

APPENDIX C: VIRGINIA USM STREAM ASSESSMENT FORMS

Stream Assessment Form (Form 1)

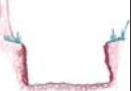
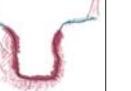
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
	I-495 NEXT	Fairfax	R3	02070008	8/20/2018	22AAA	339	0.0

Name(s) of Evaluator(s)	Stream Name and Information
Scott Shifflett, Laura Cooper, Kyle Haynes, Evan Fowler, Emily Onufre	unnamed tributary to the Potomac River

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

Channel Condition	Conditional Category					
	Optimal	Suboptimal	Marginal	Poor	Severe	
	 <p>Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.</p>	 <p>Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.</p>	 <p>Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 60-80% of banks. Streambanks may be vertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contributes to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.</p>	 <p>Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and stable sediment deposition is absent.</p>	 <p>Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.</p>	
Score	3	2.4	2	1.6	1	1.6

NOTES>> The majority of the stream banks have significant evidence of erosion.

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category						NOTES>> The buffer of this stream has mature trees with significant canopy cover and has an un-maintained understory with very dense vegetation
	Optimal	Suboptimal	Marginal	Poor	High	Low	
	<p>Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.</p>	<p>High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.</p>	<p>Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).</p>	<p>High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.</p>	<p>Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover with maintained understory.</p>	<p>High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.</p>	<p>Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.</p>
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5

- Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.
- Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.
- Enter the % Riparian Area and Score for each riparian category in the blocks below.

Right Bank	% Riparian Area>	100%					100%	CI= (Sum % RA * Scores*0.01)/2
	Score >	1.1						
Left Bank	% Riparian Area>	100%					100%	Rt Bank CI > 1.10 CI
	Score >	1.1						Lt Bank CI > 1.10 1.10

- 3. INSTREAM HABITAT:** Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle pool complexes, stable features.

Instream Habitat/ Available Cover	Conditional Category					NOTES>> Habitat elements are marginal for the majority of the stream.
	Optimal	Suboptimal	Marginal	Poor		
	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.		
Score	1.5	1.2	0.9	0.5		

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
	VDOT	Fairfax	R3	0207008	8/20/18	SK	339	0.0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

NOTES>> The stream has been straightened

Channel Alteration	Conditional Category				NOTES>> The stream has been straightened		
	Negligible	Minor	Moderate	Severe			
Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.		
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	0.50

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >>

0.82

RCI= (Sum of all CI's)/5

COMPENSATION REQUIREMENT (CR) >>

0

CR = RCI X LF X IF

INSERT PHOTOS:



DESCRIBE PROPOSED IMPACT:

Construction access - temporary impact

Stream Assessment Form (Form 1)

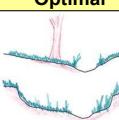
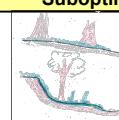
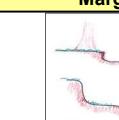
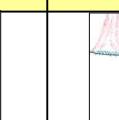
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
	Managed Lanes Study	Fairfax	R3	02070008	3/31/2020	22AAA_C	491	0.0

Name(s) of Evaluator(s)	Stream Name and Information
Karl Hellmann & Alex Nussbaum	Unnamed tributary to the Potomoac River

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

Channel Condition	Conditional Category				
	Optimal	Suboptimal	Marginal	Poor	Severe
	 <p>Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.</p>	 <p>Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.</p>	 <p>Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of banks. Streambanks may be bevelled or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contribute to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and stable sediment deposition is absent.</p>	 <p>Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and stable sediment deposition is absent.</p>	 <p>Deeply incised (overcutted), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.</p>
Score	3	2.4	2	1.6	1

NOTES>>	Entire stream segment flows through an existing culvert and therefore lacks incision.
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2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category						NOTES>> Entire stream segment is within an existing culvert and therefore does not have a riparian buffer.
	Optimal	Suboptimal	Marginal	Poor	High	Low	
	<p>Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.</p>	<p>High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.</p>	<p>Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).</p>	<p>High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.</p>	<p>Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with >30% tree canopy cover with maintained understory.</p>	<p>High Poor: Lawns, mowed, and maintained areas; nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.</p>	<p>Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.</p>
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.	Ensure the sums
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.	of % Riparian
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.	Blocks equal 100

