s Ratio Prot	c0.36			0.16	c0.09	
v/s Ratio Perm						
v/c Ratio	0.46			0.21	0.72	
Uniform Delay, d1	5.5			4.2	62.9	
Progression Factor	1.20			0.68	1.00	
Incremental Delay, d2	0.3			0.1	5.8	
Delay (s)	7.0			3.0	68.7	
Level of Service	A			A	E	
Approach Delay (s)	7.0			3.0	68.7	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1495	0	0	770	0	910
Future Volume (vph)	1495	0	0	770	0	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1625	0	0	837	0	989
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1625	0	0	837	0	989
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	71.1			150.0		67.4
Effective Green, g (s)	71.1			144.5		67.4
Actuated g/C Ratio	0.47			0.96		0.45
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	2410			4898		1252
v/s Ratio Prot	c0.32			0.16		c0.35
v/s Ratio Perm						
v/c Ratio	0.67			0.17		0.79
Uniform Delay, d1	30.5			0.1		35.3
Progression Factor	0.32			1.00		1.00
Incremental Delay, d2	1.4			0.0		3.4
Delay (s)	11.1			0.1		38.7
Level of Service	B			A		D
Approach Delay (s)	11.1			0.1	38.7	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

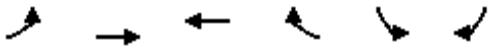
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	820	880	625	235	105	150	715	0	405	145	0
Future Volume (vph)	80	820	880	625	235	105	150	715	0	405	145	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	891	957	679	255	114	163	777	0	440	158	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	978	957	679	255	114	163	777	0	440	158	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		3			7	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		42.5	39.8	150.0	26.7	24.0	150.0	64.5		150.0	64.5	
Effective Green, g (s)		42.5	39.8	150.0	26.7	24.0	150.0	64.5		150.0	64.5	
Actuated g/C Ratio		0.28	0.27	1.00	0.18	0.16	1.00	0.43		1.00	0.43	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		972	1349	1583	315	813	1583	761		1583	1476	
v/s Ratio Prot		c0.28	0.19		c0.14	0.02		c0.44			0.05	
v/s Ratio Perm				c0.43			0.10			0.28		
v/c Ratio		1.01	0.71	0.43	0.81	0.14	0.10	1.02		0.28	0.11	
Uniform Delay, d1		53.8	49.9	0.0	59.2	54.1	0.0	42.8		0.0	25.5	
Progression Factor		0.76	0.75	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		25.8	2.3	0.6	14.2	0.4	0.1	38.0		0.4	0.0	
Delay (s)		66.6	39.6	0.6	73.4	54.5	0.1	80.8		0.4	25.6	
Level of Service		E	D	A	E	D	A	F		A	C	
Approach Delay (s)			39.6			46.9			51.7			11.7
Approach LOS			D			D			D			B

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	175
Future Volume (vph)	175
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	190
RTOR Reduction (vph)	0
Lane Group Flow (vph)	190
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	150.0
Effective Green, g (s)	150.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.12
v/c Ratio	0.12
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	0.2
Level of Service	A
Approach Delay (s)	
Approach LOS	

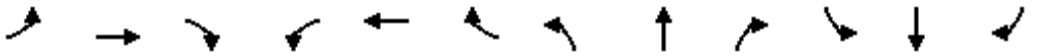
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (veh/h)	0	690	1990	0	265	130
Future Volume (veh/h)	0	690	1990	0	265	130
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	750	2163	0	288	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3852	4854	0	710	224
Arrive On Green	0.00	0.75	0.75	0.00	0.14	0.14
Sat Flow, veh/h	0	5443	6958	0	5023	1585
Grp Volume(v), veh/h	0	750	2163	0	288	141
Grp Sat Flow(s),veh/h/ln	0	1702	1609	0	1674	1585
Q Serve(g_s), s	0.0	5.1	14.9	0.0	6.3	10.1
Cycle Q Clear(g_c), s	0.0	5.1	14.9	0.0	6.3	10.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3852	4854	0	710	224
V/C Ratio(X)	0.00	0.19	0.45	0.00	0.41	0.63
Avail Cap(c_a), veh/h	0	3852	4854	0	1695	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.66	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.2	5.5	0.0	46.9	48.5
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.0	1.4	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	4.2	0.0	2.7	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.4	5.6	0.0	48.3	58.7
LnGrp LOS	A	A	A	A	D	E
Approach Vol, veh/h		750	2163		429	
Approach Delay, s/veh		4.4	5.6		51.7	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		96.5		23.5		96.5
Change Period (Y+Rc), s		6.0		6.5		6.0
Max Green Setting (Gmax), s		67.0		40.5		67.0
Max Q Clear Time (g_c+I1), s		7.1		12.1		16.9
Green Ext Time (p_c), s		6.0		4.9		29.2

Intersection Summary	
HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	880	75	440	1405	0	0	0	0	445	0	585
Future Volume (veh/h)	0	880	75	440	1405	0	0	0	0	445	0	585
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	957	0	478	1527	0				484	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1260		1595	3820	0				559	0	
Arrive On Green	0.00	0.25	0.00	0.31	0.50	0.00				0.16	0.00	0.00
Sat Flow, veh/h	0	5443	0	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	957	0	478	1527	0				484	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	0	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	26.1	0.0	15.8	28.0	0.0				20.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	26.1	0.0	15.8	28.0	0.0				20.5	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1260		1595	3820	0				559	0	
V/C Ratio(X)	0.00	0.76		0.30	0.40	0.00				0.87	0.00	
Avail Cap(c_a), veh/h	0	1260		1595	3820	0				1544	0	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.98	0.00	0.87	0.87	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	52.4	0.0	33.4	16.4	0.0				61.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.3	0.0	0.1	0.3	0.0				4.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.6	0.0	7.1	12.0	0.0				9.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	56.6	0.0	33.5	16.7	0.0				65.4	0.0	0.0
LnGrp LOS	A	E		C	B	A				E	A	
Approach Vol, veh/h		957	A		2005						484	A
Approach Delay, s/veh		56.6			20.7						65.4	
Approach LOS		E			C						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	75.7	43.0		31.3		118.7
Change Period (Y+Rc), s	6.5	6.0		7.0		* 6.5
Max Green Setting (Gmax), s	26.5	37.0		67.0		* 70
Max Q Clear Time (g_c+I1), s	17.8	28.1		22.5		30.0
Green Ext Time (p_c), s	1.2	1.2		1.8		2.5

Intersection Summary		
HCM 6th Ctrl Delay		36.9
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

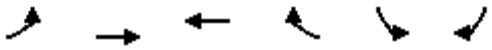
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1190	135	0	1465	380	0
Future Volume (veh/h)	1190	135	0	1465	380	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	0	1870	1870	0
Adj Flow Rate, veh/h	1293	0	0	1592	413	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	0
Cap, veh/h	4885		0	4885	0	0
Arrive On Green	0.64	0.00	0.00	0.64	0.00	0.00
Sat Flow, veh/h	5443	0	0	5443	0	0
Grp Volume(v), veh/h	1293	0	0	1592	0	0
Grp Sat Flow(s),veh/h/ln	1702	0	0	1702	0	0
Q Serve(g_s), s	16.4	0.0	0.0	21.2	0.0	0.0
Cycle Q Clear(g_c), s	16.4	0.0	0.0	21.2	0.0	0.0
Prop In Lane		0.00	0.00		0.00	0.00
Lane Grp Cap(c), veh/h	4885		0	4885	0	0
V/C Ratio(X)	0.26		0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	4885		0	4885	0	0
HCM Platoon Ratio	0.67	0.67	1.00	0.67	1.00	1.00
Upstream Filter(I)	0.76	0.00	0.00	0.96	0.00	0.00
Uniform Delay (d), s/veh	4.1	0.0	0.0	5.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	5.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.2	0.0	0.0	5.1	0.0	0.0
LnGrp LOS	A		A	A	A	A
Approach Vol, veh/h	1293	A		1592	0	
Approach Delay, s/veh	4.2			5.1	0.0	
Approach LOS	A			A		

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	150.0			150.0	0.0
Change Period (Y+Rc), s	6.5			6.5	7.0
Max Green Setting (Gmax), s	93.5			93.5	43.0
Max Q Clear Time (g_c+I1), s	23.2			18.4	0.0
Green Ext Time (p_c), s	19.0			13.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Notes

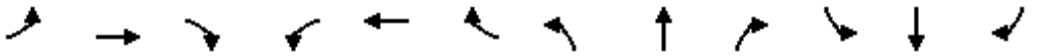
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↑		↰↰↰	↱
Traffic Volume (vph)	0	690	1990	0	265	130
Future Volume (vph)	0	690	1990	0	265	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.5	6.5
Lane Util. Factor		0.91	0.86		0.94	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5085	6408		4990	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5085	6408		4990	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	750	2163	0	288	141
RTOR Reduction (vph)	0	0	0	0	0	4
Lane Group Flow (vph)	0	750	2163	0	288	137
Turn Type		NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases						
Actuated Green, G (s)		88.0	88.0		19.5	19.5
Effective Green, g (s)		88.0	88.0		19.5	19.5
Actuated g/C Ratio		0.73	0.73		0.16	0.16
Clearance Time (s)		6.0	6.0		6.5	6.5
Vehicle Extension (s)		3.0	3.0		6.0	6.0
Lane Grp Cap (vph)		3729	4699		810	257
v/s Ratio Prot		0.15	c0.34		0.06	c0.09
v/s Ratio Perm						
v/c Ratio		0.20	0.46		0.36	0.53
Uniform Delay, d1		5.0	6.4		44.7	46.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.3		0.8	5.0
Delay (s)		5.1	6.8		45.4	51.0
Level of Service		A	A		D	D
Approach Delay (s)		5.1	6.8		47.3	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	880	75	440	1405	0	0	0	0	445	0	585
Future Volume (vph)	0	880	75	440	1405	0	0	0	0	445	0	585
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.5	6.0					7.0		7.0
Lane Util. Factor		0.91		0.97	0.91					0.97		1.00
Frt		0.99		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		5025		3433	5085					3433		1583
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		5025		3433	5085					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	957	82	478	1527	0	0	0	0	484	0	636
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	1033	0	478	1527	0	0	0	0	484	0	595
Turn Type		NA		Prot	NA					Prot		Prot
Protected Phases		2		1	6					4		4
Permitted Phases												
Actuated Green, G (s)		42.6		26.5	75.6					61.4		61.4
Effective Green, g (s)		42.6		26.5	75.6					61.4		61.4
Actuated g/C Ratio		0.28		0.18	0.50					0.41		0.41
Clearance Time (s)		6.0		6.5	6.0					7.0		7.0
Vehicle Extension (s)		0.2		3.0	0.2					3.0		3.0
Lane Grp Cap (vph)		1427		606	2562					1405		647
v/s Ratio Prot		c0.21		c0.14	0.30					0.14		c0.38
v/s Ratio Perm												
v/c Ratio		0.72		0.79	0.60					0.34		0.92
Uniform Delay, d1		48.4		59.1	26.4					30.5		42.0
Progression Factor		1.00		0.88	0.70					1.00		1.00
Incremental Delay, d2		3.2		6.3	1.0					0.1		18.4
Delay (s)		51.6		58.4	19.4					30.6		60.4
Level of Service		D		E	B					C		E
Approach Delay (s)		51.6			28.7			0.0			47.5	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1190	135	0	1465	380	0
Future Volume (vph)	1190	135	0	1465	380	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5			6.5	7.0	
Lane Util. Factor	0.91			0.91	0.97	
Frt	0.98			1.00	1.00	
Flt Protected	1.00			1.00	0.95	
Satd. Flow (prot)	5007			5085	3433	
Flt Permitted	1.00			1.00	0.95	
Satd. Flow (perm)	5007			5085	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1293	147	0	1592	413	0
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	1434	0	0	1592	413	0
Turn Type	NA			NA	Prot	
Protected Phases	6			2	3	
Permitted Phases						
Actuated Green, G (s)	113.0			113.0	23.5	
Effective Green, g (s)	113.0			113.0	23.5	
Actuated g/C Ratio	0.75			0.75	0.16	
Clearance Time (s)	6.5			6.5	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	3771			3830	537	
v/s Ratio Prot	0.29			c0.31	c0.12	
v/s Ratio Perm						
v/c Ratio	0.38			0.42	0.77	
Uniform Delay, d1	6.4			6.6	60.6	
Progression Factor	0.34			1.00	1.00	
Incremental Delay, d2	0.2			0.3	6.6	
Delay (s)	2.4			7.0	67.2	
Level of Service	A			A	E	
Approach Delay (s)	2.4			7.0	67.2	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1190	0	0	1465	0	455
Future Volume (vph)	1190	0	0	1465	0	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			6.0		6.0
Lane Util. Factor	0.91			0.91		0.88
Frt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1293	0	0	1592	0	495
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1293	0	0	1592	0	495
Turn Type	NA			NA		Prot
Protected Phases	2			4 6		4
Permitted Phases						
Actuated Green, G (s)	87.8			150.0		50.7
Effective Green, g (s)	87.8			144.5		50.7
Actuated g/C Ratio	0.59			0.96		0.34
Clearance Time (s)	5.5					6.0
Vehicle Extension (s)	3.0					3.0
Lane Grp Cap (vph)	2976			4898		942
v/s Ratio Prot	c0.25			0.31		c0.18
v/s Ratio Perm						
v/c Ratio	0.43			0.33		0.53
Uniform Delay, d1	17.3			0.1		40.0
Progression Factor	0.33			1.00		1.00
Incremental Delay, d2	0.4			0.0		0.5
Delay (s)	6.1			0.2		40.5
Level of Service	A			A		D
Approach Delay (s)	6.1			0.2	40.5	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

