



CORRIDOR CITIES TRANSITWAY

Supplemental Environmental Assessment

For the I-270/US 15 Multi-Modal Corridor Study

NOVEMBER 2010

*US Department of Transportation
Federal Transit Administration*

*Maryland Transit Administration
Maryland Department of Transportation*



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INTRODUCTION



CORRIDOR CITIES TRANSITWAY
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Introduction

This Supplemental Environmental Assessment (SEA) is a companion to the other NEPA documents that have been prepared for the I-270/US 15 Multi-Modal Corridor Study. These include the 2002 *I-270/US 15 Multi-Modal Corridor Study Draft Environmental Impact Statement and Section 4(f) Evaluation* (2002 DEIS), completed in May 2002, and the 2009 *I-270/US 15 Multi-Modal Corridor Study Alternatives Analysis/Environmental Assessment* (2009 AA/EA), completed in May 2009. This SEA addresses only the transit elements of the Multi-Modal Study and focuses on the portion of the transit corridor that is under consideration for alignment modification. It is considered an additional contribution to the total body of analysis related to the full-length highway and transit alternatives presented to date within these documents. This document presents no new information regarding the highway alternatives. The latest information available on the I-270/US 15 highway project remains the 2009 AA/EA included on a CD found inside the back cover of this document and online at www.I270multimodalstudy.com.

Specifically, this SEA presents the environmental impacts, possible mitigation, and the potential transportation benefits of three sets of proposed modifications to the Original CCT Alignment. These modifications were developed to serve three distinct areas within the CCT corridor: the future Crown Farm development; the Life Sciences Center biotechnology campus; and the Kentlands community/redevelopment.

The principal study area for the proposed modifications to the Original CCT Alignment is a sub-set of the CCT corridor in the Gaithersburg area that contains the three development areas that are under consideration for more direct service by the CCT alignment and stations. These areas, from east to west, are known as Crown Farm, Life Sciences Center (LSC), and Kentlands and are shown in **Figures II-2 through II-5** and listed in **Table II-2** (found in **Chapter II** of this document). The three areas of alignment modifications occur sequentially in an approximately two-mile section of the Original CCT Alignment. Additionally, each is a diversion from the Original CCT Alignment that was studied in the 2002 DEIS and the 2009 AA/EA documents. Essentially,

each modification begins and ends on the Original CCT Alignment and the remainder of the Original CCT Alignment remains as presented in the previous documents.

While most of the document focuses on the impacts of a roughly two-mile section of the total CCT alignment in the Gaithersburg area, the document also analyzes the effects of implementing one or more of the proposed alignment modifications on the transportation performance (such as ridership, capital cost, annual operations and maintenance costs, and cost-effectiveness) of the complete CCT project (COMSAT to Shady Grove).

In addition, this document presents more detailed analysis of two sites for the transit Operations and Maintenance (O&M) facilities for the CCT. One of these sites, which could be used for either BRT or LRT alternatives, is located adjacent to the proposed Metropolitan Grove station on land currently in use as a police vehicle impound lot. The second site would be a BRT-only site, located on Observation Drive in the vicinity of the CCT northern terminus in COMSAT. These two sites are carried forward from previous studies. Both sites are located to the north of the Gaithersburg area where the above-described alignment modifications are located.

Lastly, this document includes a Section 4(f) analysis of alignment options specifically developed to avoid or minimize impacts to historic resources. In particular, there are two areas where the proposed CCT alternatives could result in adverse impacts to sites determined to be eligible for the National Register for Historic Places. These two sites are the Crown Farm property near I-270 within the City of Gaithersburg and the Belward Farm property, which is situated at the heart of the proposed Life Sciences Center development. Both of these sites are identified and approved by local agencies for future development that could potentially change the historic integrity of these places and therefore may result in a modified determination of eligibility for the National Register of Historic Places. However, because the properties remain in their current state and are not yet developed, the MTA is required to identify and carry forward into the planning and design process options to

avoid impact to these locations while still meeting the project purpose and need in accordance with federal law. The Section 4(f) summary will describe other areas of potential cultural significance and the potential for impacts to those resources, including anticipated effects to local parks.

Project Overview

The Corridor Cities Transitway (CCT) is a proposed 14 to 16 mile transit corridor between the Shady Grove Metrorail Station in Rockville, Maryland and the COMSAT facility near Clarksburg, Maryland. The CCT is the transit element of the I-270/US 15 Multi-Modal Corridor Study, a joint project planning study undertaken by the Maryland Transit Administration (MTA) and Maryland State Highway Administration (SHA). The CCT would be either Bus Rapid Transit (BRT) or Light Rail (LRT) operating on an exclusive guideway. The CCT would provide transit service to a number of existing and planned activity centers. It would also provide direct connections to the Metrorail Red Line at the Shady Grove station and the MARC Brunswick Line at the Metropolitan Grove station, as well as linking with numerous local and express bus services in the region.

Since the mid-1990s, the SHA and MTA have been working cooperatively to assess a series of multimodal improvements in Montgomery and Frederick Counties as part of the I-270/US 15 Multi-Modal Corridor Study. This process resulted in the development of documents required under the National Environmental Policy Act (NEPA) of 1969 and other requirements, including the 2002 DEIS and 2009 AA/EA. These documents and supporting technical reports may be found on the I-270 Multi-Modal Corridor Study website, www.I270multimodalstudy.com. Together, the 2002 DEIS and 2009 AA/EA analyze the environmental effects and transportation benefits and costs of a comprehensive array of transportation alternatives comprised of a combination of different highway and transit solutions. These alternatives include a No-Build alternative, Transportation System

Management alternatives (relatively low-cost strategies for maximizing the performance of the existing transit and highway systems), addition of general-purpose lanes, auxiliary lanes, high occupancy vehicle lanes (HOV), Express Toll LanesSM (ETLsSM), premium bus services operating on HOV lanes, and BRT and LRT operating on the CCT. The full range of highway and transit alternatives studied in these documents is shown in **Tables i-1** through **i-3**.

The public circulation of both the 2002 DEIS and 2009 AA/EA included public hearings and an extensive public review and comment period to obtain the comments of members of the public as well as agency stakeholders on the proposed alternatives. Following the 2009 hearings on the 2009 AA/EA, both MTA and SHA had specific requests from entities related to the portion of the project that they managed. The SHA was asked by the Federal Highway Administration (FHWA) to conduct a more thorough modeling analysis relative to the performance of all of their alternatives using the most recent travel demand model for the region. Additionally, they were asked to take a closer examination of how the I-270/US 15 improvements would fit into the larger highway system and the growing network of managed lanes including the Intercounty Connector Express Tollway and High Occupancy Toll lanes under construction in northern Virginia. Meanwhile, MTA was asked by the Montgomery County Council and County Executive and the City of Gaithersburg to consider modifications to the CCT alignment to more directly serve planned development in the Gaithersburg area of the CCT corridor. Until recently, the 14 to 16 mile CCT transitway had always followed a single alignment defined in local area master plans, including those of Montgomery County and the City of Gaithersburg. The original alignment dates back to the mid-1980s. However, as development and development plans have evolved in the county, so has thinking about the transportation needs of the area, including the CCT alignment.

The feedback obtained by MTA and SHA relative to their parts of the I-270/US 15 Multi-Modal

Study led the agencies to consider taking separate but coordinated paths towards the next phases of project development for their individual project components. The SHA is conducting traffic modeling requested by the FHWA, as well as an Independent Utility Study that will confirm the viability of the CCT as an autonomous project within the context of addressing the transportation purpose and needs identified in the 2002 DEIS and supporting documents. The MTA conducted and made public a feasibility study of the proposed modifications to the CCT alignment in response to local government requests. After determining that the modifications have substantial transportation benefits for the Gaithersburg area a more detailed environmental analysis of the modifications was needed to be consistent with the prior environmental work and to inform a final selection of the preferred alignment and station locations. Documenting this environmental analysis is the primary function of this report.

Table i-2: Alternatives Evaluated in 2009 AA

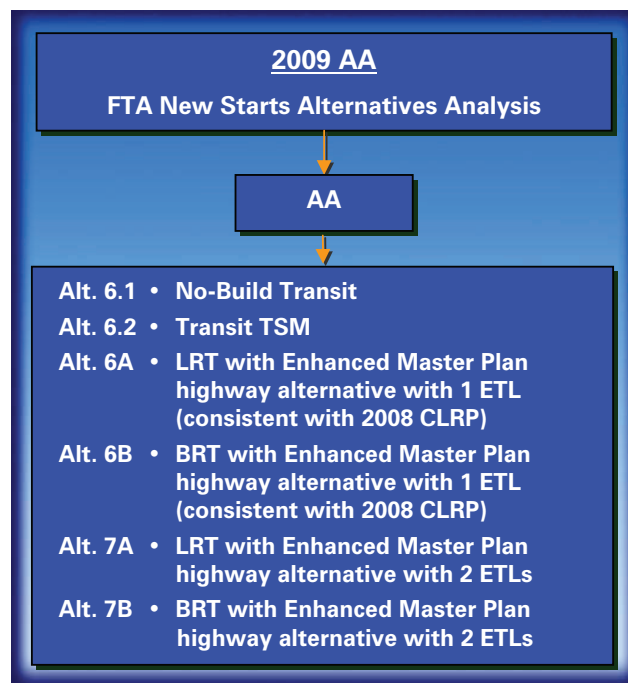


Table i-1: Alternatives Evaluated in 2002 DEIS and 2009 EA

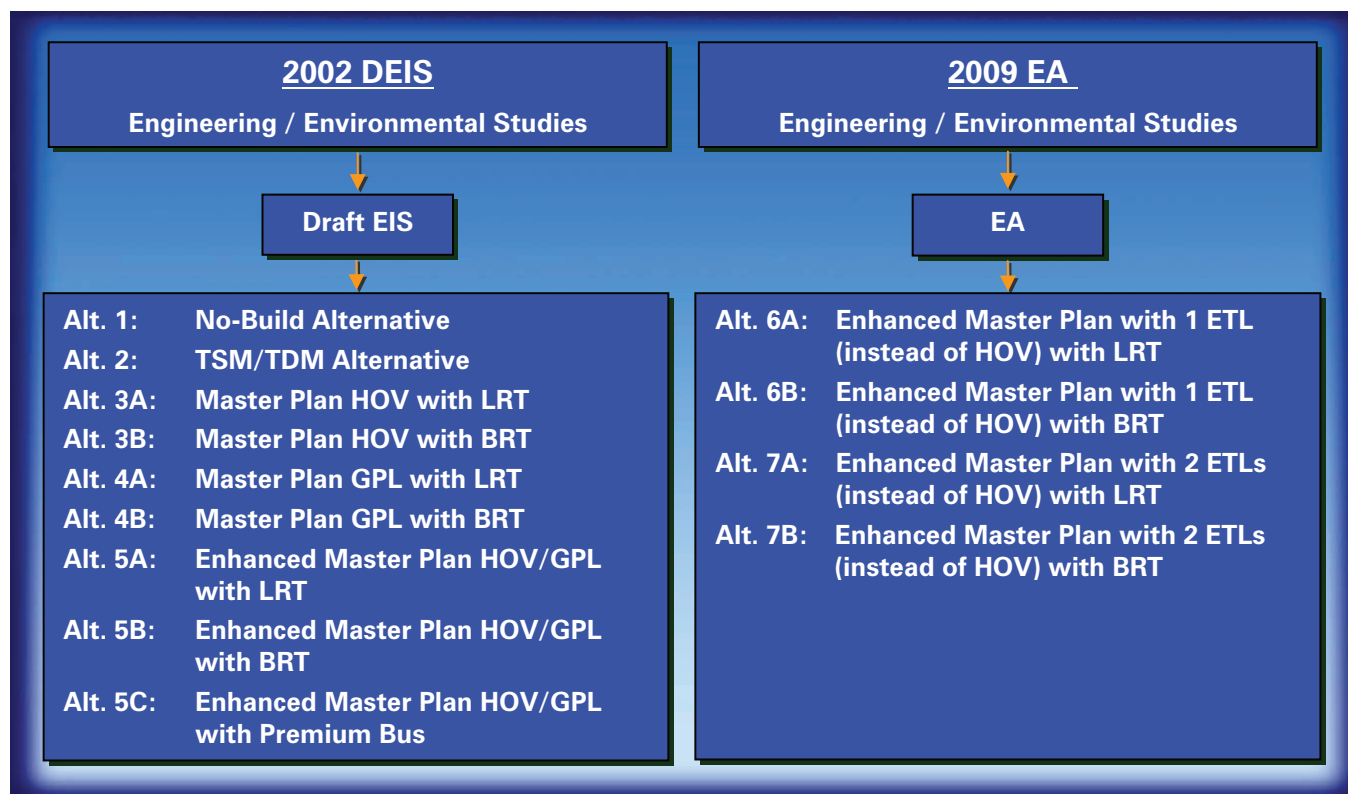


Table i-3: Alignment Modifications 2010 SEA

2010 SEA Alignment Modifications	
S1:	Crown Farm 2010 Master Plan Alignment
S2:	Life Sciences Center 2010 Master Plan Alignment
S2c:	Life Sciences Center 2010 Master Plan Alignment via Medical Center Drive
S3:	Kentlands 2010 Master Plan Alignment

Issues to Be Resolved and Next Steps

As a supplement to the 2002 DEIS and the 2009 AA/EA, this SEA identifies and describes possible impacts associated with the potential modifications to the Original CCT Alignment. The information will help support the selection of the Locally Preferred Alternative (LPA), the project mode and alignment to be advanced in the project development process. Once the LPA is determined, further design and impact analysis work will be carried out and documented in a Final Environmental Impact Statement (FEIS). This design and analysis work will be done along the full length of the CCT alignment (from Shady Grove to COMSAT).

Additional issues to be addressed in the next steps in the planning process include:

- Selection of a transit mode for the CCT corridor (BRT or LRT)
- Selection of a location for an Operations and Maintenance facility (e.g., train yard or bus garage)
- Coordination with local agencies and developers on specific site locations for stations, parking facilities, noise walls and maintenance facilities
- Determination and design of storm water management facilities
- Continuing coordination to minimize harm to Section 4(f) resources

- Continuing coordination with the Maryland Historical Trust and owners of possibly affected resources to complete a Memorandum of Agreement for adverse effects of the project on the Belward Farm and Crown Farm properties
- Continuing coordination with State and local governments on potential effects to local parkland in the City of Gaithersburg and the Seneca Creek State Park
- Continuing minimization of residential and business displacements
- Continuing minimization of natural resources impacts
- Selection of a highway improvement component of the LPA (or possible separation of the highway from the transit portions of the I-270/US 15/CCT project)

Next steps in the planning process also include continuing coordination and consultation with the resource and regulatory agencies and the public, and completion of a compensatory mitigation package for all impacts. The publication of an FEIS and issuance of a Record of Decision (ROD) would complete the planning process.

Organization of This SEA

The Introduction presents the following:

- Lead agency contacts
- A list of locations where this SEA is located for public review
- Information on the upcoming SEA public review and comment period, including the project public open house and hearing
- Contact information for the submission of comments on this document, as well as questions, comments or requests for additional information on the CCT or the I-270/US 15 Multi-Modal Corridor Study.

The document is divided into the following chapters:

Chapter I – Purpose and Need describes the purpose and need for the transit improvements within the context of the Purpose and Need for the multi-modal improvements presented in the I-270/

US 15 Multi-Modal Corridor Study. This includes the role of the CCT project in meeting the broader project goals and objectives. The Purpose and Need has not substantively changed since the 2009 AA/EA, however updated transit-related information is provided.

Chapter II – Alternatives Considered describes the transit alternatives under review and analysis within this document. It also briefly summarizes the range of alternatives that have been developed and reviewed to date in the 2002 DEIS and the 2009 AA/EA. The focus of the chapter is the description of the alignment modifications proposed for the Gaithersburg area.

Chapter III – Transportation System Performance and Effects describes the effects of the actions analyzed within this document on the existing transportation system and network, including the existing highway, transit, and non-motorized transportation network. It also presents the effects of implementing one or more of the proposed actions on the performance of the full CCT project (COMSAT to Shady Grove) in areas such as transit ridership, capital costs, annual operations and maintenance costs, and cost-effectiveness.

Chapter IV – Affected Environment and Environmental Consequences describes the effects of the Gaithersburg area alignment and station location modifications on the natural, cultural, and community environment. A comprehensive range of resources are addressed in this Chapter. Each subject is described separately and generally includes a description of existing conditions, a description of methodology used in the analysis, a description of the impacts anticipated, and possible mitigation. Additional information regarding effects associated with two O&M sites retained from previous studies is also included.

Chapter V – Section 4(f) Summary reviews the impacts of alignment options developed to avoid and minimize impacts to National Register of Historic Places (NRHP) eligible historic resources and public parks within the study area.

Chapter VI – Comments and Coordination summarizes the transit related testimony and comments received to the 2009 AA/EA document

and public hearings. These comments express issues, concerns, and preferences regarding the entire transit project from COMSAT to Shady Grove and may relate to any aspect of the project, including mode, alignment, operations, etc. Additionally, this section describes all public and agency coordination with local, state, and federal agencies that has occurred on the project since the publication of the 2009 AA/EA document.

Appendices – Appended to this SEA is a set of plan sheets that show the proposed alignment modifications under discussion within the SEA document, a list of references used in the development of this document, and other relevant documentation.

Document Availability

This SEA document and its supporting technical reports, along with the 2009 AA/EA and the 2002 DEIS and their respective supporting technical reports, are available for viewing and download on the project website, www.i270multimodalstudy.com.

Printed copies of the SEA document are available for public review through the end of the comment period at selected public libraries within Montgomery and Frederick Counties, the Maryland-National Capital Park and Planning Commission office in Montgomery County, the Montgomery County Upcounty Regional Services Center in Germantown, the SHA Headquarters in Baltimore, the SHA District 3 Office in Greenbelt, the SHA District 7 office in Frederick, the MTA Headquarters in Baltimore, and at the Rockville, Gaithersburg, and Frederick city halls. Any person with special needs, such as English language assistance or Braille, should contact the MTA for assistance.

Public Review and Comment Period

The MTA will make this document available for public review and comment a minimum of 45 days. No sooner than 15 days after the document is made available for public review, public hearings will be held to record public and agency comments on the proposed project. These comments will be included in the project records and will be responded to in the Final Environmental Impact Statement (FEIS).

Informational Contacts

Additional information concerning the CCT project may be obtained by contacting:

Ms. Diane Ratcliff

Director
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Acronyms

ACRONYMS	
AA	Alternatives Analysis
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AEC	Atomic Energy Commission
APE	Area of Potential Effects
AQTR	Air Quality Technical Report
ARMA	Air and Radiation Management Administration
ASTM	American Society for Testing and Materials
BIBI	Benthic Index of Biotic Integrity
BLS	US Bureau of Labor Statistics
BMPs	Best Management Practices
BRT	Bus Rapid Transit
BTU	British Thermal Unit
CAA	Clean Air Act
CAAA	Clean Air Act and Amendments of 1990
CCT	Corridor Cities Transitway
CD Lanes	Collector-Distributor Lanes
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CLRP	Constrained Long Range Transportation Plan
CO	Carbon Monoxide
COMAR	Code of Maryland Regulations
COMSAT	Communications Satellite, Inc.

ACRONYMS	
CTP	(Maryland) Consolidated Transportation Program
dBA	Decibels, A-weighted (representing the range of human hearing)
DC	District of Columbia; Washington, DC
DEIS	Draft Environmental Impact Statement
DOE	Department of Energy
DPW&T	(Montgomery County) Department of Public Works and Transportation
EA	Environmental Assessment
EPA	US Environmental Protection Agency
ETLs SM	Express Toll Lanes SM
EJ	Environmental Justice
FACT	Frederick Area Committee on Transportation
FCDPW	Frederick County Department of Public Works
FCLF	Frederick County Landmarks Foundation
FCIR	Farmland Conversion Impact Rating
FCA	Forest Conservation Act
FCP	Forest Conservation Plan
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FFGA	Full Funding Grant Agreement
FHWA	Federal Highway Administration
FIBI	Fish Index of Biotic Integrity
FIR	Flood Insurance Rating
FPPA	Farmland Protection Policy Act

ACRONYMS	
FSD	Forest Stand Delineation
FTA	Federal Transit Administration
GP	General-Purpose (Lanes)
GSA	Government Services Administration
HAZMAT	Hazardous Materials
H&H	Hydrologic and Hydraulic
HCS	Highway Capacity Software
HOT	High Occupancy/Toll
HOV	High Occupancy Vehicle
IBI	Index of Biotic Integrity
ICC	Intercounty Connector
ICE	Indirect and Cumulative Effects
ISA	Initial Site Assessment
ITS	Intelligent Transportation Systems
LI	Light Industrial
LRT	Light Rail Transit
LOS	Level of Service
LPA	Locally Preferred Alternative
LUST	Leaking Underground Storage Tank
LWC	Land and Water Conservation
MBSS	Maryland Biological Stream Survey
MCDEP	Montgomery County Department of Environmental Protection
MCDOT	Montgomery County Department of Transportation
MDNR	Maryland Department of Natural Resources

ACRONYMS	
MDE	Maryland Department of the Environment
MDOT	Maryland Department of Transportation
MDP	Maryland Department of Planning
MD SHPO	Maryland State Historic Preservation Office
MDTA	Maryland Transportation Authority
MHT	Maryland Historical Trust
MIHP	Maryland Inventory of Historic Places
M-NCPPC	Maryland-National Capital Park and Planning Commission
MOA	Memorandum of Agreement
MOE	Measures of Effectiveness
MOS	Minimal Operating Segment
MPO	Metropolitan Planning Organization
mS/cm	milliSiemens per centimeter (a measure of electrical resistance - Siemen is an inverse ohm)
MSAT(s)	Mobile Source Air Toxics
MTA	Maryland Transit Administration
MWAQC	Metropolitan Washington Air Quality Committee
MWCOG	Metropolitan Washington Council of Governments
MXD	Mixed-use development zoning
NAAQS	National Ambient Air Quality Standards
NAC	Neighborhood Advisory Council (Frederick City)
NAC	Noise Abatement Criteria (Noise Analysis)
NCA	Neighborhood Conservation Area
NCPC	National Capital Planning Commission
NEPA	National Environmental Policy Act (1969)

ACRONYMS	
NETR	Natural Environmental Technical Report
NFRAP	No Further Remedial Action Planned
NIST	National Institute of Standards & Technology
NHPA	National Historic Preservation Act of 1966
NMF	National Marine Fisheries
NO _x	Nitrogen Oxides
NPDES	National Pollution Discharge & Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRE	National Register Eligible
NRHP; NR	National Register of Historic Places
O ₃	Ozone
O&M	Operations and Maintenance
ORI	Office/Research/Industrial
PE	Preliminary Engineering
PEM	Palustrine Emergent Wetlands
PFA	Priority Funding Area
PFO	Palustrine Forested Wetlands
PHI	Physical Habitat Index
PM	Particulate Matter
PM _{2.5}	Particulate Matter less than 2.5 microns in size
PM ₁₀	Particulate Matter less than 10 microns in size
POS	Program Open Space
PSC	Potential Sites of Concern

ACRONYMS	
PSS	Palustrine Scrub-Shrub Wetlands
ROD	Record of Decision
ROW	Right-of-Way
RTE	Rare, Threatened and Endangered
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SCEA	Secondary and Cumulative Effects Analysis
SETR	Socio-Economic Technical Report
SHA	Maryland State Highway Administration
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SSA	Sole Source Aquifer
STIP	State Transportation Improvement Program
SVP	Stream Valley Park
SWM	Stormwater Management
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TMD	[North Bethesda] Transportation Management District
TMP	Transportation Management Plan
TNM	Traffic Noise Model
TOD	Transit-Oriented Development
TPB	Transportation Planning Board
TSM	Transportation System Management
TTF	Maryland Transportation Trust Fund

ACRONYMS	
US	United States
USACE	US Army Corps of Engineers
USDOT	US Department of Transportation
USFWS	US Fish and Wildlife Service
USGSA	US General Services Administration
VdB	Vibration Decibels
VDEQ	Virginia Department of Environmental Quality
VDOT	Virginia Department of Transportation
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WHD	Wildlife and Heritage Division
WIM	Weigh In Motion
WMATA	Washington Metropolitan Area Transit Authority
WSSC	Wetlands of Special State Concern
WSTC	Washington Suburban Transit Commission



CHAPTER I

Purpose and Need



CORRIDOR CITIES TRANSITWAY
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Chapter I – Purpose and Need

Introduction

This chapter discusses the purpose and need for the CCT transit project as originally established within the Purpose and Need of the I-270/US 15 Multi-Modal Study. A “Purpose and Need” statement is required as part of all NEPA documents for transit and highway projects. To assist in selecting the Locally Preferred Alternative (LPA), the Purpose and Need provides the project goals and objectives by which the various alternatives will be evaluated. The Purpose and Need describes those factors and conditions in the local environment that are driving the need for a transportation improvement – essentially providing the context for a decision on the LPA. Once the LPA is selected, final design and environmental analysis work can be done to allow the project to move toward construction.

The Purpose and Need for the I-270/US 15 Multi-Modal Corridor Study was first provided in **Chapter I** of the **2002 DEIS**. It was updated in **Chapter I** of the **2009 AA/EA** to address changed conditions. In this chapter of the 2010 SEA, the elements of the Purpose and Need have not changed. However, only those elements most applicable to the transit element of the project are presented, as this document is focused only on the transit element. This 2010 SEA generally presents information already contained in the 2009 AA/EA with some updates supplied as appropriate to respond to changing conditions.

Purpose of This SEA

The Maryland Transit Administration (MTA) is studying the CCT, the transit element of the I-270/US 15 Multi-Modal Transportation Corridor Study, which was developed in partnership with the Maryland State Highway Administration (SHA). The I-270/US 15 Multi-Modal Corridor Study addresses the full range of transportation

needs along a 30-mile corridor that extends from Rockville, Maryland at the intersection of I-370 and I-270 north into Frederick County and the City of Frederick, Maryland to the intersection of US 15 and Biggs Ford Road. The CCT is a proposed Bus Rapid Transit (BRT) or Light Rail Transit (LRT) line that extends 14 to 16 miles from Shady Grove Metrorail Station in Rockville, Maryland to a terminus just south of Clarksburg, Maryland at the COMSAT facility, an abandoned communications satellite industrial site that is identified for future transit-oriented development. The I-270/US 15 project study area is shown in **Figure I-1**. The CCT study area is shown in **Figure I-2**.

Figure I-1: I-270/US 15 Project Study Area

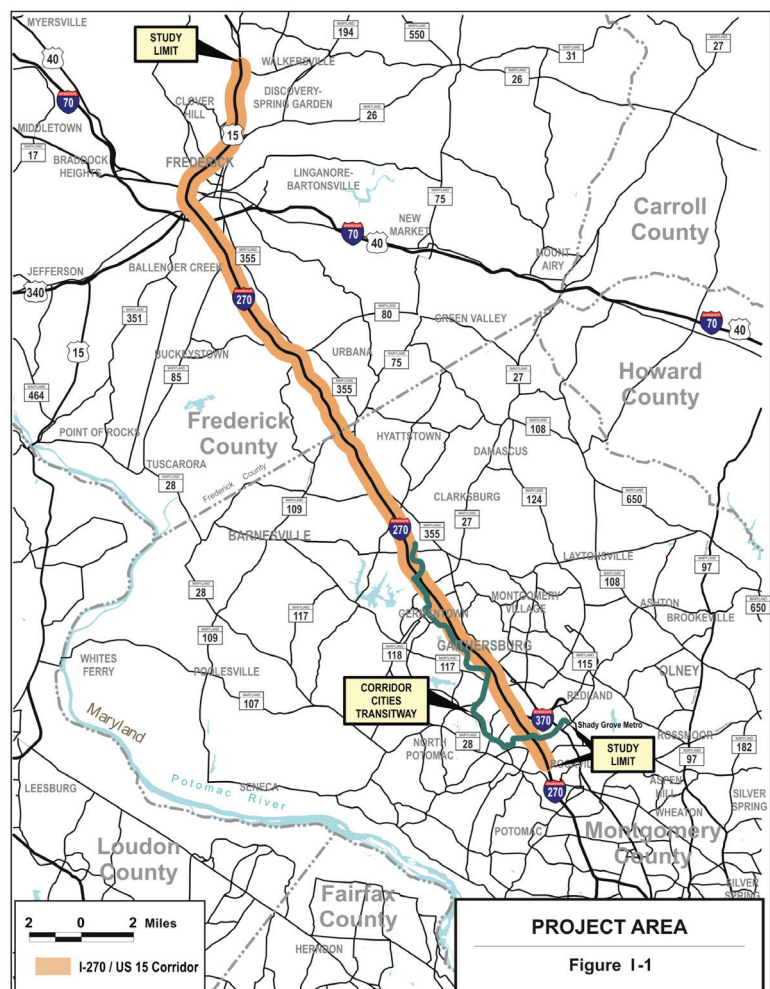
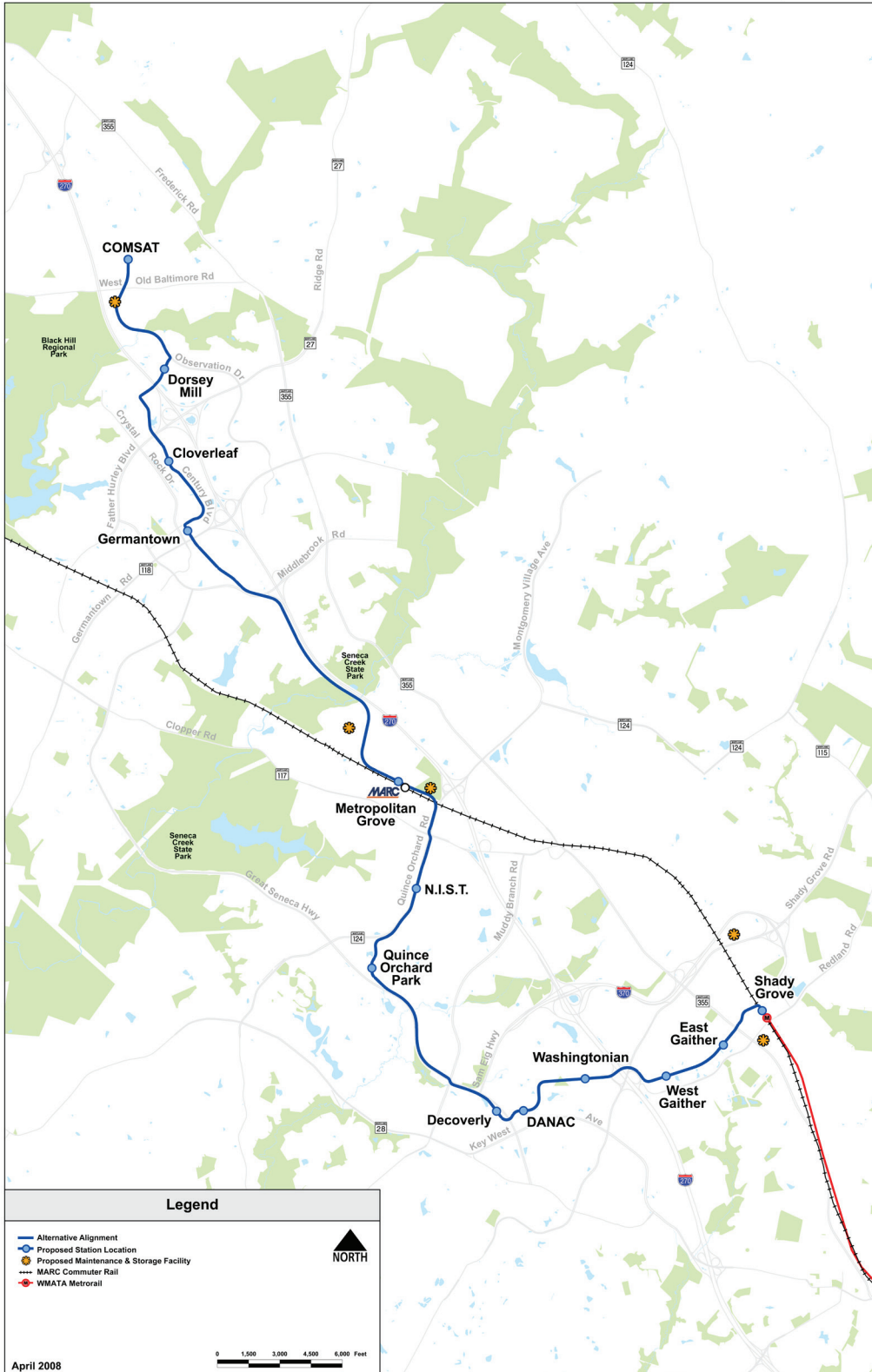


Figure I-2: CCT Study Area



This SEA focuses on the engineering and environmental impacts of three recently proposed CCT alignment modifications and new station locations. This SEA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and is a companion to two other documents that have been prepared for the I-270/US 15 Multi-Modal Corridor Study in order to comply with NEPA provisions. These include the 2002 DEIS and the 2009 AA/EA. Together these documents analyze the transportation and environmental performance of a range of highway and transit improvements against a set of common transportation goals and objectives.

Project Background and History

Below is a brief summary of the relevant project events that have occurred since its inception. **Chapter I.C** (pages I-2 to I-3) of the **2002 DEIS** provides a detailed project history. Additional information is provided in **Chapter I** (pages I-2 to I-3) of the **2009 AA/EA**.

The I-270/US 15 corridor has been the subject of multimodal transportation studies since 1970, as local and state agencies have looked at ways to address the transportation needs in the corridor. The 2002 DEIS and 2009 AA/EA represent Stage II of a three-stage project planning process by SHA and MTA and is a transition between prior concept planning and Stage III – the Final Environmental Impact Statement (FEIS). This SEA is a companion to the 2009 AA/EA and 2002 DEIS and represent part of Stage II of the planning process. It analyzes the environmental impacts of three sets of new alignment modifications and corresponding new stations proposed for the CCT BRT or LRT transitway. It also provides additional environmental analysis on the locations of the two possible Operations and Maintenance (O&M) facility sites.

The 2002 DEIS contained five alternatives of combined highway and transit improvements for evaluation: No-Build, TSM/TDM, and three build alternatives (3A/B, 4A/B and 5A/B/C). Public hearings to receive comments on the document were held on June 25, 2002 in Montgomery County and on June 27, 2002 in Frederick County.

In the fall of 2003, the Maryland Department of Transportation (MDOT) directed SHA to consider

Express Toll LanesSM (ETLsSM)¹ as an alternative for the highway elements of the I-270/US 15 corridor alternatives. Public workshops were held on June 29 and 30, 2004 to introduce the ETLs concept for the project.

The 2009 AA/EA presented the results of a comprehensive environmental analysis of the two new ETL alternatives, named “6A/B” and “7A/B”, which combined different highway capacity options (referred to as Alternatives “6” or “7”) with either LRT or BRT (referred to as “A” or “B” for LRT or BRT respectively) on the Original CCT Alignment. The Original CCT Alignment is a single transitway alignment identified initially in local area master plans and adopted by MTA for this corridor. Additionally, the document includes a transit Alternatives Analysis focused on the transportation costs and benefits of alternatives 6A/B and 7A/B. MTA and SHA held two public hearings in Montgomery and Frederick Counties on June 16 and 18, 2009 respectively and provided a sixty-day public review and comment period to provide members of the public and other stakeholders with a chance to provide input on this document.

Over 430 people attended the two public hearings in which information was presented and displayed in an “open house” format where attendees could interact with agency staff to ask questions and provide feedback on what was shown. Approximately 60 of those who attended chose to present either public or private testimony that was recorded by a court reporter and made part of the permanent public record for the project. The majority of the comments submitted related to the proposed CCT with most in favor of the project. Support was expressed for both BRT and LRT modal alternatives with some disagreement regarding whether the project alignment should be altered to serve areas identified for growth and development, particularly the Life Sciences Center. Some residents were concerned that the CCT would have limited ability to reduce the auto travel associated with the anticipated growth, while others testified to the importance of the transitway in managing traffic associated with growth.

¹ ETLs are tolled highway lanes that operate in conjunction with toll-free lanes to provide a relatively congestion-free trip when travel time is critical. The ETLs would use variable rate tolling to manage the amount of traffic, and thus the level of congestion, within the lanes.

Corridor Setting

The Original CCT Alignment studied in the 2002 DEIS and the 2009 AA/EA is entirely contained within Montgomery County on a 14 to 16 mile alignment between the COMSAT facility just south of Clarksburg and the Shady Grove Metrorail station in Rockville.

Planning Context

In the 1970s, Montgomery County developed plans for a transitway corridor, the CCT, extending northward from the then-planned terminus of the Washington Metropolitan Area Transit Authority's (WMATA) Metrorail Red Line at Shady Grove. The CCT alignment was incorporated into the County's master plan, as well as in individual sector plans, to ensure that land is reserved for the corridor as part of any development and redevelopment planned and constructed in the study area. Over the years, this corridor reservation process has enabled the county to keep much of the corridor available either through direct donation by developers or by developers providing easements or assurances that nothing will be built within the planned right-of-way. At this time, approximately 60 percent of the transitway alignment right-of-way is controlled by or under reservation by Montgomery County for the purposes of developing the transitway project.

The developers of a number of properties within the CCT study area, including Crown Farm in Gaithersburg, Germantown Town Center, and the Casey Property near the proposed Metropolitan Grove station, have designed transit-focused plans in anticipation of future transit service along the CCT corridor. Designs include planning commercial structures near proposed station areas and increasing residential and employment densities in proximity to the stations.

Recent consultation with area developers and other factors have resulted in modifications to the master plans in the CCT corridor. The City of Gaithersburg, for example, amended their current plans for the Crown Farm property to include a modified CCT alignment that travels along Fields Road to a future extension of Decoverly Drive rather than diagonally across Crown Farm as provided for in the Original CCT Alignment. The revised CCT alignment would traverse the property in the

median of Decoverly Drive. Crown Farm is proposed to be a densely developed commercial and office corridor and includes a transit station with parking as part of the development plans. Additionally, the City of Gaithersburg has identified the Kentlands Square shopping center for future redevelopment into a mixed-use activity center along the lines of the adjacent Kentlands, a New Urbanist village. The City has requested that MTA consider adjustments to the Original CCT Alignment to more directly serve these locations. In addition, Montgomery County has approved the *Great Seneca Science Corridor Master Plan*, an amendment to the County's current master plans, to permit a major new development of the Shady Grove Life Sciences Center (LSC), a mixed-use biotechnology research center that would feature up to 17 million square feet of office, commercial and residential development. A revised alignment of the CCT is featured prominently in the Master Plan as an important means of providing needed transportation in the corridor. Additionally, the plan recommends that development of the LSC be staged and triggered by different phases of CCT project development.

The 2009 AA/EA lists a number of master plans that were updated between the 2002 DEIS public hearings and the publication of the 2009 AA/EA. These may be found in **Chapter I** (pages I-2 and I-3) of the **2009 AA/EA**. Master plans and updates relevant to the alignment modifications are summarized below. Each of these recommendations is consistent with the current CCT study, which aims to provide a convenient transit connection to Metrorail at the Shady Grove Station.

- *The Shady Grove Sector Plan*, adopted in March 2006. This plan covers the area around the Shady Grove Metrorail station, and only the southernmost half-mile of the CCT is within this area. The plan includes the proposed CCT, and one of the plan's transportation objectives is to "incorporate the Corridor Cities Transitway into the Metro station to provide convenience for transit riders." More specifically, the plan supports a cross-platform connection between the CCT and Metrorail, the CCT O&M facility to be located outside the Shady Grove planning area, and the use of a grade-separated route to carry the CCT across MD 355/Frederick Road (including a safe at-grade pedestrian crossing).

- The *Great Seneca Science Corridor Master Plan*, adopted in May 2010. This plan, formerly referred to as the Gaithersburg West Master Plan, provides the vision for the LSC, a health care and biotechnology research and development center. The LSC is designed to be a mixed-use destination that provides residential, office, and commercial land uses developed on a mix of public and private land. The goal is to transform the low density office park into a densely developed self-sustaining community and offer a mix of closely located land uses to manage accessibility and provide environmental protection, green space and buffers. The CCT on a modified alignment is featured as a cornerstone of the plan, although a grid road network and hiker biker trails are also provided. The plan builds a pattern of density over a 25-35 year time period oriented around the three proposed CCT stations within the LSC: LSC West, LSC Central, and LSC Belward. The density levels are intentionally phased to coincide with different stages of infrastructure development, particularly development of the CCT.
- *Kentlands Boulevard Commercial District Special Area Study*, Amendment to the 2003 Land Use Plan, adopted May 5, 2008. The purpose of this plan is to develop a town center concept for the Kentlands commercial district that provides consistency with surrounding communities. The surrounding Kentlands residential communities were developed using New Urbanist principles and feature a walkable grid street network of residential housing and neighborhood commercial and office uses. Great Seneca Highway is the district's eastern border and Quince Orchard Drive is the district's northern border. The plan calls for the CCT to be aligned on the southwestern side of Great Seneca Highway to act as a catalyst for redevelopment into the envisioned mixed-use town center.

In addition to these approved and adopted master plans, there are draft updates to the master plans for the City of Gaithersburg and Germantown that are undergoing review and pending approval. These modifications are described below:

- *City of Gaithersburg Master Plan*, draft 2009. This document updates the most recently updated master plan, adopted in 2003. The update considers the

effects of proposed developments in Germantown and the Life Sciences Center on the City's land uses and road network. It proposes modifying the City's Adequate Public Facilities Ordinance to include a less restrictive Critical Lane Volume standard to be more competitive with surrounding parts of the County in attracting development. Additionally, this plan supports a realignment of the CCT to serve the proposed Kentlands and Crown Farm redevelopments within the City. It also states a preference for the CCT to be light rail. This document is currently undergoing public review and comment. Adoption was anticipated for the summer of 2010.

- *Germantown Forward: Germantown Master Plan*, draft 2010. Germantown Forward recommends that the Germantown Town Center expand and improve into a mixed-use, walkable and transit-centered environment. The plan envisions transit as a central element of Germantown with MARC, local bus, express bus, and the CCT all serving the community. The CCT Germantown station is identified as the central location for density, with a proposed Floor-Area-Ratio of 2.0 (meaning that the building square footage can be up to twice the area of the land parcel it sits on). Growth is anticipated to surpass that proposed for the Life Sciences Center. Up to 20,000,000 square feet of commercial development, 14,000 dwelling units, and 62,500 jobs are proposed. Adoption of the plan is pending a completed review process.

Programmed Transportation Improvements

Programmed transportation improvements associated with the I-270/US 15 corridor study area are identified in the Metropolitan Washington Council of Governments (MWCOC) *2009 Constrained Long Range Transportation Plan* (CLRP), as amended, and in the *Maryland Consolidated Transportation Program 2010-2015* (CTP). **Table I-1** of the **2009 AA/EA** identifies the projects within the study area that were included in the travel demand modeling for this study. **Table I-1** on the following page is the same list with some minor modifications as reflected in the most recent update to the CLRP. Though not listed, improvements to I-270/US 15 and the CCT are included in the CLRP.

Table I-1: Transportation Improvements Programmed for the I-270/US 15 Corridor Included in 2030 Forecasts

LOCATION	DESCRIPTION	PROJECTED COMPLETION DATE
HIGHWAY UPGRADE, RECONSTRUCTION, EXTENSION AND WIDENING PROJECTS		
I-70 from Mount Phillip Road to MD 144	Replace I-70 bridge over Reich's Ford Road and reconstruct ramps, widen from MD 144 to west of Monocacy Boulevard	2020
I-270 Interchange at Watkins Mill Road	Widen and extend Watkins Mill Road from four to six lanes	2016
I-270 at MD 121	Reconstruct interchange of I-270 and MD 121	2010
Bridge over I-270 I-4 Dorsey Mill Road	Century Boulevard to Milestone Center Drive	2015
MD 27 from MD 355 to Snowden Farm Parkway (A-305)	Widen to six lanes from MD 355 to Midcounty Highway; widen to four lanes from Midcounty Highway to Snowden Farm Parkway	2010
Midcounty Highway (M-83) from Montgomery Village Avenue to MD 27	Construct four to six lane roadway	2020
MD 117 from Seneca Creek State Park to I-270	Improve roadway and reconstruct intersections. Includes sidewalks where appropriate & multi-use path on south side.	2020
MD 118 from MD 355 to M-83 (Midcounty Highway)/ Watkins Mill Road	Extend MD 118 as a six-lane divided highway (includes bicycle/pedestrian accommodation)	2020
Watkins Mill Road at I-270	Add an interchange at I-270.	2010
Father Hurley Boulevard from Wisteria Road to Germantown Road	Construct final link of Father Hurley Boulevard as a four- or six-lane roadway	2011
Father Hurley Blvd. from I-270 to existing MD 27	Widen Father Hurley Boulevard	2010
Middlebrook Road extended from MD 355 to M-83	Study to construct six lanes	2010
Observation Drive extended	Planning study to extend Observation Drive as a four-lane divided roadway from south of Little Seneca Creek to Clarksburg Town Center	2020
Intercounty Connector (ICC)	Construct toll freeway between I-270 and I-95/US 1; engineering, right-of-way acquisition and construction under way	2012
TRANSIT EXTENSIONS AND PARKING EXPANSION PROJECTS		
Olney Transit Center	Construction of transit center in Olney	2015
Montgomery County Randolph Road bus enhancements	Bus Rapid Transit (BRT) from MD 355 to US 29	2010
Clarksburg Transit Center	Construct Transit Center	2015
Paul S. Sarbanes Transit Center Silver Spring	Transit center at Silver Spring to include Metrorail/MARC station, local and intercity bus, and a taxi queue area.	2011
Metropolitan Grove Transit Center	Vicinity of Watkins Mill Road and MD 117	2015
Purple Line	16-mile transitway between New Carrollton and Bethesda Metrorail stations, connecting the Metrorail Red, Green and Orange lines to key destinations in Prince George's and Montgomery Counties.	Phase I (Bethesda to Silver Spring) 2015 ²

Sources: MWCOG 2009 CLRP and FY 2010-2015 TIP Air Quality Conformity Inputs, 2/8/09; MWCOG 2009 CLRP Amendments http://www.mwco.org/clrp/projects/new/added_2009.asp.

² Project changed to include phased development

Purpose and Need of the Project – An Overview

As explained in the introduction, this SEA is focused on proposed alignment modifications within a roughly two-mile segment of the CCT corridor between I-270 to the east and Quince Orchard Drive to the west, to respond to requests by Montgomery County officials to better integrate the alignments with the updated community master planning documents described on the previous pages. This SEA is being prepared as a supplement to the previous analysis work done on the entire I-270/US 15 study area (**Figure I-1**). Therefore the alignment modifications and other issues discussed in the next chapters (e.g., additional analysis on the O&M sites) would be modifications to full-length (Shady Grove to COMSAT) transit alternative components. Therefore the original Purpose and Need, which arises from transportation issues in the full corridor and sets out goals for full-length multi-modal alternatives, still applies.

The Purpose and Need of the I-270/US 15 Multi-Modal Corridor Study is defined in **Chapter I** of the **2002 DEIS** and updated in **Chapter I** of the **2009 AA/EA**.

The I-270/US 15 corridor (**Figure I-1**) provides an essential connection between the Washington, DC metropolitan area and both central and western Maryland, and is an important corridor for carrying local and long distance trips within and beyond the corridor. Addressing traffic congestion and safety on I-270 and US 15 were the principal motivating factors for the multimodal study. It was determined early in the study process that congestion could not be effectively addressed solely through capacity improvements to I-270 and US 15. Additionally, factors such as environmental constraints, air quality conformity, and regional policies supportive of encouraging investments in, and use of, transit and other more sustainable forms of transportation in highly congested and growing areas led transportation officials to seek a multimodal approach to addressing these basic transportation problems in the I-270/US 15 corridor.

Population and employment growth in Montgomery and Frederick Counties is expected to cause peak period traffic congestion along the I-270/US 15 corridor to worsen. The need for transit and highway improvements stems from the mobility challenges resulting from this growing traffic congestion in the I-270 and US 15

corridors. The lack of alternate, high-speed routes within the corridor also contributes to congestion on I-270 and US 15. Transit provides an alternative for some trips in the corridor, but existing transit service in the most densely developed areas of the corridor is limited to express and local bus service operating in mixed traffic, as opposed to on a dedicated or exclusive transit guideway. This means transit is subject to the same congestion as other vehicles, and since transit vehicles stop at bus stops and stations, the travel times are not competitive with auto travel. MARC provides fast and reliable travel options for some residents of the study area – those traveling the longest distances and/or who live along the CSX corridor on which MARC operates. However, MARC does not serve those areas identified for targeted growth and development in the corridor. Metrorail also operates in a very limited portion of the corridor (serving Rockville and Shady Grove stations), but access to Metrorail is hampered by the same congestion as other traffic, and parking at some of the existing MARC and Metrorail stations is filled to capacity before the morning peak travel hours are over.

Transit has long been identified as an important element of meeting the transportation needs in the corridor. Transit provides an important option for persons traveling to and between key activity centers within the rapidly growing Montgomery County portion of the I-270 corridor. Improving connections to existing transit services along the I-270 corridor at locations such as the Germantown Transit Center, Metropolitan Grove, and Shady Grove would provide improved mobility for those already taking transit and new travel options for those who typically drive. By providing travelers with mobility options, the CCT project would address the unmet travel needs of persons who now rely on congested highways or on other, less accessible, transit alternatives.

Project Goals

In order to effectively evaluate the proposed transportation strategies and alternatives, the project team developed five goals for this project. These goals were developed very early in the study process in consultation with the I-270/US 15 Multi-Modal Corridor Study Focus Group, approximately 20 individuals representing business and community interests in the project area. The Study Focus Group reviewed and offered input on the many transportation improvement options and

evaluation measures. (For more information on the focus group and goal development process refer to the **2002 DEIS, Chapter VII**, pages VII-4 to VII-7.)

The project goals were purposely broadly defined to have a multimodal application related to the transportation and related needs of the corridor. The various highway and transit capital investment alternatives that have been analyzed over the full range of NEPA documents have been defined and evaluated against these goals within the context of a full transportation network.

This SEA focuses solely on the role of the proposed alignment/station modifications for the CCT in meeting the goals of the I-270/US 15 Multi-Modal Corridor Study. Transit is an important component of a multimodal strategy designed in consultation with Montgomery County, other local communities, and members of the public to meet the project goals. The following identifies the four goals of the I-270/US 15 Multi-Modal Corridor Study in which transit could play an important role in meeting.

Support Orderly Economic Growth

Support the orderly economic development of the I-270/US 15 corridor consistent with the local government land use plans and Maryland's Economic Growth, Resource Protection and Planning Act.

Enhance Mobility

Provide enhanced traveler mobility by: optimizing travel choices by destination, mode and route; minimizing delay; and improving the overall efficiency of the transportation system.

Preserve and Protect the Environment

Deliver transportation services in a manner that preserves, protects and enhances the quality of life and social, cultural and natural environment in the I-270/US 15 corridor.

Optimize Public Investment

Provide a transportation system in the I-270/US 15 Corridor that makes optimal use of existing transportation infrastructure while making cost effective investments in facilities and services that support other project goals.

A fifth study goal, Improve Goods Movement, is not a goal that transit addresses directly, because transit moves people, not goods. However, transit investments

in the corridor would address goods movement by limiting the interactions and conflicts with motorized vehicles on area roadways, thus reducing constraints on long distance goods movement and local freight delivery. Transit systems should also be designed, where feasible, to minimize potential interference with goods movement, for example, by not delaying truck traffic at grade crossings.

Need for Transportation Improvements

This section updates descriptions of three contributors to the project need: population and employment growth, current and projected growth in traffic congestion, and limitations of the current transit services. Some of the projected traffic volumes and new development forecast in the 2002 DEIS have been realized, so the need for a solution remains imperative.

Regional Population and Employment Growth Update

Round 7.2a Cooperative Forecasts of demographics were approved by MWCOG on October 14, 2009 and provide projections of population, household and employment growth to the year 2040. These forecasts indicate that population, household, and employment growth is expected to continue in the metropolitan Washington region, including in Montgomery County. They are the land use forecasts used in the travel demand modeling for the alignment modifications that are reported in **Chapter III** of this document. Land use forecasts are updated frequently and are currently under review once again. These forecasts are developed cooperatively among the individual jurisdictions that fall within MWCOG Region and reflect current expectations for employment and population growth. **Table I-2** identifies population and employment projections for 2030 based upon the MWCOG forecasts. The year 2030 was selected for reporting because it matches the current planning horizon year for the CCT.

Growth trends show a modest amount of growth in Montgomery County relative to the rest of the MWCOG region over the 25 year span analyzed above. Population will grow at a modest 22.8 percent from 2005 to 2030, but job growth is expected to be at a rate of 34.5 percent over that same time period. It's important to note that these growth rates reflect the land uses anticipated for Montgomery County,

Table I-2: Demographic Forecasts

AREA	2005 POPULATION	2030 POPULATION	PERCENT CHANGE	2005 EMPLOYMENT	2030 EMPLOYMENT	PERCENT CHANGE
Montgomery County	931,424	1,144,383	22.8%	500,584	673,725	34.5%
Metropolitan Washington Region*	6,276,440	8,157,467	30%	3,785,481	5,272,309	39.2%

* The Metropolitan Washington Region includes: Anne Arundel, Calvert, Carroll, Charles, Frederick, Howard, Montgomery, Prince George's and St. Mary's Counties in Maryland; Arlington, Clarke, Fairfax, Fauquier, King George, Loudoun, Prince William, Spotsylvania, and Stafford Counties in Virginia; Jefferson County in West Virginia; the cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas and Manassas Park in Virginia; and the District of Columbia.

Source: MWCOG, Round 7.2a (October 14, 2009) Cooperative Forecast.

including planned growth along I-270 and in the CCT corridor as reflected in local area master plans. This includes robust development anticipated for Life Sciences Center, Metropolitan Grove, and the City of Gaithersburg. However, it is also important to note that the cooperative forecasting land use assumptions are frequently changed in response to economic and other factors. The recent economic downturn in the region may be reflected in less robust growth projections in subsequent versions of these demographic forecasts.

Traffic Growth Update

Analysis of current and projected traffic volumes identifies existing and future congestion that will result in reduced Levels of Service (LOS), longer travel times, and higher future travel costs. Traffic trends and details of traffic projections anticipated for the I-270/US 15 corridor since the publication of the 2002 DEIS are presented in **Chapter I** of the **2009 AA/EA** (page I-6). Traffic volume projections were based on the MWCOG regional travel demand model Version 2.1D#50. As with the cooperative forecasts for the MWCOG region, travel demand models are updated frequently to account for changing conditions. However, because the SEA has been prepared so soon after the recently published 2009 AA/EA, new traffic projections are not being recalculated at this time.

The 2030 No-Build Average Daily Traffic (ADT) volumes on I-270/US 15 for areas within the CCT corridor are shown in **Table I-3** of the **2009 AA/EA**

(page I-6). Traffic volume growth on I-270 and US 15 is expected to continue well into the future in response to land use and demographic growth. Year 2000 existing traffic volumes on I-270 ranged from 210,000 vehicles per day at the southern end of the project area to approximately 96,000 vehicles per day at the northern end, whereas 2030 traffic volumes range from approximately 247,000 vehicles per day at the southern end of the project area to approximately 148,300 vehicles per day at the northern end.

Transit Demand Update

The 2002 DEIS notes that the I-270/US 15 corridor is one of the most traveled north-south transportation corridors in Maryland, and provides an essential connection between the Washington, DC metropolitan area and central and western Maryland. The 2000 Census indicates that nearly 22 percent of workers residing in Montgomery County work in Washington, DC. In 2000, this added up to an estimated 99,700 commuters. While employment is growing rapidly in Montgomery County, it is expected that a large number of corridor residents will continue to travel to DC for work in the future.

Many of the commuters headed to DC use transit to avoid the high levels of congestion on the roads. Minor changes in service on individual bus routes have occurred including the addition of bus routes to the Germantown Transit Center and new or expanded transit centers and park-and-ride lots.

Recently adopted master plans for the CCT corridor include considerable housing and job growth that might result in additional intra-county commuting and recreational travel. For example, the *Great Seneca Science Corridor Master Plan* includes plans for up to 52,500 jobs and 9,000 dwelling units just in the area between Fields Road and Quince Orchard Boulevard within the CCT corridor. This type of growth and development will affect travel needs and travel patterns.

Current Transit Services

Transit services are described by type below, with ridership numbers provided in **Table I-3**. It is clear that use of transit services is high, both within the County and for those headed south toward DC. Given the growth anticipated for the region through 2030, it is reasonable to expect that travel needs will increase and so will demand for transit service to help meet those needs.

MARC Service

MARC commuter rail transit service is available from a number of Brunswick Line stations in Montgomery County, including the Washington Grove, Gaithersburg, Metropolitan Grove and Germantown Stations located in the study area. Frederick County is served by four stations: Brunswick, Point of Rocks, downtown Frederick and Monocacy. MARC takes commuters directly to Union Station in Washington, DC. There are some limitations to MARC service for commuters to DC, including:

- MARC serves one station in Washington, DC. Riders traveling to other locations in and around DC must transfer to the Metrorail Red Line service at Union Station, Rockville or Silver Spring Station.
- Park-and-ride lots at many of the MARC stations are operating at or near capacity, including Point of Rocks and Germantown. The Point of Rocks station park-and-ride lot recently opened its expanded 550-space capacity. Plans exist to add a parking garage to the 657-space Germantown surface park-and-ride lot by 2015. Parking is free at all MARC stations in the CCT corridor.
- MARC commuter rail transit service in the corridor is only offered during weekday morning and evening peak hours, with one mid-day (1:45 PM train northbound out of Union Station) and no weekend service.
- Service is only in the peak direction, making reverse commuting impossible.
- Downtown Frederick, Monocacy, and Washington Grove stations are served by three trains in the morning peak hours resulting in long wait times between trains. The other Brunswick Line stations are served by nine trains during peak hours, which is one train approximately every thirty minutes.

Table I-3: Current Transit Ridership

	MTA ¹		WMATA ²		MONTGOMERY COUNTY ³
	MARC BRUNSWICK LINE	COMMUTER BUS #991	SHADY GROVE METRORAIL	METROBUS (J5, J9, Q2)	RIDE ON BUS
Annual	1,887,000	231,637	7,515,500	4,092,300	27,300,000
Average Daily	7,400	932	27,292	12,826	87,397
AM Peak	3,700	475	9,345	4,087	23,400

Sources: ¹ MTA (FY 2007)

² WMATA (FY 2007)

³ Montgomery County Department of Public Works and Transportation, Transit Services Division (FY 2006)

MARC is running at capacity on most of its lines and has a number of planned projects to increase capacity in the short- and long-term. The September 2007 MARC Growth and Investment Plan includes increasing seating capacity by 200 seats on the Brunswick Line by 2010, largely by lengthening existing trains to accommodate growing ridership demand. Additional plans for 2015 and 2020 include increasing seating capacity by 8,400 seats, doubling service on the Frederick Branch (Downtown Frederick and Monocacy stations) to achieve 30-minute peak headways, and adding additional parking at the Germantown, Metropolitan Grove, and Rockville stations.

Metrorail Service

Metrorail service is available at the southern terminus of the CCT corridor at the Red Line's Shady Grove station. Metrorail is a heavy rail system and service is frequent and rapid. Connections are available to other Metrorail lines near downtown, providing access to a wide range of destinations throughout Washington, DC and the surrounding region.

The parking facilities (garages and surface lots) at the Shady Grove station operate at capacity. Despite a recent expansion adding 2,140 spaces, and a daily charge of \$4.75 per day, the parking facilities continue to be filled. Parking capacity is currently 5,745 spaces, 76 of which are reserved for short-term (metered) use.

Bus Service

Over 40 bus routes serve the I-270/US 15 corridor, with service provided by WMATA Metrobus, Montgomery County Ride On, and MTA Commuter Bus Route 991. Three routes run express service (limited stops) during peak hours. The rest are local routes. Many routes connect to MARC stations, the Shady Grove Metrorail station, and to transit centers.

The Germantown Transit Center was opened in 2002. It is located on Aircraft Drive near the MD 118 interchange with I-270. The center includes a 175-space park-and-ride lot and bus bays for the nine Ride On routes that stop there. It was designed to serve the Germantown community and the I-270 employment corridor with improved bus service to Gaithersburg and the Metrorail station, including an express bus to Metrorail with timed transfers to other bus routes. The location of the Transit Center has been identified in the

most recent Germantown Master Plan update to be the center of an enhanced Germantown Town Center and the location of a planned future CCT station.

MTA Route 991 provides express service from Hagerstown via I-70 to Frederick and then via I-270 to the Shady Grove Metrorail station and Rock Spring Business Park. It travels only in the peak direction and only during morning and afternoon peak hours, with headways of about 15 minutes. As **Table I-3** shows, this route carries more than 900 riders on a typical weekday.

An indicator of the high demand for a link to Metrorail service within the corridor is that 16, of the 40 corridor bus routes, stop at the Shady Grove station. In contrast, MARC stations between Germantown and Washington Grove are each served by one or two bus routes.

Current and Future Transit Market

As discussed above, public transit is identified in numerous State, local and regional plans as a critical investment to provide effective mobility options for those who might otherwise use an automobile, as well as those who are unable to drive a car. To be most successful as an alternative to the automobile, it is critical that the new transit service be on an exclusive guideway to provide a comparable or better travel time than automobiles during rush hours. Although the majority of corridor trips will continue to be made by automobile, high frequency, high quality transit service will provide another good option for travel. The projected transit demand (described in the pages that follow) demonstrates a need to include expanded transit service throughout the I-270/US 15 corridor.

The transit component of the CCT project is envisioned as serving three principal travel markets:

- Local commuters and travelers – Montgomery County residents working at employment locations along the corridor, or visiting retail or other businesses near proposed CCT stations. This type of travel is expected to become a larger part of the total travel market as the CCT corridor continues to grow and evolve.
- Traditional commuters – Residents of the I-270 corridor in Montgomery and Frederick Counties traveling south to employment locations inside

and outside the corridor, particularly to locations that can be reached on the WMATA Metrorail system

- Reverse commuters – Residents of southern Montgomery County and Washington, DC traveling to employment centers along the proposed CCT corridor

This section provides a description of the existing and projected (2030) transit markets. They are derived from the travel demand model that was used to support the transit Alternatives Analysis presented in the 2009 AA/EA document. Projected conditions assume No-Build of the CCT, but because the model was run to support the AA/EA of which there was a highway component, there is an assumption of a highway improvement on I-270 of ETLs as described for Alternatives 6A and 6B in **Chapter II** of the **2009 AA/EA** (pages II-7 – II-12).

The CCT study area has a well-established transit market. Montgomery County has traditionally shown higher transit usage than similarly-sized suburban counties. In 2000, 18 percent of commuter trips from Montgomery County used transit, higher than the 10 percent of Fairfax County, Virginia commuters and 17 percent of Prince George's County, Maryland commuters. Frederick County commuters use transit for only 1.4 percent of trips, but also have fewer transit options available to them.

Strong commuter-driven transit demand is projected to continue in the future. Even without the proposed CCT transit improvements, commuter transit share is projected to be 21 percent for Montgomery County in 2030.

Non-commuter trips, which include trips for shopping, recreation, medical appointments, and visiting relatives, make up more than three-quarters of regional motorized trips. Because of dispersed locations assumed in the land use forecasts in the model and other factors, transit makes up a relatively small share of these trips, approximately two percent according to the travel demand model. As Montgomery County's land use and transportation systems evolve, land uses are expected to be more compact and to offer more opportunities to use transit for non-commuter trips.

In Montgomery County, the transit share of non-work trips is slightly higher in inner suburban districts

like Bethesda and Silver Spring with estimated transit shares of three to six percent. Within the corridor, transit shares of these trips are similar to the rest of the region at approximately two percent. Projections for 2030 indicate that transit's share of non-work trips will increase slightly above today's levels within the study area.

It should be noted that while only a small share of non-commute trips are made by transit, nearly a third of all transit trips in Montgomery County are for non-work purposes. Non-commuter trips are therefore an increasingly important component of the transit market and have the potential for future growth. In 2030 without the CCT, non-commuter transit trips are projected to account for 44 percent of all transit trips.

The total number of transit trips, as well as the transit market share for all trips in the study area, will continue to grow in the future. Without the CCT, Montgomery County's total transit trip share is projected to be 5.2 percent in 2030, a more than a 50 percent increase in transit trip share.

Transit Market Share by District

Transit market shares without the proposed CCT project investment vary by district within Montgomery County. **Table I-4** and **Table I-5**, derived from the travel demand model used to support the 2009 AA/EA, show 2000 estimated and 2030 projected transit shares for trips originating or ending in each district, as defined in **Figure I-3**.

- For the year 2000, transit shares were highest for trips originating from inner suburban areas such as Silver Spring/Takoma Park (ten percent), lower from the I-270 corridor (three to five percent), and lowest from rural areas (one percent). In particular, travelers from the Gaithersburg/Derwood and Germantown/Clarksburg districts had a transit modal split of approximately three percent in 2000.
- As expected, transit shares for trips to Washington, DC were estimated to be the highest (18 percent) among destination districts in 2000. For example, transit was used for 28 percent of trips to Washington, DC from the Gaithersburg/Derwood district and 26 percent from the Germantown/Clarksburg district. While

Washington, DC is a major transit destination for Montgomery County residents, Montgomery County as a transit destination is becoming increasingly important, particularly areas to the south, such as Bethesda/Chevy Chase and Silver Spring/Takoma Park. Both of these districts had transit shares of approximately eight percent from districts within the corridor.

- Transit shares for intra-county trips were estimated to be ten percent or higher for trips destined for Bethesda/Chevy Chase and Silver Spring/Takoma Park (communities served by the Metrorail Red Line) than for intra-county trips to other parts of the county.

- Transit shares for intra- and inter-district trips in the I-270 corridor were estimated to be approximately five percent or less in 2000. For example, transit trips were estimated to be two percent of all motorized trips from the Gaithersburg/Derwood district to the Germantown/Clarksburg district and four percent for trips going in the other direction.

Even without the proposed CCT, transit markets are projected to continue year 2000 demand patterns in 2030 with marked increases in transit shares in Frederick, Gaithersburg/Derwood, and Germantown/Clarksburg to Washington, DC; within and between Gaithersburg/Derwood and Germantown/

Figure I-3: Transit Districts

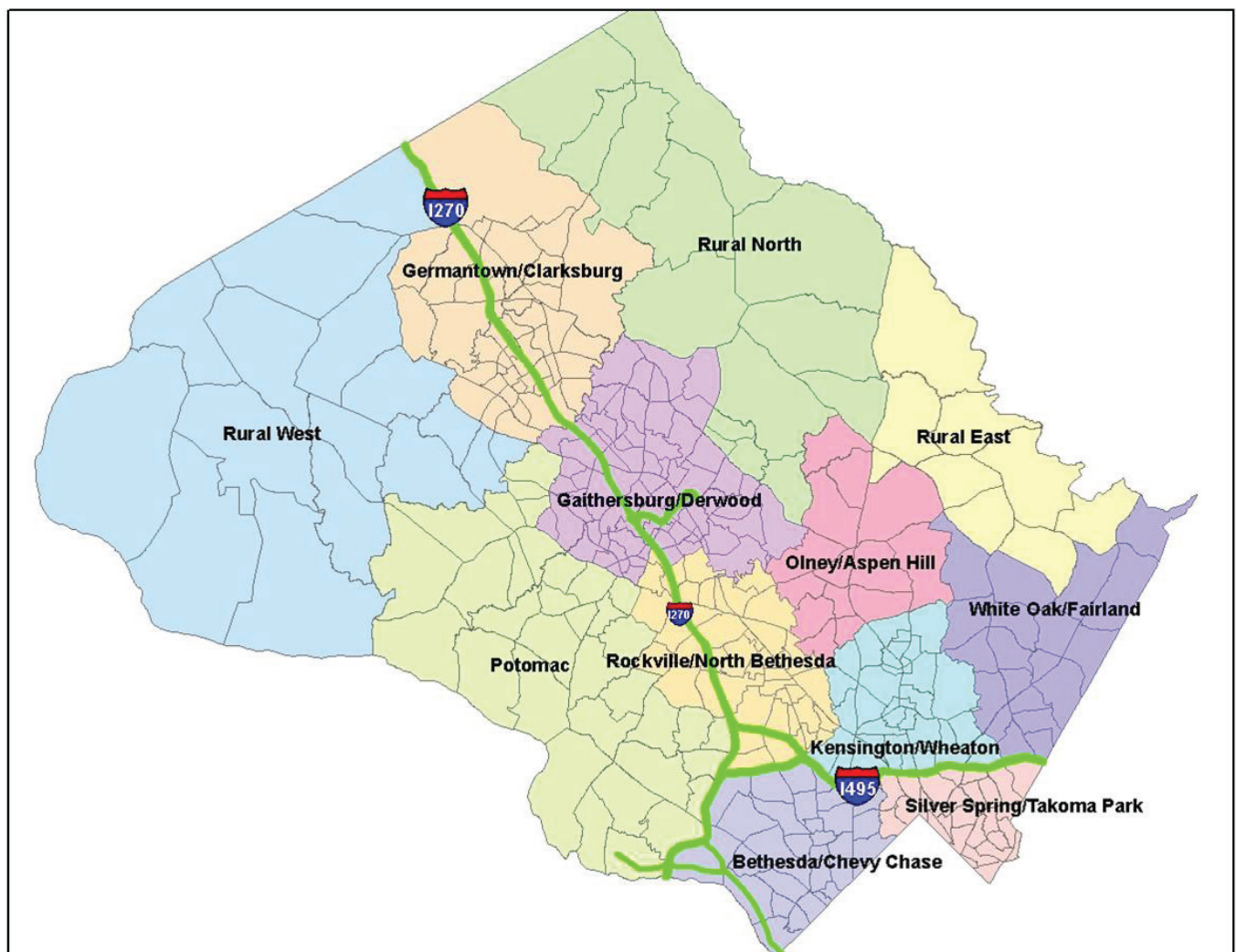


Table I-4: Transit Share of All Trips by District of Origin

TRIP ORIGIN	2000	2030
Bethesda/Chevy Chase	5.5%	6.7%
Gaithersburg/Derwood	3.3%	4.2%
Germantown/Clarksburg	3.0%	3.0%
Kensington/Wheaton	6.4%	7.2%
Olney/Aspen Hill	4.7%	5.5%
Potomac	1.6%	2.2%
Rockville/N. Bethesda	5.2%	6.1%
Rural East	1.3%	1.9%
Rural North	1.1%	1.4%
Rural West	1.7%	2.3%
Silver Spring/Takoma Park	10.0%	10.5%
White Oak/Fairland	3.9%	4.8%
District of Columbia	15.0%	14.9%
Frederick County	0.3%	0.8%
Remainder of Maryland	1.9%	2.2%
Virginia	3.2%	3.8%
Total – Metropolitan Washington Region	3.9%	4.2%

Clarksburg; Frederick to Germantown/Clarksburg and Gaithersburg/Derwood; and reverse commuting between Washington, DC to Gaithersburg/Derwood and Germantown/Clarksburg.

Similarly, commuter transit market shares vary by district within Montgomery County. **Table I-6** and **Table I-7** show estimated 2000 and projected 2030 commuter transit shares for trips by district.

- Commuter transit share in Montgomery County tends to be the highest in the inner suburban districts like Bethesda/Chevy Chase and Silver Spring/Takoma Park with nearly one-third

Table I-5: Transit Share of All Trips by Destination District

TRIP DESTINATION	2000	2030
Bethesda/Chevy Chase	7.9%	8.9%
Gaithersburg/Derwood	2.3%	3.0%
Germantown/Clarksburg	1.2%	1.6%
Kensington/Wheaton	4.0%	4.2%
Olney/Aspen Hill	1.1%	1.3%
Potomac	1.2%	1.3%
Rockville/N. Bethesda	5.8%	6.8%
Rural East	0.4%	0.5%
Rural North	0.2%	0.2%
Rural West	0.2%	0.4%
Silver Spring/Takoma Park	7.5%	8.2%
White Oak/Fairland	0.4%	1.9%
District of Columbia	18.4%	19.1%
Frederick County	0.1%	0.3%
Remainder of Maryland	0.8%	1.2%
Virginia	2.4%	3.1%
Total – Metropolitan Washington Region	3.9%	4.2%

of commuter trips traveling to or from these districts by transit in 2000. The middle I-270 corridor districts, Germantown/Clarksburg and Gaithersburg/Derwood, were lower with 11 percent and 16 percent transit shares for residents, respectively.

- Commuter transit shares tend to be the highest for destinations at major activity centers such as the District of Columbia (37 percent), Silver Spring/Takoma Park (29 percent), Bethesda/Chevy Chase (28 percent), and Rockville/North Bethesda (19 percent). These areas also have high levels of transit service as well as high parking

costs. More than one-third of commuter trips from the study area to DC used transit in 2000.

- Reverse commuting was estimated to have a high transit share, 24 percent for commuter trips from DC to Gaithersburg/Derwood and 21 to 23 percent for trips from Bethesda/Chevy Chase to Germantown/Clarksburg and Gaithersburg/Derwood districts.
- Commuter transit markets are projected to continue the existing patterns in 2030 without the CCT, with a slight increase in the share of trips made by transit.

Transit Trip Growth by District

Transit market growth, shown in **Table I-8**, reflects the overall growth of the study area in terms of population, households, employment, and associated travel needs.

- Daily transit trips from Montgomery County are projected to grow by 105,000 trips or 66 percent, accounting for nearly six percent of the county's motorized person-trip growth. Regional transit trips are projected to grow by 72 percent, making up nearly five percent of the region's motorized person-trip growth.

Table I-6: Transit Share of Commuter Trips by District of Origin

TRIP ORIGIN	2000	2030
Bethesda/Chevy Chase	34.1%	28.4%
Gaithersburg/Derwood	16.4%	17.2%
Germantown/Clarksburg	11.1%	12.0%
Kensington/Wheaton	28.4%	26.5%
Olney/Aspen Hill	22.9%	21.9%
Potomac	15.5%	12.6%
Rockville/N. Bethesda	29.8%	27.9%
Rural East	11.3%	12.4%
Rural North	9.6%	9.8%
Rural West	9.8%	10.8%
Silver Spring/Takoma Park	30.1%	30.5%
White Oak/Fairland	19.0%	20.4%
District of Columbia	40.2%	40.8%
Frederick County	1.5%	4.2%
Remainder of Maryland	9.1%	9.7%
Virginia	13.6%	14.8%
Total – Metropolitan Washington Region	15.7%	15.8%

Table I-7: Transit Share of Commuter Trips by Destination

TRIP DESTINATION	2000	2030
Bethesda/Chevy Chase	28.2%	30.7%
Gaithersburg/Derwood	9.6%	11.6%
Germantown/Clarksburg	5.8%	9.0%
Kensington/Wheaton	23.7%	21.5%
Olney/Aspen Hill	10.6%	10.3%
Potomac	9.3%	7.5%
Rockville/N. Bethesda	19.2%	21.0%
Rural East	2.2%	2.6%
Rural North	1.8%	1.7%
Rural West	1.0%	2.5%
Silver Spring/Takoma Park	29.3%	29.9%
White Oak/Fairland	9.2%	10.1%
District of Columbia	36.9%	37.5%
Frederick County	0.2%	1.0%
Remainder of Maryland	3.2%	4.7%
Virginia	10.8%	12.7%
Total – Metropolitan Washington Region	15.7%	15.8%

Reverse Commuting

The I-270 corridor is home to thousands of jobs in Montgomery and Frederick Counties, and there are a large number of residents located south of the study corridor in southern Montgomery County and the District of Columbia. Employment in Montgomery County, currently (2005) more than 500,000 jobs, is expected to grow by 34 percent by 2030, adding more than 170,000 jobs, increasing the attractiveness of the area for reverse-commuting.

The travel demand model used to support the 2009 AA/EA indicates that in 2030 without the proposed CCT approximately 9,400 people will commute daily to businesses and government offices in the CCT

corridor from residential areas adjacent to Red Line Metrorail stations in southern Montgomery County and Washington, DC. The current transit share of this market (reverse-commute trips to destinations along the CCT) is assumed to be low compared to potential latent demand in view of the fact that there is no MARC service in the reverse-commute direction and all bus service travels in shared lanes, offering no travel time advantage over private auto travel.

While Metrorail stations (such as those at Shady Grove and Rockville) are served well by Ride On bus routes, many destinations in the study area are served by just one bus route. Some of the system's bus routes run infrequently, further limiting opportunities for

Table I-8: Transit Share of All Trips by Origin District

TRIP ORIGIN	PERSON-TRIPS (ALL MODES)		TRANSIT TRIPS	
	GROWTH IN PERSON-TRIPS 2000-2030	PERCENT GROWTH	GROWTH IN TRANSIT TRIPS 2000-2030	PERCENT GROWTH
Bethesda/Chevy Chase	165,222	44%	15,402	73%
Gaithersburg/Derwood	352,727	54%	21,341	99%
Germantown/Clarksburg	284,440	109%	8,507	110%
Kensington/Wheaton	93,006	28%	9,319	44%
Olney/Aspen Hill	47,029	18%	4,760	39%
Potomac	165,848	82%	5,014	159%
Rockville/N. Bethesda	241,395	52%	19,156	80%
Rural East	46,479	59%	1,312	127%
Rural North	68,541	58%	1,455	117%
Rural West	46,275	76%	1,401	134%
Silver Spring/Takoma Park	90,636	27%	11,130	33%
White Oak/Fairland	74,052	26%	6,296	57%
District of Columbia	577,527	34%	85,103	34%
Frederick County	548,774	76%	8,410	451%
Remainder of Maryland	2,828,514	43%	85,118	68%
Virginia	6,312,213	81%	285,881	115%
Total – Metropolitan Washington Region	11,942,678	59%	569,605	72%

commuting by transit, particularly for long-distance commuters who need to make connections.

Transit improvements on the CCT corridor could increase the share of reverse-commute trips made by transit, in addition to improving mode share for traditional commuters. The planned CCT would connect to the Shady Grove Metrorail station, and stop in the vicinity of a number of major employment centers in Montgomery County, making it ideal for reverse-commute use, as well as supporting traditional commute patterns and non-work trips.

Intermodal Connectivity and Land Use

The existing transportation system includes many intermodal connections, linking roads, pedestrian and bicycle paths, local bus service, and MARC and Metrorail stations. The proposed CCT improvements from COMSAT to Shady Grove, including the modified alignments described in this SEA document, would add numerous stations, provide park-and-ride lots, as well as pedestrian and transit linkages. The CCT may also provide for the development of a bicycle path that will provide safe and efficient non-motorized connections between communities along the CCT corridor, as well as direct access to the proposed stations.

Transit Connectivity

There are 16 park-and-ride lots in the I-270 corridor between Frederick and Shady Grove Metrorail station including one transit center, one Metrorail station, and six MARC stations.

Buses serving the corridor in both Montgomery and Frederick counties are routed to stop at transit centers, MARC stations and Metrorail stations, many of which include bus bays for safe and convenient transfers. MARC and Metrorail intersect outside of the corridor, with Rockville and Silver Spring being the nearest MARC stations offering transfers.

The CCT would integrate with the Shady Grove Metrorail station, Metropolitan Grove MARC station and Germantown Transit Center, and stations will be designed to be served by feeder buses operating throughout Montgomery County.

Pedestrian/Bicycle Connectivity

The MTA conducted a study of the existing and planned trail network for the project corridor to develop a better understanding of the planning issues associated with including a parallel trail along the proposed transitway. The study investigated issues, opportunities and potential costs for constructing the trail. Specific tasks included the following:

- Establish the baseline planning assumptions including local plans and existing environmental conditions
- Determine the right-of-way availability for the transitway, including the trail
- Coordinate with local agency representatives on previous planning efforts, identify issues and potential alternative alignments
- Identify existing facilities that could serve as alternatives to constructing a new path
- Identify potential alternatives to avoid areas of engineering challenge
- Identify costs associated with construction of the trail

Construction of the parallel trail would make it easier for surrounding neighborhoods to connect to the transitway. Access to stations using the trail is the primary objective. In addition, it is anticipated that local jurisdictions would plan and, as appropriate, implement trail construction to provide connections to the transitway from neighborhoods not directly adjacent to the transitway.

Montgomery County encourages the development and use of bicycle and pedestrian facilities. The Maryland-National Capital Park and Planning Commission, which covers Montgomery and Prince George's Counties, requires developers to continue sidewalks and bike paths that are adjacent to their properties. Montgomery County Commuter Services promotes bicycling as part of its *Better Ways to Work!* program. Both the State of Maryland and Montgomery County have policies that encourage bicycle facilities to be included as part of all appropriate roadway projects.