Right Bank	% Riparian Area>	100%					100%	
	Score >	0						

Left Bank	% Riparian Area>	100%					100%	
	Score >	0						

3. INSTREAM HABITAT:	Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle pool complexes, stable features.	NOTES>> Entire stream segment is within an existing culvert and lacks most habitat elements.
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Instream Habitat/ Available Cover	Conditional Category				
	Optimal	Suboptimal	Marginal	Poor	
	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.	
Score	1.5	1.2	0.9	0.5	

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
	MDOT SHA	Fairfax	R3	02070008	3/31/2020		491	0.0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

NOTES>> Entire stream segment has been altered and consists of a waterway flowing through an existing culvert.

Channel Alteration	Conditional Category				Notes		
	Negligible	Minor	Moderate	Severe			
Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.		
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	0.50

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >>

0.80

RCI= (Sum of all CI's)/5

COMPENSATION REQUIREMENT (CR) >>

0

CR = RCI X LF X IF

INSERT PHOTOS:

DESCRIBE PROPOSED IMPACT:

Existing culvert to remain- temporary impact

Stream Assessment Form (Form 1)

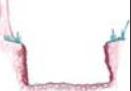
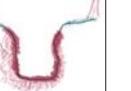
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
	I-495 NEXT	Fairfax	R3	02070008	8/20/2018	22SS	97	0.0

Name(s) of Evaluator(s)	Stream Name and Information
Scott Shifflett, Laura Cooper, Kyle Haynes, Evan Fowler, Emily Onufre	unnamed tributary to the Potomac

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

Channel Condition	Conditional Category					
	Optimal	Suboptimal	Marginal	Poor	Severe	
	 <p>Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.</p>	 <p>Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.</p>	 <p>Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 60-80% of both banks. Streambank may be vertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contributes to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.</p>	 <p>Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and stable sediment deposition is absent.</p>	 <p>Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.</p>	
Score	3	2.4	2	1.6	1	1.6

NOTES>> Banks are significantly incised through with evidence of erosion.

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category						NOTES>> The buffer is has significant areas of disturbance on the left bank including houses and lawns. The right bank has more natural features but still has lawns which intersect.
	Optimal	Suboptimal	Marginal	Poor	High	Low	
	<p>Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.</p>	<p>High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.</p>	<p>Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).</p>	<p>High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.</p>	<p>Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover with maintained understory.</p>	<p>High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.</p>	<p>Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.</p>
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5

- Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.
- Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.
- Enter the % Riparian Area and Score for each riparian category in the blocks below.

Right Bank	% Riparian Area>	80%	20%				100%	CI= (Sum % RA * Scores*0.01)/2
	Score >	1.5	0.6					
Left Bank	% Riparian Area>	90%	10%				100%	Rt Bank CI > 1.32 CI
	Score >	1.5	0.6					Lt Bank CI > 1.41 1.37

- INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle pool complexes, stable features.

Instream Habitat/ Available Cover	Conditional Category					NOTES>> Habitat elements are present in the majority of the stream.
	Optimal	Suboptimal	Marginal	Poor		
	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.		
Score	1.5	1.2	0.9	0.5		CI 1.50

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
	VDOT	Fairfax	R3	0207008	8/20/18	CC/CD	97	0.0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

Channel Alteration	Conditional Category				NOTES>> alteration/straightening has occurred on a small section of this stream		
	Negligible	Minor	Moderate	Severe			
Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.		
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	1.30

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >>

1.15

RCI= (Sum of all CI's)/5

COMPENSATION REQUIREMENT (CR) >>

0

CR = RCI X LF X IF

INSERT PHOTOS:



DESCRIBE PROPOSED IMPACT:

Construction access - temporary impact

Stream Assessment Form (Form 1)

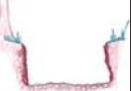
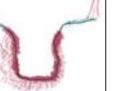
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
	I-495 NEXT	Fairfax	R3	02070008	8/20/2018	22UU	543	1.0