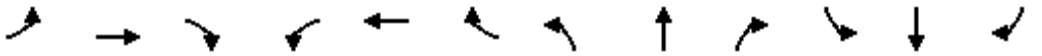
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	40	120	960	525	330	890	140	790	0	300	380	0
Future Volume (vph)	40	120	960	525	330	890	140	790	0	300	380	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0	4.0	6.5	6.0	4.0	6.5		4.0	6.5	
Lane Util. Factor		0.97	0.91	1.00	1.00	0.91	1.00	1.00		1.00	0.97	
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (prot)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Satd. Flow (perm)		3433	5085	1583	1770	5085	1583	1770		1583	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	130	1043	571	359	967	152	859	0	326	413	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	173	1043	571	359	967	152	859	0	326	413	0
Turn Type	Prot	Prot	NA	Free	Prot	NA	Free	Prot		Free	Prot	
Protected Phases	5	5	2		1	6		8			4	
Permitted Phases				Free			Free			Free		
Actuated Green, G (s)		11.3	26.0	135.0	26.5	41.2	135.0	63.5		135.0	63.5	
Effective Green, g (s)		11.3	26.0	135.0	26.5	41.2	135.0	63.5		135.0	63.5	
Actuated g/C Ratio		0.08	0.19	1.00	0.20	0.31	1.00	0.47		1.00	0.47	
Clearance Time (s)		6.5	6.0		6.5	6.0		6.5			6.5	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		287	979	1583	347	1551	1583	832		1583	1614	
v/s Ratio Prot		0.05	c0.21		c0.20	0.19		c0.49			0.12	
v/s Ratio Perm				0.36			0.10			0.21		
v/c Ratio		0.60	1.07	0.36	1.03	0.62	0.10	1.03		0.21	0.26	
Uniform Delay, d1		59.7	54.5	0.0	54.2	40.2	0.0	35.8		0.0	21.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.5	47.8	0.6	57.5	1.9	0.1	39.8		0.3	0.1	
Delay (s)		63.2	102.3	0.6	111.8	42.1	0.1	75.6		0.3	21.6	
Level of Service		E	F	A	F	D	A	E		A	C	
Approach Delay (s)			66.1			54.7			54.9			7.7
Approach LOS			E			D			D			A

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	890
Future Volume (vph)	890
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	967
RTOR Reduction (vph)	0
Lane Group Flow (vph)	967
Turn Type	Free
Protected Phases	
Permitted Phases	Free
Actuated Green, G (s)	135.0
Effective Green, g (s)	135.0
Actuated g/C Ratio	1.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	1583
v/s Ratio Prot	
v/s Ratio Perm	0.61
v/c Ratio	0.61
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	1.8
Delay (s)	1.8
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary



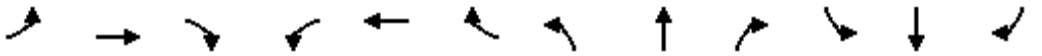
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	15	75	55	25	85	150	265	25	30	945	1290
Future Volume (veh/h)	250	15	75	55	25	85	150	265	25	30	945	1290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	272	16	82	60	27	92	163	288	27	33	1027	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	240	204	77	141	120	369	1961	182	673	1924	
Arrive On Green	0.10	0.13	0.13	0.04	0.08	0.08	0.06	0.60	0.60	0.03	0.57	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3276	305	1692	3375	1505
Grp Volume(v), veh/h	272	16	82	60	27	92	163	155	160	33	1027	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1810	1692	1687	1505
Q Serve(g_s), s	9.4	0.9	5.8	4.0	1.6	6.9	4.5	4.6	4.7	1.0	22.6	0.0
Cycle Q Clear(g_c), s	9.4	0.9	5.8	4.0	1.6	6.9	4.5	4.6	4.7	1.0	22.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	334	240	204	77	141	120	369	1060	1083	673	1924	
V/C Ratio(X)	0.81	0.07	0.40	0.78	0.19	0.77	0.44	0.15	0.15	0.05	0.53	
Avail Cap(c_a), veh/h	446	400	339	126	292	248	469	1060	1083	698	1924	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh	53.1	45.8	47.9	56.8	52.0	54.4	12.2	10.6	10.6	9.9	15.9	0.0
Incr Delay (d2), s/veh	8.3	0.1	1.3	15.2	0.6	9.8	0.8	0.3	0.3	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.4	2.3	2.1	0.8	3.1	1.8	1.9	1.9	0.4	8.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	45.9	49.2	72.1	52.7	64.3	13.1	10.9	10.9	9.9	16.8	0.0
LnGrp LOS	E	D	D	E	D	E	B	B	B	A	B	
Approach Vol, veh/h		370			179			478			1060	A
Approach Delay, s/veh		58.0			65.1			11.6			16.6	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	78.3	17.2	15.6	12.2	74.9	10.7	22.1
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	5.1	56.4	15.7	18.8	13.5	48.0	8.5	26.0
Max Q Clear Time (g_c+I1), s	3.0	6.7	11.4	8.9	6.5	24.6	6.0	7.8
Green Ext Time (p_c), s	0.0	0.3	0.4	0.2	0.2	1.6	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

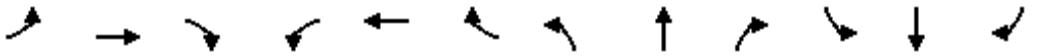
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	15	75	55	25	85	150	265	25	30	945	1290
Future Volume (vph)	250	15	75	55	25	85	150	265	25	30	945	1290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	10	11	11	10	10	11	12	10	12	11
Grade (%)		2%			1%			1%			4%	
Total Lost time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3399	1783	1463	1702	1792	1470	1643	3360		1619	3468	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.18	1.00		0.56	1.00	1.00
Satd. Flow (perm)	3399	1783	1463	1702	1792	1470	318	3360		955	3468	1500
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	16	82	60	27	92	163	288	27	33	1027	1402
RTOR Reduction (vph)	0	0	71	0	0	85	0	5	0	0	0	0
Lane Group Flow (vph)	272	16	11	60	27	7	163	310	0	33	1027	1402
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Free
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4	2			6		Free
Actuated Green, G (s)	14.0	15.8	15.8	6.7	8.5	8.5	79.0	69.4		67.3	63.2	120.0
Effective Green, g (s)	14.0	15.8	15.8	6.7	8.5	8.5	79.0	69.4		67.3	63.2	120.0
Actuated g/C Ratio	0.12	0.13	0.13	0.06	0.07	0.07	0.66	0.58		0.56	0.53	1.00
Clearance Time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	396	234	192	95	126	104	323	1943		558	1826	1500
v/s Ratio Prot	0.08	0.01		0.04	0.02		0.04	0.09		0.00	0.30	
v/s Ratio Perm			0.01			0.00	0.29			0.03		c0.93
v/c Ratio	0.69	0.07	0.06	0.63	0.21	0.06	0.50	0.16		0.06	0.56	0.93
Uniform Delay, d1	50.9	45.7	45.6	55.4	52.6	52.0	11.2	11.8		11.8	19.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.9	0.1	0.1	12.9	0.9	0.3	1.2	0.2		0.0	1.3	12.1
Delay (s)	55.8	45.8	45.7	68.3	53.5	52.3	12.5	11.9		11.9	20.4	12.1
Level of Service	E	D	D	E	D	D	B	B		B	C	B
Approach Delay (s)		53.1			57.8			12.1			15.6	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	755	1030	0	0	0	0	210	390	0	1235	0
Future Volume (vph)	5	755	1030	0	0	0	0	210	390	0	1235	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3450	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3450	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	821	1120	0	0	0	0	228	424	0	1342	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	826	1120	0	0	0	0	228	424	0	1342	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		42.8	160.0					18.7	78.5		102.2	
Effective Green, g (s)		42.8	160.0					18.7	78.5		97.7	
Actuated g/C Ratio		0.27	1.00					0.12	0.49		0.61	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		922	1544					378	1295		3105	
v/s Ratio Prot								0.07	0.16		0.26	
v/s Ratio Perm		0.24	c0.73									
v/c Ratio		0.90	0.73					0.60	0.33		0.43	
Uniform Delay, d1		56.5	0.0					67.1	24.7		16.5	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		11.2	3.0					7.0	0.1		0.1	
Delay (s)		67.6	3.0					74.1	24.9		0.1	
Level of Service		E	A					E	C		A	
Approach Delay (s)		30.4			0.0			42.1			0.1	
Approach LOS		C			A			D			A	

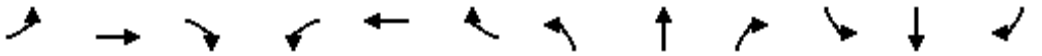
Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	1235	575	215	0
Future Volume (vph)	0	0	1235	575	215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			4.5	4.5	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	0.97	0.95	
Satd. Flow (prot)			1549	3179	3433	
Flt Permitted			0.95	0.97	0.95	
Satd. Flow (perm)			1549	3179	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1342	625	234	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	671	1296	234	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			77.5	77.5	69.5	
Effective Green, g (s)			77.5	77.5	61.5	
Actuated g/C Ratio			0.48	0.48	0.38	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			750	1539	1319	
v/s Ratio Prot			c0.43	0.41	c0.07	
v/s Ratio Perm						
v/c Ratio			0.89	0.84	0.18	
Uniform Delay, d1			37.5	35.9	32.5	
Progression Factor			1.00	1.00	0.00	
Incremental Delay, d2			13.1	4.4	0.1	
Delay (s)			50.7	40.2	0.2	
Level of Service			D	D	A	
Approach Delay (s)	0.0			43.8	0.2	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	35	335	5	5	20	180	1095	5	45	2295	550
Future Volume (vph)	570	35	335	5	5	20	180	1095	5	45	2295	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1574	1575		1900		3285	4864		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1574	1575		1900		3285	4864		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	620	38	364	5	5	22	196	1190	5	49	2495	598
RTOR Reduction (vph)	0	0	88	0	21	0	0	0	0	0	0	177
Lane Group Flow (vph)	329	329	276	0	11	0	196	1195	0	49	2495	421
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	32.7	32.7	44.1		4.0		11.4	79.2		7.6	75.4	75.4
Effective Green, g (s)	32.7	32.7	44.1		4.0		11.4	79.2		7.6	75.4	75.4
Actuated g/C Ratio	0.22	0.22	0.29		0.03		0.08	0.53		0.05	0.50	0.50
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	340	343	463		50		249	2568		86	2471	849
v/s Ratio Prot	c0.21	0.21	0.05		c0.01		c0.06	0.25		0.03	c0.51	
v/s Ratio Perm			0.13									0.25
v/c Ratio	0.97	0.96	0.60		0.21		0.79	0.47		0.57	1.01	0.50
Uniform Delay, d1	58.1	58.0	45.3		71.5		68.1	22.1		69.6	37.3	24.7
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.04	0.93	1.15
Incremental Delay, d2	39.7	37.4	2.1		2.1		15.1	0.6		4.2	15.1	1.0
Delay (s)	97.9	95.4	47.4		73.6		83.2	22.8		76.6	49.8	29.4
Level of Service	F	F	D		E		F	C		E	D	C
Approach Delay (s)		79.1			73.6			31.3			46.3	
Approach LOS		E			E			C			D	

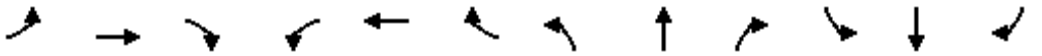
Intersection Summary			
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	5	665	0	0	0	0	1510	175	220	2225	0
Future Volume (vph)	290	5	665	0	0	0	0	1510	175	220	2225	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1663	2412					8043		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1663	2412					8043		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	5	723	0	0	0	0	1641	190	239	2418	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	161	159	723	0	0	0	0	1818	0	239	2418	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	50.6	50.6	50.6					59.5		19.9	85.9	
Effective Green, g (s)	50.6	50.6	50.6					59.5		19.9	85.9	
Actuated g/C Ratio	0.34	0.34	0.34					0.40		0.13	0.57	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	540	560	813					3190		440	2815	
v/s Ratio Prot	0.10	0.10	c0.30					0.23		0.07	c0.49	
v/s Ratio Perm												
v/c Ratio	0.30	0.28	0.89					0.57		0.54	0.86	
Uniform Delay, d1	36.6	36.4	47.0					35.3		60.8	27.0	
Progression Factor	1.00	1.00	1.00					0.67		0.52	0.44	
Incremental Delay, d2	0.3	0.3	11.6					0.6		4.1	3.2	
Delay (s)	36.9	36.7	58.7					24.1		35.8	15.0	
Level of Service	D	D	E					C		D	B	
Approach Delay (s)		52.0			0.0			24.1			16.9	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	275	5	420	270	1530	0	0	2170	730
Future Volume (vph)	0	0	0	275	5	420	270	1530	0	0	2170	730
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1701	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1701	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	299	5	457	293	1663	0	0	2359	793
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	152	152	457	293	1663	0	0	2359	793
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				20.2	20.2	150.0	19.9	115.8			89.4	150.0
Effective Green, g (s)				20.2	20.2	150.0	19.9	115.8			89.4	150.0
Actuated g/C Ratio				0.13	0.13	1.00	0.13	0.77			0.60	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)				220	229	1750	425	4781			4368	1591
v/s Ratio Prot				0.09	0.09		c0.09	0.27			c0.32	
v/s Ratio Perm						0.26						c0.50
v/c Ratio				0.69	0.66	0.26	0.69	0.35			0.54	0.50
Uniform Delay, d1				61.9	61.7	0.0	62.1	5.3			18.1	0.0
Progression Factor				1.00	1.00	1.00	1.54	0.40			0.46	1.00
Incremental Delay, d2				9.7	7.7	0.4	4.2	0.2			0.0	0.1
Delay (s)				71.6	69.4	0.4	99.6	2.3			8.4	0.1
Level of Service				E	E	A	F	A			A	A
Approach Delay (s)		0.0			28.4			16.9			6.3	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

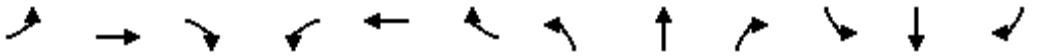
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	120	475	225	725	205	80	10	250	1170	520	35	1940
Future Volume (vph)	120	475	225	725	205	80	10	250	1170	520	35	1940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3318		3172	3504	1567		1652	4916	1531	1719	4307
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.08	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3318		3172	3504	1567		142	4916	1531	1719	4307
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	516	245	788	223	87	11	272	1272	565	38	2109
RTOR Reduction (vph)	0	0	0	0	0	69	0	0	0	281	0	4
Lane Group Flow (vph)	130	761	0	788	223	18	0	283	1272	284	38	2230
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	33.0	33.0		22.5	22.5	30.4		60.6	60.6	60.6	7.9	57.0
Effective Green, g (s)	33.0	33.0		22.5	22.5	30.4		60.6	60.6	60.6	7.9	57.0
Actuated g/C Ratio	0.22	0.22		0.15	0.15	0.20		0.40	0.40	0.40	0.05	0.38
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	694	729		475	525	317		173	1986	618	90	1636
v/s Ratio Prot	0.04	c0.23		c0.25	0.06	0.01		c0.13	0.26		0.02	c0.52
v/s Ratio Perm								c0.54		0.19		
v/c Ratio	0.19	1.04		1.66	0.42	0.06		1.64	0.64	0.46	0.42	1.36
Uniform Delay, d1	47.6	58.5		63.8	57.9	48.2		64.7	35.9	32.7	68.8	46.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.64	0.45	0.41	1.00	1.00
Incremental Delay, d2	0.1	45.3		305.8	2.5	0.1		309.9	1.5	2.4	3.2	167.5
Delay (s)	47.7	103.8		369.5	60.4	48.3		351.5	17.9	15.9	72.0	214.0
Level of Service	D	F		F	E	D		F	B	B	E	F
Approach Delay (s)		95.6			281.3				61.9			211.6
Approach LOS		F			F				E			F