Montgomery County's 2005 *Countywide Bikeways Functional Master Plan* calls for bikeways to be built in conjunction with roadway and sidewalk improvements. Higher priority is given to paths that connect major activity centers, including transit centers, central business districts, major employment centers, and existing park trails. The Master Plan assumes that a shared-use path will be built along the entire length of the proposed CCT. Identified as SP 66 in the Master Plan, the path is listed as a high priority project because it could serve pedestrians, as well as bicyclists as an important connection to major employment centers in the I-270 corridor. Proposed CCT stations are included in the bikeway mapping with the Master Plan encouraging additional bikeways to connect to these stations.

Pedestrian and bicycle connections to transit already exist in the CCT corridor. Bike racks are included on all Ride On buses, all WMATA Metrobuses, and most TransIT buses, and bike parking is available at all MARC and Metrorail stations. According to the 2004 Montgomery County *Countywide Bikeways Functional Master Plan*, all MARC stations in the corridor have one or two bike parking racks. Metrorail stations generally have more racks, with Shady Grove station providing 60 bike lockers and rack space for 32 bikes. The Master Plan noted that Shady Grove's bicycle facilities were about one-third utilized, although demand was expected to increase with the redevelopment of the station area and the planned bikeway improvements along Shady Grove Road, Redland Road, Crabbs Branch Way, and the proposed CCT alignment on King Farm Boulevard.

Transit-Supportive Land Use

Transit functions most effectively where densities are highest. A station or stop that is within walking distance of a few thousand homes or employees, for example, will be more heavily used than one that is within walking distance of only a few hundred. Transit systems also do well when stations are positioned close to major employment centers or other attractions such as shopping centers or sports arenas. Transit-oriented developments are areas where development densities – whether residential, office, shopping or a mix of these – are clustered around transit stations or corridors and designed to accommodate and complement transit use through pedestrian-friendly urban design.

There are a number of employment centers along or near the CCT corridor, including COMSAT, National Institute of Standards and Technology (NIST), the Montgomery County Correctional Facility, Montgomery College Germantown Campus, the Department of Energy Headquarters, Kentlands, and the MedImmune headquarters. Some developments have constructed or planned higher residential densities along the proposed CCT corridor in expectation of future construction of a BRT or LRT line. The King Farm property, for example, is a large development in Rockville. Started in 1997, much of the property has been built and includes both residential and commercial structures. King Farm Boulevard, the main thoroughfare for this property, has a wide landscaped median designed to support a future CCT busway or rail line. Residential densities are highest along this boulevard, and a commercial center is being developed around the proposed West Gaither station.

Advanced plans for new mixed-use employment, commercial and residential centers in the Gaithersburg area of the corridor are driving the need to analyze three potential modifications to the original CCT alignment to include direct service to these locations. The proposed developments include the Shady Grove Life Sciences Center, a mixed-use biotechnology park to be developed on property principally owned by Johns Hopkins University to include up to 9,000 homes, 52,500 jobs and 17,000,000 square feet of commercial development. Another planned development is the Crown Farm, annexed into the City of Gaithersburg and located west of I-270 and Shady Grove Road. This development is planning high-rise residential structures that would include ground-level retail to be developed adjacent to the proposed CCT Crown Farm Station. The third proposed development is the proposed redevelopment of the Kentlands Commercial District, adjacent to the southwest side of Great Seneca Highway. The City of Gaithersburg is in the final stages of modifying its master plan to include a mixed-use vision for this commercial area to be more consistent with the adjacent Kentlands Village community that it serves.



CHAPTER II

Alternatives Considered



Chapter II – Alternatives Considered

Introduction

The Supplemental Environmental Assessment (SEA) is narrowly focused on proposed alignment and station modifications to one two-mile section of the CCT corridor that has been evaluated in detail in the 2002 DEIS and 2009 AA/EA. In addition, this document describes the potential environmental effects of two Operations and Maintenance (O&M) sites that remain in consideration after extensive examination of five O&M sites in the 2009 AA/EA and the supportive technical report entitled, *Corridor Cities Transitway Operations and Maintenance Facilities Alternatives Development and Analysis*, May 2007. Some aspects of the transit alternative components, such as the location of electrical substations (for LRT if selected), have not been determined. These aspects will be developed in detail in later phases of the project, after a Locally Preferred Alternative (LPA) is selected. This document presents no new information regarding the highway alternatives. The latest information on the highway project is the 2009 AA/EA, included on a CD found in the inside back cover of this document and online at www.mta.maryland.gov/cct and www.i270multimodalstudy.com.

This chapter describes the transit alternatives' development history, physical location, costs and context within the overall ongoing Multi-Modal Corridor Study. This project's primary transit alternative (the CCT) consists of both an alignment (physical location of guideway, stations and other facilities) and a mode (the type of transit vehicle that will be traveling on the alignment). For the CCT, two modes remain under consideration: bus rapid transit (BRT) and light rail transit (LRT), both described briefly in this chapter. These modes would operate on an exclusive transit guideway on a 14 to 16 mile alignment from COMSAT near Clarksburg, Maryland to the Shady Grove Metrorail station in Rockville, Maryland.

History of Alternative Development

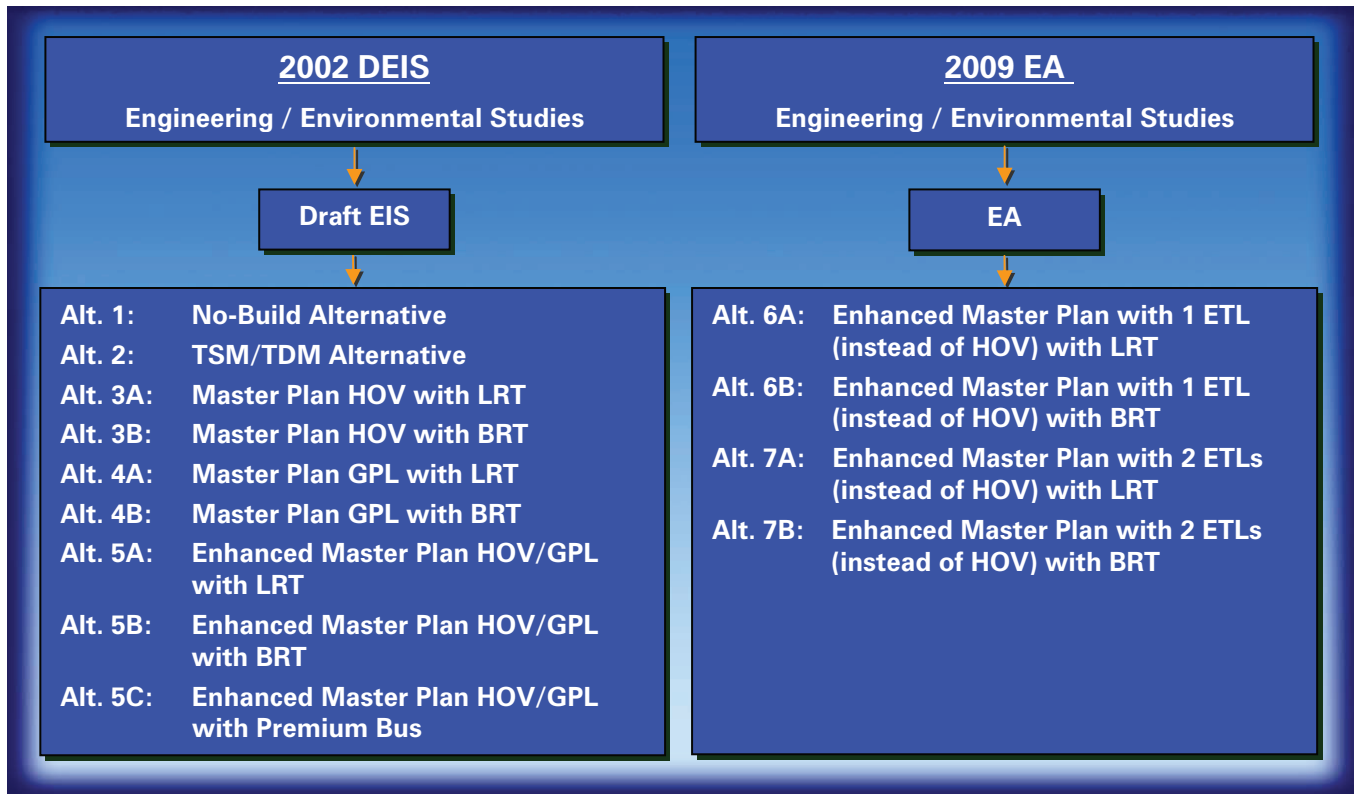
A wide range of alternatives were examined for the I-270/US 15 corridor in the two previous studies, the 2002 DEIS and the 2009 AA/EA. Together, these documents analyzed the transportation and

environmental performance of a range of multi-modal alternatives containing both highway and transit improvements. The highway improvements included the addition of different combinations of general-purpose lanes, high-occupancy vehicle (HOV) lanes, and Express Toll LanesSM (ETLsSM) on I-270 and US 15 in Montgomery and Frederick Counties. The transit alternatives included LRT running on the CCT corridor, BRT running on the CCT corridor, and premium buses running on HOV lanes as proposed in certain highway alternatives. A relatively low-cost Transportation System Management/Travel Demand Management (TSM/TDM) alternative, as well as a No-Build alternative were also examined, the latter to provide a future baseline case against which the impacts and benefits of the alternatives could be compared.

The specific alternatives analyzed in these documents are listed in **Table II-1**, and are described in greater detail in **Chapter II** of the **2009 AA/EA** (pages II-1 to II-15).

The 2009 AA/EA also analyzed a range of alternatives as a means of assessing the costs and transportation performance of the proposed transit alternatives against Federal Transit Administration (FTA) New Starts criteria. This analysis is referred to as an Alternatives Analysis (AA) and represents the first stage of the FTA New Starts process for all proposed transit major capital investments that anticipate receiving federal funding. Analysis of the transit alternatives used the most current regional travel demand model and land use projections to derive estimates of transit ridership, new transit riders, capital and annual operations and maintenance cost estimates, transit user benefits (a measure of travel time savings for all transit system users), and cost-effectiveness (a ratio of total costs per unit of user benefits). The detailed results were reported in **Chapter III** (pages III-2 to III-3) of the **2009 AA/EA**.

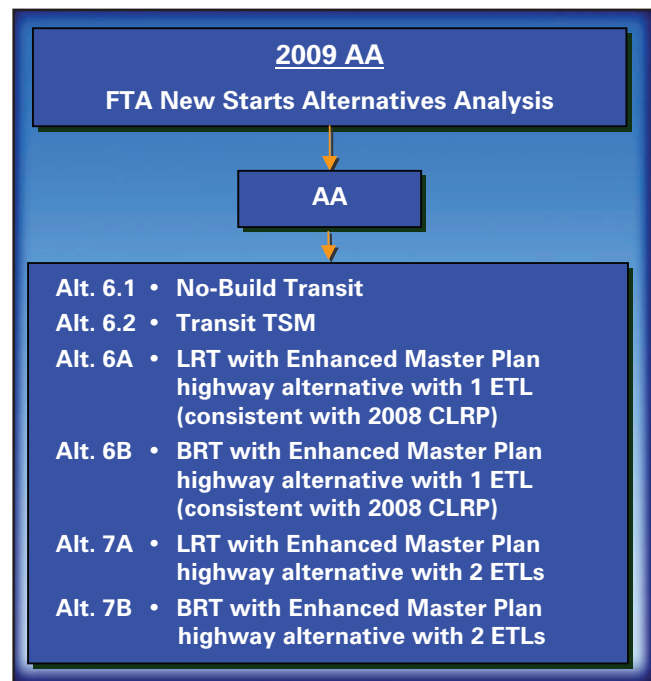
The alternatives for the AA portion of that document include a transit No-Build (no transit improvements on the I-270/US 15 corridor paired with highway build alternative 6, as shown in **Table II-2**), a transit transportation system management alternative (transit baseline alternative expanding the use of the existing transportation system to meet the project Purpose and Need paired with highway build alternative 6, as shown in **Table II-2**), and BRT and LRT operating on the

Table II-1: Alternatives Evaluated in 2002 DEIS and 2009 EA

Corridor Cities Transitway (paired with highway build alternative 6 or 7 as shown in **Table II-2**).

While still a part of the I-270/US 15 Multi-Modal Study, this SEA focuses only on the CCT. Specifically, this document primarily addresses the environmental impacts and transportation performance of recently proposed modifications to the original CCT Alignment from COMSAT to Shady Grove.

As in the 2009 AA/EA, both BRT and LRT are still under consideration as modal choices. The designs for each are very similar and therefore design assumes the most conservative requirements for transitway widths, turning radii and other aspects of the alignment. Both modes would operate on exclusive guideways with signal priority provided at appropriate signalized intersections. Either mode would feature modern low floor vehicles, high platform stations, advanced fare collection, multiple door boarding, and specialized service branding. These service features are consistent with a high capacity, high quality transit service. Service

Table II-2: Alternatives Evaluated in the 2009 AA

frequencies would be high with timed transfers with local bus, express bus and other transit services as feasible and appropriate. See **Chapter III** for more on transit operations and performance.

The Original CCT Alignment (shown in **Figure II-1**) was an alignment defined in the late 1980s and included in local area master plans in the early 1990s. MTA adopted this alignment and analyzed it in the 2002 DEIS and it has remained consistent throughout the project planning process. Recently, the MTA received formal requests from the Montgomery County Executive, Montgomery County Council, and the City of Gaithersburg to consider modifying the alignment and several stations to correspond with and better serve planned development in the Gaithersburg area of the CCT corridor.

Each of the alternatives analyzed for the CCT in the 2009 AA/EA assumed the operation of three new premium bus transit routes operating from Frederick to Shady Grove operating on local roads and proposed managed lanes on I-270 with direct access ramps to park and ride lots and major activity centers. These routes were conceptualized to provide specialized premium transit service for persons coming from Frederick City and County with an anticipated destination in the lower half of the CCT corridor or at Shady Grove. These routes are referred to as FREDSG; FREDMGSG; and KMPTMGSG and described as part of **Alternative 6.2: Transit TSM alternative** on **Table II-3** of the **2009 AA/EA** and illustrated in **Figure II-6** (pages II-14 and II-15). These bus services are assumed to be a part of any CCT alternative, assuming that a highway preferred alternative would be selected that would include managed lanes on I-270. This document does not deal with these bus routes directly since the focus of this SEA is on modifications to the Original CCT Alignment and stations. The performance of the premium bus transit routes was fully analyzed as part of Alternative 6.2: Transit TSM in **Chapter III** of the **2009 AA/EA**.

Lastly, the CCT assumes the future construction of a hiker/biker trail, consistent with the recommendations in the Montgomery County *Countywide Bikeways Functional Master Plan*, March 2005. All adopted modifications to the CCT alignment will include consideration of an adjacent hiker/biker trail during the design phase, consistent with the designs to date of the Original CCT Alignment.

Overview of the 2009 Alignment Alternatives Feasibility Study

Montgomery County and the City of Gaithersburg each had processes underway to revise their local master plans to include both newly planned developments and redevelopments of a density and mix of uses that would be well-served by a high capacity transit service, the CCT. The County's proposed Master Plan for the Life Sciences Center area, the *Great Seneca Science Corridor Master Plan*, formerly known as the *Gaithersburg West Master Plan*, specifically included a revised CCT alignment and phased different stages of land use development to different stages of CCT completion to ensure adequate transportation capacity to meet the demands of these anticipated future land uses.

Responding to the requests of local officials, MTA conducted a feasibility study of alignment modifications in three specific areas within a roughly two-mile segment of the CCT corridor between I-270 to the east and Quince Orchard Drive to the west. They are:

- An alignment modification to serve new development proposed for the Crown Farm property, located within the City of Gaithersburg along Fields Road and Omega Drive.
- Two alignment modifications to serve the Life Sciences Center, a major expansion of the existing Shade Grove Life Sciences Center. A portion of the expansion will occur on the Belward Farm that is currently approved for additional development as the Johns Hopkins University Belward Research Campus. The portion of the research campus that has been constructed includes existing biotechnology firms.
- An alignment modification to shift the Original CCT Alignment from one side of Great Seneca Highway to the other side to directly serve a proposed redevelopment of a large shopping center to a mixed-use transit-oriented destination. This proposed redevelopment is located adjacent to the Kentlands, a New Urbanist community.

TRANSIT MODE DESCRIPTIONS

Light Rail Transit (LRT) is a railway that operates on exclusive rights-of-way and usually boards and discharges passengers at floor level. LRT is currently used worldwide and since 1980, LRT systems have opened in 13 metropolitan areas including Dallas, Portland, Salt Lake City, Baltimore, Houston, and Minneapolis. Typically, LRT vehicles are powered by electricity and use an overhead source for their power. LRT cars vary in width and length, but articulated cars, or several car sections hinged together, are most common in North America. The CCT would operate LRT vehicles along two sets of tracks. Passengers riding feeder bus service would transfer to the LRT vehicles at a CCT station.

LRT benefits include:

- A three-car train of articulated cars can safely transport more than 400 passengers
- Fully automated operation is feasible on an exclusive track
- Cars are quiet and provide a smooth ride
- Externally supplied power allows for necessary heating and cooling without wasting fuel or loss in performance
- Passengers riding feeder bus service could transfer at CCT stations



LRT In Houston

Bus Rapid Transit (BRT) is a roadway transit option that incorporates the conveniences of rail transit with the versatility of buses. BRT systems have been successfully implemented in Los Angeles, Boston, Oregon and many cities abroad. BRT vehicles utilize dedicated lanes but can leave the exclusive lanes to serve local destinations as needed. The CCT would be built as an entirely separate dedicated roadway facility, not as additional lanes adjacent to existing travel lanes. This separate facility, next to highways or in the median of existing streets, could also be used by emergency vehicles. BRT vehicles are built with multiple doors for entry and exit and can be built to station level making it easier for those with disabilities to board. Although capacities and schedules differ, riders will typically have minimal transfers due to the ability of the BRT to service both local and express routes.

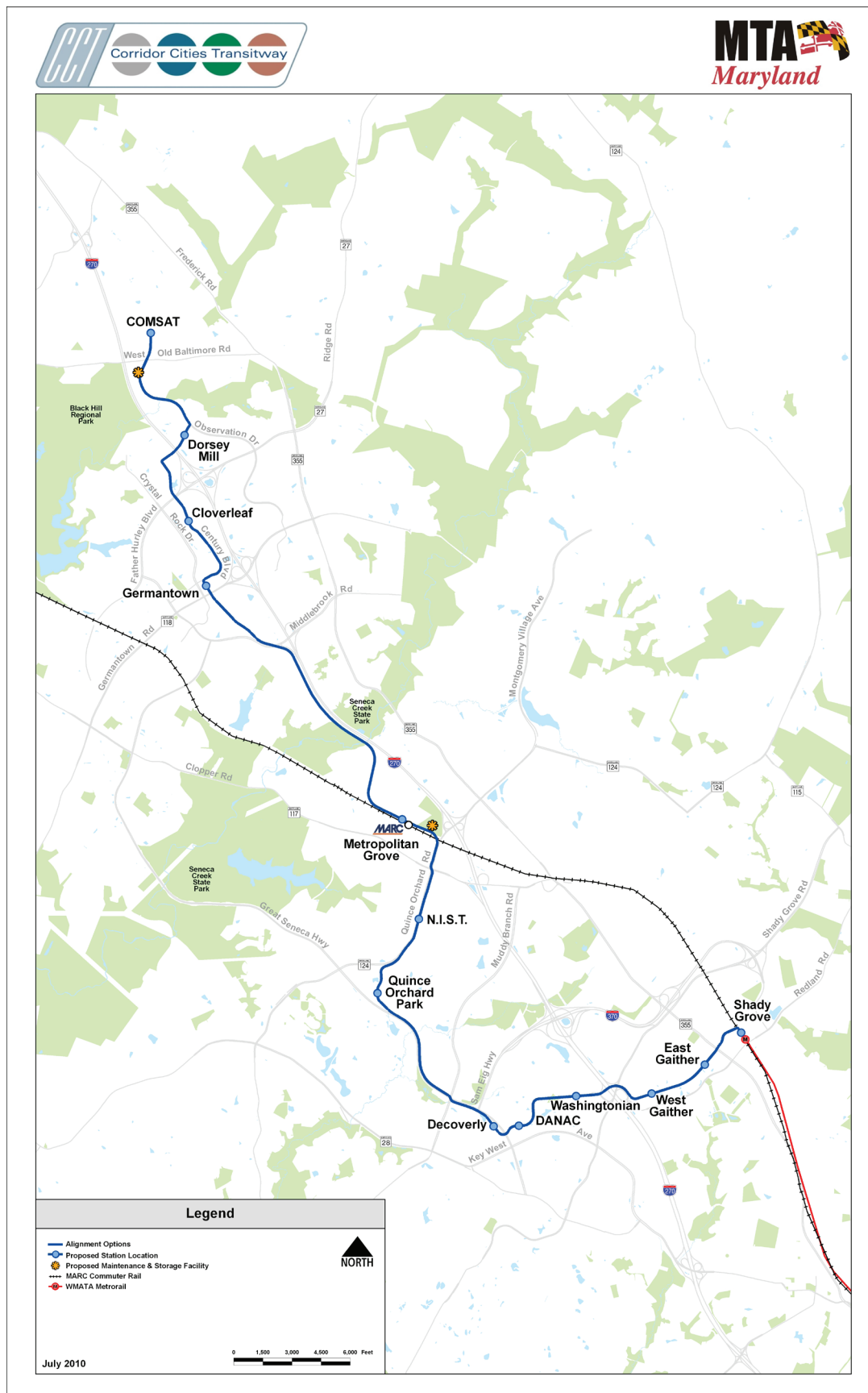
BRT benefits include:

- BRT vehicles can leave the dedicated lanes to serve local destinations, minimizing the need for multiple transfers
- Clean emission and low emission vehicles can be used
- Can provide frequent all-day service carrying more people faster than traditional fixed-route bus services that operate in mixed traffic
- Generally have lower capital costs per mile than rail systems
- Can be built in phases, providing options to the traveling public immediately, and can be expanded cost effectively
- Some feeder buses could continue along the CCT to other destinations while others would terminate at a CCT station



BRT in France

Figure II-1: Original CCT Alignment



Each of these alignment modifications is a short (one-half mile to 1.5-mile) diversion from the Original CCT Alignment.

The purpose of the feasibility study was to determine the costs and benefits of a modified CCT alignment to serve one or more of these destinations. Additionally, an environmental screening was conducted to identify potential environmental “fatal flaws,” as well as areas of specific concern that might merit more detailed environmental analysis. This technical analysis, entitled *Corridor Cities Transitway: Analysis of Alignment Alternatives Service Crown Farm, Life Sciences Center and Kentlands*, was published in November 2009 and made available for public and agency viewing on the I-270/US-15 Multi-Modal Corridor Study website, www.i270multimodalstudy.com, as well as on the CCT project website, www.mta.maryland.gov/cct.

The feasibility study showed that the alignment modifications and corresponding changes to station locations would result in considerable benefits to transit ridership and cost-effectiveness in serving the new destinations. Modeling also included updated land use assumptions, consistent with then current forecasts for the area, including changes related to these proposed new developments. Ridership increases of up to 40 percent were projected for LRT and BRT alternatives incorporating the modified alignments and new stations. Cost-effectiveness also improved, bringing both LRT and BRT alternatives well within a comfortable range of acceptability according to standards set forth by the Federal Transit Administration (FTA). LRT alternatives for the first time met the standard for a “Medium” rating for cost-effectiveness and BRT alternatives fell within the “High” standard. FTA generally looks more favorably on projects that receive at least a “Medium” rating. These results occurred despite an increase in travel time and an increase in capital and annual operating costs, which resulted from the alignment modifications and new stations.

After a considerable public review and comment process, the Montgomery County Council adopted the revised master plan with a revised CCT alignment on May 6, 2010. The plan includes a total of 52,500 jobs and a total build-out of 17.5 million square feet of development. The positive results of the feasibility study analysis of modified CCT alignments, combined

with a formal action by local governments to adopt the modified CCT alignments into a local master plan, led MTA to consider including the modified alignments and station locations in a decision of an LPA. The LPA is a transit project sponsor’s decision of a preferred transit alignment and mode to be taken into subsequent stages of planning and design.

In consultation with the FTA, the MTA Study Team determined that a supplemental environmental analysis (this document) was needed both to provide a comparable level of environmental study of the proposed modified alignments to the previously studied CCT alignment and to provide the opportunity for public involvement on the proposed changes. This document is intended to help inform a decision on the LPA.

Alignment Modifications

The study area for this document is a subset of the CCT corridor in the Gaithersburg area. It contains the three development areas under consideration for more direct service by the CCT alignment and stations. These areas, from east to west, are known as Crown Farm, Life Sciences Center (LSC), and Kentlands and are shown in **Figures II-2** through **II-5** and listed in **Table II-3**. Each of the destinations and their accompanying CCT alignment and station modification are described in the pages that follow.

Alignment S1: Crown Farm

Figure II-3 shows how/where the transitway alignment through the Crown Farm deviates from the Original CCT Alignment at Omega Drive and Fields Road. At Omega Drive the at-grade alignment turns west onto the median of Fields Road. From Fields Road, the alignment turns south onto the future, northward extension of Decoverly Drive with an at-grade station at Crown Farm. The alignment continues down the median of Decoverly Drive before rejoining the Original CCT Alignment at the intersection of Decoverly Drive and Diamondback Drive. A new station is proposed that would serve the heart of the Crown Farm development, as well as existing development north of Fields Road. The developer has agreed to provide the right-of-way for the transitway and station and a limited amount of parking for the site. This new Crown Farm station would replace the Washingtonian Station on the Original CCT Alignment.

Figure II-2: Alternative Alignments

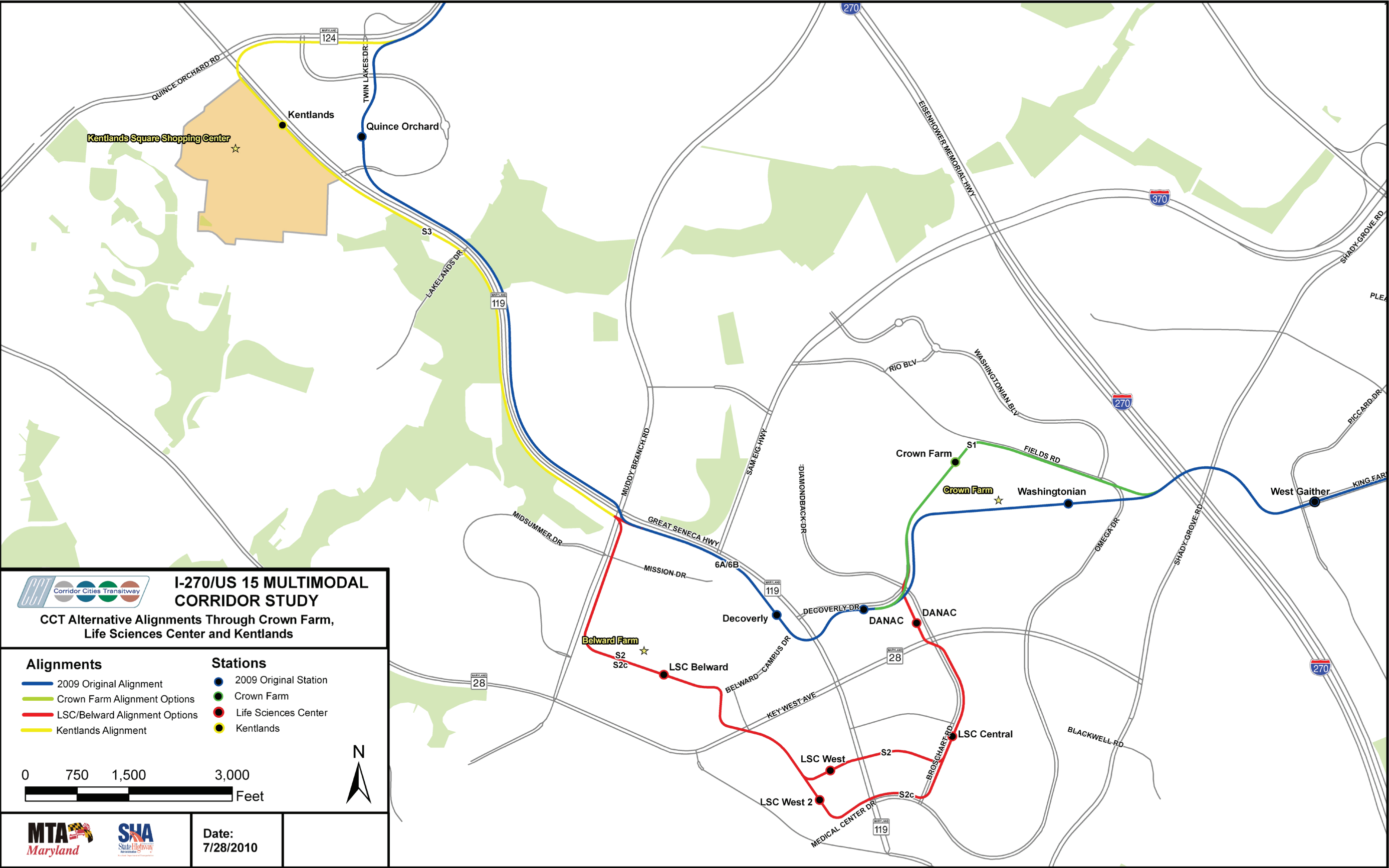


Figure II-3: Alignment S1 – Crown Farm

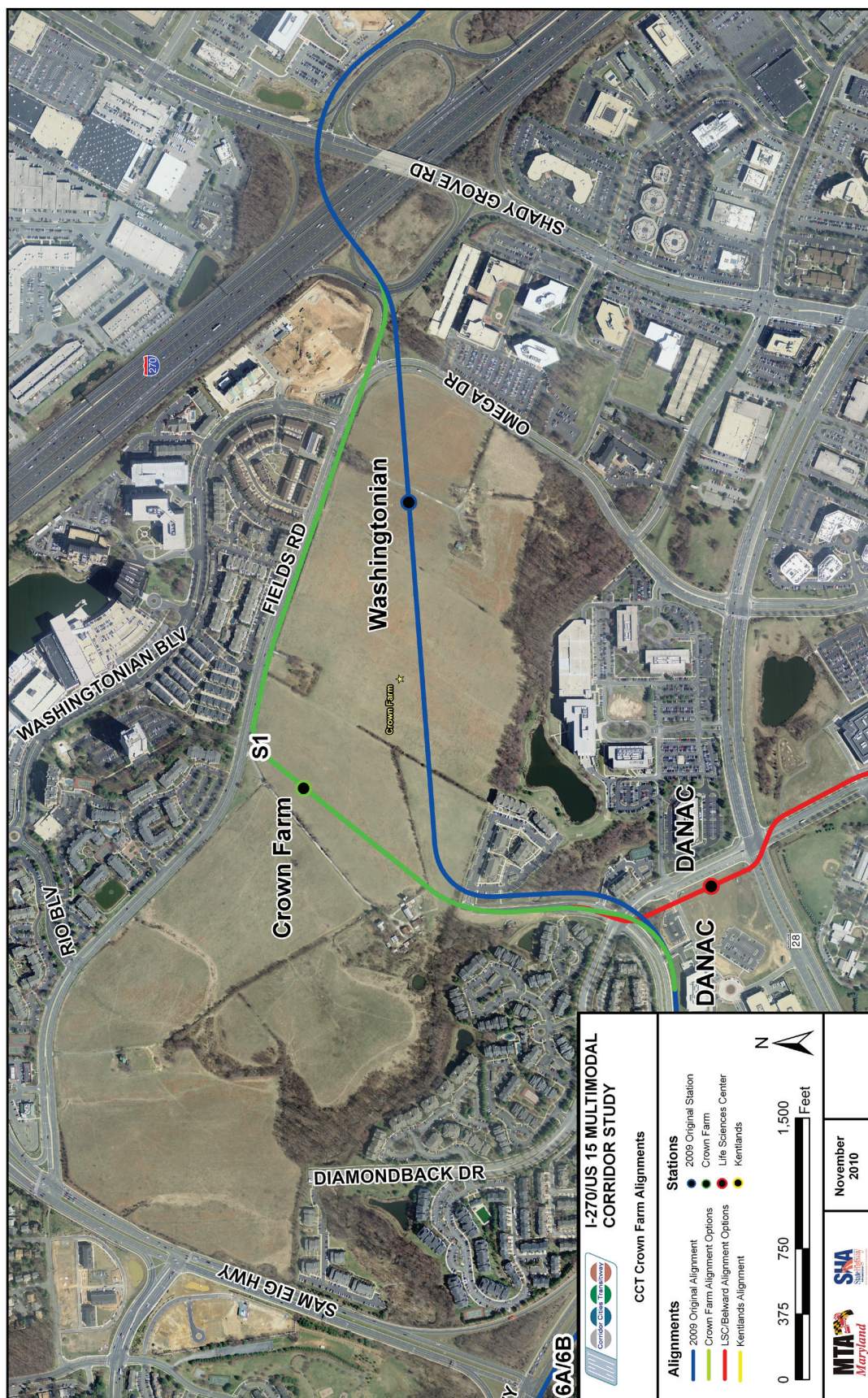


Table II-3: Proposed Alignment Modifications

DEVELOPMENT/ LOCATION	ASSOCIATED ALIGNMENT MODIFICATIONS	DESCRIPTION
Crown Farm	S1	S1 is an alignment modification to better serve new development proposed for the Crown Farm property, located within the City of Gaithersburg along Fields Road and Omega Drive.
Life Sciences Center	S2 and S2c	<p>S2 and S2c were developed to better serve the Life Sciences Center, a major expansion of the Shady Grove Life Sciences Center. A portion of the expansion will occur on the Belward Farm that is currently approved for additional development as the Johns Hopkins University Belward Research Campus. The portion of the research campus that has been constructed includes existing biotechnology firms.</p> <p>S2c is a slight variation of S2. S2 turns west from Broschart Road at a point between Blackwell Road and Medical Center Drive. S2c turns west on Medical Center Drive.</p>
Kentlands	S3	A proposed alignment modification in this area that would shift the CCT alignment from one side of Great Seneca Highway to the other side to directly serve a proposed redevelopment of a shopping center to a mixed-use transit-oriented destination located adjacent to the Kentlands.

Alignments S2 and S2c: Life Sciences Center

Alignments S2 and S2c divert from the Original CCT Alignment at Diamondback Drive and continue south along the west side of Diamondback Drive. The DANAC station is proposed to be relocated from Great Seneca Drive to a location on Diamondback Drive with an open cut tunnel crossing of Key West Avenue. After Key West Avenue, Diamondback Drive turns into Broschart Road. An at-grade station, LSC Central, is proposed on the east side of Broschart Road just south of Blackwell Road. South of the station, the alignment turns west with an at-grade crossing at Broschart Road. The alignment continues west into a wooded area between the planned extension of Blackwell Road and Medical Center Drive, with an aerial crossing over Great Seneca Highway. An at-grade station, LSC West, is proposed north of Medical Center Drive. The alignment immediately turns north past the LSC West station and skirts the west side of the existing Montgomery County Public Safety Training Academy with a cut and cover tunnel under Key West Avenue and into the existing Johns Hopkins University Belward Research Campus (Belward Farm). The alignment proceeds through Belward Farm from Johns Hopkins Drive to Muddy Branch Road and proceeds north along the west side of Muddy Branch Road before joining Alignment S3, the Kentlands Alignment, on the west side of Great Seneca Highway.

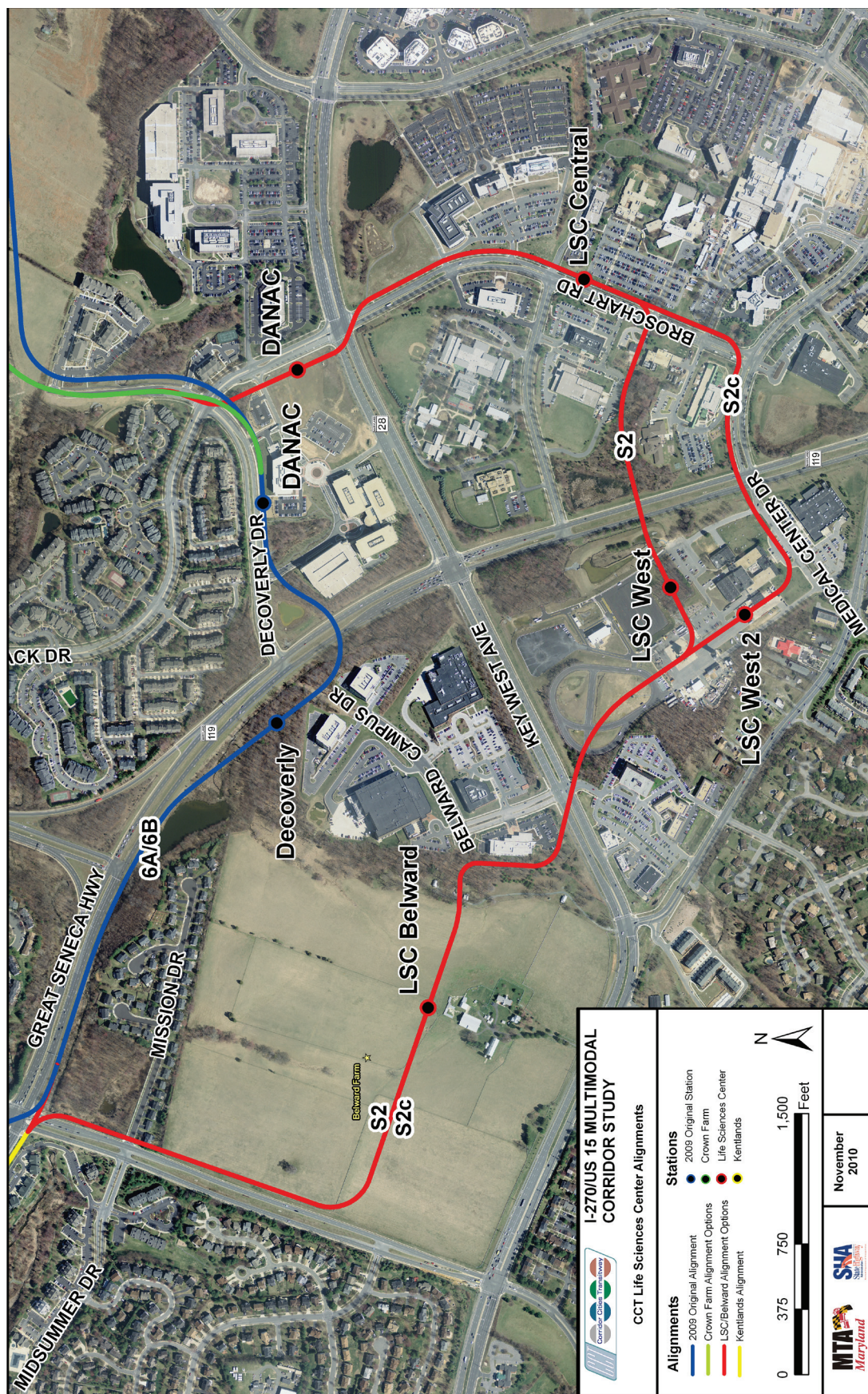
Two different alignment and station location options are under consideration for LSC West. Alignment modification S2c is considered to reduce right-of-way and property impacts associated with crossing Great Seneca Highway by maximizing use of existing roadway rights-of-way, although slightly increasing the total alignment length. Alignment S2 turns west just south of the proposed LSC Central station location on Broschart Road whereas Alignment S2c continues south and turns west onto the north side of Medical Center Drive with an at-grade crossing at Great Seneca Highway. The alignment then turns north just east of Darnestown Road and rejoins Alignment S2 at the west side of the Montgomery County Public Safety Training Academy. The LSC West at-grade station would shift to a location just north of Medical Center Drive after the alignment turns north to skirt the Montgomery County Public Safety Training Academy. (See Figure II-4).

The alignment modifications serving the LSC include three new stations, LSC Central, LSC West, and LSC Belward. The new alignment relocates the DANAC station to Diamondback Drive and no longer provides for a Decoverly station as shown in earlier studies.

Alignment S3: Kentlands

The Kentlands alignment modification, Alignment S3, diverts from the Original CCT Alignment at the intersection of Great Seneca Highway and Muddy

Figure II-4: Alignments S2 and S2c – Life Sciences Center



Branch Road. The alignment skirts the west side of Great Seneca Highway with an at-grade alignment. The alignment begins to elevate to an aerial structure south of Kentlands Boulevard as the alignment proceeds north to the Kentlands Boulevard Commercial District. A new station is proposed just south of Main Street. The alignment would continue to Quince Orchard Road and make an aerial crossing over Great Seneca Highway on the south side of the intersection. The alignment would continue along the south side of Quince Orchard Road where it would rejoin the Original CCT Alignment at Twin Lakes Drive (**Figure II-5**).

Service to the new Kentlands station would replace service at the Quince Orchard Park station on the original CCT alignment, which is located adjacent to the MedImmune campus just north of Orchard Ridge Drive along the east side of Great Seneca Highway.

Stations and Other Facilities

In addition to the track (for LRT alternatives) or exclusive guideway (for BRT alternatives), all transit alternatives will require other supporting facilities, including stations, an operating and maintenance (O&M) facility, and, in the case of LRT, electrical substations to provide power to the overhead catenary power distribution system. While station locations and O & M sites are presented in this and prior documents at a conceptual level, the precise locations and design details of these facilities would be determined during the design phase of an LPA.

Stations

The most recent station locations for the Original CCT Alignment are described in **Chapter 2** of the **2009 AA/EA** (pages II-7) and are shown in **Figure II-1** of this document. The alignment modifications described above will create new stations and shift the locations or eliminate others as described in **Table II-4**.

Operations and Maintenance (O&M) Facility Locations

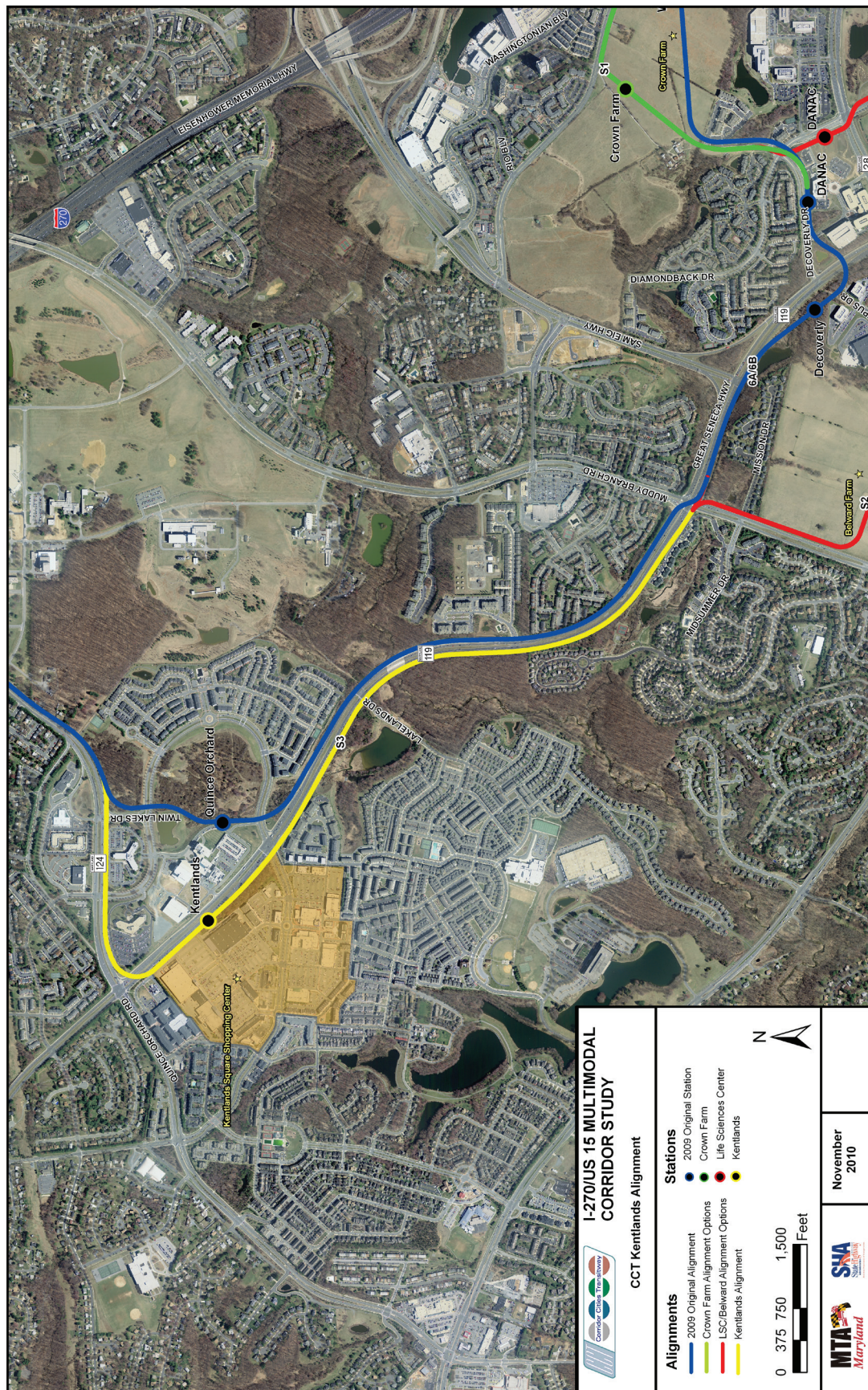
Operations and Maintenance facilities, more commonly called bus garages and train yards or shops, are needed to clean and maintain rolling stock, store active vehicles during non-peak and non-service hours, store spare vehicles and parts, and house administrative, security, and other staff needed to run a transit system.

The 2002 DEIS and the 2009 AA/EA examined a number of potential O&M facility locations and conceptual designs. In 2007, MTA completed the *Corridor Cities Transitway Operations and Maintenance Facilities Alternatives Development and Analysis*, a technical report which analyzed the costs and service benefits associated with five O&M sites retained from a set of fifteen presented in **Chapter II** of the **2002 DEIS** (pages II-19 to II-23). Based on the recommendations found in the O&M technical report, five O&M sites were retained and analyzed for their environmental impacts and transportation benefits in the 2009 AA/EA report. Based on the analysis of service and access needs and review of possible environmental

Table II-4: Stations Associated with Alignment Modifications

ALIGNMENT MODIFICATION	NEW STATION LOCATIONS	ASSOCIATED CHANGES TO ORIGINAL CCT ALIGNMENT
S1	Crown Farm Station and park-and-ride lot.	Replaces Washingtonian Station.
S2	LSC Central Station, Broschart Road; LSC West Station and park-and-ride lot, Public Safety Training Academy LSC Belward Station, Belward Campus.	DANAC Station relocated from Decoverly Drive to Diamondback Drive. Decoverly Station eliminated
S2c	LSC Central Station, Broschart Road; LSC West Station and park-and-ride lot, Medical Center Drive, LSC Belward Station, Belward Campus.	DANAC Station relocated from Decoverly Drive to Diamondback Drive. Decoverly Station eliminated.
S3	Kentlands Square Shopping Center Station	Quince Orchard Station eliminated

Figure II-5: Alignment S3 – Kentlands



and community effects presented in these documents, the potential O&M sites under consideration has been narrowed down to two locations. These two sites are carried forward from previous studies as the most advantageous to transit operations with the least environmental and community impacts.

Each of the proposed sites is suitable for use if BRT is selected, only the site in Metropolitan Grove could accommodate LRT. Both locations are being analyzed in this document to provide additional flexibility as the project proceeds towards selection of a preferred alternative. The O&M site locations are shown in **Figure II-1**, and **Figures II-6** through **II-8** show these locations in detail.

Observation Drive O&M Facility

This location is in the vicinity of the CCT northern terminus near COMSAT, and would be suitable only if BRT is chosen for the LPA. **Figure II-6** presents a preliminary layout for a facility at this site.

Metropolitan Grove O&M Facility

This location could be used for either BRT or LRT alternatives and is situated adjacent to the proposed Metropolitan Grove station on land currently used as a police vehicle impound lot. **Figure II-7** presents the preliminary layout of a BRT facility at this site, and **Figure II-8** presents the preliminary layout of an LRT facility at this site.

Figure II-6: Observation Drive BRT Operations and Maintenance Facility – Preliminary Layout

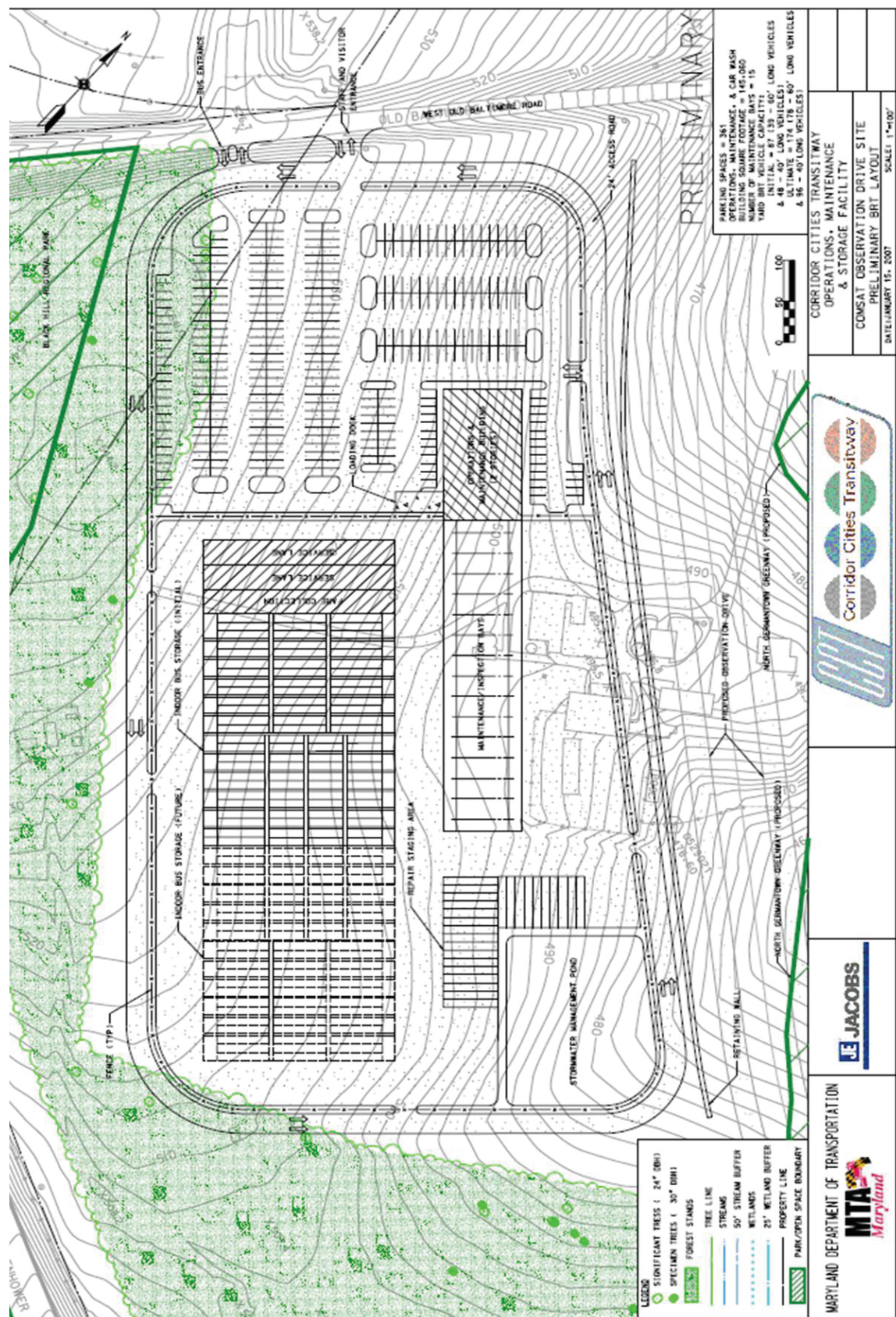


Figure II-7: Metropolitan Grove BRT Operations and Maintenance Facility – Preliminary Layout

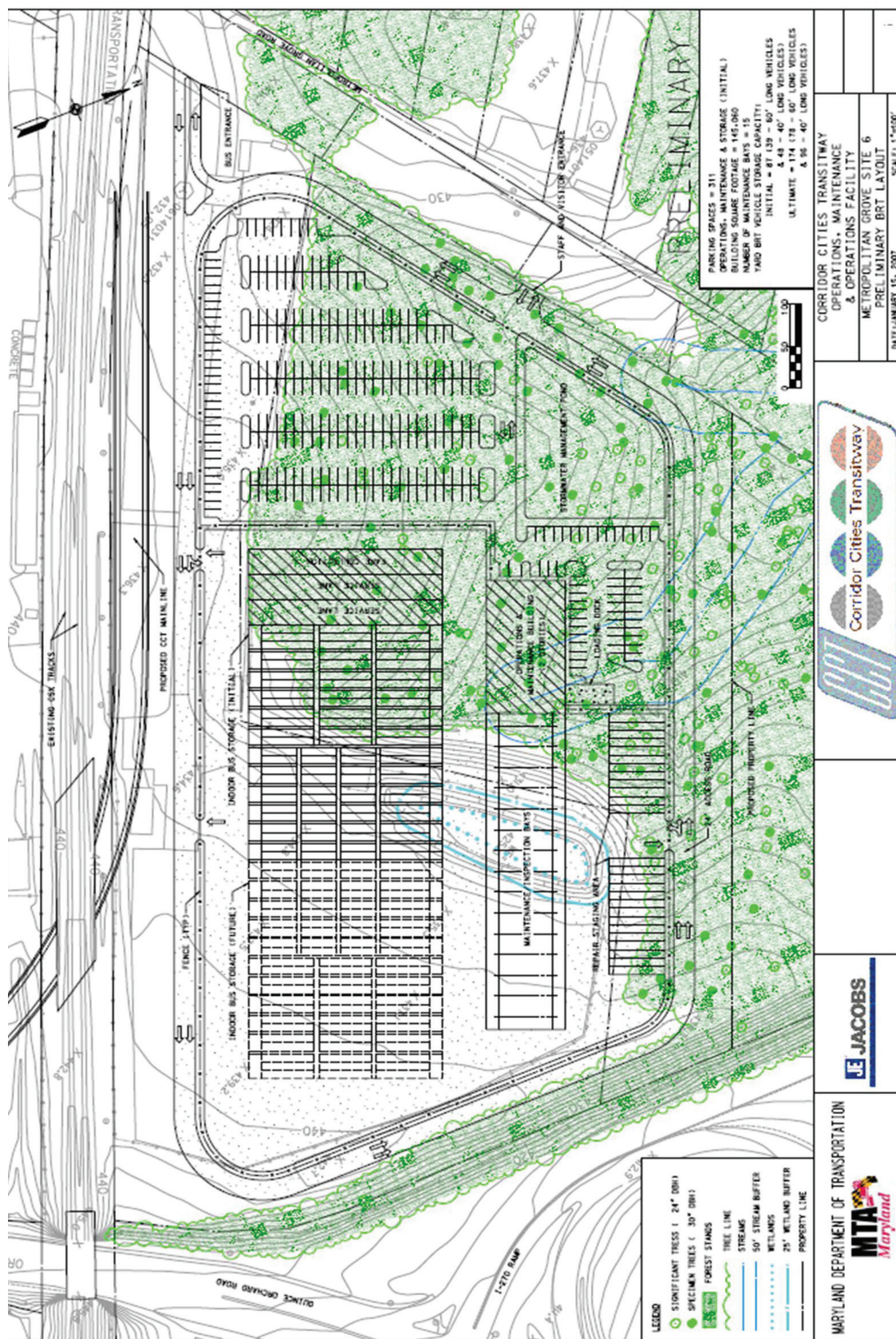
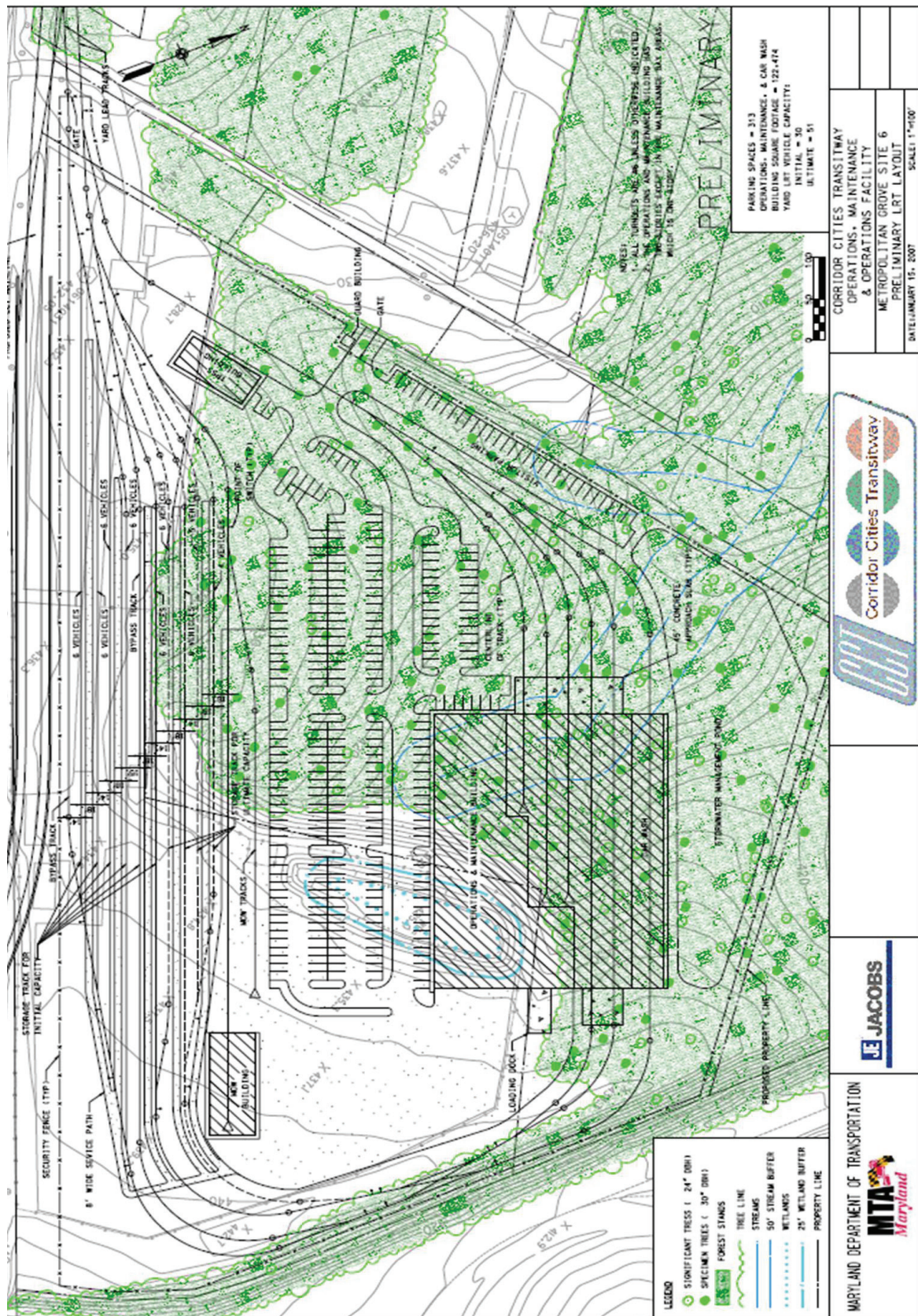


Figure II-8: Metropolitan Grove LRT Operations and Maintenance Facility – Preliminary Layout





CHAPTER III

Transportation System Performance and Effects



CORRIDOR CITIES TRANSITWAY
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Chapter III – Transportation System Performance and Effects

This chapter evaluates the transportation, mobility, and traffic impacts of the proposed modifications to the Original CCT Alignment and stations as described in **Chapter II** and below. Specifically, this chapter discusses the effects of the alignment and station modifications on transit service in the region and on traffic on local roadways. Additionally, this chapter tests the effects of various transit operations scenarios that include a selection of transit modal options – either Bus Rapid Transit (BRT) or Light Rail (LRT) – with the implementation of one or more of the proposed alignment modifications on the capital costs, operations and maintenance costs, and on transportation benefits (ridership, new transit riders, user benefits and cost-effectiveness) of the full CCT project (COMSAT to Shady Grove).

The effectiveness of transit service is dependent upon several factors including geographic coverage, hours of operation and frequency of service, door-to-door travel times, travel time reliability, number and convenience of transfers, ride comfort, and safety.

Chapter III of the **2009 AA/EA** provides detailed discussion of the proposed effects on the existing transit and transportation system of operating Alternative 6.2 (Transit-TSM) and build Alternatives 6A and 7A (LRT on the Original CCT Alignment with highway alternatives 6 or 7) and 6B and 7B (BRT on the Original CCT Alignment combined with highway alternatives 6 or 7). In general, the construction and operation of the CCT using either BRT or LRT – with or without implementation of one or more of the alignment modifications described in Chapter II of this document – in combination with associated proposed modifications to local feeder bus routes and the introduction of new express bus routes would provide the following transit system improvements:

- More frequent service
- Faster service
- Improved reliability and ride quality

- High quality station and stop amenities, including real-time transit information
- Access to key destinations and growth areas

Existing Transit Service Conditions

The north-south I-270/US 15 corridor is served by a variety of transit services, including local bus, commuter bus, and commuter rail. Washington Metropolitan Area Transit Authority (WMATA), Montgomery County Ride-On, Frederick TransIT, and the MTA provide transit service throughout much of Montgomery County, with commuter bus service extending into Frederick and Washington Counties and commuter rail service that extends into Frederick County, terminating in Martinsburg, West Virginia. There is not one single transit route or service that currently serves both the entire length of the corridor of the CCT or its proposed set of destinations.

The proposed transit service on the CCT would operate during the same time periods as other regional services, which presently operate as shown in **Table III-1**. Many bus routes operate on a variable schedule depending on destination and time of day, and some routes do not offer weekend service. Express buses usually operate only during weekday peak periods. It is expected that the CCT would operate seven days a week.

Table III-1: Existing Transit Service

TRANSIT SERVICE	WEEKDAY		WEEKEND
	STARTS	ENDS	
Metrorail	5:00 a.m.	1:00 a.m.	7:00 a.m.-3:00 a.m.
MARC	4:30 a.m.	10:30 p.m.	No service
Local Bus	4:30 a.m.	12:30-2:00 a.m.	6:00 a.m.-1:00 a.m.

Proposed CCT Transit Operations

Overall transit service for the CCT is described in **Chapter II** of the **2009 AA/EA** and summarized below. The proposed new transit service would feature the operation of either BRT or LRT on a fixed guideway from COMSAT to Shady Grove. Feeder bus services would provide access to CCT stations from local communities. Premium bus service would possibly operate on an improved/expanded I-270 facility from Frederick to Shady Grove, however the improvements required to enable that service are still under study. While this document generally addresses the effects of proposed modifications to the Original CCT Alignment in the Gaithersburg area, in this chapter it is often necessary to describe service within the context of the entire 14 to 16 mile corridor from COMSAT to Shady Grove in order to understand the broader implications of the possible changes.

For LRT service on the CCT, the assumption is that the light rail guideway would include double track operation following the alignment specified in **Chapter II** of the **2009 AA/EA** or using the modified alignments S1, S2, S2c, and/or S3 as described in this document. Light rail train sets would operate between the terminal stations at COMSAT and Shady Grove and provide service to the stations in between.

In the BRT service scenario, the buses would travel along the same guideway alignment identified for the LRT. Buses would use a two-lane guideway that would maintain complete separation from existing roadway

traffic and provide direct service to all stations. The overall quality of transit service is an important factor influencing transit ridership. System users who perceive a transit service to be comfortable, convenient, and reliable are more likely to choose that service as their primary form of travel for a given trip.

Low-floor articulated buses at least 60 feet in length would be used for the trunkline service associated with BRT and newly defined premium bus services implemented as a component of the proposed transit services described on page II-4. These buses will provide a higher capacity than the standard 40-foot buses (90 passengers per bus versus 60 passengers per bus for standard buses) and should enhance the quality of the ride as well with more comfortable seating and a smoother ride. Hybrid or other alternatively fueled vehicles will be considered.

If LRT service is selected, the light rail vehicles would also provide more comfortable seating and a smoother ride than typical bus services.

Both BRT and LRT services would benefit from faster boardings and alightings than experienced on typical bus services due to the use of multiple doors and advance fare collection. Additionally, the CCT transit services would augment existing bus routes, nearly doubling transit service capacity in the corridor. The quality of a transit trip in the study area would also be enhanced by frequent service with reduced wait times than typical bus services in the region and by making station facilities more comfortable than currently available. Frequent transit service is proposed with all proposed transit

Table III-2: Transit Service Headways

ALTERNATIVE	PEAK PERIODS (minutes)	OFF-PEAK PERIODS (minutes)
Transit TSM with service to Crown Farm and Life Sciences Center*	6	10
LRT Modal Alternatives	7.5	10-12
BRT Modal Alternatives	5	8-12

Note that BRT service is more frequent than LRT service to compensate for the greater number of passengers that can be carried on an LRT vehicle. These headways define service frequencies that are designed to provide similar capacity of service (passengers per hour) between LRT and BRT services based on modeled ridership estimates. Headways will vary between different ridership model runs in order to balance need and capacity.

** The Transit TSM Alternative in this context operates on local roads using an alignment modified to provide direct service to Crown Farm and Life Sciences Center similar to the S1 and S2 alignment modifications described in this chapter. The LRT and BRT Alternatives assume implementation of none or any combination of the proposed alignment modifications S1, S2 or S2c, and S3 as part of the CCT alignment.*

alternatives, including the Transit Transportation Systems Management alternative or LRT or BRT with the alignment modifications S1, S2 or S2c, and S3 as shown in **Table III-2**. Modern stations with enhanced amenities such as shelters, seating, and real time transit information displays are proposed as well. The stations would also be designed with improvements in pedestrian, bicycle, park-and-ride, and car drop-off access where appropriate to make the trip to the transit station safer and more pleasant, as well as more accessible.

Travel Time

Each transit alternative provides specific improvements to reduce north-south transit travel times along the CCT corridor, including use of a dedicated guideway, traffic signal priority, and improved boarding times. As would be expected, a dedicated right-of-way, which provides more direct connectivity to destinations, results in travel times that are reduced over similar travel between the same destinations in mixed traffic on local roadways.

Table III-3 provides expected travel times for each of the alternatives.

Feeder Bus Service

To extend the reach and benefit of the trunkline transit service into surrounding neighborhoods, each of the modeled CCT alternatives proposed modifications to existing area bus routes to bring passengers to stations of the proposed higher-speed trunkline service.

With LRT Alternatives, several existing bus routes (Ride-On routes 66, 67, 71, 74, 75, 78, and 90) would be re-routed to terminate at a LRT station allowing passengers to easily transfer from bus to LRT. With BRT Alternatives, the guideway would be used at various locations to provide access for local bus operation. Some local bus service would continue to operate along streets next to where the guideway is located to serve local bus stops, while others would use the CCT trunkline to provide more express service. **Figures II-4** and **II-5** of the **2009 AA/EA** illustrate proposed local bus service for the BRT and LRT modal alternatives.

Transit service on commuter bus, MARC, and Metrorail are generally assumed to operate the same as currently provided if the CCT is constructed using either BRT or LRT. Some changes to local bus routes may be made to take advantage of the higher speed and reliability of the LRT or BRT service on the CCT corridor. For example, transit schedules may be modified or local bus stops may be added to drop passengers off closer to the new CCT stations. Any proposed changes to existing routes will follow required procedures as specified by MTA, WMATA, or Ride-On, including public input and involvement.

Premium Bus Service

In addition to BRT or LRT on the CCT, all transit alternatives would include premium bus service between Frederick County and corridor park-and-ride lots, major activity centers, and transit stations operating on

Table III-3: CCT Travel Times

ALTERNATIVE	COMSAT TO SHADY GROVE	METROPOLITAN GROVE TO SHADY GROVE
TSM Alternative with S1 and S2 modifications	70 minutes	43 minutes
LRT on Original CCT Alignment	36 minutes	20 minutes
BRT on Original CCT Alignment	38 minutes	21 minutes
LRT on CCT alignment with S1 and S2	43 minutes	27 minutes
BRT on CCT alignment with S1 and S2	47 minutes	30 minutes
LRT on CCT alignment with S1, S2 and S3	44 minutes	27 minutes
BRT on CCT alignment with S1, S2 and S3	48 minutes	32 minutes

managed lanes of I-270. Managed lanes (such as the high occupancy vehicle lanes and Express Toll LanesSM presented in the 2002 DEIS and 2009 AA/EA) are still under consideration by the Maryland State Highway Administration and it is uncertain at this time which of the considered alternatives will be selected for design and construction. These services were proposed to provide better service options for long distance commuters from Frederick City and County and are described in detail as part of Alternative 6.2: Transit TSM in **Chapter II** of the **2009 AA/EA** (pages II-12 to II-14). These include the FREDSG, FREDMGSG, and KPTNMGSG premium bus routes that are part of each of the CCT service alternatives.

As the CCT project proceeds in the project development process and a preferred alternative is selected for both highway and transit, the routes may be substantially modified. The routes were designed with the assumed implementation of Express Toll Lanes and direct connections to the major CCT stations as provided in highway alternatives 6 and 7, described in **Chapter II** of the **2009 AA/EA** and **Chapter II** of this document.

Transportation Performance

A travel demand model was used to estimate transit ridership and other performance criteria for each modal alternative using the proposed realignments of the Original CCT Alignment and based upon established operations assumptions. The results of this modeling were first reported in the *Corridor Cities Transitway Analysis of Alignment Alternatives Serving Crown Farm, Life Sciences Center and Kentlands*, completed in November 2009. This chapter summarizes much of this analysis.

Additionally, each of the proposed alignment modifications was analyzed for its potential effects on vehicular traffic in the area of the realignments. The traffic analysis was an important factor in decisions regarding whether to retain grade separated crossings of busy Montgomery County roadways, and resulted in several important recommendations regarding signalization required for operation of either BRT or LRT.

Travel Demand Methodology

The travel demand analysis of the possible alignment modifications used the same travel demand model

used to analyze the performance of the CCT transit alternatives in the 2009 AA/EA, modified to include current land use forecasts for the build horizon year 2030. Specifically, the Metropolitan Washington Area Model Phase I Year 2030 Model (Version 3, dated 02/05/08) used for analysis of the CCT in the 2009 AA/EA was updated to include the Metropolitan Washington Council of Government's (MWCOCG) new round of land use forecasts (Round 7.2a) and coded network changes to include the new alignment and station locations. Network coding was completed for each of the alignment modifications described in this document. In addition, the modeled alignments include a revised Transit TSM alternative that would operate bus services on local roads to generally serve the same transit stations included for the CCT, including those proposed for alignment modifications S1, S2 and S2c, and S3. The Transit TSM alternative is used to provide a baseline against which to analyze the costs and benefits of the BRT and LRT modal "build" alternatives in which BRT or LRT are operated on the dedicated CCT guideway.

Note that the alignment modifications are modeled in combinations, and are therefore discussed in a different manner than that used in much of the engineering and environmental analysis. Alignment modification S1 serving Crown Farm is included in all modeled scenarios, because it is so physically similar to the Original CCT Alignment that the model is not sensitive enough to capture the slight differences in operating distance, time, and station locations. Similarly, the model does not test the ridership attributed to S2c because it is so similar to S2 that the model cannot capture any differences between them. The scenarios modeled include the following:

- Transit TSM with modified service to Crown Farm and the Life Sciences Center (LSC)
- LRT on the CCT with modified service to Crown Farm and LSC
- BRT on the CCT with modified service to Crown Farm and LSC
- LRT on the CCT with modified service to Crown Farm, LSC and Kentlands
- BRT on the CCT with modified service to Crown Farm, LSC and Kentlands

In addition to a change in the coding, a change was made to the processing of results to account for perceived benefits between LRT and BRT related to the qualities and characteristics of the services. The “mode-specific attributes” account for such things as amenities, reliability, comfort, safety, and other characteristics associated with a given mode. These attributes were applied not only to the alignment modifications, but also to the original alternatives using the Original CCT Alignment and included in the 2009 AA/EA. This enables a more “apples-to-apples” comparison of the performance of all alternatives under consideration.

MTA is in the process of preparing an improved transit model (Phase II) to be used on later phases of the CCT project. This model would use the results of an MTA-administered travel survey conducted to fulfill FTA requirements and include improvements in travel origin-destination pairs and other refinements needed to model transit rider behavior to a level of specificity that would be able to provide for better micro-scale analysis. After the LPA decision is made for the CCT, this refined model would be used to develop the detailed forecasts needed for the New Starts application and technical analyses that address specific questions from the community.

Round 7.1 to 7.2a Land Use

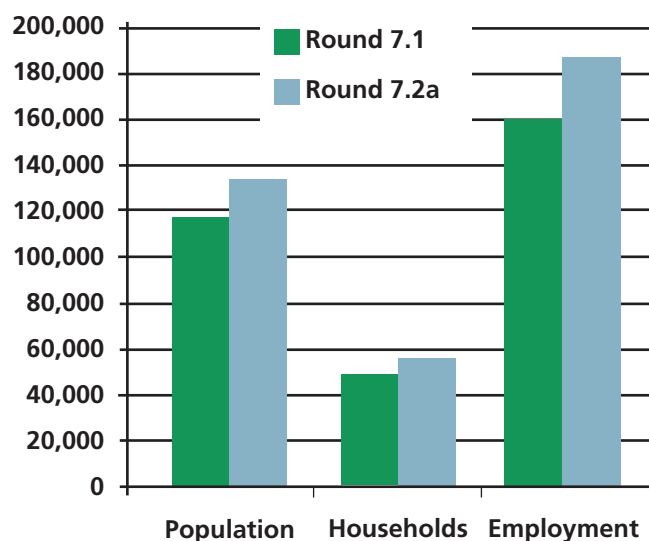
It is important to document the differences in land use assumptions in the CCT corridor between the analysis in this SEA and those in the 2009 AA/EA analysis. Land use is a critical input to the development of travel demand forecasts. Land use forecasts are generated regularly as part of the regional air quality conformity process and are based on the most recent assumptions for population and employment growth at various forecast years considering development activities and master planning efforts either approved or near the approval stage.

MWCOG Round 7.1 land use forecasts were used in the 2009 AA/EA to estimate travel demand and were linked with regional long-range transportation plan assumptions in the Phase I travel demand model. Round 7.2a forecasts updated the development assumptions for several areas in the CCT corridor, including the LSC area, the City of Gaithersburg, Metropolitan Grove, Germantown, and COMSAT. The forecast changes in land use, compared to Round 7.1, generated increased growth estimates for 2030 population, employment and households along the CCT corridor. As the Round 7.2a forecasts are

currently approved by MWCOG, they were applied to this analysis to determine their effects on CCT ridership estimates.

A summary of changes in land use forecasts for the CCT corridor was prepared to highlight the changing assumptions between Round 7.1 and 7.2a forecasts. The population, household and employment projections for those areas within 2 miles of the corridor are shown on **Figure III-1** below:

Figure III-1: Differences Between MWCOG Round 7.1 and 7.2a Land Use Forecasts in CCT Study Area



Figures III-2 and **III-3** show the forecast household and employment differences between Round 7.1 and Round 7.2a. These changes represent updated planning assumptions based on master planning processes described in **Chapter I** and noted above. As master planning processes continue to modify future land use assumptions, so do the models that forecast land use for the future. It is expected that Round 7.2a will be replaced in the near future with another “round” of forecasts. Each of these changed land use forecasts will affect projected ridership on travel demand models used to estimate ridership and other performance factors for this project.

Figure III-2: MWCOG Round 7.1 vs 7.2a Change in Households (Year 2030)

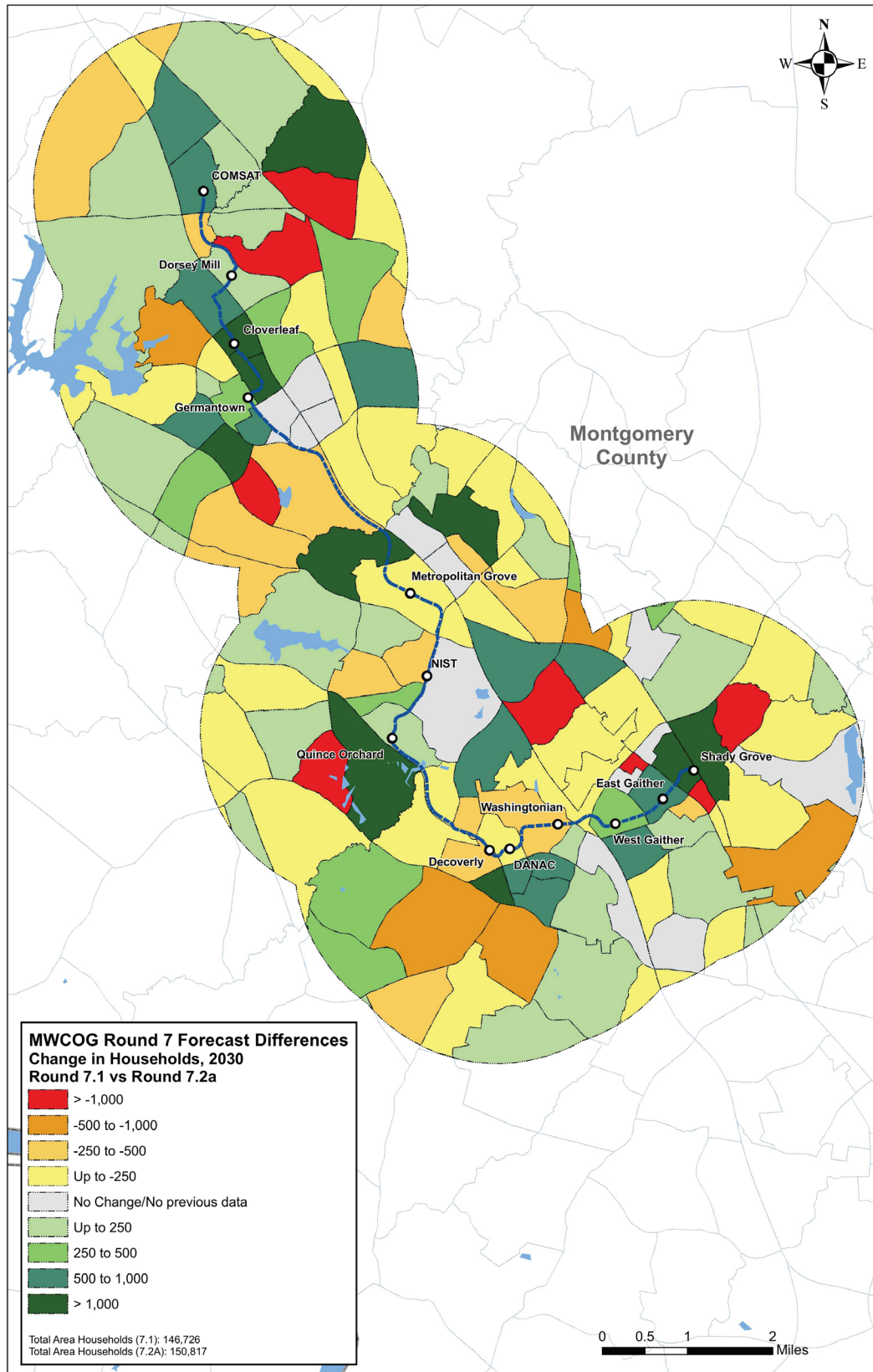
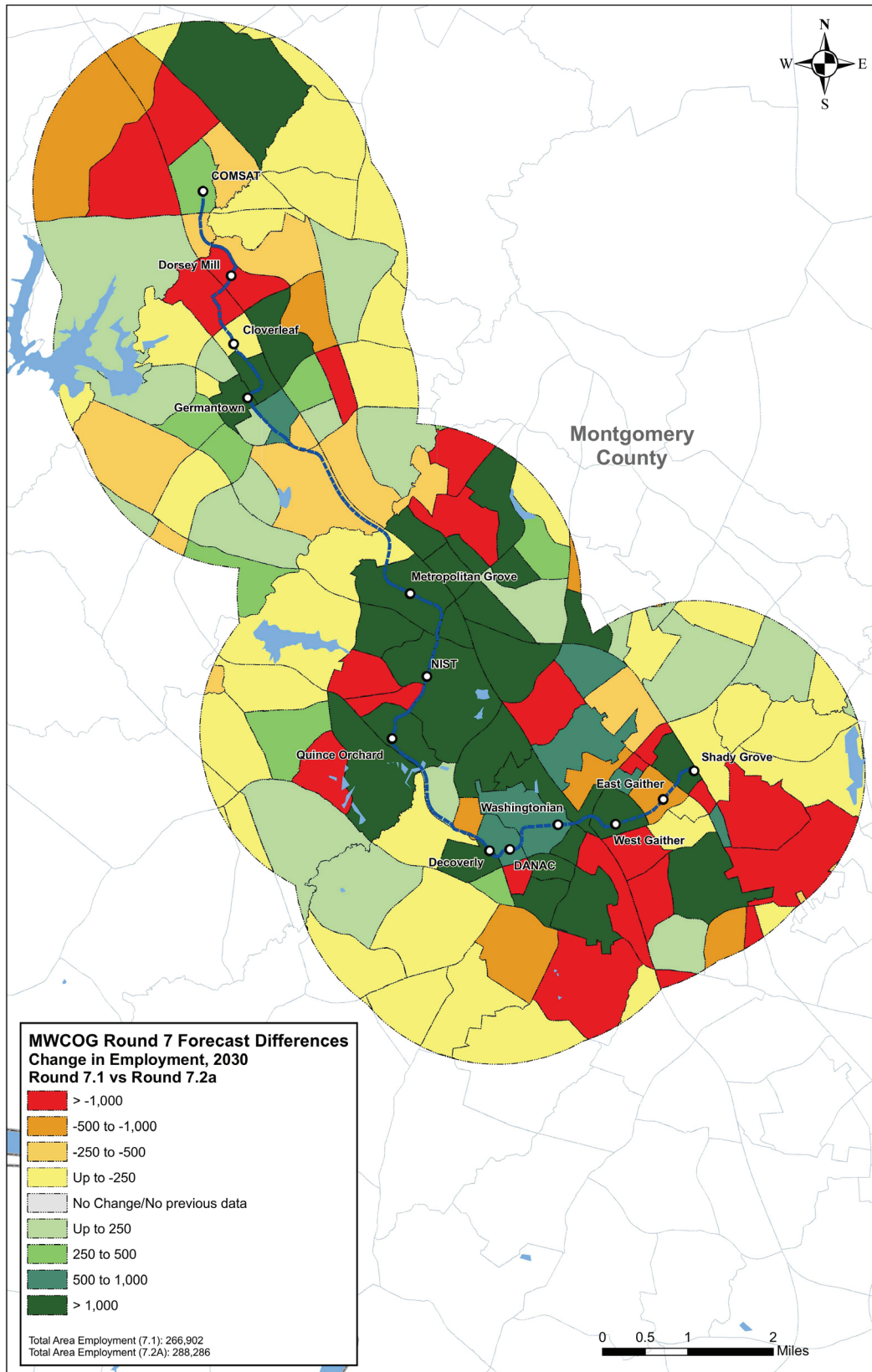


Figure III-3: MWCOG Round 7.1 vs 7.2a Change in Employment (Year 2030)



Modeled CCT Alternatives Using the Modified Alignments

The following describes the alignment routing and operations assumptions for each of the modal alternatives modeled for this analysis. A variety of scenarios were tested in order to compare the implications of operating premium bus on local roads or operating LRT or BRT on one or more of the proposed realignments of CCT guideway.