Name(s) of Evaluator(s)	Stream Name and Information
Scott Shifflett, Laura Cooper, Kyle Haynes, Evan Fowler, Emily Onufre	unnamed tributary to the Potomac

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

Channel Condition	Conditional Category					
	Optimal	Suboptimal	Marginal	Poor	Severe	
	 <p>Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.</p>	 <p>Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.</p>	 <p>Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 60-80% of both banks. Streambank may be vertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contributes to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.</p>	 <p>Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and stable sediment deposition is absent.</p>	 <p>Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.</p>	
Score	3	2.4	2	1.6	1	1.6

NOTES>> Banks are significantly incised through with evidence of erosion.

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category						NOTES>> Both sides of the stream are wetland/floodplain mosaic. The right bank has I-495 which runs through it while the left bank has a home and yard.
	Optimal	Suboptimal	Marginal	Poor	High	Low	
	<p>Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.</p>	<p>High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.</p>	<p>Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).</p>	<p>High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.</p>	<p>Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover with maintained understory.</p>	<p>High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.</p>	<p>Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.</p>
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.

Ensure the sums

2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.

of % Riparian

3. Enter the % Riparian Area and Score for each riparian category in the blocks below.

Blocks equal 100

Right Bank	% Riparian Area>	30%	70%				100%
	Score >	1.5	0.5				
Left Bank	% Riparian Area>	90%	10%				100%
	Score >	1.5	0.6				

$$CI = (\text{Sum } \% \text{ RA} * \text{Scores}) / 100$$

$$Rt \text{ Bank CI} > 0.80$$

$$Lt \text{ Bank CI} > 1.41$$

$$1.11$$

3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle pool complexes, stable features.

NOTES>> Habitat elements are not present, the majority of the channel has been riprapped

Instream Habitat/ Available Cover	Conditional Category				
	Optimal	Suboptimal	Marginal	Poor	
	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.	
Score	1.5	1.2	0.9	0.5	

$$CI$$

$$0.50$$

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
	VDOT	Fairfax	R4	0207008	8/20/18	DE	543	1.0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

Channel Alteration	Conditional Category				NOTES>> The majority of the channel has been altered through straightening and riprap		
	Negligible	Minor	Moderate	Severe			
Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.		
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	0.50

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >>

0.74

RCI= (Sum of all CI's)/5

COMPENSATION REQUIREMENT (CR) >>

401

CR = RCI X LF X IF

INSERT PHOTOS:



DESCRIBE PROPOSED IMPACT:

Impacted by roadway design

Ephemeral Stream Assessment Form (Form 1a)

Unified Stream Methodology for use in Virginia

For use in ephemeral streams

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
	I-495 NEXT	Fairfax	EPH	02070008	8/20/2018	22VV	371	1.0

Name(s) of Evaluator(s)	Stream Name and Information
Scott Shifflett, Laura Cooper, Kyle Haynes, Evan Fowler, Emily Onufer	unnamed tributary to the Potomac

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category						NOTES>> Both sides of the stream are wetland/floodplain mosaic.	
	Optimal		Suboptimal		Marginal			
	High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and an non-maintained understory . Wetlands areas.		Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		High Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory.			
	High	Low	High	Low	High	Low		
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5	

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.

Ensure the sums

2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.

of % Riparian

3. Enter the % Riparian Area and Score for each riparian category in the blocks below.

Blocks equal 100

Right Bank	% Riparian Area>	100%						100%
	Score >	1.5						
Left Bank	% Riparian Area>	100%						100%
	Score >	1.5						

CI= (Sum % RA * Scores*0.01)/2

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >>

0.75

RCI= (Riparian CI)/2

COMPENSATION REQUIREMENT (CR) >>

278

CR = RCI X LF X IF

INSERT PHOTOS:



DESCRIBE PROPOSED IMPACT:

Impacted by roadway design and construction staging area.