Intersection Summary			
HCM 2000 Control Delay	157.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	117.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	115
Future Volume (vph)	115
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	125
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



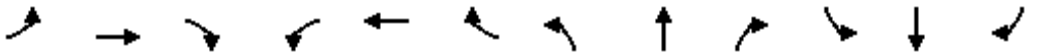
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	55	325	55	15	50	55	890	30	115	415	600
Future Volume (veh/h)	510	55	325	55	15	50	55	890	30	115	415	600
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1847	1847	1864	1864	1864	1864	1864	1864	1776	1776	1776
Adj Flow Rate, veh/h	554	60	353	60	16	54	60	967	33	125	451	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	633	414	351	77	153	130	516	1671	57	301	1675	
Arrive On Green	0.19	0.22	0.22	0.04	0.08	0.08	0.04	0.48	0.48	0.05	0.50	0.00
Sat Flow, veh/h	3412	1847	1565	1776	1864	1580	1776	3495	119	1692	3375	1505
Grp Volume(v), veh/h	554	60	353	60	16	54	60	490	510	125	451	0
Grp Sat Flow(s),veh/h/ln	1706	1847	1565	1776	1864	1580	1776	1771	1843	1692	1687	1505
Q Serve(g_s), s	18.9	3.1	26.9	4.0	1.0	3.9	2.0	24.0	24.0	4.5	9.3	0.0
Cycle Q Clear(g_c), s	18.9	3.1	26.9	4.0	1.0	3.9	2.0	24.0	24.0	4.5	9.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	633	414	351	77	153	130	516	847	881	301	1675	
V/C Ratio(X)	0.88	0.14	1.01	0.78	0.10	0.42	0.12	0.58	0.58	0.42	0.27	
Avail Cap(c_a), veh/h	802	414	351	144	153	130	533	847	881	388	1675	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	47.5	37.3	46.5	56.8	51.0	52.3	14.9	22.6	22.6	17.3	17.6	0.0
Incr Delay (d2), s/veh	8.9	0.2	49.6	15.2	0.3	2.1	0.1	2.9	2.8	0.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	1.4	15.2	2.1	0.5	1.6	0.8	10.5	10.9	1.8	3.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	37.5	96.2	72.0	51.3	54.4	15.0	25.5	25.4	18.2	17.9	0.0
LnGrp LOS	E	D	F	E	D	D	B	C	C	B	B	
Approach Vol, veh/h		967			130			1060			576	A
Approach Delay, s/veh		69.7			62.1			24.8			18.0	
Approach LOS		E			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	63.9	27.8	16.4	9.8	66.1	10.7	33.4
Change Period (Y+Rc), s	5.5	6.5	5.5	6.5	5.5	6.5	5.5	6.5
Max Green Setting (Gmax), s	12.7	46.7	28.2	8.4	5.5	53.9	9.7	26.9
Max Q Clear Time (g_c+I1), s	6.5	26.0	20.9	5.9	4.0	11.3	6.0	28.9
Green Ext Time (p_c), s	0.1	1.1	1.3	0.0	0.0	0.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

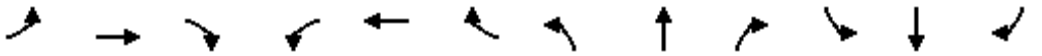
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	510	55	325	55	15	50	55	890	30	115	415	600
Future Volume (vph)	510	55	325	55	15	50	55	890	30	115	415	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	10	11	11	10	10	11	12	10	12	11
Grade (%)		2%			1%			1%			4%	
Total Lost time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3399	1783	1463	1702	1792	1470	1643	3387		1619	3468	1500
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.49	1.00		0.17	1.00	1.00
Satd. Flow (perm)	3399	1783	1463	1702	1792	1470	850	3387		297	3468	1500
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	554	60	353	60	16	54	60	967	33	125	451	652
RTOR Reduction (vph)	0	0	287	0	0	51	0	2	0	0	0	0
Lane Group Flow (vph)	554	60	66	60	16	3	60	998	0	125	451	652
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA	Free
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4	2			6		Free
Actuated Green, G (s)	24.2	22.4	22.4	7.4	5.6	5.6	62.1	56.6		70.3	60.7	120.0
Effective Green, g (s)	24.2	22.4	22.4	7.4	5.6	5.6	62.1	56.6		70.3	60.7	120.0
Actuated g/C Ratio	0.20	0.19	0.19	0.06	0.05	0.05	0.52	0.47		0.59	0.51	1.00
Clearance Time (s)	5.5	6.5	6.5	5.5	6.5	6.5	5.5	6.5		5.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	685	332	273	104	83	68	476	1597		279	1754	1500
v/s Ratio Prot	c0.16	0.03		0.04	0.01		0.01	c0.29		0.04	0.13	
v/s Ratio Perm			0.05			0.00	0.06			0.23		c0.43
v/c Ratio	0.81	0.18	0.24	0.58	0.19	0.04	0.13	0.63		0.45	0.26	0.43
Uniform Delay, d1	45.7	41.1	41.6	54.8	55.0	54.6	14.5	23.8		14.3	16.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	0.3	0.5	7.5	1.1	0.2	0.1	1.9		1.1	0.4	0.9
Delay (s)	52.7	41.3	42.0	62.3	56.2	54.8	14.6	25.6		15.5	17.2	0.9
Level of Service	D	D	D	E	E	D	B	C		B	B	A
Approach Delay (s)		48.1			58.5			25.0			8.4	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	595	675	0	0	0	0	535	915	0	455	0
Future Volume (vph)	5	595	675	0	0	0	0	535	915	0	455	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	11	12	12	12
Grade (%)		5%			0%			4%			0%	
Total Lost time (s)		7.0	4.0					8.0	6.0		8.0	
Lane Util. Factor		0.95	1.00					0.95	0.88		0.91	
Frt		1.00	0.85					1.00	0.85		1.00	
Flt Protected		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)		3449	1544					3237	2640		5085	
Flt Permitted		1.00	1.00					1.00	1.00		1.00	
Satd. Flow (perm)		3449	1544					3237	2640		5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	647	734	0	0	0	0	582	995	0	495	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	652	734	0	0	0	0	582	995	0	495	0
Turn Type	Perm	NA	Free					NA	custom		NA	
Protected Phases		3						6	5 6		2 4	
Permitted Phases	3		Free									
Actuated Green, G (s)		35.9	160.0					31.0	89.8		109.1	
Effective Green, g (s)		35.9	160.0					31.0	89.8		102.1	
Actuated g/C Ratio		0.22	1.00					0.19	0.56		0.64	
Clearance Time (s)		7.0						8.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		773	1544					627	1481		3244	
v/s Ratio Prot								c0.18	c0.38		0.10	
v/s Ratio Perm		0.19	c0.48									
v/c Ratio		0.84	0.48					0.93	0.67		0.15	
Uniform Delay, d1		59.4	0.0					63.4	24.7		11.6	
Progression Factor		1.00	1.00					1.00	1.00		0.00	
Incremental Delay, d2		8.3	1.1					22.1	1.2		0.0	
Delay (s)		67.7	1.1					85.5	25.9		0.0	
Level of Service		E	A					F	C		A	
Approach Delay (s)		32.4			0.0			47.9			0.0	
Approach LOS		C			A			D			A	

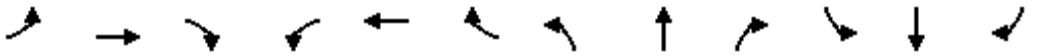
Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	455	1155	540	0
Future Volume (vph)	0	0	455	1155	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	11	11	12	12
Grade (%)	0%			1%	0%	
Total Lost time (s)			7.0	7.0	7.0	
Lane Util. Factor			0.91	0.91	0.97	
Frt			1.00	1.00	1.00	
Flt Protected			0.95	1.00	0.95	
Satd. Flow (prot)			1549	3255	3433	
Flt Permitted			0.95	1.00	0.95	
Satd. Flow (perm)			1549	3255	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	495	1255	587	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	445	1305	587	0
Turn Type			Split	NA	Prot	
Protected Phases			4 5	4 5	3 6	
Permitted Phases						
Actuated Green, G (s)			72.1	72.1	74.9	
Effective Green, g (s)			72.1	72.1	66.9	
Actuated g/C Ratio			0.45	0.45	0.42	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			698	1466	1435	
v/s Ratio Prot			0.29	c0.40	c0.17	
v/s Ratio Perm						
v/c Ratio			0.64	0.89	0.41	
Uniform Delay, d1			33.9	40.3	32.7	
Progression Factor			1.01	1.00	0.01	
Incremental Delay, d2			1.9	7.2	0.1	
Delay (s)			36.1	47.3	0.5	
Level of Service			D	D	A	
Approach Delay (s)	0.0			44.5	0.5	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

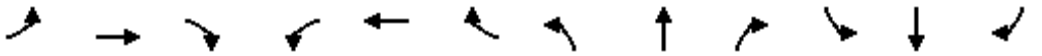
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	665	60	180	5	25	150	195	2490	10	110	1620	230
Future Volume (vph)	665	60	180	5	25	150	195	2490	10	110	1620	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	12	12	16	12	11	11	12	11	11	14
Grade (%)		1%			0%			2%			0%	
Total Lost time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.91		1.00	0.91	1.00
Frt	1.00	1.00	0.85		0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1561	1577	1575		1870		3285	4864		1711	4916	1689
Flt Permitted	0.95	0.96	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1561	1577	1575		1870		3285	4864		1711	4916	1689
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	65	196	5	27	163	212	2707	11	120	1761	250
RTOR Reduction (vph)	0	0	78	0	94	0	0	1	0	0	0	102
Lane Group Flow (vph)	390	398	118	0	101	0	212	2717	0	120	1761	148
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	6	3	3		6	2		1	5	
Permitted Phases			4									5
Actuated Green, G (s)	34.5	34.5	56.2		5.0		21.7	74.5		9.5	62.3	62.3
Effective Green, g (s)	34.5	34.5	56.2		5.0		21.7	74.5		9.5	62.3	62.3
Actuated g/C Ratio	0.23	0.23	0.37		0.03		0.14	0.50		0.06	0.42	0.42
Clearance Time (s)	6.5	6.5	6.5		7.0		6.5	6.5		6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	359	362	590		62		475	2415		108	2041	701
v/s Ratio Prot	0.25	c0.25	0.03		c0.05		0.06	c0.56		0.07	c0.36	
v/s Ratio Perm			0.05									0.09
v/c Ratio	1.09	1.10	0.20		1.63		0.45	1.13		1.11	0.86	0.21
Uniform Delay, d1	57.8	57.8	31.7		72.5		58.7	37.8		70.2	40.0	28.1
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.78	1.20	2.10
Incremental Delay, d2	72.6	76.8	0.2		346.3		0.7	62.4		112.1	4.3	0.6
Delay (s)	130.4	134.5	31.9		418.8		59.3	100.2		167.1	52.4	59.5
Level of Service	F	F	C		F		E	F		F	D	E
Approach Delay (s)		112.4			418.8			97.2			59.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	96.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		

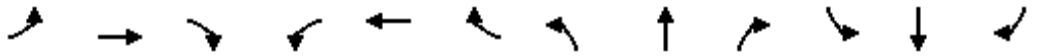
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	635	5	275	0	0	0	0	2950	355	115	1685	0
Future Volume (vph)	635	5	275	0	0	0	0	2950	355	115	1685	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	11	12	12	12	12	11	16	11	11	12
Grade (%)		3%			0%			1%			0%	
Total Lost time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Lane Util. Factor	0.95	0.95	*0.80					0.76		0.97	0.91	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1601	1661	2412					8038		3319	4916	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1601	1661	2412					8038		3319	4916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	690	5	299	0	0	0	0	3207	386	125	1832	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	345	350	299	0	0	0	0	3580	0	125	1832	0
Turn Type	Split	NA	Prot					NA		Prot	NA	
Protected Phases	4	4	4					6		5	2	
Permitted Phases												
Actuated Green, G (s)	41.2	41.2	41.2					69.3		19.5	95.3	
Effective Green, g (s)	41.2	41.2	41.2					69.3		19.5	95.3	
Actuated g/C Ratio	0.27	0.27	0.27					0.46		0.13	0.64	
Clearance Time (s)	8.0	8.0	8.0					6.5		5.5	5.5	
Vehicle Extension (s)	4.0	4.0	4.0					4.0		0.2	0.2	
Lane Grp Cap (vph)	439	456	662					3713		431	3123	
v/s Ratio Prot	c0.22	0.21	0.12					c0.45		0.04	c0.37	
v/s Ratio Perm												
v/c Ratio	0.79	0.77	0.45					0.96		0.29	0.59	
Uniform Delay, d1	50.3	50.0	45.0					39.1		59.0	15.9	
Progression Factor	1.00	1.00	1.00					0.65		0.50	0.77	
Incremental Delay, d2	9.5	8.0	0.7					1.1		1.5	0.7	
Delay (s)	59.8	58.0	45.7					26.6		31.3	13.0	
Level of Service	E	E	D					C		C	B	
Approach Delay (s)		54.9			0.0			26.6			14.2	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	145	5	215	675	2910	0	0	1655	635
Future Volume (vph)	0	0	0	145	5	215	675	2910	0	0	1655	635
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	16	10	11	12	12	11	12
Grade (%)		0%			5%			0%			-1%	
Total Lost time (s)				8.0	8.0	4.0	6.5	6.0			6.0	4.0
Lane Util. Factor				0.95	0.95	1.00	0.97	0.86			0.81	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1639	1703	1750	3204	6194			7329	1591
Flt Permitted				0.95	0.96	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1639	1703	1750	3204	6194			7329	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	158	5	234	734	3163	0	0	1799	690
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	82	81	234	734	3163	0	0	1799	690
Turn Type				Split	NA	Free	Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases						Free						Free
Actuated Green, G (s)				13.6	13.6	150.0	42.0	122.4			73.9	150.0
Effective Green, g (s)				13.6	13.6	150.0	42.0	122.4			73.9	150.0
Actuated g/C Ratio				0.09	0.09	1.00	0.28	0.82			0.49	1.00
Clearance Time (s)				8.0	8.0		6.5	6.0			6.0	
Vehicle Extension (s)				4.0	4.0		4.0	0.2			0.2	
Lane Grp Cap (vph)				148	154	1750	897	5054			3610	1591
v/s Ratio Prot				0.05	0.05		c0.23	c0.51			0.25	
v/s Ratio Perm						0.13						c0.43
v/c Ratio				0.55	0.53	0.13	0.82	0.63			0.50	0.43
Uniform Delay, d1				65.3	65.1	0.0	50.4	5.2			25.6	0.0
Progression Factor				1.00	1.00	1.00	1.29	0.82			0.54	1.00
Incremental Delay, d2				5.4	4.2	0.2	1.9	0.2			0.0	0.1
Delay (s)				70.7	69.3	0.2	67.1	4.5			13.9	0.1
Level of Service				E	E	A	E	A			B	A
Approach Delay (s)		0.0			28.8			16.3			10.1	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	330	280	150	490	335	110	20	260	2170	675	70	1630
Future Volume (vph)	330	280	150	490	335	110	20	260	2170	675	70	1630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	10	12	12	12	10	11	11	11	11
Grade (%)		3%			2%				0%			-1%
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00		1.00	0.91	1.00	1.00	*0.80
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3156	3304		3172	3504	1567		1652	4916	1531	1719	4242
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.07	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3156	3304		3172	3504	1567		129	4916	1531	1719	4242
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	304	163	533	364	120	22	283	2359	734	76	1772
RTOR Reduction (vph)	0	0	0	0	0	98	0	0	0	219	0	14
Lane Group Flow (vph)	359	467	0	533	364	22	0	305	2359	515	76	2084
Turn Type	Split	NA		Split	NA	pt+ov	pm+pt	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4		3	3	3 5	1	1	6		5	2
Permitted Phases							6	6		6		
Actuated Green, G (s)	27.8	27.8		17.5	17.5	27.7		68.5	68.5	68.5	10.2	64.2
Effective Green, g (s)	27.8	27.8		17.5	17.5	27.7		68.5	68.5	68.5	10.2	64.2
Actuated g/C Ratio	0.19	0.19		0.12	0.12	0.18		0.46	0.46	0.46	0.07	0.43
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	584	612		370	408	289		206	2244	699	116	1815
v/s Ratio Prot	0.11	c0.14		c0.17	0.10	0.01		c0.14	0.48		0.04	c0.49
v/s Ratio Perm								c0.53		0.34		
v/c Ratio	0.61	0.76		1.44	0.89	0.08		1.48	1.05	0.74	0.66	1.15
Uniform Delay, d1	56.2	58.0		66.2	65.3	50.6		63.2	40.8	33.4	68.2	42.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		0.57	0.35	0.53	1.00	1.00
Incremental Delay, d2	1.9	5.6		213.0	21.0	0.1		236.2	32.5	5.6	12.5	73.7
Delay (s)	58.1	63.6		279.3	86.3	50.7		272.0	46.9	23.4	80.7	116.6
Level of Service	E	E		F	F	D		F	D	C	F	F
Approach Delay (s)		61.2			183.2				62.0			115.4
Approach LOS		E			F				E			F