Alternative Transit TSM with S1 and S2: Service to Crown Farm and Life Sciences Center

This TSM option is identical to Alternative 6.2-Transit TSM described in **Chapter II** of the **2009 AA/EA** (pages II-12 to II-14) except the routing of the trunkline (T1) bus service has been adjusted to serve the LSC and Crown Farm areas using roads assumed to be built as part of the development plans for those areas. The modified TSM trunkline bus service would follow Great Seneca Highway, turn south on Muddy Branch Road, and then make a turn to the east on a proposed Belward Campus Drive extension. The T1 bus route would traverse what is now the Belward Farm and would stop at a new station within the future development. The T1 bus route would then turn south on Johns Hopkins Drive and proceed across Key West Avenue onto a proposed arterial roadway traversing what is now the Montgomery County Public Safety Training Academy. A station stop would be made to serve the redevelopment planned for the site and continue forward. Upon reaching Medical Center Drive, the T1 buses would turn east, proceed across Great Seneca Highway, turn north onto Broschart Road and make a station stop near Blackwell Road. Continuing northward, the buses would cross Key West Avenue and proceed onto Diamondback Drive. At Decoverly Drive, T1 buses would turn to the right and proceed northeast onto a proposed extension of the road through the Crown Farm property. A station stop would be made just prior to Fields Road. After this, buses would turn east on Fields Road, south on Omega Drive, and east onto Research Boulevard. From here, T1 buses would follow the remainder of the TSM route to Shady Grove.

The T1 route would have limited stops operating on six-minute peak period headways from COMSAT to the Shady Grove Metrorail station, making stops at locations at or near where stations are proposed along

the alignment modifications. During off-peak periods, the T1 route would operate at ten-minute headways, augmented by existing feeder bus routes.

The feeder bus plan for the TSM alternative would build upon the existing route structure, extend the service area into Frederick County, and improve service frequencies where appropriate. In addition to the trunkline bus route described above, new bus service would include the FREDSG and FREDMGSG routes between the Frederick Transit Center and Shady Grove and the KPTNMGSG route between Kemptown and Shady Grove. Route FREDSG would continue to Shady Grove via I-270 while Routes FREDMGSG and KPTNMGSG would follow the TSM trunkline route from Metropolitan Grove to Shady Grove, consistent with the Alternative 6.2-Transit TSM described in **Chapter II** of the **2009 AA/EA** (pages II-12 to II-13).

LRT with S1 and S2: Service to Crown Farm and Life Sciences Center

Under this modeled scenario, the LRT alignment is identical to Alternatives 6A and 7A in the 2009 AA/EA except in the vicinity of LSC and Crown Farm where the alignment would deviate from the Original CCT Alignment beginning at the Great Seneca Highway/Muddy Branch Road intersection. The changes in alignments to service these new destinations are described in **Chapter II** of this report.

LRT service between COMSAT and Shady Grove would operate at six-minute headways during peak periods and ten-minute headways during off-peak periods. The premium bus and feeder bus services provide identical geographic coverage and frequencies as described for LRT (Alternatives 6A and 7A) in the 2009 AA/EA and supporting technical reports.

BRT with S1 and S2: Service to Crown Farm and Life Sciences Center

The BRT alignment is identical to the LRT alignment described above. The trunkline BRT service frequencies would be identical to that described in Alternatives 6B and 7B in the 2009 AA/EA with one trunkline BRT bus route (B1) on six-minute headways during peak periods and ten-minute headways during off peak-periods between COMSAT and the Shady Grove Metrorail station, making all stops. In addition, feeder buses would use the guideway augmenting the trunkline service.

The feeder bus service provides identical geographic coverage and frequencies as described for BRT alternatives in the 2009 AA/EA (Alternatives 6B and 7B), but with some minor re-routing to serve the LSC Belward, LSC West, LSC Central, and Crown Farm stations.

Two of the three new bus routes to Shady Grove, Routes FREDMGSG and KPTNMGSG, would follow the CCT alignment between Metropolitan Grove and Shady Grove, originating from the Frederick Transit Center and Kemptown respectively. Route FREDSG would operate between the Frederick Transit Center and Shady Grove via I-270.

LRT with S1, S2 and S3: Service to Crown Farm, Life Sciences Center and Kentlands

The LRT alignment is identical to the LRT alignment described above (LRT with S1 and S2) except that it adds the new routing to Kentlands. As noted above, LRT service between COMSAT and Shady Grove would operate at six-minute headways during peak periods and ten-minute headways during off-peak periods.

The feeder bus service provides identical geographic coverage and frequencies as described for Alternatives 6A and 7A in the 2009 AA/EA, but with some minor re-routing to serve the Kentlands, LSC Belward, LSC West, LSC Central, and Crown Farm stations.

BRT with S1, S2 and S3: Service to Crown Farm, Life Sciences Center and Kentlands

The BRT alignment is identical to the LRT alignment described directly above (LRT with S1, S2 and S3). The trunkline BRT service would be identical to that described in Alternatives 6B and 7B in the 2009 AA/EA with the buses operating on six-minute headways during peak periods and ten-minute headways during off-peak periods. Some feeder bus routes would use a portion of the alignment to Shady Grove.

The feeder bus service provides identical geographic coverage and frequencies as described in the AA/EA, but with some minor re-routing to serve the Kentlands, LSC, and Crown Farm.

Two of the three new bus routes to Shady Grove, Routes FREDMGSG and KPTNMGSG, would follow

the CCT alignment between Metropolitan Grove and Shady Grove, originating from the Frederick Transit Center and Kemptown respectively. Route FREDSG would operate between the Frederick Transit Center and Shady Grove via I-270.

Transit Service and Ridership Implications of the Modified Alignments in the Gaithersburg Area

The ridership estimates for the LRT and BRT scenarios described above were developed to compare the feasibility, attractiveness, and the ridership effects of operating on modified alignments in the Gaithersburg area to the transit alternatives studied in the 2009 AA/EA and 2002 DEIS.

The scenarios were set up to test:

- Ridership changes resulting from changing land use forecasts (Rounds 7.1 to 7.2a)
- Direct routing of LRT/BRT vehicles on a revised alignment through the destinations served by alignment modifications S1, S2, and S3

Table III-4 identifies some of the results of the modeling analysis performed for the representative scenarios relative to the alternatives tested in the 2009 AA/EA. Specifically, the table identifies the number of daily boardings, or riders, projected to take the CCT under a range of operating scenarios, including operation of a TSM, BRT, or LRT alternative on the Original CCT Alignment or as modified by adding S1, S2, and/or S3 to the alignment to serve growth areas. Additionally, the table identifies the number of new transit trips, i.e., trips that otherwise would have been taken by another travel mode (such as by automobile) that can be attributed to implementing one of these transit scenarios. A comparison of these numbers facilitates a decision on which of the scenarios is most effective at drawing riders to the CCT. In general, the FTA requires agencies to define a TSM alternative as a baseline of comparison against the so-called “build” alternatives that require the construction of a new transit facility in order to isolate the number of riders generated by the added capital investment.

Table III-4: Estimated Ridership and New Transit Trips

	ALTERNATIVE	BOARDINGS	NEW TRANSIT TRIPS
2009 AA/EA - Original CCT Alignment	6.2-Transit TSM	7,000	610-760
	6A-LRT	24,000-30,000	700-880
	6B-BRT	21,000-26,000	750-940
Original CCT Alignment Modified to Serve Crown Farm and LSC (S1 + S2)	TSM	9,000-12,000	780-980
	LRT	34,000-43,000	1,140-1,420
	BRT	30,000-37,000	1,200-1,510
Original CCT Alignment Modified to Serve Crown Farm, LSC and Kentlands (S1+ S2 + S3)	LRT	34,000-42,000	1,120-1,400
	BRT	29,000-37,000	1,190-1,490

Cost Analysis of CCT Alignment Modifications

Capital Cost Estimates

Capital cost estimates for the transit alternatives of the I-270/US 15 Multi-Modal Corridor Study, including those using one or more of the modified CCT alignments, have been developed in accordance with FTA guidelines. The guidelines call for cost estimates to be prepared and reported using the latest revision of FTA's Standard Cost Categories as described below. This forms the basis for the format and structure that is used for the capital cost detail and summary sheets developed for this project. The *Capital Cost Technical Memorandum* (March 2008) provides more detailed discussion on the methodology used to estimate capital costs.

The current FTA Standard Cost Categories consist of the following:

- Guideway and Track Elements
- Stations, Stops, Terminals, Intermodal
- Support Facilities: Yards, Shops, Administration Buildings
- Sitework & Special Conditions
- Systems (Power, Control, Communication)

- Right-of-Way, Land, Existing Improvements
- Vehicles
- Professional Services
- Contingency

Each of the alternatives under consideration for the CCT has a set of conceptual engineering drawings, typical sections, station locations, and/or written descriptions that provide definition for each of the major cost components. These documents form the basis for the infrastructure elements that were used to prepare the capital cost estimates. These facility elements can be classified into one of two broad groups, either typical or non-typical facilities. Typical facility costs are developed for elements that can be defined by a typical cross-section and applied over a given length of alignment, such as roadbed, track, and catenary power. The typical facility composite unit cost is developed by combining the costs for all of the individual construction elements for a typical section or facility and creating a representative composite unit cost. Typical sections or facilities are being developed for each of the alternatives.

Non-typical facilities include elements necessary for overall system operation but whose costs cannot be allocated to a specific geographic segment of the system

(e.g., vehicles, O&M facility). After details are prepared for both typical and non-typical facilities and the cost data are developed, they are put into a format summarizing overall alternative cost and the cost of various alignment segments.

Contingency

Contingency is the estimated percentage by which a calculated value may differ from its true or final value. The contingency allowance is used to account for items of work (and their corresponding costs) that may not be readily apparent or cannot be quantified at the current level of design. These could include unknown project scope items, a potential project change resulting from public or political issues, or a change in environmental or technical requirements. For the purposes of this study, contingency is divided into two major categories: allocated and unallocated.

Allocated contingency is based on the level of design information available for individual items of work, as well as the relative difficulty in establishing unit prices for these items. The allocated contingency allowance, in the range of five percent to 30 percent, is allocated according to FTA construction or procurement cost categories. The exact percentage selected for each cost category is based on professional judgment and experience related to the cost variability typically seen for items of work within a particular cost category.

Unallocated contingency is similar to allocated contingency in that it is primarily applied as an allowance for unknowns and uncertainties due to the level of project development completed. The major difference is that allocated contingencies are intended to address uncertainties in the estimated construction, right-of-way, and vehicle costs that typically occur as the amount of engineering and design information advances, while unallocated contingencies are typically broader in nature and often address changes in the project scope and schedule. Unallocated contingency is calculated as two to five percent, depending on the cost category.

Professional Services

This cost category includes allowances for preliminary engineering, final design, project and construction

management, agency program management, project insurance, surveys and testing, and start-up costs. These allowances are computed by applying a percentage to the total construction cost estimated for each cost category (excluding right-of-way and vehicle costs). Right-of-way and vehicle costs typically are calculated to include the management and administration costs associated with these activities and are therefore excluded from the calculation of professional services.

Capital Cost Assumptions

Key assumptions affecting the capital cost estimates included in the financial strategy are discussed in the following paragraphs.

The use of roadway rights-of-way controlled by the state is assumed to be granted to the project at no cost, except for construction of new facilities and replacement and/or repair of existing facilities. The costs for these property dedications will be shown when available, but will not be included in the final cost for the project.

There is a proposed hiker-biker trail project associated with the CCT. While the design of the CCT would accommodate this proposed trail, it is assumed that a separate funding program would be undertaken by local jurisdictions for implementation and maintenance of the trail.

The capital cost estimates assume traditional design-bid-build procurement, construction, and equipping for implementing the CCT project.

For reasons of construction management, corridor readiness, and/or funding availability, the project could be implemented in stages or phases. At this point, no definitive decision has been made regarding any phasing or staging. Possible initial phases, referred to as minimal operable segments (MOSs), could be Shady Grove to Metropolitan Grove and/or Metropolitan Grove to COMSAT. Any initial MOS phase would require a maintenance and storage facility.

Capital Cost Estimates

The cost estimates for the LRT and BRT alternatives are presented in **Table III-5** and are in 2007 dollars. **Table III-5** enables a comparison of the operation of LRT

and BRT modes on the proposed modified alignment alternatives with the operation of LRT and BRT on the Original CCT Alignment. In general, LRT alternatives have higher capital costs than BRT alternatives due to LRT's need for continuous track, power, and signal systems.

Operating and Maintenance Cost Estimates

Operating and maintenance (O&M) cost estimates were developed using a model created for the 2009 AA/EA

Table III-5: Capital Cost Estimates

	ALTERNATIVE	COSTS (millions of 2007 dollars)
2009 AA/EA - Original CCT Alignment	TSM	\$118.63
	LRT	\$875.65
	BRT	\$461.24
Original CCT Alignment with Crown Farm and LSC* (S1 + S2)	TSM	\$124.88
	LRT	\$972.63
	BRT	\$505.15
Original CCT Alignment with Crown Farm, LSC and Kentlands* (S1+S2+S3)	LRT	\$999.01
	BRT	\$532.63

* These costs were originally calculated without a relocated DANAC station corresponding with alignment modifications S2 and S2c. The relocated DANAC is assumed under alignment modifications S2 and S2c to accommodate anticipated redevelopment of the DANAC property. A capital cost estimate conducted by MTA indicates the relocated station would cost an additional \$12.1 million, reflecting the need for more tunneling to cross Key West Avenue and the addition of a new station. Only the costs associated with alignment modification S2 were calculated. S2c was not estimated

and have been updated using the latest agency data. The transit O&M model conforms to FTA's most recently issued technical guidelines for transit alternatives analysis (*Procedures and Technical Methods for Transit Project Planning: Review Draft, September 1986 and updates*).

Estimating O&M costs involves two primary steps: 1) development of operating plans and estimation of operating statistics for each transit mode included in each service alternative and 2) development of O&M

cost models and their application to the operating statistics obtained in step 1 to estimate the O&M costs for the new service. The operating statistics (vehicle hours, vehicle miles, etc.) are derived from the final operating plan for each service alternative.

Unit costs developed from Montgomery County Transit Ride-On operating statistics were used to represent all local bus service within the model. In this model, revenue miles, revenue hours, the number of peak vehicles, and other operating statistics for a particular transit alternative are converted to the resources that are required to operate and maintain the alternative (such as employees, materials, and services) using productivity factors that express the resources required as a function of the level of service. For local bus, the following supply variables were assigned:

- Vehicle Revenue Hours—costs driven by labor costs for vehicle operations
- Vehicle Revenue Miles—costs driven by materials and supplies for both vehicle operations and vehicle maintenance
- Peak Vehicles—costs for vehicles that operate during peak hours, the maximum number of service vehicles in operation

For local bus, the 2005-2007 data were escalated to 2009 dollars and then allocated to the service characteristics with which they were most closely associated (e.g., operator wage and fringe benefit costs were attributed to vehicle hours of service provided, fuel costs were allocated to vehicle miles, etc.). These allocated costs were summed to form a cost model based on three service characteristics: service hours, vehicle miles, and peak vehicles (the number of vehicles that operate during peak hours). The costs were then divided by the number of units of each operating statistic to develop unit total cost factors for each category.

The resulting unit cost factors are as follows:

\$49,155 x number of buses operated during peak

\$2.80 x number of annual vehicle miles

\$51.26 x number of annual vehicle service hours

The LRT unit costs were derived using data from MTA. The individual costs were summed to form a cost model based on four service characteristics: vehicles in maximum service (peak number of vehicles), track

miles, passenger car (one car of a potentially multi-car train) revenue hours and revenue miles. The rail model distinguishes between labor costs and non-labor costs for operating characteristics.

The unit cost factors for light rail include:

\$91,572	x	number of vehicles in maximum service
\$174,651	x	number of directional route miles (track miles)
\$3.51	x	number of annual passenger car revenue miles
\$118.26	x	number of annual passenger car revenue hours

Operating Statistics

Operating statistics were developed using the same service assumptions used in the 2009 AA/EA and described in the *Detailed Definition of Alternatives* technical report. Generally, span of service extends from 5:00 AM until 12:00 midnight with the peak period spanning three hours in both the AM and PM. The majority of bus routes within the corridor that operate only in the peak period today are also assumed to operate only in the peak period in the future, but overall bus frequencies are improved for all alternatives, including the No-Build alternative, compared to existing frequencies. This increase in bus frequencies reflects Ride-On policies as well as factors that would typically increase bus service such as expected growth in population and employment within the corridor.

Service frequencies for both the trunkline service (BRT or LRT) as well as the feeder bus routes were adjusted to reflect changes in passenger loads. Passenger loads were obtained from the travel demand estimates, which provide peak period maximum load point volumes for each route. Off-peak frequencies were assumed in the *Definition of Alternatives* technical report.

The O&M cost estimates were developed by applying the operating statistics of each alternative to the unit costs described above. These costs are determined separately for LRT, BRT, and feeder bus and then summed together to derive total annual operating costs in the corridor by mode. Subtracting the O&M cost

of the No-Build from the O&M cost of each proposed Build alternative provides the net O&M cost for each Build alternative.

Table III-6 shows the net annual O&M costs for each alternative. Differences in maximum load volumes, guideway length, and travel time account for the differences in Vehicle Revenue Hours, Vehicle Revenue Miles, and Daily Peak Vehicles. Not surprisingly, the longer guideway of the alignments serving the LSC result in higher operating costs.

The lower capacity of the BRT vehicles, compared to LRT vehicles, results in higher annual operating costs for the BRT alternatives. Note that many of the feeder bus routes in the BRT alternatives also operate on the guideway, resulting in quicker travel times and higher boardings on those routes than would be the case if they operated on local roads.

Cost-Effectiveness

FTA requires an analysis of cost-effectiveness as a measure of the long-term benefits of the proposed project compared to the capital and operating costs of the project. In its evaluation of the cost-effectiveness of a proposed project, FTA considers the incremental cost per hour of transportation system user benefits in the forecast year. Transportation system user benefits reflect the improvements in regional mobility—as measured by the changes in travel time to users of the regional transit system—caused by the implementation of the proposed project. The cost-effectiveness measure is calculated by (a) estimating the incremental “base-year” annualized capital and operating costs of the project (over a lower cost “baseline” of transit service) and then (b) dividing these costs by the projected user benefits. The result of this calculation is a measure of project cost per hour of projected user benefits (i.e., travel-time) expected to be achieved if the project is added to the regional transit system. Proposed projects with a lower cost per hour of projected travel-time benefits are evaluated as more cost effective than those with a higher cost per hour of projected travel-time benefits.

Table III-7 presents the cost-effectiveness thresholds FTA is using in FY 2010 for assigning a High, Medium-High, Medium, Medium-Low or Low cost effectiveness

Table III-6: Net Annual Operating and Maintenance Costs

	ALTERNATIVE DESCRIPTION	DAILY VEHICLE REVENUE MILES	DAILY VEHICLE REVENUE HOURS	DAILY PEAK VEHICLES	ANNUAL VEHICLE REVENUE MILES	ANNUAL VEHICLE REVENUE HOURS	TRACK MILES	TOTAL OPERATING COST LRT
LIGHT RAIL TRANSIT								
Original CCT Alignment	6A	5,587	252	36	1,675,956	75,550	26.6	\$22,759,000
CCT with Crown Farm and LSC (S1+S2)	LRT	5,528	273	39	1,658,377	82,022	29	\$24,157,000
CCT with Crown Farm, LSC and Kentlands (S1+S2+S3)	LRT	5,696	278	39	1,708,781	83,429	30	\$24,675,000
BUS RAPID TRANSIT								
Original CCT Alignment	6.2-Transit TSM	4,291	229	19	1,287,369	68,733	0	\$9,864,000
	6B	6,792	323	32	2,037,508	96,951	26.6	\$17,130,000
CCT with Crown Farm and LSC (S1+S2)	TSM	4,293	238	16	1,287,777	71,306	0	\$9,850,000
	BRT	6,676	361	38	2,002,706	108,267	29	\$18,042,000
CCT with Crown Farm, LSC and Kentlands (S1+S2+S3)	BRT	6,782	361	38	2,034,594	108,367	30	\$18,258,000

rating for each proposed project. FTA publishes updates to these breakpoints annually to reflect the impact of inflation. FTA prefers a project to achieve at least a “Medium” rating in order to proceed in the FTA New Starts process. Additionally, a project’s cost-effectiveness counts for 20 percent of a project’s overall rating for New Starts. These ratings are used for the purposes of making funding recommendations to Congress for the discretionary New Starts transit project program.

Table III-8 summarizes the cost-effectiveness calculations for the alternatives. As shown, each of the alignment alternatives is compared to the TSM alternative. With this comparison the FTA is

Table III-7: Cost-Effectiveness Thresholds

COST EFFECTIVENESS RATING	COST EFFECTIVENESS VALUE
High	less than or equal to \$11.99
Medium-High	between \$12.00 and \$15.99
Medium	between \$16.00 and \$24.49
Medium-Low	between \$24.50 and \$30.49
Low	greater than or equal to \$30.51

determining whether the cost of a fixed guideway system is worth the investment. The table shows that the BRT alternatives are more cost-effective than the LRT alternatives and that there are higher user benefits from serving the LSC and Crown Farm areas for both BRT and LRT alternatives than with the Original CCT Alignment. Implementation of alignment modification S3 to more directly serve the Kentlands is not as cost-effective as the original location on the Original CCT Alignment because the additional travel time appears to inconvenience passengers from north of Quince Orchard and the capital cost is higher.

Roadway Network Effects of a Realigned CCT

This section describes the effect of alignment modifications S1, S2, and S3 on other local surface transportation facilities both in terms of impacts resulting from transit vehicles in operation and from induced traffic associated with site development of the two maintenance facility locations under study.

Analysis Methodology

Existing traffic counts were obtained from a variety of sources including the Maryland State Highway Administration (SHA), the Maryland National Capital Park and Planning Commission (M-NCPPC), and peak hour traffic counts obtained by the study team on May

18-20, 2010. Estimates of 2030 turning movement volumes at key intersections were developed by applying growth factors (obtained from comparison of link volumes in the 2005 and 2030 Travel Demand Models) to available count data. These projected 2030 turning movement volumes represent the “No Build” condition. The assessment of “Build” conditions varied depending on the type of impact (signalized and unsignalized transit crossing or induced traffic from site development) and are described in the following sections. Traffic operations were evaluated using Critical Lane Analysis, which is a tool that can determine the utilization of intersection capacity. Critical Lane Analysis is the preferred method by SHA and M-NCPPC for planning-level evaluation of intersection performance.

Signalized Crossings

The various CCT alignment modifications have the potential to impact roadway traffic patterns at several locations where at-grade portions of the proposed transit alignment coincide with existing at-grade intersections of high-volume roadways, typically the case for all intersections where the CCT alignment crosses intersections along a numbered state route. Most of these locations are already signalized, though existing signals will require modification to accommodate a transit phase. Due to the high traffic volumes at these locations as well as the anticipated high frequency of transit service, it would be infeasible to stop traffic

Table III-8: Cost-Effectiveness

	ALTERNATIVE DESCRIPTION	CAPITAL COSTS	ANNUAL OPERATING COSTS*	ANNUAL USER BENEFIT HOURS	COST EFFECTIVENESS
2009 AA/EA – Original CCT Alignment	6.2-Transit TSM	\$118,636,000	\$19,791,000	1,500,000–1,890,000	
	6A – LRT	\$875,650,000	\$25,523,000	3,660,000–4,590,000	\$24.00–\$30.00
	6B – BRT	\$461,240,000	\$25,224,000	3,720,000–4,650,000	\$11.21–\$13.93
Original CCT Alignment with Crown Farm and LSC (S1+S2)	LRT	\$972,630,000	\$26,416,000	5,430,000–6,780,000	\$16.04–\$20.05
	BRT	\$505,150,000	\$25,984,000	5,490,000–6,840,000	\$7.43–\$9.26
Original CCT Alignment with Crown Farm, LSC and Kentlands (S1+S2+S3)	LRT	\$999,010,000	\$26,945,000	5,370,000–6,720,000	\$16.86–\$21.14
	BRT	\$532,630,000	\$26,346,000	5,430,000–6,780,000	\$8.11–\$10.13

* Includes costs of operating feeder and premium bus services

through preemption in order to serve the transit movement. At such locations it is proposed that the CCT be served at signalized intersections using Transit Signal Priority (TSP), which requires that the CCT vehicle be held temporarily if it arrives in the middle of a conflicting signal phase. Signal control would then serve both the CCT and compatible traffic movements (those not in conflict with the CCT) at the earliest opportunity. Proposed locations for a signalized CCT crossing in the Gaithersburg area are as follows:

Signalized Crossings of CCT Alignment Modifications

- Intersection of Decoverly Drive and Diamondback Drive (Alignments S1, and S2)
- Crossing of Diamondback Drive north of Key West Avenue (Alignment S1)
- Transit crossing of Great Seneca Highway north of Medical Center Drive (Alignment S2c)

- Crossing of Muddy Branch Road south of Great Seneca Highway (Alignments S2 and S2c)
- Crossing of Lakelands Drive south of Great Seneca Highway (Alignment S3)
- Crossing of Orchard Ridge Drive south of Quince Orchard Road (Alignment S3)
- Crossing of Twin Lakes Drive south of Quince Orchard Road (Alignment S3)

With TSP, the transit movement can have a minimal impact to traffic congestion because the transit movement is timed to coincide with compatible (non-conflicting) traffic movements. In cases where the CCT alignment parallels a high-volume roadway such as Great Seneca Highway, the majority of the signal cycle is already dedicated to serve the high-volume “through” movement and does not conflict with the transit vehicle’s passage. Therefore, the transit vehicle can often proceed across the minor street with no delay

Table III-9: Critical Lane Analysis

INTERSECTION	2030 NO-BUILD				2030 BUILD				CCT IMPACT
	AM PEAK		PM PEAK		AM PEAK		PM PEAK		
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	
Diamondback Drive & Decoverly Drive	0.25	A	0.28	A	0.39	A	0.38	A	LOW
Key West Avenue & Diamondback Drive / Broschart Road	1.03	F	1.15	F	1.03	F	1.15	F	none
Great Seneca Highway & Medical Center Drive	0.64	B	0.92	E	0.84	D	0.99	E	MODERATE
Key West Avenue & Johns Hopkins Drive	1.06	F	0.93	E	1.15	F	1.10	F	MODERATE
Muddy Branch Road & Mission Drive / Midsummer Drive	0.62	A	0.51	A	0.62	A	0.51	A	none
Great Seneca Highway & Muddy Branch Road	1.53	F	1.07	F	1.53	F	1.07	F	none
Great Seneca Highway & Lakelands Boulevard	0.97	E	0.74	C	0.97	E	0.74	C	none
Quince Orchard Road & Sioux Lane / Orchard Ridge Road	0.36	A	0.36	A	0.36	A	0.36	A	none
Quince Orchard Road & Twin Lakes Lane	0.42	A	0.44	A	0.42	A	0.44	A	none

a. *v/c* = volume to capacity, the ratio of the anticipated traffic volume to the road's capacity

b. *LOS* – level of service, a measure of traffic congestion, where “A” represents free-flow conditions, and “F” represents highly congested condition.

and negligible impact on roadway traffic. **Table III-9** shows the results of Critical Lane Analysis evaluation of key intersections under the 2030 “No-Build” and 2030 “Build” scenarios.

Minor Crossings of CCT Alignment Modifications

The CCT will also interface with the road network at the intersections of numerous local streets and private entrances at the following locations:

- Anticipated crossings of private entrances and local intersections associated with Crown Farm development (Alignment S1)
- Crossing of private entrances along Discoverly Drive (Alignment S1)
- Crossing of private entrances and local intersections on the east side of Broschart Road (Alignment S2)
- Crossing of Mission Drive east of Muddy Branch Road (Alignments S2, S2c)

The locations noted above would operate under minor-approach stop control. The traffic movement parallel to the CCT is allowed to proceed in free flow and all turning vehicles (to or from the entrance) are obligated to yield right-of-way.

Efficient operation of the CCT requires that these crossings operate under transit preemption. Operationally, this would result in interruption of access to entrances with each passage of a transit vehicle.

For the BRT option there will be little change from the perspective of drivers at these entrances since they already yield to traffic along the major street. However, the bi-directional operation of the BRT warrants gating or other safety measures since half of the BRT vehicles will be operating in a direction opposite to oncoming traffic.

In the case of LRT these crossings must be protected by gates for safety and site-specific evaluation should determine if the interruption to site traffic warrants signalization to provide a protected movement for turning vehicles when the CCT is not present. Currently, 2030 traffic projections do not indicate a need for signal control at these locations.

CCT O&M Site Impact Analysis

O&M Site at Metropolitan Grove (LRT or BRT)

Evaluation of traffic operations for the 2030 Build scenarios considered the O&M Site proposed at Metropolitan Grove. Alternative site designs for the BRT and LRT options differ in layout but are functionally similar in that all site generated traffic will access the public road network via Metropolitan Grove Road.

Site Trip Generation

Evaluation of traffic impacts from the O&M site considered site-generated traffic including O&M staff, drivers, and transit vehicles for the BRT option. Site trip generation for both LRT and BRT during the AM and PM peaks is affected by the shift changes that are expected to occur at 7AM and 3PM. Additionally, bus pull-outs from the site will affect traffic during the AM and PM peak hour for the BRT option. Site trip generation for the O&M site is summarized as follows:

AM peak hour:

- 67 cars entering for 7:00 AM-3:00 PM shift
- 48 cars exiting for 11:00 PM-7:00 AM shift
- 8 bus pull-outs (BRT option only)

PM peak hour:

- 65 cars entering for 3:00 PM-11:00 PM shift
- 67 cars exiting for 7:00 AM-3:00 PM shift
- 2 bus pull-outs (BRT option only)

Distribution of Site-Generated Traffic

The influence area of generated traffic for the O&M site included signalized intersections along Clopper Road from Watkins Mill Road (one signal to the west of Metropolitan Grove) to Quince Orchard Road (two signals to the east). The evaluation was carried out to Quince Orchard Road due to the routing of buses from the site to serve the CCT in which all buses would exit the O&M site to travel eastbound on Clopper Road and would split at Quince Orchard Road where buses serving the northbound routes (originating at Shady Grove) are anticipated to go straight across Quince Orchard Road en route to I-270. Buses serving the southbound routes (originating at COMSAT) would turn left on Quince Orchard Road to go north. Passenger car traffic relating to shift changes is distributed throughout the Clopper Road corridor consistent with prevailing traffic patterns.

Table III-10: Metropolitan Grove O&M Site – Results of Critical Lane Analysis

INTERSECTION	ANALYSIS SCENARIO	AM PEAK		PM PEAK	
		v/c	LOS	v/c	LOS
Clopper Road & Watkins Mill Road	2030 No-Build	0.52	A	0.45	A
Clopper Road & Metropolitan Grove Road		0.54	A	0.56	A
Clopper Road & Firstfield Road		0.73	C	0.72	C
Clopper Road & Quince Orchard Road		0.76	C	0.85	D
Clopper Road & Watkins Mill Road	2030 Build LRT	0.53	A	0.46	A
Clopper Road & Metropolitan Grove Road		0.56	A	0.61	A
Clopper Road & Firstfield Road		0.74	C	0.74	C
Clopper Road & Quince Orchard Road		0.77	C	0.86	D
Clopper Road & Watkins Mill Road	2030 Build BRT	0.53	A	0.46	A
Clopper Road & Metropolitan Grove Road		0.57	A	0.63	B
Clopper Road & Firstfield Road		0.75	C	0.74	C
Clopper Road & Quince Orchard Road		0.77	C	0.86	D

Impacts of Site-Generated Traffic

Evaluation of traffic impacts from the O&M site compared traffic under “Build” conditions for both the BRT and LRT options to 2030 “No Build” traffic based on forecasts. Signalized intersections within the influence area were analyzed for AM and PM traffic under each condition using Critical Lane Analysis, consistent with M-NCPPC Local Area Transportation Review parameters. As **Table III-10** indicates, the analysis shows that all intersections are projected to function at an acceptable Level of Service (D or better) during both AM and PM peak hours under the 2030 No-Build scenario, and that site traffic results in negligible increases to congestion for the BRT and LRT Build scenarios.

O&M Site at Observation Drive (BRT Only)

An alternative O&M site under consideration for the BRT option is located near the intersection of West Old Baltimore Road and the future extension of Observation Drive just east of the I-270 overpass over Old Baltimore Road and approximately 1.3 miles west of MD 355. A detailed traffic analysis of the Observation Drive site was not conducted, given the very different current and future conditions of land uses and available roadway capacity

at the location of the Observation Drive O&M site compared to those of the Metropolitan Grove O&M site.

At this location, the CCT is anticipated to run down the median of Observation Drive intersecting the local road network at an at-grade intersection with West Old Baltimore Road. Preliminary layouts of the O&M site show access to the site being provided via entrances on Old Baltimore Road.

Traffic impacts resulting from this site include staff traffic related to shift changes at the O&M site and the ingress/egress of BRT vehicles to the CCT alignment. The impact of bus traffic is limited to the immediate vicinity of the site between the site entrance and Observation Drive. Staff traffic will distribute through the local roadway network and is anticipated to have a similarly negligible impact on congestion as is apparent with the O&M site location at Metropolitan Grove. Minor improvements at local intersections, such as the intersection of West Old Baltimore Road and MD 355, will be considered in the course of selecting the preferred site for the O&M facility.



CHAPTER IV

Environmental Resources and Consequences



CORRIDOR CITIES TRANSITWAY
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Chapter IV – Affected Environment and Environmental Consequences

Overview

This chapter presents the existing environmental conditions including natural and social/cultural/economic resources and the estimated impacts on these resources that would occur as a result of the proposed alignment modifications and Operations and Maintenance (O&M) sites described in **Chapter II**.

For some resources, such as wetlands or floodplains, the physical “footprint” of the alignment modification is important. For other impact categories, such as visual or noise, the transit mode (BRT or LRT) that is ultimately selected also makes a difference, and the results are presented to reflect this variable. Where impacts are potentially significant, prospective mitigation measures are presented.

This chapter does not reanalyze or present new data regarding the impacts or performance of the Original CCT Alignment alternative or the multimodal alternatives analyzed in previously published NEPA documents. Rather, the focus is intentionally on the proposed alignment modifications and O&M site locations presented in **Chapter II** of this document. Together, the full array of NEPA documents provides the analysis and documentation required to inform a decision on a preferred alignment and modal selection for the CCT. Where necessary, this chapter will refer the reader to an appropriate discussion in another document. All documents will be made available upon publication and distribution of this document for public review and comment. For convenience, a **CD** of the **2009 AA/EA** is included in the inside back cover of this document.

Once a locally preferred alternative (LPA)—alignment and mode—is selected, additional engineering work will be done to determine precise alignments, station layouts and equipment specifications. Final environmental impacts

will be assessed in a Final Environmental Impact Statement, and more refined mitigation commitments will be determined at that time.

Land Use, Zoning and Future Development

This section presents an examination of changes to land use, land use planning, and zoning in the CCT corridor since the 2009 AA/EA was completed. Summaries of the findings are provided for the City of Gaithersburg and the planning areas within Montgomery County in which the proposed CCT alignment modifications fall.

Existing Land Use

Figure IV-1 depicts the existing land uses within 1,000 feet to either side of the proposed alignment modifications that were not described in the 2009 AA/EA. Therefore, this section presents a review of current land uses for areas in the vicinity of the proposed new CCT alignments including Crown Farm, Life Sciences Center, and Kentlands. Existing land uses near the two O&M sites described in **Chapter II** are also documented. For a more detailed description of general land uses within Montgomery County and the City of Gaithersburg, please refer to **Chapter IV** of the **2009 AA/EA**.

Crown Farm is a 180-acre parcel of land bounded by Fields Road to the north, Sam Eig Highway (I-370) to the west, and Omega Drive to the east. Land uses surrounding Crown Farm include the Washingtonian Center, a large mixed-use development located north of Fields Road, and high-density residential developments located off Diamondback Drive and Decoverly Drive. Development of the Crown Farm property into residential, office and commercial development, including a mixed-use town center, is presently underway.

Life Sciences Center (LSC) is a rapidly-growing medical and bio-technology community within Montgomery County. Bisected by Great Seneca Highway, the eastern portion of the LSC currently

consists of mostly medical- or health-related institutional land uses including Shady Grove Adventist Hospital, Regional Institute for Children and Adolescents, Johns Hopkins University, and several large rehabilitation and radiology centers. The western portion of the LSC also consists of governmental and institutional uses, the Montgomery County Public Safety Training Academy, and high-density office buildings and laboratories.

Belward Farm is a 108-acre farm located on the western side of the LSC. This undeveloped parcel is owned by Johns Hopkins University. Bounded by Mission Drive to the north, Darnestown Road to the south, and Muddy Branch Drive to the west, Belward Farm is surrounded by very compact residential development on three sides.

Kentlands, a 352-acre community founded on New Urbanist design concepts, is located within the City of Gaithersburg and is a walkable, mixed-use neighborhood. The Kentlands Marketplace, located adjacent to the west side of Great Seneca Highway consist of commercial uses including restaurants, a large retail center and a Lowes home improvement store. On the eastern side of Great Seneca Highway, land uses consist of office and governmental/institutional uses including the MedImmune Campus.

The Proposed Observation Drive O&M Site is located south of West Old Baltimore Road and east of I-270. This site is currently undeveloped, inactive farmland and includes a farmhouse, two barns, and other farming-related outbuildings. Other land surrounding this site includes a stream buffer area to the east, I-270 to the west, and a small portion of Black Hill Regional Park to the northwest. To the south, a large wooded buffer separates this site from The Vistas at Millstone and Brookfield residential developments.

The Proposed Metropolitan Grove O&M Site is located within the City of Gaithersburg west of I-270. Land uses in this area can be characterized as industrial. Large warehouses and distribution centers are present on the south side of the rail tracks near the Metropolitan Grove MARC Station. North of the rail tracks, and closer to the terminus of Metropolitan Grove Road, Browns Station Park and the Montgomery County Police impound lot border the tracks. A large parcel of vacant property is located north

of the Metropolitan Grove Station. Land in this area is also used for other transportation-related uses such as interstate highways, arterial roadways, railroad tracks, and large surface parking areas.

Farm Uses

As of December 2009, Montgomery County had 561 farms, approximately one-third of the County's land area. Since the publication of the 2009 AA/EA, farmland within Montgomery County has remained virtually unchanged.

The historic Belward Farm is located within the heart of the study area for the alignment modifications. This 108-acre farm is currently undeveloped except for a 19th century farmhouse and associated outbuildings. It is one of the last remaining large parcels of formerly agricultural land in this part of Montgomery County. As part of the recently-approved *Great Seneca Science Corridor Master Plan* (discussed in more detail below) Belward Farm is expected to develop into a high-density research campus that would also include employee and visitor housing and a CCT station.

The historic Crown Farm is a 180-acre parcel of land bounded by Fields Road to the north, Sam Eig Highway (I-370) to the west, and Omega Drive to the east. Development of the Crown Farm property into a variety of commercial, office and residential uses is presently underway.

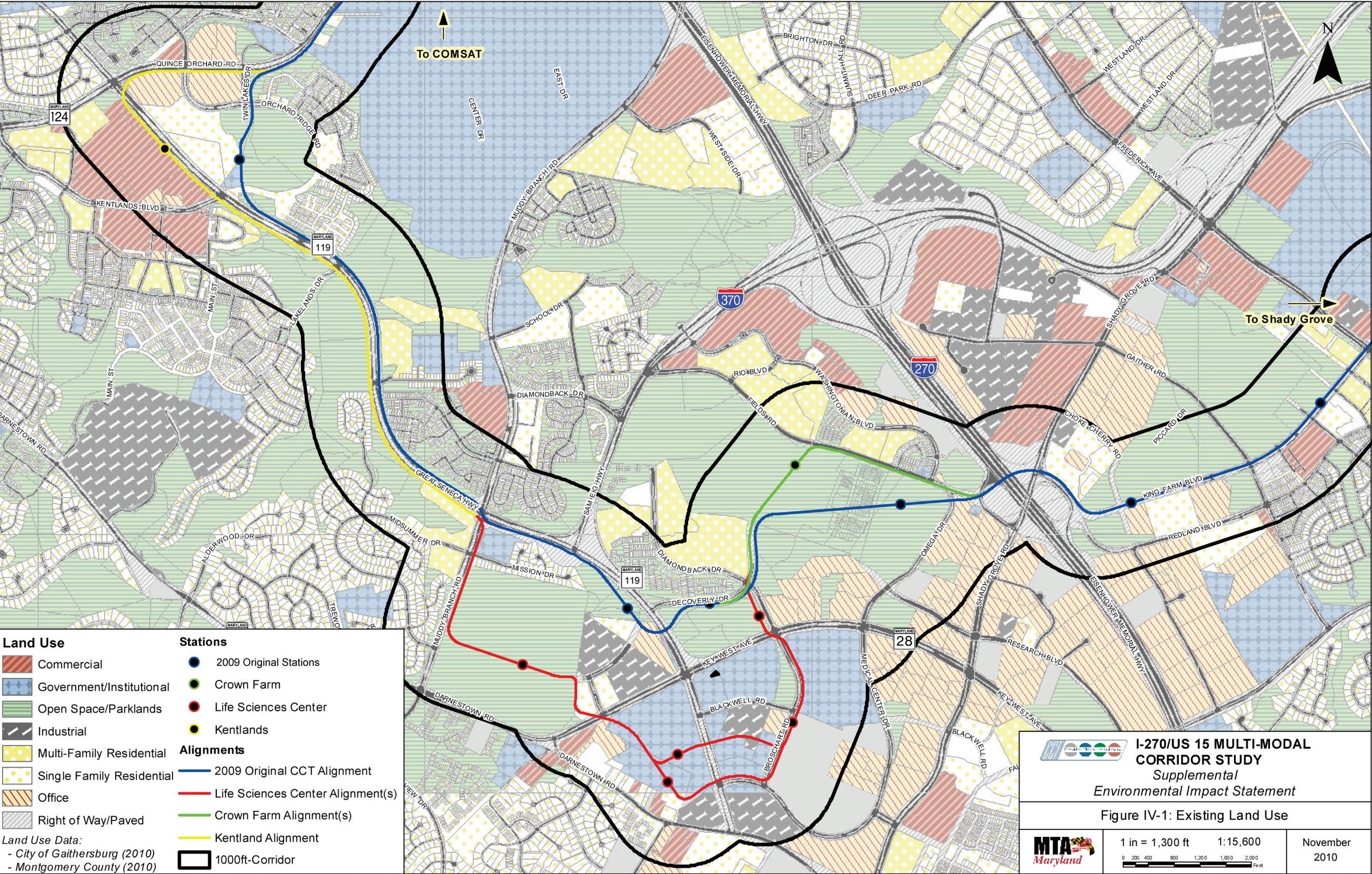
The Observation Drive site is proposed on land which is currently vacant, but not an active farm. All proposed improvements on this parcel, including the CCT and an extension of Observation Drive, are planned and approved in the June 1994 *Clarksburg Master Plan and Hyattstown Special Study Area*.

There are no farm uses at the proposed Metropolitan Grove site. It is currently occupied by the Montgomery County Police Abandoned Motor Vehicle Unit.

Future Land Use

Local long range development plans describe future land use visions. The adopted plans for each planning area or municipality contain specific recommendations for future land use. The following presents summaries of plans that have been newly drafted or updated and adopted since the publication of the AA/EA in

Figure IV-1: Existing Land Use



May 2009. Future land use is also guided by and reflected in the zoning designations and regulations of local governments. Although the Maryland Transit Administration (MTA) is not required to meet local zoning requirements in their projects, local zoning modifications can occur and have occurred in response to major transportation projects such as the proposed CCT. Consequently, pertinent zoning trends are noted below as an indicator of how land use may evolve in the long term.

Montgomery County

Since the publication of the AA/EA in 2009, there have been no updates to the following documents:

- *Montgomery County General Plan with Refinements* (adopted 1993)
- *Shady Grove Sector Plan* (adopted with amendments in January (2006)
- *The Clarksburg Master Plan* (1994)

On May 4, 2010, the Montgomery County Council unanimously approved the *Great Seneca Science Corridor Master Plan*. Formerly known as Gaithersburg West, this Master Plan updates the *1990 Shady Grove Study Area Master Plan* and portions of the *1985 Gaithersburg Vicinity Master Plan*. The *Great Seneca Science Corridor Master Plan* area covers 4,360 acres in the heart of the I-270 Corridor. It includes the existing LSC, the western Quince Orchard neighborhoods and enclave areas such as the National Institute of Standards and Technology (NIST) and Rosemont, which are completely or nearly completely surrounded by a municipality. The City of Gaithersburg occupies ten square miles in the center of the Plan area.

The Plan establishes the creation of a Life Sciences Center (LSC) and a live/work community in the next 25 to 35 years. The Plan recognizes, however, that sufficient infrastructure – particularly transit – would need to be in place before the overall goals and visions for the LSC can be realized. Relative to the CCT the plan states the following:

- The CCT will enable people who work at the LSC to live in nearby communities connected by transit.
- Transit is an essential element of this Plan and is the basis for the land use and zoning

recommendations. A strong public and private commitment to the Plan's transit proposals will help ensure that the LSC is connected internally, as well as to the rest of the Corridor.

- The LSC of the future will be served by a fully integrated transit system that links mid-County activity centers via the CCT. Access to high quality transit is increasingly important to businesses trying to attract knowledge-based, creative class workers. The LSC will continue to be a specialized employment center and it will be connected by transit to nearby residential communities at the Shady Grove Metro Station, the King Farm, the Crown Farm, Kentlands, and the Watkins Mill Town Center.
- The CCT is the centerpiece of the Plan's vision for the LSC.
- This Plan recommends realigning the CCT to bring transit into the heart of the LSC where it can serve more businesses, institutions, and other users than the current route.
- The Plan builds a pattern of density focused on the three LSC districts where CCT transit stations are proposed: Central, West, and Belward. Increased density is recommended at proposed transit stations and development can only proceed in stages that are linked to the provision of infrastructure, most importantly, the CCT.
 - The LSC South District is not recommended for increased densities largely because it is within the Piney Branch Special Protection Area. Realigning the CCT route into the center of the LSC will bring transit closer to LSC South, where it can serve the Universities at Shady Grove, Human Genome Sciences, and the Traville community. The proposed alignment offers two alternatives between the LSC Central and LSC West stations.
- The two current station locations – DANAC (on the south side of Decoverly Drive) and Decoverly (along Great Seneca Highway near Sam Eig Highway) are not located to serve the LSC districts with the most growth potential and the greatest number of future transit

riders. The Discoverly station would serve primarily as a park-and-ride facility since it is located along a highway rather than in the center of development. Also, the alignment near the Discoverly station would impact an environmentally sensitive wetland and stream buffer area, which could be avoided if the route is relocated.

- The Plan's three new proposed stations are located where new development and redevelopment is expected, increasing the number of potential CCT riders within a quarter mile radius, or a five-minute walk. The proposed realignment would lengthen the route by one mile.
 - If the CCT is ultimately provided as BRT, it may be possible to incorporate both the current and proposed routes, but the land use and zoning recommendations in this Plan require the realignment through the LSC to serve the proposed densities at the three new stations.
- The highest density and building height will be concentrated at the proposed CCT stations.
- Public open spaces will be provided at each CCT station
- The CCT, trails, and attractively designed sidewalks will connect the districts and adjacent neighborhoods, encouraging walking instead of driving.
- The organizing element of the LSC open space plan is a 3.5-mile, multi-use path loop connecting the districts and destinations.
 - The LSC Loop will run alongside existing streets, such as Medical Center Drive and Omega Drive, and be completed on new streets in LSC West.
 - It will incorporate the proposed multi-use path next to the CCT through LSC West and onto the Belward property.
 - The LSC Loop will link activity centers and community facilities, including the planned high school on the Crown Farm (in the City of Gaithersburg), the historic Belward Farm, and the civic green and

retail center on LSC West. CCT stations along the Loop include the Crown Farm, Belward, and LSC West.

- The Plan recommends a CCT station on Broschart Road near Blackwell Road, and those streets should be enlivened with active uses. Future development, in its design and use, should be carefully planned to take advantage of transit and contribute to creating a vibrant LSC hub.
- Reuse of the Belward Farm offers opportunities for community-serving uses such as a cultural, recreational, or educational center that could become a destination on the CCT and the LSC Loop.
- A CCT station is planned on the western side of the National Institute of Standards and Technology (NIST) facility. With 5,000 employees (2,700 permanent and 2,300 contract), this station offers an opportunity to change commuting patterns and is an important link in the future public transit network.

The *Great Seneca Science Corridor Master Plan* includes the following specific recommendations relative to the CCT:

- Realign the CCT through the LSC to provide three transit stations that will be the focal point of new development in the LSC Central, West, and Belward district
- Concentrate density, building height, and civic green spaces at the CCT stations.
- Realign the CCT with existing service between the proposed LSC CCT stations. To reduce delays for transit and vehicles, this realignment may require CCT grade separations at Key West Avenue and Great Seneca Highway.
- Realign the CCT through the LSC with a station on the Belward property along Discoverly Drive extended near the intersection with Medical Center Drive extended
 - Provide a comprehensive pedestrian network throughout Belward with an emphasis on easy and convenient access to the proposed CCT station

- Relocate the DANAC station to the east side of the property as part of the CCT alignment through the LSC. The current CCT alignment includes a station on the north side of the DANAC property.
- Actively manage parking supply and demand and promote shared parking efficiencies, particularly relieving the requirement for smaller properties to self-park. Public/private parking agreements should be encouraged as private properties redevelop and potentially act as a funding source for the CCT.
- Coordinate with NIST to plan for the proposed CCT station along Quince Orchard Road.
- Provide a continuous bikeway as part of the CCT.

In January 2008, the Montgomery County Planning Department published a report entitled *Guiding the Future of the MD 355/I-270 Corridor*, which provided guidance for all master plan and sector plans being undertaken at that time including the *Great Seneca Science Corridor Master Plan* (formerly Gaithersburg West). The report recognizes that providing a wide-range of transportation options, including the future CCT, is key to successfully addressing mobility within the MD 355/I-270 Corridor. This report also recognizes that the CCT will provide a link between activity and business centers within the corridor as well as to the region's other resources. Key CCT-related recommendations for the areas near Shady Grove and Gaithersburg include:

- Build the CCT from Shady Grove to Clarksburg.
- Find a location for all bus and rail infrastructure including garages, maintenance areas needed for additional Metrorail, Metrobus, and Ride-On services as well as the CCT and the North Bethesda Transitway.

On October 21, 2009, the Montgomery County Council adopted the *Germantown Employment Area Sector Plan* as an amendment to the 1989 *Germantown Master Plan*. The sector plan creates a vision for mixed-use communities served by the existing MARC service and the future CCT. Overall, this plan supports the CCT and recognizes the importance of linking transportation and land use. The plan also recognizes that the higher densities recommended for

the Germantown employment sectors cannot be realized without the construction of the CCT. Relative to the CCT this plan recommends the following:

- Transit Mixed-Use Zone (TMX-2) should be established on sites located in a Transit Station Development Area, which is defined by the Zoning Ordinance as "an area near a metro transit station, or along an existing or proposed transit right-of-way (ROW), which is not located within a central business district, which has been designated as a Transit Station Development Area by an approved and adopted master plan or sector plan." TMX permits a broad range of uses that can provide the variety needed to create a cohesive transit-served community with employment and housing options.
- A CCT loop bus service should be established to serve districts and increase employment on both sides of I-270.
- The CCT station previously considered along Middlebrook Road should be removed from the Plan.
- Transit stations along the CCT should be designed to provide convenient and safe pedestrian access and each should incorporate public art that conveys community identity and a sense of place.
- Potential CCT eastern alignments should be evaluated for ways to better serve the Montgomery College Campus for future phases of the CCT.

City of Gaithersburg

Maryland municipalities establish Maximum Expansion Limits (MEL) to set boundaries for future potential annexations of unincorporated land. The Maryland State Code (Article 23A, Section 19) requires that municipalities produce a *Municipal Growth Plan* delineating the MEL. Only land within the MEL and adjoining the municipal boundaries can be considered for annexation. In 2009, the City of Gaithersburg established a new MEL as part of its adopted *Municipal Growth Element*. The City's new MEL includes nearly all of the *Great Seneca Science Corridor Master Plan* area, including the LSC.

The *City of Gaithersburg Master Plan* (Adopted December 2003) contains a Land Use Plan that describes general land use and zoning categories for properties located within the City and makes recommendations for future land use. For detailed information on this plan and its contents please refer to the **2009 AA/EA, Chapter IV**.

The City of Gaithersburg is currently undertaking an update to the Transportation Element of City's Master Plan. In response to the growth currently taking place within and in communities surrounding Gaithersburg, the new Transportation Element will highlight the link between land use and transportation and will focus on near- and long-term, multi-modal transportation options within the City. This document states that the City has been a long-time supporter of the CCT as a light-rail project rather than as bus rapid transit (BRT), and supports realigning the CCT through Kentlands and Crown Farm. In planning for the CCT, the City has obtained the majority of needed ROW and approved high-density, transit-oriented developments such as Crown Farm and Watkins Mill Town Center and adopted the *Kentlands Boulevard Commercial District Special Study Area*.

Specific to the CCT the revised Transportation Element states:

- The originally proposed "Master Plan" alignment for the CCT would have impacts on MedImmune's growth and would underserve the Kentlands Special Study Area.
- The *Great Seneca Science Corridor Master Plan* includes a recommendation of a grade separated interchange at the intersection of MD 119 and MD 124. This interchange would impact and possibly preclude the implementation of recommendations made in the Kentlands Boulevard Commercial District Special Study Area, the Kentlands Special Study Area (discussed above), the City-requested Kentlands realignment for the CCT, and expansion of the MedImmune campus.
- The City does not support any grade-separated interchanges within the City limits such as the proposed MD 124 and MD 119 interchange that may impede the implementation of the recommendations in the adopted City Master Plan, preclude the Kentlands CCT Realignment,

or conflict with any approved development site plans.

- The City will continue to support the CCT with the Kentlands and Crown Farm realignments and endorse light rail transit (LRT) as the preferred mode option for CCT.

The City of Gaithersburg adopted *Kentlands Boulevard Commercial District* in May 2008 as an amendment to the *2003 Land Use Plan*. The study area includes 80 acres located south of Great Seneca Highway with Kentlands Boulevard bisecting the area into northern and southern halves. The purpose of the plan was to provide guidance on future development within the area and to also obtain input on the CCT and its alignment along Great Seneca Highway. Relative to the CCT realignment through the Kentlands, the study identified the following:

- The CCT will impact the future development pattern within the Kentlands Boulevard Commercial District (KBCD). If the Master Plan Alignment is changed to run on the south side of Great Seneca Highway, the KBCD has the potential to evolve into a mixed-use town center.
- A parcel located between Great Seneca Highway and Market Street is a prime location for a CCT station and associated station parking facility. This site is also identified as having high re-development potential.
- A parcel located in the northwest quadrant of the intersection of Kentlands Boulevard and Great Seneca Highway is an alternate location for a CCT station and parking facility. A pedestrian bridge over Great Seneca Highway would connect Quince Orchard Park residents and MedImmune employees with the transit station.
- Two realignments of the CCT on the southwest side of Great Seneca Highway will positively impact the KBCD. However, if one of these alignments is chosen and the CCT station is relocated to the KBCD, the City of Gaithersburg would need to dispose of ten acres of City-owned property currently being reserved for a Quince Orchard Park CCT Station.

O&M Sites

In the *Clarksburg Master Plan and Hyattstown Special Study Area* (June, 1994) the proposed BRT O&M site at Observation Drive is classified as a “Major Employment” center within the Brink Road Transition Area. Specific to the CCT and the proposed O&M site, the plan recommends low-intensity, industrial development employment uses on the almost 65 acres adjoining I-270, just south of West Old Baltimore Road. The plan states that this type of use will help provide non-office employment needs (such as warehousing, automobile repair and service, wholesale trades, etc.).

The proposed Metropolitan Grove O&M site is located within the Casey-Metropolitan Grove Special Study Area. As stated in the 2003 *Gaithersburg Land Use Plan*, this area will be designated as a large, mixed-use development centered on the CCT. The City of Gaithersburg and Montgomery County own a total of 31 acres surrounding and including this site. The City property at Browns Station Park is designated as open space. The County property land use is designated as institutional and is in use as the Montgomery County Police Abandoned Motor Vehicle Unit. The parcels owned by Montgomery County (P435) and City of Gaithersburg (P138, P404) contain a covenant that limits development to a public use. The covenant states that the parcels are to be used solely for a public use approved by the Board of Public Works of Maryland. This covenant is recorded in Montgomery County Land Records, Liber 5765 and Folio 508. The Board of Public Works would have to amend the covenant to allow private development.

Specific to the CCT and the proposed O&M facility, the plan states the following:

- As part of the CCT, there may be a need to provide a Transit Rail Yard at the Casey-Metropolitan Grove Study Area. If the Transit Rail Yard is to be located within the Casey-Metropolitan Grove Study Area, a plan must be reviewed and approved by the Mayor and City Council and Planning Commission as part of the schematic development plan (SDP) process.
- The City has proposed two alternative locations for the Transit Rail Yard as follows:
 - Alternative 1: The Montgomery County abandoned auto storage lot located north of and parallel to the CSX right-of-way

and east of Metropolitan Road extended. To locate the rail yard in this location will require the cooperation of Montgomery County and the State of Maryland for the relocation of the County auto storage. This site is surrounded by the CSX rail tracks, I-270 Interchange, Metropolitan Grove Road extended, future rail station and parking facility and the City-owned parkland which may make it difficult to provide a viable residential, commercial or office development. All the rail yard buildings, as well as adequate screening in the form of a solid wall and landscaping should be placed along the north side of the site. The intent is to screen the rail yard activity and rail car storage from the City-owned parkland.

- Alternative 2: The State of Maryland truck maintenance and anti-skid materials distribution facility located south of and parallel to the CSX right-of-way and east of Metropolitan Road extended. To locate the rail yard in this location will require the cooperation of Montgomery County and the State of Maryland for the relocation of the existing State facility. All the rail yard buildings, as well as adequate screening in the form of a solid wall and landscaping should be placed along the south side of the site. The intent is to screen the rail yard activity and rail car storage from the adjacent residential apartment community.

Existing and Future Zoning

Zoning is the tool that implements local jurisdictions’ long-range land use plans objectives. It governs the type and form of development that occurs. In general, the counties and communities in the I-270 corridor have been updating their zoning and growth management plans in anticipation of the improvements to the transportation system that may result from this Multi-Modal Corridor Study.

Montgomery County

Montgomery County is currently undertaking a three-year process to update their Zoning Ordinance.

The current version dates back to 1977. A detailed discussion of the current Zoning Ordinance is in the 2009 AA/EA. The updated zoning will help Montgomery County promote appropriately-scaled infill development, create sustainable neighborhoods and communities, and support smart growth principles and transit-oriented development projects.

In advance of the ordinance re-write, the Montgomery County Council adopted an amendment to the current zoning ordinance that establishes Commercial/Residential (CR) zones; including the intent, allowed land uses, development methods, general requirements, development standards, density incentives, and approval procedures for development under these zones. This amendment became effective on March 22, 2010 and will aid in the implementation of the *Great Seneca Science Corridor Master Plan* and other area master plans. The new CR zone will allow for more density and flexibility and will also promote economically, environmentally, and socially sustainable development patterns where people can live, work, and have access to services and amenities while minimizing the need for automobile use.

As mentioned above, the *Great Seneca Science Corridor Master Plan* recommends several zoning changes for the proposed developments within the LSC and Belward Farm. These proposed changes will be considered during the re-write of Montgomery County's Zoning Ordinance.

City of Gaithersburg

The revised City of Gaithersburg Zoning Map became effective on April 25, 2010. Properties located near the proposed CCT realignment in Kentlands, between Quince Orchard Road and Muddy Branch Road, are zoned MXD (Mixed-Use Development). Parcels within Crown Farm, south of Fields Road, are also zoned MXD, with the exception of a very small parcel, which has been zoned R-6 (Medium-Density Residential).

As mentioned above, the City of Gaithersburg established a new MEL as part of its adopted *Municipal Growth Element*. The City's new MEL includes nearly all of the *Great Seneca Science Corridor Master Plan* area, including the LSC. As a result, several parcels within the LSC development could be annexed.

Observation Drive O&M Site

The 1994 *Clarksburg Master Plan and Hyattstown Special Study Area* designates the proposed Observation Drive O&M site as I-4, low-intensity, light-industrial. This would continue the clustering of employment uses along I-270.

Metropolitan Grove O&M Site

Properties in the vicinity of Metropolitan Grove Road, including those owned by the County and the City, have been rezoned as MXD to accommodate the proposed development that will be part of the proposed Casey-Metropolitan Grove mixed-use development.

Planned and Programmed Developments

Figure IV-2 presents the locations of "pipeline" development projects within the 1,000-foot project corridor buffer in Montgomery County and the City of Gaithersburg, as well as the O&M facility sites at Observation Drive and Metropolitan Grove. These are projects that have been approved for construction but are not yet built or fully completed. The pipeline projects represent major planned changes in land use anticipated in the vicinity of the proposed CCT realignments and O&M facilities. Projects are considered major if they include 50 or more new residential units and/or 100,000 or more square feet of non-residential development.

Table IV-1 presents the residential and commercial pipeline development located within the study corridor in the City of Gaithersburg and Montgomery County as well as for the O&M facilities proposed at Observation Drive and Metropolitan Grove. There are several residential and other pipeline development projects located within the 1,000-foot limit of the project corridor. The majority of these projects occur in the Kentlands/Quince Orchard Park in the City of Gaithersburg and in the area of the LSC. In the City of Rockville, the King Farm development is a prominent project, while in Gaithersburg the expansion of the MedImmune campus, as well as the planned mixed-use development at Crown Farm are most notable.

Legend:

- 1000ft-Corridor
- City
- Pipeline Projects
- New Residential Neighborhoods

Stations

- 2009 Original CCT
- Crown Farm
- Life Sciences Center
- Kentlands

Alignments

- 2009 Original CCT Alignment
- Life Sciences Center Alignment(s)
- Crown Farm Alignment(s)
- Kentland Alignment

Map Labels:

- Kentlands - The Colonnade, Archstone
- Quince Orchard Park - The Vistas
- MedImmune
- Gaithersburg
- Johns Hopkins Research Campus
- Crown Farm
- Crown Farm (Aventine)
- Avalon at Decoverly - Phase 2
- Shady Grove Adventist Hospital
- Traville
- King Farm - Irvington Center (F7)
- Washingtonian South
- King Farm - Irvington Center (F5)
- King Farm - Irvington Center (F6)
- Decoverly Hall
- Montgomery County Medical Center
- Rockville

Figure IV-2: Pipeline Development Projects Map

1 inch = 1,300 feet

0 200 400 800 1,200 1,600 Feet

September 2011

Compliance with Smart Growth Initiatives

The intent of Maryland's Smart Growth Areas Act (October 1997) is to direct state funding for growth-related projects to areas designated by local jurisdictions as Priority Funding Areas (PFAs). PFAs consist of existing communities and other locally-designated areas as determined by local jurisdictions in accordance with "smart growth" guidelines. The Act seeks to guide development to existing towns, neighborhoods, and business areas by directing State infrastructure improvements to those places. For additional information regarding Maryland's Smart Growth Initiative and the objectives of the Act, reference the 2009 AA/EA. Relative to the CCT realignments, the PFAs, as illustrated in **Figure IV-3**, have not expanded in their coverage of areas within close proximity to the CCT.

The *Planning Visions Bill*, which went into effect on October 1, 2009, modernizes the State's eight existing planning visions with 12 new visions that reflect more

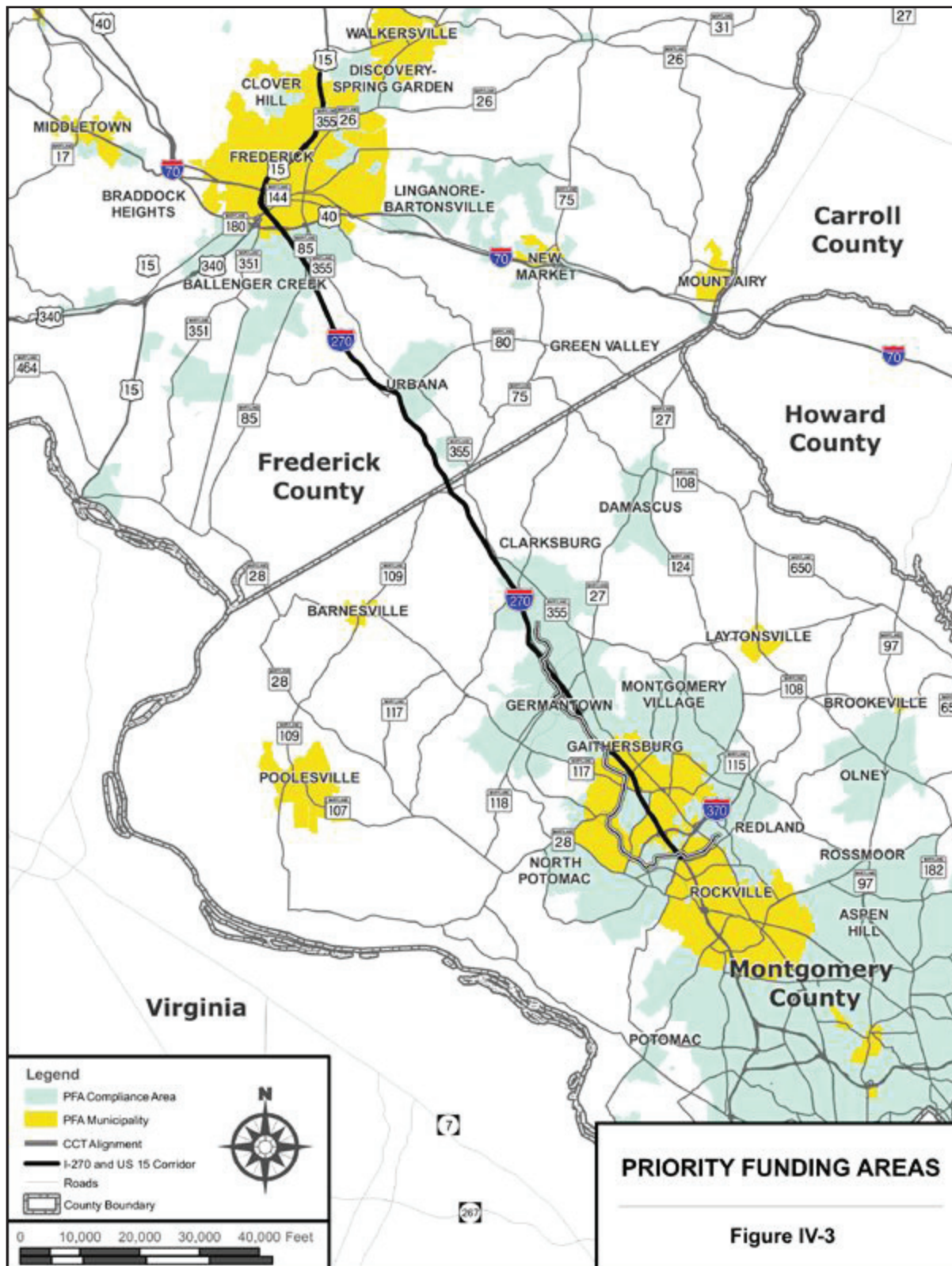
accurately Maryland's ongoing aspiration to develop and implement sound growth and development policy. The visions address:

- Quality of life and sustainability
- Public participation
- Growth areas
- Community design
- Infrastructure
- Transportation
- Housing
- Economic development
- Environmental protection
- Resource conservation
- Stewardship
- Implementation approaches

Table IV-1: Pipeline Projects within the Project Corridor

PROJECT NAME	PROPOSED USE
Crown Farm	Mixed-use development consisting of 320,000 square feet of retail and 2,250 residential units (high-rise condominiums, townhomes, single-family home, live/work units over commercial)
Avalon at Decoverly – Phase 2	168 multi-family units
Montgomery County Medical Center	894,636 square feet of medical offices
Shady Grove Adventist Hospital	203,262 square foot expansion of existing facility
Traville	Mixed-use development consisting of 1,221,201 square feet of office; 99,299 square feet of retail; and 12,000 square feet of other uses
Johns Hopkins Research Campus	1,800,000 square feet of industrial
Quince Orchard Park – MedImmune All Phases	Expansion of existing facility
Quince Orchard Park – The Meadows	150,000 square feet of office
Quince Orchard Park – The Vistas	13 single-family detached units, 38 townhomes, 32 condominiums
Washingtonian South (Future)	203,136 square feet of office
King Farm – Irvington (F5)	352,565 square feet of office; 10,000 square feet of retail
King Farm – Irvington (F6)	241,428 square feet of office; 6,605 square feet of retail
King Farm – Irvington (F7)	151,522 square feet of office; 3,595 square feet of retail
Watkins Mill Town Center (Casey West)	1,066 dwelling units; 283,939 square feet of retail; 936,650 square feet of office; and 394 hotel rooms
Linthicum East (Summerfield Crossing)	157 single family detached units and 102 townhomes

Figure IV-3: 2000 Priority Funding Areas



Local jurisdictions are required to include the visions in their local comprehensive plans and implement them through zoning ordinances and regulations.

The law also requires local jurisdictions to submit a report to the Maryland Department of Planning (MDP) every two years if an Adequate Public Facility Ordinance (APFO) results in a restriction in a PFA, that is, if there is not adequate infrastructure to support such public facilities as new schools, recreational or transportation facilities, and transit-oriented development. Local jurisdiction reports on PFAs and APFOs must include information about the nature of the restriction and if available, information about the proposed resolution. MDP's report on the statewide impact of APFOs has to identify:

(1) geographic areas and facilities within PFAs that do not meet local adequate public facility standards; and (2) scheduled or proposed improvements to facilities in local capital improvement programs. MDP's first report is due by January 1, 2011.

The law also authorizes local jurisdictions to establish Transfer of Development Rights (TDR) programs within PFAs to assist a local jurisdiction in the purchase of land for public facilities. Proceeds from the sale of these development rights must be used for land acquisition and public facility construction in the PFA.

The *Smart Growth Goals, Measures, and Indicators and Implementation of Planning Visions Bill* requires local planning commissions or boards to submit annual reports to local legislative bodies beginning July 1, 2011 that include specified smart growth measures and indicators and information on a local land use goal as part of the report. In addition to other planning and development information required under current law, the annual report must state which ordinances or regulations were adopted or changed to implement the State's planning visions. With the exception of jurisdictions that issue less than 50 building permits per year, the measures and indicators that must be reported include the following:

- Amount and share of growth that is being located inside and outside the PFA
- Net density of growth that is being located inside and outside the PFA
- Creation of new lots and the issuance of residential and commercial building permits inside and outside the PFA

- Development capacity analysis, updated once every three years or when there is a significant zoning or land use change
- Number of acres preserved using local agricultural land preservation funding

The bill establishes a statewide land use goal of increasing the current percentage of growth occurring within PFAs and decreasing the percentage of growth occurring outside PFAs. Recognizing that the 12 planning visions will not be realized unless local jurisdictions set their own goals to make incremental progress towards achieving a statewide land use goal, the General Assembly required local jurisdictions to develop a percentage goal towards achieving the statewide goal. The annual report filed by local jurisdictions must include a local goal, the timeframe achieving the local goal, resources necessary for infrastructure inside the PFA and land preservation outside the PFA, and any incremental progress made towards achieving that local goal.

Project Effects on Land Use

Direct impacts to land use were evaluated based on the effect that the CCT realignments would have on compatibility of land uses, land use patterns, and access to land.

Alignment Modifications

Although the CCT realignments would result in the loss of farmland, alignment modifications S1, S2, S2c and S3 would not result in impacts to overall community land use or zoning for the following reasons:

- Local land use plans and zoning ordinances have been updated, revised, and approved to include policies and guidelines that accommodate the realignment of the CCT and the potential for increased development that could result from the proposed transit improvements
- Although the loss of farmland would change land use patterns, the CCT realignments through Crown Farm and Belward Farm have been formally approved by the City of Gaithersburg and Montgomery County
- On these modified alignments, the CCT will facilitate the achievement of the future land

use visions included in the local land use plans by allowing the parcels within the corridor to be developed as currently planned

- As documented in local plans, communities within the project corridor generally support the realignment of the CCT through Crown Farm, the LSC, Belward Farm, and the Kentlands

Positive and/or beneficial impacts of the CCT alignment modifications include:

- On these alignment modifications the CCT will connect existing and future regional employment, residential, and commercial activity centers in Shady Grove, King Farm, Crown Farm, Watkins Mill Town Center and Kentlands.
- As currently planned, S1, S2, S2c, and S3 provide a necessary link between transportation and land use.
- On these alignments, the CCT supports state and local level smart growth policies by enhancing sustainability, providing multi-modal transportation options, and focusing growth within PFAs

O&M Facilities

The proposed BRT O&M facility at Observation Drive in Clarksburg would not have direct effects on land use since the property was designated as an employment center in the 1994 Clarksburg Master Plan. Rezoning to I-4 is proposed for this property. This classification would allow low-intensity industrial uses such as automotive repair facilities to be located on this site. Therefore, a BRT maintenance facility will be compatible with the proposed zoning and future corridor land uses.

The proposed O&M facility location at Metropolitan Grove is currently located on County-owned property and is part of the Casey-Metropolitan Grove Special Study Area. The proposed O&M facility would not have direct effects on land use as the City of Gaithersburg has incorporated the proposed O&M facility into its 2003 Land Use Plan. Once designed, a site plan for the O&M facility would need to be approved by the County.

Consistency with Area Master Plans

In general, master plans provide a set of comprehensive recommendations and guidelines that reflect a vision for the future development of local communities. Master plan recommendations and guidelines present a vision

for a 20-year time horizon from the date of adoption, although the plans are generally updated approximately every ten years. Local master plans identify the desirability of transportation system improvements in the project area. The Master Plans relevant to the CCT alignment modifications are:

- The *Shady Grove Sector Plan* (described in the 2009 AA/EA)
- The *Great Seneca Science Corridor Master Plan* (described on previous pages)
- The *City of Gaithersburg Master Plan* (described in the 2009 AA/EA)
- The *Clarksburg Master Plan* and *Hyattsville Special Study Area* (described in the 2002 DEIS)

Alignment Modifications

Based on the information stated above and in the 2002 DEIS and 2009 AA/EA, Alternatives S1, S2, S2c, and S3 would be consistent with approved local land use plans. This is not unexpected as these alignment modifications were designed to correspond to the latest local plans.

O&M Facilities

Both proposed O&M facility locations would be consistent with approved local land use plans.

The *Clarksburg Master Plan* (described in the 2002 DEIS) includes the proposed O&M facility site within its Brink Road Transition Area and recommends low-intensity industrial employment uses, such as automobile repair and service, on this site. Additionally, the site will be rezoned to I-4 to continue the clustering of employment locations along I-270 and the CCT.

The 2003 *City of Gaithersburg Land Use Plan* identifies the proposed Metropolitan Grove O&M Facility within its Casey-Metropolitan Grove Special Study Area. Although a site plan approval would be needed from the County, the proposed use is consistent with the 2003 Land Use Plan.

Social Environment

The purpose of this section is to present information on the existing social environment in which the CCT project would be built, focusing on the alignment modifications in the Gaithersburg area. This section includes data for the Metropolitan Washington

Region, Montgomery County, and the Metropolitan Washington Council of Governments (MWCOG) forecasting region. It also includes data from the 2000 US Census, specifically information about population and households, household income and race characteristics. The section compares the growth of Montgomery County to the Region's growth and presents information about the existing neighborhoods, communities, community facilities and services, and parks and recreational facilities in the alignment modification and O&M site areas.

Potential impacts and benefits are also presented in this section. The assessment of potential impacts and benefits of each alternative includes data on displacements and relocations and an assessment of effects to environmental justice (EJ) populations, generally defined as low-income and minority populations. Potential impacts to these resources are discussed along with any potential avoidance, minimization and/or mitigation measures.

Population and Households

The 2002 DEIS presented population and household data based on the 1990 US Census and the 2009 AA/EA presented 2000 US Census data for the original multimodal alternatives (including highway improvements along I-270/US 15, as well as transit improvements to the Original CCT Alignment). This SEA uses data from the 2000 US Census to present information for the evaluation of the alignment modifications developed after the completion of the 2009 AA/EA. **Figure IV-4** shows the census tracts and block groups in Montgomery County and within the current expanded CCT study area. **Table IV-2** summarizes the population and household characteristics for the Metropolitan Washington Region and Montgomery County.

Table IV-3 summarizes the general median household income and race characteristics for the Metropolitan Washington Region and Montgomery County.

Metropolitan Washington Region

The Metropolitan Washington Region includes the following jurisdictions: Washington, DC; the counties of Arlington, Clarke, Fairfax, Fauquier, King George, Loudoun, Prince William, Spotsylvania, and Stafford in Virginia; and the cities of Alexandria, Falls Church, Fairfax, Fredericksburg, Manassas, and Manassas Park

in Virginia; Jefferson County in West Virginia; and Anne Arundel, Calvert, Carroll, Charles, Frederick, Howard, Montgomery, Prince George's, and St. Mary's counties in Maryland. Ten of these counties and cities are included in the Round 7.2a forecasts, but were not included in the Round 6.4a forecasts that were presented in the 2009 AA/EA. They are:

- In Virginia: Clarke, Fauquier, Spotsylvania, and King George Counties, and the City of Fredericksburg
- In West Virginia: Jefferson County
- In Maryland: Howard, Anne Arundel, Carroll, and St. Mary's Counties

The MWCOG determined that the Metropolitan Washington Region grew by approximately 16.2 percent during the period from 1990 to 2000, from approximately 3.9 million to 4.6 million people. The MWCOG expects the regional population to increase by 78 percent between 2000 and 2030, reaching almost 8.2 million persons in 2030 (this growth includes the addition of the cities and counties listed above). The agency anticipates a decline in household size from 2.70 to 2.52 persons per household between 2000 and 2030, which contributes to the growth in the number of households.