Ephemeral Stream Assessment Form (Form 1a)

Unified Stream Methodology for use in Virginia

For use in ephemeral streams

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
	I-495 NEXT	Fairfax	EPH	02070008	8/20/2018	22WW/22XX	64	1.0

Name(s) of Evaluator(s)	Stream Name and Information
Scott Shifflett, Laura Cooper, Kyle Haynes, Evan Fowler, Emily Onufer	unnamed tributary to the Potomac

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category						NOTES>> Both sides of the stream are wetland/floodplain mosaic.	
	Optimal		Suboptimal		Marginal			
	High		Low		High			
	Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5
1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.					Ensure the sums			
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.					of % Riparian			
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.					Blocks equal 100			
Right Bank	% Riparian Area>	100%				100%		
	Score >	1.5					CI= (Sum % RA * Scores*0.01)/2	
Left Bank	% Riparian Area>	100%				100%	Rt Bank CI > 1.50	
	Score >	1.5					Lt Bank CI > 1.50	
REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH								

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >> 0.75

RCI= (Riparian CI)/2

COMPENSATION REQUIREMENT (CR) >> 35

CR = RCI X LF X IF

INSERT PHOTOS:



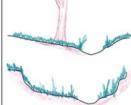
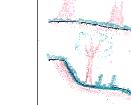
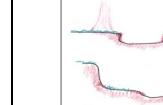
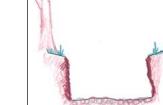
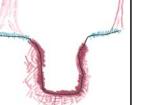
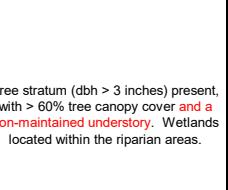
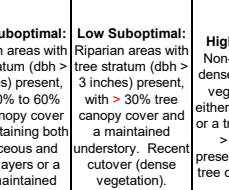
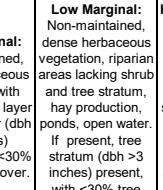
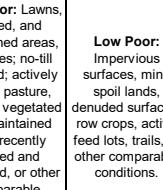
DESCRIBE PROPOSED IMPACT:

Impacted by roadway design

Stream Assessment Form (Form 1)

Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor	
	Managed Lanes Study	Fairfax	R3	02070008	3/31/2020	22WW_C	272	0.0	
Name(s) of Evaluator(s)		Stream Name and Information							
Karl Hellmann & Alex Nussbaum		Unnamed tributary to the Potomac River							
1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)									
Channel Condition	Conditional Category								
	Optimal		Suboptimal		Marginal		Poor		
									
	<p>Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.</p>		<p>Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.</p>		<p>Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of banks. Streambanks may be vertical or undercut. AND/OR 60-80% of stream is covered by sediment. Sediment may be temporary/transient, contributing to instability. Deposition that contributes to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.</p>		<p>Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection present on > 40% of the banks and stable sediment deposition is absent.</p>		
									
									Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.
Score	3	2.4	2	1.6	1	3.0			
NOTES>>	Entire stream segment flows through an existing culvert and therefore lacks incision.								<p>NOTES>> Entire stream segment is within an existing culvert and therefore does not have a riparian buffer.</p> <p>CI= (Sum % RA * Scores*0.01)/2</p> <p>CI</p> <p>0.50</p>
2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)									
Riparian Buffers	Conditional Category								
	Optimal		Suboptimal		Marginal		Poor		
									
	<p>Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.</p>		<p>High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.</p> <p>Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).</p>		<p>High Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover and a maintained understory.</p>		<p>Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover and a maintained understory.</p> <p>High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.</p>		
			High	Low	High	Low	High	Low	
	Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5	
1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.						Ensure the sums of % Riparian Blocks equal 100			
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.									
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.									
Right Bank	% Riparian Area>	100%					100%		
	Score >	0							
Left Bank	% Riparian Area>	100%					100%		
	Score >	0							
3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle pool complexes, stable features.									<p>NOTES>> Entire stream segment is within an existing culvert and lacks most habitat elements.</p>
Instream Habitat/ Available Cover	Conditional Category								
	Optimal		Suboptimal		Marginal		Poor		
	<p>Habitat elements are typically present in greater than 50% of the reach.</p>		<p>Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.</p>		<p>Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.</p>		<p>Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.</p>		
Score	1.5	1.2	0.9	0.5					