Intersection Summary			
HCM 2000 Control Delay	94.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

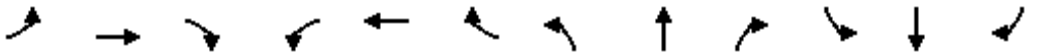
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	300
Future Volume (vph)	300
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	326
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	1110	30	10	105	590	125	25	45	300	535	140
Future Volume (vph)	20	1110	30	10	105	590	125	25	45	300	535	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	1.00			1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (prot)	1711	3525			1778	3557	1538	1694	1783	1776	1536	1623
Flt Permitted	0.41	1.00			0.08	1.00	1.00	0.95	1.00	1.00	0.95	0.97
Satd. Flow (perm)	735	3525			152	3557	1538	1694	1783	1776	1536	1623
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1207	33	11	114	641	136	27	49	326	582	152
RTOR Reduction (vph)	0	1	0	0	0	0	62	0	0	0	0	1
Lane Group Flow (vph)	22	1239	0	0	125	641	74	27	49	326	367	377
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	67.0	67.0			82.0	82.0	82.0	6.0	6.0	150.0	41.5	41.5
Effective Green, g (s)	67.0	67.0			82.0	82.0	82.0	6.0	6.0	150.0	41.5	41.5
Actuated g/C Ratio	0.45	0.45			0.55	0.55	0.55	0.04	0.04	1.00	0.28	0.28
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	328	1574			196	1944	840	67	71	1776	424	449
v/s Ratio Prot		c0.35			c0.04	0.18		0.02	c0.03		c0.24	0.23
v/s Ratio Perm	0.03				0.30		0.05			0.18		
v/c Ratio	0.07	0.79			0.64	0.33	0.09	0.40	0.69	0.18	0.87	0.84
Uniform Delay, d1	23.7	35.4			26.5	18.8	16.2	70.3	71.1	0.0	51.6	51.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	4.1			6.6	0.5	0.2	8.1	30.9	0.2	18.0	14.5
Delay (s)	24.1	39.5			33.1	19.3	16.4	78.4	102.0	0.2	69.6	65.7
Level of Service	C	D			C	B	B	E	F	A	E	E
Approach Delay (s)		39.2				20.7			17.9			67.6
Approach LOS		D				C			B			E

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

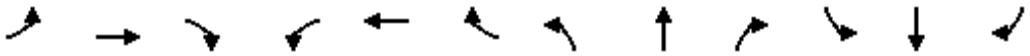
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	11
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1025	930	400	650	0	0	0	0	615	0	180
Future Volume (vph)	0	1025	930	400	650	0	0	0	0	615	0	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	12	12	12	12	12
Total Lost time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Lane Util. Factor		0.91	0.88	0.97	0.91					0.94		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5085	2787	3433	5085					4990		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5085	2787	3433	5085					4990		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1114	1011	435	707	0	0	0	0	668	0	196
RTOR Reduction (vph)	0	0	570	0	0	0	0	0	0	0	0	164
Lane Group Flow (vph)	0	1114	441	435	707	0	0	0	0	668	0	32
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		2	2	1	6					7		7
Permitted Phases												
Actuated Green, G (s)		39.3	39.3	14.3	61.6					14.9		14.9
Effective Green, g (s)		39.3	39.3	14.3	61.6					14.9		14.9
Actuated g/C Ratio		0.44	0.44	0.16	0.68					0.17		0.17
Clearance Time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Vehicle Extension (s)		2.0	2.0	0.5	2.0					0.5		0.5
Lane Grp Cap (vph)		2220	1216	545	3480					826		262
v/s Ratio Prot		c0.22	0.16	c0.13	0.14					c0.13		0.02
v/s Ratio Perm												
v/c Ratio		0.50	0.36	0.80	0.20					0.81		0.12
Uniform Delay, d1		18.3	17.0	36.5	5.2					36.2		32.0
Progression Factor		1.00	1.00	0.63	0.66					1.00		1.00
Incremental Delay, d2		0.8	0.8	7.2	0.1					5.5		0.1
Delay (s)		19.1	17.8	30.2	3.6					41.7		32.1
Level of Service		B	B	C	A					D		C
Approach Delay (s)		18.5			13.7			0.0			39.5	
Approach LOS		B			B			A			D	

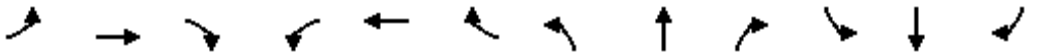
Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1625	0	0	1120	0	240	0	715	0	0	0
Future Volume (vph)	130	1625	0	0	1120	0	240	0	715	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0			6.0		6.5		6.0			
Lane Util. Factor	1.00	0.91			0.91		0.94		0.88			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1770	5085			5085		4990		2787			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1770	5085			5085		4990		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	1766	0	0	1217	0	261	0	777	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	88	0	0	0
Lane Group Flow (vph)	141	1766	0	0	1217	0	261	0	689	0	0	0
Turn Type	Prot	NA			NA		Prot		Prot			
Protected Phases	5	2			6		3		8			
Permitted Phases												
Actuated Green, G (s)	9.9	52.3			37.4		24.2		24.7			
Effective Green, g (s)	9.9	52.3			37.4		24.2		24.7			
Actuated g/C Ratio	0.11	0.58			0.42		0.27		0.27			
Clearance Time (s)	6.0	7.0			6.0		6.5		6.0			
Vehicle Extension (s)	0.5	2.0			2.0		0.5		0.2			
Lane Grp Cap (vph)	194	2954			2113		1341		764			
v/s Ratio Prot	0.08	c0.35			0.24		0.05		c0.25			
v/s Ratio Perm												
v/c Ratio	0.73	0.60			0.58		0.19		0.90			
Uniform Delay, d1	38.7	12.1			20.2		25.4		31.5			
Progression Factor	1.60	0.12			0.94		1.00		1.00			
Incremental Delay, d2	8.4	0.7			0.7		0.0		13.6			
Delay (s)	70.5	2.2			19.7		25.4		45.1			
Level of Service	E	A			B		C		D			
Approach Delay (s)		7.2			19.7			40.1			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

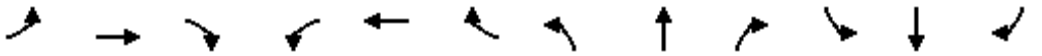
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	2210	30	5	1780	20	35	5	5	45	10	215
Future Volume (vph)	100	2210	30	5	1780	20	35	5	5	45	10	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1784			1957	1785
Flt Permitted	0.05	1.00	1.00	0.03	1.00	1.00		0.73			0.75	1.00
Satd. Flow (perm)	95	3621	1515	56	3370	1508		1360			1537	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	2402	33	5	1935	22	38	5	5	49	11	234
RTOR Reduction (vph)	0	0	8	0	0	6	0	3	0	0	0	48
Lane Group Flow (vph)	109	2402	25	5	1935	16	0	45	0	0	60	186
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	143.0	136.4	136.4	127.7	127.1	127.1		24.5			24.5	24.5
Effective Green, g (s)	143.0	136.4	136.4	127.7	127.1	127.1		24.5			24.5	24.5
Actuated g/C Ratio	0.79	0.76	0.76	0.71	0.71	0.71		0.14			0.14	0.14
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	163	2743	1148	45	2379	1064		185			209	242
v/s Ratio Prot	c0.04	c0.66		0.00	0.57							
v/s Ratio Perm	0.49		0.02	0.08		0.01		0.03			0.04	c0.10
v/c Ratio	0.67	0.88	0.02	0.11	0.81	0.01		0.25			0.29	0.77
Uniform Delay, d1	36.2	15.7	5.4	29.5	18.3	7.9		69.5			69.9	75.0
Progression Factor	1.00	0.96	0.99	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	10.0	3.3	0.0	2.3	3.2	0.0		1.4			1.6	16.2
Delay (s)	46.3	18.4	5.4	31.8	21.4	7.9		70.9			71.5	91.2
Level of Service	D	B	A	C	C	A		E			E	F
Approach Delay (s)		19.4			21.3			70.9			87.2	
Approach LOS		B			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		

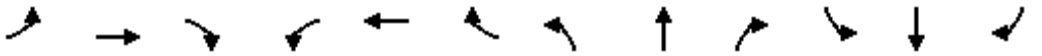
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	1485	10	370	905	85	20	0	115	155	0	125
Future Volume (vph)	145	1485	10	370	905	85	20	0	115	155	0	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	1614	11	402	984	92	22	0	125	168	0	136
RTOR Reduction (vph)	0	0	5	0	0	33	0	0	103	0	0	125
Lane Group Flow (vph)	158	1614	6	402	984	59	22	0	22	168	0	11
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot		Over	Prot		Over
Protected Phases	5	2	3	1	6	7	3		1	7		5
Permitted Phases			2			6						
Actuated Green, G (s)	7.4	43.4	51.0	15.5	50.5	58.1	7.6		15.5	7.6		7.4
Effective Green, g (s)	7.4	43.4	51.0	15.5	50.5	58.1	7.6		15.5	7.6		7.4
Actuated g/C Ratio	0.08	0.48	0.57	0.17	0.56	0.65	0.08		0.17	0.08		0.08
Clearance Time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Vehicle Extension (s)	0.5	2.0	0.5	0.5	2.0	0.5	0.5		0.5	0.5		0.5
Lane Grp Cap (vph)	282	2452	1037	591	2853	1021	289		272	289		130
v/s Ratio Prot	0.05	c0.32	0.00	c0.12	0.19	0.00	0.01		0.01	c0.05		0.01
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.56	0.66	0.01	0.68	0.34	0.06	0.08		0.08	0.58		0.09
Uniform Delay, d1	39.7	17.7	8.5	34.9	10.7	5.9	38.0		31.3	39.7		38.2
Progression Factor	0.47	0.52	1.00	0.70	0.26	0.05	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.3	1.2	0.0	2.1	0.3	0.0	0.0		0.0	1.9		0.1
Delay (s)	20.2	10.4	8.5	26.4	3.1	0.3	38.0		31.3	41.6		38.3
Level of Service	C	B	A	C	A	A	D		C	D		D
Approach Delay (s)		11.2			9.2			32.3			40.1	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



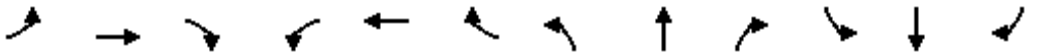
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1025	930	400	650	0	0	0	0	615	0	180
Future Volume (veh/h)	0	1025	930	400	650	0	0	0	0	615	0	180
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1114	1011	435	707	0				668	0	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2344	1281	509	3521	0				778	0	245
Arrive On Green	0.00	0.46	0.46	0.10	0.46	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5274	2790	3456	5274	0				5023	0	1585
Grp Volume(v), veh/h	0	1114	1011	435	707	0				668	0	196
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1674	0	1585
Q Serve(g_s), s	0.0	13.6	27.7	11.2	7.4	0.0				11.7	0.0	10.7
Cycle Q Clear(g_c), s	0.0	13.6	27.7	11.2	7.4	0.0				11.7	0.0	10.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2344	1281	509	3521	0				778	0	245
V/C Ratio(X)	0.00	0.48	0.79	0.85	0.20	0.00				0.86	0.00	0.80
Avail Cap(c_a), veh/h	0	2344	1281	710	3521	0				1033	0	326
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.66	0.66	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.8	20.7	39.6	9.5	0.0				37.1	0.0	36.7
Incr Delay (d2), s/veh	0.0	0.5	3.4	5.3	0.1	0.0				4.6	0.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	8.9	5.2	2.5	0.0				5.0	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.3	24.0	44.9	9.6	0.0				41.7	0.0	43.9
LnGrp LOS	A	B	C	D	A	A				D	A	D
Approach Vol, veh/h		2125			1142						864	
Approach Delay, s/veh		20.5			23.1						42.2	
Approach LOS		C			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	20.8	47.8		21.4		68.6
Change Period (Y+Rc), s	7.5	6.5		7.5		* 6.5
Max Green Setting (Gmax), s	18.5	31.5		18.5		* 58
Max Q Clear Time (g_c+I1), s	13.2	29.7		13.7		9.4
Green Ext Time (p_c), s	0.1	1.4		0.3		3.5