Montgomery County

Montgomery County's population grew 16 percent between 1990 and 2000, from about 750,000 to 870,000 people. County population is expected to increase by almost 30 percent between 2000 and 2030, surpassing one million persons in 2020. The number of households is expected to increase by 33 percent between 2000 and 2030. Average household size is expected to decrease between 2000 through 2030 from 2.66 to 2.55 persons per household.

Elderly and Disability Population Characteristics

Table IV-4 summarizes the elderly and disability population characteristics of Montgomery County and the study area. The presence of elderly and disability populations often highlights potential locations of minority and/or low-income communities, often representative of EJ populations. Of the six block groups in the study area, one block group, census tract 7007.05 block group 4, has a higher percentage of elderly population than that of Montgomery County as a whole. Two block groups, census tract 7007.05 block

Table IV-2: Population and Household Characteristics

JURISDICTION	1990	2000	2010	2020	2030	PERCENT CHANGE 2000-2030
Metropolitan Washington Region						
Population (millions)	3.9	4.6	6.7	7.5	8.2	78.3%
Households (millions)	1.5	1.7	2.5	2.9	3.2	88.2%
Average Household Size	2.71	2.70	2.60	2.54	2.52	--
Montgomery County						
Population (millions)	0.75	0.88	0.97	1.08	1.14	29.5%
Households (millions)	0.28	0.33	0.36	0.41	0.44	33.3%
Average Household Size	2.65	2.66	2.64	2.60	2.55	--

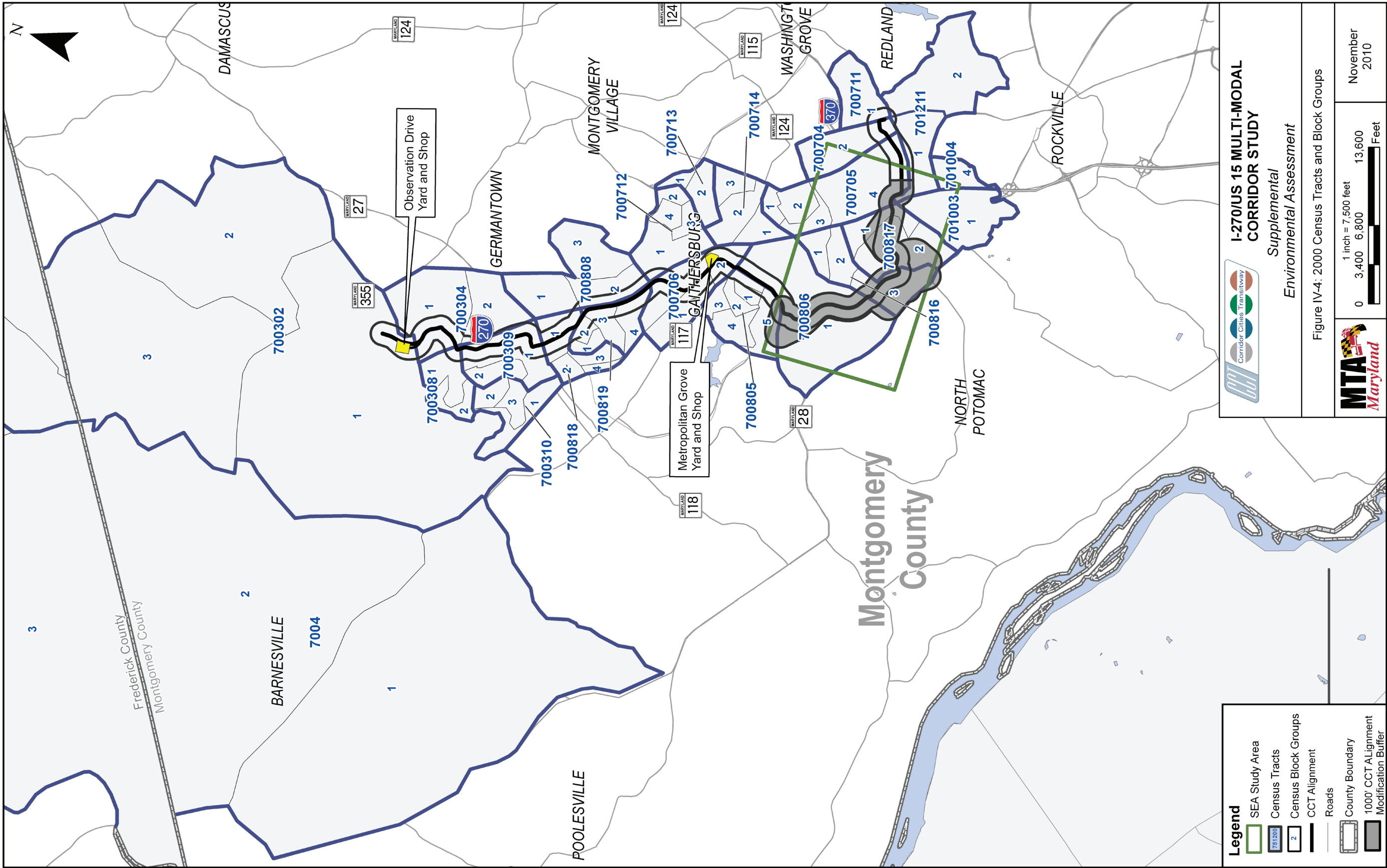
Source: MWCOG Round 6.4a Summary Table, November 2004 and MWCOG Round 7.2a Cooperative Forecasts, November 2009

Table IV-3: General Race Characteristics and Median Household Income in the Metropolitan Washington Region

JURISDICTION	MONTGOMERY COUNTY	TOTAL – METROPOLITAN WASHINGTON REGION
Total Population	873,341	5,756,008
White Alone	518,456	3,417,970
Black or African American Alone	128,252	1,365,705
American Indian and Alaska Native Alone	1,837	15,419
Asian Alone	97,769	354,753
Native Hawaiian and Other Pacific Islander Alone	424	3,144
Other	26,294	146,859
Hispanic or Latino	100,309	452,158
Total Minority	354,885	2,338,038
Median Household Income in 1999	\$71,551	\$61,281

Source: US Census 2000

Figure IV-4: 2000 Census Tracts and Block Groups



group 4 and census tract 7008.17 block group 2, has a higher percentage of disability populations than that of Montgomery County as a whole.

Neighborhoods and Communities

Existing Conditions

Neighborhoods and communities may be defined in several ways. They may be designated within specific boundaries by municipal or county government for jurisdictional or planning purposes. They may also be identified by residents through their sense of community cohesion; this is the sense of unification, “belonging”, or closeness. It can relate to physical characteristics as well as the less tangible perceptions of residents about their neighborhood quality of life. Cohesive neighborhoods or communities may also be represented by citizen organizations to promote their interests. For the purposes of this study, established and emerging neighborhoods and communities are defined in one of five ways:

1. Is an incorporated place
2. Is identified as a Corridor City by Montgomery County
3. Is a locally recognized but unincorporated neighborhood or community
4. Is a neo-traditional community or- mixed-use

development that includes both residential and commercial uses; may include community facilities (i.e., a community center) and/or have a homeowners association or neighborhood association

5. A residential subdivision of 50 lots or more that are approved and programmed or under construction

Existing communities are discussed in the 2002 DEIS, both in the discussion of programmed and pipeline projects (approved but not fully built) and in the discussion of communities and neighborhoods, both found in Chapter III. This section adds new areas of large-scale residential growth (50 or more homes in a single development) that have occurred within the study area since the publication of the 2009 AA/EA. **Figure IV-5** shows the locations of all documented communities and neighborhoods within the expanded study area.

Incorporated Places and Corridor Cities: Relative to the proposed CCT realignments, the following municipalities, unincorporated communities, including Corridor Cities, are in the alignment modification study area:

- City of Rockville
- Shady Grove
- City of Gaithersburg
- Kentlands

Table IV-4: 2000 Elderly and Disability Population Characteristics

CENSUS TRACT/ BLOCK GROUP	TOTAL POPULATION AGE 65+ YEARS	PERCENT OF TOTAL POPULATION AGE 65+ YEARS	TOTAL POPULATION WITH DISABILITY (NUMBER)	PERCENT OF TOTAL POPULATION WITH DISABILITY
7007.05 4	107	14.2%	165	21.8%
7008.05 5	90	3.3%	383	14.0%
7008.06 1	488	5.5%	933	10.6%
7008.16 3	68	4.5%	206	13.7%
7008.17 1	139	6.3%	367	16.7%
7008.17 2	195	8.7%	630	28.1%
Study Area	1,087	6.0%	2,684	14.7%
Montgomery County	97,457	11.2%	186,580	21.4%

Source: US Census 2000

Neighborhoods and Neo-Traditional Communities

Most of the area surrounding the proposed realignments of the CCT has been built out and contains older subdivisions. Newer development will include higher-density development and will focus on connections to other modes of transportation, such as biking, walking, and transit. Since publication of the 2009 AA/EA, newly emerging communities within the area of the proposed alignment modifications include:

- Crown Farm – This development is located southwest of the intersection of I-270 and I-370. It is proposed with a transit-oriented, traditional neighborhood design including a mix of types of residential units and commercial uses on 182 acres. At full build-out, it may ultimately have 2,250 residences and 370,000 square feet of commercial space. The area of the Crown Farm was annexed by the City of Gaithersburg.
- Avalon at Decoverly Phase 2 – Residential development within the Decoverly neighborhood consists of approximately 1,100 townhomes west of Diamondback Drive and multi-family residences/apartments to the east of Diamondback Drive (Avalon at Decoverly). The 168 multi-family units planned for Avalon at Decoverly Phase 2 would complete this development.
- Quince Orchard Vistas – This development is the residential component of the larger Quince Orchard Park mixed-use area in Gaithersburg. The Vistas will be located adjacent to the MedImmune campus, the planned Meadows office development, and the recently-completed Quince Orchard Crescents commercial development. When complete The Vistas will consist of 13 single-family homes, 38 townhomes, and 32 condominiums.

It should also be noted that approximately 9,000 dwelling units have been approved as part of the *Great Seneca Science Corridor Master Plan*. While these dwelling units have not yet been programmed as part of the County's pipeline development, all dwelling units will be constructed in a traditional neighborhood design and will include a mix of residence types as well as some commercial uses. Staging of this project is dependent on the staging for the CCT.

Close to the proposed Observation Drive O&M facility location is the Linthicum East/Summerfield Crossing development, which would contain 157 single family units and 102 townhomes.

Near the proposed Metropolitan Grove O&M site, the Watkins Mill Town Center is proposed for the Casey West site with 1,066 dwelling units and more than a million square feet of retail, office and hotel.

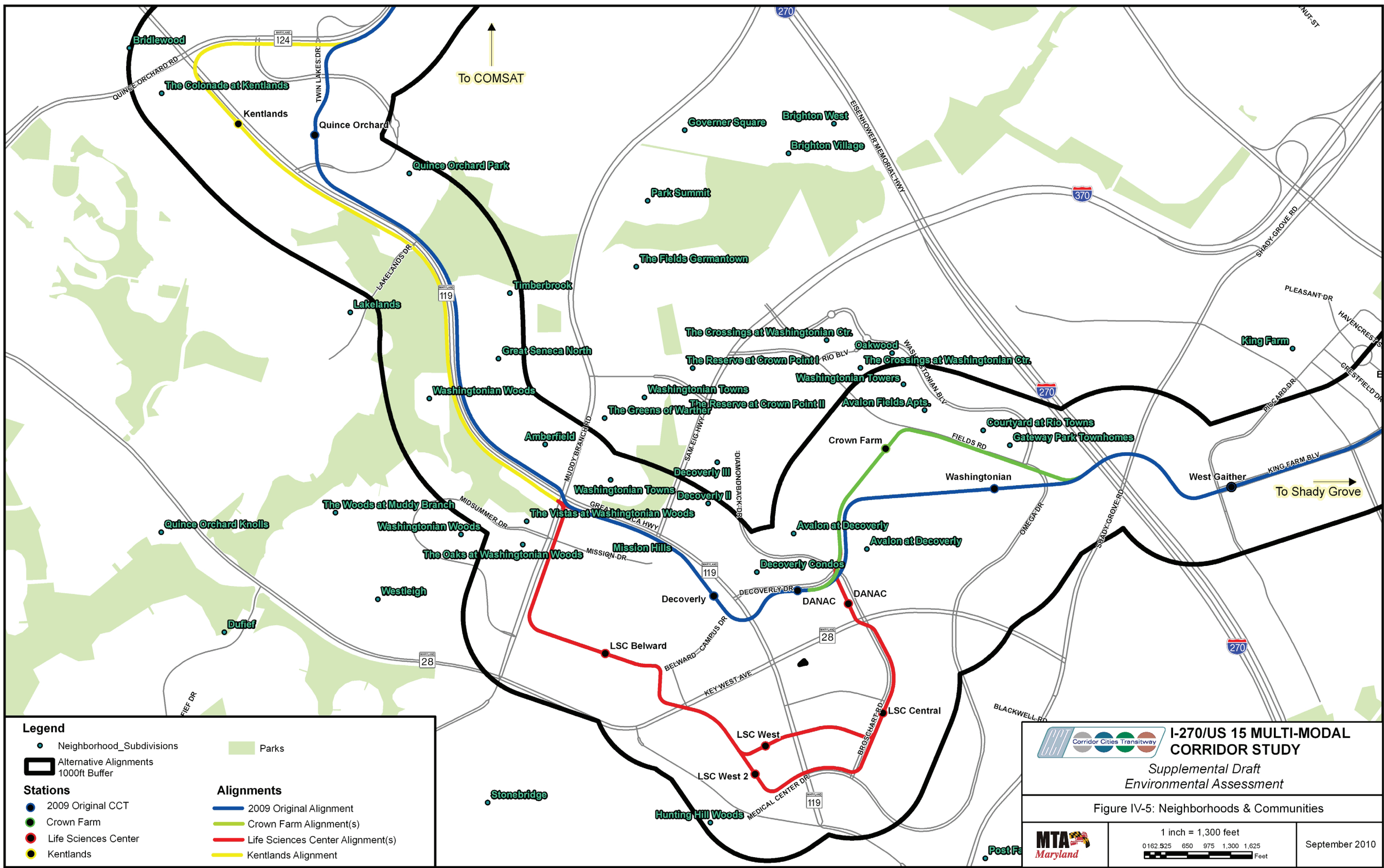
Impacts

Physical characteristics important to neighborhoods include access to and within the neighborhood or community, common historical and/or architectural themes among buildings, and the presence of community institutions such as libraries, churches, and fire stations. To varying degrees the visual and physical impact of the proposed CCT realignments on neighborhoods and communities will be greatest at and around the station sites. These station sites create new visual elements and public activity nodes within the fabric of these neighborhoods and communities.

Access within a neighborhood is characterized by the ability to travel by a variety of modes, including walking and bicycling. In general, the proposed CCT realignments will result in greater transportation mobility for residents. Expanded mobility means greater access to employment centers, public service providers and facilities, including health care, and recreational facilities.

The proposed alignment modifications and their associated stations would have a direct effect on the emerging new communities. The station locations have been configured to serve these new communities and, in particular, to support transit-oriented development in the Quince Orchard Park and Crown Farm developments. The CCT stations, transitway alignment, and potential operations and maintenance sites have been incorporated into the new community design plans. Since the transitway would be close to residential areas there is a potential safety concern where residents may attempt to cross the transitway. The stations, transitway, and potential operations and maintenance sites would be designed with safety fencing, warning signage, lighting, and other measures where appropriate.

Figure IV-5: Neighborhoods and Communities



Community Facilities and Services

Existing Conditions

The I-270 Corridor is home to a wide array of community facilities and services. These are resources that support community safety, cohesion, and quality of life. They include:

- Educational facilities
- Religious facilities
- Libraries
- Health care facilities
- Major social service agencies
- Community facilities and services
- Emergency services
- Parks and recreational facilities

The community facilities located in the area around the proposed alignment modifications are shown in **Figure IV-6** and discussed in more detail below.

The 2009 AA/EA identified several community resources within the corridor, all of which remain today.

Additionally, the 2009 AA/EA identified several planned and programmed resources. Two of these, the fire station located on Key West Avenue and the planned High School in Crown Farm, remain relevant to the proposed CCT alignment modifications. In addition to these resources, new and pending community facilities in or near the study area are listed in **Table IV-5**.

Educational Facilities

The following educational facilities are located within the area of the proposed alignment modifications and the two O&M sites:

- Academy Child Development Center – daycare center
- Katherine Thomas School – provides services for children and adults with learning disabilities and special needs
- John L. Gildner Regional Institute for Children and Adolescents – a community-based public, residential, clinical and educational facility serving children and adolescents with severe emotional disabilities
- The Ridge School of Montgomery County – provides special education and general education programs for sixth through twelfth graders with emotional difficulties
- Alfred D. Noyes Children's Center – is a state-owned and operated detention facility for juvenile males and females. General education, special education, and physical education classes are provided for all youths
- Johns Hopkins University Montgomery County – academic institution dedicated to the sciences and research

Religious Facilities

The Hunting Hill Church, at the corner of Darnestown Road and Key West Avenue, is located within the area of the proposed alignment modifications.

Libraries

There are no libraries located within the area of the proposed alignment modifications and the two O&M sites.

Health Care Facilities

There are two health care facilities located in the area of the proposed alignment modifications and

Table IV-5: Newly Built or Planned Community Facilities

FACILITY TYPE	STATUS	LOCATION
Fire station	Built	Near the police training academy on Key West Road in Gaithersburg
High School	Planned	Washington Blvd. at Fields Road, Crown Farm, Gaithersburg
Elementary School	Planned	Life Sciences Center West, south of Key West Drive
Fire Station	Planned	Northwest Corner of Shady Grove Road and Darnestown Road
North Potomac Recreation Center	Planned	Travilah Road

the two O&M sites. They are the Shady Grove Adventist Hospital and the Psychiatric Institute of Montgomery County.

Community Facilities and Services

There are no community facilities (community centers) located within the area of the proposed alignment modifications or the Observation Drive O&M site. However, the O&M site proposed adjacent to the Metropolitan Grove station area is located on property currently occupied by a vehicle impound lot owned and operated by Montgomery County. The MTA would need to coordinate with Montgomery County on a plan to relocate this facility.

Emergency Services

The Montgomery County Public Safety Training Facility is located within the study area near S2c. The site is bordered by Key West Avenue, Great Seneca Highway, and Darnestown Road and is used as a training facility for firefighters, police officers, and operators of large vehicles. There are no other emergency service providers located within the area of the proposed alignment modifications and the two O&M sites.

Impacts

Impacts to community facilities and services are assessed in terms of direct takings of land and/or buildings as well as changes to ease of access for patrons. Impacts to community facilities of the full Alternatives (with highway and transit components) are described in the 2009 AA/EA and the 2002 DEIS. Impacts related to the proposed alignment modifications are described below.

Direct impacts to community facilities and services are not expected from the alignment modifications for the following reasons:

- The proposed alignment modifications would be located on land that has been set aside for this purpose within the *Montgomery County Master Plan*.
- The taking of portions of parcels and/or buildings within the LSC has also been programmed and approved in the *Great Seneca Science Corridor Master Plan*.
- The CCT would operate on an exclusive right-of-way with limited at-grade crossings, therefore

emergency response services (police, fire, ambulance) would not be affected.

The CCT realignments, however, would have an indirect positive effect on community facilities and services by enhancing access to the existing resources. The proposed CCT realignments would also provide a direct link between activity centers and community resources located within Shady Grove, Crown Farm, all of the LSC districts, and Kentlands.

Parks and Recreational Facilities

Existing Conditions

Parks and recreational areas are identified in **Table IV-6**.

Impacts

S1, S2 and S2c will not impact any parks or recreational facilities. S3 will impact two parks, Washingtonian Woods and Muddy Branch Stream Valley Park/Muddy Branch Park. The impacts will occur adjacent to where the alignment runs along Great Seneca Highway, which abuts both of these parks. Impacts to Muddy Branch Stream Valley Park are also discussed in **Chapter V**.

The Observation Drive O&M site would impact Black Hill Regional Park, and the Metropolitan Grove O&M site would potentially impact Metropolitan Grove Park/ Browns Station Park. Both areas of impact are undeveloped. Coordination is ongoing with the owners of the parks to determine appropriate mitigation measures should an alignment or O&M site be selected that has any direct or indirect effect on these resources.

Avoidance, Minimization and Mitigation

Further design work will be done to see if impacts to Muddy Branch Stream Valley Park, Washingtonian Woods Park, Black Hill Regional Park, and Brown's Station Park can be minimized.

Screening will be used where needed and where feasible to reduce visual impacts of the project.

Displacements and Relocations

An analysis of the potential residential and business displacements that could result from the alignment modifications through Crown Farm, LSC and Kentlands was completed based on preliminary right-of-way estimates. If a build alternative is selected, the number of actual displacements may vary from those

Figure IV-6: Community Facilities and Services

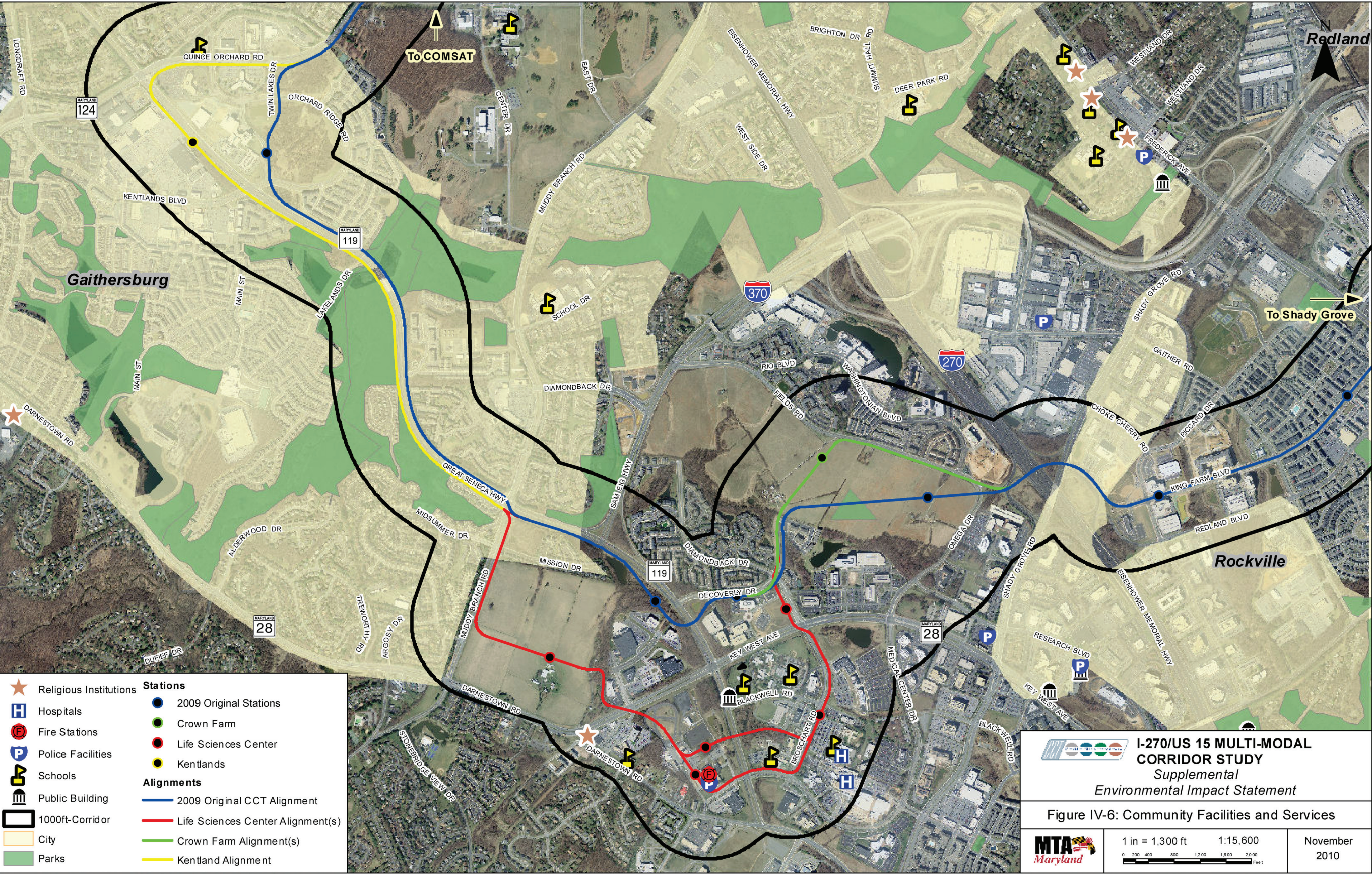


Table IV-6: Parks and Recreational Facilities within the Alignment Modification Study Area and O&M Facility Areas

NAME OF PARK	AMENITIES	SIZE (acres)	JURISDICTION
Green Park	Tot lot, play area, basketball courts, tennis court, hiking trails, dog exercise area	14	City of Gaithersburg
Washingtonian Woods Park	Play area, basketball court, tennis courts, hiking trails	22	City of Gaithersburg
Muddy Branch Stream Valley Park	Passive park	Unknown	City of Gaithersburg
Metropolitan Grove Park/Browns Station Park	Undeveloped	Unknown	City of Gaithersburg
Fields Road Local Park	Investigation ongoing	Unknown	Investigation ongoing
Izaak Walton League	Investigation ongoing	Unknown	Presumed private
Black Hill Regional Park	Undeveloped	1,843	Maryland-National Capital Park and Planning Commission

presented here due to refinements in both the design and right-of-way requirements that will occur during the detailed engineering phase of this project. **Table IV-7** summarizes potential residential and business displacements. Potential displacements would occur as part of one or both of the LSC alignment modifications (S2 and S2c). The locations of potential displacements are identified on the Plan Sheets in **Appendix A**.

The CCT alignments have been planned to minimize property acquisitions and relocations. The project team will continue to coordinate with municipalities during the planning phase of this project as property acquisitions are subject to change as the project plans are refined.

Relocation Process

Affected property owners will receive relocation assistance in accordance with federal and/or state requirements depending on the funding source. The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, with implementing regulations at 49 CFR Part 24, requires that the project shall not proceed into any phase that will cause the relocation of any persons or businesses or proceed with any construction project, until it has furnished assurances that all displaced persons will be satisfactorily relocated to comparable decent, safe and sanitary housing within their financial means, or that

Table IV-7: Summary of Displacements along the Modified CCT Alignments

LOCATION	PLAN SHEET	ALTERNATIVES	NUMBER OF DISPLACEMENTS
Mission Drive at Muddy Branch Road	TRAN 3	S2 and S2c	1 residence
Broschart Road	TRAN 2	S2	1 business

Note: Plan Sheets are in **Appendix A**.

such housing is in place and has been made available to the displaced person. Reasonable moving expenses are also provided for displaced persons or businesses. The Federal Uniform Relocation Assistance and Real Property Acquisition Policies would be executed in a timely and humane fashion. Comparable housing and business space exists on the open market for relocation within the same area and can be completed with minimal effects to the economic well being of those directly affected by the project.

In the event comparable replacement housing is not available for displaced persons or available replacement housing is beyond their financial means, additional financial compensation will be provided through “housing as a last resort” to assure that comparable replacement housing be available for displaced persons. Based on relocation studies it is anticipated that “housing of a last resort” would be utilized to accomplish the re-housing requirements for the build alternatives under consideration. A copy of the Summary of the *Relocation Assistance Program of the Maryland State Highway Administration* is available in **Appendix B** of the **2009 AA/EA** for further reference.

Title VI Statement

It is the policy of the MTA to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964 and related civil rights laws and regulations that prohibit discrimination on the grounds of race, color, sex, national origin, age, religion, physical or mental handicap or sexual orientation in all MTA programs and projects funded in whole or in part by the Federal Transit Administration (FTA). The MTA will not discriminate in transit planning, design, construction, the acquisition of right-of-way, or the provision of relocation advisory assistance. This policy has been incorporated into all levels of the transportation planning process in order that proper consideration may be given to the social, economic and environmental effects of all transportation projects.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, directs federal agencies to “promote nondiscrimination in federal programs substantially affecting human health and the environment, and provide minority and low-income communities access

to public information on, and an opportunity for public participation in, matters relating to human health or the environment.” The order directs agencies to ensure that:

- They do not discriminate on the basis of race, color, or national origin
- They identify and address disproportionately high and adverse human health or environmental effects of their actions on minority and low-income communities
- They provide opportunities for community input in the NEPA process, including input on potential effects and mitigation measures

This EJ analysis determines whether there are disproportionately high and adverse human health and environmental effects on minority and low-income populations associated with the modified CCT alignments and O&M sites.

Method for Identifying EJ Populations

Executive Order 12898 does not define the terms “minority” or “low-income.” However, the Council on Environmental Quality (CEQ) describes these terms in the context of an EJ analysis. The following definitions are the basis for the SEA EJ analysis:

- **Minority Individual** – The US Census Bureau classifies a minority individual as belonging to one of the following groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black (not of Hispanic origin), and Hispanic
- **Minority Populations** – CEQ Guidelines identify minority populations where either (a) the minority population of the affected area exceeds 50 percent or (b) the percentage of a minority population in the affected area is meaningfully greater than the percentage of minority population in the general population (or other appropriate unit of geographic analysis)
- **Low-Income Population** – The US Department of Health and Human Services sets poverty income guidelines. Low-income populations are identified as either a group of low-income individuals living close to one another or a set of individuals who share common conditions of environmental exposure or effect.

This EJ analysis evaluates the racial and income characteristics of persons within the expanded study area. The evaluation consists of the following two steps to determine whether each study area block group meets the “EJ threshold” for further analysis:

Step 1: Calculate minority or low-income populations –

The 2000 US Census provided data for each block group in the study area and for Montgomery County including: (1) the total population, (2) the total minority population, and (3) the total low-income population. These raw numbers helped to determine the percentage of persons in each minority group and persons below the poverty level.

Step 2: Determine if EJ threshold is met – The baseline minority and low-income populations help to identify specific block groups that meet the EJ threshold. Block groups would meet the EJ threshold if:

- The minority or low-income population in the block

group equals or exceeds 50 percent of the population in that block group, or

- The percentage of the minority or low-income population is at least 10 percent higher than the minority or low-income population percentage for Montgomery County.

The following section presents the results of the EJ analysis.

EJ Populations

Montgomery County contains 40.6 percent minority population. This means that block groups in the study area that meet the EJ threshold must equal or exceed 50 percent minority population (since “meaningfully greater” would be a percentage of at least 50.6 percent minority population). **Table IV-8** lists the study area block groups that meet or exceed the EJ threshold for minority populations.

Table IV-8: Minority Population Data for Study Area Block Groups

CENSUS TRACT/ BLOCK GROUP	7007.05 4	7008.05 5	7008.06 1	7008.16 3	7008.17 1	7008.17 2	STUDY AREA	MONTGOMERY COUNTY
Total Population	756	2,739	8,799	1,499	2,192	2,242	18,227	873,341
White Only	335	1,873	6,445	843	1,348	1,334	12,178	518,456
Black or African American Only	90	236	348	147	141	257	1,219	128,252
American Indian and Alaska Native Only	0	0	0	0	0	0	0	1,837
Asian Only	129	318	1,206	328	476	385	2,842	97,769
Native Hawaiian and Other Pacific Islander Only	12	0	0	0	0	17	29	424
Hispanic	190	201	482	74	168	160	1,275	100,309
Other	0	111	318	107	59	89	684	26,294
Total Minority	421	866	2,354	656	844	908	6,049	354,885
Percent Minority	55.7%	31.6%	26.8%	43.8%	38.5%	40.5%	33.2%	40.6%
Meet Minority EJ Threshold	Yes	No	No	No	No	No	–	–

Source: US Census 2000

Montgomery County contains 5.4 percent low-income population. This means that block groups meeting the EJ threshold must (a) equal or exceed 50 percent low-income population or (b) contain a “meaningfully greater” percentage of at least 15.4 percent low-income population. **Table IV-9** lists the study area block groups and percent of low-income population.

All of the block groups within the study area are located within the 1,000-foot impact analysis buffer area for the transitway alignments. In addition, recognizing the transportation effects that could potentially be borne by EJ communities surrounding the corridor, the impact assessments also considered some additional block groups adjacent to the buffer area. These adjacent block groups include census tract 7007.05 block group 2, census tract 7007.05 block group 3, census tract 7008.16 block group 1, and census tract 7008.16 block group 2.

Of the six block groups analyzed in the impact analysis area, one block group, census tract 7007.05 block group 4, met or exceeded the EJ thresholds for minority populations. None of the block groups located within the impact analysis area met the EJ threshold for low-income populations. The block group that met the EJ thresholds within the impact analysis area and the adjacent areas are shown in **Figure IV-7**.

The identified EJ area is comprised of residential developments, neighborhoods, and communities. The adjacent block groups that meet the minority EJ

threshold are located between I-370 and Muddy Branch Road in Montgomery County. Targeted EJ outreach activities were completed for the purposes of this analysis for residential developments, neighborhoods and communities that are located within the block groups that meet or exceed the EJ thresholds and would be potentially affected by the project consistent with the provisions of the Executive Order on Environmental Justice 12898.

Method for Assessing EJ Impacts

Executive Order 12898 requires federal agencies to identify and address, “disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” To comply with the order, the project team considered the location and severity of potential effects on minority and low-income populations within the study area and determined whether the effects were disproportionately high in relation to other areas in the corridor.

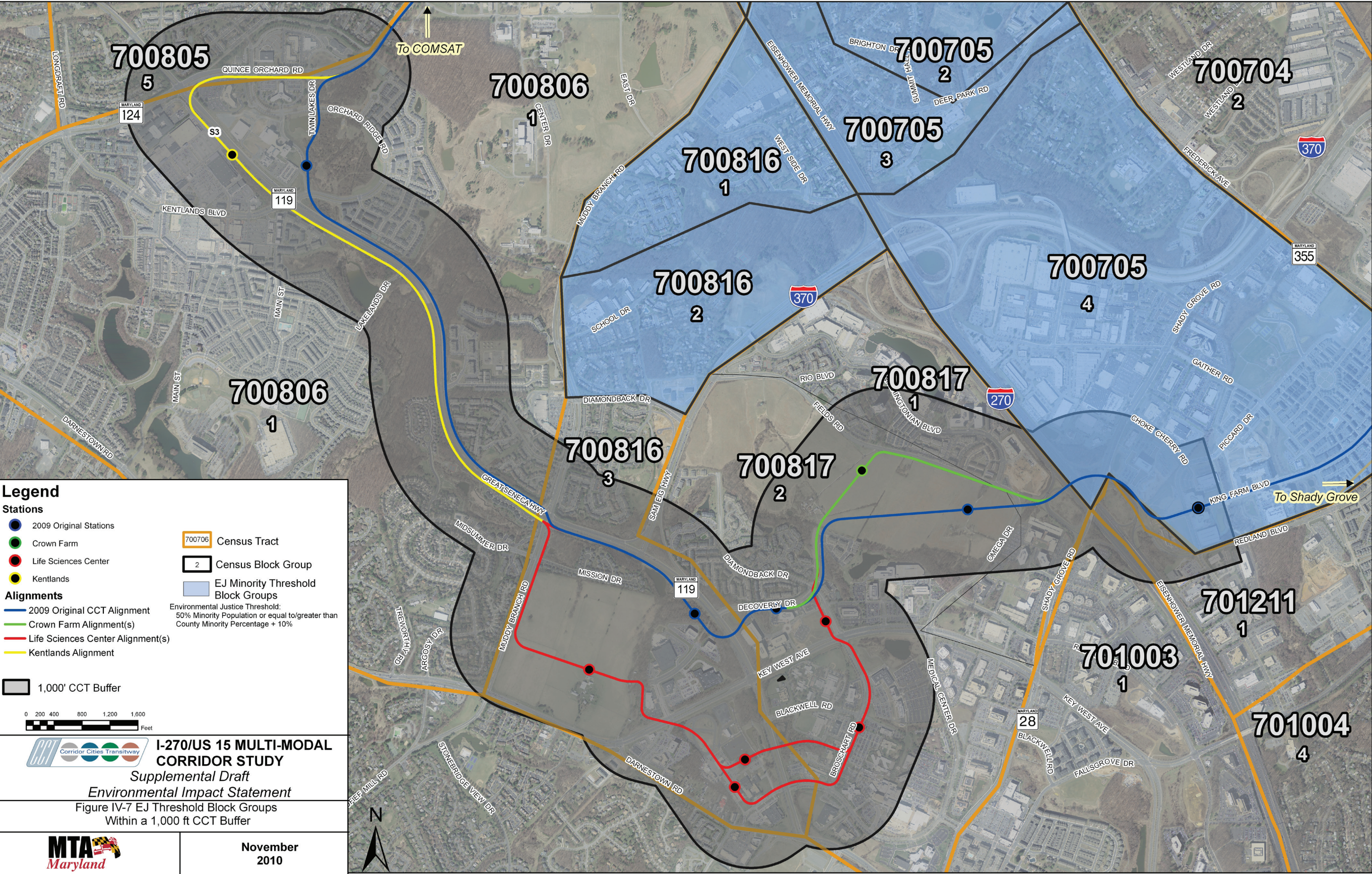
The assessment of disproportionate effects was based on a comparison between affected and non-affected (or less-affected) areas and determined whether impacts fall predominantly or more severely on minority and low-income communities. The EJ analysis is intended to identify any adverse effects that disproportionately occur to minority and/or low-income populations as well as any situations in which proposed mitigation

Table IV-9: Low-Income Population Data for Study Area Block Groups

CENSUS TRACT/ BLOCK GROUP	TOTAL POPULATION	LOW-INCOME POPULATION	PERCENT LOW-INCOME POPULATION	MEETS LOW-INCOME EJ THRESHOLD
7007.05 4	756	85	11.2%	No
7008.05 5	2,739	67	2.4%	No
7008.06 1	8,799	278	3.2%	No
7008.16 3	1,499	25	1.7%	No
7008.17 1	2,192	114	5.2%	No
7008.17 2	2,242	138	6.2%	No
Study Area Total	18,227	707	3.9%	—
Montgomery County	873,341	47,024	5.4%	—

Source: US Census 2000

Figure IV-7: EJ Threshold Block Groups within 1,000-foot CCT Buffer



may be inadequate to fully address the adverse effects to minority and/or low-income communities.

EJ Impacts and Mitigation

The CCT alignment modifications were analyzed for potential impacts in the following categories on EJ populations within 1,000 feet of the transitway alignments:

- Displacements and relocations
- Community cohesion and access
- Economic activity
- Visual conditions
- Noise and vibration
- Traffic and transportation

The potential impacts on the identified EJ areas are discussed by individual impact category.

Effects on Displacements and Relocations in EJ Areas

The EJ areas were assessed for potential property acquisition and/or displacements of residential and commercial buildings. The analysis used preliminary right-of-way estimates, which was the same method used to analyze the build alternatives in the 2002 DEIS. One residential and one business displacement were identified, both along the LSC alignment modifications. Neither of these potential displacements is in an EJ area.

If a build alternative is selected as the locally preferred alternative, the number of actual displacements may vary from the info presented above as a result of refinements in both the design and right-of-way requirements.

Effects on Community Cohesion and Access in EJ Areas

Community cohesion refers to stability, interdependence and social interaction among persons or groups in a community. In some instances, the construction of a transportation facility can have an effect on community cohesion by increasing the amount of physical separation (barriers) between parts of an established community or by creating physical or psychological isolation of residents from one another.

The CCT would improve access to communities and other destinations in the corridor by increasing travel options. The transitway would offer one station in an EJ area (Metropolitan Grove station) and one potential

O&M facility (Metropolitan Grove) in the same EJ area. The addition of this facility and increased options for the communities along the Muddy Branch Road corridor near the communities of Brighton West and Brighton East would increase access to employment areas for EJ populations.

Effects on Economic Activity in EJ Areas

The CCT would improve public transit access throughout the corridor while remaining as community-friendly as possible. Workers would benefit from reduced travel times and improved connections since they can access a wider geographic area for jobs in the same amount of travel time. This improved access would support economic development and evenly distribute benefits to surrounding communities. The analysis of potential economic effects was done on a broader (regional) geographic scale rather than on a site-specific level.

The CCT is expected to support economic development by improving access to employment areas. This increased access through transit will be especially beneficial for those persons who do not drive or own a car. The neighborhoods and communities near the proposed transit stations are expected to benefit from increased access to jobs and other destinations. An additional benefit for EJ communities is transportation choice. Many of the communities have access to local bus and the Shady Grove Metrorail Station. The addition of rapid transit service on the CCT corridor would provide additional service options along the Muddy Branch Road corridor.

In general, proximity to rail is shown to benefit property values due to the increased transit access. This conclusion was based on several measures of property value such as sales prices of single-family homes, apartment rents, and median home value. The benefits of increased property values occur within a reasonable walking distance from the station, generally one-quarter mile to one-half mile. Beyond this distance, the effect of nearby rail transit on property values was negligible (Source: *Impacts of Rail Transit on Property Values*, located on the web at <http://www.apta.com/research/info/briefings/documents/diaz.pdf>).

If a build alternative is selected as the Locally Preferred Alternative, later phases of the project should consider, in greater detail, the potential for property values to

increase near stations along the transitway alignment. This could be an advantage for property owners in EJ areas who are willing to move but a potentially large issue if there are any low-income owners or renters in the vicinity of the stations or owners who want to stay and cannot afford the higher property taxes or rents.

Effects on Visual Conditions in EJ Areas

The CCT would have moderate visual effects since it would travel mostly at ground level. There are several locations where above-grade crossings are being considered including Great Seneca Highway at Muddy Branch Road and Quince Orchard Road at Copper Road. The potential transit station sites would have the greatest degree of visual effect on EJ areas. These station sites will use land within several new and emerging communities.

The Metropolitan Grove Station and O&M facility would add new visual elements and public activity centers within EJ areas. Specific Census data for this area are included in the 2009 AA/EA. The Metropolitan Grove O&M facility would be out of direct sight from the general viewshed, however, design decisions regarding lighting and other elements have not yet been determined. This site is generally surrounded by wooded areas, which lessen the potential for visual intrusion on surrounding areas.

Using appropriate mitigation techniques, minimal visual effects on all areas, including EJ areas, are expected to occur from the project. The transitway facilities would be designed to be visually compatible with the surrounding areas. The extent of potential visual effects on EJ areas would not be considered a “disproportionately high and adverse impact” under the EJ guidelines.

Effects of Noise and Vibration in EJ Areas

Potential noise effects from the project would occur in isolated areas throughout the CCT study corridor. Moderate and severe noise impacts were identified at five locations within the CCT study area for the proposed modified alignments.

Estimates of future noise were completed at 22 locations along the CCT corridor to determine the noise impacts of the alignment modifications and O&M sites. One of these locations, near the proposed Metropolitan Grove

O&M facility, is located in an EJ area. Noise modeling for this area under all build alternatives (BRT and LRT) show no impact. Therefore, no EJ areas near the transitway alignments or associated facilities are expected to be impacted using federal noise criteria.

Effects on Traffic and Transportation in EJ Areas

Traffic studies in the CCT corridor determined that two moderate impacts would occur at signalized crossings; neither are located in EJ areas. Evaluation of the Metropolitan Grove O&M facility, which is located in an EJ area, determined that operations in the area in the 2030 build condition for all alternatives (BRT and LRT) would not impact traffic negatively as all intersections would have a level of service (LOS) of D or better during peak conditions.

Residents and employees in the corridor, including those located in EJ areas, can expect to benefit from the project through improved transportation access and a modest reduction in traffic on local roads with the provision of more public transportation options in the area.

Standard traffic control devices would manage vehicle movements at intersections and near transitway stations. Gates or flashing signals and audio signals, such as horns, would be considered.

During construction, a temporary fence will be used to shield construction activities and equipment from residences and limit pedestrian and vehicular movements to prevent accidents. Appropriate signage will be used to notify travelers of road closures and detours. Road access would be restored as soon as possible, following completion of work in an area.

Emergency vehicle access will be maintained at all times. Maintenance of traffic and construction staging will be planned and coordinated with local jurisdictions and scheduled to minimize traffic delays and interruptions to the maximum extent possible. A Transportation Management Plan will be developed during the final design phase. After mitigation, minor traffic or transportation effects on adjacent communities, including the EJ areas, are expected from the transitway alignments and associated facilities. The extent of potential traffic effects on EJ areas would not be considered a “disproportionately high and adverse impact” under the EJ guidelines.

Conclusion

The analysis identified those block groups where the minority or low-income populations met the EJ threshold within the 1,000-foot study area limits and adjacent to those areas where EJ populations might be impacted. To the extent they have been studied, the potential effects to land use, community facilities and services, air, noise, public health and safety, visual effects, and traffic and transportation with regard to EJ areas do not present an adverse impact. Therefore there would not be a “disproportionately high and adverse impact” under the EJ guidelines.

Public Involvement

In general, support of public involvement activities from a community-wide perspective included outreach by the Multi-Modal Corridor Study project team to the general public through media, the project website, community events and several public meetings and hearings. The team also contacted public and private social service agencies, community action and religious organizations, schools and libraries to request additional information to supplement census data regarding the location and needs of EJ populations. The project team contacted these organizations through letters anticipating that groups would offer information on existing, targeted, local community outreach programs and possess knowledge of specific locations of EJ populations in 2006 and in 2007. As a result of limited feedback from the initial effort, the team launched a strategic environmental justice outreach and education program in March 2009.

The project team identified community locations and neighborhood gathering places on a base map with census tracts that showed higher concentrations of minority and low-income populations. Over several months, the team completed neighborhood field assessments and conducted in-person and telephone interviews with grassroots organizations, planners and residents.

In addition, bilingual (English and Spanish) bus placards, flyers and announcements were developed and displayed in EJ residential and business service areas including the Upcounty Regional Services Center, food banks, shelters and other facilities. Religious organizations and schools located within census tracts that exhibited higher than countywide averages for minority and low-income populations received the bilingual project flyer explaining the project, publicizing the 2009 AA/EA Public Hearings, and offering them the opportunity to meet and discuss the project with the project team. Over 600 flyers were delivered to Summit

Hall Elementary School and Fox Chapel Elementary for kindergarten through third grade in these EJ areas.

The team also contacted or attempted to contact those included on the 2008 EJ Contact List. This list was developed in 2006 to assist with the outreach letters to community groups and advocates. Three surveys were created to assist with this effort, focusing on the religious community, neighborhood groups and advocates. Of the 135 EJ contacts listed, the team reached 105 people and organizations.

The team also coordinated several community briefings and presentations for several Frederick County Neighborhood Advisory Councils (NACs) in EJ areas, the communities of Brighton West, Brighton East and Fireside including one fully bilingual presentation, and hosted a booth at a Hispanic Chamber of Commerce event. Current outreach activities also include grocery store outreach.

In addition to the above activities, the team also conducted outreach at MARC and Metrorail stations within the corridor, including the Frederick and Monocacy MARC Stations, Metropolitan Grove and Germantown MARC Stations and the Shady Grove Metrorail Station.

Public involvement has been integrated throughout this project planning study. The purposes of the public involvement process are to reach out to all populations that would be directly and indirectly affected by the project, including minority and low-income populations, to provide information and to generate input on the project. Advertisements for the 2009 AA/EA public hearings for this project were advertised in the following:

- *The Baltimore Sun*
- *The Washington Post*
- *The Montgomery Gazette*
- *The Montgomery Journal*
- *The Afro-American (Washington, DC)*
- *El Montgomery*
- *The Asian Fortune*
- *The Washington Jewish Weekly*
- *The Frederick News Post*
- *The Frederick Gazette*

Notices were also distributed to a mailing list that included all property owners and residents within and slightly beyond the study area. Additional outreach included meetings with the homeowners associations and civic associations in the corridor.

The project mailing list has also been expanded to encompass a wider area and includes all census block groups identified for the study area. The list includes a 1½-mile corridor surrounding the CCT alignment.

If a build alternative is selected as the locally preferred alternative for transportation improvements, MTA will coordinate with the affected communities to develop a mitigation program, if needed, to meet the needs of EJ areas prior to final project approval. The MTA will reassess the preliminary conclusions of this analysis based on input from the public involvement program. The project team will continue to involve minority and low-income populations in the project planning process during later stages of the project.

Economic Environment

Existing Conditions

Both of the proposed O&M sites, as well as each of the proposed alignment modifications, including new station locations, would operate in the same economic environment described in the 2009 AA/EA and the 2002 DEIS. While more up-to-date employment numbers are available now, the general characteristics of the economy of the I-270/US 15 corridor and the surrounding economic region of which it is a part still apply.

The updated employment estimate for Montgomery County is 510,000 jobs – 10,000 more than the 2005 estimate.

In addition, the projected future employment figures have been updated as part of the revised employment and population projections developed by the Metropolitan Washington Council of Governments (MWCOCG). These updates, known as Round 7.2a Cooperative Forecasts, were approved on October 14, 2009. Round 7.2a figures are used in the modeling efforts that produced the ridership projections described in **Chapter III**. Forecasted 2040 employment for Montgomery County is estimated to be 723,000, representing 42 percent growth (213,000 more jobs) compared to 2010.

Economic Impacts

Because the alignment modifications are relatively minor and the location of an O&M facility is relatively inconsequential from a broad economic perspective, the economic impacts will be generally the same as those described in the AA/EA and the 2002 DEIS. Overall, as stated in the AA/EA, the build alternatives will create relatively small positive economic development effects when compared with the large amount of economic growth that is forecasted to occur in the project area with or without the project.

Impacts of Alignment Modifications

Access-related impacts on the economy as described in the AA/EA may be slightly greater with the proposed alignment modifications because the modifications are designed to bring transit stations closer to planned housing, jobs and activity centers, enhancing the potential for accessibility benefits.

By providing mobility choices that make connections between homes, jobs, and shopping opportunities faster, less expensive, or easier, the following benefits of accessibility may be enhanced with the alignment modifications:

- The workforce in the region may experience an increase in productivity (to the extent that less time is spent commuting)
- Local quality of life may be enhanced (to the extent less time or money is spent on transportation)
- Retail locations near future station areas may experience increases in sales
- Development in station areas may occur sooner or be of a higher value or density with the proposed alignment modifications, thus increasing local government tax revenues
- The job-creation effects of project construction will be increased to the extent that the alignment modifications increase project costs (described in **Chapter III**). Job creation derived from ongoing operation and maintenance of the project will be similar with or without the alignment modifications and regardless of the selection of a site for the O&M facility.

Impacts of O&M Site Locations

The impact on the overall economy of an O&M site in one location versus another will be the same.

It should be noted that the impacts described in the AA/EA and the DEIS were impacts of the combined transit and highway components of the original alternatives. The increases in impacts described above would be of a smaller scale, representing only a part of the impact of the transit component alone.

Avoidance, Minimization and Mitigation

No mitigation is necessary as overall benefits are expected to be positive.

Cultural Resources

Existing Conditions

Cultural resources include historical, architectural and archaeological sites. The 2009 AA/EA identifies and describes cultural resources found within the Area of Potential Effect (APE) of the Original CCT Alignment (see **Figure IV-8**). Both of the O&M sites are located within this APE buffer, however some of the proposed alignment modifications extend outside of the APE.

Chapter IV of the **2009 AA/EA** provides a detailed summary of the regulatory framework and methodology for cultural resources. A summary of all consultation that has been done to date related to Section 106 of the National Historic Preservation Act of 1966, is also included in this section.

Impacts

The S1 alignment crosses part of the England/Crown Farm (Maryland Inventory of Historic Places #M: 20-17), which is a National Register – eligible historic site. This resource is referred to as Crown Farm throughout this document.

S2 and S2c both cross part of the proposed National Register boundary for the Ward House (Maryland Inventory of Historic Places #M: 20-21) on the grounds of Belward Farm. Impacts to these two historic properties are discussed in more detail in **Chapter V, Section 4(f)**.

In addition to historic sites, it is possible that the alignment modifications may also disturb archaeological resources given the long history of human habitation in the area.

The areas of proposed alignment modifications will require additional archaeological research and review if one or more of them is selected as part of the Locally Preferred Alternative. Further archaeological investigation will also be required on the remaining approximately 12 miles of the corridor not associated with the Gaithersburg area alignment modifications.

Natural Environment

Topography, Geology and Soils

Existing Conditions–Topography

Much of the topographic landscape within the Gaithersburg area of the CCT has been manipulated for development, such as the filling of historic wetlands along streams, raised berms for highways, and grading of topographic relief for the urban street grid. The undeveloped areas within the stream valleys of Muddy Run and its tributaries have base elevations of 335 feet while other areas are more rolling with the highest elevation at 475 feet above sea level (USGS 1985).

Topography associated with the Observation Drive and Metropolitan Grove O&M sites remains unchanged since the 2002 *Natural Environmental Technical Report for the I-270/US 15 Multimodal Study* (NETR).

Existing Conditions–Geology

The existing conditions for geology have not changed since the 2002 NETR. Refer to the 2002 NETR for a description.

Existing Conditions–Soils

Several of the soil series identified within the 2002 NETR are the same as those identified within the Gaithersburg area of the CCT corridor due to the project's close proximity to the Original CCT Alignment as shown in **Table IV-10** and **Table IV-11**. Detailed descriptions of those soil series can be found in the 2002 NETR. The new alignments within the Gaithersburg area of the CCT corridor traverse three additional soil series not previously discussed in 2002 NETR or other subsequent documents. Those soil series include Travilah silt loam (37B), Urban Land-Wheaton complex (67UB), and Urban Land (400).

Existing Conditions—Prime Farmland Soils and Farmland of Statewide or Local Importance

The county lists for prime farmland and farmland of statewide or local importance for Montgomery County were obtained from the United States Department of Agriculture National Resources Conservation Service (USDA-NRCS) *Soil Data Mart* (USDA 2010). **Figure IV-9** shows a map of the prime farmland soils and soils of statewide importance within the Gaithersburg area of the CCT corridor.

The Glenelg silt loam with three to eight percent slopes (2B) is the only prime farmland soil identified within the Gaithersburg area of the CCT corridor. Occoquan loam (17B), another prime farmland soil, is within the Observation Drive O&M site. The detailed description of this soil series can be found within the 2002 NETR.

The proposed alignment modifications to the CCT corridor traverse three soils series identified as farmland of statewide importance that include Gaila and Glenelg

Table IV-11: Soil Series within the O&M Facility Sites

MAP UNIT	SOIL SERIES	SLOPE
Metropolitan Grove		
1C	Gaila silt loam	3-8%
2B	Glenelg silt loam	3-8%
66UB	Wheaton-Urban land complex	0-8%
West Old Baltimore Road		
16D	Brinklow-Blocktown channery silt loam	15-25%
17B	Occoquan loam	3-8%
17C	Occoquan loam	8-15%

Source: USDA, 2010

Table IV-10: Soil Series within the Gaithersburg area of the CCT Corridor

MAP UNIT	SOIL SERIES	SLOPE
1C	Gaila silt loam	3-8%
2B	Glenelg silt loam	3-8%
2C	Glenelg silt loam	8-15%
5A	Glenville silt loam	0-3%
6A	Baile silt loam	0-3%
16D	Brinklow-Blocktown channery silt loam	15-25%
35B	Chrome and Conowingo	3-8%
35C	Chrome silt loam	8-15%
37B	Travilah silt loam	8-15%
54A	Hatboro silt loam	0-3%
66UB	Wheaton-Urban land complex	0-8%
67UB	Urban land-Wheaton complex	0-8%
400	Urban Land	N/A

Source: USDA, 2010

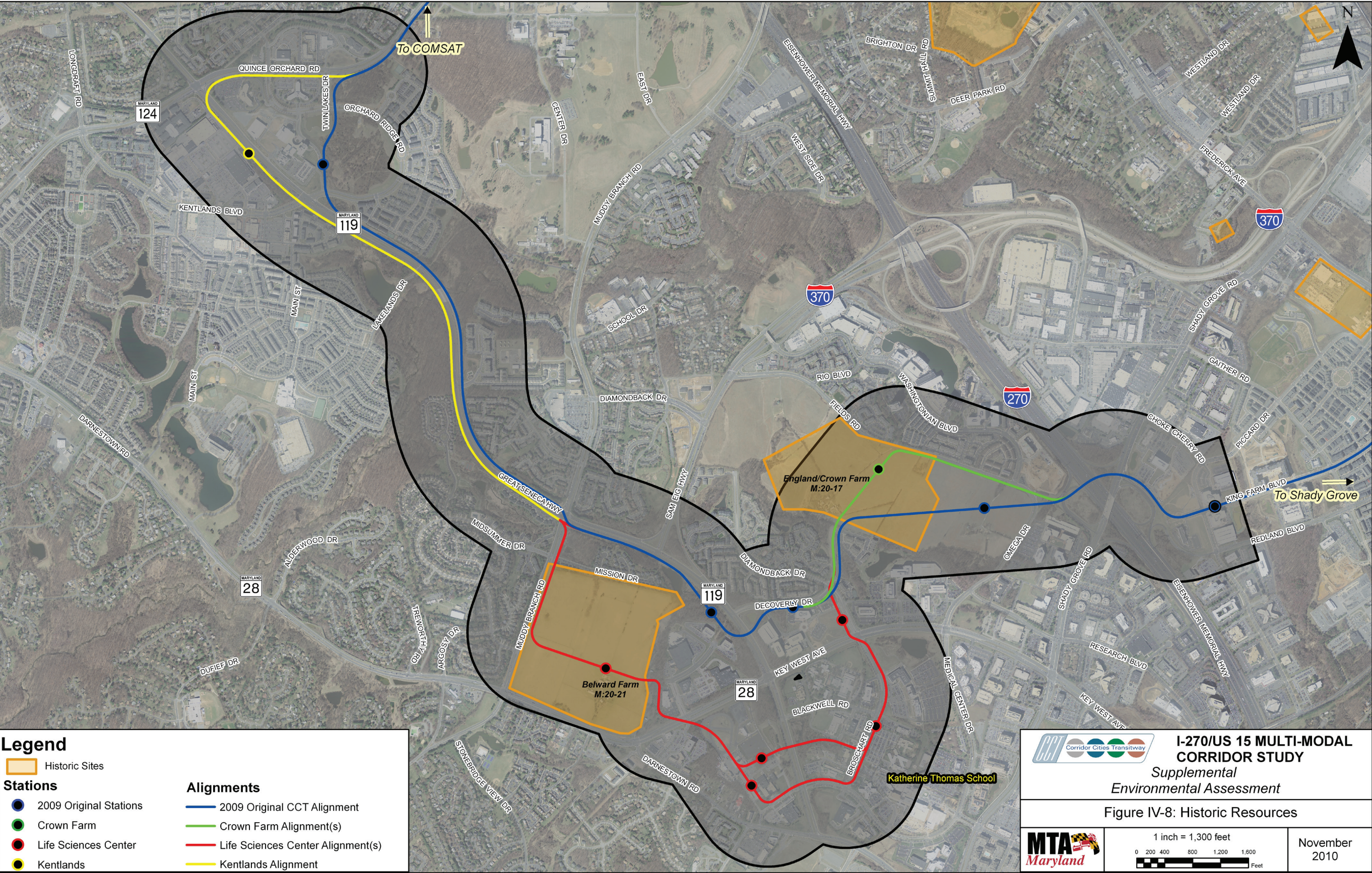
silt loam with eight to 15 percent slopes (1C and 2C) and Travilah silt loam with three to eight percent slopes (37B). The Gaila and Glenelg soils series are described in detail in the 2002 NETR. The Travilah series consists of moderately deep, somewhat poorly drained soils with moderately slow permeability. They formed in residuum that weathered from serpentine in the Piedmont Plateau.

Impacts—Topography

Topographic impacts from each of the alignment modifications are expected to be minimal. The alignments will either maintain the existing topography, as some of them occur within existing roadways or, in most cases, parallel the roadway or require grading that would amount to a relatively small incremental change to the existing topography. Changes to topography would occur primarily from reconfiguring existing roadways to support aerial crossings and tunnel options, as well as widening the existing roadway.

The Crown Farm Alignment would have the least effect on topography. The Life Sciences Center Alignment would have the greatest effect on topography due to possible tunnel options, which would be constructed using the “cut and cover” method, along with underground boring machines and possibly blasting, if rock is encountered.

Figure IV-8: Historic Resources



O&M Facilities

The Observation Drive site would require extensive grading to make the site level as it is currently situated at the top of a hill.

Minimal grading would be required for the paved portions of the Metropolitan Grove site; however, a portion of the site is located on a steep hillside that would require extensive grading and fill to accommodate the infrastructure of an O&M facility.

Impacts–Geology

Effects on study area geology would be greatest for the Life Sciences Center alignments due to the tunnel options. All of the tunnel options could affect the geologic resources in the corridor, although these changes would be limited to the tunnel section itself where rock would be bored and removed for construction of the tunnel.

O&M Facilities

Minimal impacts to geologic resources are anticipated for the Metropolitan Grove site. Depending on the depth of grading required for the Observation Drive site, geologic resources may be impacted.

Detailed geotechnical investigations will be undertaken in later phases of the project to determine the specific nature of the geologic formations within the tunnel sections. This information will be used for design of the tunnel sections and for development of construction techniques tailored to the specific geologic conditions in the corridor.

Impacts–Soils

Because of the urbanized nature of the study area, the majority of soils potentially affected by the project have already been disturbed, manipulated, or covered by development. Additional soil disturbances would occur for all of the proposed alignments. Other potential impacts that could occur include changes to drainage patterns within or adjacent to the right-of-way. However, these effects should be minimal and reduced by required Stormwater Management (SWM) facilities.

Soil types and their limitations for construction will be evaluated in detail during later phases of the project. Detailed geotechnical investigations will be conducted to determine specific soil characteristics along the selected alignment so that construction techniques and

environmental safeguards can be developed to address any limitations. To minimize potential effects from soil disturbances, proper slope and soil stabilization techniques will be used in work areas, both during and after construction, to prevent potential sedimentation of nearby waterways. Sediment and erosion controls and SWM facilities will be implemented in the project area in accordance with the Maryland Department of Environment (MDE) *2000 Maryland Stormwater Design Manual, Volumes I & II*.

Impacts–Prime Farmland Soils and Farmland of Statewide or Local Importance

A majority of the areas surrounding the alignment modifications that are designated as potential prime farmland soils and farmland of statewide and local importance are already developed. Once developed these soils are no longer considered prime farmland and farmland of statewide or local importance.

Impacts to both categories of farmland soils are shown in **Table IV-12**.

Crown Farm Alignment (S1)

The Crown Farm alignment could impact between 5.20 and 6.21 acres of prime farmland soils and between 0.29 and 1.63 acres of farmland soils of statewide and local importance. A majority of these impacts would occur within the Crown Farm. For this discussion there are two possible Crown Farm alignments, as S1 can connect to either S2/S2c or to the Original CCT Alignment, with each connection impacting a different amount of farmland soils. The S1 to LSC alignment option would have the most impact to prime farmland soils and to farmland soils of statewide or local importance compared to the S1 to Original CCT Alignment.

Life Sciences Center Alignment Options (S2 and S2c)

The Life Sciences Center alignments could impact between 8.43 and 8.75 acres of prime farmland soils and 1.05 acres of farmland soils of statewide or local importance. The S2c alignment option would have a slightly larger effect on prime farmland soils.

Kentlands Alignment (S3)

The Kentlands Alignment would impact 3.75 acres of prime farmland soils and 3.40 acres of farmland soils of statewide or local importance.

O&M Facilities

The O&M facilities would have a larger effect on prime farmland soils than any of the CCT alignment modifications being considered. The Observation Drive site could impact 12.76 acres of prime farmland soils and 2.20 acres of farmland soils of statewide or local importance. The Metropolitan Grove site could impact 10.19 acres of prime farmland soils and 1.73 acres of farmland soils of statewide or local importance.

Avoidance and Minimization

The linear nature of the proposed CCT alignment modifications and the extensive coverage of the study area by prime farmland soils and farmland soils of statewide or local importance makes complete avoidance impossible. The impacts associated with the alignments are not anticipated to interrupt viable farm operations or jeopardize the financial stability of these businesses. It should be noted that master plan documents for Montgomery County show that many areas presently in agricultural use are zoned for development.

A Farmland Conversion Impact Rating form, in accordance with the Farmland Protection Policy Act

(FPPA), was completed for this project and submitted to the Natural Resources Conservation Service for Montgomery County. Should any of the alignment modifications become part of the LPA, this form will be revised and resubmitted as appropriate.

Groundwater

Existing Conditions

There are no changes to existing groundwater conditions since the 2002 DEIS and 2007 NETR.

Impacts

The Alignment options and the proposed O&M facilities are not expected to substantially affect groundwater within the project areas. These alignments and O&M facilities would be completely constructed on the ground surface and only minor changes to the movements of the shallow groundwater table are likely during grading and construction. Any runoff would be treated in accordance with MDE guidelines for SWM and released to surface waters.

The Life Sciences Center alignment modifications could affect groundwater as a result of the tunnel components. Tunneling could intercept groundwater resources in the shallow aquifers of the Piedmont. Tunnel boring in the

Table IV-12: Impacts to Prime Farmland Soils and Farmland Soils of Statewide or Local Importance

ALIGNMENT	SEGMENT	PRIME FARMLAND SOILS (acres)	FARMLAND SOILS OF STATEWIDE OR LOCAL IMPORTANCE (acres)
Crown Farm Alignment	S1 to LSC	6.21	1.63
	S1 to Master Plan	5.20	0.29
Range of Impacts for Crown Farm Alignment		5.20-6.21 acres	0.29-1.63 acres
Life Sciences Center Alignments	S2	8.43	1.05
	S2c	8.75	1.05
Total Impacts for Life Sciences Center Alignment		8.43-8.75 acres	1.05 acres
Kentlands Alignment	S3	3.75	3.40
Range of Impacts for Kentlands Alignment		3.75 acres	3.40 acres
Operation and Maintenance Facilities	Observation Drive	12.76	2.20
	Metropolitan Grove	10.19	1.73
Range of Impacts for O&M Facilities		10.19-12.76 acres	1.73-2.20 acres

Source: USDA, 2010

Legend

- Prime Farmland Soils
- Soils of Statewide Importance
- Landmarks
- Alignments
- 2009 Original Stations
- Crown Farm
- Life Sciences Center
- Kentlands
- 2009 Original CCT Alignment
- Crown Farm Alignment(s)
- Life Sciences Center Alignment(s)
- Kentlands Alignment

Stations

- 2009 Original Stations
- Crown Farm
- Life Sciences Center
- Kentlands

Alignments

- 2009 Original CCT Alignment
- Crown Farm Alignment(s)
- Life Sciences Center Alignment(s)
- Kentlands Alignment

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Supplemental Environmental Assessment
 Figure IV-9: Prime Farmland Soils and Farmland of Statewide or Local Importance

1 inch = 1,300 feet

0 200 400 800 1,200 1,600 Feet

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Piedmont would likely intercept the rock fractures that are typical of this physiographic province, potentially causing a minor change in localized groundwater paths. These minor changes, however, are not expected to affect overall groundwater flows or quantities.

Avoidance, Minimization and Mitigation

During the geotechnical investigations that would occur in later phases of the project a groundwater testing program would be undertaken to identify any potential groundwater or soil contaminants that could be encountered during tunnel construction.

Surface Waters

Existing Conditions

All methodologies and regulatory context associated with surface waters is described in detail in the 2007 NETR. There are 18 Waters of the US that were flagged within the Gaithersburg area of the CCT corridor. Of these, 10 were identified as perennial streams (WUS1, WUS6, WUS8, WUS14, WUS21, WUS22, WUS24, WUS27, WUS28, and WUS29), four as intermittent streams (WUS5, WUS7, WUS12, and WUS39), and four as ephemeral channels (WUS28, WUS31, WUS33, and WUS40). There are two palustrine, open water systems (W15 and W18) identified within the Gaithersburg area of the CCT corridor and are being described within this section as they are mitigated the same as streams. It should be noted that many of the newly identified resources are associated with the Section 4(f) avoidance alignments and not the primary alignment modifications intended to better serve the future Crown Farm and Belward Farm developments. Streams in the vicinity of the proposed alignment modifications are mapped in **Appendix A**.

There were no Waters of the US located within the proposed Observation Drive and Metropolitan Grove O&M sites. The limits of disturbance for the proposed Metropolitan Grove O&M site has been further refined since the 2007 NETR, excluding most of the streams and wetlands that were initially identified. One previously identified stream (WUS3) is no longer present as the SWM pond upslope of this barely identifiable channel is no longer draining to this area. The channel is not clearly defined and lacks bed and banks, which are the indicators typically used in identifying a perennial or intermittent stream. An ordinary high water mark, a typical indicator of an

ephemeral channel, is barely visible and upon further investigation, dissipates into the upland forest.

All of the surface waters in the study area are classified by the Maryland Department of the Environment (MDE) as Use I. See the Water Quality section in **Chapter III** of the **2002 DEIS** (e.g., **Table III-43**) for further details on Use I streams within the Gaithersburg area of the CCT corridor.

Most of the streams identified within the new alignments of the CCT corridor are first order streams ranging in size from three to six feet wide. The second order streams range in size from three to 12 feet wide. Only one third order stream, Muddy Branch, is present within the new alignments of the CCT corridor. It averages 15 feet in width. The majority of the stream channels within the expanded CCT project area are situated in forested stream valleys that are very disturbed due to the adjacent roadways and surrounding development. The forested stream valley associated with the mainstem of Muddy Branch (WUS1) is less disturbed than most within the project area.

Impacts

Waters of the US are regulated under Section 401 and 404 of the Clean Water Act. Direct impacts to stream channels (**Table IV-13**) would require a permit from the US Army Corps of Engineers (USACE) as part of Section 404 for the discharge of dredge or fill material into project surface waters. A 401 Water Quality Certification is included as part of the Section 404 permit process to ensure that a project will not impact Maryland water quality standards. Any work performed within the waterway will require a waterway construction permit to assure that activities in a waterway or its floodplain do not create flooding of adjacent properties, maintain fish habitat and migration, and ensure that waterways are protected from erosive measures.

Impacts are primarily related to streams that cross perpendicular to the CCT corridor or parallel the existing roadways, and would be affected when existing roads are widened to accommodate the CCT alignments. Impacts to streams that are currently bridged would be temporary as these existing structures would be extended to accommodate widening. In streams where new culverts are proposed the impacts would be permanent.

Crown Farm Alignment (S1)

The Crown Farm Alignment could impact 88 linear feet of perennial streams with no impacts to intermittent streams or ephemeral channels.

The Original CCT Alignment showed a larger impact to the same stream system than will potentially be impacted by the Crown Farm Alignment. However, since the publication of the 2009 AA/EA, Decoverly Drive was extended and the stream was placed in a twin box culvert reducing the original impact to this stream system.

Life Sciences Center Alignment (S2 and S2c)

Depending upon which option is chosen, the Life Sciences Center Alignment could impact 51 linear feet of perennial streams and either 0 or 68 linear feet of intermittent streams. Impacts to ephemeral channels range between 78 and 146 linear feet. Impacts to open water areas, mainly SWM ponds, would not occur.

The Original CCT Alignment had higher impacts to perennial/intermittent streams (197 linear feet) compared to the Life Sciences Center alignments. However, impacts to ephemeral channels for the

Original CCT Alignment were lower (80 linear feet) than those anticipated for S2.

Kentlands Alignment (S3)

The Kentlands Alignment would impact 65 linear feet of perennial streams, 51 linear feet of intermittent streams, and 18 linear feet of ephemeral channels.

The Original CCT Alignment would impact more linear feet of perennial and intermittent streams (1,824 linear feet combined) than the Kentlands Alignment. Also, ephemeral channel impacts are significantly higher in the Original CCT Alignment with approximately 960 linear feet of impact. However, recent development within the northern portion of the CCT corridor has eliminated the ephemeral streams within this area reducing the total impact to 661 linear feet for the Original CCT alignment.

O&M sites

Impacts to perennial/intermittent streams and ephemeral channels within the Observation Drive and Metropolitan Grove sites are not anticipated.

Table IV-13: Waterway Impacts

ALIGNMENT	SEGMENT	PALUSTRINE OPEN WATER SQUARE FEET (acres)	PERENNIAL STREAMS (linear feet)	INTERMITTENT STREAMS (linear feet)	EPHEMERAL CHANNELS (linear feet)
Crown Farm Alignment	S1 to LSC	0	88	0	0
	S1 to Master Plan	0	88	0	0
Impacts for Crown Farm Alignment		0	88	0	0
Life Sciences Center Alignments	S2	0	51	68	146
	S2c	0	51	0	78
Range of Impacts for Life Sciences Center Alignment		0	51	0-68	78-146
Kentlands Alignment	S3	0	65	51	18
Range of Impacts for Kentlands Alignment		0	65	51	18
Operation and Maintenance Facilities	Observation Drive	0	0	0	0
	Metropolitan Grove Road	0	0	0	0
Impacts for O&M Facilities		0	0	0	0

Source: USDA, 2010

Avoidance and Minimization

Complete avoidance of impacts to surface waters is not possible due to the number of these systems in the project area and their orientation perpendicular to the proposed CCT alignments. However, impacts have been avoided or minimized wherever possible through the realignment of the transitway. Investigations of further avoidance and minimization measures are ongoing and will continue throughout all phases of engineering design for the project.

During the final design phases of the project, bridges and culverts will be sized to maintain the geomorphic stability of the stream channels as bankfull and flood-prone elevations are evaluated. Consideration will be given to the full range of crossing options including bridging and culvert designs such as bottomless arch and depressed culverts that allow for the maintenance of a natural stream bottom and reduce the risk of creating barriers to fish movement.

Short-term construction impacts will be minimized through strict adherence to MDE erosion and sediment control procedures and stormwater management regulations. These procedures include the use of BMP and structural controls such as the minimization of exposed soils through vegetative cover, use of contouring and diversion to reduce water velocities, routing of runoff to retention basins and installation of control structures such as sediment fences. For Use I surface waters, in-stream work may not be conducted during the period March 1 through June 15, inclusive, during any year. Stormwater management plans will be in compliance with MDE requirements and will be designed to treat both quantity and quality of stormwater runoff prior to discharge into receiving waters.

Scenic and Wild Rivers

Existing Conditions

There are no scenic and wild rivers within the new alignment modifications under discussion or within the proposed O&M sites.

Impacts and Avoidance/Mitigation

Impacts to scenic and wild rivers are not anticipated, and thus no mitigation or avoidance is needed.

Waters of the US Including Wetlands

Existing Conditions

All Waters of the US, including wetlands, were identified and flagged within the new alignments in the Gaithersburg area of the CCT corridor and the Observation Drive and Metropolitan Grove O&M sites using USACE regulatory guidance and *Corps of Engineers Wetland Delineation Manual* (USACE 1987). All other methods associated with the wetland delineation and waterway identification are discussed in detail in the 2007 NETR.

Due to the overlap in location between the Original CCT Alignment and the new alignment modifications within the Gaithersburg area of the CCT corridor some of the wetlands and waterways previously flagged during the 1998 and 2006 wetland delineations are also located within the right-of-way of the new CCT alignment modifications. These overlap areas were re-delineated in an effort to update any changes that may have occurred since the 1998 and 2006 delineations, including reclassifying wetlands that have transitioned to a different vegetative condition (e.g., an emergent wetland that has since converted to a scrub-shrub condition). All wetlands and waterways within the new alignments of the CCT corridor were delineated in May 2010.

Wetland functions were evaluated for each wetland system located within or in close proximity to the CCT project area that are greater than one-half acre using the Evaluation for Planned Wetlands (EPW) method. This methodology is described in detail in the 2002 NETR. The six major wetland functions evaluated by the EPW method include shoreline bank erosion control, sediment stabilization, water quality, wildlife, fish in non-tidal stream/river or pond/lake, and uniqueness/heritage.

For wetlands that did not exceed the one-half acre threshold wetland functions and values were evaluated using best professional judgment. General guidance on the types of functions and values discussed (groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat) can be found in the *Highway Methodology Workbook* (USACE 1999).

A jurisdictional determination (JD) for the wetlands and waterways within the footprints of the modified alignments and two O&M sites was held on July 27, 2010 with the USACE and MDE. The JD involves a field review by the regulatory agencies to finalize the boundaries and jurisdictional nature of the resources presented in this SEA. Since the 2009 AA/EA, additional guidance has been developed on jurisdictional determinations in light of the Supreme Court decision in *Rapanos v. US*, 126 S. CT. 2208 (2006), which limited the USACE's jurisdiction over ephemeral channels and some other wetland features. Based on this case, the USACE will continue to take jurisdiction over the following resources:

- Traditional navigable waterways (TNWs)
- Wetlands adjacent to TNWs
- Non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least three months out of the year
- Wetlands that abut such tributaries

However, the agencies will determine jurisdiction on a case-by-case basis over the following waters after an analysis has been performed to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

A significant nexus evaluation (SNE) will be required to assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs. All jurisdictional determinations (JDs) with a significant nexus evaluation will be reviewed by the USEPA before a JD will be issued for the project.

A total of 42 numbered wetlands and waterways are located within the expanded CCT project area, which includes the Observation Drive and the Metropolitan Grove O&M sites. Wetland and waterway

characteristics are described in the summary table included in **Appendix B**. Of these numbered systems, 25 wetlands and 17 waters of the US were identified. It should be noted that many of the newly identified resources are associated with the Section 4(f) avoidance alignments (discussed in Chapter V) and not the primary alignment modifications (S1, S2, S2c and S3), which are intended to better serve the future Crown Farm and LSC/Belward Farm developments.

The expanded CCT study area traverses several tributaries and their associated wetlands that ultimately drain to Muddy Branch. A majority of the streams within the project area are classified as perennial (ten), followed by intermittent (four) and ephemeral (four), respectively. The perennial and intermittent streams, including ephemeral channels within the CCT project area, are discussed in the Surface Waters section of this document.

The 27 wetlands identified within the Gaithersburg area of the CCT corridor include palustrine emergent wetlands (W9, W10, W11, W13, W16, W19, W23, W25, W30, W36, W37, W41), palustrine scrub-shrub wetlands (W2, W3, W4, W16, W17, W34, W38, W42), palustrine open water wetlands (W15, W18, W23, W26) and palustrine forested wetlands (W20, W32, W35). These areas generally consist of floodplains, hillside groundwater seeps, and stormwater management ponds adjacent to roadways and housing developments.

No wetlands or waterways were identified within the Observation Drive O&M site. One wetland pond (W42) was flagged within the Metropolitan Grove O&M site.

The wetlands within the Gaithersburg area of the CCT corridor consist of three main types of wetlands:

- Larger, undisturbed wetlands within forested stream valleys or agricultural tracts
- Vegetated/unvegetated stormwater management ponds
- Fringe wetlands along streams

Many of the wetlands within the CCT project area are located within areas that are not currently developed, including forested stream valleys and the Crown and Belward farm areas. The wetland systems located in the more protected interior of stream valleys or agricultural tracts are generally less-disturbed and more highly

functioning than the wetlands located on the margins where encroaching development and adjacent roadways have caused more disturbance. The less disturbed wetlands include W3, W15, W16, W17, W32, W36, W37, and W38, which may be more highly functioning due to a combination of size (>0.5 acre), maturity, and/or connectivity to streams. According to the EPW method, the principal functions associated with these wetlands rank high for sediment stabilization and water quality, as the wetlands detain and infiltrate storm and floodwaters. Three wetlands (W15, W16, and W17), collectively assessed as one wetland system for the EPW method, were found to rank high for the shoreline bank erosion control due to the presence of an extensive broadleaf cattail (*Typha latifolia*) marsh and root mat that likely serves to stabilize the banks of its associated stream. These wetlands ranked moderate to low for the wildlife functions. While some of the wetlands exhibited a high level of habitat complexity (W3, W32, and W38), virtually all of them lacked important wildlife attractors and physical features such as snags, dense brush, open water and/or upland islands. Furthermore, the broader urban environment within which these wetlands are located tends to isolate wildlife populations by denying them access to other natural areas that may be required as additional habitat.

Several of the vegetated and non-vegetated stormwater management (SWM) ponds flagged within the Gaithersburg area of the CCT corridor provide wetland water quality functions, but at relatively low levels. A number of the SWM wetlands also provide fish habitat but cannot be evaluated using the EPW method due to the presence of fish passage barriers located at the upstream and downstream ends of these ponds. Those SWM wetlands that exceed one-half acre (W19, W23, and W24) can provide a wide range of functions such as water quality, sediment stabilization, wildlife and fish habitat. Wetland 19 is situated just outside of the project area, but its buffer is located within the right-of-way of the new CCT alignments and its connectivity to Wetlands 36 and 37 increases the functions that would otherwise be associated with W19. W19 ranked high for sediment stabilization and water quality and moderate for wildlife. Also located adjacent to a series of roads, parking lots and buildings is W23, which was found to perform similarly to W19 with regard to functional capacity. Wetland 34 is a densely vegetated SWM pond with an interior of emergent vegetation and a scrub-

shrub border. This wetland was found to function optimally in the sediment stabilization and water quality categories, but ranked low in wildlife habitat.

Many of the streams found to occur within the new CCT alignments have been modified by human activity such that they have become disconnected from their associated floodplains. As a result, much of the wetlands occurring along these streams are limited to stream banks and alluvial benches found within the channels. These fringe wetlands (W9, W10, W11, W12, W13, W25, W30) were all very small in nature, none of which exceeded 0.1 acre; therefore, each were assessed for functional value using best professional judgment. These wetlands may provide sediment/shoreline stabilization and floodflow alteration.

Impacts

Waters of the US, which includes wetlands, are regulated under Section 401 and 404 of the Clean Water Act and the Maryland Non-tidal Wetlands Protection Act. The discharge of dredge or fill material into project area wetlands will require a Section 404 permit from the USACE. Any alteration of non-tidal wetlands within the project area will also require a Section 401 Water Quality Certification.

The majority of the impacts are discussed by alignment, which may incorporate multiple design options as part of the overall impact analysis for each alignment. The impacts to palustrine forested, scrub-shrub, and emergent wetlands areas are minimal with any combination of alignment options chosen, totaling less than once acre of impact to vegetated wetlands as shown in **Table IV-14**.

Crown Farm Alignment (S1)

Depending on which options are chosen through the Life Sciences Center, the Crown Farm Alignment could potentially impact 0.004 acre of emergent wetlands. Impacts to forested and scrub-shrub wetlands are not anticipated as part of this alignment.

The Original CCT Alignment showed a larger impact to the same wetland area that will potentially be impacted by the Crown Farm Alignment. The Original CCT Alignment would impact 0.31 acre of emergent wetlands and 0.03 acre of forested wetlands. However, since the publication of the 2009 AA/EA, the development of this area has decreased the forested

Table IV-14: Impacts to Waters of the US, Including Wetlands

ALIGNMENT	SEGMENT	PEM SQUARE FEET (acres)	PSS SQUARE FEET (acres)	PFO SQUARE FEET (acres)
Crown Farm Alignment	S1 to LSC	158.16 (0.004)	0	0
	S1 to Master Plan	158.16 (0.004)	0	0
Impacts for Crown Farm Alignment		0.004 acres	0	0
Life Sciences Center Alignments	S2	3,398.06 (0.08)	12,276.13 (0.28)	4,414.50 (0.10)
	S2c	702.82 (0.02)	0	4,413.06 (0.10)
Range of Impacts for Life Sciences Center Alignment		0.02-0.08 acres	0-0.28 acres	0.10 acres
Kentlands Alignment	S3	0	3,322.71 (0.08)	0
Range of Impacts for Kentlands Alignments		0 acres	0.08 acres	0
Operation and Maintenance Facilities	Observation Drive	0	0	0
	Metropolitan Grove	0	7,405.20 (0.17)	0
Range of Impacts for O&M Facilities		0	0.17 acres	0

and emergent wetland areas that once resided in this location.

Life Sciences Center Alignment (S2 and S2c)

The Life Sciences Center Alignment could potentially impact between 0.02 and 0.08 acre of emergent wetlands, while impacts to scrub-shrub wetlands would range from zero to 0.28 acre. Impacts to forested wetlands would be 0.10 acre.

The Life Sciences Center Alignment impacts more numbered wetland systems than the Original CCT Alignment. The Original CCT Alignment would impact 0.33 acre of emergent wetland with no scrub-shrub or forested wetland impacts.

Kentlands Alignment (S3)

The Kentlands Alignment would not impact emergent wetlands or forested wetlands and would potentially impact 0.08 acres of scrub-shrub wetlands.

The Original CCT Alignment traversed fewer numbered vegetated wetland areas compared to the

Kentlands Alignment within this portion of the project area, impacting 0.03 acre of scrub-shrub wetlands.

O&M Sites

Impacts to wetlands within the Observation Drive site are not anticipated. However, approximately 0.17 acre of scrub-shrub wetlands located within a SWM facility would be impacted by the Metropolitan Grove site.

Avoidance and Minimization

In accordance with federal and state regulations, efforts to avoid and minimize impacts to wetlands and other Waters of the US are ongoing. Avoidance and mitigation will continue through later phases of the project when an alignment has been selected and when more detailed design refinements can be employed to further minimize impacts.

Preliminary engineering designs will continue to be refined to address avoidance and minimization of impacts as will the practicability and effectiveness of using measures such as retaining walls, steeper fill slopes, and

reduced roadway sections. This process will continue through all phases of design and construction planning.

Non-Tidal Wetlands of Special State Concern

There are no Non-Tidal Wetlands of Special State Concern within the new alignments of the CCT project area. Impacts to Non-Tidal Wetlands of Special State Concern by the proposed alignments are not anticipated; thus no avoidance or mitigation is required.

Floodplains

Existing Conditions

The CCT corridor within the Gaithersburg area traverses the same FEMA designated 100-year floodplains as shown in the 2007 NETR, which include Muddy Branch and one of its larger tributaries that parallels the south side of Great Seneca Highway (mapped in **Appendix A**).

Impacts

Streams in the vicinity of the proposed alignment modifications are mapped in **Appendix A**. Any construction within the 100-year floodplain (**Table IV-15**) will require a Waterway Construction Permit from the MDE. The placement of substantial amounts of

fill in floodplain areas is not anticipated for the at-grade components of the alignment modifications. However, fill may be placed in the 100-year floodplain in areas where the existing road berm may need to be extended to support the placement of aerial structures, which includes widening of existing bridges such as the one over the mainstem of Muddy Branch, and the construction of grade separations.

Crown Farm Alignment (S1)

The Crown Farm Alignment is not anticipated to impact any 100-year floodplains.

Life Sciences Center Alignments (S2 and S2c)

The two Life Sciences Center alignment modifications could potentially impact 0.29 acre of the 100-year floodplain associated with an unnamed tributary of Muddy Branch.

Kentlands Alignment (S3)

The Kentlands Alignment could potentially impact 1.49 acres of the 100-year floodplain associated with the mainstem of Muddy Branch and an unnamed tributary.

O&M Sites

Impacts to the 100-year floodplain within the Observation Drive site or the Metropolitan Grove site are not anticipated.

Table IV-15: 100-Year Floodplain Impacts

ALIGNMENT	SEGMENT	FLOODPLAIN IMPACT (acres)
Crown Farm Alignment	S1 to LSC	0
	S1 to Master Plan	0
Impacts for Crown Farm Alignment		0 acres
Life Sciences Center Alignments	S2	0.29
	S2c	0.29
Impacts for Life Sciences Center Alignment		0.29 acres
Kentlands Alignment	S3	1.49
Impacts for Kentlands Alignment		1.49 acres
Operation and Maintenance Facilities	Observation Drive	0
	Metropolitan Grove	0
Impacts for O&M Facilities		0 acres

Avoidance and Minimization

Efforts to minimize and avoid impacts to 100-year floodplains will continue throughout the planning and engineering process. Techniques that will be investigated to further minimize or avoid impacts may include alignment shifts to ensure the narrowest possible crossing and bridging of floodplains to further reduce encroachment and allow for unrestricted passage of floodwaters. Hydrologic and hydraulic (H&H) studies will be conducted to determine the appropriate bridge or culvert opening sizes for the various alternatives so that they will not appreciably raise flood levels.

All construction occurring within the FEMA designated 100-year floodplain must comply with FEMA approved local floodplain construction requirements. These requirements consider structural elevations, fill levels, and grading elevations. If, after compliance with the requirements of Executive Order 11988 and 11990 Floodplain Management, and with DOT Order 5650.2 Floodplain Management and Protection, new construction of structures or facilities are to be located in a floodplain, accepted flood proofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, wherever practicable, structures should be elevated above the base flood level rather than filling for culvert placement. If H&H studies indicate that impacts to flood levels will occur, project designs will be changed to avoid the impact or mitigation of the affect will be provided.

Terrestrial Vegetation

Existing Conditions

The CCT corridor in the Gaithersburg area traverses an urban environment that includes mostly developed land interspersed with patches of agricultural land and forest. The portions of the CCT corridor characterized by larger tracts of natural forested habitat (>2 acres) occur within stream valleys that drain Muddy Branch and its associated tributaries. The forested areas that would be intersected by the new CCT alignments are characterized as mid-successional forests in the Tulip Poplar and River Birch-Sycamore associations (Brush et al. 1976). Several of these forested areas are experiencing edge disturbances resulting from encroachment by roadways and residential/commercial land uses. As a

result, several non-native species are dominants within these well developed forested areas including *Alliaria officinalis* (garlic mustard), *Celastrus orbiculatus* (Oriental bittersweet), and *Lonicera japonica* (Japanese honeysuckle). Detailed descriptions of the forest associations can be found in the 2002 NETR.

Two large agricultural tracts, the Crown and Belward farms, are located within the Gaithersburg area of the CCT corridor. Another large farm exists where the Observation Drive O&M site is proposed. These farms, collectively account for more than 325 acres that are at least partially bordered by forest. The remainder of the project area consists of smaller patches of mostly disturbed vegetation that occur along roadsides and near residential and commercial development.

Significant trees with a diameter at breast height (dbh) size of 30 inches or greater or with a diameter that is at least 75 percent of the state champion tree for a given species were not specifically identified within the project corridor during this stage of the planning process. This is consistent with the prior work on the Multi-Modal Corridor Study for this resource.

Impacts

Impacts to forested habitats and non-forested habitats, such as managed lawns, landscaped areas, agricultural land and old field habitat, would result from all proposed alignment modifications. These impacts, however, should be relatively minor as the alignments would generally follow within or along existing roadways. In general, impacts to plant communities include direct losses from clearing within rights-of-way and changes in plant community structure and composition. Effects to terrestrial resources will involve the conversion of habitat to impervious road, rail or other associated facilities. In many locations, managed lawns and landscaped areas would likely be restored following construction. Effects could also result from the introduction of invasive non-native plant species into undisturbed habitat adjacent to newly impacted sites, however, the majority of the impacts resulting from the alignment modifications will be occurring in areas that are already disturbed and dominated by invasive species. Forested habitat impacts resulting from all of the alignment modifications, as well as the two proposed O&M sites, are shown in **Table IV-16**.

Forests in Maryland are regulated under the Forest Conservation Act, Natural Resources Article, Section 5-1609, Annotated Code of Maryland. Before a sediment and erosion control permit is issued for a project, the Act requires that a Forest Stand Delineation (FSD) and a Forest Conservation Plan (FCP) be submitted and approved by the Maryland Department of Natural Resources (DNR), Forestry Division. A more detailed forest assessment, including preparation of an FSD and FCP, will need to be completed for the project once an alternative has been selected and more detailed design has been completed.

Crown Farm Alignment (S1)

The Crown Farm alignment modification could potentially impact between 0.27 and 0.38 acres of forest (the larger impact would occur if S1 connects back to the Original CCT alignment instead of S2 or S2c). These impacts occur in forest patches already disturbed due to their adjacency to existing roadways or along the edges of the Crown Farm where the forest has been previously impacted by development.

Life Sciences Center Alignments (S2 and S2c)

The Life Sciences Center alignment modifications could potentially impact between 2.19 and 3.43 acres of forest. The majority of these impacts would occur within forested areas that are less disturbed due to their

connectivity to wetlands and the floodplain along Great Seneca Highway. Additional impacts would occur to the forests that surround the Belward Farm. The S2c option has the least amount of forest impacts (2.19 acres) due to the fact that it parallels existing roadways, except for where it cuts across the Belward Farm property.

Kentlands Alignment (S3)

The Kentlands Alignment could potentially impact 7.92 acres of forest. These impacts occur to the forested stream valleys of Muddy Branch and its tributaries.

O&M Sites

The Observation Drive Site is not anticipated to have any forest impacts. The Metropolitan Grove Site could potentially impact up to 10.66 acres of well developed upland forest.

Terrestrial Wildlife

Existing Conditions

The presence of terrestrial wildlife within the project area is a function of available habitats. Because of the prevalence of built up land uses in the Gaithersburg area of the CCT, native wildlife species are expected to be primarily restricted to less developed areas, such as the riparian buffers along Muddy Branch and its tributaries and agricultural land bounded by forests.

Table IV-16: Forest Impacts

ALIGNMENT	SEGMENT	FOREST (acres)
Crown Farm Alignment	S1 to LSC	0.27
	S1 to Master Plan	0.38
Range of Impacts for Crown Farm Alignment		0.27-0.38 acres
Life Sciences Center Alignments	S2	3.43
	S2c	2.19
Range of Impacts for Life Sciences Center Alignment		2.19-3.43 acres
Kentlands Alignment	S3	7.92
Impacts for Kentlands Alignment		7.92 acres
Operation and Maintenance Facilities	Observation Drive	0
	Metropolitan Grove	10.66
Range of Impacts for O&M Facilities		0-10.66 acres

However, artificial or man-made habitats such as stormwater management (SWM) ponds and residential yards and hedgerows are also capable of supporting wildlife. Some of the most common wildlife species known to utilize these various habitats are summarized below. Note that due to the adaptability of wildlife living in urban settings, it is expected that many of these species occur to some degree in all of the habitats listed. For an exhaustive list of the birds, mammals, reptiles and amphibians observed or potentially occurring near the alignment modifications, refer to **Table V-3** of the **2002 NETR**.

Forests occurring in the Gaithersburg CCT project area are primarily small in nature. Consequently they are most likely to support wildlife assemblages comprised primarily of generalist species. Those more commonly encountered may include *Odocoileus virginianus* (white-tailed deer), *Didelphis virginiana* (opossum), *Peromyscus leucopus* (white-footed mouse), *Procyon lotor* (raccoon), *Sciurus carolinensis* (gray squirrel), *Accipiter cooperii* (Cooper's hawk), *Colaptes auratus* (Northern flicker), *Sitta carolinensis* (white-breasted nuthatch), *Dumatella carolinensis* (gray catbird), *Cardinalis cardinalis* (Northern cardinal), and *Thryothorus ludovicianus* (Carolina wren).

Wildlife species potentially found within agricultural land, such as the Crown and Belward Farms, include white-tailed deer, raccoon, opossum, white-footed mouse, *Corvus brachyrhynchos* (American crow), *Agelaius phoeniceus* (red-winged blackbird), *Zenaidura macroura* (mourning dove), and *Branta canadensis* (Canada goose). Other species typically found within this habitat, particularly where grasslands or meadows predominate, include *Ammodramus savannarum* (grasshopper sparrow), *Sturnella magna* (eastern meadowlark), *Microtus pennsylvanicus* (meadow vole), *Marmota monax* (groundhog), and *Vulpes vulpes* (red fox). Species that may hunt these fields or use them during the winter include birds of prey such as *Buteo jamaicensis* (red-tailed hawk) and *Falco sparverius* (American kestrel); white-tailed deer; *Passerculus sandwichensis* (savannah sparrow); and *Junco hyemalis* (dark-eyed junco).

Much of the wildlife using those areas classified as developed, such as *Sturnus vulgaris* (European starling) and *Passer domesticus* (house sparrow) are adapted to human-modified environments. Those species

that can inhabit smaller, more disturbed sites with a mix of vegetation types include gray squirrel, *Tamias striatus* (eastern chipmunk), *Baeolophus bicolor* (tufted titmouse), *Poecile carolinensis* (Carolina chickadee), Carolina wren, *Melanerpes carolinus* (red-bellied woodpecker), northern cardinal, *Mimus polyglottos* (northern mockingbird), *Spizella passerina* (chipping sparrow) and *Picoides pubescens* (downy woodpecker).

SWM ponds existing in the Gaithersburg CCT project area are typically located in open areas adjacent to forested stream valleys; therefore they are capable of attracting a variety of species such as those known to utilize the habitat types listed above. Especially prevalent within the aquatic to semi-aquatic environments characteristic of SWM ponds are amphibians and reptiles. Common herpetofauna that might be found to inhabit SWM ponds in the Gaithersburg area include *Lithobates clamitans melanota* (northern green frog), *Lithobates catesbeianus* (American bullfrog), *Anaxyrus americanus americanus* (American toad), *Chrysemys picta picta* (eastern painted turtle), *Chelydra serpentina serpentina* (eastern snapping turtle) and *Nerodia sipedon sipedon* (northern watersnake). Where SWM ponds are located in close proximity to forested riparian zones, other amphibians such as *Lithobates sylvestris* (wood frog), *Hyla versicolor* (gray tree frog), *Pseudacris crucifer* (spring peeper) and *Anaxyrus fowleri* (Fowler's toads) may also occur. Birds commonly occurring within SWM pond habitats include Canada goose and *Butorides virescens* (green heron).

Forest Interior Dwelling Species

As stated previously, the Gaithersburg area of the CCT alignment is located in a developed area that contains primarily small patches of forest. However, one relatively large forest block does exist along the main stem of Muddy Branch at the Great Seneca Creek Highway bridge crossing. This area is a contiguous corridor that extends approximately 1.3 miles north and east from MD 28 to Muddy Branch Road. Although surrounded by housing developments, this area exceeds the minimum acreage and riparian buffer width necessary to be recognized as habitat for Forest Interior Dwelling Species (FIDS) (Jones et al. 2001). Guidance on FIDS and the implications of their potential occurrence in a project area can be found in the 2002 NETR. Some of the more common FIDS that might be found nesting among mature

forest stands along the main stem of Muddy Branch near the new CCT alignment include *Buteo lineatus* (red-shouldered hawk), *Strix varia* (barred owl), *Picoides villosus* (hairy woodpecker), *Dryocopus pileatus* (pileated woodpecker), *Hylocichla mustelina* (wood thrush), *Empidonax virescens* (Acadian flycatcher), *Vireo olivaceus* (red-eyed vireo), and *Seiurus motacilla* (Louisiana waterthrush).

Impacts

Alignment Modifications

Because the alignment modifications mostly follow existing roadway alignments, impacts to wildlife resources are anticipated to be minor, and any wildlife corridors would be maintained. Impacts to FIDS habitat are also anticipated to be minor for the same reason. The only areas of forest interior habitat occur within the Muddy Branch stream valley at the Great Seneca Highway bridge crossing. Minor encroachment on the edges of FIDS habitat would minimize impacts to the forest interior compared to what would occur if the alignment options were to bisect undisturbed FIDS habitat.

O&M Sites

Impacts to the O&M sites are discussed in **Chapter III** of the **2002 DEIS**.

Avoidance and Minimization

Forest impacts are regulated under the Maryland Reforestation Law. Enacted in 1989 and amended in 1992 the Maryland Reforestation Law was created to preserve existing forested lands and protect Maryland forests from being cleared without replacement. The law requires a one acre-to-one acre replacement of any forested areas that are cleared during construction of State-sponsored projects.

Before replacement is considered every reasonable effort must be made to minimize the cutting or clearing of trees. Only the minimum number of trees may be cut, and best management practices (BMPs) must be used. When prudent minimization efforts have been considered and one acre or more of forest clearing is still required, replacement of the forests must occur on a one-to-one basis. The constructing agency is required to locate state or publicly owned land of equivalent size to be reforested. The DNR is the agency in charge of the reforestation efforts.

Avoidance and minimization efforts to reduce forest impacts are ongoing for all of the alignment modifications. Efforts to minimize impacts include the shifting of alternatives away from large, contiguous blocks of forest and the reduction of fill slopes through the use of retaining walls.

Aquatic Habitat/Species

Existing Conditions

Muddy Branch Watershed

The Muddy Branch watershed originates in the City of Gaithersburg, east of MD 355. The stream system flows in a southwesterly direction through the Gaithersburg area of the CCT project area to meet the Potomac River. Within the CCT project area Muddy Branch flows generally west through Muddy Branch Stream Valley Park and is bordered by man-made lakes on the northern side. Similar to many of the other tributaries located in the Potomac basin in this portion of Montgomery County, Muddy Branch has been influenced by urbanization, particularly along major historic transportation corridors such as MD 355 and the railroad (Montgomery County Department of Environmental Protection (MCDEP) 1998). Construction associated with the new alignments of the CCT corridor would take place immediately downstream of the headwater areas surrounding Gaithersburg. The CCT corridor and upstream area is highly urbanized and contains a high-level of impervious surface cover. Based on the City of Gaithersburg study (*An Ecological Assessment of Streams in Gaithersburg, Maryland 2001-2002*), land use in the Muddy Branch watershed upstream of I-270 is approximately 60 percent urban, 21 percent agriculture, and 17 percent forest (City of Gaithersburg 2002). In contrast, the lower portion of the watershed where the stream nears the Potomac River is mostly forested within protected parkland.

Stream quality is greatly affected by land use patterns in the watershed. The upper portions of the stream system, which are dominated by residential and commercial/industrial land use types, suffer the effects of uncontrolled urban runoff from areas developed prior to stormwater management regulations. Incised stream channels, bank instability, and poor biological conditions are evidence of these effects. Downstream of Gaithersburg, stream conditions improve to “Fair”, and

then to “Good” in the lower reaches where undeveloped land uses, primarily deciduous forest, provide more favorable stream conditions (MCDEP 2003).

Total Maximum Daily Loads (TMDLs) are a tool used to determine the amount of pollutants entering a waterbody and the ability of that waterbody to assimilate those pollutant loadings. The pollutants can be metals, sediments, toxics, bacteria, or other parameters that are able to be measured to determine stream health. The 2010 integrated 303(d) list does not list a TMDL for Muddy Branch, and in 2002 Muddy Branch was a low priority watershed for TMDL development. However, Clopper Lake, which is within one mile of the CCT project area, has a phosphorus and sediment TMDL of 555 pounds/year and 129 tons/year, respectively (MDE 2002). Muddy Branch and its tributaries are classified as Use I (water contact recreation and the protection of aquatic life) streams as defined by the Code of Maryland Regulations (COMAR).

Aquatic Habitat

State and local agencies assess aquatic habitat conditions in the field when sampling the benthic macroinvertebrate and fish communities. Within the Muddy Branch Watershed, these state and local agencies include the Maryland Department of Natural Resources (MDNR) and the MCDEP.

The MCDEP habitat assessment approach was adapted and refined by MCDEP from the Environmental Protection Agency (EPA) Rapid Bioassessment Protocols (RBP) (Barbour et al. 1999). This protocol is based on

the quality of velocity/depth regime, epifaunal substrate, embeddedness, sediment deposition, frequency of riffles, channel alteration, channel flow status, bank vegetative protection, bank stability, and riparian vegetative zones.

Habitat scores throughout the Muddy Branch Watershed ranged from “Very Poor” to “Excellent/Good” (MCDEP 2002). In general, sites were often characterized by high scores for instream habitat with moderate scores for sediment deposition, bank stability, and bank vegetative protection. Habitat scores within the upper portion of the Muddy Branch watershed varied from “Very Poor” to “Good”. These streams were characterized by highly eroded banks, increased sediment deposition, and high levels of embeddedness. The habitat impairment in the headwater streams is most likely the result of high levels of impervious cover (26%) and inadequate riparian buffers (MCDEP 1999).

The best descriptor of habitat conditions within the CCT corridor is site MB-1, which was sampled by the City of Gaithersburg in 2002. MB-1 is within the CCT project area and best describes the condition of Muddy Branch that would be most affected by the transitway construction. The physical habitat at MB-1 was described as “Partially Degraded” by MBSS and “Good” by MCDEP. In addition, stream reaches close to the Observation Drive site and Metropolitan Grove Site were sampled by MCDEP in 2001. At the Observation Drive site the habitat was ranked “Good/Fair”, and the habitat at the Metropolitan Grove Site was ranked as “Good.”

Table IV-17: MBSS BIBI Scores and Rankings

BIBI SCORE	NARRATIVE RANKING	CHARACTERISTICS
4.00 – 5.00	Good	Comparable to reference streams considered to be minimally impacted, biological metrics fall within the upper 50 percent of reference site conditions.
3.00 – 3.90	Fair	Comparable to reference conditions, but some aspects of biological integrity may not resemble the qualities of minimally impacted streams.
2.00 – 2.90	Poor	Significant deviation from reference conditions, indicating some degradation. On average, biological metrics fall below the 10th percentile of reference site values.
1.00 - 1.90	Very Poor	Strong deviation from reference conditions, with most aspects of biological integrity not resembling the qualities of minimally impacted streams, indicating severe degradation. On average, most or all metrics fall below the 10th percentile of reference site values.

Source: MBSS (1999)

Table IV-18: MCDEP FIBI Scores and Rankings

MCDEP		
>4.5	Excellent	Comparable to the biological community found in reference streams. Exceptional assemblage of species with a balanced community composition.
3.5 –4.5	Good	Decreased number of sensitive species, decreased number of specialized feeding groups with some intolerant species present.
2.3 – 3.3	Fair	Intolerant and sensitive species are largely absent; unbalanced feeding group structure.
≤ 2.2	Poor	Top carnivores and many expected species are absent or rare; general feeders and tolerant species dominate.

Source: Van Ness 1997.

Macroinvertebrates

Sites were sampled by the MBSS, the MCDEP, and the City of Gaithersburg. Benthic macroinvertebrate community assessments were conducted using methodologies developed by MBSS and MCDEP.

In 2005, MBSS developed a new benthic index of biological integrity (BIBI) that compares the macroinvertebrate community within a given stream to reference macroinvertebrate communities in streams classified as least-impaired by anthropogenic impacts. The MBSS BIBI is based on state-wide reference streams in each physiographic province. The BIBI for the Piedmont uses six community metrics found to characterize macroinvertebrate community health in Maryland's Piedmont streams. The metrics calculated for Piedmont streams include the total number of taxa, the number of EPT taxa, the number of Ephemeroptera taxa, the percent intolerant to urban, the percent Chironomidae, and the percent clingers. **Table IV-17** shows the scores and narrative rankings of the MBSS BIBI.

Hundreds of species of macroinvertebrates were found inhabiting the Muddy Branch Watershed including sensitive Ephemeroptera, Plecoptera and Trichoptera

(EPT) species. These organisms are indicative of overall stream conditions, provide an important food source for larger organisms, and play a large role in the ability of the stream to process nutrients. Benthic macroinvertebrate community conditions throughout Muddy Branch watershed ranged from "Poor" by the MBSS BIBI, "Poor" to "Excellent" by the MCDEP BIBI, and "Very Poor" to "Fair" by the City of Gaithersburg study. However, the macroinvertebrate community in the upper watershed was most often rated as poor, which may be the result of water quality impairment by lack of riparian buffers and flash flows in this highly developed portion of the watershed. These sites were mostly dominated by midges, oligochaetes, and common net-spinning caddisflies.

Within the CCT project area the BIBI was 2.56 or "Poor" with a total of 32 taxa most of which were pollution tolerant species of chironomids and oligochaetes. At the Observation Drive site the BIBI was "Good/Fair," and at the Metropolitan Grove Site the BIBI was "Good."

Fisheries

The MBSS field protocol for electrofishing was followed for fish surveys conducted in the Muddy Branch Watershed by MDNR. The fish survey data were analyzed using tolerance value, native or introduced origin, trophic

Table IV-19: Muddy Branch Watershed FIBI Results

YEAR	AGENCY	SCORE	NARRATIVE
2003 - 2004	MBSS	3.33 - 5.00	Fair to Good
2002	MCDEP	1.00 - 4.10	Poor to Good
2002	City of Gaithersburg	1.67 - 3.67	Very Poor to Fair

Source: Van Ness 1997.

status, lithophilic spawning status, and abundance to calculate metrics. The Fish Index of Biotic Integrity (FIBI) combined the following metrics: number of benthic fish species (adjusted for watershed area), the percent tolerant fish, the percent generalists, omnivores, and invertivores, the number of individuals per square meter, the biomass (g) per square meter, and the percent lithophilic spawners.

The MCDEP FIBI was developed using reference streams only within Montgomery County, and the scoring of the nine metrics used is tailored specifically to conditions within the County. Because the metrics and scoring criteria differ, the resulting FIBI scores and narrative rankings are also different between MBSS and MCDEP. **Table IV-18** above presents the MCDEP FIBI scores and rankings.

Table IV-19 on the following page summarizes the results of the fish sampling within the project study area.

Thirty different species of fish were documented in the Muddy Branch watershed by MCDEP. A number of the larger streams are seasonally stocked with game fish to provide additional opportunities for anglers to utilize the resource. Some streams also provide vital freshwater spawning habitat for anadromous fish species. Fish community conditions within Muddy Branch were rated as “Fair” to “Good” by the MBSS FIBI, “Poor” to “Good” by the MCDEP FIBI, and “Very Poor” to “Fair” by the City of Gaithersburg study (**Table IV-19**).

It should be noted, however, that the majority of the species known to exist in Muddy Branch would not be expected to be found directly in the CCT study area. For example, two species, bluegill and blacknose dace, comprised 52 percent of the fish assemblages found in streams near or around the city of Gaithersburg. The portion of the watershed within the study area includes small headwater and middle order streams that would be expected to contain species that require less discharge, and are tolerant to impacts associated with development. The portion of Muddy Branch within the CCT study area had an FIBI ranking of 3.22 or “Fair”, and consisted of 14 species and 472 individuals. The FIBI at the Observation Drive site scored “Good/Fair”, and the Metropolitan Grove site ranked as “Good.”

Chemical Water Quality

In situ water sampling data was collected with field measurement techniques utilizing water quality meters. Water quality in Muddy Branch is generally within

State standards, although extensive sampling has not been conducted in the area of the watershed that may be affected by the CCT corridor. Limited water temperature monitoring data were available for Muddy Branch, and temperatures recorded were well below the 90 F maximum standard for Use I streams. In the upper portion of Muddy Branch watershed, a general trend of increased conductivity, approximately two to three times greater than the lower portion existed. The range of conductivity values observed was from 512 to 1001 mho/cm. High conductivity is often evidence of urbanization, and impervious surface cover in the watershed.

Impacts

Impacts to aquatic biota and water quality occur directly through stream channel impacts and indirectly through increases in impervious surfaces. A detailed discussion of stream channel impacts is discussed elsewhere in this chapter. Impacts to streams that are currently bridged would be temporary as these existing structures would be extended to accommodate widening. In streams where new culverts are proposed, the impacts would be expected to be more permanent. Direct impacts to streams include sediment releases and vegetation removal. Sediment releases can damage fish and macroinvertebrate habitat or cause fish mortality. Tree removal reduces shade to the stream causing in-stream temperatures to rise, which can affect sensitive fish species, such as trout, that have cooler temperature requirements. The primary direct impacts to aquatic biota from the CCT would be mortality of aquatic organisms during construction of stream crossings from heavy equipment, and loss of natural habitat from placement of culvert pipes and other in-stream structures.

The fish communities are more mobile than macroinvertebrates and can respond to short-term water quality or flow impacts through avoiding sections of the stream and relocating. However, long-term changes in flow regimes and habitat from imperviousness could eventually alter the diversity of resident fish communities. Sensitive fish species could be negatively affected by an increase in impervious cover. However, the species expected to be impacted are adapted to urbanized settings and would be likely to colonize the area again. During operation, the alignment options would have similar potential to increase water quality degradation from stormwater runoff because greater impervious

(paved) surfaces could affect water quality. However, the small incremental impervious impacts that could be expected from the project are unlikely to affect aquatic habitat or the makeup of biological communities to an appreciable degree.

While all of the alignments have the potential to affect existing surface water to some degree, the relatively small amount of new impervious surfaces and related pollutants that the project would add to the highly urbanized setting of the corridor would be expected to cause only minimal changes, if any, in corridor water quality. During construction, wind and rain could severely erode large areas of soil that would be exposed following the removal of vegetation and naturally-occurring soil stabilizers. Erosion of these exposed soils can considerably increase the sediment load to receiving waters (Barrett 1995). After construction, impacts associated with the use of the CCT, are mainly based on the potential for contamination of surface waters by run-off from new impervious surfaces. These runoff constituents can be grouped as heavy metals, salt, organic molecules, and nutrients (Trombulak 1999).

Avoidance and Minimization

Complete avoidance of impacts to surface waters is not possible due to the number of these systems in the project area and their orientation perpendicular to the proposed CCT alignments. However, impacts have been avoided or minimized wherever possible through the realignment of the transitway. Investigations of further avoidance and minimization measures are ongoing and will continue throughout all phases of engineering design for the project.

During construction, the potential for water quality impacts would be minimized through strict adherence to MDE approved sediment and erosion control plans, which would include best management practices such as silt fence, straw bales, sediment basins, and other methods to capture potential sediment from exposed soils.

Potential effects to aquatic habitat and water quality would be minimized by strict adherence to sediment and erosion control and stormwater management plans that would be developed in accordance with state regulations to provide long-term mitigation of potential effects from stormwater runoff. In addition, in-stream construction would not be performed during the period of fish spawning and early development from March 1 to June 15 in accordance with the state's Use 1 time of year restrictions.

Rare, Threatened, and Endangered Species

Existing Conditions

The US Fish and Wildlife Service (USFWS), the Maryland Department of Natural Resources (MDNR) Wildlife and Heritage Division (WHD), and the Environmental Review Unit (ERU) of MDNR were contacted in January 2010 to update the information regarding the presence of rare, threatened, or endangered (RTE) species and fisheries information immediately adjacent to the project area or within one mile of the new alignments within the CCT corridor. An online notification from USFWS was received January 27, 2010 stating that there are no federally proposed or listed endangered and threatened species known to exist within the project area (see **Appendix C**). A letter from the MDNR-WHD was received on June 15, 2010 stating that there are no state or federal records of RTE species within the project area (**Appendix C**).

Impacts/Mitigation

Impacts to federally listed threatened and endangered species are not anticipated, as there are no RTE species within the project area. A letter was sent to the MDNR-ERU on January 27, 2010 regarding the potential for impacts on fisheries.

Hazardous Materials

Existing Conditions

An Initial Site Assessment (ISA) for the I-270/US 15/CCT project area was conducted in 1998 and its findings were presented in the 1999 Preliminary Screening Assessment Report and the 2002 DEIS. The ISA identified the potential areas of hazardous material on properties that could be impacted by the build alternatives. The ISA included field reconnaissance, a search of the regulatory databases, and a review of public regulatory documents.

Results and Recommendations

The findings from the ISA are described in **Chapter III** of the **2002 DEIS**. No additional research on hazardous materials sites has been done since then.

It is recommended that more detailed environmental assessments should be performed for specific sites of concern and for large property acquisitions following approval of a build alternative and prior to right-of-

way acquisition. A regulatory database search should be performed to update the documentation on known contaminant releases along the alignment. Where appropriate, based on site observations and available documentation, assessment efforts may include Phase II Site Investigations with soil and/or groundwater sampling and analysis.

Mitigation

Where it is impractical to avoid an identified hazardous materials site, examples of remediation strategies may include:

- Modified construction techniques and schedule (e.g., performing construction work under a site specific Health and Safety Plan or utilizing sediment and erosion controls)
- Underground storage tank (UST) or above ground storage tank (AST) removal
- Product recovery
- Soil containment technologies (e.g. capping, vertical barriers, horizontal barriers, and surface controls)
- Soil removal and off-site treatment or disposal
- Soil treatment technologies (e.g. vapor extraction, bioventing immobilization, dewatering, physical treatment, chemical treatment (lime neutralization), biological treatment (cultured micro-organisms, in-situ treatment/surface bio-reclamation), thermal treatment (desorption)
- Groundwater treatment (e.g. physical treatment (coagulation/flocculation, oil-water separation, air stripping, adsorption), chemical treatment (neutralization, precipitation, ion exchange, oxidation/reduction), and in-situ treatment (bioventing)

Air Quality

Existing Conditions

As described in the 2009 AA/EA, the Environmental Protection Agency (EPA) has established the National Ambient Air Quality Standards (NAAQS) in accordance with the Clean Air Act and Amendments. Geographic areas that are not in compliance with the NAAQS for a particular pollutant are referred to as non-attainment areas. Areas that have had a history of non-attainment but are now consistently in attainment

are called maintenance areas. Maintenance areas require a maintenance plan to show how they will stay in attainment. These efforts require transportation projects to be assessed for conformity with air quality goals before they can be approved for construction.

The proposed project is located in a maintenance area for carbon monoxide (CO), a non-attainment area for particulate matter smaller than 2.5 micrometers (PM_{2.5}), and a moderate non-attainment area for ozone (O₃). Each of these pollutants is tied to vehicular emissions.

Impacts

The predicted impacts of the project on air quality will be the same with or without the alignment modifications. Current air quality modeling technology is not sensitive enough to reflect alignment changes of this small a scope.

Similarly, regional air quality impacts would be the same regardless of the location of the O&M site.

Projected impacts of alternatives with one or more alignment modifications and with either O&M site location are therefore expected to be the same as the impacts described in the 2009 AA/EA.

Noise and Vibration

Noise

This section explains FTA standards with respect to noise and then provides a description of existing noise conditions in the study area. Then, estimated effects from the CCT alignment modifications and O&M sites on the adjacent communities are presented along with possible mitigation measures.

Sound Descriptors

Sound is measured in a variety of ways to reflect how it is perceived by the human ear. A number of factors affect sound when it is perceived as noise. These factors include the actual level of sound (or noise), the frequencies involved, exposure time interval, and the changes or fluctuations in the noise levels during exposure. Noise levels are measured in units called decibels. Since the human ear does not respond equally to all frequencies (or pitches), measured sound levels (in decibel units at standard frequency bands) are often adjusted or weighted to correspond to the frequency response of human hearing and the human perception of loudness. The weighted sound level is expressed in units called A-weighted decibels

(dBA) and is measured with a calibrated sound meter. Community noise levels in urban areas usually range between 45 dBA, the daytime level in a typical quiet living room, and 75 dBA, the approximate noise level near a sidewalk adjacent to heavy traffic.

Road traffic and transit noise and other noises found in communities tend to fluctuate from moment to moment depending on whether a noisy truck passes by, an airplane flies over, a horn blows, or children scream as they play in a nearby schoolyard. To measure this noise accurately, the noise energy (expressed in dBA) produced by different activities are averaged over a period of time in order to obtain a single number. This single number is called the equivalent noise level, or L_{eq} .

Another noise measure considers people's increased sensitivity to noise during sleeping hours. This measure is calculated by measuring noise levels over a 24-hour period to calculate what is called the day-night sound level, or L_{dn} . The L_{dn} level is determined by calculating the average daytime (L_{day}) and average nighttime (L_{night}) noise level. When averaging the two to determine the L_{dn} nighttime noise is increased by 10 dBA to account for the greater human sensitivity to noise during the nighttime hours.

The FTA criteria utilize both the L_{eq} and the 24-hour L_{dn} noise descriptors for noise impact assessment. The selection of which one to apply is determined by the land use type being assessed for impact.

Human Perception to Changes in Noise Levels

The average individual's ability to perceive changes in noise levels is well documented. Generally, changes in noise levels less than three dBA will be barely perceived

by most listeners, whereas a 10-dBA change normally is considered significant and is perceived as a doubling (or halving) of noise levels.

FTA Noise Criteria for Transit Projects

FTA noise criteria are based on land use categories. The FTA impact assessment guidelines group sensitive areas into three specific land use categories, and the noise descriptor (L_{eq} or L_{dn}) used to complete the impact assessment is chosen based on that land use type (**Table IV-20**). The L_{eq} (1h) dBA (one hour) descriptor is utilized for land uses with primarily daytime uses, and the L_{dn} descriptor is applied when the land use involves properties where people sleep and sensitivity to noise at night is of utmost importance.

The noise impact assessment completed for this study primarily involved FTA Category 2 land uses, which consist of buildings where people normally sleep and the sensitivity to noise is of the utmost importance, such as residential buildings, hotels, and hospitals.

Existing Noise

In accordance with FTA impact assessment requirements, twenty-four hour day-night noise levels (L_{dn} dBA) were measured at 20 representative sites identified near each of the various proposed CCT transit alignment modification corridors and at two additional representative sites near each of the proposed O&M facility locations. Noise measurements collected at ten of these locations were recorded previously as part of the efforts for developing earlier environmental documents for the I-270/US 15 Multi-Modal Corridor Study.

The representative measurement sites were selected on the basis of several factors, the most important of

Table IV-20: FTA Guidelines Land Use Categories and Metrics for Transit Noise

LAND USE CATEGORY	NOISE METRIC (DBA)	DESCRIPTION OF LAND USE CATEGORY
1	Outdoor L_{eq} (h)*	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and land used as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use.
2	Outdoor L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor L_{eq} (h)*	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material.

* $L_{eq}(h) = L_{eq}$ for the noisiest hour of transit-related activity during hours of noise sensitivity

which was the site's potential sensitivity and proximity to additional noise generated by transit operations. Locations therefore represent properties that are within the closest proximity to the proposed alignments and therefore provide a conservative estimate of "worst case" future projected noise exposure that can be expected adjacent to these communities. Properties adjacent to and in the general area of the measurement site will result in comparable ambient noise conditions as that measured at the representative monitoring site. Consequently, at representative properties where line operation or horn noise impacts are identified, these other adjacent nearby properties may also experience elevated noise exposure from the project, but these would likely be similar to, or less severe than, those predicted at the representative sites. All field measurements were conducted according to procedures described in *Sound Procedures for Measuring Highway Noise (Report Number FHWA-DP-45-1R May 1996)*.

Figure IV-10 depicts the locations of the 20 noise monitoring sites near the various proposed CCT build configuration options (as well as the Section 4(f) avoidance alternatives described in Chapter V. The sites adjacent to the two proposed O&M facilities (R-21 and R-22) are located further north along the original CCT alignment and are illustrated in **Figure IV-11** and **Figure IV-12**. Monitoring locations consisted primarily of residential properties and included one medical facility and one childcare facility. **Table IV-21** provides a brief description of each monitoring location along with its measured day-night noise level.

Measured noise levels are typical of ambient conditions in suburban communities. In general, L_{dn} levels show less variability than short-term noise readings because the L_{dn} levels are time averaged over a 24-hour period. Within the proposed CCT corridor, several measurement sites are located in fairly isolated areas far removed from existing road traffic routes and other noise sources. Tranquil or low ambient noise conditions are considered to occur when measured day-night noise levels are 63 dBA or lower. Within the project study area measured day-night levels of 63 dBA or lower were recorded at 15 out of the 22 representative noise monitoring locations. Overall day-night levels ranged from 55 dBA at site R-11 (the Belward Farm) to a maximum L_{dn} level of 74 dBA at Site R-22 (Motel Six) located near the proposed Metropolitan Grove O&M site. The high measured L_{dn} level recorded

at Site R-22 is due primarily to its close proximity to an active railroad overpass near Quince Orchard Road. Lastly, peak hour (L_{eq} (h) dBA) noise levels were reported at Site R-13 (Nanda Child-care Center) because this site is limited to daytime use. The detailed hourly noise measurement survey findings collected at each site are contained in the 2010 *Corridor Cities Transitway Supplemental Noise and Vibration Technical Memorandum* available on the project website www.i270multimodalstudy.com.

FTA Impact Definitions

Under FTA guidelines, noise impacts are determined by comparing the estimated future noise levels generated solely by the proposed LRT or BRT transit operations against the existing ambient noise levels without the project. Impact thresholds are also based on a site's land use category (**Table IV-21**).

Project noise levels are categorized into three principal levels of impact: "No Impact", "Moderate Impact", and "Severe Impact." **Table IV-22** shows the impact criteria thresholds for each receptor site.

Future Transit Noise Exposure Methodology and Findings

Every noise prediction must characterize three elements: the noise source, the sound propagation path, and the affected noise receptor. Vehicular noise emissions depend upon the type of vehicle as well as operating conditions (speed and pass-by frequency).

The noise exposure calculations were completed following the procedures and methodologies described in the FTA Manual (*Transit Noise and Vibration Assessment Manual*, FTA report FTA-VA-90-1003-06, May 2006).

In accordance with FTA impact assessment procedures, existing ambient L_{dn} levels measured at each monitoring location were compared with future noise levels computed from LRT and BRT transit line operations. Following the impact category thresholds in **Table IV-22**, computed future noise exposure levels at each site were compared to the measured L_{dn} levels to establish if the project noise would exceed the threshold of "moderate" or "severe" impact.

The noise analysis findings for the LRT option without horn blowing are provided in **Table IV-23**. The noise analysis findings for the BRT option are summarized in **Table IV-24**. The noise analysis findings indicate that

Figure IV-10: Noise & Vibration Monitoring and Prediction Sites

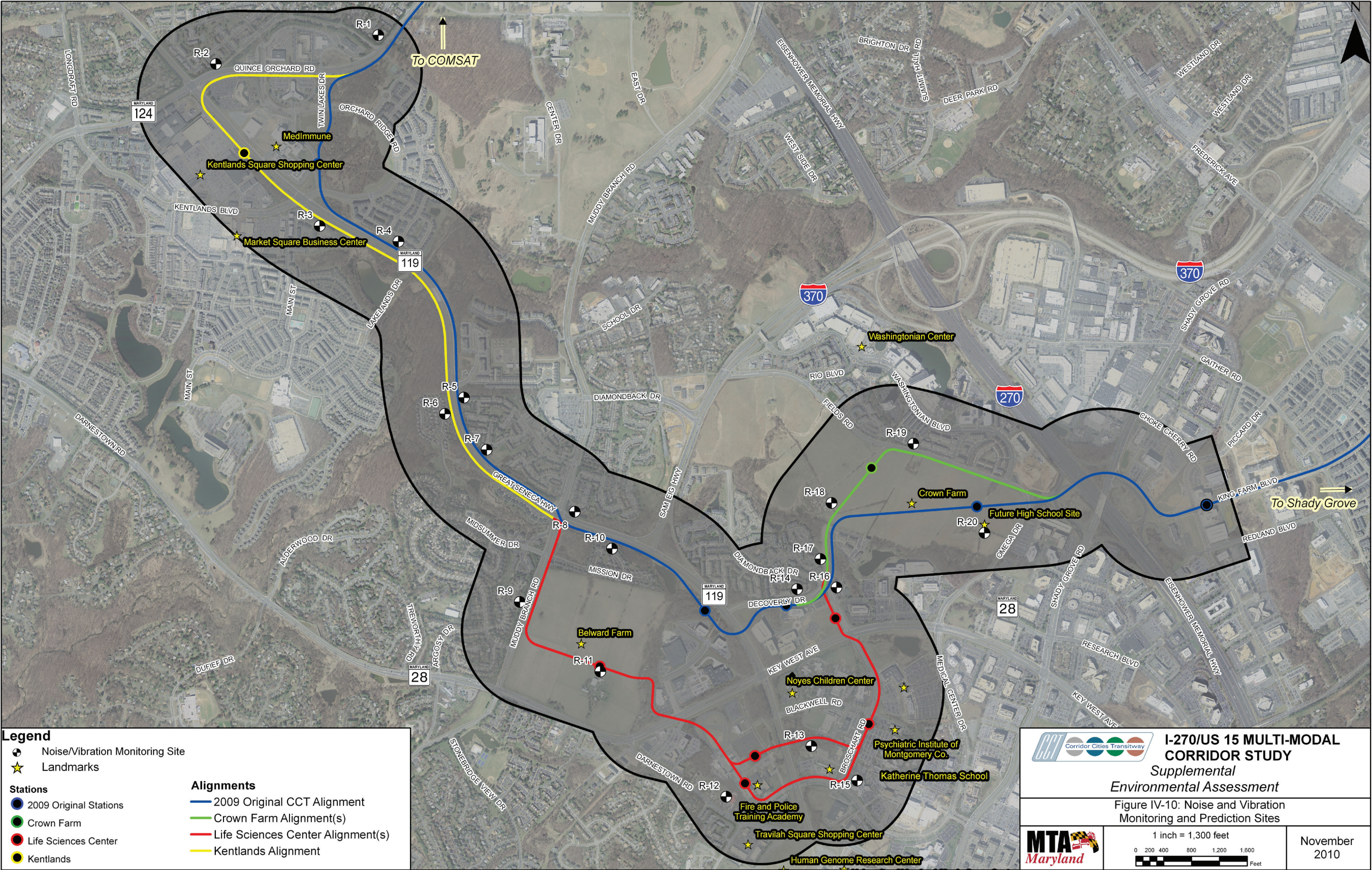


Figure IV-11: Location of Noise Measurement Site R 21 near Proposed Observation Drive BRT Maintenance and Storage Facility

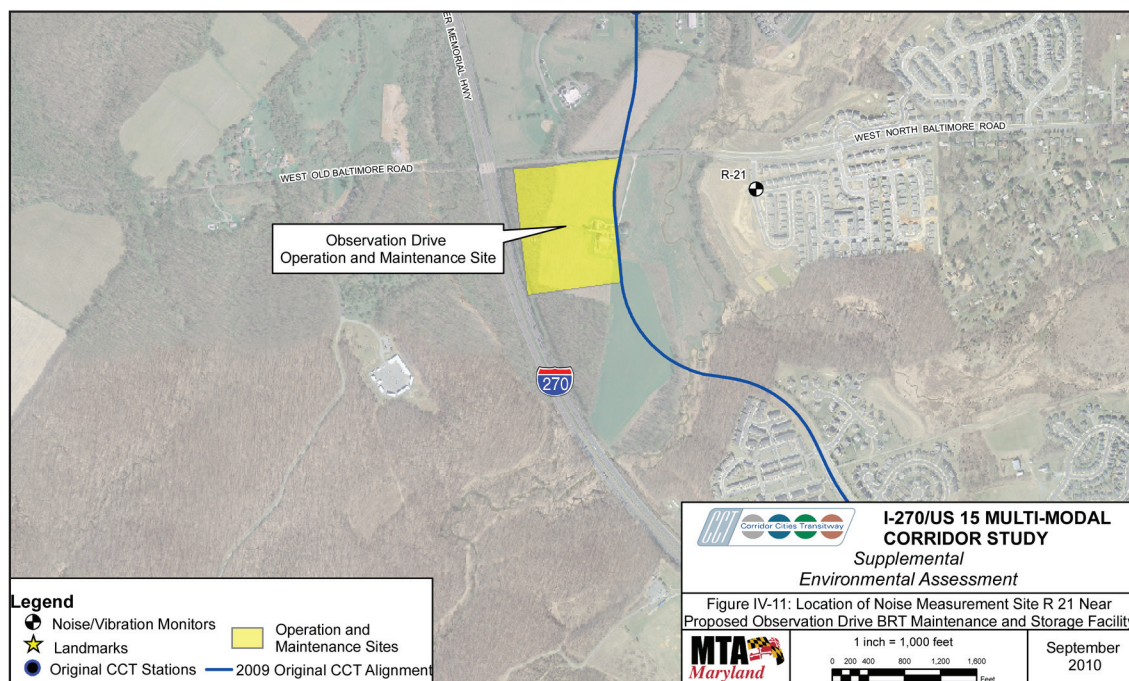


Figure IV-12: Location of Noise Measurement Site R 22 near Proposed Metropolitan Grove BRT & LRT Maintenance and Storage Facility

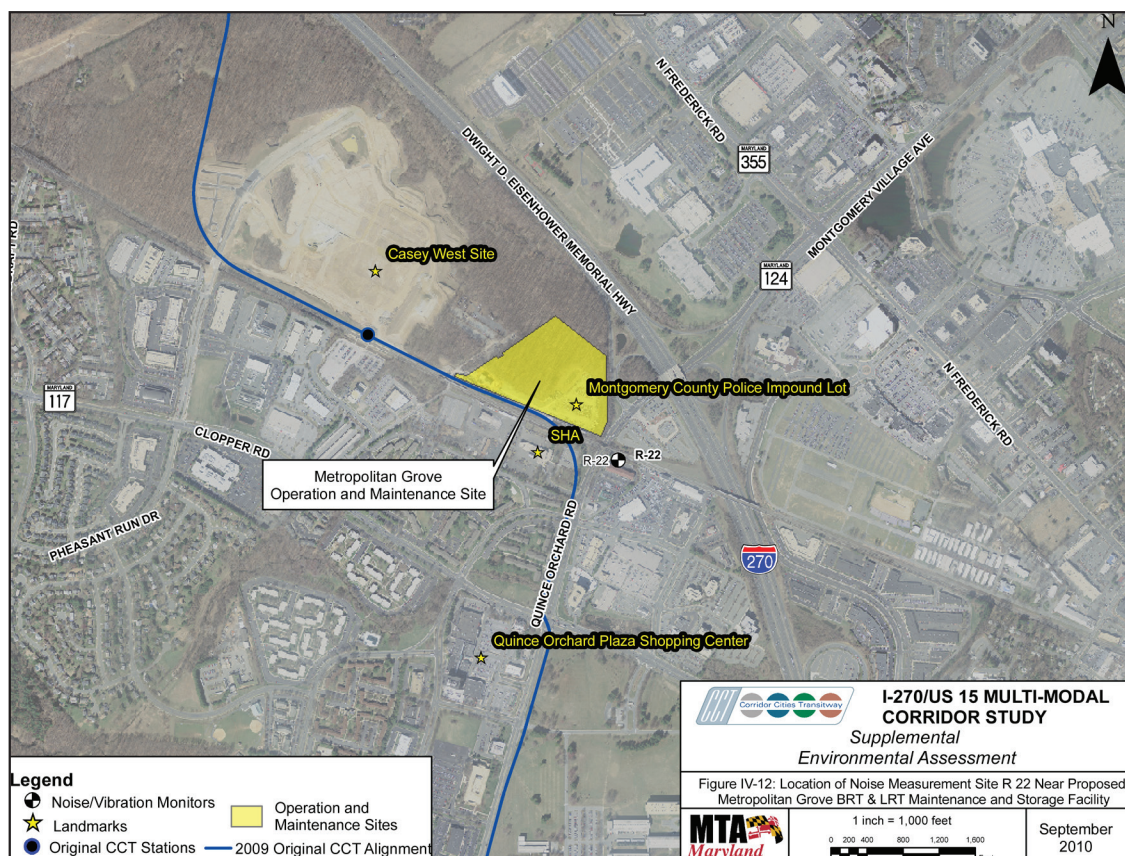


Table IV-21: Summary of Noise Measurements (L_{dn}) at Residential Land Uses (FTA "Category 2" Sites) Adjacent to Proposed CCT Corridor

SITE # ID			LOCATION	LAND USE	DATE	L_{DN}
2010 STUDY	2007 STUDY	2002 STUDY				
R-1	T-13	T-6	2 Purchase Street, Gaithersburg	Residential	5-15-06	68
R-2	NA	NA	Unit 12 Baybridge Court, Gaithersburg	Residential	5-4-10	61
R-3	NA	NA	130 Chevy Chase Street, Gaithersburg	Residential	5-4-10	71
R-4	T-12	T-N1	305 Swanton Lane, Gaithersburg	Residential	5-17-06	63
R-5	T-11	T-N4	300 High Gables Drive, Gaithersburg	Residential	5-31-06	65
R-6	T-10	T-5	427 Upshire Circle, Gaithersburg	Residential	5-15-06	61
R-7	T-9	T-4	309 Leafcap Road, Gaithersburg	Residential	5-16-06	66
R-8	T-8	T-3	67 Pontiac Way, Gaithersburg	Residential	5-4-10	61
R-9	NA	NA	314 Argosy Drive, Gaithersburg	Residential	5-4-10	58
R-10	T-7	T-2	141 Mission Drive, Gaithersburg	Residential	5-16-06	63
R-11	NA	NA	Belward Farm	Residential	5-4-10	55
R-12	NA	NA	10119 Darnestown Road, Gaithersburg	Residential	5-3-10	58
R-13	NA	NA	14910 Broschart Road, Rockville	Nanda Child Care	5-3-10	64 ¹
R-14	T-6	T-1	9963 Foxborough Circle, Gaithersburg	Residential	5-17-06	63
R-15	NA	NA	9909 Medical Center Drive, Gaithersburg	Hospital	5-4-10	58
R-16	NA	NA	9700 Oakdale Drive, Gaithersburg	Residential	5-3-10	59
R-17	T-5	T-N10	15303 Gable Ridge Court, Apt J, Gaithersburg	Residential	6-13-06	59
R-18	T-4	T-N9	9800 Fields Road, Gaithersburg	Residential	6-13-06	61
R-19	T-3	T-N8	9601 Fields Road, Apt. 102, Gaithersburg	Residential	6-12-06	67
R-20	NA	NA	Crown Farm Property near Omega Drive	Residential	5-3-10	56
R-21	NA	NA	13041 Seneca Ayr Drive, Germantown	Residential	5-5-10	58
R-22	NA	NA	497 Quince Orchard Road, Gaithersburg	Motel Six	5-5-10	74

¹Peak hour L_{eq} (h) dBA measured at this location because land use is primarily limited to daytime use.

Table IV-22: Noise Levels Defining Impact for Transit Projects

EXISTING NOISE EXPOSURE* L_{EQ} (1-hr) OR L_{DN} (dBA)	PROJECT NOISE IMPACT EXPOSURE, * L_{EQ} (1-hr) OR L_{DN} (dBA)					
	CATEGORY 1 OR 2 SITES			CATEGORY 3 SITES		
	NO IMPACT	MODERATE IMPACT	SEVERE IMPACT	NO IMPACT	MODERATE IMPACT	SEVERE IMPACT
51	<54	54-60	>60	<59	59-65	>65
52	<55	55-60	>60	<60	60-65	>65
53	<55	55-60	>60	<60	60-65	>65
54	<55	55-61	>61	<60	60-66	>66
55	<56	56-61	>61	<61	61-66	>66
56	<56	56-62	>62	<61	61-67	>67
57	<57	57-62	>62	<62	62-67	>67
58	<57	57-62	>62	<62	62-67	>67
59	<58	58-63	>63	<63	63-68	>68
60	<58	58-63	>63	<63	63-68	>68
61	<59	59-64	>64	<64	64-69	>69
62	<59	59-64	>64	<64	64-69	>69
63	<60	60-65	>65	<65	65-70	>70
64	<61	61-65	>65	<66	66-70	>70
65	<61	61-66	>66	<66	66-71	>71
66	<62	62-67	>67	<67	67-72	>72
67	<63	63-67	>67	<68	68-72	>72
68	<63	63-68	>68	<68	68-73	>73
69	<64	64-69	>69	<69	69-74	>74
70	<65	65-69	>69	<70	70-74	>74
71	<66	66-70	>70	<71	71-75	>75
72	<66	66-71	>71	<71	71-76	>76
73	<66	66-71	>71	<71	71-76	>76
74	<66	66-72	>72	<71	71-77	>77
75	<66	66-73	>73	<71	71-78	>78
76	<66	66-74	>74	<71	71-79	>79
77	<66	66-74	>74	<71	71-79	>79
>77	<66	66-75	>75	<71	71-80	>80

Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006

* L_{dn} is used for land use where nighttime sensitivity is a factor; L_{eq} during the hour of maximum transit noise exposure is used for land use involving only daytime activities.

Table IV-23: Existing Noise Exposure, Projected Future LRT Noise Exposure and Impact Assessment Using FTA Criteria

SITE NO.	EXISTING NOISE LEVEL ¹ L _{DN} (DBA)	S1+S2+S3 ALIGNMENT ²	S2C ALIGNMENT ²
		ESTIMATED L _{DN} LEVEL FTA IMPACT ASSESSMENT	ESTIMATED L _{DN} LEVEL FTA IMPACT ASSESSMENT
R-1	68	56 No Impact	NA
R-2	61	52 No Impact	NA
R-3	71	60 No Impact	NA
R-4	63	52 No Impact	NA
R-5	65	52 No Impact	NA
R-6	61	60 Moderate Impact	NA
R-7	66	52 No Impact	NA
R-8	61	44 No Impact	43 No Impact
R-9	58	52 No Impact	45 No Impact
R-10	63	NA	NA
R-11	55	48 No Impact	47 No Impact
R-12	58	NA	48 No Impact
R-13 ¹	64	55 No Impact	NA
R-14	63	NA	NA
R-15	58	NA	47 No Impact
R-16	59	45 No Impact	NA
R-17	59	53 No Impact	NA
R-18	61	56 No Impact	NA
R-19	67	55 No Impact	NA
R-20	56	NA	NA

¹ Existing L_{dn} noise levels are derived from 24-hour measurements collected at each location. Except Site R-13, which is limited to primarily daytime use, and therefore peak-hour L_{eq} is provided.

² Headways of 10 minutes (5 AM to 5:30 AM, 9:30 AM to 4:30 PM & 7:30 PM to 9 PM), 7.5 minutes (5:30 AM to 9:30 AM & 4:30 PM to 7:30 PM) and 12 minutes (9 PM to 1 AM) were used for the impact assessment, with no service from 1 AM to 5 AM.

NOTE: NA indicates where the alignment modification (column header) is not in proximity to the receptor site (row).

Table IV-24: Existing Noise Levels, Projected Future BRT Noise Exposure and Impact Assessment Using FTA Criteria

SITE NO.	EXISTING NOISE LEVEL ¹ L _{DN} (dBA)	S1+S2+S3 ALIGNMENT ²	S2C ALIGNMENT ²
		ESTIMATED L _{DN} LEVEL FTA IMPACT ASSESSMENT	ESTIMATED L _{DN} LEVEL FTA IMPACT ASSESSMENT
R-1	68	58 No Impact	NA
R-2	61	55 No Impact	NA
R-3	71	63 No Impact	NA
R-4	63	55 No Impact	NA
R-5	65	55 No Impact	NA
R-6	61	63 Moderate Impact	NA
R-7	66	55 No Impact	NA
R-8	61	49 No Impact	47 No Impact
R-9	58	55 No Impact	55 No Impact
R-10	63	NA	NA
R-11	55	51 No Impact	50 No Impact
R-12	58	NA	52 NO IMPACT
R-13 ¹	64	59 No Impact	NA
R-14	63	NA	NA
R-15	58	NA	52 No impact
R-16	59	49 No Impact	NA
R-17	59	57 No Impact	NA
R-18	61	59 Moderate Impact	NA
R-19	67	58 No Impact	NA
R-20	56	NA	NA

¹ Existing L_{dn} noise levels are derived from 24-hour measurements collected at each location. Except Site R-13, which is limited to primarily daytime use, and therefore peak-hour L_{eq} is provided.

² Headways of 10 minutes (5 AM to 5:30 AM, 9:30 AM to 4:30 PM & 7:30 PM to 9 PM), 7.5 minutes (5:30 AM to 9:30 AM & 4:30 PM to 7:30 PM) and 12 minutes (9 PM to 1 AM) were used for the impact assessment, with no service from 1 AM to 5 AM.

NOTE: NA indicates where the alignment modification (column header) is not in proximity to the receptor site (row)

under normal operating conditions (no horn blowing) there will be no severe impacts under any of the proposed LRT or BRT alignment modifications, with moderate impacts identified only as follows:

- Under the LRT and BRT S3 alignment modification, a moderate noise impact is expected at one site (R-6), a residential property at 427 Upshire Circle
- Under the S1 alignment, a moderate noise impact is expected at Site R-18 only if the BRT mode is selected. R-18 is located near Crown Farm at 9800 Fields Road, Gaithersburg

Table IV-25 provides a summary of the projected noise impacts that are likely to occur under LRT operations at properties near grade crossings if train horn sounding warnings were to be required. The FTA has no such requirement and looks to the states to rule on the matter of horn use at grade crossings. The additional noise impact assessment due to possible horn blowing was completed at properties that were within 1,000 feet of proposed at-grade crossings where possible horn noise annoyance could be a noise contributing factor. The analysis findings indicate that moderate or severe noise impacts are projected to occur at Sites R-8, R-15, R-16

and R-17 under all proposed alignment options that pass by these areas. Where impacts are found to be severe, the second row of buildings from the alignment may potentially experience noise levels in the FTA moderate impact category. Beyond these second row properties, shielding provided by building rows should diminish noise levels sufficiently to below the FTA moderate impact threshold.

Where impacts from horn blowing are expected to be severe, it is anticipated that measures would be put in place to eliminate the need for horn-blowing. Detailed hour-by-hour LRT and BRT noise calculations at each of the noise monitoring sites are contained in the 2010 *Corridor Cities Transitway Supplemental Noise and Vibration Technical Memorandum*.

Operations and Maintenance Facilities

Operations and maintenance activities, whether BRT or LRT, produce randomly occurring noises that are of a considerably different character than typical community background noise. Therefore, if the noises are higher than the background noise level, they can be noticeable and intrusive. Most of the noises produced by the transit vehicles are controlled to a level that would avoid impact

Table IV-25: Locations Where Noise Impacts Are Expected if Horn Noise Soundings Are Used at Grade Crossings

SITE NO.	EXISTING NOISE LEVEL ¹ L_{DN} (dBA)	S1+S2+S3 ALIGNMENT ²	S2C ALIGNMENT ²
		ESTIMATED L_{DN} LEVEL FTA IMPACT ASSESSMENT	ESTIMATED L_{DN} LEVEL FTA IMPACT ASSESSMENT
R-8	61	65 SEVERE IMPACT	63 MODERATE IMPACT
R-15	58	NA	69 SEVERE IMPACT
R-16	59	61 MODERATE IMPACT	NA
R-17	59	72 SEVERE IMPACT	NA

¹Existing L_{dn} noise levels are derived from 24 hour measurements collected at each location.

²Headways of 10 minutes (5 AM to 5:30 AM, 9:30 AM to 4:30 PM & 7:30 PM to 9 PM), 7.5 minutes (5:30 AM to 9:30 AM & 4:30 PM to 7:30 PM) and 12 minutes (9 PM to 1 AM) were used for the impact assessment, with no service from 1 AM to 5 AM.

NOTE: NA indicates where the alignment modification (column header) is not in proximity to the receptor site (row).

Table IV-26: Summary of Existing, Future Noise Level Estimates and FTA Impact Assessment Due to Operations & Maintenance

RECEPTOR	FACILITY	OPERATION AND MAINTENANCE USE (Transit Mode)	EXISTING DAY-NIGHT NOISE LEVEL L_{DN} (dBA)	PROJECTED DAY-NIGHT NOISE LEVELS (L_{DN} dBA) DUE TO O&M FTA IMPACT ASSESSMENT
R-21	Observation Drive	BRT	58	38 No Impact
R-22	Metropolitan Grove	BRT	74	47 No Impact
R-22	Metropolitan Grove	LRT	74	65 No Impact

on adjacent areas unless the separation distance between the operations and maintenance facilities and the residential area is small.

Noise generated from yard and shop related activities were calculated based on the reference Sound Exposure Levels (SEL dBA), screening distances and calculation procedures provided in the FTA Manual. Total noise from all of the operations and maintenance activities was estimated after applying distance correction from the site boundary.

Two locations were identified for O&M facilities: the Observation Drive site would serve only as a BRT facility and the Metropolitan Grove site could serve either LRT or BRT maintenance operations. Existing 24-hour noise measurements were collected at the nearest noise sensitive properties adjacent to each proposed facility. These measurement locations are identified as Site R-21 on **Figure IV-11** and Site R-22 shown on **Figure IV-12**.

Table IV-26 provides a summary of the existing noise levels at both sites, along with projected future day-night noise levels that would be generated from operations and maintenance activities at each of the representative receptor locations. The high (existing) measured L_{dn} level recorded at Site R-22 is due primarily to its close proximity to existing active railroad tracks that pass over the area near Quincy Orchard Road. The analysis findings indicate that noise generated from maintenance and storage operations are expected to be below the FTA impact threshold at the nearest noise-sensitive properties adjacent to either proposed facility.

Mitigation Measures

Practical noise mitigation measures that are employed in reducing noise from train operations are summarized in the FTA Manual and include the following:

- Select quieter system-wide components (e.g., continuous welded rail, tie and ballast track work, resilient wheels, skirts on the vehicle to reduce equipment noise, etc.)
- Add design features (e.g., noise barriers if adequate space is available, lubricate track at curves, track-bed isolation, movable point switch frogs, etc.)
- Tailor operation plans to provide reduction in noise and vibration levels such as reducing vehicle speed, eliminate bells/horns at grade crossings, proper vehicle maintenance, etc.

The first measures would likely be included in the project design if the LRT mode is selected to reduce overall noise. The second and third types of improvements are usually site-specific and are only considered at sites where (1) noise impacts are expected and (2) where the number of “benefitted receivers” (e.g., the number of homes or hospitals where project noise is noticeably reduced) justifies the cost of constructing the mitigation (e.g., a noise wall or crossing gates).

The noise analysis findings indicate that under normal operating conditions (no horn blowing) there will be no severe impacts from either LRT or BRT operations.

Most considerations for noise abatement are generally limited to those areas that are projected to experience

severe impacts. While impacts in the moderate range are not of the same magnitude as severe impacts, there might be circumstances that would warrant abatement consideration, such as a large cluster of residences adjacent to a proposed transit line or when moderate impacts are approaching the severe impact threshold. For this reason, potential mitigation measures at Sites R-6 and R-18 (where moderate impacts were predicted under the S1 and S3 alignment modifications as noted above) are discussed below.

Site R-18 is a single isolated property and thus would not satisfy cost effectiveness requirements and therefore noise barrier abatement is not considered feasible at this property.

Site R-6 represents a residential cluster of single family homes just north of the Washingtonian Woods Park in Gaithersburg. This area could feasibly benefit from a noise barrier if one is desired. A discussion on potential noise wall costs and effectiveness is provided in the *Corridor Cities Transitway Noise and Vibration Technical Report*. Additional engineering work is needed to determine if a noise wall is feasible near Site R-6. Furthermore, consultation with the community would be needed to determine if a noise barrier is desired. While effective at reducing noise in many situations, noise walls must be continuous to maximize their effectiveness and can therefore create an unwanted visual intrusion as well as a barrier to pedestrian, bicycle and vehicular traffic, impacting community cohesiveness.

Train Horn Noise Mitigation Measures

Receptor sites near four at-grade crossings (R-8, R-15, R-16 and R-17) are expected to experience moderate to severe impacts generated from LRT horn noise soundings under various alignment modifications (**Table IV-26**). The most adversely affected properties are expected to be residences within 500 feet of the intersection of Muddy Branch Road and Great Seneca Highway (near Site R-8) and residences near the intersection of Diamondback and Decoverly Drives (near Site R-16). The affected residential areas and the path of each of the proposed LRT alternatives as they pass through these intersections are illustrated in **Figure IV-10**.

Where impacts are found to be severe, measures can be put in place to eliminate the need for horn-blowing. A

variety of approaches are available for reducing noise due to train horns near roadway/rail at-grade crossings. These include equipping crossings with flashing warning lights and automatic gates, as well as the use of median barriers, paired one-way streets, enforcement cameras similar to those used to ticket red-light runners, and wayside horns (where a warning horn installed at the crossing focuses an audible warning at the railroad crossing itself instead of using the horns mounted on the trains).

Depending on actual design requirements, median barriers may be expensive to install at some locations. A four-quadrant gate system would generally be more expensive than a median barrier. As with noise walls, the cost-effectiveness of any abatement measure will depend on whether or not a substantial number of homes or other sensitive receptors would be protected by the elimination of horn noise soundings and if there would be other benefits, such as safety improvements, that need to be considered in the decision-making process.

In addition to these measures, the Federal Railroad Administration (FRA) has designated the wayside horn to be a substitute for the use of locomotive horns at public highway-rail grade crossings. The system is designed to reduce the overall ambient horn noise by using a warning horn installed at the crossing that focuses an audible warning at the railroad crossing itself instead of using the horns mounted on the trains. The system is activated by the existing crossing signal system and projects a recorded train horn sound to traffic at the railroad crossing.

The final determination of the need for horn blowing will depend on whether future design modifications to an LRT alternative are considered that would meet USDOT criteria for Quiet Zones.

Vibration Analysis

A detailed discussion of the vibration analysis, including measurement, impacts, and FTA regulations, is contained in the *2010 Corridor Cities Transitway Supplemental Noise and Vibration Technical Memorandum*.

Existing Vibration Levels and Vibration Prediction Methodology

The major sources of vibration in the corridor today include automobiles, trucks, and buses. Typical velocity

levels generated by these types of vehicles range from 50 to 60 VdB and are generally considered below the threshold of perception. FTA vibration criteria do not require measurement of existing vibration levels to assess potential impacts of transit vibration impact. Estimated vibration levels were determined following procedures contained in Chapter 10 of the FTA Manual.

Vibration Impact Assessment and Mitigation Measures

At all 20 receptor sites evaluated for the CCT alignment options in the Gaithersburg area (see **Figure IV-10**) velocity levels throughout the transit corridor stayed below the FTA thresholds under both LRT and BRT proposed operations. The LRT and BRT vibration calculations for each of the proposed CCT alignment options are contained in the *2010 Corridor Cities Transitway Supplemental Noise and Vibration Technical Memorandum*.

Analysis is not needed for the proposed O&M facility sites. The FTA manual screening distance for completing ground-borne vibration impact assessment is 150 feet or less for residential areas and 450 feet or less for more sensitive concert halls/auditoriums and TV/recording studios. All existing vibration-sensitive properties near proposed CCT maintenance facilities are beyond these distances and therefore no vibration impact assessment is necessary.

Mitigation

The vibration impacts of transit operations were found to be below the FTA impact threshold for all alignment modifications and both O&M sites. Therefore, consideration of vibration mitigation measures is not necessary.

Visual Quality

Visual impact assessments are routinely performed on transportation projects to ascertain the effects of proposed projects on the visual environment, including the natural, historic, and human environments. Visual quality is one of many resources protected by NEPA and the CEQ regulations that support NEPA implementation.

Existing Conditions

The visual landscape of the CCT varies considerably, from the largely rural settings of the northern portion of the alignment to the highly developed suburban

landscapes found in the southern portion of the study area. The proposed CCT alignment from Shady Grove Metro Station to COMSAT Station passes alongside several distinctive neighborhoods and diverse land uses including highway; interchanges; major and minor roads; low, medium and high-density residential areas; office and industrial parks; commercial areas; and open space.

The existing visual character of the area surrounding the CCT corridor has not changed substantially from that described in the 2002 DEIS (see pages III-305 to III-312). However, large, mixed-use developments, such as those in downtown Germantown adjacent to the transit center, were constructed after 2002 and have altered the visual landscape. In other areas, new office, residential and commercial developments are being planned or are under construction. These will similarly change the visual landscape by the time the CCT would be constructed. This would include new development anticipated near the O&M sites and in the Crown Farm, Kentlands and Belward Farm areas, which are all in the area of the possible alignment modifications.

The Observation Drive site is a former farm and contains a farmhouse, two barns, and other farming-related outbuildings. Land surrounding this site includes a vacant stream buffer area to the east, and to the south, a large wooded buffer separates this site from The Vistas at Millstone and Brookfield residential developments.

The visual environment surrounding the Metropolitan Grove O&M site includes a mix of forested area and transportation uses, including the Montgomery County Police Abandoned Motor Vehicle Unit impound lot, warehouses and distribution centers, and rail tracks. It is also located within view of Browns Station Park.

Visual Impacts

The infrastructure associated with the transitway varies by mode, and each would affect the visual environment differently. For example, an LRT system includes catenary wires and poles that are not components of a BRT system. Vehicle types and design, station designs, park-and-ride lots, maintenance facilities and the guideways all have elements that will alter the visual landscape.

The visual impact of a proposed transportation project also can vary considerably depending on the existing

character of the natural and built environment and the design elements of the proposed transportation system.

The 2002 DEIS presented the potential impacts of the project on visually sensitive areas. The alignment modifications are expected to have similar impacts as those described for the transit components (see pages III-317 to III-320).

In general, the CCT is expected to have moderate visual effects since it would travel mostly at ground level and frequently along existing transportation corridors. There are several locations where above-grade crossings are being considered, including Great Seneca Highway at Muddy Branch Road and Quince Orchard Road at Clopper Road. The transit stations and the O&M facility would have the greatest degree of visual effect.

At this point in the development of the CCT, it is difficult to assess visual impacts because many design elements are unknown, including mode, design, lighting, and landscaping of stations and park-and-ride lots. Furthermore, the design of some of the surrounding areas will be changing (e.g., the development planned for the Kentlands, Belward Farm and Crown Farm). For this reason, it is recommended that additional visual impact analysis be done after further design development is completed.

Construction along the alignment modifications through the existing undeveloped farm areas of Belward Farm and Crown Farm would result in a visual impact. It can be assumed, however, that planned developments in the Crown Farm, LSC and Kentlands areas will be designed with a future transit system in place, greatly reducing the potential visual impact of the proposed alignment modifications on the likely future landscape.

The already-developed areas through which the two LSC alignment modifications are proposed will experience some visual changes. Because both S2 and S2c would largely be traveling along existing or planned roadways and parking lots, visual impacts should be minor.

Mitigation

Negative impacts would occur in places where proposed facilities would detract from or obstruct the view of existing visually sensitive areas. Mitigation measures would be implemented where appropriate and in consultation with adjacent communities and property

owners. Mitigation measures could include landscaping and tree replacement to reduce the visual effects of the transportation system. In addition, the design of transit stations and facilities, bridges and other structures could use materials, colors, and other features to integrate into the surrounding landscape.

Mitigation measures for short term temporary construction impacts could include timing of construction activities and use of construction fencing.

Construction and Operational Issues

There are some unavoidable but temporary community impacts that result from the construction of transportation projects. These typically include the following impact types:

- Noise and vibration from construction equipment
- Air quality impacts from fugitive dust as well as emissions from construction vehicles and other equipment
- Traffic impacts (where the alignment runs along or across a road)

Construction-related noise, vibration, air quality and traffic issues for the alignment modifications as well as the two proposed O&M sites would be similar to the impacts described for the Original CCT Alignment alternatives, as described in Chapter IV of the 2009 AA/EA.

The visual character of the two O&M sites would change if either were selected. Given current land uses, these effects are expected to be minor. However, the visual impacts will be assessed in greater detail during project design. With details regarding the modes and alignment designs known, better information about the scope and degree of the impacts could be assessed and design and alignment concepts for avoidance and/or mitigation can be developed.

Indirect and Cumulative Effects (ICE) Analysis

An indirect and cumulative effects (ICE) analysis is conducted to evaluate secondary impacts and cumulative effects on the environment that may result from a project and other past, present, and reasonably

foreseeable future actions regardless of the organization or individual which may undertake such actions.

The CEQ regulation (40 CFR § 1508.8(b)) describes indirect, or secondary, impacts as, “caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” The CEQ regulations (40 CFR § 1580.7) define cumulative effects as, “an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (Federal, or non-Federal) or person undertakes such other actions.”

Guidance for this analysis was obtained from the following publications:

- Council on Environmental Quality’s (CEQ) regulations (40 CFR Sections 1500 – 1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC Sections 4321 et seq.)
- Council on Environmental Quality 1997 guidelines, Considering Cumulative Effects under the National Environmental Policy Act
- Maryland State Highway Administration’s Internal *Indirect and Cumulative Effects Analysis Guidelines*, revised 2007
- Federal Highway Administration Position Paper: Secondary and Cumulative Impact Assessment in the Highway Project Development Process, April 1992

2002 Analysis

Indirect and cumulative effects most often occur as a result of changes in land use. For the 2002 DEIS, the SHA in cooperation with the MTA, established a panel of land use experts to develop the ICE analysis (referred to in the DEIS as the SCEA, or Secondary and Cumulative Effects Analysis). The Expert Panel Land Use was comprised of knowledgeable local and national experts who were asked to identify potential future land use in the region. The results of their analysis and the overall ICE evaluation are described in **Chapter III** of the **2002 DEIS**.

Impacts

The Gaithersburg area alignment modifications presently under consideration and described in Chapter II are relatively minor. With differences in direct impacts to various resources being relatively small, as described in the sections above, the potential for differences in indirect and cumulative impacts to these same resources would be similarly limited.

Similarly, in the context of regional development, the selection of one O&M location over another would produce only minor differences in indirect and cumulative impacts.

There are therefore no indications that the conclusions reached in the 2002 ICE analysis would change either as a result of the proposed alignment modifications or because of the selection of one O&M facility location over the other.

Energy

Energy is an important environmental resource, and its use contributes to the degradation of other environmental resources such as air quality and land. Transportation energy is generally discussed in terms of direct and indirect energy. Direct energy is the energy used to operate vehicles. The amount of energy used is a function of traffic characteristics such as volume, speed, distance traveled, vehicle mix, and thermal value of the fuel being used. Indirect energy is the energy needed to construct the project, a one-time energy expenditure.

Existing Conditions

Existing conditions regarding energy use in Maryland are described in **Chapter IV** of the **2009 AA/EA**.

Impacts

At this point in the study, without refined information on materials and rolling stock to be used on the CCT corridor, the direct and indirect energy impacts of the project are assumed to be the same as those presented in the 2009 AA/EA. The impacts of one or more of the alignment modifications, as well as the selection of a specific O&M site, are too minor to impact direct and indirect energy use estimates at this level of study.

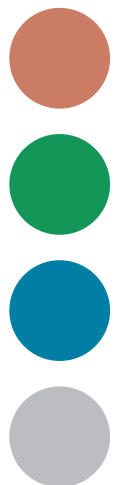
Measures to Minimize Harm

As noted in the 2009 AA/EA, conservation of energy could be achieved in facility planning, construction, operation and maintenance of the project. Conservation could also be applied to recycling pavements, hardware items (guardrails, signals, tires, right-of-way, etc.), using indigenous plants for landscaping, and applying Best Management Practices in maintenance. Other measures that could be applied include using high pressure sodium vapor lamps for light, solar powered lighting, and promoting carpools, vanpools, and bicycle use.