Intersection Summary		
HCM 6th Ctrl Delay		25.7
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



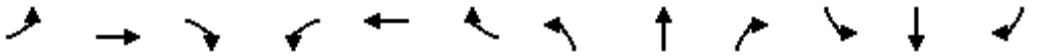
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1625	0	0	1120	0	240	0	715	0	0	0
Future Volume (veh/h)	130	1625	0	0	1120	0	240	0	715	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	141	1766	0	0	1217	0	261	0	777			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	0	2	0	2			
Cap, veh/h	173	2823	0	0	1987	0	1493	0	829			
Arrive On Green	0.10	0.55	0.00	0.00	0.39	0.00	0.30	0.00	0.30			
Sat Flow, veh/h	1781	5274	0	0	5443	0	5023	0	2790			
Grp Volume(v), veh/h	141	1766	0	0	1217	0	261	0	777			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1702	0	1674	0	1395			
Q Serve(g_s), s	7.0	21.3	0.0	0.0	17.2	0.0	3.5	0.0	24.4			
Cycle Q Clear(g_c), s	7.0	21.3	0.0	0.0	17.2	0.0	3.5	0.0	24.4			
Prop In Lane	1.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	173	2823	0	0	1987	0	1493	0	829			
V/C Ratio(X)	0.82	0.63	0.00	0.00	0.61	0.00	0.17	0.00	0.94			
Avail Cap(c_a), veh/h	257	2823	0	0	1987	0	1647	0	914			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	39.8	13.8	0.0	0.0	22.1	0.0	23.4	0.0	30.8			
Incr Delay (d2), s/veh	5.4	0.8	0.0	0.0	1.4	0.0	0.0	0.0	15.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.2	7.5	0.0	0.0	6.7	0.0	1.3	0.0	9.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	14.5	0.0	0.0	23.5	0.0	23.5	0.0	46.0			
LnGrp LOS	D	B	A	A	C	A	C	A	D			
Approach Vol, veh/h		1907			1217			1038				
Approach Delay, s/veh		16.8			23.5			40.4				
Approach LOS		B			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		56.8			14.7	42.0		33.2				
Change Period (Y+Rc), s		7.0			6.0	* 7		6.5				
Max Green Setting (Gmax), s		47.0			13.0	* 29		29.5				
Max Q Clear Time (g_c+I1), s		23.3			9.0	19.2		26.4				
Green Ext Time (p_c), s		10.2			0.0	4.2		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	2210	30	5	1780	20	35	5	5	45	10	215
Future Volume (veh/h)	100	2210	30	5	1780	20	35	5	5	45	10	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	109	2402	33	5	1935	22	38	5	5	49	11	234
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	2742	1176	83	2510	1120	153	20	16	234	49	259
Arrive On Green	0.03	0.75	0.75	0.00	0.73	0.73	0.16	0.14	0.14	0.16	0.14	0.14
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	821	140	112	1388	346	1821
Grp Volume(v), veh/h	109	2402	33	5	1935	22	48	0	0	60	0	234
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1073	0	0	1733	0	1821
Q Serve(g_s), s	2.9	86.2	1.0	0.1	62.6	0.7	5.4	0.0	0.0	0.0	0.0	22.8
Cycle Q Clear(g_c), s	2.9	86.2	1.0	0.1	62.6	0.7	10.5	0.0	0.0	5.2	0.0	22.8
Prop In Lane	1.00		1.00	1.00		1.00	0.79		0.10	0.82		1.00
Lane Grp Cap(c), veh/h	173	2742	1176	83	2510	1120	203	0	0	307	0	259
V/C Ratio(X)	0.63	0.88	0.03	0.06	0.77	0.02	0.24	0.00	0.00	0.20	0.00	0.90
Avail Cap(c_a), veh/h	212	2742	1176	106	2510	1120	227	0	0	339	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.4	16.3	5.7	25.8	15.3	6.8	71.3	0.0	0.0	67.5	0.0	76.0
Incr Delay (d2), s/veh	8.0	4.3	0.0	0.6	2.4	0.0	1.3	0.0	0.0	0.7	0.0	30.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	34.4	0.3	0.1	24.0	0.2	2.1	0.0	0.0	2.5	0.0	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	20.6	5.7	26.5	17.6	6.8	72.6	0.0	0.0	68.2	0.0	106.1
LnGrp LOS	D	C	A	C	B	A	E	A	A	E	A	F
Approach Vol, veh/h		2544			1962			48			294	
Approach Delay, s/veh		21.0			17.5			72.6			98.4	
Approach LOS		C			B			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	136.9		32.1	6.7	141.2		32.1				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	9.0	123.5		29.0	3.0	129.5		29.0				
Max Q Clear Time (g_c+I1), s	4.9	64.6		12.5	2.1	88.2		24.8				
Green Ext Time (p_c), s	0.2	3.6		0.3	0.0	5.5		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			24.8									
HCM 6th LOS			C									

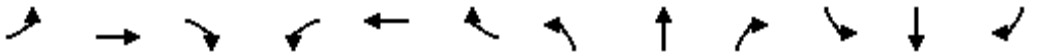
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	25	690	25	15	265	1305	775	30	215	420	525	200
Future Volume (vph)	25	690	25	15	265	1305	775	30	215	420	525	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	11	11	11	16	9	10
Grade (%)		0%				-1%			2%			-3%
Total Lost time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5	4.0	7.0	7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt	1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (prot)	1711	3521			1778	3557	1538	1694	1783	1776	1536	1619
Flt Permitted	0.11	1.00			0.10	1.00	1.00	0.95	1.00	1.00	0.95	0.98
Satd. Flow (perm)	194	3521			180	3557	1538	1694	1783	1776	1536	1619
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	750	27	16	288	1418	842	33	234	457	571	217
RTOR Reduction (vph)	0	2	0	0	0	0	298	0	0	0	0	2
Lane Group Flow (vph)	27	775	0	0	304	1418	544	33	234	457	360	464
Turn Type	Perm	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Free	Split	NA
Protected Phases		6		5	5	2		3	3		4	4
Permitted Phases	6			2	2		2			Free		
Actuated Green, G (s)	37.2	37.2			64.0	64.0	64.0	21.5	21.5	150.0	44.0	44.0
Effective Green, g (s)	37.2	37.2			64.0	64.0	64.0	21.5	21.5	150.0	44.0	44.0
Actuated g/C Ratio	0.25	0.25			0.43	0.43	0.43	0.14	0.14	1.00	0.29	0.29
Clearance Time (s)	6.0	6.0			4.5	6.0	6.0	7.5	7.5		7.0	7.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	48	873			314	1517	656	242	255	1776	450	474
v/s Ratio Prot		0.22			0.14	c0.40		0.02	c0.13		0.23	c0.29
v/s Ratio Perm	0.14				c0.27		0.35			0.26		
v/c Ratio	0.56	0.89			0.97	0.93	0.83	0.14	0.92	0.26	0.80	0.98
Uniform Delay, d1	49.3	54.4			46.7	41.0	38.1	56.1	63.4	0.0	48.9	52.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.1	13.0			41.7	12.1	11.6	0.5	36.2	0.4	11.1	35.8
Delay (s)	89.4	67.4			88.4	53.1	49.7	56.7	99.6	0.4	60.0	88.3
Level of Service	F	E			F	D	D	E	F	A	E	F
Approach Delay (s)		68.2				56.2			35.0			76.0
Approach LOS		E				E			C			E

Intersection Summary			
HCM 2000 Control Delay	58.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

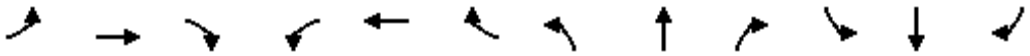
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1900
Lane Width	12
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	38
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1320	330	475	2120	0	0	0	0	515	0	240
Future Volume (vph)	0	1320	330	475	2120	0	0	0	0	515	0	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	12	12	12	12	12
Total Lost time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Lane Util. Factor		0.91	0.88	0.97	0.91					0.94		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5085	2787	3433	5085					4990		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5085	2787	3433	5085					4990		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1435	359	516	2304	0	0	0	0	560	0	261
RTOR Reduction (vph)	0	0	203	0	0	0	0	0	0	0	0	113
Lane Group Flow (vph)	0	1435	156	516	2304	0	0	0	0	560	0	148
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		2	2	1	6					7		7
Permitted Phases												
Actuated Green, G (s)		39.1	39.1	15.9	63.0					13.5		13.5
Effective Green, g (s)		39.1	39.1	15.9	63.0					13.5		13.5
Actuated g/C Ratio		0.43	0.43	0.18	0.70					0.15		0.15
Clearance Time (s)		6.5	6.5	7.5	6.0					7.5		7.5
Vehicle Extension (s)		2.0	2.0	0.5	2.0					0.5		0.5
Lane Grp Cap (vph)		2209	1210	606	3559					748		237
v/s Ratio Prot		0.28	0.06	0.15	c0.45					c0.11		0.09
v/s Ratio Perm												
v/c Ratio		0.65	0.13	0.85	0.65					0.75		0.62
Uniform Delay, d1		20.1	15.2	35.9	7.4					36.6		35.9
Progression Factor		1.00	1.00	0.78	0.63					1.00		1.00
Incremental Delay, d2		1.5	0.2	3.9	0.4					3.6		3.7
Delay (s)		21.5	15.5	31.9	5.1					40.2		39.5
Level of Service		C	B	C	A					D		D
Approach Delay (s)		20.3			10.0			0.0			40.0	
Approach LOS		C			B			A			D	

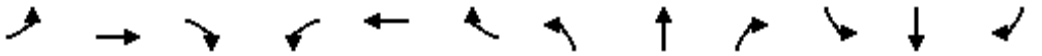
Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	1615	0	0	1635	0	725	0	400	0	0	0
Future Volume (vph)	175	1615	0	0	1635	0	725	0	400	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0			6.0		6.5		6.0			
Lane Util. Factor	1.00	0.91			0.91		0.94		0.88			
Frt	1.00	1.00			1.00		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1770	5085			5085		4990		2787			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1770	5085			5085		4990		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	1755	0	0	1777	0	788	0	435	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	98	0	0	0
Lane Group Flow (vph)	190	1755	0	0	1777	0	788	0	337	0	0	0
Turn Type	Prot	NA			NA		Prot		Prot			
Protected Phases	5	2			6		3		8			
Permitted Phases												
Actuated Green, G (s)	12.0	60.0			43.0		16.5		17.0			
Effective Green, g (s)	12.0	60.0			43.0		16.5		17.0			
Actuated g/C Ratio	0.13	0.67			0.48		0.18		0.19			
Clearance Time (s)	6.0	7.0			6.0		6.5		6.0			
Vehicle Extension (s)	0.5	2.0			2.0		0.5		0.2			
Lane Grp Cap (vph)	236	3390			2429		914		526			
v/s Ratio Prot	c0.11	0.35			c0.35		c0.16		0.12			
v/s Ratio Perm												
v/c Ratio	0.81	0.52			0.73		0.86		0.64			
Uniform Delay, d1	37.9	7.6			18.9		35.6		33.7			
Progression Factor	1.03	0.93			0.99		1.00		1.00			
Incremental Delay, d2	13.5	0.5			0.2		8.1		2.0			
Delay (s)	52.5	7.5			18.8		43.8		35.7			
Level of Service	D	A			B		D		D			
Approach Delay (s)		11.9			18.8			40.9			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

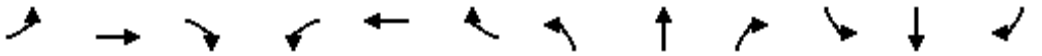
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	1700	60	5	2600	55	25	5	5	45	10	155
Future Volume (vph)	255	1700	60	5	2600	55	25	5	5	45	10	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	11	11	12	12	12	12	14	15
Grade (%)		2%			3%			-2%			-5%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96			0.96	1.00
Satd. Flow (prot)	1694	3621	1515	1685	3370	1508		1782			1957	1785
Flt Permitted	0.03	1.00	1.00	0.11	1.00	1.00		0.75			0.78	1.00
Satd. Flow (perm)	58	3621	1515	199	3370	1508		1378			1586	1785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1848	65	5	2826	60	27	5	5	49	11	168
RTOR Reduction (vph)	0	0	12	0	0	21	0	4	0	0	0	82
Lane Group Flow (vph)	277	1848	53	5	2826	39	0	33	0	0	60	86
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		8
Actuated Green, G (s)	150.6	144.0	144.0	117.1	116.5	116.5		16.9			16.9	16.9
Effective Green, g (s)	150.6	144.0	144.0	117.1	116.5	116.5		16.9			16.9	16.9
Actuated g/C Ratio	0.84	0.80	0.80	0.65	0.65	0.65		0.09			0.09	0.09
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.5			6.5	6.5
Vehicle Extension (s)	5.0	0.2	0.2	5.0	0.2	0.2		5.0			5.0	5.0
Lane Grp Cap (vph)	303	2896	1212	134	2181	976		129			148	167
v/s Ratio Prot	c0.14	0.51		0.00	c0.84							
v/s Ratio Perm	0.62		0.04	0.02		0.03		0.02			0.04	c0.05
v/c Ratio	0.91	0.64	0.04	0.04	1.30	0.04		0.26			0.41	0.51
Uniform Delay, d1	68.2	7.4	3.7	14.6	31.8	11.5		75.7			76.8	77.6
Progression Factor	1.01	0.97	1.23	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	28.3	0.9	0.1	0.2	136.6	0.1		2.2			3.8	5.2
Delay (s)	97.5	8.1	4.6	14.9	168.4	11.6		78.0			80.6	82.8
Level of Service	F	A	A	B	F	B		E			F	F
Approach Delay (s)		19.3			164.8			78.0			82.2	
Approach LOS		B			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	101.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		