CHAPTER V

Section 4(f) Evaluation Summary and Update



CORRIDOR CITIES TRANSITWAY
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Chapter V – Section 4(f) Evaluation Summary and Update

Overview of Section 4(f) Regulations

Section 4(f) of the US Department of Transportation Act of 1966, 49 USC 303(c), as implemented through 23 CFR 774 jointly by the Federal Highway Administration (Administration) and the Federal Transit Administration (Administration), requires that the proposed use of land from any publicly-owned public park, recreation area, wildlife and/or waterfowl refuge, or any significant historic site, as part of a federally funded or approved transportation project, is not permissible unless:

- a) The Administration determines there is no feasible and prudent avoidance alternative to the use of land from the property, and the action includes all possible planning to minimize harm to the property resulting from such use [23 CFR 774.3(a)]; or
- b) The Administration determines the use of the Section 4(f) property, including any measures to minimize harm (such as avoidance, minimization, mitigation, or enhancements measures) committed to by the applicant, will have a *de minimis* impact on the property [SAFETEA-LU Section 6009(P.L. 109-53) and 23 CFR 774.3(b)].

Further, Section 4(f) defines the use of property as:

- Land from a 4(f) resource is permanently incorporated into a transportation facility;
- A temporary occupancy of land that is adverse in terms of the Section 4(f) statute's preservationist purposes;
- A constructive use; or
- A *de minimis* impact on the property, as defined in 23 CFR 774.17:

For historic sites, *de minimis* impact means that the Administration has determined, in accordance with 36 CFR part 800, that no historic property is affected by the project or that the project will have “no adverse effect” on the historic property in question.

For parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

Background

The 2002 DEIS and Section 4(f) Evaluation and 2009 AA/EA identified two National Register eligible historic properties in the Gaithersburg area that might be affected by the long standing Original CCT Alignment, as well as the proposed alignment and station modifications that are the primary subject of this supplemental document. In addition, properties under public ownership were identified in the vicinity of the alignments and Operations and Maintenance (O&M) sites since the 2009 AA/EA was published.

Where potential impacts to properties protected by Section 4(f) are discovered or anticipated, analysis is required to determine if there are feasible and prudent ways to avoid the use (so-called “avoidance alternatives”) and/or to determine if the impacts are of a *de minimis* nature.

This chapter includes

- The further examination and conceptual design of possible Section 4(f) avoidance alignments
- A discussion of possible impacts associated with the avoidance alignments

The purpose of this chapter is to help inform a future selection of a Locally Preferred Alternative (LPA) for the transit element of the I-270/US 15 Multi-Modal Corridor Study. This chapter is not intended to bring conclusion to the Section 4(f) evaluation process or the feasibility determination of any of the avoidance alignments presented. Coordination is ongoing with the appropriate owners and/or stewards of the parks and historic sites in question, as well as appropriate interested parties.

Section 4(f) Resources Associated with the Alignment Modifications and O&M Sites

Chapter IV of the **2009 AA/EA** has a complete listing of Section 4(f) resources in the entire I-270/US 15/CCT project study area, including both park/recreational resources and historical resources. Being focused on just the potential transit alignment modifications and new stations through the Crown Farm, Life Sciences Center (LSC) and Kentlands areas and the two remaining O&M sites under study located at Observation Drive and Metropolitan Grove, this document only covers the following Section 4(f) resources:

- Muddy Branch Stream Valley Park (SVP)
- Crown Farm
- Belward Farm

These resources are described individually below.

Public Park and Recreation Areas

Muddy Branch Stream Valley Park

Muddy Branch Stream Valley Park is a large passive park. It is a greenway beginning in Gaithersburg and connecting to the Potomac River. The corridor is owned by Maryland-National Capital Park and Planning Commission (M-NCPPC) and the City of Gaithersburg. At this time, there are no active uses on this property and it is not open to the public in the vicinity of the CCT alignment. A connection to the Rock Creek Greenways is planned. A trail linking Blockhouse Point Park and the C&O Canal National Historical Park has been proposed. Further coordination with M-NCPPC will be necessary to ascertain the future of this property as an active park or recreational area.

Historical Resources

Belward Farm (Maryland Inventory of Historic Places #M: 20-21)

Belward Farm is located on the north side of MD 28 west of Great Seneca Highway in the vicinity of Gaithersburg. (Sheet **TRAN 3, Appendix A**). It is eligible for listing in the National Register of Historic Places (NRHP) under Criterion A and Criterion C for its association with agrarian history in Montgomery County and the architectural character of the farmstead



Belward Farm

building. The historic site is a remnant of a dairy farm continuously operated by members of the same family who established it in the mid-nineteenth century. The farmhouse is an excellent example of an 1890s Victorian frame dwelling. Since 1998, a portion of the historic site located east of the farmstead building cluster has undergone development as the first portion of the approved 1996 Johns Hopkins University Belward Research Campus.

The 107-acre property eligible for the NRHP is privately owned and is currently a fallow farm field approved for an additional 1.4 million square feet of development as part of the approved 1996 Johns Hopkins University Belward Research Campus.

The Maryland Historical Trust concurred that the project, if built along the Original CCT Alignment, will have an adverse effect on this resource. The anticipated effects of proposed modified alignments S2 and S2c would also have an adverse effect on this resource if built, therefore a use under Section 4(f) would occur.

England/Crown Farm (Maryland Inventory of Historic Places #M: 20-17)

England/Crown Farm is located within the Gaithersburg City limits (Sheet **TRAN 1, Appendix A**) and is eligible for listing in the NRHP under Criterion A for its association with the agrarian history of Montgomery County. The dwelling is part of a well-preserved early to mid-twentieth century farm complex originating with the England family in the late nineteenth century. It exhibits architectural significance because of its detailing and the presence of a log dwelling, possibly originally a tenant house during the ownership by the Hunter



Crown Farm

family predating the England family ownership. The England/Crown Farm has been identified as a rare link to the agrarian past of the Gaithersburg area, which is increasingly covered by subdivision construction.

This 76-acre property is privately owned and is currently a fallow farm field awaiting planned development.

The Maryland Historical Trust concurred that the project, if built along the Original CCT Alignment, will have an adverse effect on this resource. The proposed S1 alignment through Crown Farm would also have an adverse effect on this resource if built, therefore a use under Section 4(f) would occur.

Section 4(f) Use from Alignment Modifications and O&M Sites on the Above-Listed Resources

Table V-1 below indicates the potential impact of the proposed alignment modifications on Crown and Belward Farms, and Muddy Branch Stream Valley Park.

Table V-1: Section 4(f) Use of Proposed Alignment Modifications

RESOURCE	POTENTIAL USE
Muddy Branch Stream Valley Park	S3 – 0.02 acre
Crown Farm	S1 – 4.42 acres
Belward Farm	S2 – 9.85 acres S2c – 9.85 acres

Muddy Branch Stream Valley Park

Both the Original CCT Alignment and the S3 alignment run alongside Great Seneca Highway (the former on the north/east side of the travel lanes, and the latter on the south/west side). Great Seneca Highway runs through Muddy Branch Stream Valley Park, so an expansion to either side would impact the park. The S3 alignment would impact an estimated 0.02 acres of the park. This would be a strip taking in an area of the park that is not actively used by the public because it is adjacent to a major road.

Crown Farm

As reported in the 2009 AA/EA, the Original CCT Alignment would impact 3.6 acres of this property, and cut diagonally across the full expanse of the property and the smaller National Register eligible historic boundary. The S1 alignment would use 4.42 acres of the property from the National Register eligible historic boundary, which would be utilized for a transitway, as well as for a station. The S1 alignment would pass slightly closer to the farm buildings that are part of this site.

The Maryland Transit Administration (MTA) has consulted with the property owners of Crown Farm and the City of Gaithersburg on the historic eligibility of the property and the need to identify and study alternatives that would avoid impacts to the property. Redevelopment of Crown Farm appears in the recently updated City of Gaithersburg Master Plan, which is still in draft form. (See **Chapter I** for a description of this document.) The owners of the property have plans to redevelop the farmland into four distinct “neighborhoods,” including a mixed-use Main Street that features the CCT running in an extended Decoverly Drive. The property is currently being prepared for the development and its continued eligibility for the National Register and/or the possible effects of the various CCT alignments will be re-examined in the future as appropriate.

Belward Farm

As reported in the 2009 AA/EA, the Original CCT Alignment would impact the wooded northeast corner of the National Register eligible boundary of Belward Farm. The impact area of 0.64 acres was to be used for constructing a parking structure and hiker/biker trail. At the time, the plan for these components of the CCT was in line with the development plans for the area.

The S2 and S2c alignments would use 9.85 acres of this property, which would be utilized for transitway, as well as for a station. Both of these alignments would run much closer to the farm buildings on this site than the Original CCT Alignment.

The MTA has engaged in consultation with Montgomery County and the owners of Belward Farm on the historic eligibility of the property and the need to identify and study alternatives that would avoid use of the property per Section 4(f). The owner intends to redevelop the farmland into a transit and pedestrian oriented biotechnology research “community” featuring laboratory and office space, educational facilities, retail, recreational and other uses. The property is currently approved for 1,411,350 square feet of additional development and its continued eligibility for the National Register and/or the possible effects of the various CCT alignments will be re-examined in the future as appropriate. Montgomery County has incorporated these plans into their recently adopted *Great Seneca Science Corridor Master Plan* (discussed in **Chapter I** of this document), which includes the realigned CCT operating through the center of Belward Farm as described above. The site of the original homestead and farm buildings would be preserved and integrated into the fabric of the planned research campus.

Description of the Avoidance Alignments

Because of the potential Section 4(f) use of the National Register eligible Crown Farm and Belward Farm that would result from the S1, S2, and S2c alignment modifications (as well as the Original CCT Alignment), a number of avoidance alignments were developed for further examination if avoidance of these sites is feasible and prudent. The avoidance alignments are described below and depicted in **Figure V-1** with the Original CCT Alignment, the proposed alignment modifications, and the historic resources. It should be noted that the lines in **Figure V-1** denoting the various alignments are conceptual and do not indicate the full “limits of disturbance” that these alignments could have. Actual Section 4(f) use, which is conservatively estimated at

this point in the design stage, would include stations, possible park-and-ride lots, and the proposed hiker/biker trail. While some of these impacts are not visually evident in **Figure V-1**, the potential Section 4(f) use is accurately indicated in the tables and text of this chapter. More detailed graphics are available in the plan sheets in **Appendix A**.

As stated in the 2009 AA/EA, the No-Build and the Transportation Systems Management/Travel Demand Management (TSM/TDM) Alternative would completely avoid impacts to the potentially-impacted resources but they are not feasible and prudent because they do not meet the project purpose and need.

The prior study documents, including the 2009 Section 4(f) Evaluation, also concluded that avoidance options regarding Crown Farm and Belward Farm were not prudent or feasible, and that further impact minimization, footprint reduction and other techniques would be examined in later stages of design. The concept-level engineering described below is intended to examine in greater detail the feasibility of avoiding these Section 4(f) resources. This was done to better inform a future LPA decision, as well as ongoing and future coordination with the owners and regulatory agencies associated with these properties.

S1a – Crown Farm Full Avoidance Alignment

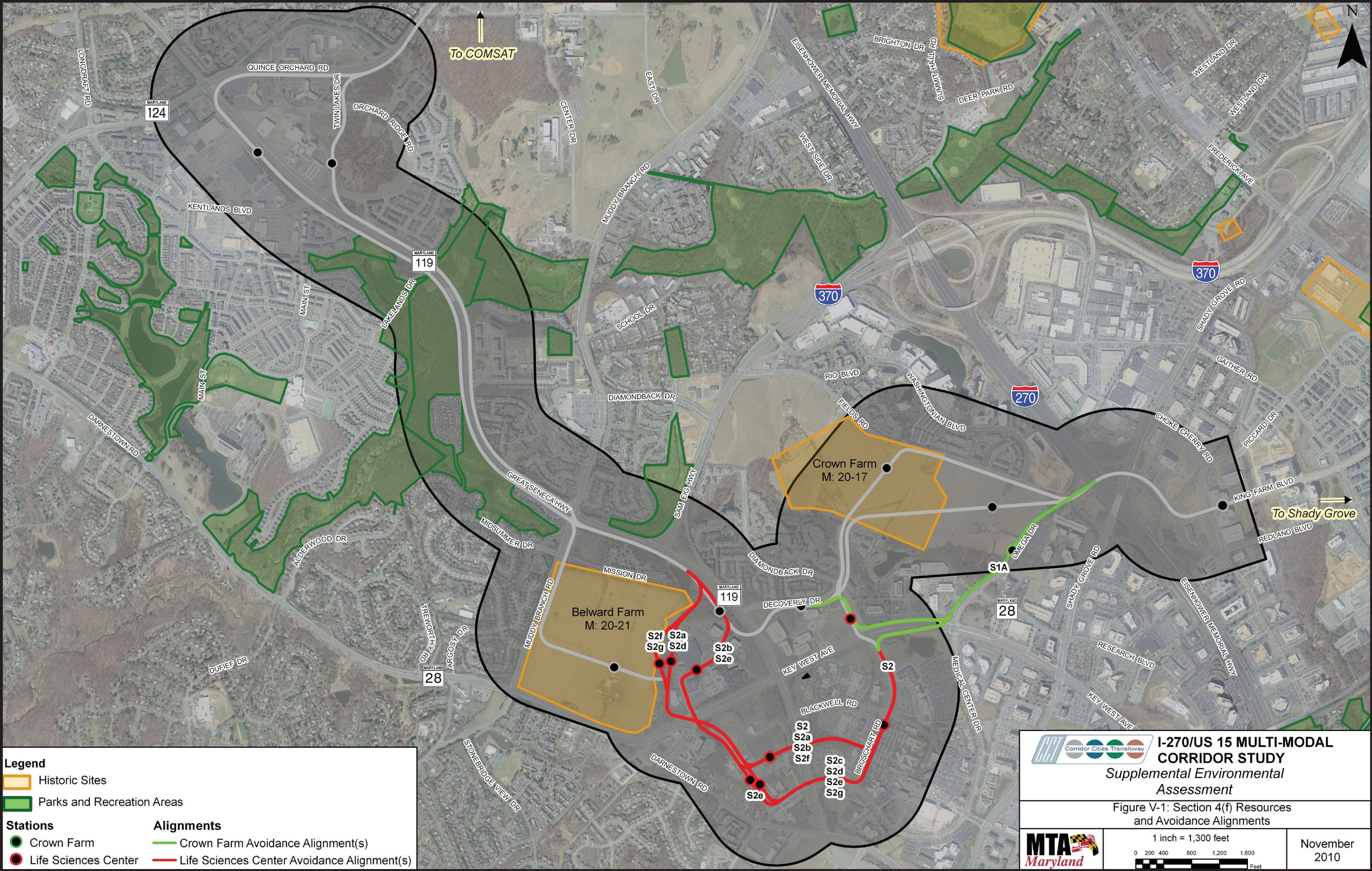
This alignment modification would completely avoid the Crown Farm property by following the Original CCT Alignment until just after the I-270 crossing where it turns left to run along Omega Drive. The alignment turns right along Key West Avenue and would either turn northbound along Diamondback Drive to rejoin the Original CCT Alignment at the intersection of Diamondback Drive and Decoverly Drive or continue south to connect with S2, S2c, or the other LSC alignments described below.

This alignment includes a station located along Omega Drive.

S2a – Belward Farm Minimization Alignment (East) Skirting the Historic Property

From Crown Farm, this alignment runs along Diamondback Drive through a tunnel under Key West

Figure V-1: Avoidance Alternative Alignments



Avenue and continues along Broschart Road. The alignment turns right to travel west through a currently wooded area between the planned extension of Blackwell Road and Medical Center Drive with a bridge over Great Seneca Highway. The alignment then continues along the north side of a future extended Johns Hopkins Drive where it continues through a tunnel under Key West Avenue. From Key West Avenue, the alignment continues along the eastern edge of the Belward Farm property along the border between the currently undeveloped farm and the existing developed property. The alignment rejoins the Original CCT Alignment at Great Seneca Highway. The segment of Great Seneca Highway immediately to the west includes planned, grade-separated interchanges at Sam Eig Highway and Muddy Branch Road. Although not analyzed in this document, construction of those planned interchanges may force a shift to the CCT alignment and may result in additional impacts on natural resources and developed properties. These potential impacts will be examined in the future.

S2a has three stations, two are the same locations as proposed for S2, with the third station (the one shown near the Belward Farm buildings) relocated along the edge of the undeveloped portion of the farm.

S2b – Belward Farm Full Avoidance Using Belward Campus Drive

From Crown Farm, this alignment would run along Diamondback Drive through a tunnel under Key West Avenue to Broschart Road turning right, then traveling west through a currently wooded area between the planned extension of Blackwell Road and Medical Center Drive and bridge over Great Seneca Highway. The alignment will continue along the median of a future extended Johns Hopkins Drive where it will continue to either a tunnel or an at-grade crossing of Key West Avenue. The alignment would turn right to follow the median of Belward Campus Drive where it rejoins the Original CCT Alignment along Great Seneca Highway.

S2b has three stations, two are the same locations as proposed for S2, with the third station (the one shown near the Belward Farm buildings) relocated along Belward Campus Drive.

S2d – Belward Farm Minimization Alignment (East) via Medical Center Drive Skirting the Historic Property

This alignment is similar to S2a, but runs along Medical Center Drive instead of through a currently wooded area between the planned extension of Blackwell Road and Medical Center Drive.

From Crown Farm, this alignment runs along Diamondback Drive through a tunnel under Key West Avenue to travel west along Medical Center Drive with an at-grade crossing of Great Seneca Highway. The alignment then continues along the north side of a future extended Johns Hopkins Drive where it continues through a tunnel under Key West Avenue along the eastern edge of the Belward Farm property along the border between the currently undeveloped farm and the existing developed property. It rejoins the Original CCT Alignment at Great Seneca Highway.

S2d has three stations, two are the same locations as proposed for S2c, with the third station (the one shown near the Belward Farm buildings) relocated along the edge of the undeveloped portion of the farm.

S2e – Belward Farm Avoidance Alternative via Medical Center Drive Using Belward Campus Drive

This alignment is similar to S2b, but runs along Medical Center Drive instead of through a currently wooded area between the planned extension of Blackwell Road and Medical Center Drive.

From Crown Farm, this alignment runs along Diamondback Drive through a tunnel under Key West Avenue and continues along Broschart Road turning right to travel west along Medical Center Drive with an at-grade crossing of Great Seneca Highway. The alignment would then continue along the median of a future extended Johns Hopkins Drive where it continues either in a tunnel or on an at-grade crossing of Key West Avenue, turning right to the median of Belward Campus Drive where it would rejoin the Original CCT Alignment along Great Seneca Highway.

S2e has three stations, two are the same locations as proposed for S2c, with the third station (the one shown near the Belward Farm buildings) relocated along Belward Campus Drive.

S2f – Belward Farm Minimization Alignment (West) Skirting the Historic Property

From Crown Farm, this alignment runs along Diamondback Drive through a tunnel under Key West Avenue and continues along Broschart Road. The alignment turns right to then travel west through a currently wooded area between the planned extension of Blackwell Road and Medical Center Drive with a bridge over Great Seneca Highway. The alignment then continues along the north side of a future extended Johns Hopkins Drive where it continues through a tunnel under Key West Avenue. From Key West Avenue, the alignment continues along the eastern edge of the Belward Farm property, similar to alignment S2c. The alignment curves farther west onto the Belward Farm property to permit a station closer to the interior of the property and proposed development therein. The alignment would then rejoin the Original CCT Alignment at Great Seneca Highway.

S2f has three stations, two are the same locations as proposed for S2, with the third station (the one shown near the Belward Farm buildings) relocated to the eastern edge of the undeveloped portion of Belward Farm.

S2g – Belward Farm Minimization Alignment (West) via Medical Center Drive Skirting the Historic Property Using Belward Campus Drive

This alignment is similar to S2f, but runs along Medical Center Drive instead of through a currently wooded area between the planned extension of Blackwell Road and Medical Center Drive.

From Crown Farm, this alignment runs along Diamondback Drive through a tunnel under Key West Avenue to travel west along Medical Center Drive with an at-grade crossing of Great Seneca Highway. The alignment then continues along the north side of a future extended Johns Hopkins Drive where it continues to a tunnel under Key West Avenue along the eastern edge of the Belward Farm property, similar to the S2c alignment. The alignment curves farther west onto the Belward Farm property to permit a station closer to the interior of the property and proposed development therein. The alignment would then rejoin the Original CCT Alignment at Great Seneca Highway.

S2g has three stations, two are the same locations as proposed for S2c, with the third station (the one shown near the Belward Farm buildings) relocated to the eastern edge of the undeveloped portion of Belward Farm.

Section 4(f) Use of Avoidance Alignments on Crown and Belward Farms

The physical impacts of the avoidance alignments on the two historic sites are shown in **Table V-2**.

Table V-2: Section 4(f) Use of Avoidance Alignments on Crown and Belward Farms

ALIGNMENT	SECTION 4(f) PROPERTY	USE
S1a	Crown Farm	No impact
S2a	Belward Farm	1.56 acres
S2b	Belward Farm	No impact
S2d	Belward Farm	1.56 acres
S2e	Belward Farm	No impact
S2f	Belward Farm	3.53 acres
S2g	Belward Farm	3.53 acres

Section 4(f) Use of Avoidance Alignments on Other Resources

While the avoidance alignments minimize or avoid Section 4(f) use of the two specified historic resources, these avoidance alignments will alter the transportation impacts of the project, as well as impact other natural and social resources as described below. Note that only the impacts on these resources are described in this chapter – information on existing conditions, regulatory environment and other background, as well as possible mitigation, is provided in **Chapter IV**.

Land Use, Zoning and Future Development

Effects on Land Use

Direct impacts to land use were evaluated based on the effect that the avoidance alignments would have on compatibility of land uses, land use patterns, and access to land.

While the Section 4(f) avoidance alignments (S1a, S2a, S2b, S2d, S2e, S2f and S2g) will significantly reduce the impacts to Crown Farm and the Belward Farm, they will result in direct impacts to land uses within the study corridor for the following reasons:

- The CCT, on these avoidance alignments, would not be consistent with local land use plans, as currently written and approved.
- On these avoidance alignments, the CCT will not facilitate the achievement of the future land use visions included in the local land use plans. As such, parcels will not be able to be developed as currently planned.
- The avoidance alignments do not support state and local-level smart growth policies as densities will not be concentrated near transit stations.

Consistency with Area Master Plans

Four master plans described in this document, as well as in the 2009 AA/EA provide a vision for the area in which the Section 4(f) avoidance alignment modifications are proposed:

- The *Shady Grove Sector Plan* (described in the 2009 AA/EA)
- The *Great Seneca Science Corridor Master Plan* (described in Chapter IV)
- The *City of Gaithersburg Master Plan* (described in the 2009 AA/EA)
- The *Clarksburg Master Plan* (described in the 2002 DEIS)

Based on the information provided in **Chapter IV** of this document and the 2009 AA/EA regarding the goals of these plans, Alignments S1a, S2a, S2b, S2d, S2e, S2f and S2g are not consistent with approved local plans as they do not support the future land use plans and visions for the region.

In particular, these alignments conflict with an interchange at Sam Eig Highway and Great Seneca Highway included in the recently approved *Great Seneca Science Corridor Master Plan*. This interchange has been proposed by Montgomery County, but it is not currently undergoing project development by the Maryland State Highway Administration or the Montgomery County Department of Transportation, nor is it programmed for funding in the State or regional Transportation Improvement Programs. Nevertheless, both the proposed interchange and the proposed avoidance alignments could not likely be built in the limited right-of-way available and could result in substantial impacts to adjacent property and costly design and implementation.

Social Environment

Chapter IV covers impacts to the following resources related to the project area's social environment:

- Neighborhoods and Communities
- Community Facilities and Services
- Parks and Recreational Facilities
- Displacements and Relocations
- Environmental Justice

Neighborhoods and Communities

Impacts to neighborhoods and communities would be the same as described in **Chapter IV**, with the accessibility benefits of the project (regardless of alignment) resulting in greater mobility for residents, including greater access to employment centers, public service providers and facilities, including health care and recreational resources. By better integrating with planned future neighborhoods and employment centers, the alignment modifications (S1, S2, S2c and S3) are expected to have greater positive impacts, and lower negative impacts on ongoing and future planned development in the Crown Farm, Belward Farm, and Kentlands areas compared to the Section 4(f) avoidance alternatives.

Community Facilities and Services

Direct impacts to community facilities and services identified in **Chapter IV** are not expected from the Section 4(f) avoidance alignments (S1a, S2a, S2b, S2d, S2e, S2f and S2g). It should be noted that S3, which

is not an avoidance alternative, would impact Muddy Branch SVP as described earlier in this chapter.

Parks and Recreational Facilities

There are no parks located in the vicinity of the Section 4(f) avoidance alignments, so no impacts are expected.

Displacements and Relocations

Displacements are expected only under the following Section 4(f) avoidance alignments: S2a, S2b and S2f. With each of these alignments, there would be one displacement – a business located along Broschart Road. This property would also be displaced under S2.

The other displacement mentioned for S2 and S2c, located at Mission Drive and Muddy Branch Road, would not be required under the Section 4(f) avoidance alignments.

Information on the relocation process and compliance with Title VI requirements in this regard, is presented in **Chapter IV**.

Environmental Justice

Because the Section 4(f) avoidance alignments are so physically close to the alignment modifications described in previous chapters, the impacts related to Environmental Justice (EJ) would be the same as described in **Chapter IV**. Specifically, a benefit is expected from the increased mobility and access to employment, and there is no indication that the project, if built along the Section 4(f) avoidance alignments, would have a “disproportionate impact” on EJ areas.

Economic Environment

The impacts of the Section 4(f) avoidance alignments on the overall economic environment would be generally the same as those described for the alignment modifications in **Chapter IV**. Overall, the CCT build alternatives on any alignment will create relatively small positive economic development effects when compared with the large amount of economic growth that is forecasted to occur in the project area, with or without the project. The positive effects could be lower with the Section 4(f) avoidance alignments compared to the alignment modifications, as the Section 4(f) avoidance alignments are located farther away from major planned job and residential destinations, which would decrease the positive benefits expected to result from increased accessibility.

Cultural Resources

Impacts to Crown Farm and Belward Farm are discussed on the previous pages. No other historical resources have been identified either in the vicinity of the alignment modifications or in the vicinity of the proposed O&M sites.

As noted for the alignment modifications in **Chapter IV**, it is possible that as-yet-unidentified archaeological resources may be impacted by the Section 4(f) avoidance alignments. Because the Section 4(f) avoidance alignments were developed to avoid less-disturbed land (that is, the fallow farmland of Crown Farm and Belward Farm, versus currently developed former farmland), the likelihood of archaeological resources being impacted by the Section 4(f) avoidance alignments is likely to be lower than under the alignment modifications (S1, S2, and S2c).

The alignment of the LPA would require additional research and review with respect to archaeological resources.

Natural Environment

Topography, Geology and Soils

Topography

Topographic impacts from each of the Section 4(f) avoidance alignments would be the same as those for the alignment modifications (S1, S2, and S2c). As described in **Chapter IV**, the impacts on topography are expected to be minimal. The alignments will either maintain the existing topography, as some of them occur within existing roadways or, in most cases, parallel the roadway or require grading that would amount to a relatively small incremental change to the existing topography. Changes to topography would occur primarily from reconfiguring existing roadways to support aerial crossings and tunnel options, as well as widening some existing roadways to accommodate the CCT.

S1a has the fewest constructed elements making it the alignment that would have the least effect on topography. The LSC alignments would have the greatest effect on topography due to the tunnel options, which would be constructed using the “cut and cover” method with possibly blasting if rock is encountered.

Geology

Effects on study area geology would be the same for the Section 4(f) avoidance alignments as for the alignment modifications (S1, S2, and S2c). The LSC alignments would have the greatest impact (compared to S1a) due to the tunnel options. All of the tunnel options could affect the geologic resources in the corridor, although these changes would be limited to the tunnel section itself where rock would be excavated and removed for construction of the tunnel.

Detailed geotechnical investigations will be undertaken in later phases of the project to determine the specific nature of the geologic formations within the tunnel sections. This information will be used for design of the tunnel sections and for development of construction techniques tailored to the specific geologic conditions in the corridor.

Soils

Effects on study area soils would generally be the same for the Section 4(f) avoidance alignments as for the alignment modifications (S1, S2, and S2c). The same is true for potential changes to drainage patterns within or adjacent to the right-of-way. These effects should be minimal and would be reduced by required stormwater management (SWM) facilities.

As noted in **Chapter IV**, soil types and their limitations for construction would be evaluated in detail during later phases of the project. Detailed geotechnical investigations would be conducted to determine specific soil characteristics along the selected alignment so that construction techniques and environmental safeguards can be developed to address any limitations. To minimize potential effects from soil disturbances, proper slope and soil stabilization techniques would be used in work areas, both during and after construction, to prevent potential sedimentation of nearby waterways. Sediment and erosion controls and SWM facilities would be implemented in the project area in accordance with the Maryland Department of Environment *2000 Maryland Stormwater Design Manual, Volumes I & II*.

Prime Farmland Soils and Farmland of Statewide or Local Importance

A majority of the areas of all the avoidance alignments that are designated as potential prime farmland soils and farmland of statewide and local importance are already developed. When developed, these soils are no longer

considered prime farmland and farmland of statewide or local importance.

Impacts to both categories of farmland are shown in **Table V-3** and discussed below. Information on the alignment modifications (S1, S2, and S2c) is provided for comparison.

Crown Farm Alignment Options (S1 and S1a)

The Crown Farm alignments could impact between 2.13 and 6.21 acres of prime farmland soils and between zero and 1.81 acres of farmland soils of statewide and local importance. A majority of these impacts would occur within the Crown Farm. As shown in **Table V-3**, there are four potential Crown Farm alignments, as S1 and S1a can each connect to the LSC options on two ways. Of the four, the S1 to LSC alignment option would have the most impact to prime farmland soils as it traverses the entire width of the farm. The S1a to LSC alignment option would have the greatest effect on farmland soils of statewide or local importance.

LSC Alignment Options (S2 and S2a-S2g)

The LSC alignments could impact between 0.72 and 8.75 acres of prime farmland soils and between 0.14 and 1.05 acres of farmland soils of statewide or local importance. The S2c alignment option could have the greatest effect on prime farmland soils as it traverses the entire width of the Belward Farm. The S2 alignment is very similar in design, impacting slightly less than the S2c alignment option, with 8.43 acres of impact. The S2 and S2c alignment options would have the greatest effect on farmland soils of statewide or local importance soils with an equal impact of 1.05 acres.

The impact of the avoidance alternatives would be much less than for the alignment modifications in this area. This is not unexpected as these avoidance alignments were specifically designed to avoid impacts to Belward Farm. Impacts of the avoidance alternatives on prime farmland soils range from 0.72 acres for S2a, S2b and S2f, to 1.04 acres for S2d and S2e. Impacts of the avoidance alternatives on farmland soils of statewide or local importance range from 0.14 acres for S2f to 0.56 acres for S2b (with the tunnel option) and S2e (with the tunnel option).

The impacts associated with the alignments are not anticipated to interrupt viable farm operations, as both Crown Farm and Belward Farm are not being actively

Table V-3: Impacts to Prime Farmland Soils and Farmland Soils of Statewide or Local Importance

ALIGNMENT	SEGMENT	PRIME FARMLAND SOILS (acres)	FARMLAND SOILS OF STATEWIDE OR LOCAL IMPORTANCE (acres)
Crown Farm Alignments	S1 to LSC	6.21	1.63
	S1 to Original CCT Alignment	5.20	0.29
	S1a to LSC	2.13	1.81
	S1a to Original CCT Alignment	3.63	0.0
Range of Impacts for Crown Farm Alignments		2.13-6.21	0-1.81
Life Sciences Center Alignments	S2	8.43	1.05
	S2c	8.75	1.05
	S2a	0.72	0.43
	S2b (at-grade) ¹	0.72	0.42
	S2b (tunnel option) ¹	0.72	0.56
	S2d	1.04	0.43
	S2e (at-grade) ¹	1.04	0.42
	S2e (tunnel option) ¹	1.04	0.56
	S2f	0.72	0.14
	S2g	1.04	0.43
Range of Impacts for LSC Alignments		0.72-8.75	0.14-1.05

¹ S2b and S2e have the option of crossing over Key West, near the future extended Johns Hopkins Drive, either at-grade, or below grade, using a cut-and-cover tunneling method.

farmed. Master plan documents for Montgomery County show that both of these areas in their entirety are planned for development.

A Farmland Conversion Impact Rating form, in accordance with the Farmland Policy Act (FPPA), will be completed for this project and submitted to the Natural Resources Conservation Service for Montgomery County.

Groundwater

The Section 4(f) avoidance alignments, like the primary alignment modifications, are not expected to substantially affect groundwater within the project areas. These alignments would be largely constructed on the ground surface and only minor changes to the movements of the shallow groundwater table are likely

during grading and construction. Any runoff would be treated in accordance with Maryland Department of Environment guidelines for SWM and released to surface waters.

The LSC alignments could affect groundwater as a result of the tunnel component. Tunneling could intercept groundwater resources in the shallow aquifers of the Piedmont. Tunnel excavation in the Piedmont would likely intercept the rock fractures that are typical of this physiographic province, potentially causing a minor change in localized groundwater paths. These minor changes, however, are not expected to affect overall groundwater flows or quantities.

During the geotechnical investigations that would occur in later phases of the project, a groundwater

testing program would be undertaken to identify any potential groundwater or soil contaminants that could be encountered during tunnel construction.

Surface Waters

Crown Farm Alignments

Like S1, S1a would not impact palustrine open water, intermittent streams or ephemeral channels (**Table V-4**). Perennial streams do exist along these alignments, and it is estimated that S1 could impact 88 linear feet of these streams, while the S1a avoidance alternative would impact 68 linear feet.

In the 2009 AA/EA, the Original CCT Alignment showed a larger impact to the same stream system that will potentially be impacted by S1 and S1a. However, since the publication of the 2009 AA/EA, Discoverly Drive was extended and the stream was placed in a twin box culvert, reducing the original impact to this stream system.

LSC Alignments

The Section 4(f) avoidance alignments would have very different impacts than S2 and S2c. Depending upon which option is chosen, the LSC alignment could impact between 51 and 303 linear feet of perennial streams and 0 and 68 linear feet of intermittent streams. Impacts to ephemeral channels range between zero and 146 linear feet. Impacts to open water areas, mainly SWM ponds, could range between zero and 0.03 acres depending on which option is chosen. Specific impacts for each potential alignment are shown in **Table V-4**.

Scenic and Wild Rivers

There are no scenic and wild rivers within the alignment modifications or the Section 4(f) avoidance alignments.

Waters of the US including Wetlands

The impacts to palustrine forested (PFO), scrub-shrub (PSS), and emergent wetlands (PEM) areas are minimal with any combination of alignment options

Table V-4: Waterway Impacts

ALIGNMENT	SEGMENT	PERENNIAL STREAMS (linear feet)	INTERMITTENT STREAMS (linear feet)	EPHEMERAL CHANNELS (linear feet)	PALUSTRINE OPEN WATER SQUARE FEET (acres)
Crown Farm Alignments	S1	88	0	0	0
	S1a	68	0	0	0
Range of Impacts for Crown Farm Alignments		68-88	0	0	0
Life Sciences Center Alignments	S2	51	68	146	0
	S2c	51	0	78	0
	S2a	167	68	67	1236.75 (0.03)
	S2b	303	68	67	973.65 (0.02)
	S2d	167	0.2	0	1236.78 (0.03)
	S2e	303	0.2	0	973.68 (0.02)
	S2f	162	68	67	1231.59 (0.03)
	S2g	162	0.2	0	1231.59 (0.03)
Range of Impacts for Life Sciences Center Alignments		51-303	0-68	0-146	0-0.03

chosen totaling less than one acre of impact to vegetated wetlands as shown in **Table V-5**.

Crown Farm Alignments

Depending on which options are chosen, the Crown Farm Alignment could potentially impact between zero and 0.004 acre of emergent wetlands. These impacts are associated with the S1 option under this alignment, while the S1a (Section 4(f) avoidance) option would have no impact to wetlands. Impacts to forested and scrub-shrub wetlands are not anticipated as part of this alignment.

The Original CCT Alignment showed a larger impact to the same wetland area that will potentially be impacted by the Crown Farm alignment modification. The Original CCT Alignment would impact 0.31 acres of emergent wetlands and 0.03 acres of forested wetlands. However, since the publication of the 2009 AA/EA, the development of this area has decreased the forested and emergent wetland areas that once existed in this location.

LSC Alignments

The LSC alignment could potentially impact between 0.02 and 0.47 acres of emergent wetlands, while impacts

to scrub-shrub wetlands would range from zero to 0.32 acres. Depending on which options are chosen, impacts to forested wetlands could range between zero and 0.10 acres.

The Original CCT Alignment would impact 0.33 acres of emergent wetlands with no scrub-shrub or forested wetland impacts. S2e (with the tunnel option) impacts fewer wetlands than the Original CCT Alignment and all other options being considered as part of the LSC alignment configuration.

Non-Tidal Wetlands of Special State Concern

There are no Non-tidal Wetlands of Special State Concern within the new alignments of the CCT project area.

Floodplains

Any construction within the 100-year floodplain will require a Waterway Construction Permit from the Maryland Department of Environment. The placement of substantial amounts of fill in floodplain areas is not anticipated for the at-grade components of the alignment options. However, fill may be placed in the 100-year floodplain in areas where the existing road berm may need to be extended to support the placement

Table V-5: Impacts to Waters of the US, Including Wetlands

ALIGNMENT	SEGMENT	PEM SQUARE FEET (acres)	PSS SQUARE FEET (acres)	PFO SQUARE FEET (acres)
Crown Farm Alignments	S1	158.16 (0.004)	0	0
	S1a	0	0	0
Total Impacts for Crown Farm Alignment		0-0.004	0	0
Life Sciences Center Alignments	S2	3,398.06 (0.08)	12,276.13 (0.28)	4,414.50 (0.10)
	S2c	702.82 (0.02)	0	4,413.06 (0.10)
	S2a	18,008.04 (0.41)	13,771.54 (0.32)	1.44 (0.0)
	S2b	9,577.63 (0.22)	12,460.32 (0.29)	1.44 (0.0)
	S2d	15,312.82 (0.35)	1,495.42 (0.03)	0
	S2e	6,882.40 (0.16)	184.19 (0.004)	0
	S2f	20,626.21 (0.47)	13,758.61 (0.31)	1.44 (0.00)
	S2g	17,930.98 (0.41)	1,482.49 (0.03)	0
Range of Impacts for LSC Alignments		0.02-0.47	0-0.32	0-0.10

of aerial structures, which includes widening of existing bridges such as the one over the mainstem of Muddy Branch, and the construction of grade separations.

Crown Farm Alignments

The Crown Farm Section 4(f) avoidance alignment (S1a), like the S1 alignment modification, is not anticipated to impact any 100-year floodplains.

LSC Alignment

The LSC alignments could potentially impact between 0.29 and 0.74 acres of the 100-year floodplain associated with an unnamed tributary of Muddy Branch (**Table V-6**). The S2 and S2c options would have the least amount of floodplain impact at 0.29 acres, while the Section 4(f) avoidance alternatives would each have 0.74 acres.

Terrestrial Vegetation

Impacts to forested habitats and non-forested habitats, such as managed lawns, landscaped areas, agricultural land and old field habitat would result from all alignment options. These impacts, however, should be relatively minor as the alignments would generally follow within or along existing roadways. In general, impacts

to plant communities include direct losses from clearing within rights-of-way and changes in plant community structure and composition. Effects to terrestrial resources will involve the conversion of habitat to impervious road, rail or other associated facilities. In many locations, managed lawns and landscaped areas would likely be restored following construction. Effects could also result from the introduction of invasive non-native plant species into undisturbed habitat adjacent to newly impacted sites, however, the majority of the impacts will be occurring in areas which are already disturbed and dominated by invasive species. Forested habitat impacts resulting from the Section 4(f) avoidance alignments, as well as S1, S2, and S2c, are shown in **Table V-7**.

Table V-6: 100-Year Floodplain Impacts

ALIGNMENT	SEGMENT	FLOODPLAIN IMPACT (acres)
Crown Farm Alignments	S1	0
	S1a	0
Impacts for Crown Farm Alignments		0
Life Sciences Center Alignments	S2	0.29
	S2c	0.29
	S2a	0.74
	S2b	0.74
	S2d	0.74
	S2e	0.74
	S2f	0.74
	S2g	0.74
Range of Impacts for LSC Alignments		0.29-0.74

Table V-7: Forest Impacts

ALIGNMENT	SEGMENT	FOREST IMPACTS (acres)
Crown Farm Alignments	S1 to LSC	0.27
	S1 to Original CCT Alignment	0.38
	S1 to LSC	1.83
	S1a to Original CCT Alignment	2.21
Range of Impacts for Crown Farm Alignments		0.27-2.21
Life Sciences Center Alignments	S2	3.43
	S2c	2.19
	S2a	6.44
	S2b (at-grade)	3.73
	S2b (tunnel option)	3.82
	S2d	5.19
	S2e (at-grade)	2.49
	S2e (tunnel option)	2.58
	S2f	6.09
	S2g	4.85
Range of Impacts for Life Sciences Center Alignments		2.19-6.44

Crown Farm Alignments

The Crown Farm alignments could potentially impact between 0.27 and 2.21 acres of forest, with the Section 4(f) avoidance alternatives impacting less than the S1 alignments. These impacts occur in forest patches already disturbed due to their adjacency to existing roadways or along the edges of the Crown Farm where the forest has been previously impacted by development.

LSC Alignment

The LSC alignments could potentially impact between 2.19 and 6.44 acres of forest. The majority of these impacts will occur within forested areas that are less disturbed due to their connectivity to wetlands and the floodplain along Great Seneca Highway. Additional impacts will occur to the forests that surround Belward Farm. The S2a and S2f options would have the greatest impact to forests with 6.44 and 6.09 acres, respectively. The S2c option has the least amount of forest impacts (2.19 acres), due to the fact that it parallels existing roadways, except for where it cuts across Belward Farm.

Terrestrial Wildlife

The impact of the Section 4(f) avoidance alignments on wildlife resources is anticipated to be minor because the alignment changes mostly follow existing roadway alignments and because existing wildlife corridors would be maintained. Impacts to Forest Interior Dwelling Species (FIDS) habitat are also anticipated to be minor for these same reasons.

Aquatic Habitat/Species

Impacts to aquatic biota and water quality from the Section 4(f) avoidance alignments would be the same as for the alignment modifications discussed in **Chapter IV**.

Rare, Threatened, and Endangered Species

As noted in **Chapter IV**, no rare, threatened, or endangered species are known to be located in the area of the Crown Farm and LSC alignment options.

Hazardous Materials

As described in **Chapter IV**, an initial site assessment (ISA) for the I-270/US 15/CCT project area was conducted in 1998 and its findings were presented in the *1999 Preliminary Screening Assessment Report* and the 2002 DEIS. The ISA identified the potential areas of hazardous material on properties that could be

impacted by the build alternatives. The ISA included field reconnaissance, a search of the regulatory databases, and a review of public regulatory documents.

The findings from the ISA are described in **Chapter III** of the **2002 DEIS**. No additional research on hazardous materials sites has been done since then.

It is recommended that more detailed environmental assessments should be performed for specific sites of concern and for large property acquisitions following selection of an LPA and prior to right-of-way acquisition.

Air Quality

As described in **Chapter IV**, the predicted impacts of the project on air quality will be the same with or without the alignment modifications, including the Section 4(f) avoidance alignments. Current air quality modeling technology is not sensitive enough to reflect alignment changes of this small a scope.

Noise and Vibration

Noise

A description of the existing noise environment, the methodology used to predict noise impacts, and the regulatory environment regarding noise impacts can be found in **Chapter IV**. **Figure IV-9** in that chapter shows the locations of noise receptor sites with respect to the alignment modifications and the Section 4(f) avoidance alignments.

Predicted impacts for the alignment modifications, as well as the Section 4(f) avoidance alignments are discussed below with separate results for LRT and BRT alternatives as each of these modes has different sound characteristics.

Future Transit Noise Exposure Methodology and Findings

In accordance with FTA impact assessment procedures, existing ambient L_{dn} levels measured at each monitoring location were compared with future noise levels computed from LRT and BRT transit line operations. Following the impact category thresholds in **Table IV-22** in **Chapter IV**, computed future noise exposure levels at each site were compared to the measured existing L_{dn} levels to establish if the project noise would exceed the threshold of “moderate” or “severe” impact.

The noise analysis findings for LRT without horn blowing are provided in **Table V-8**. The noise analysis findings for BRT are summarized in **Table V-9**. The noise analysis findings indicate that under normal operating conditions (no horn blowing) there will be no severe impacts under any proposed LRT or BRT alignments with moderate impacts identified only under the S1+S2+S3 alternatives, as follows:

- Under the LRT and BRT S1+S2+S3 alternatives, a moderate noise impact is expected at one site, R-6, a residential property at 427 Upshire Circle
- Under the BRT S1+S2+S3 alternatives, a moderate noise impact is expected at Site R-18 (9800 Fields Road, in Gaithersburg, near Crown Farm)

Table V-10 provides a summary of the projected noise impacts that are likely to occur under LRT operations at properties located near at-grade crossings if train horn sounding warnings are required. The additional noise impact assessment due to horn blowing was completed at properties which were within 1,000 feet of proposed at-grade crossings where horn noise annoyance could be a noise contributing factor. The analysis findings indicate that moderate or severe noise impacts are projected to occur at Sites R-8, R-15, R-16 and R-17 under all proposed alignment options which pass by these areas. Information on mitigation of train horn noise is available in **Chapter IV**, along with other noise mitigation measures.

Detailed hour-by-hour LRT and BRT noise calculations at each of the noise monitoring sites are contained in the *2010 Corridor Cities Transitway Supplemental Noise and Vibration Technical Memorandum*.

Vibration

A discussion of vibration, including measurement, impacts, and FTA regulations, is contained in **Chapter IV**, with additional detail available in the *2010 Corridor Cities Transitway Supplemental Noise and Vibration Technical Memorandum*.

Vibration Impact Assessment and Mitigation Measures

At all 22 receptor sites evaluated (see **Figure IV-9**), velocity levels stay below the FTA thresholds under both LRT and BRT proposed operations on all alignment variations. Consideration of vibration mitigation measures is therefore not necessary.

Visual Quality

The impact of the Section 4(f) avoidance alignments would be similar to the effects for the S1, S2, S2c, and S3 alignments. As described in **Chapter IV**, at this point in the development of the CCT, it is difficult to assess visual impacts because many design elements are unknown, including mode selection and the design, lighting, and landscaping of stations and park-and-ride lots. Furthermore, the design of some of the surrounding areas will be changing (e.g., the development planned for Belward Farm and Crown Farm). For this reason, it is recommended that additional visual impact analysis be done after further design development is completed.

Construction and Operational Issues

Construction and operational issues resulting from implementation of the Section 4(f) avoidance alignments would be similar to those effects described for the alignment modifications (S1, S2, S2c, and S3). As noted in **Chapter IV**, these impacts are similar to those presented in the 2009 AA/EA.

Indirect and Cumulative Effects (ICE) Analysis

The Section 4(f) avoidance alignments represent relatively small changes to the Original CCT Alignment. With differences in direct impacts to various resources being relatively small, as described in the sections above, the potential for differences in indirect and cumulative impacts to these same resources would be similarly limited.

Therefore, there are no indications that the conclusions reached in the 2002 ICE analysis (for the alternatives with the Original CCT Alignment) would change as a result of the proposed Section 4(f) avoidance alignments.

Energy

Without refined information on materials and rolling stock to be used on the CCT corridor, the direct and indirect energy impacts of the project following one or more of the Section 4(f) avoidance alignments are assumed to be the same as those presented in the 2009 AA/EA. The impacts of one or more of the alignment variations are too minor to impact direct and indirect energy use estimates at this level.

Table V-8: Existing Noise Levels, Projected Future LRT Noise Exposure and Impact Assessment Using FTA Criteria

Site No	Existing Noise Level ¹ L_{dn} (dBA)	PROPOSED CCT ALIGNMENT MODIFICATIONS AND SECTION 4(F) AVOIDANCE ALIGNMENTS ²									
		S1+S2+S3 Alignment	S1a to Master Plan Alignment	S1a to S2 Alignment	S2a Alignment	S2b Alignment	S2c Alignment	S2d Alignment	S2e Alignment	S2f Alignment	S2g Alignment
		Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment
R1	68	56 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R2	61	52 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R3	71	60 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R4	63	52 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R5	65	52 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R6	61	60 Moderate Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R7	66	52 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R8	61	44 No Impact	NA	NA	NA	NA	43 No Impact	54 No Impact	53 No Impact	55 No Impact	54 No Impact
R9	58	52 No Impact	45 No Impact	45 No Impact	NA	NA	45 No Impact	NA	NA	NA	NA
R10	63	NA	NA	NA	52 No Impact	54 No Impact	NA	47 No Impact	52 No Impact	52 No Impact	47 No Impact
R11	55	48 No Impact	NA	NA	NA	NA	47 No Impact	NA	NA	40 No Impact	41 No Impact
R12	58	NA	NA	NA	43 No Impact	41 No Impact	48 No Impact	49 No Impact	49 No Impact	40 No Impact	48 No Impact
R13 ³	64	55 No Impact	NA	NA	55 No Impact	55 No Impact	NA	NA	NA	55 No Impact	NA
R14	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R15	58	NA	NA	NA	NA	NA	47 No Impact	47 No Impact	47 No Impact	NA	53 No Impact
R16	59	45 No Impact	39 No Impact	NA	NA	NA	NA	NA	NA	NA	NA
R17	59	53 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R18	61	56 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R19	67	55 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

¹ Existing L_{dn} noise levels are derived from 24-hour measurements collected at each location (except Site R13 which is limited to primarily daytime use, and therefore peak hour L_{eq} is provided).

² Headways of ten minutes (5 AM to 5:30 AM, 9:30 AM to 4:30 PM & 7:30 PM to 9 PM), 7.5 minutes (5:30 AM to 9:30 AM & 4:30 PM to 7:30 PM) and 12 minutes (9 PM to 1 AM) were used for the impact assessment, with no service from 1 AM to 5 AM.

³ Peak hour L_{eq} (h) dBA measured and predicted under future line operations at this location because land use is primarily limited to daytime use.

NOTE: NA indicates where the alternative alignment is not in proximity to the receptor site

Table V-9: Existing Noise Levels, Projected Future BRT Noise Exposure and Impact Assessment Using FTA Criteria

Site No	Existing Noise Level ¹ L_{dn} (dBA)	PROPOSED CCT ALIGNMENT MODIFICATIONS AND SECTION 4(F) AVOIDANCE ALIGNMENTS ²									
		S1+S2+S3 Alignment	S1a to Master Plan Alignment	S1a to S2 Alignment	S2a Alignment	S2b Alignment	S2c Alignment	S2d Alignment	S2e Alignment	S2f Alignment	S2g Alignment
		Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment
R1	68	58 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R2	61	55 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R3	71	63 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R4	63	55 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R5	65	55 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R6	61	63 Moderate Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R7	66	55 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R8	61	49 No Impact	NA	NA	NA	NA	47 No Impact	57 No Impact	57 No Impact	58 No Impact	57 No Impact
R9	58	55 No Impact	NA	NA	NA	56 No Impact	55 No Impact	NA	NA	NA	NA
R10	63	NA	NA	NA	NA	56 No Impact	NA	51 No Impact	55 No Impact	55 No Impact	51 No Impact
R11	55	51 No Impact	NA	NA	55 No Impact	NA	50 No Impact	NA	NA	44 No Impact	45 No Impact
R12	58	NA	NA	NA	48 No Impact	45 No Impact	52 No Impact	52 No Impact	52 No Impact	44 No Impact	52 No Impact
R13 ³	64	59 No Impact	NA	NA	59 No Impact	59 No Impact	NA	NA	NA	59 No Impact	NA
R14	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R15	58	NA	NA	NA	NA	NA	52 No Impact	52 No Impact	52 No Impact	NA	56 No Impact
R16	59	49 No Impact	45 No Impact	NA	NA	NA	NA	NA	NA	NA	NA
R17	59	57 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R18	61	59 Moderate Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R19	67	58 No Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	56	NA	45 No Impact	45 No Impact	NA	NA	NA	NA	NA	NA	NA

¹ Existing L_{dn} noise levels are derived from 24-hour measurements collected at each location (except Site R13 which is limited to primarily daytime use, and therefore peak hour L_{eq} is provided).

² Headways of ten minutes (5 AM to 5:30 AM, 9:30 AM to 4:30 PM & 7:30 PM to 9 PM), 7.5 minutes (5:30 AM to 9:30 AM & 4:30 PM to 7:30 PM) and 12 minutes (9 PM to 1 AM) were used for the impact assessment, with no service from 1 AM to 5 AM.

³ Peak hour L_{eq} (h) dBA measured and predicted under future line operations at this location because land use is primarily limited to daytime use.

NOTE: NA indicates where the alternative alignment is not in proximity to the receptor site

Table V-10: Existing Noise Levels, Projected Future LRT Noise Exposure at Locations Where Horn Noise Soundings Are Required and Impact Assessment Using FTA Criteria

Site No	Existing Noise Level ¹ L_{dn} (dBA)	PROPOSED CCT ALIGNMENT MODIFICATIONS AND SECTION 4(F) AVOIDANCE ALIGNMENTS ²									
		S1+S2+S3 Alignment	S1a to Master Plan Alignment	S1a to S2 Alignment	S2a Alignment	S2b Alignment	S2c Alignment	S2d Alignment	S2e Alignment	S2f Alignment	S2g Alignment
		Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment	Estimated L_{dn} Level FTA Impact Assessment
R8	61	65 Severe Impact	NA	NA	NA	NA	63 Moderate Impact	63 Moderate Impact	63 Moderate Impact	63 Moderate Impact	63 Moderate Impact
R15	58	NA	NA	NA	NA	NA	69 Severe Impact	69 Severe Impact	69 Severe Impact	NA	66 Severe Impact
R16	59	61 Moderate Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA
R17	59	72 Severe Impact	NA	NA	NA	NA	NA	NA	NA	NA	NA

¹ Existing L_{dn} noise levels are derived from 24 hour measurements collected at each location.

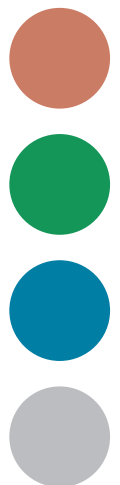
² Headways of 10 minutes (5 AM to 5:30 AM, 9:30 AM to 4:30 PM & 7:30 PM to 9 PM), 7.5 minutes (5:30 AM to 9:30 AM & 4:30 PM to 7:30 PM) and 12 minutes (9 PM to 1 AM) were used for the impact assessment, with no service from 1 AM to 5 AM.

NOTE: NA indicates where the alternative alignment is not in proximity to the receptor site



CHAPTER VI

Comments and Coordination



CORRIDOR CITIES TRANSITWAY
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Chapter VI – Comments and Coordination

Overview

This chapter documents project coordination with agencies, elected officials and members of the public that has occurred since the public hearings on the I-270/US 15 Multi-Modal Corridor Study Alternatives Analysis/Environmental Assessment (2009 AA/EA), which were held in June 2009.

Background

Two public hearings were held in June 2002 to present the No-Build Alternative and Build Alternatives 1, 2, 3 A/B, 4 A/B and 5 A/B/C. Initial engineering concept design and environmental analysis results (potential impacts) discussed in the 2002 DEIS were also presented at these public hearings. The public hearings were held in Montgomery and Frederick Counties. In addition, two public workshops, developed to introduce the Express Toll LanesSM (ETLsSM) concepts (Alternatives 6A/B and 7A/B) and to summarize updated engineering and environmental studies, were held in June 2004 in Montgomery and Frederick Counties. Since that time, engineers and planners updated and refined the build alternatives for Alternatives 6A/B and 7A/B and completed analysis of the potential environmental effects, completed an alternatives analysis, and estimated potential costs, benefits and community effects. The results were presented in the 2009 AA/EA document.

Summary of June 2009 Public Hearings on the Alternatives Analysis/Environmental Assessment

Public hearings for the 2009 AA/EA were held on June 16, 2009 in Montgomery County at Gaithersburg Middle School and on June 18, 2009 in Frederick County at Monocacy Middle School. These public hearings were held to present the results of the updates to the engineering and environmental analysis, and to receive testimony and feedback from stakeholders. Approximately 430 people attended these public hearings. Representatives from the Maryland Transit Administration (MTA) and Maryland State

Highway Administration (SHA) and staff from Montgomery County, Frederick County and several resource agencies provided information about the study and received comments about the proposed highway and transit improvements, including the design concepts for the ETL alternatives. ETLs were studied in conjunction with bus rapid transit (BRT) or light rail (LRT) as transit service alternatives on the Original CCT Alignment. Project information, including a video, maps, and other corridor displays were available for review. The National Park Service also provided information on the Monocacy National Battlefield Draft General Management Plan.

Project representatives engaged stakeholders and discussed project issues during the open house segment of the meeting, received comments and feedback, and answered many questions. Public hearing participants identified a number of major concerns, including project costs, local community impacts, and the CCT ridership estimates. **Table VI-1** lists the collected written public hearing comments as they relate to transit.

Attendees had the option of providing public oral testimony, private oral testimony, and/or written comments. Oral testimony was received during the hearings from over 60 citizens. In total, 559 written comments were received during and after the hearings from citizens, government agencies, and non-profit organizations. During the public comment period, 341 form letters and comment cards were received from the Amberfield and Lakelands Ridge communities with a request to avoid impacts to the communities which are located along the east side of Great Seneca Highway by moving the CCT alignment to the west side of Great Seneca Highway, referred to as the “Kentlands Alignment” option.

Every written comment requesting a response to a specific question receives an individualized response from the project team. Many of the comments received have already been responded to in writing. All comments will be summarized and appropriately addressed in the FEIS.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
A. Jennings	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Adolpho Vessz	Rockville, MD	Concerned about noise from CCT.
Adriana Amara	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Aftab & Mahjabeen Raza	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Aher & Esther Oppenheimer	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Ai-His Liu, MD	Chevy Chase, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Albin S. Quiko	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Alex Diaz	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Ali Vesal	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports LRT.
Alicia & Roberto Matus	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Allen Roginsky	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Alyce Ortuzar	Ashton, MD	Suggests extending metro to Frederick with LRT lines linking neighborhoods.
Amir R. Nowroozi	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Amy Wu	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Anatolia Gartew	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Angela Y. Ng	Gaithersburg, MD	Opposes LRT running along Great Seneca Hwy in front of community. Supports BRT.
Angelina Kelly	Germantown, MD	Supports project; Would like to see bike trails.
Angelina Koutsos	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Aniruddha Sathe	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Ann M. Sloane	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Anonymous	Withheld	Supports LRT, against at-grade crossings, concerned about hiker-biker trail accessibility from both sides of the CCT.
Anonymous	Walkersville, MD	Recommends expanding MARC schedules to Frederick, running LRT on MARC tracks.
Anonymous	Withheld	Suggests improving MARC service. Supports BRT.
Anonymous	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Arash & Tricia Moazzez	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Ariel & Mariel Duran	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Arleen Magpantay	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Arthur & Marcia Candido	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Astrid Adler	Germantown, MD	Opposes highway widening, supports transit on the east side of I-270. Concerned about noise.
Audney Chang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Audrey Starr	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Augusta McGown	West Chester, PA	Opposes maintenance facility off of Game Preserve Road, suggests realignment of CCT through property, suggests realignment of ramp to Watkins Mill interchange.
Avaro & Daryl Castillo	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Avianto Iman-Santoso	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Barbara A. Sakkestad	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Barbara Cullen	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Barbara D. Kupperman	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Barbara Jessus/Diane Posey	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Barbara Knapp	Germantown, MD	Supports Transit.
Barbara Lavery	Frederick, MD	Opposes ETL, suggests more mass transportation in Frederick area.
Barry & Ruth Ploff	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Beatrice & Gordon Tong	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Bede C. Sullivan		Suggests running Metro to Frederick.
Behzad Kamjom	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Ben Ross	Silver Spring, MD	Recommends specific regional transit plan, which includes MARC expansion, red line extension, LRT for CCT, and MD 355 as a multimodal urban boulevard.
Bennett Rushkoff	N. Potomac, MD	Comments that CCT travel time is too slow; suggests high-speed rail from COMSAT to Shady Grove with a stop only at Metropolitan Grove.
Beverly Peyi Wany	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Beverly S. Brown	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Bijan Salari	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Bill	Potomac	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Bill Edmiston	Gaithersburg, MD	Supports highway widening, opposes removal of CD lanes and addition of ETL. Suggests relocating the CCT to run along MD 355 instead of Great Seneca Hwy and Quince Orchard Rd.
Bill Robertson		Supports project - Alternative 7, no transit preference. Supports realignment through Life Sciences Center.
Blair Lough	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Bonnie Ghofrani	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Boris Langer	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Bowman Miksch	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Brenda Bayus	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Brett Webster	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Brian & Marianne Holly	Gaithersburg, MD	Opposes project.
Bruce & Judith Brown	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Bruce Johnson	Gaithersburg, MD	Opposes road construction, supports LRT.
Cara Schoem	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Carl Wilner	Rockville, MD	Opposes CCT running on King Farm Blvd (destroys median). Suggests LRT while keeping median trees and grass. Asks team to keep residential character in mind.
Carlos P. Averu	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Carol W. Sweeney	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Cassandra Bugbee	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Catherine & Robert Hellmuth	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Celeste Dixon	Frederick, MD	Supports LRT to Frederick.
Chad & Tulasi Hardwick	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Chamila Karandana	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Chang Liu	Rockville, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Chao Wang	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Charles & Evelyn Spaid	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Charles Chu	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Cheryl & Saul Schwartz	Germantown, MD	Supports LRT, opposes ETL, opposes No-Build.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Cheryl Robinson	Gaithersburg, MD	Opposes LRT, favors BRT due to noise, property value decrease, and impact to neighborhood entrance.
Cheryl Robinson	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Chien-Hao Liao	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Chin Lez	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Chinh-Chin Chang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Chiou Chih Chang	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Christopher Sharkey	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Clancy Kress	Gaithersburg, MD	Supports Kentlands option, opposes Shady Grove option.
Cyrile Smith	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Dale Steman	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Dan & Eileen Alemar	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Daniel Reeder	Gaithersburg, MD	Opposes O&M facility on Game Preserve Road, suggests realignment of CCT within McGown property and along Watkins Mill Rd, suggests realignment of Watkins Mill Rd ramp, requests noise abatement. Opposes ETL, suggests GP-only alternative.
Danielle Hines	Frederick, MD	Opposes ETLs, supports expanded transit service, suggests extending Metro to Frederick.
David Alhadeff	Gaithersburg, MD	Concerned about CCT blocking community entrance. Suggests CCT be moved to the southbound side of Great Seneca Hwy.
David Alhadeff	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
David & Christine Chae	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
David Baer	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
David Federman	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
David Linda	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
David McDonough	Baltimore, MD	Supports Life Sciences Center Alignment.
David Okonah	Frederick, MD	Supports CCT.
David Rosen	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
David Rothbard	North Potomac, MD	Supports BRT with route modifications, opposes ETL, supports HOV-2 lanes.
David Stoline	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Dean & Ludivina Wiles	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Debbie Kirshner	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Deborah Adamczyk	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Deborah Sasson	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Deborah M. Vendetti	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Debra Spagnola	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Delegate Kirill Reznik	Annapolis	Supports CCT.
Delegate Saqib Ali	Gaithersburg, MD	Delegate Saqib Ali supports CCT and not I-270 widening.
Dennis & Patricia Evans	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Don Leake	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Donna Baron	North Potomac, MD	Objects to Gaithersburg West Master Plan, specifically Science City.
Dorothy Sellers	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Douglas & Geneva Wicker	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Dr. Carol Levine	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Dr. J. Schantz	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Duk Kim	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Dwayne Neal	Frederick, MD	Suggests LRT and other mass transit extension to Frederick.
Ed & Marcia Shum	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Edward L. Jordan	Gaithersburg, MD	Opposes highway due to impact on community, and environment. Specific concerns include noise, impact to church, and property values/displacements. Also, mentioned lack of meetings with him and other residents in GP community.
Edith Levine	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Edson L. Tenyson, P.E.	Vienna, VA	Supports LRT, has specific suggestions re: studying cost effectiveness of transit alternatives.
Eileen Lombardi	Frederick, MD	Suggests bus service from PA or Walkersville to DC. Describes lack of parking in Frederick for Park and Ride.
Elayne Kabakoff	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT. Concerned about gate breakdowns and emergency vehicle access to community.
Elias Branco	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Elizabeth A. Kumm	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Elizabeth Chew	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Ellen & Yaniv Goury	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Eric Gilliland	Washington, DC	Supports CCT with bike trail. Concerned that project's website doesn't give enough attention to bike trail. Specific suggestions for bike facilities, including minimizing at-grade crossings, trail standards, lighting, accommodation for bikes on CCT.
Eric Eskew	Gaithersburg, MD	Concerned with impact of O&M Facility near/on Game Preserve Road. Requests information regarding access to that facility. Opposes O&M facility near/on Game Preserve Road.
Evan Meyers	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Evgeni Manjelievski	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Fang Gao	Rockville, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Fateh & Akhtar Chaudhri	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Fateh M. Chaudhri	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Francine R. Hincerick	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Franco & Haria Rovere	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Frazer Sheets	Frederick, MD	Suggests monorail line running up I-270.
G. Stanley Doore	Silver Spring, MD	Suggests BRT or Monorail.
Gary Boughan	Damascus, MD	Opposes widening, supports transit. Concerned about sprawl growth and impacts to residences, historic resources, parks, and environment.
Gary Rafiq	Gaithersburg, MD	Suggests alternate route for CCT. Suggests monorail or elevated LRT using rubber tires.
Gaston Peri/Monica Ries	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
George Barsky	Germantown, MD	Observes that mapping is old, suggests grade separation of CCT at Great Seneca Hwy @ Muddy Branch Rd and @Middlebrook Rd. Suggests alternate CCT route.
The Hon. George Leventhal (Elected Official)	Rockville, MD	Supports project. Emphasizes the importance of consensus and moving forward with the project.
George Petran	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Georgia Lohere	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Gerard F. & Mary D. Hurley	Gaithersburg, MD	Oppose widening of I-270, oppose placement of O&M facility on Game Preserve Road, suggest CCT alignment run along the east side of I-270.
Gholam & Mina Motamedi	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the LRT option. Will take legal actions if need be.
Giuseppe Giannattasio	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Glen Yee	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Glenn & Sonja Doley	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Glenn Nelson	Gaithersburg, MD	Opposes CCT.
Gordon & Beatrice Tong	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Green	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Greg & Eva Gonsalves	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Gwo-Tzong Hwang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Haiyan Wan	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Han Hsieh	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Harry & Jane Popores	Gaithersburg, MD	Opposes CCT alignment due to impact on house, opposes O&M facility on Game Preserve Rd due to neighborhood impact. Opposes widening I-270 but ask for noise abatement if widened.
Heather A. Collier	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Heather Holman	Hagerstown, MD	Supports project, suggests allowing hybrid cars in the HOV lane and expanding HOV lane, suggests commuter train from Hagerstown to Baltimore and DC.
Helen & Bob Rubinstein	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Helen B. McMunn	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Henry Chiang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Hillary & Harry Egeth	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Hillary Wilson	Frederick, MD	Against ETL; suggests LRT connection to Frederick.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Hiroko K. Flinn	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Hongchun Liu	Germantown, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Ho-Sheng Wang	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Hratchya Markarian	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Hsiao-Pai Chu	Chevy Chase, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Hung Hs. Lice	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Huafang Zhao	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Hubert Van Hecke	Germantown, MD	Supports project. Supports LRT over BRT.
Huili Hiao	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Humcha Hariprakash	Frederick, MD	Supports ETLs, Public Private Partnership, increase in number of buses. Suggests route changes for buses.
Hunter A. & Frances M. Kirkman	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Huy Ho	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Hwa Kao	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Hyi-Chun Lin	North Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Ian & Stephanie Fleisher	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Irene Dent	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Irmak Tanali	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Ivan & Hana Klein	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Mr. & Mrs. J.L. Dekeibaum	Gaithersburg, MD	Suggest the CCT should go to the Kentlands.
J. Staley	Gaithersburg, MD	Suggests light-rail/rail service from Shady Grove metro to PA line.
J.R. Kinard	Gaithersburg, MD	Supports CCT with LRT. Suggests additional station between Germantown and Washington Grove (Middlebrook). Comments that DANAC and Decoverly are too close together.
Jack Cochrane	Bethesda, MD	Supports CCT and bike trail along CCT. Specific suggestions regarding bicycle facilities, safety, accessibility, and potential new bike routes.
Jacob & Bernice Dekelbaum	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Jae Wee	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
James & Geraldine Kane	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
James M. & Beatrice B. Anderson	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
James Yen	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Jamie Javeedi	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Jan Fine	Gaithersburg, MD	Supports master plan alignment of CCT, opposes Life Sciences Center alignment.
Jan Jaret	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Janet Buyer	Rockville, MD	Supports increased road capacity between Clarksburg and COMSAT, and directly to Shady Grove, by way of Mid-County Highway.
Janet C. Israel	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Janice L. Impara	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Janis Summers	Gaithersburg, MD	Concerned about cost, travel time, "big picture" planning, overcrowding of metro, infrastructure around COMSAT and other stations, loss of low-income housing, encouragement of development, impact on the environment.
Janming Yuan	Boys, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Janusv Stecyk	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Jaromir J. Ulbrecht	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Jason Judd	Frederick, MD	Suggests extending CCT to Frederick.
Jean Garfinkle	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Jean Teng	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Jeff Brown	Gaithersburg, MD	Asks questions re: wildlife routes and stormwater runoff, suggests LRT to Olde Towne Gaithersburg, requests copy of the study.
Jeffrey J. Reisner	Gaithersburg, MD	Concerned about CCT spur from Quince Orchard Road interchange to Shady Grove Metro station. Recommends aligning to the other side of Great Seneca Highway with a Kentlands stop.
Jennifer L. Solomon	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Jennifer Logsdon	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Jennifer Russel	Gaithersburg, MD	Supports Alternative 7A/B.
Jeremy Souders	Frederick, MD	Supports extension of CCT to Frederick.
Jianxin Zhao	Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Jimmy Loh	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Jin Wu	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Jinglan Wang	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Joanne Ivancic	Frederick, MD	Opposes ETLs, suggests people mover, extending metro to Clarksburg, and expanding MARC service. Opposes impacts to battlefield and other historic sites. Supports transit.
Jody Rosenblum	Gaithersburg, MD	Opposes LRT due to noise and community impact. Supports BRT.
Joe Plunkard		Suggests adding another lane to Biggs Ford Road, opposes tolls in Frederick County, suggests Metro extension to Frederick County.
Joe Cina/Elaine Reiss	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
John & Katherine Koutsandreas	Gaithersburg, MD	Suggests rerouting CCT along SW side of Great Seneca Hwy, lowering speed limit to 40mph on Great Seneca Hwy, putting speed cameras on lowered speed limit section. Supports BRT.
John & Lisa Lynch	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
John & Nathalie McGuire	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
John Cataliott	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
John Deckenback	Frederick, MD	Supports action on the project, specific recommendations for short-term improvement, concerned about development/smart growth, opposes ETLs.
John D. Koutsandreas	Gaithersburg, MD	Suggests rerouting CCT along SW side of Great Seneca Hwy, lowering speed limit to 40mph on Great Seneca Hwy, putting speed cameras on lowered speed limit section.
John Dickey	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
John Fitzgerald	Boys, MD	Supports LRT.
John Hudalla	Germantown, MD	Supports BRT or LRT for CCT; Wants CCT to follow a more direct route between Metropolitan Grove and Shady Grove.
John I. Cheng	Darnestown, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
John Kelser		Opposes HOV lanes, specific suggestions for transit service.
John N. Ridgely	Rockville, MD	Supports Alt. 6A, suggests CCT run along I-370 instead of King Farm Blvd.
John Reynolds	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Jon H. Sminbrook	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Joseph & Kristen Harris	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Joseph Kirk Michael	Gaithersburg, MD	Suggests monorail.
Joseph Kroener	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Joseph Murphy	Rockville, MD	Opposes CCT through King Farm.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Joseph W. Hajdusiewicz	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Josh Lawson	Frederick, MD	Supports LRT and highway widening. Opposes ETL.
Judith Dubois	Rockville, MD	Sees project as expensive short-term fix. Suggests incorporating trains like those found in Austria, or adding MARC service.
June Liu	Rockville, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Justin & Lira Silbert	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Kai Wang	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Kamla Butaney	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Kareh Abtahi	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Karen Feldman	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Karin Thoman	Gaithersburg, MD	Opposes project; Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Kathleen McConnell	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Katrice Lippa	Gaithersburg, MD	Suggests bike/ped path along CCT.
Kay Anderson	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Kay Boughan	Damascus, MD	Opposes widening, supports transit. Concerned about sprawl growth and impacts to residences, historic resources, parks, and environment.
Ke Huang/Jing Kang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Kefu Xu	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community.
Ken West/Kylee Snyder	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Kenneth E. Lanham	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Kenneth Gele	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Kent Seiler	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Keri L. Christenfeld	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Kevin & Alisha Gutowski	Boyd, MDS	Supports Highway Alternative 7. Concerned about gridlock on Old Baltimore Road. Opposes moving Montgomery County fairground to near Summerfield Crossing.
Kevin Pascoe	Germantown, MD	Opposes construction of light rail through environmentally sensitive areas, opposes light rail.
Kevin Shin	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Kim Lawson	Boyd, MDS	Opposes BRT because buses would get stuck in traffic and have uncertain schedules.
Kim St. John	Frederick, MD	Opposes highway widening, supports transit.
Kimberly Nugent	Gaithersburg, MD	Suggests extending metro to Frederick; opposes ETL.
Koseian Sivaslian	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Kuo-Shein Lee	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Kyle & Gary Blackstone	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
L. Raghavan	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Ladys Desanto	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Laura Millard	Frederick, MD	Against the project due to urban sprawl, cost effectiveness, existing infrastructure, and costs to the state.
Laura Muncy	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Laura Nelson	Frederick, MD	Against the project due to urban sprawl, cost effectiveness, existing infrastructure, and costs to the state.
Laura Stets	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Leona D. Kalbacher	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Leonard Shapiro	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Leroy Randall	Gaithersburg, MD	Supports BRT with suggestions for route, asks for traffic light for neighborhood.
Leslie Ben-Canaan	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Leslie Stewart	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Lezlie Crosswhite	N. Potomac, MD	Suggests metro extend to Frederick, asks why metro is not part of the study, says people will not drive from the north to park at Shady Grove metro to ride to NIST, COMSAT, asks whether COMSAT and Shady Grove Stations will have more parking.
Li Li	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Li Yang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Li Zhi	Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Libby Randall	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Lily Cheng	Darnestown, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Linda Kass	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Linda Reisner	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Lisa Daniels	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Lisa Fadden	Rockville, MD	Supports Alternative 7A.
Lori Pellnitz	Gaithersburg, MD	Supports LRT, opposes highway widening.
Lori Tecler	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Louis B. Hackerman	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Louis Cerny	Gaithersburg, MD	Supports LRT, suggests CCT be built before widening I-270.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Louise Corabi	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Lynne Rose	Gaithersburg, MD	Concerned with CCT impact to neighborhood entrance; suggests alternatives.
Maggie Levy	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Manoocheer Roosta	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Marcin Gierdalsky	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
Margaret Ink	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Margaret Levitan	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option
Margo Caplan	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option
Margo Stein	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
Maria Della Camera	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Mariana Halari	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Maria & Jose Guevara	Frederick, MD	Concerned about US 15 impact, especially noise, and impact of sound walls on properties.
Marie G. Heck	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Marie Maffuy	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option
Marie P. Sullivan	Gaithersburg, MD	Objects to LRT on the side of the road with Lakelands Ridge neighborhood. Suggests BRT on the other side of the road. Also suggests elevated rail on a new route.
Mark & Pauline Loveland	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
Mark & Vivianne Schneider	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
Mark Bardwell	Silver Spring, MD	Supports CCT (especially LRT), opposes highway widening.
Mark Laufe	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Mark Loveland	Gaithersburg, MD	Specific suggestions for CCT route between Muddy Branch Road and Quince Orchard Road along Great Seneca Hwy.
Mark Rami	Gaithersburg, MD	Opposes CCT, supports extending metro north to Frederick.
Martha L. Cadle	Montgomery Village, MD	Suggest consideration of mass transit from Shady Grove to Frederick.
Martin Johnson	Baltimore, MD	Opposes I-270 expansion, suggests specific projects in Baltimore.
Martin K. Yau	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Mary A. Lanigan	Gaithersburg, MD	Concerned about CCT impact on entrance to community (Lakelands Ridge on High Gables Drive). Suggests running CCT on median of Great Seneca Highway or on the other side of the street.
Mary Clare Walker	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Mary Edukat	Gaithersburg, MD	Opposes project.
Mary Elizabeth Price	Gaithersburg, MD	Suggests CCT follow "Kentlands Alignment," supports BRT. Asks why Ride On bus service can't be expanded.
Mary Elizabeth Price	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Mary Lanigan	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Mary McMenamin	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Mary Romano	Gaithersburg, MD	Suggests moving CCT to the Kentlands side of Great Seneca Hwy.
Mary Stanley/Michael Seonarin	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Matthew G. Liberty	Gaithersburg, MD	Supports Kentlands alignment of CCT, suggests station at Great Seneca Hwy at Muddy Branch Rd.
Mee Har Eng	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Mei-Chu Chen	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Melissa Yorks	Gaithersburg, MD	Opposes highway widening.
Michael & Ling Marte	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
Michael Beonarian	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Michael Berceli	Gaithersburg, MD	Opposes project. Suggests removal from consideration of O&M facility on Game Preserve Road, requests noise mitigation, suggests realignment of CCT to minimize neighborhood impact.
Michael Calabro	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Michael Fordham Dennis	Germantown, MD	Supports BRT, recommends moving CCT to west side of Great Seneca Highway.
Michael Greenberg	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Michael Knapp	Rockville, MD	Supports Alternative 7A, concerned about making sure the project moves forward.
Michael Komack	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Michael McLay	Gaithersburg, MD	Asks for clarification on which portions of the CCT will be at-grade/grade-separated. Specific concerns include the intersection of Great Seneca Highway at Muddy Branch Road. Suggests Personal Rapid Transit (PRT) instead of BRT or LRT.
Michael Well	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Michael Woo	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Michael Zacharia	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Michell Watson/ Carmen Campbell	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Mike Tolker	Dickerson, MD	Supports transit, opposes highway widening.
Min-Chieh Chang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Miriam Schoenbaum	Boyd, MDS	Opposes highway widening, opposes ETL. Supports CCT, on the Kentlands side of Great Seneca Hwy and without a detour into Science City. Suggests direct rail connection from Shady Grove north to other areas.
M.J. Powers	Frederick, MD	Concerned about impact on Carrollton neighborhood, concerned about CCT ridership numbers, would like more information about project timeline.
Mohamed N. Radwan	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Mohammed & Raesa Faruqi	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Mona & Melvin Janis	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Morgan & Margarita Silva	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Morton & Iris Hyman	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Morton & Natalie Werber	Gaithersburg, MD	Opposes LRT location in front of community. Concerned about access and noise. Suggests moving CCT to less populated area, using buses on the other side of Great Seneca, or moving LRT to other side of Great Seneca.
Mr. & Mrs. Labosco	Rockville, MD	Opposes CCT route along King Farm Blvd, suggests running CCT along MD 355.
Mukul Nerurkar	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Nadine J. Gray	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Naiwen Liao	Rockville, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Namita A. Gandhi	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Nancy Breen	Rockville, MD	Supports CCT.
The Hon. Nancy Floreen (Elected Official)	Rockville, MD	Supports project.
Nancy Luse	Frederick, MD	Supports transit.
Natalie Halem	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Natalie Werber	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Natasha Clich	Gaithersburg, MD	Specific complaints about the #54 bus in Gaithersburg.
Nathaniel Peery	Germantown, MD	Supports project, especially LRT.
Neil Kim	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Nicholas P. Provost	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Nicole Halpine	Germantown, MD	Suggests extending Metro Red Line to Germantown and Frederick. Suggests using Black Hill Regional Park for a metro station.
Norman Talon	Germantown, MD	Concerned about impacts to state listed threatened fish species; supports BRT.
Norris A. & Olena Robertson	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Oscar & Ana Echeverria	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Pam Buckhanon	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Pamela Lindstrom	Gaithersburg, MD	Supports master plan route for CCT.
Patricia Broks	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT
Patrick Smeller	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Pattabi Srinivasan/ Nanmathi Manian	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Paul & Linda Poto	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Mr. & Mrs. Paul Combs	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Paul Defrigin	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Paula Sinsky	Gaithersburg, MD	Opposed to CCT due to neighborhood impact and noise. Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Pedro Blanco	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
Peter Liu	Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Peter Mao	Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Peyvand Ghofrani	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Phil & Susan Cho	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Ping Lam	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Qigao Xhu	Fairfax, VA	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Qing Yang	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Qingyuan Luo	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Quon Kwan	Rockville, MD	Supports LRT, opposes highway improvements.
R. H. Mehta	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Rachel Summers	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Rasmi Thomas	Frederick, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Raymond Cao	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Reed Montague	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Renee Forlove	Gaithersburg, MD	Concerned about impact to community, especially safety, access, and tree-save area. Suggest moving CCT to opposite side of Great Seneca Highway.
Renee Orlove	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Richard & Beverly Bertelmann	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Richard & Martha Strombotne	Gaithersburg, MD	Concerned about neighborhood access, skeptical about CCT usage. Prefer alternate Kentlands proposal.
Richard & Theresa Cheng	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Richard Arkin	Gaithersburg, MD	Supports Kentlands Alignment, Supports LRT for CCT.
Richard Arnold	Frederick, MD	Concerned about aggressive driving; supports LRT.
Richard Blaney	Rockville, MD	Suggests extending metro towards Clarksburg and Frederick.
Richard Blevins	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Richard A. Holmes	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Mr. & Mrs. Richard E. Rayford	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Richard Jones	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Richard King	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Richard Parsons	Derwood, MD	Supports Alternative 7A.
Rici/ Shurong Yu/Ying	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
The Hon. Rob Garagiola (Elected Official)	Annapolis, MD	Supports CCT, particularly LRT. Concerned about making sure the project keeps moving forward.
The Hon. Rob Garagiola (Elected Official)	Annapolis, MD	Submitted letter signed by several Elected Officials indicating Supports CCT - especially LRT but will accept BRT if necessary as long as it is a "rail on wheels" system. Also supports Alt 7, but recommend studying reversible lanes.
Robert & Carolyn Jackson	Gaithersburg, MD	Suggests running metro to Frederick. Opposes highway widening.
Robert & Ruth Sherman	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Robert Devita	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Robert Duggan	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Robert Jackson	Gaithersburg, MD	Opposes highway widening. Concerned about sprawl/overdevelopment. Suggests running metro to Frederick. Opposes highway widening.
Robert Janku	Gaithersburg, MD	Opposes CCT (buses specifically). Suggests extending Metro to Germantown.
Robert Mecklenburg	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Robert Rubinstein	Gaithersburg, MD	Opposes LRT in front of community. Suggests rerouting CCT, relocating LRT to other side of Great Seneca Hwy, BRT, or incorporating BRT on other side of Great Seneca Hwy.
Robert Seaton	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Robert Shade	Gaithersburg, MD	Supports LRT.
Robert Weitzman	Gaithersburg, MD	Supports Alt 7 with modified transit: LRT from Shady Grove to Metropolitan Grove, Express Bus north of Metropolitan Grove.
Roberta Helzner	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Roberta V. McKay	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Romain Tweedy	Germantown, MD	Suggests improving the beltway and local roads. Supports the CCT; suggests bike path next to the CCT.
Ronald & Joyce Uleck	Gaithersburg, MD	Opposes LRT, supports BRT. Concerned about noise, community impact, access, aesthetic impact. Also concerned about CCT fueling sprawl.
Ronald B. Argintar	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Ronald C. Welke	Germantown, MD	Supports Alternative 7B.
Rosalind Lacy MacLennan	Gaithersburg, MD	Supports BRT, supports routing CCT diagonally through Crown Farm property, suggests Ride-On buses connect population "islands", concerned about transit stations in residential areas, etc.
Rosemary R. Rufiax Harger	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Roy Deitchman	Rockville, MD	Supports transit, especially LRT.
Roy Wong	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Ruth Finglass	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Salvador Corona Padilla	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Sam Su	Rockville, MD	Supports LRT, suggests direct connection from Rockville to CCT, and thus Germantown and Gaithersburg.
Sami Garshoni	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Samira Binjandianp	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Sandra Wexlere	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Saoda Choudhury	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Sasan Arefi	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Sathyamoorthy Venugopal	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Sean S. & Angela Smith	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Sedigheh Montaser	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Serena Chiang	Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Shabnam Nia	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Sharon Borysiewicz	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Sharon Dooley	Olney, MD	Supports CCT, supports extending CCT to Clarksburg.
Shelley Aloï	Frederick, MD	Supports CCT, supports sound barriers for Rosedale neighborhood.
Shih-Ping Cheng	Darnestown, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Shilpa Roy	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Shirley L. Dolinger	Gaithersburg, MD	Concerned about CCT impact to community (access, noise, aesthetics). Supports buses.
Shirley L. Dolinger	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Simon Fan	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Sonay Gunawardhana	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Soo & Song Lee	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Sophie Mitrison	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Spencer Ward	Gaithersburg, MD	Does not supports I-270 widening. Suggest and supports high speed mass transit system.
Stacie Sterling	Gaithersburg, MD	Opposes CCT impacting property. Concerned about environmental impact.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Stan & Teri Hupert	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Stephanie Fitz	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Stephen & Susan Hutt	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Steve & Esther Lee	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Steve Barone	Germantown, MD	Supports study. Suggests extension of Metro to Germantown.
Steve Dufresne	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Steve Lombardi	Frederick, MD	Specific suggestions for commuter buses from Frederick to DC, including route and stops.
Steve Lombardi	Frederick, MD	Suggests bus directly from Frederick to DC. Suggests extending route 991 bus north. Suggests more parking for car/van pools.
Steve McFaul	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Steve Wang	Gaithersburg, MD	Alignment: We supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Mode: We support the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Steve Warner	Silver Spring, MD	Supports HOV, opposes Alternative 7. Suggests new bus lines to PA.
Steven & Eva Katradis	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Stewart & Janet Sutton	Gaithersburg, MD	Opposes O&M Facility at Site 4/5, concerned about noise/eligibility for noise walls and environmental impact, suggests alternate alignment for CCT paralleling I-270/ Watkins Mill deceleration lane.
Stewart L. Edelstein, Ph.D.	Rockville, MD	Supports CCT and expansion of I-270. Advocates CCT stop on Universities at Shady Grove campus.
Sue Ann Mahaffey	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Susan Eskite	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Suzanne Yuskiw	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Svetlana Ivanova	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
T.M. Staley	Gaithersburg, MD	Supports extending transit service to Frederick.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Tandan Venkat	Gaithersburg, MD	Concerned about CCT impact on community. Supports BRT with second choice of Kentlands option.
Mr. & Mrs. Ted Task	Rockville, MD	Supports light rail.
Teresa Chen	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Teresa Salsgiver	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Teri Johnson	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Theresa Jones	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports LRT.
Theresa San Agustin	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Thomas & Bianca Zinzi	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Thomas Gilliland	Gaithersburg, MD	Supports BRT/LRT, opposes highway widening, in favor of improving bike facilities.
Thomas Hill	Gaithersburg, MD	Supports LRT, supports GP/HOV, opposes ETL.
Timothy Fuss	Germantown, MD	Supports CCT (prefers LRT but accepts BRT). Supports new HOV lanes, opposes ETL)
Tina Kamdjou	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Tinghu Qiu	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Toba E. Gellman	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Tom & Janet Lamkin	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Tom Versilhelli	Germantown, MD	Supports LRT.
Tong Zhao/Hui Chen	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Tonjua Bander	Gaithersburg, MD	Opposes project's impact on community, concerned about impact on resale value/fair market value. Disappointed at not receiving the hearing brochure in the mail and shortened comment period.
Tonse Raju	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Too Pan & Yan Zhang	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Tori Sullivan	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Toros & Susan Mermer	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Tracy S. Yau	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Tuyet McFaul	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Uma Gupta	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Usman & Ayesha Malik	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Vandana Puri	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Vickie Campos	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Victor L. Farkas	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Vijay Goel	Clarksburg, MD	Suggests lowering the number of CCT stations from 13 to 7. Suggests that adequate Park & Ride spaces be provided at stations.
Viola S. Genovese	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT.
Violet Namatollahy	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Walter Morrow, Jr.	Frederick, MD	Opposes ETLs, supports increased transit to Frederick.
Wei Yan	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Wei-Yen Chen	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Wen Chen	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Wen-Lang Chen	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Wendy K. Nicholas	Gaithersburg, MD	Supports "Kentlands Alignment" on opposite side of Great Seneca Highway from community, supports BRT.
Wentao Peng	Rockville, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Wyatt & Laura Taylor	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Xiaohua Gao	Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Xiadqi Gong	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Xiaming Pan	N. Potomac, MD	Supports Alt. 5B, opposes ETL.
Xiaoping Jiang	Germantown, MD	Supports project, supports LRT.
Xiyan Li	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Xu Naizhen	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Xu Zaizhen	Gaithersburg, MD	Opposes CCT due to impact on Amberfield community. Suggests "Kentlands Alignment", Supports BRT.
Xuan T. Ohung	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT
Xunde Wang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Yanggu Shi/Yingfan Zhang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Yelistratov Victor	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Yi-Chun Lin	North Potomac, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.

Table VI-1: Summary of Transit-Related Written Comments from the 2009 AA/EA Public Hearings (cont.)

NAME	CITY, STATE	COMMENTS/CONCERNS/QUESTIONS
Yijian Zhang	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Yong Zhang	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Yu Ying Yau	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Yu-Tarng Cheng	Darnestown, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Yvonne Mah	Gaithersburg, MD	Supports Kentlands Alignment or any alignment located on the West/South side of Great Seneca Highway. Prefers BRT over LRT.
Zain Deen	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Zeina Jabbour	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the Bus Rapid Transit (BRT) option over the Light Rail Transit (LRT) option.
Zhaoyong Wu	Gaithersburg, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.
Zihou Wang	Gaithersburg, MD	Supports a "Kentlands Alignment" or such option which relocates the alignment of the transitway to the west side of Great Seneca Highway. Supports the BRT option over the LRT option.
Zili Qian	Germantown, MD	Concerned about project's impact on church located on Game Preserve Road. Specific concerns include: noise, runoff, air pollution, ROW acquisition, safety along Game Preserve Road.

Comments received since the 2009 AA/EA included comments on both the transit and highway aspects of the project alternatives. Only the transit-related comments are discussed in this SEA. Highway-related comments will be included in the I-270/US 15 Multi-Modal Corridor Study Final Environmental Impact Statement.

Overall, the transit-related comments of those testifying at the hearings voiced concerns for the existing CCT alignment along Great Seneca Highway as previously noted. They also expressed a desire for extended and improved MARC service in Frederick County, opposition to the I-270/US 15 road widening, and preference for new and/or improved transit. Almost all of those who testified agreed that some form of improvement is needed. Written transit-related comments were generally similar to the transit-related spoken comments except that some written comments indicated support for BRT and a “Kentlands Alignment” option along Great Seneca Highway as noted earlier. Specific concerns and suggestions from the transit-related written and oral comments are summarized in **Table VI-2**, and discussed below.

Government agencies and non-profit organizations expressed support for transit and the CCT and expressed concerns about the location of the CCT alignment, the need for transit service in Frederick, and improved MARC service. Among these groups, there was more support for BRT than for the other transit options alternatives.

Government Agency Transit-Related Comments

Most of the agencies were concerned about socioeconomic impacts and benefits. Most commented on the proposed CCT bike path and bicyclist and pedestrian use of the facility as well as proposed impacts to federal land.

US Department of Commerce-National Institute of Standards and Technology (NIST), Ms. Stella Fiotes

The NIST commented on the CCT and made note that the agency was not supportive of the proposal based upon the fact that the agency was unable to assess the impact of the CCT on NIST property until more information was provided. Specific

Table VI-2 Summary of Citizen Transit-Related Comments

COMMENT FOCUS	TOTAL COMMENTS
Supported Alternative 2 (TSM/TDM)	1
Supported Transit TSM	1
Supported Transit No Build	13
Supported Transit A (LRT)	45
Supported Transit B (BRT)	365
Expand Frederick County mass transit service	13
Expand mass transit service to Pennsylvania	3
Increase park-and-ride locations	3
Expand MARC Service	9
Extend the CCT Alignment	4
Make the CCT Alignment more direct	5
Comments on CCT O&M	5
Proposed a different CCT Alignment	22
Supported grade separation at intersections along CCT	3
Supported the “Kentlands Alignment” option	365
Requested new or different CCT Stations	5
Proposed the use of Monorail	4
Proposed the PRT method	1
Extend Metro service to Frederick	10
Extend Metro service to Clarksburg	1
Extend Metro service to Germantown	3

concerns expressed included the amount of NIST property required, impact on access at gates, vibration and sound, location of the CCT station proposed at NIST, impacts to power lines and wetlands and interference with equipment.

US General Services Administration (GSA), Ms. Suzanne Hill

The GSA commented on the potential impact of the CCT alignment to the U.S. Department

of Energy site in Germantown, MD. The agency requested additional coordination and support documentation concerning an existing SHA easement on the property and any additional land impacts for the proposed transit and highway improvements. GSA also noted that FEIS should address impacts and resources on the site, stormwater management, access, floodplains, historic buildings and noise impacts. The agency also requested additional engineering studies be completed to examine potential effects to utilities.

Maryland Department of Planning (MDP), Linda Janey

The MDP noted that Alternatives 6A/B and 7A/B are consistent with the State's smart growth policies. MDP also noted support for the CCT adding that the project would provide high quality transit service, provide a transportation alternative for high density communities and employment centers along the I-270 corridor, and would foster transit-oriented development near the transit stations. The department also requested the study and construction of pedestrian and bicycle facility connections from surrounding communities to future transit stations.

Washington Metropolitan Area Transit Authority (WMATA), Tom Harrington

The WMATA noted support for MTA's interest in expanding transit service in the I-270 corridor in efforts to improve the quality of life for metropolitan area residents and visitors. WMATA noted specific support for the CCT with the CCT bike path as part of the final design. The agency also noted that WMATA would determine potential needs to expand its existing metro system to handle the increased number of passengers during the peak hour.

Summary of Additional Public Involvement

In addition to the public hearings, SHA and MTA have met with citizens to discuss the I-270/US 15 Multi-Modal Corridor Study and CCT on numerous occasions since June 2009, either at workshops or community civic association meetings that were open to the public. In support of public awareness of these meetings and their purpose,

various newsletters and brochures were distributed. At the public meetings, citizens were invited to provide verbal or written comments concerning the material presented at the meeting or comments on the project in general.

General Public and Community Briefings

The following is a list of public meetings and briefings that have taken place since June 2009. The list includes any meeting where members of the project team were present and where the public attended.

- **June 8, 2009** –Transit Center Outreach Frederick County MARC Stations – SHA, MTA and project team members distributed flyers and provided project information to MARC riders. Information also included notices for the June 2009 public hearings.
- **June 10, 2009** –Transit Center Outreach Shady Grove Metrorail Station – SHA, MTA and project team members distributed flyers and provided project information to Metro riders. Information also included notices for the June 2009 public hearings.
- **June 10, 2009** – Briefing to Neighborhood Advisory Council (NAC) 8, City of Frederick – SHA attended the NAC 8 meeting to educate residents about the I-270/US 15 Multi-Modal Corridor project. The project team reviewed the project design alternatives, potential impacts and changes in the Frederick area. Attendees were also provided information about the project website, newsletter and brochure. Attendees were invited to attend the June 2009 public hearings and were encouraged to participate in the public comment process.
- **June 11, 2009** – Briefing to Ft. Detrick Employees and Residents – SHA and MTA attended the planned meeting to present the I-270/US 15 Multi-Modal Corridor project. The project team provided websites for the attendees to find out more information concerning the project and design alternatives and invited attendees to attend the June 2009 public hearings.

- **June 12, 2009** – CCT Coalition Briefing – SHA and MTA attended this meeting to update the Coalition on the project, discuss information that would be presented at the upcoming Public Hearings, and to receive a briefing on the Coalition’s plan for providing testimony.
- **June 15, 2009** – Briefing to NAC 10, City of Frederick – SHA attended the NAC 10 meeting to make a presentation on the I-270/US 15 Multi-Modal Corridor project. The project team provided an overview of the project and discussed the transportation network, project benefits and other features. The team also provided attendees with the project website so they could share information concerning the project and design alternatives with others not in attendance. The team invited attendees to attend the June 2009 public hearings. Attendees had questions about the project schedule, costs and design.
- **June 23, 2009** – Meeting with Fireside Condominium Owners – SHA attended a special meeting with the Fireside Community. Nearly 60 residents attended; the team presented the alternatives and the potential impacts of each on the community. The attendees wanted more information on the project timeframe, which was well into the future. SHA and MTA committed to completing additional studies on the preliminary impacts of the alternatives. Some residents stated concern that they could not sell their properties, because potential buyers will not want to purchase a condo that is slated for demolition.
- **June 25, 2009** – Briefing to NAC 5, City of Frederick – SHA attended the NAC 5 meeting to introduce the I-270/US 15 Multi-Modal Corridor project to NAC 5 residents. The attendees had questions about the project schedule, costs and the potential for direct impacts to property along the highway alternatives. The MTA and SHA staff answered the questions and also invited attendees to visit the project website to review the 2009 AA/EA and to participate in the public comment period for the following the June 2009 public hearings.
- **July 7, 2009** – Briefing to the Montgomery Village Homeowners Association (HOA) Board of Directors – SHA and MTA attended this meeting at the request of the Transportation Committee from Montgomery Village to update them about the I-270/US 15 Multi-Modal Corridor project and the 2009 AA/EA document. An update on the Watkins Mill interchange project was also provided. Attendees were invited to participate in the public comment period for the June 2009 public hearings. Attendees had questions on cost, schedule, extension of Metrorail, potential air quality impacts and on how public-private partnerships could be used to construct the project.
- **July 9, 2009** – Meeting with Amberfield and Lakelands Ridge Communities – SHA and MTA attended the Amberfield and Lakelands Ridge HOA meeting to present the I-270/US 15 Multi-Modal Corridor project. The project team discussed the CCT alignment along Great Seneca Highway and its potential impacts on these communities. The project team provided websites for the attendees to find out more information concerning the project and design alternatives and invited attendees to participate in the public hearing process for the June 2009 public hearings. Attendees from the Amberfield community expressed concerns about the CCT’s proximity to individual townhouses. Attendees from the Lakelands Ridge community expressed concerns about the CCT’s route across the only access road to the community.
- **July 16, 2009** – Briefing to the Brighton West IV HOA Board – SHA attended a Brighton West IV HOA meeting to provide an update on the project and to request a meeting with the entire Brighton West community. The presentation included an overview of specific project impacts to their community, as well as the study as a whole. A full community meeting was scheduled for July 28, 2009.
- **July 23, 2009** – Meeting with Game Preserve Road Residents – SHA and MTA attended a meeting to provide an update on the project and to meet with the community. The presentation included an overview of specific

impacts to their community, as well as the study as a whole. Attendees were invited to participate in the public hearing process for the June 2009 public hearings. Attendees were concerned about direct property impacts and noise effects.

- **July 28, 2009** – Briefing to the Frederick County Kiwanis Club – SHA attended this meeting to present information on the I-270/US 15 Multi-Modal Corridor project. Discussion items included a description of the project area, the alternatives being considered, and an explanation of Express Toll Lanes. The 2009 AA/EA document was also introduced, and information was provided regarding the public hearings on June 16th and 18th, 2009. Attendees were encouraged to send comments that they wished to have included in the project record to the project team. The attendees had questions about the project schedule, tolling and displacements, all of which were answered during the meeting.
- **July 28, 2009** – Open House with Brighton West Communities – SHA and MTA held an open house to present the project, and its impacts on members of the Brighton West Community. Two formal presentations were held, one at 6:30PM and one at 7:30 PM. Spanish translators were in attendance to translate the full meeting. Attendees expressed concerns about potential relocations. Attendees were invited to participate in the public hearing process for the June 2009 public hearings.
- **July 29, 2009** – Presentation/Briefing to the Greater Washington Board of Trade – This briefing was organized by the Greater Washington Board of Trade to update the Board on the I-270/US 15 Multi-Modal Corridor project and the 2009 AA/EA document. Attendees were invited to participate in the public comment period for the June 2009 public hearings.
- **September 2, 2009** – Monocacy River Citizens Advisory Board/Frederick County Historic Preservation Commission Joint Briefing – SHA presented an overview of the I-270/US 15 Multi-Modal Study to the two Boards at their joint meeting, with a focus on the environmental impacts of the alternatives and the potential minimization and mitigation strategies being considered at Monocacy National Battlefield and Schifferstadt. Several questions centered around Schifferstadt and the City's proposed annexation of the Birely-Roelkey farmstead near Biggs Ford Road. Those in attendance also asked questions about potential impacts to air quality, residential and business displacements, and noise abatement.
- **January 21, 2010** – Meeting with Scale-It-Back Community Group – MTA attended a meeting at a private home hosted by the local community group Scale-It-Back. The group is opposed to the substantial development proposed for the Life Sciences Center (LSC), specifically at Belward Farm. The MTA provided a briefing on the project and informed attendees that the agency does not have a role in zoning matters and is responsible for providing service to areas in need of transit. A plan to relocate the CCT alignment to traverse the Belward Farm was developed in reaction to the County's proposal for approved development on the site.
- **March 23, 2010** – Gan Zikaron Garden of Remembrance Board of Directors – SHA presented an overview of the I-270/US 15 Multi-Modal Study to the Board of Directors of the Garden of Remembrance, adjacent to southbound I-270 north of Comus Road. Questions from the Board focused on the alternatives and whether the state would need to acquire land, stream and wetland impacts, and noise abatement.
- **April 28, 2010** – Briefing to the Flint's Grove HOA Board of Directors and Residents – MTA attended a Flint's Grove HOA meeting at the invitation of the community to provide an update on the project. The presentation included an overview of design concepts, the environmental process and schedule. Several attendees expressed concern that a CCT stop was not located closer to the community. 13 attendees requested to be added to the project mailing list.

- **May 24, 2010** – CCT Coalition Breakfast – MTA participated in this event that was organized by the CCT Coalition to bring together business and education facility stakeholders in the LSC area of the county. Speakers included Maryland State Senator Rob Garagiola, Montgomery County Councilmember Mike Knapp and MTA Deputy Administrator Henry. The MTA presentation provided an update regarding the study of the alternative alignments serving the LSC area. MTA began study of the alternative alignments as a result of the Montgomery County Council's adoption of the Great Seneca Science Corridor Master Plan which calls for the realignment of the CCT.
- **June 10, 2010** – Briefing to the Meadows at Northlake HOA Board of Directors and Residents – MTA attended the Meadows at Northlake HOA meeting at the invitation of the community to provide an update on the project. The presentation included an overview of design concepts, the environmental process and schedule. Several attendees expressed concern that a CCT stop was not located closer to the community. Residents asked for additional information on transit service, the location of the CCT and project costs.
- **July 14, 2010** – Briefing to the Lakelands and Kentlands HOA Board of Directors and Residents – MTA attended the Meadows at Northlake HOA meeting at the invitation of the community to provide an update on the project. The presentation included an overview of design concepts, the environmental process and schedule. Several attendees expressed concern that a CCT stop was not located closer to the community.
- **July 17, 2010** –Grocery Store Outreach at Magruder's Grocery Store – Project team members passed out flyers and information concerning the CCT project at this Gaithersburg location. The team also provided interested shoppers with the opportunity to join the project mailing list and to submit requests for presentations to interested community groups. 156 people visited the booth and 15 people signed up for the project mailing list.
- **July 19, 2010** –Grocery Store Outreach at Giant Grocery Store – Project team members passed out flyers and information concerning the CCT project at the Bureau Drive location in Gaithersburg. The team also provided interested shoppers with the opportunity to join the project mailing list and to submit requests for presentations to interested community groups. 168 people visited the booth and 14 people signed up for the project mailing list.
- **July 24, 2010** –Grocery Store Outreach at Giant Grocery Store – Project team members passed out flyers and information concerning the CCT project at the Muddy Branch Road location in Gaithersburg. The team also provided interested shoppers with the opportunity to join the project mailing list and to submit requests for presentations to interested community groups. 161 people visited the booth and eight people signed up for the project mailing list.
- **July 26, 2010** – Briefing to the Woods at Northlake HOA Board of Directors and Residents – MTA attended the Woods at Northlake HOA meeting at the invitation of the community to provide an update on the project. The presentation included an overview of design concepts, the environmental process and schedule. Several attendees expressed concern that a CCT stop was not located closer to the community.
- **August 8, 2010** –Grocery Store Outreach at Giant Grocery Store – Project team members passed out flyers and information concerning the CCT project at the Frederick Road location in Germantown. The team also provided interested shoppers with the opportunity to join the project mailing list and to submit requests for presentations to interested community groups. 205 people visited the booth and 13 people signed up for the project mailing list.
- **August 21, 2010** –Grocery Store Outreach at Giant Grocery Store – Project team members passed out flyers and information concerning the CCT project at the Kentlands Boulevard location in Gaithersburg. The team also provided interested shoppers with the opportunity to join the project mailing list and to submit requests for presentations to interested community

groups. 150 people visited the booth and six people signed up for the project mailing list.

- **August 22, 2010** –Grocery Store Outreach at Safeway Grocery Store – Project team members passed out flyers and information concerning the CCT project at the Germantown Road location in Germantown. The team also provided interested shoppers with the opportunity to join the project mailing list and to submit requests for presentations to interested community groups. 249 people visited the booth and four people signed up for the project mailing list.

Project Newsletters and Media Outreach

Postcards were distributed in May 2009 to coincide with the 2009 AA/EA Public Hearings. These postcards were distributed to the study's mailing list of approximately 50,000 individuals and organizations. In addition, over 25,000 project brochures were sent to addresses within the area of direct effects of the project, as well as to EJ communities and to those who requested to be on the mailing list. Public notices were also used to announce the 2009 AA/EA Public Hearings.

In addition, newspaper articles, advertisements, bus placards, flyers, radio/cable television interviews, press releases and the transit outreach activities noted in the previous section were utilized to maintain and increase public awareness of the study's activities and progress.

The I-270/US 15 project team's outreach included advertising project activities in the following newspapers and periodicals:

- *The Baltimore Sun*
- *The Examiner* (Washington, DC)
- *The Washington Post*
- *The Montgomery Gazette*
- *The Afro-American* (Washington, DC)
- *Washington Hispanic*
- *El Tiempo Latino*
- *The Frederick News Post*
- *The Frederick Gazette*

In previous years, information on the project was also posted in the following newspapers and periodicals:

- *The Montgomery Journal*
- *El Montgomery*
- *The Asian Fortune*
- *The Washington Jewish Weekly*

Prior to the May 2009 postcard announcing the June 2009 public hearings, a newsletter was distributed within the study area in March 2009 providing an update on the progress of the project.

Agency Coordination

After the publication of the 2009 AA/EA, SHA and MTA engaged in extensive coordination with local agencies and officials. A list of correspondence between the project team and local agencies/officials is provided in **Appendix C**.

Interagency Coordination Meeting

An interagency review meeting was held on May 26, 2010 regarding the I-270/US 15 Multi-Modal Corridor project. Participating agencies included the Maryland Department of Natural Resources (MDNR), Environmental Protection Agency, US Army Corps of Engineers, Federal Highway Administration, Maryland Department of the Environment, Maryland National Capitol Park and Planning Commission (M-NCPPC), National Park Service, Maryland Historical Trust, Maryland Department of Planning, US Fish and Wildlife Service, and the National Marine Fisheries Service.

The project team presented a status update to the agency representatives. The primary project activity discussed was the I-270/US 15 AA/EA Public Hearings and the environmental results. Agency representatives were briefed on the public hearing and preliminary comments as well as public involvement efforts. The agencies were also provided with an update on specific design modifications and ongoing environmental analysis for the CCT project, including the new alternative alignments as discussed in this document.

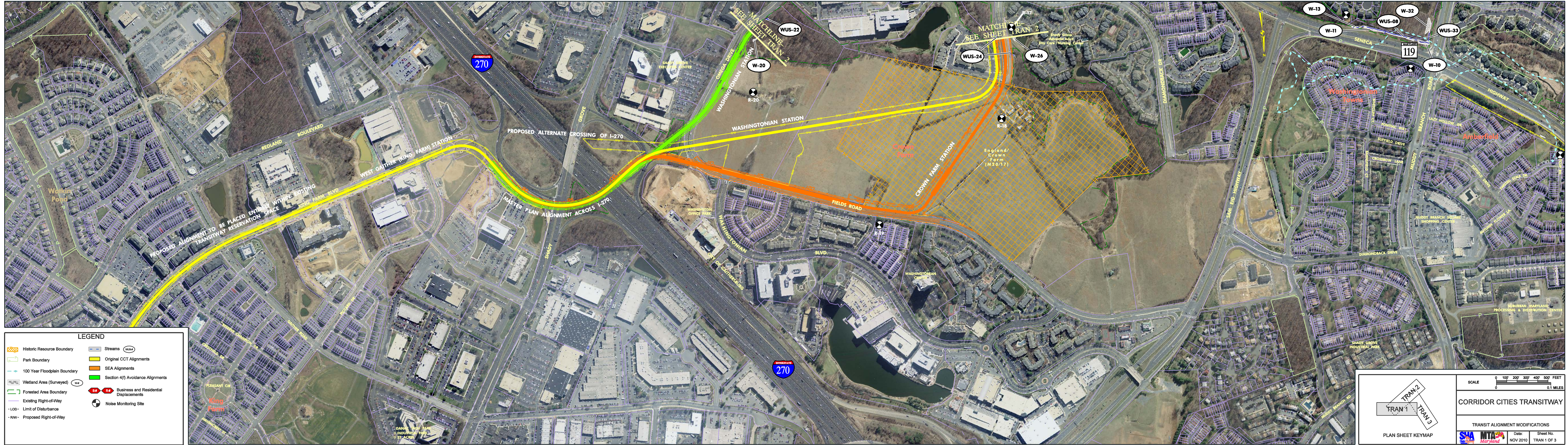
Coordination with Local Agencies & Elected Officials

The I-270/US 15 project team has had extensive coordination with local agencies and provided several briefings to local agency representatives as well as elected officials. The following section provides summaries of the project team's meetings with local agencies and elected officials.

- **June 8, 2009** – Briefing to City of Gaithersburg and City Council. SHA and MTA presented an update on the Multi-Modal project including information on the CCT project. A summary was given to the Mayor and Council of the City of Gaithersburg. Questions related to getting a better understanding of ETLs, how they work, and how much they would cost. The team provided examples across the country.
- **June 11, 2009** – Briefing to the Montgomery County Planning Board – SHA and MTA attended a work session with the M-NPPC and the Montgomery County Planning Board on its consideration of zoning changes in the LSC area. The Board with support from is currently preparing a new master plan for the area that would affect the ridership on the CCT. SHA and MTA also provided a briefing on the information to be presented at 2009 AA/EA Public Hearings.
- **July 6, 2009** – Montgomery County Planning Board Work Session – SHA and MTA were invited back to attend the Planning Board Work Session to answer questions related to the findings of the 2009 AA/EA and to assist the Planning Board in its assessment of planned development in the LSC area.
- **July 13, 2009** – Montgomery County Council Transportation, Infrastructure, Energy and Environment Committee – SHA and MTA attended the Committee meeting to answer questions from the members of the Committee related to the proposed recommendations of the M-NCPPC staff in support of the selection of a locally preferred alternative for the project.
- **July 16, 2009** – Montgomery County Council Transportation, Infrastructure, Energy and Environment Committee – SHA and MTA returned on July 16th to attend the Committee meeting to answer questions from the members of the committee related to the project in response to the proposed recommendations of the M-NCPPC staff support of the selection of a locally preferred alternative.
- **July 16, 2009** – Presentation to the Frederick County Board of Commissioners and Municipalities – SHA and MTA staff provided a briefing to the Board on the project and were on hand to answer questions.
- **July 21, 2009** – Briefing to the Montgomery County Council – MTA attended the Council meeting to provide an update on the I-270/US 15 Multi-Modal Corridor Study and to answer questions specific to the CCT Project.
- **August 20, 2009** – Briefing to the Frederick County Board of County Commissioners – Frederick County staff made a recommendation to the Commission on the locally preferred alternative. The SHA and MTA were on hand to answer any questions related to the I-270/US 15 Multi-Modal project prior to the Board's decision.
- **August 31, 2009** – Presentation/Briefing to the City of Gaithersburg Mayor and Council
- **November 6, 2009** – MWCOG Transportation Planning Board (TPB) Tech Committee Briefing – SHA and MTA attended the TPB Tech Committee meeting to provide a briefing on the I-270/US 15 Multi-Modal project.
- **November 9, 2009** – Coordination meeting with MDNR – SHA met with the real estate department of MDNR to discuss the project.
- **November 10, 2009** – Montgomery County Council Meeting – SHA and MTA attended the Council meeting to provide a briefing on the Multi-Modal project.
- **December 16, 2009** – MWCOG TPB Briefing – SHA and MTA attended the TPB Tech Committee meeting to provide a briefing on the Multi-Modal project.

Appendix A: Plan Sheets





LEGEND

- Historic Resource Boundary
- Park Boundary
- 100 Year Floodplain Boundary
- Wetland Area (Surveyed)
- Forested Area Boundary
- Existing Right-of-Way
- LOD- Limit of Disturbance
- RAW- Proposed Right-of-Way
- Streams
- Original CCT Alignments
- SEA Alignments
- Section 4(f) Avoidance Alignments
- Business and Residential Displacements
- Noise Monitoring Site

SCALE 0 100 200 300 400 500 FEET
0 0.1 MILES

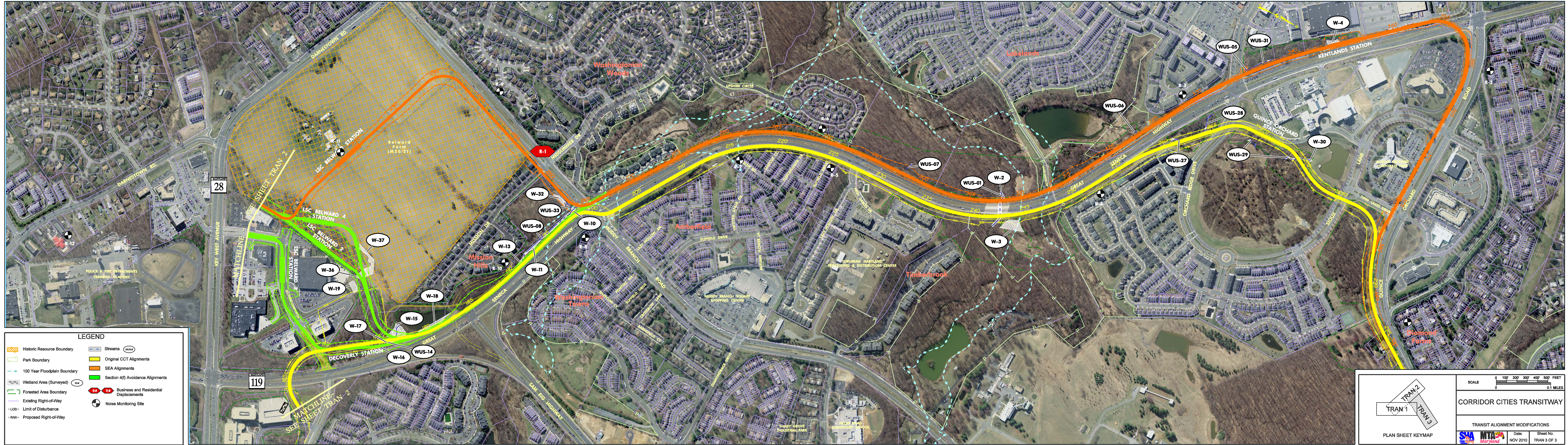
CORRIDOR CITIES TRANSITWAY

TRANSIT ALIGNMENT MODIFICATIONS

PLAN SHEET KEYMAP

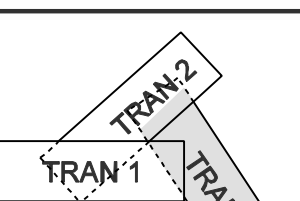
TRAN 1 TRAN 2 TRAN 3

DATE: NOV 2010 **SHEET NO.:** TRAN 1 OF 3

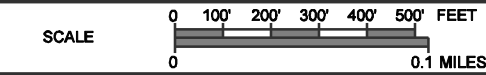


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PLAN SHEET KEYMAP



CORRIDOR CITIES TRANSITWAY

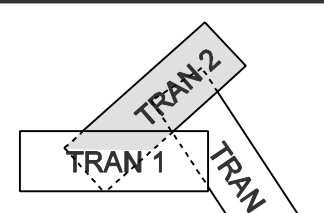
TRANSIT ALIGNMENT MODIFICATIONS

Date: NOV 2010 Sheet No. TRAN 3 OF 3



LEGEND

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SCALE 0 100' 200' 300' 400' 500' FEET
0.1 MILES

CORRIDOR CITIES TRANSITWAY

TRANSIT ALIGNMENT MODIFICATIONS

Date: NOV 2010 Sheet No. TRAN 2 OF 3

Appendix B: Wetland Summary Table

Wetland Summary Table

The wetlands and other waters of the U.S. listed in the Wetlands Summary Table below are mapped in Appendix A.

WETLAND NUMBER	WETLAND ACREAGE ON-SITE	COWARDIN CLASSIFICATION	HYDROLOGY	VEGETATION		SOILS	PRINCIPAL FUNCTIONS
WUS-1	N/A	R2UB1/2	Perennial Stream	N/A	N/A	N/A	N/A
W-2	0.008	PSS1C	Saturated in Upper 12 Inches, Drainage Patterns	red maple Oriental bittersweet jewelweed Northern spicebush Nepalese browntop Allegheny monkeyflower reed canarygrass Oriental lady's thumb Asiatic tearthumb	Acer rubrum Celastrus orbiculatus Impatiens capensis Lindera benzoin Microstegium vimineum Mimulus ringens Phalaris arundinacea Polygonum cespitosum Polygonum perfoliatum	Hatboro silt loam	Groundwater Recharge/Discharge, Nutrient Removal, Wildlife Habitat
W-3	0.005	PSS1B	Inundated, Saturated in Upper 12 Inches, Drainage Patterns	jewelweed rice cutgrass Japanese honeysuckle sensitive fern common reed American sycamore unknown blackberry black willow	Impatiens capensis Leersia oryzoides Loniceria japonica Onoclea sensibilis Phragmites australis Platanus occidentalis Rubus sp. Salix nigra	Hatboro silt loam	SS – 1.0 WQ – 0.9 WL – 0.5
W-4	0.068	PSS1Bx	Saturated in Upper 12 Inches, Oxidized Root Channels in Upper 12 Inches, Water-stained Leaves	red maple shallow sedge blunt spikerush fowl mannagrass black willow narrowleaf cattail broadleaf cattail	Acer rubrum Carex lurida Eleocharis obtusa Glyceria striata Salix nigra Typha angustifolia Typha latifolia	Glenville silt loam, Glenelg silt loam	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Nutrient Removal
WUS-5	N/A	R4SB2	Intermittent Stream	N/A	N/A	N/A	N/A
WUS-6	N/A	R2UB1/2	Perennial Stream	N/A	N/A	N/A	N/A
WUS-7	N/A	R4SB1/2	Intermittent Stream	N/A	N/A	N/A	N/A
WUS-8	N/A	R2UB1	Perennial Stream	N/A	N/A	N/A	N/A
W-9, 13	0.007	PEM1E	Inundated, Saturated in Upper 12 Inches	awlfuit sedge rice cutgrass	Carex stipata Leersia oryzoides	Hatboro silt loam, Brinklow-Blocktown channery silt loams	Sediment/Shoreline Stabilization
W-10	0.018	PEM1E	Inundated, Saturated in Upper 12 Inches	awlfuit sedge rice cutgrass	Carex stipata Leersia oryzoides	Hatboro silt loam, Brinklow-Blocktown channery silt loams	Sediment/Shoreline Stabilization

WETLAND NUMBER	WETLAND ACREAGE ON-SITE	COWARDIN CLASSIFICATION	HYDROLOGY	VEGETATION		SOILS	PRINCIPAL FUNCTIONS
W-11	0.002	PEM1E	Inundated, Saturated in Upper 12 Inches	awlfuit sedge rice cutgrass	Carex stipata Leersia oryzoides	Hatboro silt loam, Brinklow-Blocktown channery silt loams	Sediment/Shoreline Stabilization
WUS-12	N/A	R4SB2x	Intermittent Stream	N/A	N/A	N/A	N/A
W-13	0.0004	PEM1E	Inundated, Saturated in Upper 12 Inches	awlfuit sedge rice cutgrass	Carex stipata Leersia oryzoides	Hatboro silt loam, Brinklow-Blocktown channery silt loams	Sediment/Shoreline Stabilization
WUS-14	N/A	R2UB1	Perennial Stream	N/A	N/A	N/A	N/A
W-15	0.017	POWx	N/A	N/A	N/A	N/A	SBEC – 0.8 SS – 1.0 WQ – 0.8 WL – 0.4
W-16	0.038	PSS1E	Inundated, Saturated in Upper 12 Inches, Water Marks, Drift Lines, Sediment Deposits, Drainage Patterns	smallspike falsenettle common buttonbush silky dogwood rice cutgrass black willow unknown goldenrod	Boehmeria cylindrica Cephalanthus occidentalis Cornus amomum Leersia oryzoides Salix nigra Solidago sp.	Chrome silt loam	SBEC – 0.8 SS – 1.0 WQ – 0.8 WL – 0.4
	0.85	PEM1E	Inundated, Saturated in Upper 12 Inches, Sediment Deposits	jewelweed swamp smartweed arrowleaf tearthumb broadleaf cattail	Impatiens capensis Polygonum hydropiperoides Polygonum sagittatum Typha latifolia	Chrome silt loam	
W-17	0.004	PSS1E	Inundated, Saturated in Upper 12 Inches, Water Marks, Drift Lines, Sediment Deposits, Drainage Patterns	smallspike falsenettle common buttonbush silky dogwood rice cutgrass black willow unknown goldenrod	Boehmeria cylindrica Cephalanthus occidentalis Cornus amomum Leersia oryzoides Salix nigra Solidago sp.	Chrome silt loam	SBEC – 0.8 SS – 1.0 WQ – 0.8 WL – 0.4
W- 18	0.017, 0.019	POWx	N/A	N/A	N/A	N/A	SS – 0.5 WQ – 0.6 WL – 0.3
W-19	0	PEM1C/E	Inundated, Saturated in Upper 12 Inches, Oxidized Root Channels in Upper 12 Inches	unknown sedge shallow sedge softstem bulrush broadleaf cattail	Carex sp. Carex lurida Schoenoplectus tabernaemontani Typha latifolia	Chrome and Conowingo soils, Chrome silt loam	SS – 0.8 WQ – 0.9 WL – 0.5

WETLAND NUMBER	WETLAND ACREAGE ON-SITE	COWARDIN CLASSIFICATION	HYDROLOGY	VEGETATION		SOILS	PRINCIPAL FUNCTIONS
W-20	0	PFO1E	Inundated, Saturated in Upper 12 Inches, Drainage Patterns	red maple jewelweed black walnut Virginia creeper black cherry multiflora rose unknown blackberry	Acer rubrum Impatiens capensis Juglans nigra Parthenocissus quinquefolia Prunus serotina Rosa multiflora Rubus sp.	Baile silt loam	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Wildlife Habitat
WUS-21	N/A	R3UB2x	Perennial Stream	N/A	N/A	N/A	N/A
WUS-22	N/A	R2UB1r	Perennial Stream	N/A	N/A	N/A	N/A
W-23	0.062	PEM1Ex	Inundated, Saturated in Upper 12 Inches	common rush broadleaf cattail	Juncus effusus Typha latifolia	Chrome and Conowingo soils	SS – 0.7 WQ – 0.8 WL – 0.4
	0	POWx	N/A	N/A	N/A	N/A	N/A
WUS-24	N/A	R2UB1/2	Perennial Stream	N/A	N/A	N/A	N/A
W-25	0.004	PEM1E	Saturated in Upper 12 Inches	shallow sedge fowl mannagrass jewelweed common rush watercress arrowleaf tearthumb broadleaf cattail	Carex lurida Glyceria striata Impatiens capensis Juncus effusus Nasturtium officinale Polygonum sagittatum Typha latifolia	Baile silt loam	Floodflow Alteration, Sediment/Shoreline Stabilization
W-26	0	PEM1E	Inundated, Saturated in Upper 12 Inches	blunt spikerush broadleaf cattail	Eleocharis obtusa Typha latifolia	Baile silt loam	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Nutrient Removal
	0	POWx	N/A	N/A	N/A	N/A	N/A
WUS-27	N/A	R3UB1	Perennial Stream	N/A	N/A	N/A	N/A
WUS-28	N/A	R3UB1	Perennial Stream	N/A	N/A	N/A	N/A
WUS-29	N/A	R2UB2	Perennial Stream	N/A	N/A	N/A	N/A
W-30	0.009	PEM1E	Inundated, Saturated in Upper 12 Inches	redtop shallow sedge fowl mannagrass Nepalese browntop Asiatic tearthumb	Agrostis gigantea Carex lurida Glyceria striata Microstegium vimineum Polygonum perfoliatum	Baile silt loam	Sediment/Shoreline Stabilization

WETLAND NUMBER	WETLAND ACREAGE ON-SITE	COWARDIN CLASSIFICATION	HYDROLOGY	VEGETATION		SOILS	PRINCIPAL FUNCTIONS
WUS-31	N/A	N/A	Ephemeral channel	N/A	N/A	N/A	N/A
W-32	0.101	PF01E	Inundated, Saturated in Upper 12 Inches, Drainage Patterns, Oxidized Root Channels in Upper 12 Inches	red maple smallspike falsenettle unknown sedge fowl mannagrass jewelweed sensitive fern black willow New York ironweed	Acer rubrum Boehmeria cylindrica Carex sp. Glyceria striata Impatiens capensis Onoclea sensibilis Salix nigra Vernonia noveboracensis	Hatboro silt loam	SS – 1.0 WQ – 0.9 WL – 0.6
WUS-33	N/A	N/A	Ephemeral channel	N/A	N/A	N/A	N/A
W-34	0.022	PSS1E	Saturated in Upper 12 Inches, Sediment Deposits, Drainage Patterns	hazel alder silky dogwood jewelweed spotted ladythumb	Alnus serrulata Conus amomum Impatiens capensis Polygonum persicaria	Baile silt loam	SS – 1.0 WQ – 1.0 WL – 0.3
W-35	0.00003	PF01A	Inundated, Saturated in Upper 12 Inches, Drainage Patterns, Water-stained Leaves	silky dogwood green ash jewelweed Morrow's honeysuckle pin oak post oak Eastern poison ivy Southern arrowwood	Cornus amomum Fraxinus pennsylvanica Impatiens capensis Lonicera morrowi Quercus palustris Quercus stellata Toxicodendron radicans Viburnum dentatum	Baile silt loam	Groundwater Recharge/Discharge, Wildlife Habitat
W-36	0.13	PEM1E	Inundated, Saturated in Upper 12 Inches	switchgrass rice cutgrass green bulrush broadleaf cattail	Panicum virgatum Leersia oryzoides Scirpus atrovirens Typha latifolia	Chrome and Conowingo soils, Chrome silt loam	SS – 0.8 WQ – 0.9 WL – 0.5
W-37	0.047	PEM1E	Inundated, Saturated in Upper 12 Inches, Oxidized Root Channels in Upper 12 Inches	small carpgrass shallow sedge rice cutgrass reed canarygrass	Anthraxon hispidus Carex lurida Leersia oryzoides Phalaris arundinacea	Chrome and Conowingo soils, Chrome silt loam	SS – 0.8 WQ – 0.9 WL – 0.5
W-38	0.26	PF01C	Inundated, Saturated in Upper 12 Inches, Drainage Patterns in Wetlands	groundnut silky dogwood multiflora rose black willow black elderberry nightshade skunk cabbage	Apios Americana Cornus amomum Rosa multiflora Salix nigra Sambucus nigra Solanum ferox Symplocarpus foetidus	Baile silt loam	SS – 0.9 WQ – 0.8 WL – 0.5
WUS-39	N/A	R4SB3/4	Intermittent Stream	N/A	N/A	N/A	N/A
WUS-40	N/A	N/A	Ephemeral channel	N/A	N/A	N/A	N/A

WETLAND NUMBER	WETLAND ACREAGE ON-SITE	COWARDIN CLASSIFICATION	HYDROLOGY	VEGETATION		SOILS	PRINCIPAL FUNCTIONS
W-41	0.008	PEM1Cd	Inundated, Saturated in Upper 12 Inches, Drainage Patterns in Wetlands	common rush spotted ladythumb	Juncus effusus Polygonum persicaria	Hatboro silt loam, Brinklow-Blocktown channery silt loams	Groundwater Recharge/Discharge, Nutrient Removal
W-42	0.17	PSS1Fx	Inundated, Saturated in Upper 12 Inches	black willow common threesquare softstem bulrush	Salix nigra Schoenoplectus pungens Schoenoplectus tabernaemontani	Glenelg silt loam	Groundwater Recharge/Discharge, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat

Appendix C: Agency Correspondence

MD20090604-0719

**MONTGOMERY COUNTY PLANNING BOARD**
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION**OFFICE OF THE CHAIRMAN**

July 8, 2009

Councilmember Nancy Floreen
Chair – Transportation, Infrastructure, Energy and Environment
Committee
Montgomery County Council
100 Maryland Avenue
Rockville, Maryland 20850

Dear Ms. Floreen:

The Montgomery County Planning Board at its meeting Monday evening, July 6, voted to recommend that the Council endorse Bus Rapid Transit (BRT) as the Locally Preferred Alternative for the Corridor Cities Transitway (CCT). The consensus of the Board was that the flexibility of BRT offers advantages from phasing, operational and cost standpoints – making it the logical choice based on information available at this time. The Maryland Transit Administration (MTA) is currently examining the feasibility of both Light Rail Transit (LRT) and BRT on the Planning Board's preferred alternative alignment to serve the Life Sciences Center within the Gaithersburg West Master Plan area. The Board recognizes that the question of the preferred mode for the CCT would be revisited if the MTA analysis this fall indicates that the cost-effectiveness of LRT would improve to the point where it would be competitive for federal funding. However, there is no basis to suggest that the MTA results of the Life Sciences Center alignment will show a different relationship between the performance of LRT and BRT modes. We expect that the BRT advantages summarized above will be confirmed by the subsequent MTA analysis.

With respect to alignment, the Planning Board supports the alternate alignment through the Life Sciences Center that is included in the current Public Hearing Draft of the Gaithersburg West Master Plan. We believe it is important – absent any analysis to the contrary – that this alignment with a dedicated transitway be included as the preferred approach to accommodating the planned growth in this area. The Board is not opposed to a secondary, or limited express, bus service along the current Master Plan alignment but that alignment should be clearly identified at this time as supplemental and not the preferred alignment.

The Board also recommends that the Council endorse a modified Alternative 7 as the locally preferred highway alternative. This recommendation should be viewed as a qualified recommendation. Some Board members are reluctant to endorse any widening of I-270. The Board, however, feels the combination of (1) moving forward with the CCT and (2) introducing value pricing or variable tolling on I-270 are key elements of moving us away from dependence on additional roadway capacity and that the trade-offs in play (including the potential for

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www.MCParkandPlanning.org E-Mail: mcp-chairman@mncppc.org

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Councilmember Nancy Floreen
July 8, 2009
Page Two


MD 20090604-0717

significantly worsening congestion) warrant moving ahead with a “build alternative.” The Board, the Maryland Department of Transportation (MDOT) Project team, and our staff all agree, however, that additional information is needed in order to make the case for this highway alternative. There is also a need to continue work on mitigation of impacts – which in some cases are significant.

A summary of all of the Planning Board recommendations related to the I-270 / U.S. 15 Corridor Cities Transitway Alternatives Analysis/Environmental Assessment is enclosed. We want to take this opportunity to thank the MDOT Project Team and the Montgomery County Department of Transportation for their responsiveness and assistance throughout this process. It is a critically important project and we look forward to seeing it advance in a manner consistent with our goals for providing enhanced mobility throughout the County.

Our staff will be present at the Committee’s deliberations on July 13 to answer any questions you or other Committee members may have. Should you have any questions in advance, please do not hesitate to contact Dan Hardy (301-495-4530) or Tom Autrey (301-495-4533) of our Transportation Planning Division.

Sincerely,

A handwritten signature in black ink, appearing to read "Royce Hanson".

Royce Hanson
Chairman

Enclosure

MD 20092604-0917

**Planning Board Recommendations on I-270 / U.S. 15 / Corridor Cities Transitway (CCT)
Alternative Analysis / Environmental Assessment
Adopted July 6, 2009**

Transit Mode

1. Select Bus Rapid Transit (BRT) for the CCT.

CCT Alignment

2. Select the Master Plan alignment with adjacent hiker biker trail with the following modifications:
 - a. Replace the existing master plan alignment with the alignment through the Life Sciences Center that is included in the pending Planning Board Draft of the Gaithersburg West Master Plan.
 - b. Replace the conceptual alignment through Crown Farm with the alignment along Fields Road that is consistent with the Crown Farm Project Plan approved by the City of Gaithersburg.
 - c. Include only one station on Crown Farm and drop from further consideration the stations at School Drive and Middlebrook Road.
 - d. Defer to the City of Gaithersburg on any recommendation to the proposed relocation of the alignment to the west side of Great Seneca Highway to better serve the Kentlands.
 - e. Locate the Operations and Maintenance facility at Metropolitan Grove Site 6.

Highway Alternative

3. Based upon the information currently available, select "Modified" Alternative 7 – Two Express Toll Lanes (ETL) in each direction but:
 - a. Limit the number of through lanes (i.e. General Purpose and Managed Lanes) at the Frederick County line to no more than six.
 - b. Incorporate preferential treatments for High Occupancy Vehicle (HOV) and transit into the design (i.e., High Occupancy Toll or HOT lanes instead of Express Toll Lanes).
 - c. Consider a reversible lane system between MD 121 and the Monocacy Battlefield as a means to minimize costs and resource impacts.

Further Analysis

4. Provide additional detail on on-going mitigation efforts throughout the next phases of the project planning for both the highway and transit components.
5. Provide additional detail on the financial profile of the project. Additional and updated information is needed on assumptions related to toll rates, the estimated revenue to be generated, the extent to which the highway component of the project is expected to help

MD20090604-0717

defray capital and operating costs, and the extent the project may be expected to fund transit improvements.

6. Examine the potential for providing more frequent access to the managed lanes through the use of more open area or slip ramps where appropriate. The feasibility of providing direct access ramps from HOT lanes to the Life Science Area needs to be examined.
7. Consider closing the MD 109 interchange.
8. Additional information or data is needed in subsequent project planning in the following specific technical areas:
 - a. Traffic Volumes and Level of Service (LOS) By Lane Type
 - b. Intersection LOS in format similar to 2002 AA/DEIS
 - c. Roadway Travel Time Data
9. During project development, the following resource impact minimization and mitigation efforts should be expedited:
 - Section 106 coordination to address master planned development on the Banks / Belward Farm historic site facilitating establishment of the CCT alignment to a planned community with five million square feet of commercial development potential.
 - Development of linear stormwater management techniques in sensitive areas such as Use IV subwatersheds, the Clarksburg Special Protection Area, and the stream/parkland crossings of Great Seneca Creek and Little Seneca Creek.
 - Continuing coordination between federal, state, and local environmental mitigation requirements with particular attention to noise attenuation, wildlife exclusion fencing, the introduction of non-native invasive species, and the protection of rare, threatened, and endangered species such as the comely shiner.
 - Developing a project delivery mechanism that provides continuing opportunities to minimize resource impacts, including the use of contractual financial incentives.
 - Identifying a conceptual Section 4(f) mitigation proposal to address parkland impacts such as potential impacts to Little Bennett Regional Park and Black Hill Regional Park.

Recommended Further Action by Montgomery County

10. Establish a working group to examine methods of accelerating the funding and implementation of the CCT and providing necessary funding for the operation, maintenance, rehabilitation, and expansion of our existing public transit services – including Metrorail, Metrobus, and Ride On – as well as the planned Purple Line.
11. Before I-270 improvements (other than new interchange access points) are designed for mandatory referral submission, the County Council should identify the priority of all major roadways and transit projects in the corridor through the County CIP and state CTP

MD 20090604-0717

process. Existing or potential projects of significance in the corridor include the following:

- I-270 north of I-370 (improvements resulting from this AA/EA)
- Extended managed lanes to be evaluated in the SHA West Side Mobility Study
- A countywide BRT network, for County study in FY 10
- Midcounty Highway Extended (M-83), currently under County study

MD2009 0604-0717

OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850Isiah Leggett
County Executive

MEMORANDUM

July 10, 2009

TO: Phil Andrews, President
Montgomery County Council

FROM: Isiah Leggett, County Executive

SUBJECT: I-270/US 15 Multi-modal Corridor Study



The Maryland Department of Transportation (MDOT) released in June the I-270/US 15 Alternative Analysis/Environmental Assessment (AA/EA) for the multi-modal corridor. This document is based on the earlier 2002 Draft Environmental Impact Statement (DEIS) with updates to the Corridor Cities Transitway (CCT) to reflect the current Federal Transit Administration guidance on major transit capital projects. The update also adds consideration of express toll lane (ETL) alternatives for I-270 along with the high occupancy vehicle (HOV) lane concept from the DEIS. The release of the AA/EA is an important step in the planning process.

Prior to the Transportation, Infrastructure, Energy and Environment Committee's work session on the I-270/US 15 Multi-modal Corridor Study, I would like to convey my position on the preferred transit and highway options.

My position is based on my belief in treating different areas of the County equally; input I have received from individuals, community and civic organizations, businesses and elected officials; and from recommendations from the County's Department of Transportation. I recommend light rail transit for the CCT and Alternative 3 for I-270 for the following reasons:

1. Light rail transit will provide the greatest transportation benefit of highest ridership and fastest corridor travel times. I believe that a light rail transit system will advance smart growth better than the bus rapid transit (BRT) alternative and can better serve a growing corridor well into the future, beyond the twenty year period analyzed in the AA/EA. The BRT alternative is very competitive and would also support smart growth, but light rail is preferred because it will be a greater economic catalyst and a stronger signal to businesses and the general public that we are committed to achieve the balanced development envisioned in our master plans. Due to the current rules in place for the State analysis, the current study did not take into consideration the proposed increased densities being proposed along the corridor for Gaithersburg West and Germantown. We should not close our eyes to those efforts and need to think beyond the 20 year horizon used in the State's study.

MD2009 0604-0717

Phil Andrews
July 10, 2009
Page 2

2. The CCT is the transit backbone in two Master Plans currently being considered by the Planning Board and County Council, Gaithersburg West and Germantown, and the approved Clarksburg plan. The CCT remains a critical element required to achieve smart growth in these master plans, and improvements to I-270 will address one of the major sources of traffic congestion in the County. I support MDOT studying an alternative alignment for the CCT that is consistent with the proposed Gaithersburg West Master Plan that routes the CCT through the Life Sciences Center, the Public Safety Training Academy, and the Belward Farm. MDOT indicates that this CCT routing analysis should be available in two months. I am willing to review my position and recommendation once that effort is completed; but at this point, I must support the long range vision and benefit of a light rail system over bus rapid transit.
3. Completing HOV lanes to Frederick County, as described in Alternative 3, is the best choice to increase person throughput along I-270 with the least neighborhood and environmental disruption. As with the CCT, Alternative 3 is consistent with master plans that call for an HOV system. I-270 continues to experience significant congestion and this congestion is expected to worsen as the region continues to grow. In 2004, MDOT expanded the range of alternatives for consideration to include managed lanes, ETLs. While I generally agree that managed lanes is an alternative, we need to consider for major highway improvements in the future, I do not support applying this concept to the I-270 corridor in Montgomery County. Montgomery County residents typically only travel a short distance along I-270 and will see limited use of the express toll lanes. Montgomery County travelers will not have easy and convenient use of the ramps to the express toll lanes and will have the number of regular lanes reduced. I do not believe that it is in the best interest of our residents to limit their access to I-270, lose a lane of travel, absorb major disruption to their land during construction and then having to pay to use the ETL's. I am not opposed for users having to pay for additional lane capacity, so as Alternative 3 advances, I recommend that MDOT also consider converting the HOV lanes to high occupancy toll lanes or HOT lanes. This approach will also be most compatible to the activities under way on the Virginia Interstate System along I-495.

My staff and I will continue to work with the State, the Council, the affected municipalities, and the Planning Board to ensure that as these important projects proceed through planning and construction, the needs and concerns of our residents are considered to the maximum extent possible, and that neighborhood and environmental concerns continue to be addressed.

AH:lh



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

July 29, 2009

Mr. Bruce M. Grey
Deputy Director
Office of Planning and Preliminary Engineering
State Highway Administration
707 N. Calvert Street, Mail Stop C-301
Baltimore Maryland 21202

Ms. Diane Ratcliff
Maryland Transit Administration
6 Saint Paul Street, 9th Floor
Baltimore Maryland 21202

Re: I-270/US 15 Multi-Modal Corridor Study, Environmental Assessment/ Alternatives Analysis, Frederick and Montgomery, Maryland, May 2009

Dear Mr. Grey and Ms. Ratcliff,

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and the Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency (EPA) has reviewed the Environmental Assessment/Alternatives Analysis for the I-270/US15 Corridor Study, referenced above. The document is complete and written in a manner easily readable by the public and agencies.

The EA/AA has been prepared as a companion assessment to the Draft Environmental Impact Statement (2002) for the corridor. The study includes improvements to a 30-mile highway from I-370 to US 15/Biggs Ford Road and the 14-mile Corridor Cities Transitway (CCT) from Shady Grove to the COMSAT facility south of Clarksburg. The EA/AA evaluates social, historical and environmental impacts of two build alternatives analyzed to supplement the range of alternatives evaluated in the DEIS. The new alternatives (6A/B and 7A/B) incorporate the option of Express Toll Lanes (ETL) on the highway corridor in addition to Transportation System Management/ Transportation Demand Management measures. The transit alternatives compare a Bus Rapid Transit and Light Rail Transit on dedicated transitway. Environmental impacts of each of the two new alternatives are identical. Wetland impacts for the new alternates (highway and transit) are 13 acres, stream impacts are 20,198 linear feet, forest impacts of 295.8

acres and park impacts are 43.28 acres. Parkland impacts are of particular concern as they include significant taking from the Monocacy National Battlefield. Residential displacements are appreciable, ranging from 256-260, dominantly from the highway component. The response of the affected public to the proposal should be considered, addressed and presented in further project development documentation.

A more significant difference can be seen by comparison of the new alternatives to impacts of the non-ETL options evaluated in the DEIS. EPA supports evaluation of minimization measures that can be made to alternatives 6A/B and 7A/B to bring these alternatives in closer line to the original alternatives. If this can not be done, the advantage of ETL must be explained in order to render other alternatives impracticable. Avoidance and minimization of adverse impacts should be pursued in any future design for the highway project. A cost comparison of alternatives was included, but might be more effective if all were brought to 2007 dollars.

EPA supports evaluation and incorporation of design that can potentially further reduce environmental impacts associated with the transitway, such as pervious surface for the LRT transitway, low impact development BMPs for park and rides that may be included in the infrastructure project, research into low emissions vehicles for the BRT option (possibility of partial zero emissions hybrid buses), and low emissions equipment use during construction.

Environmental Justice analysis identified populations of concern, potential impacts and sources of concern during project implementation. The evaluation was thorough and conclusions should be considered in project development. An indirect and cumulative effects (ICE) analysis was provided in the document. Discussion of cumulative effects could be improved by indicating if any specific foreseeable projects are planned in the area of the ICE study boundary that may impact resources (cultural or natural) that are affected by the proposed project. It would be helpful to include a map showing the geographic boundary determined for the ICE analysis; the boundary was not clearly identified by the text. The use of the Expert Land Use Panel for the EIS was very effective, and the conclusions were appropriately applied to the EA/AA document.

Thank you for providing EPA with the opportunity to review this project. If you have questions regarding these comments, please contact me at 215-814-3322.

Sincerely,

A handwritten signature in black ink, appearing to read 'Barbara Rudnick'.

Barbara Rudnick
NEPA Team Leader
Office of Environmental Programs



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THE MARYLAND GENERAL ASSEMBLY
ANNAPOLIS, MARYLAND 21401-1991

July 29, 2009

Mr. Russell Anderson, Project Manager
Maryland State Highway Administration
Project Management Division
707 North Calvert Street, Mail Stop C-301
Baltimore, MD 21202

Dear Mr. Anderson:

We are writing to express our fervent support for the Corridor Cities Transitway (CCT), which is our number one transportation priority, to stay on track for construction in 2012.

This project is shovel-ready with the right-of-way largely set aside. There is little or no opposition in the community with strong local business and government support. Compared to other mass transit projects, the overall costs are very modest. We urge creativity in financing, including a public/private partnership and a combination of federal, state, and local aid.

By providing a link between many communities – Clarksburg, Germantown, Gaithersburg, and Rockville – to the Shady Grove Metro Station, this project will benefit commuters in some of the fastest growing communities in both Montgomery and Frederick Counties and alleviate traffic congestion in the I-270 corridor. In addition, the CCT will play a vital role in the continued economic development of Montgomery and Frederick Counties and the state.

We believe that light rail should be the mode choice for the portion of the route from Shady Grove to Clarksburg. Economic development is more likely near light rail transit, and light rail promotes a more high quality transit-oriented development in burgeoning town centers. Studies have shown that more people choose to get out of their cars for light rail, as opposed to bus-rapid-transit (BRT). Light rail would have lower operational costs than BRT because, as demand increases, more rail cars can be added at no additional personnel cost. However, if BRT is the necessary choice due to Federal transit Administration cost effectiveness requirements, then we urge that such BRT truly be a “rail on wheels” system, without compromising the advertised service level, speed, and quality.

AUG 03 2009

Additionally, we support two Express Toll Lanes (ETLs), as a component of this project, to help reduce congestion on I-270. We also think that the Montgomery County Planning Board's recommendation of reversible lanes is worth further exploration, as it could alleviate traffic congestion while mitigating negative environmental impacts. These ETLs should be combined with general-purpose lanes without tolls, so that these new transportation facilities will be financed in large part by private investments.


We thank you in advance for your attention to these important matters.

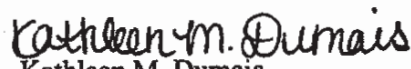
Sincerely,


Rob Garagiola
State Senator – District 15



Saqib Ali
Delegate – District 39



Charles E. Barkley
Delegate – District 39


Kumar P. Barve
Delegate – District 17



Kathleen M. Dumais
Delegate – District 15


Brian J. Feldman
Delegate – District 15

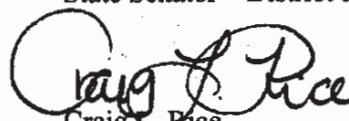

Jennie M. Forehand
State Senator – District 17



James W. Gilchrist
Delegate – District 17


Nancy J. King
State Senator – District 39


Alexander X. Mooney
State Senator – District 3


Kirill Reznik
Delegate – District 39


Craig E. Rice
Delegate – District 15


Richard B. Weldon, Jr.
Delegate – District 3B

Cc: The Honorable Martin J. O'Malley, Governor
The Honorable Beverley Swaim-Staley, Maryland Department of Transportation,
Acting Secretary

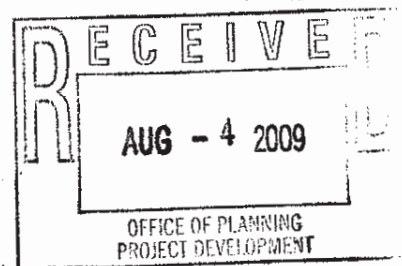


UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

July 30, 2009

Mr. Rick Kiegel, P.E.
Project Manager
Office of Planning
Maryland Transit Administration
6 Saint Paul Street, Suite 902
Baltimore, MD 21202

Mr. Russell E. Anderson, P.E.
Project Manager
State Highway Administration
707 N. Calvert St.
Mailstop 3-C01
Baltimore, MD 21202



RE: I270/US 15 Multi-Modal Corridor Study
Alternatives Analysis/Environmental Assessment
May 2009

Dear Mr. Kiegel and Mr. Anderson,

NIST has reviewed the above referenced Alternatives Analysis/Environmental Assessment and would like to go on record with the following comments. They are a repeat of the comments sent April 1, 2009.

1. Reference: *Chapter IV – Environmental Resources and Consequences – Pg. IV-1; Section A. Land Use, Zoning and Future Development; Existing Conditions; Zoning; Montgomery County*: In discussion regarding the City of Gaithersburg, the following statement is included: “However, the city expects to annex and rezone the National Institute of Standards and Technology (NIST) property...” NIST objects to this language as it implies an action regarding the NIST property that will not take place in the foreseeable future. While the City of Gaithersburg Master Plan does show the NIST property within its ‘maximum expansion limits,’ NIST assumes the designation is a placeholder if NIST was to ever vacate the site. NIST currently has no intentions of vacating its Gaithersburg location. We request that the statement be deleted and replaced with an acknowledgement that NIST would be impacted on two sides by the I-270 widening, the proposed ramp, and the CCT.
2. Reference: *Chapter IV – Environmental Resources and Consequences, multiple locations*: Many of the maps within Chapter IV delineate a ‘1000 ft. corridor buffer’ around I-270 and the proposed CCT. Neither the purpose for this designation, nor the implications to the land within the ‘buffer,’ is apparent from the document. This buffer area is shown to severely encroach upon the NIST property.
3. Reference: *Appendix A, Plan Sheet 2 Of 15*: NIST is opposed to the location of the “Potential MD 117 Direct Access Ramps” from MD 117 (West Diamond/Clopper Road) to South I-270. Not only do they severely encroach upon NIST property, potentially disrupting internal roadways and operations, but the entrance to the proposed general purpose lanes ramp is dangerously close to NIST’s main entrance gate. No traffic analysis of the impact to the gate appears to be

provided. Additionally, disturbance to the trees on the NIST property violates NIST's approved Forestation Plan with the State of Maryland.

4. Reference: *Appendix A, Plan Sheet 4 of 6*: Clarification is requested regarding the location of the "PFA Municipal Boundary Line." This line, as shown, significantly encroaches upon NIST property.
5. Regarding the proposed *Corridor Cities Transitway (CCT)*, NIST is not supportive of the proposal as we are unable to assess the impact of the CCT on NIST property until additional information is provided. Our concerns include the following:
 - a. Width of NIST Property Required – A clear definition of the width of the proposed CCT lanes, station, bike path and right-of-way is needed so that NIST may assess the impacts of the loss of property.
 - b. Impact to NIST Entrance Gates – The proposed CCT crosses two entrance/exit gates. A clear definition of the safety measures to be implemented for pedestrian and vehicular traffic crossing the CCT line is needed.
 - c. Vibration & Sound – NIST requests a vibration and sound analysis specific to its property line and nearby buildings.
 - d. EMI/RFI – If the light rail option is selected, as opposed to the bus, NIST is concerned about the potential Electro-Magnetic Interference (EMI) and Radio Frequency Interference (RFI) and their impact on research at NIST. An assessment of the potential field strengths are needed along NIST's property line and for the proposed NIST CCT Station.
 - e. NIST CCT Station – Additional information is needed regarding the dimensions and general appearance anticipated for the station. NIST reserves the right to determine the final location for the Station.
 - f. PEPCO Power Lines – PEPCO's power lines currently run along Quince Orchard Road. NIST will not entertain locating the overhead lines within its property.
 - g. NIST has a small wetland within the impacted area along Quince Orchard Road.

We appreciate the opportunity to review the Alternative Analysis/Environmental Assessment and look forward to future cooperation regarding the planning and design of this proposed action. Please contact Susan Cantilli at (301) 975-8833 or susan.cantilli@nist.gov for questions or coordination purposes.

Sincerely,

A handwritten signature in black ink, appearing to read 'Stella F. Fiotes'.

Stella F. Fiotes, AIA
Chief Facilities Management Officer
National Institute of Standards and Technology



July 31, 2009

Diane Ratcliff
Director, Office of Planning
Maryland Transit Administration
6 St. Paul Street, 9th Floor
Baltimore, MD 21202

Re: I-270/US 15 Multi-Modal Corridor Alternatives Analysis and Environmental Assessment (AA/EA) Comments

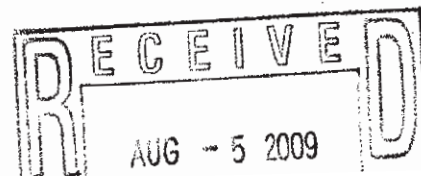
Dear Ms. Ratcliff:

The Washington Metropolitan Area Transit Authority (WMATA) appreciates the opportunity to provide comments on the I-270/US 15 Multi-Modal Corridor Alternatives Analysis and Environmental Assessment (AA/EA). As the regional transit operator in the Washington metropolitan area, WMATA supports the efforts of the Maryland Transit Administration (MTA) to expand transit service in the I-270 corridor and improve the quality of life for metropolitan area residents and visitors. WMATA supports the Corridor Cities Transitway (CCT) with the CCT Bike Path as part of a final project to make it truly multi-modal, thus offering more mobility options in the corridor. We hope these staff comments provide valuable feedback and we look forward to further participation in this important project.

Whether the final preferred alternative includes Bus Rapid Transit (BRT) or Light Rail Transit (LRT), there are benefits of this service that we would like to highlight:

- **Regional Transit Connectivity.**

Transit service in the I-270 corridor will help expand the reach of Metro into upper regions of Montgomery County and provide an attractive alternative for those who currently park and ride at Metrorail Red Line stations, which could reduce the need to build additional parking at these stations and ease traffic congestion in the corridor.



**Washington
Metropolitan Area
Transit Authority**

800 Fifth Street, NW
Washington, DC 20001
202/962-1234

By Metrorail:
Judiciary Square—Red Line
Gallery Place-Chinatown—
Red, Green and
Yellow Lines
By Metrobus:
Routes D1, D3, D6, P6,
70, 71, 80, X2

A District of Columbia

Diane Ratcliff
Page 2

- **Dedicated Right-of-Way for Transit.** Traffic congestion on suburban roadways has a significant impact on the ability local and regional bus operators to deliver rapid and reliable service. Travel delays increase bus operating costs as well as the fleet requirements for the bus system. WMATA strongly supports the alternatives that provide more dedicated right-of-way and priority treatments for transit vehicles.

Should the final alternative include a significant transit investment, as designs for the project progress further in the preliminary engineering phase, there are some considerations that we feel are critical to the project's success:

- **Pedestrian Safety and Accessibility.** The future facility must be designed to ensure safe movement for pedestrian and vehicular traffic in the corridor. The Metro system is one of the few fully accessible transit systems in the country. Modal connections to and from Metrobus and or Metrorail to either the new BRT or LRT service must be made fully accessible. WMATA is currently updating the Station Site and Access Planning Manual to include BRT/LRT access guidelines to ensure pedestrian safety, bus access, and ADA compliance in the vicinity of Metrorail stations. The preferred transit service will need to be designed to comply with these guidelines particularly where it interfaces with the Shady Grove Metro Station.
- **Regional Integration of Transit Services.** It is critical that the I-270 transit service be designed and operated in a manner that provides transit riders with easy-to-use service and seamless transfers between the CCT and Metrorail and Metrobus. Integration should consider:
 - *Fare Policies and Technology.* Nearly all bus systems in the region are equipped with SmarTrip capability for fare payment. WMATA now only provides transfer discounts to passengers using SmarTrip cards. It is important that the CCT service fully utilize the SmarTrip card, and allow passengers the greatest ease in transferring to and from other transit lines.
 - *Customer Information Integration.* The capability to exchange information on vehicle location, arrival times and service disruptions improves customers' experience and confidence in using transit. A seamless integration

Diane Ratcliff
Page 3

of way finding signs, transit system maps, and other electronic traveler information with WMATA and other existing local transit services will be essential to the incorporation of the CCT service into the existing transit network.

- *Mode Technology.* Given the regional nature of the project, MTA should seek out opportunities to integrate the selected mode, whether BRT or LRT, with other regional transit projects. For a BRT system, that could entail shared bus storage and maintenance facilities. For a LRT system, the project design and development should be coordinated with other LRT and streetcar projects being explored in the District of Columbia and Virginia to avoid inefficiencies related to different vehicle technologies, workforce training, maintenance yards, or lack of inter-connections.

On a more specific level, there is a need for much greater coordination with WMATA with respect to several issues involving the **Shady Grove Metro** station. In particular,

- **System Interface.** The study does not provide much detail regarding the CCT interface with the Shady Grove Metro station. Coordination is required between MTA and WMATA for the development of the interface of the CCT alignment on WMATA's property if that alternative is selected, especially in the context of a developed station area as envisioned in the M-NCPPC Shady Grove sector plan.
- **Ridership Impacts.** Travel forecasts for the Shady Grove Metro Station show a significant number of additional rail and bus riders accessing the station, many of whom will arrive during peak periods. WMATA's 2007 Station Access and Capacity Study identified critical vertical circulation needs at that station by 2030. MTA will need to coordinate with Metro on this issue, as well as on other station access needs.

Diane Ratcliff
Page 4

- *In the Travel Demand Forecasting Report (p32), there is a note indicating that recent survey data for Metrorail was not available for the study. WMATA can supply 2007 Rail Passenger Survey data if needed.*
- **Parking.** The study indicates that CCT parking needs at Shady Grove will be met by expansion of WMATA parking (Table III-9). Per M-NCPPC's Shady Grove Sector Plan, the Shady Grove Metro station area is slated for mixed use development. Shared parking needs should be coordinated with WMATA and M-NCPPC.
- **Maintenance Facility.** WMATA expresses the same concern as M-NCPPC on selecting a Shady Grove Area location for the CCT yard and shop. This area is proposed for mixed-use high density development as per the approved County Sector Plan. The study also indicates that proposed Site 1D Maintenance Facility option near Shady Grove requires moving a traction power substation facility, and the site is bounded by WMATA tracks, which require a certain buffer of clearance. These impacts could make the option infeasible.

On a final note, the addition of passengers to Metrorail at end-of-line stations heading into the core of the region will put additional strain on the peak period capacity of the rail system. WMATA has identified core capacity needs that will be required to accommodate projected new growth to the system. WMATA would look to MTA and the State as a full funding partner for these needs as the I-270 corridor improvements come on-line.

We look forward to continued coordination with MTA on the next phases of this project. If you have any questions regarding these comments, please feel free to contact me at (202) 962-2294.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Harrington', is written over a horizontal line.

Tom Harrington

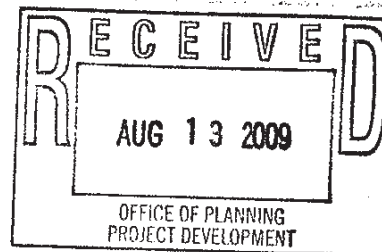


MONTGOMERY COUNTY COUNCIL
ROCKVILLE, MARYLAND

OFFICE OF THE COUNCIL PRESIDENT

August 7, 2009

Beverley Swaim-Staley, Acting Secretary
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, Maryland 21076



Dear Ms. Swaim-Staley:

In July the Council began its evaluation of the I-270/US 15 Multi-Modal Corridor Study, including the Corridor Cities Transitway, with the goal of recommending to you a Locally Preferred Alternative. We received excellent briefings from the staffs of the State Highway Administration and Maryland Transit Administration, as well as recommendations from our County Executive, Planning Board, and Council staff. During the course of our review we have raised the following questions for which we would ask for responses before we take up our deliberations on the LPA on September 15:

Toll Operations, Rates, Revenues, and Costs

- Would the I-270 express toll lanes be restricted and tolled all the time?
- How would they be operated at non-rush hour times: with a lower toll, or free?
- How would the two reversible lanes be managed in non-rush times?
- For each toll option, what is the anticipated range of toll-rates-and-revenue?
- For each toll option, what is the anticipated annual maintenance and operation cost for the toll collection, including the amortization of transponders and other capital equipment?

Funding

- The Alternative Analysis/Environmental Assessment stipulates that the funding strategy for the I-270 widening would be a combination of Federal highway funds, State transportation funds, and toll revenue. What are the anticipated funding amounts from each of these revenue sources? (An estimated range for each would suffice.)
- What percentage of the total project funding is anticipated to be discretionary, versus restricted for highway use?
- Are Federal-aid highway funds fungible and/or usable for transit projects, specifically? Does this answer change if the funding is solely for a transit project that runs on a highway?