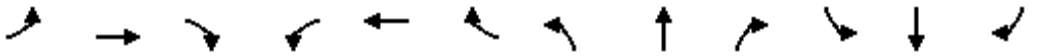
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	1340	180	250	2085	25	405	0	150	300	0	105
Future Volume (vph)	315	1340	180	250	2085	25	405	0	150	300	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433		1583	3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	1457	196	272	2266	27	440	0	163	326	0	114
RTOR Reduction (vph)	0	0	32	0	0	10	0	0	140	0	0	101
Lane Group Flow (vph)	342	1457	164	272	2266	17	440	0	23	326	0	13
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot		Over	Prot		Over
Protected Phases	5	2	3	1	6	7	3		1	7		5
Permitted Phases			2			6						
Actuated Green, G (s)	9.9	40.5	53.9	12.6	42.2	55.6	13.4		12.6	13.4		9.9
Effective Green, g (s)	9.9	40.5	53.9	12.6	42.2	55.6	13.4		12.6	13.4		9.9
Actuated g/C Ratio	0.11	0.45	0.60	0.14	0.47	0.62	0.15		0.14	0.15		0.11
Clearance Time (s)	8.0	8.0	8.0	7.5	8.5	8.0	8.0		7.5	8.0		8.0
Vehicle Extension (s)	0.5	2.0	0.5	0.5	2.0	0.5	0.5		0.5	0.5		0.5
Lane Grp Cap (vph)	377	2288	1088	480	2384	977	511		221	511		174
v/s Ratio Prot	0.10	c0.29	0.02	0.08	c0.45	0.00	c0.13		0.01	0.09		0.01
v/s Ratio Perm			0.08			0.01						
v/c Ratio	0.91	0.64	0.15	0.57	0.95	0.02	0.86		0.10	0.64		0.07
Uniform Delay, d1	39.6	19.1	8.0	36.1	22.9	6.6	37.4		33.8	36.0		35.9
Progression Factor	0.55	0.41	0.03	1.08	0.59	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	19.7	1.1	0.0	0.6	7.1	0.0	13.4		0.1	1.9		0.1
Delay (s)	41.5	9.0	0.3	39.7	20.5	6.6	50.8		33.8	37.9		36.0
Level of Service	D	A	A	D	C	A	D		C	D		D
Approach Delay (s)		13.7			22.4			46.2			37.4	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



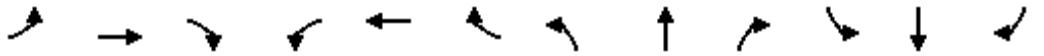
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1320	330	475	2120	0	0	0	0	515	0	240
Future Volume (veh/h)	0	1320	330	475	2120	0	0	0	0	515	0	240
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1435	359	516	2304	0				560	0	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2074	1133	588	3369	0				927	0	293
Arrive On Green	0.00	0.41	0.41	0.11	0.44	0.00				0.18	0.00	0.18
Sat Flow, veh/h	0	5274	2790	3456	5274	0				5023	0	1585
Grp Volume(v), veh/h	0	1435	359	516	2304	0				560	0	261
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1674	0	1585
Q Serve(g_s), s	0.0	20.9	7.9	13.2	32.5	0.0				9.2	0.0	14.5
Cycle Q Clear(g_c), s	0.0	20.9	7.9	13.2	32.5	0.0				9.2	0.0	14.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2074	1133	588	3369	0				927	0	293
V/C Ratio(X)	0.00	0.69	0.32	0.88	0.68	0.00				0.60	0.00	0.89
Avail Cap(c_a), veh/h	0	2074	1133	710	3369	0				1033	0	326
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.67	0.67	0.30	0.30	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	22.1	18.2	38.9	17.6	0.0				33.7	0.0	35.8
Incr Delay (d2), s/veh	0.0	1.3	0.5	3.1	0.3	0.0				0.5	0.0	22.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.1	2.5	6.0	13.2	0.0				3.7	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	23.4	18.7	42.0	17.9	0.0				34.1	0.0	58.0
LnGrp LOS	A	C	B	D	B	A				C	A	E
Approach Vol, veh/h		1794			2820						821	
Approach Delay, s/veh		22.4			22.3						41.7	
Approach LOS		C			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.8	43.1		24.1		65.9
Change Period (Y+Rc), s	7.5	6.5		7.5		* 6.5
Max Green Setting (Gmax), s	18.5	31.5		18.5		* 58
Max Q Clear Time (g_c+I1), s	15.2	22.9		16.5		34.5
Green Ext Time (p_c), s	0.1	5.1		0.1		14.5

Intersection Summary		
HCM 6th Ctrl Delay		25.3
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



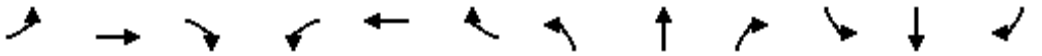
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	1615	0	0	1635	0	725	0	400	0	0	0
Future Volume (veh/h)	175	1615	0	0	1635	0	725	0	400	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	190	1755	0	0	1777	0	788	0	435			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	0	2	0	2			
Cap, veh/h	227	3427	0	0	2437	0	898	0	499			
Arrive On Green	0.04	0.22	0.00	0.00	0.48	0.00	0.18	0.00	0.18			
Sat Flow, veh/h	1781	5274	0	0	5443	0	5023	0	2790			
Grp Volume(v), veh/h	190	1755	0	0	1777	0	788	0	435			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1702	0	1674	0	1395			
Q Serve(g_s), s	9.5	27.2	0.0	0.0	25.1	0.0	13.8	0.0	13.7			
Cycle Q Clear(g_c), s	9.5	27.2	0.0	0.0	25.1	0.0	13.8	0.0	13.7			
Prop In Lane	1.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	227	3427	0	0	2437	0	898	0	499			
V/C Ratio(X)	0.84	0.51	0.00	0.00	0.73	0.00	0.88	0.00	0.87			
Avail Cap(c_a), veh/h	297	3427	0	0	2437	0	1033	0	573			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.2	22.1	0.0	0.0	18.9	0.0	36.0	0.0	35.9			
Incr Delay (d2), s/veh	9.3	0.4	0.0	0.0	2.0	0.0	7.1	0.0	11.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.0	12.3	0.0	0.0	9.5	0.0	6.1	0.0	5.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.4	22.5	0.0	0.0	20.8	0.0	43.1	0.0	47.3			
LnGrp LOS	D	C	A	A	C	A	D	A	D			
Approach Vol, veh/h		1945			1777			1223				
Approach Delay, s/veh		25.3			20.8			44.6				
Approach LOS		C			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		67.4			17.5	50.0		22.6				
Change Period (Y+Rc), s		7.0			6.0	* 7		6.5				
Max Green Setting (Gmax), s		58.0			15.0	* 38		18.5				
Max Q Clear Time (g_c+I1), s		29.2			11.5	27.1		15.8				
Green Ext Time (p_c), s		11.0			0.0	6.6		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			28.5									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	1700	60	5	2600	55	25	5	5	45	10	155
Future Volume (veh/h)	255	1700	60	5	2600	55	25	5	5	45	10	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1921	1847	1817	1817	1817	1949	1949	1949	2067	2149	2149
Adj Flow Rate, veh/h	277	1848	65	5	2826	60	27	5	5	49	11	168
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	2865	1229	175	2416	1078	115	21	16	184	38	198
Arrive On Green	0.09	0.78	0.78	0.00	0.70	0.70	0.12	0.11	0.11	0.12	0.11	0.11
Sat Flow, veh/h	1759	3649	1565	1731	3453	1540	742	193	146	1360	349	1821
Grp Volume(v), veh/h	277	1848	65	5	2826	60	37	0	0	60	0	168
Grp Sat Flow(s),veh/h/ln	1759	1825	1565	1731	1726	1540	1081	0	0	1709	0	1821
Q Serve(g_s), s	16.0	39.7	1.7	0.2	126.0	2.2	3.5	0.0	0.0	0.0	0.0	16.3
Cycle Q Clear(g_c), s	16.0	39.7	1.7	0.2	126.0	2.2	9.1	0.0	0.0	5.6	0.0	16.3
Prop In Lane	1.00		1.00	1.00		1.00	0.73		0.14	0.82		1.00
Lane Grp Cap(c), veh/h	196	2865	1229	175	2416	1078	167	0	0	246	0	198
V/C Ratio(X)	1.41	0.65	0.05	0.03	1.17	0.06	0.22	0.00	0.00	0.24	0.00	0.85
Avail Cap(c_a), veh/h	196	2865	1229	197	2416	1078	239	0	0	335	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	73.0	8.4	4.3	9.6	27.0	8.4	75.9	0.0	0.0	73.0	0.0	78.8
Incr Delay (d2), s/veh	212.3	1.1	0.1	0.1	81.1	0.1	1.4	0.0	0.0	1.1	0.0	21.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.7	14.8	0.5	0.1	75.2	0.8	1.7	0.0	0.0	2.6	0.0	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	285.3	9.6	4.4	9.8	108.2	8.5	77.3	0.0	0.0	74.1	0.0	100.0
LnGrp LOS	F	A	A	A	F	A	E	A	A	E	A	F
Approach Vol, veh/h		2190			2891			37			228	
Approach Delay, s/veh		44.3			105.9			77.3			93.2	
Approach LOS		D			F			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	132.0		26.0	6.7	147.3		26.0				
Change Period (Y+Rc), s	6.0	6.0		6.5	6.0	6.0		6.5				
Max Green Setting (Gmax), s	16.0	116.5		29.0	3.0	129.5		29.0				
Max Q Clear Time (g_c+I1), s	18.0	128.0		11.1	2.2	41.7		18.3				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.3		1.2				

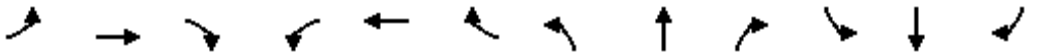
Intersection Summary												
HCM 6th Ctrl Delay			79.9									
HCM 6th LOS			E									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	80	5	295	10	5	5	5	120	1325	5	5	2635
Future Volume (vph)	80	5	295	10	5	5	5	120	1325	5	5	2635
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.97			1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1779	1583		1757			1770	5085	1583	1770	5068
Flt Permitted		0.72	1.00		0.83			0.04	1.00	1.00	0.17	1.00
Satd. Flow (perm)		1346	1583		1495			71	5085	1583	322	5068
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	5	321	11	5	5	5	130	1440	5	5	2864
RTOR Reduction (vph)	0	0	17	0	4	0	0	0	0	1	0	1
Lane Group Flow (vph)	0	92	304	0	17	0	0	135	1440	4	5	2928
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		17.4	32.0		17.9			119.1	119.1	119.1	99.0	99.0
Effective Green, g (s)		17.4	32.0		17.9			119.1	119.1	119.1	99.0	99.0
Actuated g/C Ratio		0.12	0.21		0.12			0.79	0.79	0.79	0.66	0.66
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		156	337		178			221	4037	1256	212	3344
v/s Ratio Prot			c0.09					0.06	0.28			c0.58
v/s Ratio Perm		0.07	0.10		0.01			0.42		0.00	0.02	
v/c Ratio		0.59	0.90		0.09			0.61	0.36	0.00	0.02	0.88
Uniform Delay, d1		62.9	57.5		58.8			46.0	4.4	3.2	8.8	20.5
Progression Factor		1.00	1.00		1.00			0.68	0.80	1.00	1.00	1.00
Incremental Delay, d2		8.6	25.9		0.5			4.5	0.2	0.0	0.2	3.6
Delay (s)		71.5	83.3		59.3			35.8	3.8	3.2	9.0	24.1
Level of Service		E	F		E			D	A	A	A	C
Approach Delay (s)		80.7			59.3				6.5			24.1
Approach LOS		F			E				A			C

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

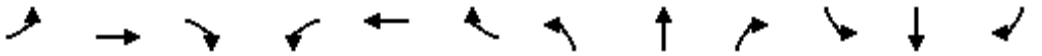
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	65
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	205	5	325	400	1130	0	0	2285	660
Future Volume (vph)	0	0	0	205	5	325	400	1130	0	0	2285	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1689	1583	1770	5085			4914	
Flt Permitted				0.95	0.95	1.00	0.05	1.00			1.00	
Satd. Flow (perm)				1681	1689	1583	85	5085			4914	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	223	5	353	435	1228	0	0	2484	717
RTOR Reduction (vph)	0	0	0	0	0	103	0	0	0	0	34	0
Lane Group Flow (vph)	0	0	0	114	114	250	435	1228	0	0	3167	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				25.3	25.3	25.3	112.7	112.7			81.2	
Effective Green, g (s)				25.3	25.3	25.3	112.7	112.7			81.2	
Actuated g/C Ratio				0.17	0.17	0.17	0.75	0.75			0.54	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				283	284	266	344	3820			2660	
v/s Ratio Prot							c0.21	0.24			0.64	
v/s Ratio Perm				0.07	0.07	c0.16	c0.74					
v/c Ratio				0.40	0.40	0.94	1.26	0.32			1.19	
Uniform Delay, d1				55.6	55.6	61.6	58.0	6.1			34.4	
Progression Factor				1.00	1.00	1.00	0.96	0.38			0.60	
Incremental Delay, d2				1.3	1.3	39.0	136.6	0.2			87.7	
Delay (s)				56.9	56.9	100.6	192.2	2.5			108.2	
Level of Service				E	E	F	F	A			F	
Approach Delay (s)		0.0			83.4			52.2			108.2	
Approach LOS		A			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	88.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