STELLA B. WERNER COUNCIL OFFICE BUILDING • 100 MARYLAND AVENUE • ROCKVILLE, MARYLAND 20850
240/777-7900 • TTY 240/777-7914 • FAX 240/777-7989

Ms. Beverley Swaim-Staley

August 7, 2009

Page 2

- Please identify the Federal aid programs from which funding the I-270 widening is anticipated. Which of these programs currently allow funding to be "flexed" from highways to transit and which do not?
- Is MDOT currently funding any highway projects with Federal funds that are eligible to be flexed to transit, which are eligible for funding from programs that do not allow flexing? Can Federal funding be reallocated among projects so as to move flex-eligible funding to the I-270 corridor?
- The American Public Transportation Association reports that under the new transportation bill proposed in the U.S. House of Representatives, "the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and Surface Transportation Program (STP) remain largely intact as states and local governments will continue to be able to flex these funds for transit projects at the local level." Does MDOT agree, or do you expect the new Federal transportation law to impose new restrictions on flexing highway funds to transit?
- Are these statements about the Transportation Trust Fund, from the MDOT web site, still true? "All funds dedicated to the Department are deposited in the Trust Fund and disbursements for all programs and projects are made from the Trust Fund. Revenues are not earmarked for specific programs..." ... "The Transportation Trust Fund permits the State tremendous flexibility to meet the needs of a diverse transportation system."
- If toll-backed bonds (i.e., GARVEE bonds) are used for this project, what is the anticipated debt service/interest obligation that the State will incur (expressed either as a range of absolute dollars or as a % of the total principal financed)? Will bond-financing for this project limit the ability of the State to bond-finance transit projects, and if not, what would be the impact on its bond-rating?

Alternatives and Impacts

- What is your initial analysis of the costs and benefits of the all-transit alternative offered by the Action Committee for Transit (attached)?
- What would be the time-delay and cost of studying this or other all-transit alternatives, in comparison to the I-270 widening options?
- What would be the time-delay and cost of studying the impact of proposed Gaithersburg West and Germantown Master Plans on I-270 congestion, travel times, and other related projections?
- Are additional lanes contemplated on I-270 south of Shady Grove?
- What is the cost of the express bus service on the managed lanes—such as express buses from Frederick to Shady Grove—and is it included in the cost of the build alternatives? How much bus service is assumed and what is its ridership? How does the ridership and cost of this express bus service compare to the ridership and cost of a direct transitway and implementing the Governor's plans for improving Brunswick Line MARC service?
- In evaluating ridership on the Corridor Cities Transitway, which I-270 alternative was assumed?

Ms. Beverley Swaim-Staley

August 7, 2009

Page 3

- SHA staff noted that the I-270 build alternatives produce less air pollution than the No Build option. Does this take into account the increase in vehicle miles of travel (VMT) generated by the build alternatives? Is increased VMT taken into account in the air pollution calculations? What is the increase in greenhouse gas emissions?
- What would be the capital cost of the two-reversible-lane scenario supported by the Planning Board?
- Examining Table III-8 of the AA/EA, the volume-to-capacity ratio on I-270 in the off-peak direction under Alternative 1 (the No Build) in Year 2030 will be no worse than 0.89 (a good Level of Service E). Therefore, an option that would have two reversible managed lanes north of Shady Grove should provide a more than adequate level of service at a much lower cost and with far fewer impacts than Alternative 7, which has four managed lanes between Shady Grove and Clarksburg. Do you concur? If not, why not?

We would appreciate receiving your answers to these questions by Friday, September 4. This will give us the sufficient time for them to be reviewed in advance our September 15 worksession.

Sincerely,

A handwritten signature in black ink, appearing to read "Phil Andrews".

Phil Andrews, President
County Council

PA:go
cc:

Neil Pedersen, Administrator, State Highway Administration
Paul Wiedefeld, Administrator, Maryland Transit Administration
Doug Simmons, Director of Planning and Preliminary Engineering, State Highway Administration
Russell Anderson, Study Manager, State Highway Administration
Diane Ratcliff, Planning and Programming, Maryland Transit Administration
Ernie Baisden, Planning and Programming, Maryland Transit Administration
Rick Kiegel, Study Manager, Maryland Transit Administration
Dan Hardy, Chief, Transportation Division, Maryland-National Capital Park and Planning Commission
Tom Autrey, Transportation Division, Maryland-National Capital Park and Planning Commission
Edgar Gonzalez, Deputy Director for Transportation Policy, Department of Transportation
Gary Erenrich, Department of Transportation



Maryland Department of Planning

Martin O'Malley
Governor
Anthony G. Brown
Lt. Governor

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

September 3, 2009

Mr. Greg Slater
Director, Planning and Preliminary Engineering
State Highway Administration
707 North Calvert Street
Baltimore, MD 21202

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20090604-0717

Applicant: State Highway Administration (SHA)

Project Description: I-270/US 15 Multi-Modal Corridor Study Alternative Analysis (AA)/Environmental Assessment (EA): Section 4(f) evaluation; Environmental Assessment Form: consider four (4) build alternatives, "no build", and transit transportation system management alternatives (see MD20020523-0522)

Project Location: Counties of Frederick, and Montgomery

Approving Authority: U.S. Department of Transportation, and Maryland Department of Transportation (MDOT)

Funds: Federal: \$449,920,000.00 State: \$ 0.00 Local: \$ 0.00 Other: \$ 0.00

Recommendation: Consistent with Qualifying Comments and Contingent Upon Certain Actions

Dear Mr. Slater:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.01.04-.06, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter, with attachments, constitutes the State process review and recommendation based upon comments received to date. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Departments of State Police, Natural Resources, the Environment, Transportation, Montgomery and, Frederick Counties, the Maryland-National Capital Park and Planning Commission in Montgomery County, the Cities of Rockville, and Frederick, and the Maryland Department of Planning, including the Maryland Historical Trust. As of this date, the Maryland Department of Natural Resources, the Cities of Rockville, and Frederick have not submitted comments. **This recommendation is contingent upon the applicant considering and addressing any problems or conditions that may be identified by their review. Any comments received will be forwarded.**

The Maryland Historical Trust stated that their findings of consistency are contingent upon the Applicant taking the action summarized below. The Maryland Historical Trust stated that their approval of the project is contingent on the successful completion of Section 106 (review process), and on-going consultation with the State Highway Administration is required.

Mr. Greg Slater
September 3, 2009
Page 2

The Maryland Departments of the Environment, and Transportation; the Maryland-National Capital Park and Planning Commission in Montgomery County, and Frederick County, and the Maryland Department of Planning found this project to be generally consistent with their plans, programs, and objectives, but included certain qualifying comments summarized below. The Maryland Department of the Environment stated that:

1. any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3318 for additional information.

The Maryland Department of Transportation commented that it will be forwarding comments directly to the State Highway Administration, and the Maryland Transit Administration (MTA).

The Maryland-National Capital Park and Planning Commission in Montgomery County forwarded to the State Clearinghouse the recommendations of the Montgomery County Planning Board. The Montgomery County Planning Board recommended that the Montgomery County Council endorse Bus Rapid Transit (BRT) as the Locally Preferred Alternative for the Corridor Cities Transitway (CCT). The Montgomery County Planning Board also recommended that the Montgomery County Council a modified Alternative 7 as the Locally Preferred Highway Alternative. See the enclosed letter, and attachments.

Frederick County affirmed that the Board of County Commissioners will be transmitting its preferred alternative at a later date under separate cover.

This Department (MDP) addressed issues relating to: consistency with Smart Growth Initiatives; and transit-supportive land use patterns, policies, and programs. This Department stated that the proposed Alternatives 6A/B and 7A/B are generally consistent with the State's smart growth policies. In particular, MDP supports the CCT. The Transitway will provides a high quality transit service and a viable transportation alternative to existing and future relatively high density communities and employment centers along the I-270 Corridor in Montgomery County, as well as, foster Transit Oriented Development (TOD) in future transit station areas. Considering the need for a multi-modal approach including highway expansion on I-270 and US 15, MDP also recognizes the benefits of the Express Toll Lanes (ETLs) proposed for the project. ETLs could be an effective tool in managing and reducing automobile travel demand, creating a relatively congestion-free travel option in this key, congested travel corridor, and funding critical roadway improvements.

Consistency with Smart Growth Initiatives (Page IV-14)

While considering the Alternatives 6A/B and 7A/B are generally consistent with the State's Smart Growth policies, MDP recognizes both the positive and negative growth-inducing impacts of the Alternatives. As a positive effect of the Alternative 6A/B or 7A/B, its transit component (i.e., the CCT) will be a catalyst for TODs in future transit station areas. As one of the most important tools in furthering smart growth in Montgomery County, TOD will provide many economic, environment, transportation and social benefits for communities along the CCT corridor.

Mr. Greg Slater
September 3, 2009
Page 3

While the proposed ETLs, and additional general purpose lanes and interchanges will support growth in major Priority Funding Areas (i.e. Frederick City, Urbana, Gaithersburg, Germantown, Rockville, and many employment centers), the highway expansion will inevitably facilitate single-occupancy vehicle travel along the I-270 and US 15 corridor, and accommodate and induce growth in rural areas where access from I-270 or US 15 is provided (i.e. the rural areas in northern Montgomery County and southern Frederick County, and in northern Frederick City).

Since the project is not entirely located inside Priority Funding Areas (PFAs), MDOT/SHA and MDP agreed that the project will be evaluated to meet the exception criterion, "Serving to Connect Priority Funding Areas (PFAs)." It is expected that as part of the PFA's law compliance evaluation, measures preventing sprawl should be developed and analyzed. An important sprawl prevention measure for a highway project such as this one is to better manage interchange access points. Currently, the proposed US 15/Biggs Ford Road Interchange is located outside PFAs, as well as, outside the proposed Community Growth Area designated by the draft 2009 Frederick County Comprehensive Plan, although the Interchange is inside the 2004 Frederick City's future growth area. Prior to committing State funding to the improvement of the US 15/Biggs Ford Road, Frederick County and Frederick City should reach an annexation agreement for the areas adjacent to the Interchange; and the annexation areas need to be certified as PFAs. The proposed I-270/Relocated MD 75 Interchange is partially outside PFAs. MDP concurs with the current proposed design configuration in which an access to the area south of I-270 will not be provided. Indirect land use effects outside of PFAs should be addressed as part of the PFA law compliance analysis.

We suggest incorporating the following language under "Consistency with Smart Growth Initiatives and Long Range Plans" on page IV-14: *Approximately 30% of the project highway segments are outside PFAs. Figure IV-3 indicates the boundaries of PFAs and shows that the segments north of the Frederick City boundary, between MD 85 and MD 80, and between MD 121 in Montgomery County and south of Urbana in Frederick County are located outside PFAs. Since the highway portion of the project is not located entirely within PFAs, the State must approve an exception prior to funding the highway improvement. The Maryland Department of Planning and the Maryland Department of Transportation, in coordination with other state, local and federal agencies, will work jointly to assess and determine whether the project will meet exception conditions in accordance with the 1997 Smart Growth law.*

Transit-supportive land use patterns, policies, and programs

We assume MTA and the project study team will provide thorough information and analyses on State, regional, and local TOD policies, programs, and projects in the New Starts Criteria package for the CCT. The TOD-related land use and development discussions in the AA/EA document are very general and limited, and do not thoroughly reflect the extent and depth of local, State, and regional TOD planning and investment efforts. "Transit-supportive land use patterns, policies, and programs" and "Economic Development," two of six criteria for rating a New Starts project, should be adequately addressed. We suggest that the following information be included and discussed in the New Starts Criteria package for the CCT:

Mr. Greg Slater
September 3, 2009
Page 4

- The State's TOD strategy and efforts are described on this website: <http://www.mdot-realestate.org/tod.asp>. In addition, in 2008, the Maryland General Assembly passed TOD legislation that clearly defined TOD, insured TOD as a transportation purpose, established the process for designation of TODs, and enhanced the State's ability to help to finance and promote TOD in transit station areas (<http://mlis.state.md.us/2008rs/billfile/sb0204.htm>). In 2009, Maryland expanded the 2008 TOD legislation by expanding local government authority to finance TOD projects and greatly facilitating cooperative project and funding arrangements among State and local government entities (<http://mlis.state.md.us/2009rs/billfile/hb0300.htm>).
- Washington Area Metropolitan Transit Authority's (WMATA) joint-development or TOD policies and TOD projects should be discussed (<http://www.mdot.state.md.us/News/2008/February%202008/WMATA-TOD.htm>; http://www.wmata.com/about_metro/planning_dev.cfm). WMATA, in working with MDOT and local jurisdictions, is actively participating in planning and investing in public infrastructure in supporting TODs adjacent to a WMATA transit line station in Montgomery County.
- Metropolitan Washington Council of Governments, as part of its effort in enhancing transportation planning, initiated a Transportation/Land-Use Connections Program. The program provides technical and financial support to local jurisdictions in the Washington Region to improve the coordination between transportation and land use planning and investment. Since TOD is the best tool for making the land use and transportation connection, TOD planning and investment projects are benefited from the program (<http://www.mwcog.org/transportation/activities/land/>).
- TOD policies, zoning, programs, and projects pursued by Montgomery County, the City of Gaithersburg, and the City of Rockville should be discussed. Information on some existing TOD projects in Montgomery County should be provided as good examples showing the commitment of Montgomery County, the State, WMATA, and municipalities in implementing TOD. These include White Flint, Shady Grove, Wheaton, Twinbrook, Silver Spring, and Grosvenor Strathmore Metro Stations' TODs. For information on these Metro Station TODs, contact Mr. Andy Scott, MDOT, Special Assistant to the Secretary for Economic Development.

Other Comments on the AA/EA Document

- **Page S-5 Table S-1** It should be clarified that the number of lane miles showing in the table are the directional lane miles.
- **Page S-5, Summary of Environmental Impacts and Permits Required** The report should briefly explain why the project designs depict an equal width of pavement for Alternative 6A/B and Alternative 7A/B. The public may consider that the intention of such a design is to favor Alternative 7A/B. In the 2002 Draft Environmental Impact Statement, Alternatives 3A/B, 4A/B, and 5A/B/C were designed with different pavement widths; and it appears the different pavement widths saved about \$290 to \$418 million.
- **Page S-5, Neighborhoods and Communities** The first sentence of the third paragraph states "minor property takings along I-270." But there aren't any property takings data in Table S-2.
- **Page S-14, Air Quality** The CCT/transit component may help to reduce CO2 and other pollutants. Although the effect may be limited, the report should point out the benefits.

Mr. Greg Slater
September 3, 2009
Page 5

- Page S-15, Indirect and Cumulative Effects Analysis The CCT has the potential to induce new development, or spur redevelopment in the future transit station areas. These beneficial indirect land use effects should be discussed.
- Page S-16, Summary of Costs/Financial Analysis The cost of constructing and maintaining the Hiker-Biker Trail along the CCT should be estimated and the information should be provided in the AA/EA document. The Trail is not anticipated to be funded as part of the total package.
- Page S-16, Financial Analysis It mistakenly stated, "Light-rail transit (LRT) operation along the CCT alignment is about 50 percent more expensive than BRT operation..." Should it be just 5% more?
- Page S-17, Issues to be Resolved and Next Step Although constructing the entire length of the proposed Hiker-Biker Trail may not be part of the CCT, studying and constructing pedestrian and bicycle facility connections from surrounding communities to future transit stations should be part of the CCT and a next step. For instance, the proposed Washingtonian station does not have a direct and convenient pedestrian and bicycle connection to the Washingtonian Center between Fields Road and Washingtonian Boulevard. Such a connection should be provided through the CCT project.

Will developing a New Starts application package for the CCT be one of next steps?

- Page II-7 and II-12, Alternatives 6A and 6B, Alternative 7A and 7B The document should briefly explain why ETLs would terminate north of MD 80 and not at I-70 as HOVs for Alternative 3A/B and 5A/B/C would do. Since the general purpose lanes between Park Mills Road and MD 85 would be operated at LOS F in 2030 even with solely additional general purpose lanes, why would ETLs not be provided as a congestion-free option starting at I-70 along I-270?
- Page II-12, New Alternatives Being Evaluated for the Alternatives Analysis The analyses of transitway options to Kentlands Town-Center, Crown Farm, and Johns Hopkins' Life Science Center are not provided in the document. Will these be options for the CCT? MDP views that the CCT should mainly be a high quality, local transit-line that makes more direct connections to major community/employment centers and serves local transit users. This vision is distinct from the long distance commuter transit service that competes with I-270 and feeds into the Metro system, although the CCT will help to remove some auto traffic off of I-270. We believe that these options should be thoroughly evaluated and considered for their merits.
- Page III-5, Table III-8 Include the words "General Purpose Lane" to the title before "Mainline LOS..." to indicate that the Level of Service (LOS) data are for the general purpose lanes only.
- Page III-6, Multi-Modal Conclusions It is expected that as part of the Priority Funding law compliance evaluation, a more detailed explanation should be provided on why transit and other Transportation Demand Management alternatives alone may not meet the project's needs.

Mr. Greg Slater
September 3, 2009
Page 6

- Page IV-74, H. Air Quality As discussed above, the CCT/transit component may help to reduce CO2 and other pollutants. Although the effect may be limited, the AA/EA document should point out these benefits.
- Page IV-92, L. ICE Analysis As discussed above, the CCT has the potential to induce new development or spur redevelopment in future transit station areas. These beneficial, indirect land use effects should be analyzed and discussed.
- Page VI-4, Development Impacts The document states, "BRT may primarily serves to enhance access to existing or planned residential and employment developments, rather than providing stimulation for creating new TOD that is possible with LRT." The AA/EA document should be cautious with a statement such as this since BRT's ability to stimulate TOD in the United States has not yet been clearly proven given that the BRT system has a short history in this country. It may be preferable to change the statement to a perception as a viewpoint rather than a conclusion.

Montgomery County, the Maryland Department of State Police, and the Maryland Historical Trust found this project to be consistent with their plans, programs, and objectives.

The Montgomery County Executive's recommendations to the Montgomery County Council's Transportation, Infrastructure, Energy, and Environment Committee include his support for the Light Rail Transit for the Corridor Cities Transitway; and Alternative 3 for I-270. See the attached letter.

Any statement of consideration given to the comments should be submitted to the approving authority, with a copy to the State Clearinghouse. The State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the approving authority cannot accommodate the recommendation.

Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. **Also please complete the attached form and return it to the State Clearinghouse as soon as the status of the project is known. Any substitutions of this form must include the State Application Identifier Number. This will ensure that our files are complete.**

Thank you for your cooperation with the MIRC process.

Sincerely,



Linda C. Janey, J.D., Assistant Secretary
for Clearinghouse and Communications

LCJ:BR

Enclosures

cc: Beth Cole - MHT

William Ebare - MDSP

Roland Limpert - DNR

Joane Mueller - MDE

Cindy Johnson - MDOT

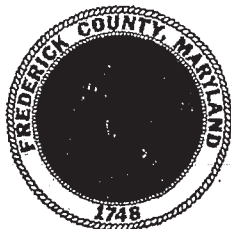
Diane Jones - MTGM

Eric Soter - FRDR

John Carter - MNCPPCM

Susan Hoffmann - ROCKVILLE

William Holtzinger - FREDERICK
09-0717_CRR.CLS.doc



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COMMISSIONERS FREDERICK COUNTY, MARYLAND

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www.co.frederick.md.us

September 3, 2009

Beverley K. Swalm-Staley
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, Maryland 21076

Re: I-270/US 15 Multimodal Study Preferred Alternative

Dear Secretary Swalm-Staley:

On behalf of the Board of County Commissioners of Frederick County (BOCC), I am writing to share Frederick County's Preferred Alternative for the I-270 / US 15 Multimodal Study. At our August 20, 2009 public meeting, the BOCC voted unanimously to support Alternative 7B, which would provide two additional managed express toll lanes in each direction and Bus Rapid Transit as the preferred transit mode on the Corridor Cities Transitway. The County Commissioners greatly desire a transit alternative for Frederick County commuters. This option accommodates Bus Rapid Transit, which is the only transit opportunity presented within Frederick County. Many of our residents would prefer the extension of rail into Frederick County.

The County Commissioners also support the following:

- Further study of High Occupancy Toll (HOT) lanes within the context of any future managed toll lane scenario;
- Maximum mitigation through minimization of all associated build alternative impacts;
- Further study of direct access from the managed lanes to park & rides, specifically to the MD 80 / Urbana Park & Ride;
- Inclusion of additional premium bus service in the corridor including the provision of express service originating in Frederick County directly to Shady Grove Metro and consideration for routing additional Frederick County originating routes to provide local bus service along the Corridor Cities Transitway;
- Inclusion of a shared use path parallel to any transitway alternative;
- Consideration of extending future rail north into Frederick County;
- In addition, we do not support the consideration of using reversible lanes in Frederick County;

We believe these recommendations best support the existing need for and management of long-term travel movement in the corridor. Frederick County has contributed local funding to advance numerous projects in the corridor and will continue to partner on important projects in the future.

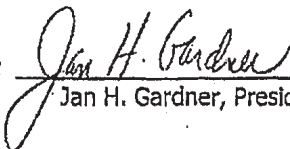
The Frederick County Commissioners understand that transit and highway surface funding is derived from separate sources. Since Bus Rapid Transit depends on surface projects, we are concerned that the prioritization of transit over surface projects will delay or defer Bus Rapid Transit for Frederick County. Our only transit option depends upon surface funding.

Beverley K. Swaim-Staley
September 3, 2009
Page 2

We appreciate the opportunity to provide input on enhancing the transportation network in Maryland. We look forward to continuing a productive partnership with the Maryland Department of Transportation and to actively participate in the development of projects in the I-270/US-15 corridor. If you have questions or need additional information, please contact John Thomas, Principal Planner in the Division of Planning at 301-600-6768, or me at 301-600-3190.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
OF FREDERICK COUNTY, MARYLAND

By: 
Jan H. Gardner, President

cc: Board of County Commissioners
Frederick County Delegation Members
The Honorable William J. Holtzinger, Mayor, City of Frederick
Ron Hart, County Manager
Eric Soter, Director, Division of Planning
Al Hudak, P.E., Director, Division of Public Works
Joyce Grossnickle, Administrative Officer, Office of the County Manager
Neil Pedersen, Administrator, State Highway Administration
Paul Wiedefeld, Administrator, Maryland Transit Administration
Dave Coyne, District Engineer, State Highway Administration
Rich Hall, Maryland Department of Planning
Glenn Orlin, Montgomery County Council
Dan Hardy, Maryland National Capital Park & Planning Commission
Gary Erenreich, Montgomery County Division of Public Works
Reading File

SHEILA ELLIS HIXSON
20th Legislative District
Montgomery County

Chair

Ways and Means Committee



The Maryland House of Delegates

ANNAPOLIS, MARYLAND 21401

September 8, 2009

Annapolis Office
The Maryland House of Delegates
6 Bladen Street, Room 131
410-841-3469 • 301-858-3469
800-492-7122 Ext. 3469
Sheila.Hixson@house.state.md.us

District Office
1008 Broadmore Circle
Silver Spring, Maryland 20904
301-384-4739

The Honorable Martin O'Malley
The State House
Annapolis, Maryland 21401

Dear Governor O'Malley:

Your administration identified an important priority for Maryland by setting the goal of a substantial increase in transit ridership. New transit opportunities can provide important benefits such as improved travel times, revitalized communities and a healthier environment. The Department of Transportation's current I-270 Corridor Study may offer a valuable opportunity for progress toward the objective of more effective transit.

The I-270 corridor has been a center of both economic growth and traffic congestion, and MDOT is evaluating options for relieving the congestion. To date, all options evaluated in this study have devoted well over two-thirds of projected construction funding to road capacity expansion. A coalition of environmental groups has developed an interesting transit-only alternative, comparable in cost to the proposals studied thus far. It is described in the enclosed letter from the Action Committee for Transit.

The large transportation investments proposed along I-270 will take years to implement, and they will shape the development of the corridor for decades. There is time to decide carefully and wisely. We request that you ask MDOT to add an all-transit alternative to this study. After a complete range of options is evaluated, policy-makers and the public will be able to choose the solutions that are best for our communities, our economy, and our environment.

Sincerely,



Sheila E. Hixson
Chair, Ways and Means Committee
District 20

Anne R. Kaiser
Herman L. Taylor, Jr.
District 14

Kathleen M. Dumais
Craig L. Rice
District 15

William A. Bronrott
Susan C. Lee
District 16

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Letter to Honorable Martin O'Malley
September 8, 2009
Page 2

James W. Gilchrist
Luiz R. S. Simmons
District 17

Alfred C. Carr, Jr.
Jeffrey D. Waldstreicher
District 18

Henry B. Heller
Roger Manno
District 19

Tom Hucker
Heather R. Mizeur
District 20

Saqib Ali
Charles E. Barkley
Kirill Reznik
District 39

Enclosure



Maryland Department of Transportation
The Secretary's Office

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Beverley K. Swaim-Staley
Secretary

September 15, 2009

The Honorable Phil Andrews
Council President
Montgomery County Council
100 Maryland Avenue
Rockville MD 20850

Dear Mr. Andrews:

Thank you for allowing the State Highway Administration (SHA), the Maryland Transit Administration (MTA), and the Maryland Department of Transportation (MDOT) to provide combined comments on the Gaithersburg West Sector Planning Board Draft Plan. We recognize and appreciate the significant thought and effort that has gone into this work. We offer our comments in the spirit of improving the successful and complete implementation of your plan.

The SHA and the MTA have had the privilege of working on a task force with the Montgomery County Department of Transportation (MCDOT), the Maryland National Capital Park and Planning Commission (M-NCPPC), and the cities of Gaithersburg and Rockville on the transportation elements of the plan. All of the parties have expressed their concerns and provided further insight into the impacts associated with the increased commercial and residential density proposed in the plan. It would be our recommendation that this type of task force be set up for sector plans in the future.

Our broad concerns include the general timing of the approval of this sector plan. The entire sector plan requires some form of the CCT (funding, construction, etc) to be in place. We would like to bring to your attention that neither the determination on the feasibility of the realignment or a selection of the locally preferred alternative or mode have been made. We recommend that the sector plan approval be delayed until these decisions are made. The proper sequencing of plans, one for land use and the other for transportation infrastructure, is especially significant in this sector plan. It would be counter-productive to increase the density in the sector plan area if it was revealed that the realignment is not cost-effective and the transit project could not be realized.

Specifically, the Plan must clearly demonstrate the projected impacts of the proposed infrastructure. This includes projected cost, potential property relocations, impacts to the Corridor Cities Transitway (CCT) alignment and environmental impacts. Excluding the cost of

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7201 Corporate Center Drive, Hanover, Maryland 21076

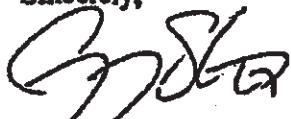
The Honorable Phil Andrews
Page Three

overall employees and population is much lower than the 30 percent that is automatically assumed in the sector plan. In order to reach this 30 percent goal, increases in transit service, further transportation demand management (TDM) strategies, and a jobs/housing balance will be required.

We would strongly encourage you to consider ensuring that mobility and accessibility needs are adequately addressed during each phase of the development. We believe it is imperative to get the development and transportation infrastructure sequencing properly aligned as the area develops instead of constructing the majority of the major roadway improvements in the last stage. Based on our analysis, we would recommend moving the Sam Eig Highway interchanges to an earlier stage, as this will be the main access route from I-270.

Thank you again for allowing the SHA, MTA and MDOT provide comments on the Gaithersburg West Sector Plan Planning Board Draft Plan. If we may be of further assistance, please do not hesitate to contact us or Eric Beckett, SHA's Assistant Regional Planner at 410-545-5666, toll-free 888-204-4828 or via email at ebeckett@sha.state.md.us.

Sincerely,



Gregory I. Slater, Director
Office of Planning and Preliminary Engineering
State Highway Administration

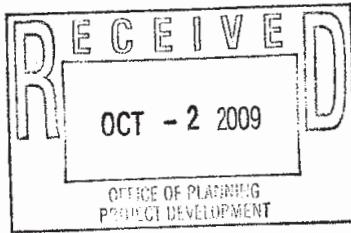


Don Halligan, Director
Planning and Capital Programming
Maryland Department of Transportation



Diane H. Ratcliff, Director
Office of Planning
Maryland Transit Administration

cc: Mr. Eric Beckett, Assistant Regional Planner, SHA
Mr. Neil Pedersen, Administrator, State Highway Administration
Ms. Beverley K. Swaim-Staley, Secretary, Maryland Department of Transportation
Mr. Paul Wiedefeld, Administration, Maryland Transit Administration



7180

September 16, 2009

The Honorable Martin O'Malley
Governor
State of Maryland
State House
Annapolis, MD 21401

TAO
SEP 23 2009
received

Dear Governor O'Malley: *Governor*

The Mayor and City Council of Gaithersburg have finalized the City's position on the transit and highway components of the I270/US15 Multi-Modal Corridor Study, and would request that you and Secretary of Transportation Swaim-Staley consider our views when selecting the Locally Preferred Alternative.

The City has strongly advocated for light rail as the preferred mode for the Corridor Cities Transitway (CCT) for many years but we understand that based on the current Cost Effective Ratio of the project, light rail would not qualify for federal transit funding. Therefore, given that costs associated with light rail inhibit the competitiveness of the project for Federal funding, the City is supportive of a bus rapid transit (BRT) mode. Should there be a change in the applicable formulas, available federal resources, or data relied upon (such as ridership, planned densities, etc.), the City would support light rail as the most desirable and efficient mode for the CCT.

The City is very supportive of the alternative alignments that would serve both the Crown Farm and Kentlands. If the CCT mode is BRT, the City strongly opposes locating the operations and maintenance facility at Site 6 on Metropolitan Grove Road.

With respect to highway improvements, the City supports Alternative 7 with two restricted lanes in each direction between Sam Eig Highway and MD-85; however, the City would strongly prefer High Occupancy Toll (HOT) lanes rather than Express Toll Lanes (ETL). We firmly believe that this alternative would provide significant congestion relief by retaining incentives to carpool while still providing a funding source to support construction. However, because the Alternative 7 restricted lanes would be barrier-separated, we urge you to pursue designs that do not isolate the City but rather establish sufficient connectivity between the restricted lanes and entrance/exit points within the City.

Recognizing that Alternative 7 will cause some displacement, the City requests that the State Highway Administration work closely with affected homeowners, communities, and businesses to minimize impacts and ensure that the remaining communities are sustainable. Additionally,

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301-258-6300 • FAX 301-948-6149 • TTY 301-258-6430 • cityhall@gaitersburgmd.gov • www.gaitersburgmd.gov

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Sidney A. Katz

COUNCIL MEMBERS
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Cathy C. Drzyzgula
Henry F. Marraffa, Jr.
Michael A. Sesma
Ryan Spiegel

CITY MANAGER
Angel L. Jones

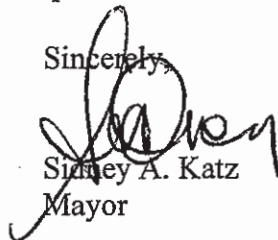
The Honorable Martin O'Malley
September 16, 2009
Page 2

the State should offer to purchase impacted properties as soon as possible rather than waiting for actual construction.

The Council and I are aware of what a major project the I270/US15 Multi-Modal Corridor Study has been for the Maryland Department of Transportation, and we would like to take this opportunity to commend all the staff involved. Over the years, Maryland Transit Administration and State Highway Administration staff have been in regular contact with the City on the status of the study, and have provided countless presentations and updates to City staff and officials.

Your consideration of the City's views would be greatly appreciated. Please feel free to contact me or Assistant City Manager Fred Felton at 301-258-6310 if you or your staff should have any questions.

Sincerely,



Sidney A. Katz
Mayor

SAK/ms
Enclosure

cc: Beverley Swaim-Staley, Secretary of Transportation
Neil Pedersen, Administrator, State Highway Administration
Paul J. Wiedefeld, Administrator, Maryland Transit Administration
District 17 Delegation
City Council
Angel L. Jones, City Manager
Frederick J. Felton, Assistant City Manager



Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor

State Highway
Administration

Beverley K. Swaim-Staley, Secretary
Neil J. Pedersen, Administrator

Maryland Department of Transportation

October 19, 2009

The Honorable Phil Andrews
President, Montgomery County Council
100 Maryland Avenue
Rockville MD 20850


Dear Council President Andrews:

Thank you for your letter to Transportation Secretary Beverley K. Swaim-Staley regarding the I-270 Multi-Modal Corridor Study. The Secretary has received your letter and asked our two agencies to respond on her behalf.

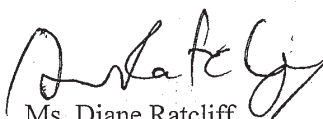
The study, jointly lead by SHA and MTA, is investigating the widening of I-270 and US 15, combined with a transit alternative named the Corridor Cities Transitway (CCT) through Gaithersburg and Germantown in Montgomery County that would tie in with the existing Metrorail Red Line at Shady Grove. The Secretary's letter to you addressed the policy questions regarding toll operations and funding. As requested by the Secretary, we offer the attached point-by-point responses to your questions regarding tolling operations, rates, revenues and cost; funding; and alternatives and impacts.

Thank you again for your letter. The Secretary appreciates hearing from you and, on her behalf, we also thank you for your interest in this very important project. If we may be of further assistance, please do not hesitate to contact either of us or Mr. Russell Anderson, Project Manager for SHA at 410-545-8839, toll-free 800-548-5026 or via email at randerson2@sha.state.md.us. You can also contact Mr. Rick Keigel, Project Manager for MTA at 410-767-1380, toll-free 866-743-3682 or via email rkiegel@mtamaryland.com.

Sincerely,



Mr. Gregory I. Slater
Director of Planning
and Preliminary Engineering



Ms. Diane Ratcliff
Director of Planning

cc: Mr. Neil J. Pedersen, Administrator, SHA
Mr. Paul J. Wiedefeld, Administrator, MTA

410-545-0412 or 1-888-204-4828

My telephone number/toll-free number is _____
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Street Address: 707 North Calvert Street • Baltimore, Maryland 21202 • Phone: 410-545-0300 • www.marylandroads.com



The Honorable Phil Andrews
Page Two

bcc: Ms. Felicia Alexander, Assistant Division Chief, Project Management Division, SHA
Mr. Russell Anderson, Project Manager, Project Management Division, SHA
Mr. Ernest Baisden, Program Manager, MTA
Ms. Kimberly Booker, Administrative Assistant, SHA
Mr. Dave Coyne, District Engineer, SHA
Mr. Bruce Gartner, Director, Policy and Governmental Affairs, MDOT (electronic copy)
Mr. Bruce M. Grey, Deputy Director of Planning and Preliminary Engineering,
SHA
Mr. Don Halligan, Director of Planning and Capital Programming, MDOT
Mr. Martin L. Harris, State Legislative Officer, MDOT (electronic copy)
Ms. Colleen Johnson, Legislative Coordinator, Office of Policy and Governmental
Affairs, MDOT (electronic copy)
Mr. Henry Kay, Deputy Administrator for Planning and Engineering, MTA
Mr. Rick Kiegel, Project Manager, MTA
Mr. Darrell Mobley, District Engineer, SHA
Ms. Caitlin Hughes Rayman, Assistant Secretary for Transportation Policy, MDOT
(electronic copy)
Mr. Douglas H. Simmons, Deputy Administrator/Chief Engineer for Planning,
Engineering, Real Estate and Environment, SHA
Dr. Richard Y. Woo, Ph.D., Director of Policy and Research, SHA

I-270 / US 15 Multi-Modal Corridor Study Montgomery County Council Questions and Responses

<p>FUNDING</p> <p>The Alternative Analysis/Environmental Assessment stipulates that the funding strategy for the I-270 widening would be a combination of Federal highway funds, State transportation funds, and toll revenue. What are the anticipated funding amounts from each of these revenue sources? (An estimated range for each would suffice.)</p>	<p>There are insufficient future federal allocations to the State of Maryland to accommodate a project of the magnitude of the entire I-270 improvements. As the CCT is funded through the next phase and the highway portion is not, the highway portion will be slightly different and proceed at a different pace. The highway portion of this multi-modal study will progress as several breakout projects once we are in a position to look at allocating funding for future phases of the project. At that time, MDOT will assess the appropriate funding sources (Federal, State, bonds, etc.) that are available to fund the various types of breakout projects, including the transit portion</p>
<p>What percentage of the total project funding is anticipated to be discretionary, versus restricted for highway use?</p>	<p>Because of the insufficient future of funding allocations, it would be premature for MDOT to specify the percentages of the project funding that would be discretionary or restricted for highway use.</p>
<p>Are Federal-aid highway funds fungible and/or usable for transit projects, especially? Does this answer change if funding is solely for a transit project that runs on a highway?</p>	<p>Federal-aid highway funds are fungible for transit projects, depending on the source of the funds. Interstate maintenance (IM) funds, for example, could be used to construct HOV lanes along the interstate or to provide improved interstate access to park and ride or rail facilities. Other funding sources that could be flexed from highway use to transit use are described below. Transfers can also be made on the federal level, that is, from the FHWA to the Federal Transit Administration (FTA), upon approval by the Secretary of the United States Department of Transportation (USDOT).</p>
<p>Please identify the Federal aid programs from which funding the I-270 widening is anticipated. Which of these programs currently allow funding to be "flexed" from highways to transit and which do not?</p>	<p>The majority of federal highway funds can be flexed either between specific highway programs or from highway to transit. To provide one example, up to 50 percent of the National Highway System (NHS) funds can be transferred to the Surface Transportation Program (STP) category. Up to 100 percent can be transferred to the STP category if approved by the Secretary of USDOT to be in the public interest. NHS funds cannot be flexed directly to transit; however, any amount of STP funds can be flexed from highways to transit. Because of the insufficient future of funding allocations, it would be premature for MDOT to specify the programs from which funding for the project is anticipated.</p>
<p>Is MDOT currently funding any highway project with Federal funds that are eligible to be flexed to transit, which are eligible for funding from programs that do not allow flexing? Can Federal funding be reallocated among projects so as to move flex-eligible funding to the I-270 corridor?</p>	<p>Yes. Please see the explanation in the question above for more detail. Current MDOT practice is to flex funding only when necessary; priority is given to ensure that system preservation and safety needs are completed first.</p>
<p>The American Public Transportation Association reports that under the new transportation bill proposed in the U.S. House of Representatives, "the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and Surface Transportation Program (STP) remain largely intact as states and local governments will continue to be able to flex these funds for transit projects at the local level." Does MDOT agree, or do you expect the new Federal transportation law to impose new restrictions on flexing highway funds to transit?</p>	<p>At this time, it would be premature for MDOT to speculate the outcome of the new Federal Transportation Law. Once a final bill is signed MDOT will then assess the impacts to our program appropriately.</p>

I-270 / US 15 Multi-Modal Corridor Study Montgomery County Council Questions and Responses

<p>Are these statements about the Transportation Trust Fund, from MDOT web site, still true? "All funds dedicated to the Department are deposited in the Trust Fund and disbursements for all programs and projects are made from the Trust Fund. Revenues are not earmarked for specific programs..." "The Transportation Trust Fund permits the State tremendous flexibility to meet the needs of a diverse transportation system."</p>	<p>This comment is true for the State funds. Federal funds, however, are disbursed through the FHWA and FTA, independently. On the State level, while the flexibility is there, there is a limit to the funds available for highway and transit projects and how they will be distributed throughout the state. FHWA funds can be used for bus/HOV lanes where they are feasible, or for creating park and ride lots, or other Transportation System Management/Transportation Demand Management (TSM/TDM) measures. FHWA funds cannot be directly used for transit-only capital improvements on new alignments; they come under the purview of the FTA, and funds would need to be shifted at the federal level.</p>
<p>If toll-backed bonds (i.e. GARVEE bonds) are used for this project, what is the anticipated debt service/interest obligation that the State will incur (expressed either as a range or absolute dollars or as a % of the total principal financed)? Will bond-financing for this project limit the ability of the State to bond-finance transit projects, and if not, what would be the impact on its bond-rating?</p>	<p>GARVEE bonds are backed by future federal-aid allocations to the State. State law currently caps the amount of GARVEE bonds that can be issued in Maryland to the \$750 million committed to the ICC project. Because of the insufficient future of funding allocations, it would be premature for MDOT to specify the financing from which funding for the project is anticipated.</p>
<p>ALTERNATIVES AND IMPACTS</p> <p>What is your initial analysis of the cost and benefits of the all-transit alternative offered by the Action Committee for Transit (attached)?</p>	<p>The proposal set forth by Action Committee for Transit (ACT) is of such a magnitude as to require considerable time and effort to fully analyze costs and benefits. Our initial preliminary analysis of the all-transit alternative proposed by ACT is that it would not benefit the full range of transportation-system users within the I-270 Multi-Modal Study project area, such as freight carriers and through route long distance travelers. It also appears that the Vision 270 plan has not been analyzed using a recent transportation and land use model that reflects future conditions, whereas the corridor alternatives in the I-270 study were analyzed using the Metropolitan Washington Council of Governments' (MWCOG) land use and transportation models which do take into consideration future conditions.</p>
<p>What would be the time-delay and cost of studying this or other all-transit alternatives, in comparison to the I-270 widening options?</p>	<p>The study team already performed a preliminary study of an all-transit alternative, prior to the issuance of the DEIS. Based on capital costs and proposed ridership, none of the all-transit alternatives, other than the use of express bus on an improved I-270 linked with the Corridor Cities Transitway, provided user benefits that would meet both the cost effectiveness criteria established by the FTA and the purpose and need for the Multi-Modal Study. The results of the all-transit alternatives that were dropped from further study prior to the DEIS only provided a modest decrease in vehicle miles of travel (VMT) on I-270.</p> <p>Essentially, this would re-start the NEPA process for each project, including the CCT. These projects would need to go through NEPA and each be independently developed using the FTA New Starts project planning and development process in order to receive federal transit funds. The process is time consuming to complete and can require well over a decade to get a project through planning and design, construction and initiation of operation, and would cost several millions of dollars.</p>

I-270 / US 15 Multi-Modal Corridor Study Montgomery County Council Questions and Responses

<p>What would be the time-delay and cost of studying the impact of proposed Gaithersburg West and Germantown Master Plans on I-270 congestion, travel times, and other related projections?</p>	<p>SHA's Regional and Intermodal Planning Division prepared a cursory analysis of the generated trips that would be added to I-270 and I-370 as a result of the Gaithersburg West development, which showed additional traffic on I-270 and I-370 with an internal trip-capture rate of 40 percent. The analysis of the impacts of the Gaithersburg West development on the corridor will be studied in greater detail once the MWCOG land use and transportation models are updated to reflect the new adopted land use plan. This will be done as part of the Tier 1 FEIS support, after the updated sector plans are approved and incorporated into the MWCOG model.</p>
<p>Are additional lanes contemplated on I-270 south of Shady Grove?</p>	<p>A preliminary feasibility study, known as the Westside Mobility Study, is complete for the section from Shady Grove Road to the American Legion Bridge. The study would need to undergo a full NEPA study, prior to implementation. The study would also need to be prioritized on the local level and have funding made available to become a new planning start. This study looked at both general-purpose and managed lanes.</p>
<p>What is the cost of the express bus service on the managed lanes-such as express buses from Frederick to Shady Grove-and is it included in the cost of the build alternatives? How much bus service is assumed and how much is its ridership? How does the ridership and cost of this express bus service compare to ridership and cost of a direct transitway and implementing the Governor's plans for improving Brunswick Line MARC service?</p>	<p>The CCT includes three new premium bus services, including a peak hour operating bus service that operates every 15 minutes from the City of Frederick to Shady Grove using the managed lanes on I-270. This service generates between 2,900-3,400 daily boardings. Two additional express service routes are intended to feed the CCT. In the LRT alternatives, this service begins in Frederick or Kemptown and terminates at the COMSAT station, where all passengers who wish to continue transfer to the CCT.</p> <p>In the BRT alternatives, these services enter the BRT guideway at Metropolitan Grove and continue on to Shady Grove, providing a "one-seat ride" for those passengers from Frederick. They operate all day at 20- to 30-minute frequencies and generate an additional 1,800-2,800 daily boardings. The CCT transitway (the "direct transitway" we assume is being referred to in the question) generates many more thousands of daily riders at a much higher cost than the premium bus services do. The annual operating costs of the bus services range from between approximately \$6.0 million for the LRT alternatives to just under \$9.0 million for the BRT alternatives and are accounted for in the O&M costs reported for the CCT alternatives. The capital cost of the rolling stock needed to support these routes is also integrated into the total capital cost of each alternative. A total of 22 to 29 buses will be required to support these routes. However, the number of buses actually purchased to support these routes will depend on the total rolling stock requirements of the entire feeder bus network. The MARC Growth and Investment Plan includes improvements that would be implemented incrementally with a goal of increasing the capacity and quality of the service. The total costs of the improvements scheduled through 2035 to the MARC Brunswick Line would be \$531 million (in 2007 dollars), providing almost a four-fold increase in seating capacity to 26,000 seats. A preliminary estimate of 2030 ridership for the Brunswick Line that accounts for planned increases in service shows growth in total boardings along the alignment of almost 7,800 trips for a total daily ridership of just over 15,500 daily trips. In contrast, there were, on average, 7,600 daily trips on the Brunswick Line in 2007. It is important to keep in mind that the Brunswick Line serves a different market than the proposed CCT or the premium bus services from Frederick. The alignment goes as far west as Martinsburg, West Virginia.</p>

I-270 / US 15 Multi-Modal Corridor Study Montgomery County Council Questions and Responses

<p>In evaluating ridership on the Corridor Cities Transitway, which I-270 alternative was assumed?</p>	<p>In the recently published Alternatives Analysis/Draft Environmental Assessment, MTA evaluated ridership for light rail and bus rapid transit for Alternatives 6 and 7.</p>
<p>SHA staff noted that the I-270 build alternatives produce less air pollution than the No-Build Option. Does this take into account the increase in vehicle miles of travel (VMT) generated by the build alternatives? Is increased VMT taken into account in the air pollution calculations? What is the increase in greenhouse gas emission?</p>	<p>It is anticipated that the build alternatives would produce varying degrees of "induced demand" on I-270, and thus varying degrees of air quality improvement or degradation over the no-build condition. A portion of the induced demand on I-270 is actually the removal of traffic on congested local streets (such as MD 355) to I-270. In 2030, for example, the No-Build corridor VMT is 40,538,000 and the VMT for Alternative 6 is 40,951,000, or an increase of 0.97%. For Alternative 7, the VMT is 41,020,000, which is an increase of 1.14%. The comparative pollutant loads between the No-Build, Alternative 6, and Alternative 7 are similar (between a 0.3% decrease or 1.1% increase, depending on pollutant measured) due to the decreased vehicle hours traveled (VHT) resulting from shortened travel times. Reference Table IV-29 in the AA/EA. While not mentioned in detail in the DEIS or AA/EA, it is also likely that, as vehicle miles-per-gallon standards increase and more people purchase hybrid and zero-emission electric-powered vehicles, it is anticipated that pollutant loads will decrease even further.</p>
<p>What would be the capital cost of the two-reversible lane scenario supported by Planning Board?</p>	<p>The reversible-lane scenario would need to be studied for feasibility, and would be initiated after the preferred alternative decision as part of the Tier 1 FEIS. The team would need to also address what would happen at the northern terminus of the reversible lanes, which would need to occur south of Monocacy National Battlefield. The capital cost of this scenario would have to be further investigated once a preferred alternative is selected.</p>
<p>Examining Table III-8 of the AA/EA, the volume-to-capacity ratio on I-270 in the off-peak direction under Alternative 1 (the no-build) in Year 2030 will be no worse than 0.89 (a good LOS E). Therefore an option that would have two reversible managed lanes north of Shady Grove should provide a more than adequate level of service at a much lower cost and with far fewer impacts than Alternative 7, which has four managed lanes between Shady Grove and Clarksburg. Do you concur? If not, why not?</p>	<p>SHA concurs that Table III-8 does show that the off-peak No-Build would only result in LOS "E" between MD 80 and MD 85, and would appear to support a reversible lane system. When the DEIS was prepared using 2025 traffic numbers, however, the same segment was LOS "F" in the AM peak direction, but in the PM peak the entire corridor from New Cut Road to MD 85 resulted in either LOS "F" or "F+" conditions. The team will be using the new 2035 forecast numbers and updated land use and transportation models to determine the feasibility of a reversible system during the next stage of the study.</p>



Maryland Department of Transportation
The Secretary's Office

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Beverley K. Swaim-Staley
Secretary

Harold M. Bartlett
Deputy Secretary

October 19, 2009

The Honorable Phil Andrews
President, Montgomery County Council
100 Maryland Avenue
Rockville MD 20850

Dear Council President Andrews:

Thank you for your letter regarding the I-270/US 15 Multi-Modal Corridor Study. It is my pleasure to follow up on my initial response to your questions.

The State Highway Administration (SHA), Maryland Transportation Authority (MdTA), and Maryland Transit Administration (MTA) are evaluating major transit and highway improvements to relieve congestion and improve safety along the I-270 and US 15 corridors. The study, jointly led by SHA and MTA, is investigating both transit and highway improvement alternatives. The transit alternative, the Corridor Cities Transitway through Gaithersburg and Germantown, would tie in with the existing Metrorail Red Line at Shady Grove. The study also seeks to determine whether a widening of I-270 and US 15 should be done and, if so, what the concept should be.

The Maryland Department of Transportation's (MDOT) policy priority for the corridor is to provide additional multi-modal capacity that is supportive of smart growth development patterns and transit-oriented development. Although decisions will be made regarding long-term improvements for both transit and highways, given MDOT's current financial situation, it is not expected that construction for major highway improvements will take place for quite some time. However, it is important to adopt a long-term plan that will guide right-of-way preservation efforts and shorter-term, localized improvements within the corridor.

Your questions focused on several aspects of the project including toll operations, rates, revenues, costs, funding, and alternatives and impacts, including the assessment of an all-transit alternative proposed by the Action Committee for Transit. I will offer a response from a policy perspective on your toll operations and funding questions. I have asked SHA and MTA to follow up with more detail on the other specific questions you have asked. Representatives from SHA and MTA will also be present at the upcoming council session to answer any additional questions that you and the other council members may have.

My telephone number is 410-865-1000
Toll Free Number 1-888-713-1414 TTY Users Call Via MD Relay
7201 Corporate Center Drive, Hanover, Maryland 21076

The Honorable Phil Andrews
Page Two

Central to your inquiries about tolling are many of the details that would need to be investigated further, if managed lanes were selected as a preferred alternative on the highway portion in this study. At this stage of the project, we have not determined whether managed lanes are the preferred option in the Multi-Modal Study. If a determination is made to further explore managed lanes along I-270, we will begin to address the more detailed challenges of toll operations, rates, revenues, annual maintenance, and operating costs.

Funding for these types of projects will be a challenge, as future federal allocations to the State of Maryland will be insufficient to accommodate a project of the I-270 improvements magnitude. We envision that this study will progress as several breakout projects, once we are in a position to allocate funding for future phases of the project. At that time, we will assess the appropriate sources available to fund the various types of breakout projects, including the transit portion. Our current practice is to flex Congestion Mitigation and Air Quality funding for transit. The remaining categories of federal highway funding are primarily dedicated to highway safety and system preservation efforts, which remain a high priority.

Thank you again for your letter and for your interest in this very important project. Again, the additional responses to come from SHA and MTA will provide greater detail. If we may be of further assistance, please do not hesitate to contact me or Mr. Gregory I. Slater, Director of Planning and Preliminary Engineering, SHA at 410-545-0412, toll-free 888-204-4825 or via email at gslater@sha.state.md.us, or Ms. Diane Ratcliff, Director of Planning, MTA at 410-767-3771, toll-free 888-218-2267 or via email at dratcliff@mtamaryland.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Beverley K. Swaim-Staley".

Beverley K. Swaim-Staley
Secretary

cc: Mr. Neil J. Pedersen, Administrator, SHA
Ms. Diane Ratcliff, Director of Planning, MTA
Mr. Gregory I. Slater, Director of Planning and Preliminary Engineering, SHA
Mr. Paul J. Wiedefeld, Administrator, MTA

William J. Holtzinger
Mayor



Aldermen
Marcia A. Hall
President Pro Tem
David "Kip" Koontz
Alan E. Imhoff
C. Paul Smith
Donna Kuzemchak Ramsburg

October 22, 2009

Ms. Beverley K. Swaim-Staley
Secretary of Transportation, Office of Secretary
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, Maryland 21076

RE: I-270/US15 Multi-Modal Corridor Study Alternative Analysis (AA)/Environmental Assessment (EA)

Dear Secretary Swaim-Staley,

On behalf of the Board of Aldermen for the City of Frederick, we would like to offer our official comments on the I-270/US15 Alternatives Analysis. On July 22, 2009, City Staff presented the above mentioned to the Mayor and Board of Aldermen to discuss the options for the City. The City is left with only one "build" alternative and the Aldermen were in agreement that the build option was in order. There was also discussion regarding the transit mode consideration, but due to the fact that the Study does not address transit within the City that issue is not applicable.

- 1) The consensus amongst the Aldermen was to expand the bridges and widen US15 through the City as noted in all of the Options for the exception of "no build".
- 2) In keeping with the available considerations found in the study, the Aldermen also agreed that there should be transit available for the corridor; therefore the extension of additional premium bus service through the City is in order.
- 3) Due to the fact that many businesses and residents are impacted by this project, the Aldermen concurred that State Highway's Strategy of maximum mitigation impacts though minimization is appropriate in the City.

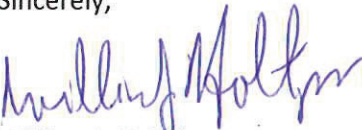
There was a good deal of discussion regarding options not contained in the AA/EA. The primary consideration was the fact that no transit, HOV, HOT lane, contra-flow/reversible lanes, BRT or LRT were even available for the City. The disappointment of no alternatives to single occupancy vehicles was well noted while considering the future poor performance of the US15 corridor, while so much emphasis was placed on the Corridor Cities Transitway further south. The Aldermen did make mention that if breakout projects were to be noted from a priority standpoint, that the Patrick, Rosemont and 7th Street bridges in the City be set for reconstruction first.

We believe that the recommendations noted will benefit the City as best as possible. The City of Frederick, along with our counterparts at the County have invested many hours of staff time in this project, as well as capital contributions for breakout projects within the corridor. We look forward to the continued City-County-State cooperation as this project moves forward.

Ms. Beverley K. Swaim-Staley
Secretary of Transportation, Office of Secretary
October 22, 2009
Page 2

The City of Frederick appreciates the opportunity to make comment on this project that will be of great benefit to the region as it develops. We look forward to continuing a productive partnership with the Maryland Department of Transportation and to actively participate in the development of projects in the I-270/US15 corridor. Should you have any questions or require additional information, please contact Tim Davis, Transportation Planner in our Engineering Department at 301-600-1884, or me at 301-600-1380.

Sincerely,

A handwritten signature in blue ink, appearing to read "William J. Holtzinger".

William J. Holtzinger
Mayor

CC: Frederick County Board of Commissioners
Russell Anderson, SHA Project Manager
Rick Kiegel, MTA Project Manager
Eric Soter, Frederick County Planning Director
Joe Adkins, Deputy Director for Planning



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MAYOR
Susan R. Hoffmann

COUNCIL
John B. Britton
Piotr Gajewski
Phyllis Marcuccio
Anne M. Robbins

CITY MANAGER
Scott Ullery

CITY CLERK
Claire F. Funkhouser

CITY ATTORNEY
Debra Yerg Daniel

November 4, 2009

Rick J. Kiegel, Corridor Cities Transitway Project Manager
Maryland Transit Administration
6 St. Paul Street, #901
Baltimore, Maryland 21201

Subject: I-270/US 15 Multi-Modal Corridor Study

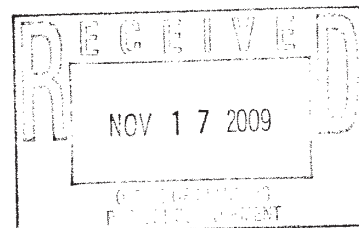
Dear Mr. Kiegel:

This letter provides the Mayor and Council of Rockville's position regarding the highway and transit improvements of the I-270/US 15 Multi-Modal Corridor Study. The City supports Alternative 7A with High Occupancy Vehicle (HOV) lanes for the I-270/US 15 improvements and the Light Rail Transit option for the Corridor Cities Transitway (CCT).

The Mayor and Council believe Alternative 7 with HOV lanes would provide more road capacity than Alternative 6 and significant congestion relief while providing incentives to carpool. In regards to the CCT, the Mayor and Council view the light rail transit as the more favorable option for potential riders.

Montgomery County's 2008 joint priority letter lists the CCT as a project of regional significance that should be funded. This project has become even more significant as Montgomery County considers the Gaithersburg West Master Plan. The CCT will help relieve congestion generated by thousands of new jobs and housing units planned in the area, which will lower pressure on Rockville intersections near or adjacent to the Gaithersburg West Master Planning area.

The Mayor and Council are concerned that the highway improvements are tied to the CCT. These highway improvements account for 83 to 90 percent of the total cost of the entire project. Therefore, the Mayor and Council feel that the CCT portion should be constructed prior to road improvements to encourage mass transit use before more road capacity opens. If highway improvements



Rick J. Kiegel
Maryland Transit Administration
11/4/09
Page 2

could not be built, the Mayor and Council would recommend that the CCT be constructed to help reduce traffic.

Sincerely,

A handwritten signature in black ink, appearing to read 'Susan R. Hoffman'.

Susan R. Hoffman
Mayor

Cc: John Britton, Councilmember
Piotr Gajewski, Councilmember
Phyllis Marcuccio, Councilmember
Anne M. Robbins, Councilmember
Scott Ullery, City Manager
Craig Simoneau, Director of Public Works
Emad Elshafei, Chief, Traffic and Transportation Division
Rebecca Torma, Transportation Planner II



THE MARYLAND GENERAL ASSEMBLY
ANNAPOLIS, MARYLAND 21401-1991

November 24, 2009

Dear Governor O'Malley:

We respectfully urge you to move forward with the Corridor Cities Transitway ("CCT") and support light rail as the preferred mode. As you know, the local jurisdictions along the CCT route have each expressed their mode choice for the CCT. The Montgomery County Council, the City of Gaithersburg, and the City of Rockville, as well as many local civic and business organizations all agree that the CCT should be light rail. We hope you will join us in supporting light rail as the best mode choice for this very important project. Your decision will bring the CCT one step closer to being funded and built.

The most recent cost analysis conducted by the Maryland Transit Administration ("MTA") shows that light rail now meets the cost effectiveness threshold required for the Federal Transit Administration New Starts program, with the cost effectiveness value between \$18 and \$23. Given that the project qualifies for the New Starts program, light rail is favored for many reasons:

1. Light rail demonstrates a long-term investment to transit. The CCT corridor will be a major employment center for the State of Maryland. The development of Clarksburg, Germantown, and Gaithersburg-West are long-term transit oriented development projects planned along the CCT line. To attract business to the State, we need to provide the strong incentives for companies to make long-term investments in our communities.
2. Light rail also provides more long-term transit capacity. As we continue to encourage more people to get out of their cars and onto transit, we need to make sure the capacity is available. As the I-270 corridor continues to grow, the demand for transit will grow. Light rail is necessary to meet that capacity.
3. According to the analysis by MTA, light rail will yield 5,000 more daily boardings than bus rapid transit, which would again support our transit-oriented goals.
4. Whether real or perceived, the permanence of light rail provides more incentives for development and redevelopment along the transit stops, which encourages smart growth initiatives. We need to give our transit oriented developments the best chance of success by providing the best option for transit – light rail.

Signatories:

Senator Rob Garagiola (D-15)
Senator Jennie Forehand (D-17)
Senator Nancy King (D-39)
Senator Rona Kramer (D-14)
Delegate Saqib Ali (D-39)
Delegate Charles Barkley (D-39)
Delegate Kumar Barve (D-17)
Delegate Kathleen Dumais (D-15)
Delegate Brian Feldman (D-15)
Delegate Jim Gilchrist (D-17)
Delegate Karen Montgomery (D-14)
Delegate Kirill Reznik (D-39)
Delegate Craig Rice (D-15)

Given the new information on cost-effectiveness, we hope you will join us in supporting light rail for the Corridor Cities Transitway. With your help, the CCT is "Good to Go!"

Walt J. Sayre

Jennie Forehand

Nancy L. King

Charles Benhly

John Warner

Lu Montgomerie

Bob Aalto

Edry

Craig Bee

K&

Franklin Demais

Chris Egan

James W. Feltner



ROCKVILLE, MARYLAND

November 30, 2009

Beverley Swaim-Staley, Secretary
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, Maryland 21076

Dear Secretary Swaim-Staley:

We have completed our review of the Maryland Department of Transportation's (MDOT) I-270/US 15 Multi-Modal Corridor Study and are sharing with you our recommendations for the Locally Preferred Alternative (LPA). We have arrived at our recommendations only after discussions with many stakeholder groups and individuals, and after reviewing the testimony from MDOT's two public hearings and the scores of correspondence we have received, and detailed analysis and recommendations from our Planning Board.

The Montgomery County Executive's and Council's joint recommendations regarding the LPA are to:

- Select light rail (LRT) as the transit mode for the Corridor Cities Transitway (CCT).
- Select the master planned alignment modified to incorporate the alignment alternatives serving the Crown Farm, Life Sciences Center (including a relocated DANAC station), and Kentlands, as described in the Maryland Transit Administration's (MTA) November 5, 2009, report.
- Site the LRT maintenance yard and shop at the current location of the Department of Police's impound lot. A follow-up study should identify a new site for the impound lot.
- For the segment of I-270 between Shady Grove Road and Frederick County, add two barrier-separated reversible lanes that would operate as high-occupancy toll (HOT) lanes in the peak direction of travel. The HOT lanes would be free for carpools, vanpools, buses, and motorcycles, and the tolls for non-HOVs would be set to avoid congestion on these lanes. We defer to Frederick County and the State as to the nature of the I-270 improvements within Frederick County. We understand that there are logistical and operational elements that will need to be addressed.
- Ensure that the congestion on the regular-use lanes generally will not fall below Level of Service 'D' within Montgomery—in both directions and during both peak periods.
- Support a new grade-separated interchange at proposed Newcut Road in Clarksburg, as well as direct access ramps to/from the HOT lanes at several locations on I-270.



Beverley Swaim-Staley

November 30, 2009

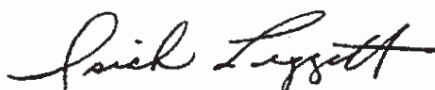
Page 2

As we transmit these recommendations, we would be remiss if we did not take the opportunity to thank Governor O'Malley for championing the CCT, not only in his words but in his deeds: in particular, his retaining full funding for its preliminary engineering and design while many other projects in the Consolidated Transportation Program have had to be eliminated or scaled back significantly.

We also want to recognize the tremendous job by MTA, the State Highway Administration and their consultant team in bringing the project to this point in its development. We especially want to express our gratitude to study managers Rick Kiegel of MTA and Russell Anderson of the State Highway Administration.

We look forward to working with you, members of the General Assembly, and our colleagues in Frederick County to gain Federal funding approval for preliminary engineering and, ultimately, for the design and construction of the entire CCT and I-270 improvements. These are vital projects for the state and the region, and we must collectively move forward to bring them into service as soon as possible.

Sincerely,



Isiah Leggett
County Executive



Phil Andrews
Council President

IL: PA:go

cc: The Honorable Martin O'Malley, Governor of Maryland
The Honorable Barbara Mikulski, United States Senate
The Honorable Benjamin Cardin, United States Senate
The Honorable Christopher Van Hollen, United States House of Representatives
The Honorable Donna Edwards, United States House of Representatives
The Honorable Roscoe Bartlett, United States House of Representatives
The Honorable Richard Madaleno, Chair, Montgomery County Senate Delegation
The Honorable Brian Feldman, Chair, Montgomery County House Delegation
The Honorable Jan Gardner, President, Frederick County Board of County Commissioners
The Honorable David Brinkley, Chair, Frederick County Senate Delegation
The Honorable Richard Weldon, Jr., Chair, Frederick County House Delegation
The Honorable Sidney Katz, Mayor, City of Gaithersburg
The Honorable Phyllis Marcuccio, Mayor, City of Rockville
Royce Hanson, Chair, Montgomery County Planning Board



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor
Beverley K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

January 27, 2010

RE: Corridor Cities Transitway (CCT)
Montgomery County

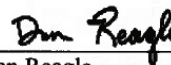
Ms. Lori Byrne
Wildlife and Heritage Division
Department of Natural Resources
Tawes State Office Building, E-1
580 Taylor Ave
Annapolis, MD 21401

Dear Ms. Byrne:

The Maryland Transit Administration (MTA) is studying alternative alignments to the Corridor Cities Transitway (CCT) in Montgomery County. The CCT was formerly part of a larger I-270/US 15 multi-modal corridor project, but is now a separate project. The new study is located approximately between the intersection of Shady Grove Road and Interstate 270 and Quince Orchard Road and Wind River Lane (see attachment). The mode of the CCT may be light rail or bus rapid transit and the project may contain tunnels, as well as bridges, for selected portions.

We request any information concerning the presence of state threatened or endangered species and unique habitat that may occur in this area. If you have any questions, please contact me at 410.767.3771 or dreagle1@mtamaryland.com.

Sincerely,

A handwritten signature in black ink that reads 'Dan Reagle'.

Dan Reagle
Environmental Planner
Office of Planning

**Coordination Sheet for Maryland Department of Natural Resources,
Environmental Review Unit information on fisheries resources,
including anadromous fish, related to project locations and study areas**

DATE OF REQUEST: January 27, 2010

REQUESTED BY:

Dan Reagle, MTA, 9th Floor, Office of Planning, 6 St. Paul Street, Baltimore MD 21202 410.767.3771

PROJECT NAME / LOCATION / DESCRIPTION:

The Maryland Transit Administration (MTA) is studying alternative alignments to the Corridor Cities Transitway (CCT) in Montgomery County. The CCT was formerly part of a larger I-270/US 15 multi-modal corridor project, but is now a separate project. The new study is located approximately between the intersection of Shady Grove Road and Interstate 270 and Quince Orchard Road and Wind River Lane (see attachment). The mode of the CCT may be light rail or bus rapid transit and the project may contain tunnels, as well as bridges, for selected portions.

NAME OF STREAM(S) (and MDE Use Classification) WITHIN THE STUDY AREA:

SUB-BASIN (6 digit watershed): Washington Metropolitan (02-14-02)

DNR RESPONSE (sections below to be completed by MD DNR):

____ Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year.

____ Where presence of yellow perch has been documented in the vicinity of an instream project area, generally no instream work is permitted in Use I and Certain Use II waters during the period of February 15 through June 15, inclusive, during any year.

____ Generally, no instream work is permitted in Use III streams during the period of October 1 through April 30, inclusive, during any year.

____ Generally, no instream work is permitted in Use IV streams during the period of March 1 through May 31, inclusive, during any year.

____ Other applicable site specific time of year restriction information:

ADDITIONAL FISHERIES RESOURCE NOTES:

ADDITIONAL COMMENTS ON BEST MANAGEMENT PRACTICES:

MD DNR, Environmental Review Unit signature

Name of Reviewer Printed out (Here)

DATE: _____

PHONE: 410-260 - _____



**United States Department of the Interior**

U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575

**Online Certification Letter**

Today's date: 1/27/10

Project: Corridor Cities Transitway - Supplemental Draft
Environmental Impact Statement

Dear Applicant for online certification:

Thank you for choosing to use the U.S. Fish and Wildlife Service Chesapeake Bay Field Office online list request certification resource. This letter confirms that you have reviewed the conditions in which this online service can be used. On our website (www.fws.gov/chesapeakebay) are the USGS topographic map areas where **no** federally proposed or listed endangered or threatened species are known to occur in Maryland, Washington D.C. and Delaware.

You have indicated that your project is located on the following USGS topographic map
Rockville and Gaithersburg

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8540. For information in Delaware you should contact the Delaware Natural Heritage and Endangered Species Program, at (302) 653-2880. For information in the District of Columbia, you should contact the National Park Service at (202) 535-1739.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay).

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species

Carroll County Project USFWS Chesapeake Bay Field Office -- Online certification letter

Page 2 of 2

program at (410) 573-4531.

Sincerely,

Leopoldo Miranda
Field Supervisor

<http://www.fws.gov/chesapeakebay/EndSppWeb/ELEMENTS/onlineletter.html>

2/9/2010



*mailed to all
elected officials
on attached sheet*

MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

May 6, 2010

The Honorable Marc B. Elrich
Montgomery County Council
Stella B. Werner Council Office Building
100 Maryland Avenue
Rockville MD 20850

Dear Councilmember Elrich:

The Maryland Transit Administration (MTA) is continuing to advance the Corridor Cities Transitway (CCT) project. I would like to update you on the project's progress in advance of a public briefing scheduled for May 24, 2010 and hosted by the CCT Coalition. At that breakfast meeting, Rick Kiegel, the CCT Project Manager will present findings of our ongoing engineering and environmental evaluations and provide a project schedule update.

In November, 2009, the MTA completed a feasibility study of alternative alignments to the CCT Master Plan alignment proposed by the City of Gaithersburg and the Maryland-National Capital Park and Planning Commission. These modifications were requested to serve the proposed development of Crown Farm, the improvements proposed for the Life Sciences Center (LSC) area, and the planned redevelopment of the Kentlands Market Square shopping center into a transit-oriented mixed use development. Conceptual level alignments through these three areas were developed and estimated environmental impacts were assessed to rule out potential fatal flaws. Costs and transportation performance measures were also computed. The study concluded that a combination of the three alignment shifts were strongly beneficial to the CCT. The full report can be found in the "News and Updates" section on the I-270/US 15 Multi-Modal Corridor Study website at www.i270multimodalstudy.com.

In its consideration of the draft Gaithersburg West Master Plan, the Montgomery County Council reviewed the study report and concluded that the proposed alternative alignments through Crown Farm, LSC, and the Kentlands should be considered as part of the transit project. Montgomery County Executive Isiah Leggett and County Council President Phil Andrews co-signed a letter to Transportation Secretary Beverly Swaim-Staley recommending that the existing Master Plan alignment be changed to serve these three areas. On May 4, 2010, the County Council approved the Great Seneca Science Corridor Master Plan (formerly the Gaithersburg West Master Plan) with development density at 17.5 million square feet, down from the 20 million square feet proposed in the draft plan. This reduction is not expected to significantly alter the conclusions in MTA's feasibility study because the reduced density is forecast to occur beyond the forecast year of 2030 used in the study.

The Honorable Marc B. Elrich
Page Two

Based on the County's recommendation, the MTA consulted with the Federal Transit Administration (FTA) to determine how best to incorporate these new options into the overall project study. FTA and MTA concluded that a Supplemental Draft Environmental Impact Statement (SDEIS) should be prepared that details the potential environmental impacts associated with the changes, and a public hearing should be held to provide an opportunity for citizens to comment. This document would focus on the three alternative alignments described above as well as update as necessary certain aspects of the 2002 Draft Environmental Impact Statement and the 2009 Alternatives Analysis/Environmental Assessment.

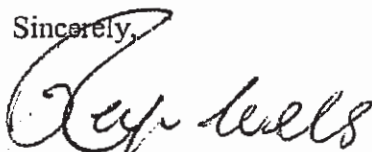
The MTA is now completing engineering on a range of options to serve these three alternative destinations. Most critical to the definition of alignment options are the issues related to the — Crown Farm and Belward Farm; both properties are eligible for the National Register of Historic Places. The MTA must consider alignments that fully avoid these properties or minimize potential impacts to these properties as required by Section 4(f) of the USDOT Act Title 49 USC Section 303. Section 4(f) requires rigorous avoidance studies of public recreation areas, but also applies to historic structures. Additionally, the County has requested that the MTA study two options for crossing Great Seneca Highway in the LSC area.

Environmental impacts will be evaluated and will be included in the new environmental document. These include impacts on natural features such as wetlands and streams as well as social elements such as impacts to low-income and minority communities and cultural resources. An enhanced public outreach program is also underway, including development of a CCT-specific website, a spring newsletter, and project briefings with area community associations.

The CCT project schedule has been adjusted to account for the time needed to complete the new studies and conduct the public hearing. We estimate the document will be ready for FTA review and approval this Summer. Final production and distribution of the document would occur by late summer with a public hearing to be held this Fall. We anticipate giving the public at least 45 days to comment on the published document. Following the hearing, comments will be received and reviewed. These comments will be used to consider any changes to the designs as well as aiding in the selection of the locally preferred alternative.

The MTA will continue to keep you up-to-date on the project's progress and date for the public hearing. If you have any question in advance of the breakfast meeting on May 24 or would like additional information, please do not hesitate to contact me or Rick J. Kiegel, MTA Project Manager for the CCT, at 410-767-1380 or by email at rkiegel@mta.maryland.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ralign T. Wells'.

Ralign T. Wells
Administrator

cc: Mr. Rick J. Kiegel, Project Manager, Office of Planning, MTA

Office	First name	Initial	Last name	Org	Address	AD2	City	State	Zip	dist
Senator	Alex	X.	Mooney	Senate of Maryland	P. O. Box 669		Frederick	MD	21705	3
Delegate	Charles	A.	Jenkins	Maryland House of Delegates	House Office Building, Room 324	6 Bladen Street	Annapolis	MD	21401	3
Delegate	Galen	R.	Clagett	Maryland House of Delegates	8 North East Street, Suite 201		Frederick	MD	21701	3
Delegate	C. Sue		Hecht	Maryland House of Delegates	120 West Church Street		Frederick	MD	21701	3
Senator	Robert		Garagiola	Senate of Maryland	James Senate Office Building, Room 104	11 Bladen Street	Annapolis	MD	21401	15
Delegate	Craig	L.	Rice	Maryland House of Delegates	House Office Building, Room 223	6 Bladen Street	Annapolis	MD	21401	15
Delegate	Kathleen	M.	Dumais	Maryland House of Delegates	House Office Building, Room 350	6 Bladen Street	Annapolis	MD	21401	15
Delegate	Brian	J.	Feldman	Maryland House of Delegates	House Office Building, Room 223	6 Bladen Street	Annapolis	MD	21401	15
Senator	Jennie	M.	Forehand	Senate of Maryland	James Senate Office Building, Room 223	11 Bladen Street	Annapolis	MD	21401	17
Delegate	Kumar	P.	Barve	Maryland House of Delegates	426 Palmspring Drive		Gaithersburg	MD	20878	17
Delegate	Jim		Gilchrist	Maryland House of Delegates	House Office Building, Room 221	6 Bladen Street	Annapolis	MD	21401	17
Delegate	Luiz		Simmons	Maryland House of Delegates	House Office Building, Room 225	6 Bladen Street	Annapolis	MD	21401	17
Senator	Nancy	J.	King	Senate of Maryland	Miller Senate Office Building, 3 West Wing	11 Bladen Street	Annapolis	MD	21401	39
Delegate	Charles	E.	Barkley	Maryland House of Delegates	19222 Golden Meadow Drive		Germantown	MD	20878	39
Delegate	Saqib		Ali	Maryland House of Delegates	House Office Building, Room 224	6 Bladen Street	Annapolis	MD	21401	39
Delegate	Kirill		Reznik	Maryland House of Delegates	House Office Building, Room 225	6 Bladen Street	Annapolis	MD	21401	39
President	Jan	H.	Gardner	Frederick County Board of Commissioners	Winchester Hall	12 East Church Street	Frederick	MD	21701	
Commissioner	David	P.	Gray	Frederick County Board of Commissioners	Winchester Hall	12 East Church Street	Frederick	MD	21701	
Commissioner	Kai	John	Hagen	Frederick County Board of Commissioners	Winchester Hall	12 East Church Street	Frederick	MD	21701	
Commissioner	Blaine	R.	Young	Frederick County Board of Commissioners	Winchester Hall	12 East Church Street	Frederick	MD	21701	
Commissioner	John	L.	Thompson, Jr.	Frederick County Board of Commissioners	Winchester Hall	12 East Church Street	Frederick	MD	21701	
Council Executive	Isiah	(Ike)	Leggett	Montgomery County	Executive Office Building, 2nd Floor	101 Monroe Street, 2nd floor	Rockville	MD	20850	
Councilmember	Roger		Berliner	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Council Vice President	Valerie		Ervin	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Councilmember	Marc	B.	Eirich	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Council President	Nancy	M.	Floren	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Councilmember	George	L.	Leventhal	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Councilmember	Duchy		Trachtenberg	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Councilmember	Michael	J.	Knapp	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Councilmember	Philip	M.	Andrews	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Councilmember	Nancy		Navarro	Montgomery County Council	Stella B. Werner Council Office Building	100 Maryland Avenue	Rockville	MD	20850	
Mayor	Sidney	A.	Katz	City of Gaithersburg	City Hall	31 South Summit Avenue	Gaithersburg	MD	20877	
Councilmember	Jud		Ashman	Gaithersburg City Council	City Hall	31 South Summit Avenue	Gaithersburg	MD	20877	
Councilmember	Cathy	C.	Drzygala	Gaithersburg City Council	City Hall	31 South Summit Avenue	Gaithersburg	MD	20877	
Councilmember	Ryan		Spiegel	Gaithersburg City Council	City Hall	31 South Summit Avenue	Gaithersburg	MD	20877	
Councilmember	Henry	F.	Marratta, Jr.	Gaithersburg City Council	City Hall	31 South Summit Avenue	Gaithersburg	MD	20877	
Councilmember	Michael	A.	Sesna	Gaithersburg City Council	City Hall	31 South Summit Avenue	Gaithersburg	MD	20877	
Mayor	Phyllis		Marcuccio	City of Rockville	City Hall	111 Maryland Avenue	Rockville	MD	20850	
Councilmember	Bridget		Newton	Rockville City Council	City Hall	111 Maryland Avenue	Rockville	MD	20850	
Councilmember	Mark		Pierzchala	Rockville City Council	City Hall	111 Maryland Avenue	Rockville	MD	20850	
Councilmember	John		Britton	Rockville City Council	City Hall	111 Maryland Avenue	Rockville	MD	20850	
Councilmember	Piotr		Gajewski	Rockville City Council	City Hall	111 Maryland Avenue	Rockville	MD	20850	
Mayor	Randy		McClement	City of Frederick	City Hall	101 North Court Street	Frederick	MD	21701	
Alderman	Shelley	M.	Aloi	Frederick City Council	City Hall	101 North Court Street	Frederick	MD	21701	
Alderman	Carol	L.	Krimm	Frederick City Council	City Hall	101 North Court Street	Frederick	MD	21701	
Alderman	Michael	C.	O'Connor	Frederick City Council	City Hall	101 North Court Street	Frederick	MD	21701	
Alderman	Kelly		Russell	Frederick City Council	City Hall	101 North Court Street	Frederick	MD	21701	
Alderman	Karen	Lewis	Young	Frederick City Council	City Hall	101 North Court Street	Frederick	MD	21701	



Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

June 15, 2010

Mr. Dan Reagle
Maryland Department of Transportation
Maryland Transit Administration
6 Saint Paul Street
Baltimore, MD 21202-1614

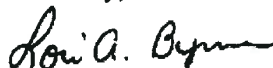
RE: Environmental Review for Corridor Cities Transitway (CCT) – Alternative Alignments between Shady Grove Road/Interstate 270 and Quince Orchard Road/Wind River Lane, Montgomery County, Maryland.

Dear Mr. Reagle:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lori A. Byrne'.

Lori A. Byrne
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER # 2010.0195.mo
cc: G. Golden, DNR



Appendix D:

List of References Used in Preparing the Supplemental Environmental Assessment

- Acoustical Society of America. *Guide to the Evaluation of Human Exposure to Vibration in Buildings. American National Standard ANSI S3.29*, 1983.
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- Washington D.C. Department of Health:
Environmental Health Administration:
Bureau of Environmental Quality: Water
Quality Division. *District of Columbia: final
total maximum daily load for fecal coliform
bacteria in Upper Potomac River, Middle
Potomac River, and Lower Potomac River,
Battery Kemble Creek, Foundry Branch, and
Dalecarlia Tributary, 2004.*

Appendix E: List of Contributors

Appendix E: List of Contributors

MARYLAND STATE HIGHWAY ADMINISTRATION	
Russell Anderson	Project Manager
Suseela Rajan	Project Manager
MARYLAND TRANSIT ADMINISTRATION	
Ernest Baisden	Manager, Project Development
Rick Kiegel	Project Manager (Transit)
John Newton	Manager, Environmental Planning
Diane Ratcliff	Director, Office of Planning and Capital Programming
Dan Reagle	Environmental Planning

Consultant Team

FIRM/STAFF	ROLE
PARSONS BRINCKERHOFF	
Ron Bruno	Socio-Economics, Transportation Planning, GIS Mapping
Mark Cheskey	Environment, Transportation Planning
Romy de La Cruz	Engineering
Dalmain Fenton	Noise Analysis
Masakatsu Fukui, EIT	Traffic Impact Analysis
Kimberly Gilbert, PE	Engineering
Alice Lovegrove	Air Quality
Arthur Morrone	Noise and Vibration
Kyle Nembhard	Environmental Effects, GIS Mapping/Spatial Analysis

Consultant Team

FIRM/STAFF	ROLE
PARSONS BRINCKERHOFF (CONTINUED)	
Tracey Nixon, AICP	Transportation Planning
Scott Noel	Noise Analysis
Surendra Omkaram, EIT	Traffic Impact Analysis
Todd Peterson, PE, PTOE	Roadway Network Effects
Allyson Reynolds	Displacements and Relocations
Patrick Romero	Noise Analysis
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