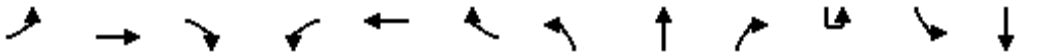
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	5	525	0	0	0	0	1420	130	260	2230	0
Future Volume (vph)	110	5	525	0	0	0	0	1420	130	260	2230	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.96	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1692	1583					5021		1770	5085	
Flt Permitted	0.95	0.96	1.00					1.00		0.09	1.00	
Satd. Flow (perm)	1681	1692	1583					5021		171	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	5	571	0	0	0	0	1543	141	283	2424	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	62	63	571	0	0	0	0	1678	0	283	2424	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	14.2	14.2	150.0					84.3		123.8	123.8	
Effective Green, g (s)	14.2	14.2	150.0					84.3		123.8	123.8	
Actuated g/C Ratio	0.09	0.09	1.00					0.56		0.83	0.83	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	159	160	1583					2821		492	4196	
v/s Ratio Prot	0.04	0.04						0.33		0.13	c0.48	
v/s Ratio Perm			c0.36							0.35		
v/c Ratio	0.39	0.39	0.36					0.59		0.58	0.58	
Uniform Delay, d1	63.8	63.9	0.0					21.6		23.9	4.4	
Progression Factor	1.00	1.00	1.00					0.69		0.83	0.23	
Incremental Delay, d2	3.3	3.3	0.6					0.8		0.1	0.1	
Delay (s)	67.1	67.2	0.6					15.8		20.0	1.0	
Level of Service	E	E	A					B		B	A	
Approach Delay (s)		12.6			0.0			15.8			3.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	265	20	10	30	5	85	5	1190	15	10	110	2595
Future Volume (vph)	265	20	10	30	5	85	5	1190	15	10	110	2595
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		1.00		1.00	1.00	0.85	1.00	1.00			1.00	1.00
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1775		1770	1863	1583	1770	5076			1770	5074
Flt Permitted		0.74		0.74	1.00	1.00	0.05	1.00			0.15	1.00
Satd. Flow (perm)		1380		1379	1863	1583	88	5076			276	5074
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	22	11	33	5	92	5	1293	16	11	120	2821
RTOR Reduction (vph)	0	1	0	0	0	69	0	1	0	0	0	1
Lane Group Flow (vph)	0	320	0	33	5	23	5	1308	0	0	131	2863
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		37.6		37.6	37.6	37.6	85.1	84.4			99.4	93.2
Effective Green, g (s)		37.6		37.6	37.6	37.6	85.1	84.4			99.4	93.2
Actuated g/C Ratio		0.25		0.25	0.25	0.25	0.57	0.56			0.66	0.62
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		345		345	466	396	57	2856			277	3152
v/s Ratio Prot					0.00		0.00	0.26			c0.03	c0.56
v/s Ratio Perm		c0.23		0.02		0.01	0.05				0.28	
v/c Ratio		0.93		0.10	0.01	0.06	0.09	0.46			0.47	0.91
Uniform Delay, d1		54.9		43.1	42.2	42.7	27.9	19.3			11.9	24.7
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			0.50	0.16
Incremental Delay, d2		30.7		0.2	0.0	0.1	0.7	0.5			1.1	4.4
Delay (s)		85.6		43.3	42.2	42.8	28.6	19.9			7.1	8.4
Level of Service		F		D	D	D	C	B			A	A
Approach Delay (s)		85.6			42.9			19.9				8.4
Approach LOS		F			D			B				A

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

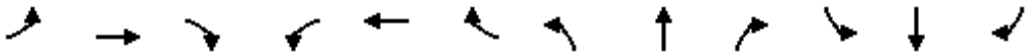
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	40
Future Volume (vph)	40
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	43
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	120	5	100	10	5	5	5	175	2795	5	5	2000
Future Volume (vph)	120	5	100	10	5	5	5	175	2795	5	5	2000
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.91	1.00	1.00	0.91
Frt		1.00	0.85		0.97			1.00	1.00	0.85	1.00	0.99
Flt Protected		0.95	1.00		0.97			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1777	1583		1757			1770	5085	1583	1770	5054
Flt Permitted		0.72	1.00		0.83			0.04	1.00	1.00	0.04	1.00
Satd. Flow (perm)		1339	1583		1495			76	5085	1583	80	5054
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	5	109	11	5	5	5	190	3038	5	5	2174
RTOR Reduction (vph)	0	0	16	0	3	0	0	0	0	1	0	2
Lane Group Flow (vph)	0	135	93	0	18	0	0	195	3038	4	5	2264
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		4	1!		8			1	6			2
Permitted Phases	4		4	8			1!	6		6	2	
Actuated Green, G (s)		21.6	38.0		22.1			114.9	114.9	114.9	93.0	93.0
Effective Green, g (s)		21.6	38.0		22.1			114.9	114.9	114.9	93.0	93.0
Actuated g/C Ratio		0.14	0.25		0.15			0.77	0.77	0.77	0.62	0.62
Clearance Time (s)		7.5	5.5		7.0			5.5	6.0	6.0	6.0	6.0
Vehicle Extension (s)		5.0	3.0		5.0			3.0	0.2	0.2	0.2	0.2
Lane Grp Cap (vph)		192	401		220			243	3895	1212	49	3133
v/s Ratio Prot			0.03					0.09	c0.60			0.45
v/s Ratio Perm		c0.10	0.03		0.01			c0.53		0.00	0.06	
v/c Ratio		0.70	0.23		0.08			0.80	0.78	0.00	0.10	0.72
Uniform Delay, d1		61.1	44.4		55.2			47.9	10.2	4.1	11.6	19.6
Progression Factor		1.00	1.00		1.00			0.67	1.48	1.00	1.00	1.00
Incremental Delay, d2		13.7	0.3		0.3			11.2	1.0	0.0	4.1	1.5
Delay (s)		74.8	44.7		55.6			43.5	16.1	4.1	15.7	21.1
Level of Service		E	D		E			D	B	A	B	C
Approach Delay (s)		61.4			55.6				17.7			21.1
Approach LOS		E			E				B			C

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

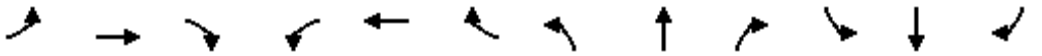
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	85
Future Volume (vph)	85
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	92
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	140	5	235	200	2745	0	0	1635	480
Future Volume (vph)	0	0	0	140	5	235	200	2745	0	0	1635	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.91			0.91	
Frt				1.00	1.00	0.85	1.00	1.00			0.97	
Flt Protected				0.95	0.96	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1681	1691	1583	1770	5085			4912	
Flt Permitted				0.95	0.96	1.00	0.05	1.00			1.00	
Satd. Flow (perm)				1681	1691	1583	84	5085			4912	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	152	5	255	217	2984	0	0	1777	522
RTOR Reduction (vph)	0	0	0	0	0	55	0	0	0	0	33	0
Lane Group Flow (vph)	0	0	0	79	78	200	217	2984	0	0	2266	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		6	2			5	
Permitted Phases				4		4	2					
Actuated Green, G (s)				23.8	23.8	23.8	114.2	114.2			81.7	
Effective Green, g (s)				23.8	23.8	23.8	114.2	114.2			81.7	
Actuated g/C Ratio				0.16	0.16	0.16	0.76	0.76			0.54	
Clearance Time (s)				6.5	6.5	6.5	6.0	5.5			6.0	
Vehicle Extension (s)				4.0	4.0	4.0	3.0	0.2			0.2	
Lane Grp Cap (vph)				266	268	251	356	3871			2675	
v/s Ratio Prot							0.11	c0.59			c0.46	
v/s Ratio Perm				0.05	0.05	c0.13	0.36					
v/c Ratio				0.30	0.29	0.80	0.61	0.77			0.85	
Uniform Delay, d1				55.7	55.7	60.8	41.0	10.3			28.9	
Progression Factor				1.00	1.00	1.00	0.55	0.13			0.46	
Incremental Delay, d2				0.9	0.8	16.9	2.3	0.5			2.5	
Delay (s)				56.6	56.5	77.7	24.8	1.9			15.8	
Level of Service				E	E	E	C	A			B	
Approach Delay (s)		0.0			69.6			3.5			15.8	
Approach LOS		A			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

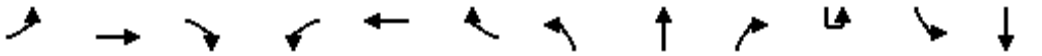
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	465	5	260	0	0	0	0	2480	195	190	1585	0
Future Volume (vph)	465	5	260	0	0	0	0	2480	195	190	1585	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	4.0					6.0		6.0	5.5	
Lane Util. Factor	0.95	0.95	1.00					0.91		1.00	0.91	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1681	1687	1583					5030		1770	5085	
Flt Permitted	0.95	0.95	1.00					1.00		0.04	1.00	
Satd. Flow (perm)	1681	1687	1583					5030		77	5085	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	505	5	283	0	0	0	0	2696	212	207	1723	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	252	258	283	0	0	0	0	2902	0	207	1723	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	4	4						5		6	2	
Permitted Phases			Free							2		
Actuated Green, G (s)	25.8	25.8	150.0					89.7		112.2	112.2	
Effective Green, g (s)	25.8	25.8	150.0					89.7		112.2	112.2	
Actuated g/C Ratio	0.17	0.17	1.00					0.60		0.75	0.75	
Clearance Time (s)	6.5	6.5						6.0		6.0	5.5	
Vehicle Extension (s)	5.0	5.0						0.2		3.0	0.2	
Lane Grp Cap (vph)	289	290	1583					3007		238	3803	
v/s Ratio Prot	0.15	c0.15						c0.58		c0.09	0.34	
v/s Ratio Perm			0.18							0.55		
v/c Ratio	0.87	0.89	0.18					0.97		0.87	0.45	
Uniform Delay, d1	60.5	60.7	0.0					28.7		57.5	7.2	
Progression Factor	1.00	1.00	1.00					0.60		1.00	0.49	
Incremental Delay, d2	25.4	28.0	0.2					7.6		15.8	0.2	
Delay (s)	85.9	88.7	0.2					24.9		73.1	3.7	
Level of Service	F	F	A					C		E	A	
Approach Delay (s)		56.3			0.0			24.9			11.2	
Approach LOS		E			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	55	5	10	10	5	40	10	2575	5	5	35	1715
Future Volume (vph)	55	5	10	10	5	40	10	2575	5	5	35	1715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.98		1.00	1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.96		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1757		1770	1863	1583	1770	5084			1770	5047
Flt Permitted		0.77		0.74	1.00	1.00	0.09	1.00			0.04	1.00
Satd. Flow (perm)		1403		1374	1863	1583	160	5084			65	5047
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	5	11	11	5	43	11	2799	5	5	38	1864
RTOR Reduction (vph)	0	4	0	0	0	38	0	0	0	0	0	3
Lane Group Flow (vph)	0	72	0	11	5	5	11	2804	0	0	43	1959
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		custom	pm+pt	NA
Protected Phases		4			8		1	6			5	2
Permitted Phases	4			8		8	6			5	2	
Actuated Green, G (s)		15.8		15.8	15.8	15.8	112.6	110.8			118.8	113.9
Effective Green, g (s)		15.8		15.8	15.8	15.8	112.6	110.8			118.8	113.9
Actuated g/C Ratio		0.11		0.11	0.11	0.11	0.75	0.74			0.79	0.76
Clearance Time (s)		6.5		6.5	6.5	6.5	5.5	6.5			5.5	6.5
Vehicle Extension (s)		4.0		4.0	4.0	4.0	3.0	0.2			3.0	0.2
Lane Grp Cap (vph)		147		144	196	166	139	3755			107	3832
v/s Ratio Prot					0.00		0.00	c0.55			c0.01	c0.39
v/s Ratio Perm		c0.05		0.01		0.00	0.06				0.30	
v/c Ratio		0.49		0.08	0.03	0.03	0.08	0.75			0.40	0.51
Uniform Delay, d1		63.3		60.5	60.2	60.2	5.4	11.4			16.0	7.1
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			2.53	0.61
Incremental Delay, d2		3.4		0.3	0.1	0.1	0.2	1.4			2.3	0.5
Delay (s)		66.7		60.8	60.3	60.3	5.7	12.8			42.8	4.8
Level of Service		E		E	E	E	A	B			D	A
Approach Delay (s)		66.7			60.4			12.8				5.6
Approach LOS		E			E			B				A

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

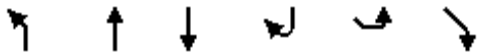
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	90
Future Volume (vph)	90
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	98
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	115	225	625	135	115	2145	125	1215
Future Volume (vph)	115	225	625	135	115	2145	125	1215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.93		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1734		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1734		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	245	679	147	125	2332	136	1321
RTOR Reduction (vph)	0	49	0	21	0	0	53	0
Lane Group Flow (vph)	125	196	679	251	0	2332	83	1321
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	17.7	31.4	54.6	31.4		82.9	82.9	82.9
Effective Green, g (s)	17.7	31.4	54.6	31.4		82.9	82.9	82.9
Actuated g/C Ratio	0.12	0.21	0.36	0.21		0.55	0.55	0.55
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	405	331	1249	362		2810	874	1995
v/s Ratio Prot	0.04		c0.20	c0.14		c0.46		0.37
v/s Ratio Perm		0.12					0.05	
v/c Ratio	0.31	0.59	0.54	0.69		0.83	0.09	0.66
Uniform Delay, d1	60.5	53.5	37.8	54.9		27.7	15.8	23.7
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	5.2	0.5	8.4		3.0	0.2	1.7
Delay (s)	61.0	58.7	38.3	63.3		30.7	16.1	25.4
Level of Service	E	E	D	E		C	B	C
Approach Delay (s)				45.5		29.9		
Approach LOS				D		C		

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

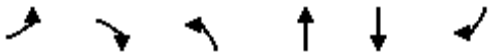
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	3325	0	0	430
Future Volume (vph)	0	0	3325	0	0	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	3614	0	0	467
RTOR Reduction (vph)	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	3614	0	0	466
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			130.1			37.9
Effective Green, g (s)			130.1			37.9
Actuated g/C Ratio			0.72			0.21
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4631			586
v/s Ratio Prot			c0.56			c0.17
v/s Ratio Perm						
v/c Ratio			0.78			0.80
Uniform Delay, d1			15.9			67.4
Progression Factor			1.00			1.00
Incremental Delay, d2			1.4			8.9
Delay (s)			17.2			76.3
Level of Service			B			E
Approach Delay (s)		0.0	17.2		76.3	
Approach LOS		A	B		E	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

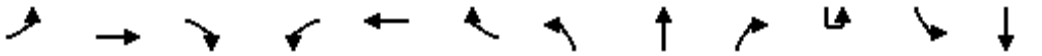
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	510	195	55	1930	3635	120
Future Volume (vph)	510	195	55	1930	3635	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	554	212	60	2098	3951	130
RTOR Reduction (vph)	0	89	0	0	0	27
Lane Group Flow (vph)	554	123	60	2098	3951	103
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	30.0	30.0	18.0	137.5	113.0	143.0
Effective Green, g (s)	30.0	30.0	18.0	137.5	113.0	143.0
Actuated g/C Ratio	0.17	0.17	0.10	0.76	0.63	0.79
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	572	263	177	3884	4022	1310
v/s Ratio Prot	c0.16		0.03	c0.41	c0.62	0.01
v/s Ratio Perm		0.08				0.05
v/c Ratio	0.97	0.47	0.34	0.54	0.98	0.08
Uniform Delay, d1	74.5	67.8	75.5	8.5	32.5	4.1
Progression Factor	1.00	1.00	1.02	0.39	0.66	0.56
Incremental Delay, d2	30.2	3.7	0.9	0.4	7.7	0.0
Delay (s)	104.7	71.4	78.2	3.8	29.3	2.3
Level of Service	F	E	E	A	C	A
Approach Delay (s)	95.5			5.8	28.4	
Approach LOS	F			A	C	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	75	5	25	5	5	15	0	1575	5	320	5	3410
Future Volume (vph)	75	5	25	5	5	15	0	1575	5	320	5	3410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0			4.5	5.0
Lane Util. Factor		1.00			1.00			0.91			1.00	0.91
Frt		0.97			0.92			1.00			1.00	1.00
Flt Protected		0.97			0.99			1.00			0.95	1.00
Satd. Flow (prot)		1741			1692			5083			1770	5065
Flt Permitted		0.77			0.95			1.00			0.08	1.00
Satd. Flow (perm)		1389			1624			5083			158	5065
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	5	27	5	5	16	0	1712	5	348	5	3707
RTOR Reduction (vph)	0	2	0	0	14	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	112	0	0	12	0	0	1717	0	0	353	3809
Turn Type	Perm	NA		Perm	NA			NA		custom	pm+pt	NA
Protected Phases		8			4			6			5	2
Permitted Phases	8			4						5	2	
Actuated Green, G (s)		19.3			19.3			102.7			150.2	149.7
Effective Green, g (s)		19.3			19.3			102.7			150.2	149.7
Actuated g/C Ratio		0.11			0.11			0.57			0.83	0.83
Clearance Time (s)		6.0			6.0			5.0			4.5	5.0
Vehicle Extension (s)		3.0			3.0			0.2			3.0	0.2
Lane Grp Cap (vph)		148			174			2900			512	4212
v/s Ratio Prot								0.34			0.16	c0.75
v/s Ratio Perm		c0.08			0.01						0.41	
v/c Ratio		0.76			0.07			0.59			0.69	0.90
Uniform Delay, d1		78.1			72.3			25.1			31.0	10.3
Progression Factor		1.00			1.00			1.00			0.58	1.17
Incremental Delay, d2		19.7			0.2			0.9			1.2	1.2
Delay (s)		97.8			72.4			26.0			19.3	13.2
Level of Service		F			E			C			B	B
Approach Delay (s)		97.8			72.4			26.0				13.7
Approach LOS		F			E			C				B

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

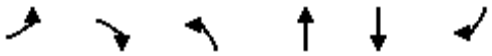
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	95
Future Volume (vph)	95
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	103
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	3325	0	0	430
Future Volume (veh/h)	0	0	3325	0	0	430
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			3614	0	0	467
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			3614	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			7.0	0.0		
Cycle Q Clear(g_c), s			7.0	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.58	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.2	0.0		
Incr Delay (d2), s/veh			0.4	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.2	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.6	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			3614			
Approach Delay, s/veh			0.6			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	124.5
Max Q Clear Time (g_c+I1), s	9.0
Green Ext Time (p_c), s	11.0

Intersection Summary	
HCM 6th Ctrl Delay	0.6
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	510	195	55	1930	3635	120
Future Volume (veh/h)	510	195	55	1930	3635	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	554	0	60	2098	3951	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	576		178	3900	4039	1259
Arrive On Green	0.17	0.00	0.10	0.76	0.63	0.63
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	554	0	60	2098	3951	130
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	28.6	0.0	5.6	29.6	106.6	3.3
Cycle Q Clear(g_c), s	28.6	0.0	5.6	29.6	106.6	3.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	576		178	3900	4039	1259
V/C Ratio(X)	0.96		0.34	0.54	0.98	0.10
Avail Cap(c_a), veh/h	576		178	3900	4039	1259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.4	0.0	75.4	8.5	32.3	4.1
Incr Delay (d2), s/veh	28.9	0.0	1.1	0.5	9.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	0.0	2.7	10.5	41.3	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	103.3	0.0	76.5	9.1	42.2	4.3
LnGrp LOS	F		E	A	D	A
Approach Vol, veh/h	554	A		2158	4081	
Approach Delay, s/veh	103.3			10.9	41.0	
Approach LOS	F			B	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		144.0		36.0	24.5	119.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		137.5		30.0	18.0	113.0
Max Q Clear Time (g_c+I1), s		31.6		30.6	7.6	108.6
Green Ext Time (p_c), s		37.0		0.0	0.1	3.6

Intersection Summary		
HCM 6th Ctrl Delay		36.6
HCM 6th LOS		D

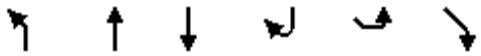
Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR2	WBL	WBT	WBR	SBT	SBR	NWR
Lane Configurations								
Traffic Volume (vph)	165	190	245	140	145	1715	135	1865
Future Volume (vph)	165	190	245	140	145	1715	135	1865
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.5	5.5	6.5		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.97	1.00		0.91	1.00	0.76
Frt	1.00	0.85	1.00	0.92		1.00	0.85	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	3433	1720		5085	1583	3610
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	3433	1720		5085	1583	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	207	266	152	158	1864	147	2027
RTOR Reduction (vph)	0	60	0	24	0	0	60	0
Lane Group Flow (vph)	179	147	266	286	0	1864	87	2027
Turn Type	Prot	Perm	Prot	NA		NA	Perm	Prot
Protected Phases	3		3 4	4		6		2
Permitted Phases		4					6	
Actuated Green, G (s)	13.8	29.1	48.4	29.1		89.1	89.1	89.1
Effective Green, g (s)	13.8	29.1	48.4	29.1		89.1	89.1	89.1
Actuated g/C Ratio	0.09	0.19	0.32	0.19		0.59	0.59	0.59
Clearance Time (s)	5.5	6.5		6.5		6.0	6.0	6.0
Vehicle Extension (s)	3.0	6.0		6.0		0.2	0.2	0.2
Lane Grp Cap (vph)	315	307	1107	333		3020	940	2144
v/s Ratio Prot	c0.05		0.08	c0.17		0.37		c0.56
v/s Ratio Perm		0.09					0.06	
v/c Ratio	0.57	0.48	0.24	0.86		0.62	0.09	0.95
Uniform Delay, d1	65.2	53.7	37.3	58.5		19.5	13.1	28.2
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.3	3.3	0.1	21.5		1.0	0.2	10.3
Delay (s)	67.6	57.0	37.4	80.0		20.5	13.3	38.5
Level of Service	E	E	D	E		C	B	D
Approach Delay (s)				60.3		19.9		
Approach LOS				E		B		

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

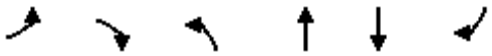
c Critical Lane Group



Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (vph)	0	0	2410	0	0	405
Future Volume (vph)	0	0	2410	0	0	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			6.5
Lane Util. Factor			0.86			0.88
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			2787
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	2620	0	0	440
RTOR Reduction (vph)	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	2620	0	0	434
Turn Type			NA			Prot
Protected Phases			2			4
Permitted Phases						
Actuated Green, G (s)			131.2			36.8
Effective Green, g (s)			131.2			36.8
Actuated g/C Ratio			0.73			0.20
Clearance Time (s)			5.5			6.5
Vehicle Extension (s)			0.2			6.0
Lane Grp Cap (vph)			4670			569
v/s Ratio Prot			c0.41			c0.16
v/s Ratio Perm						
v/c Ratio			0.56			0.76
Uniform Delay, d1			11.2			67.5
Progression Factor			1.00			1.00
Incremental Delay, d2			0.5			7.7
Delay (s)			11.7			75.2
Level of Service			B			E
Approach Delay (s)		0.0	11.7		75.2	
Approach LOS		A	B		E	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	255	75	65	3350	2475	340
Future Volume (vph)	255	75	65	3350	2475	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.86	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	5085	6408	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	5085	6408	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	82	71	3641	2690	370
RTOR Reduction (vph)	0	69	0	0	0	76
Lane Group Flow (vph)	277	13	71	3641	2690	294
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	20.5	20.5	18.0	147.0	122.5	143.0
Effective Green, g (s)	20.5	20.5	18.0	147.0	122.5	143.0
Actuated g/C Ratio	0.11	0.11	0.10	0.82	0.68	0.79
Clearance Time (s)	6.0	6.0	6.5	6.5	6.5	6.0
Vehicle Extension (s)	6.0	6.0	3.0	3.0	0.2	6.0
Lane Grp Cap (vph)	390	180	177	4152	4361	1310
v/s Ratio Prot	c0.08		0.04	c0.72	0.42	0.03
v/s Ratio Perm		0.01				0.16
v/c Ratio	0.71	0.07	0.40	0.88	0.62	0.22
Uniform Delay, d1	76.9	71.2	75.9	10.7	15.8	4.6
Progression Factor	1.00	1.00	0.84	0.28	0.67	0.26
Incremental Delay, d2	8.5	0.5	0.5	0.9	0.6	0.2
Delay (s)	85.4	71.7	63.9	3.9	11.2	1.4
Level of Service	F	E	E	A	B	A
Approach Delay (s)	82.3			5.0	10.0	
Approach LOS	F			A	B	

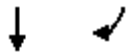
Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	95	5	15	10	5	5	5	10	3080	5	235	5
Future Volume (vph)	95	5	15	10	5	5	5	10	3080	5	235	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			4.5	5.0			4.5
Lane Util. Factor		1.00			1.00			1.00	0.91			1.00
Frt		0.98			0.97			1.00	1.00			1.00
Flt Protected		0.96			0.97			0.95	1.00			0.95
Satd. Flow (prot)		1757			1757			1770	5084			1770
Flt Permitted		0.75			0.87			0.04	1.00			0.03
Satd. Flow (perm)		1368			1571			71	5084			59
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	5	16	11	5	5	5	11	3348	5	255	5
RTOR Reduction (vph)	0	3	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	121	0	0	17	0	0	16	3353	0	0	260
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		custom	pm+pt
Protected Phases		8			4		1	1	6			5
Permitted Phases	8			4			6	6			5	2
Actuated Green, G (s)		20.3			20.3			124.9	121.9			149.2
Effective Green, g (s)		20.3			20.3			124.9	121.9			149.2
Actuated g/C Ratio		0.11			0.11			0.69	0.68			0.83
Clearance Time (s)		6.0			6.0			4.5	5.0			4.5
Vehicle Extension (s)		3.0			3.0			3.0	0.2			3.0
Lane Grp Cap (vph)		154			177			77	3442			260
v/s Ratio Prot								0.00	0.66			c0.12
v/s Ratio Perm		c0.09			0.01			0.14				c0.71
v/c Ratio		0.79			0.09			0.21	0.97			1.00
Uniform Delay, d1		77.8			71.6			27.1	27.6			74.0
Progression Factor		1.00			1.00			1.00	1.00			0.97
Incremental Delay, d2		22.8			0.2			1.3	10.4			49.8
Delay (s)		100.6			71.8			28.5	38.0			121.5
Level of Service		F			E			C	D			F
Approach Delay (s)		100.6			71.8				37.9			
Approach LOS		F			E				D			

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



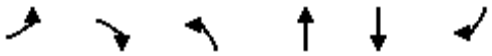
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2165	145
Future Volume (vph)	2165	145
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.91	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5037	
Flt Permitted	1.00	
Satd. Flow (perm)	5037	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	2353	158
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	2508	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	141.2	
Effective Green, g (s)	141.2	
Actuated g/C Ratio	0.78	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	3951	
v/s Ratio Prot	0.50	
v/s Ratio Perm		
v/c Ratio	0.63	
Uniform Delay, d1	8.3	
Progression Factor	0.16	
Incremental Delay, d2	0.6	
Delay (s)	2.0	
Level of Service	A	
Approach Delay (s)	13.2	
Approach LOS	B	

Intersection Summary

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations			↑↑↑↑			↱↱
Traffic Volume (veh/h)	0	0	2410	0	0	405
Future Volume (veh/h)	0	0	2410	0	0	405
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach			No		No	
Adj Sat Flow, veh/h/ln			1870	0	0	1870
Adj Flow Rate, veh/h			2620	0	0	440
Peak Hour Factor			0.92	0.92	0.92	0.92
Percent Heavy Veh, %			2	0	0	2
Cap, veh/h			6237	0	0	0
Arrive On Green			0.97	0.00	0.00	0.00
Sat Flow, veh/h			6958	0	0	
Grp Volume(v), veh/h			2620	0	0.0	
Grp Sat Flow(s),veh/h/ln			1609	0		
Q Serve(g_s), s			3.8	0.0		
Cycle Q Clear(g_c), s			3.8	0.0		
Prop In Lane				0.00		
Lane Grp Cap(c), veh/h			6237	0		
V/C Ratio(X)			0.42	0.00		
Avail Cap(c_a), veh/h			6237	0		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	0.00		
Uniform Delay (d), s/veh			0.1	0.0		
Incr Delay (d2), s/veh			0.2	0.0		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.1	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.4	0.0		
LnGrp LOS			A	A		
Approach Vol, veh/h			2620			
Approach Delay, s/veh			0.4			
Approach LOS			A			

Timer - Assigned Phs	2
Phs Duration (G+Y+Rc), s	180.0
Change Period (Y+Rc), s	5.5
Max Green Setting (Gmax), s	116.5
Max Q Clear Time (g_c+I1), s	5.8
Green Ext Time (p_c), s	4.7

Intersection Summary	
HCM 6th Ctrl Delay	0.4
HCM 6th LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	255	75	65	3350	2475	340
Future Volume (veh/h)	255	75	65	3350	2475	340
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	277	0	71	3641	2690	370
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	330		216	4264	4361	1226
Arrive On Green	0.10	0.00	0.12	0.83	0.68	0.68
Sat Flow, veh/h	3456	1585	1781	5274	6696	1585
Grp Volume(v), veh/h	277	0	71	3641	2690	370
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1702	1609	1585
Q Serve(g_s), s	14.2	0.0	6.6	73.8	41.7	12.4
Cycle Q Clear(g_c), s	14.2	0.0	6.6	73.8	41.7	12.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	330		216	4264	4361	1226
V/C Ratio(X)	0.84		0.33	0.85	0.62	0.30
Avail Cap(c_a), veh/h	403		216	4264	4361	1226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.0	0.0	72.4	8.5	16.1	6.0
Incr Delay (d2), s/veh	19.4	0.0	0.9	2.4	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	3.1	22.8	14.7	6.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.4	0.0	73.3	10.9	16.7	6.7
LnGrp LOS	F		E	B	B	A
Approach Vol, veh/h	277	A		3712	3060	
Approach Delay, s/veh	99.4			12.1	15.5	
Approach LOS	F			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		156.8		23.2	28.3	128.5
Change Period (Y+Rc), s		6.5		6.0	6.5	6.5
Max Green Setting (Gmax), s		146.5		21.0	18.0	122.0
Max Q Clear Time (g_c+I1), s		75.8		16.2	8.6	43.7
Green Ext Time (p_c), s		67.6		1.0	0.1	4.8

Intersection Summary		
HCM 6th Ctrl Delay		17.0
HCM 6th LOS		B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.