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
	MDOT SHA	Fairfax	R3	02070008	3/31/2020		272	0.0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

Channel Alteration	Conditional Category					NOTES>> Entire stream segment has been altered and consists of a waterway flowing through an existing culvert.	
	Negligible	Minor	Moderate	Severe			
	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.		
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	0.50

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >> 0.80

RCI= (Sum of all CI's)/5

COMPENSATION REQUIREMENT (CR) >> 0

CR = RCI X LF X IF

INSERT PHOTOS:



DESCRIBE PROPOSED IMPACT:

Existing culvert to remain - temporary impact

Stream Assessment Form (Form 1)

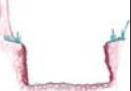
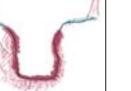
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
	I-495 NEXT	Fairfax	R3	02070008	8/20/2018	22ZZ	97	0.0

Name(s) of Evaluator(s)	Stream Name and Information
Scott Shifflett, Laura Cooper, Kyle Haynes, Evan Fowler, Emily Onufre	unnamed tributary to the Potomac River

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

Channel Condition	Conditional Category					
	Optimal	Suboptimal	Marginal	Poor	Severe	
	 <p>Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.</p>	 <p>Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.</p>	 <p>Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 60-80% of banks. Streambanks may be vertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contributes to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.</p>	 <p>Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and stable sediment deposition is absent.</p>	 <p>Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.</p>	
Score	3	2.4	2	1.6	1	2.0

NOTES>> Incision evident on approximately 50% of the stream banks with some vertical banks.

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Riparian Buffers	Conditional Category					NOTES>> The stream is surrounded by homes and roads although the majority of the buffer is higher quality with some evidence of disturbance in locations.	
	Optimal	Suboptimal	Marginal	Poor			
	<p>High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.</p>	<p>Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. Recent cutover (dense vegetation).</p>	<p>High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.</p>	<p>Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover with maintained understory.</p>	<p>High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.</p>	<p>Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.</p>	
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.

Ensure the sums

2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.

of % Riparian

3. Enter the % Riparian Area and Score for each riparian category in the blocks below.

Blocks equal 100

Right Bank	% Riparian Area>	60%	30%	10%			100%
	Score >	1.2	0.75	0.5			
Left Bank	% Riparian Area>	40%	40%	20%			100%
	Score >	1.5	0.85	0.5			

CI= (Sum % RA * Scores*0.01)/2
Rt Bank CI > 1.00 CI
Lt Bank CI > 1.04 1.02

3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle pool complexes, stable features.

NOTES>> Habitat elements are marginal for the majority of the stream.

Instream Habitat/ Available Cover	Conditional Category				
	Optimal	Suboptimal	Marginal	Poor	
	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.	
Score	1.5	1.2	0.9	0.5	

CI
0.90

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
	VDOT	Fairfax	R3	0207008	8/20/18	SH	97	0.0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

NOTES>> It appears that a good portion of the stream has been straightened.

Channel Alteration	Conditional Category				Notes		
	Negligible	Minor	Moderate	Severe			
Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.		
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	0.90

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

THE REACH CONDITION INDEX (RCI) >> **0.96**

RCI= (Sum of all CI's)/5

COMPENSATION REQUIREMENT (CR) >> **0**

CR = RCI X LF X IF

INSERT PHOTOS:



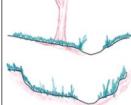
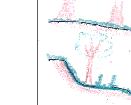
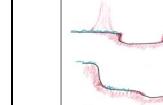
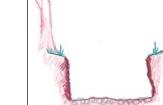
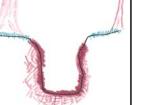
DESCRIBE PROPOSED IMPACT:

Construction access - temporary impact

Stream Assessment Form (Form 1)

Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name		Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor			
	Managed Lanes Study		Fairfax	R3	02070008	3/31/2020	22ZZ_C	1075	0.0			
Name(s) of Evaluator(s)		Stream Name and Information										
Karl Hellmann & Alex Nussbaum		Unnamed tributary to the Potomac River										
1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)												
Channel Condition	Optimal		Suboptimal		Marginal		Poor		Severe			
												
	Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.		Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.		Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of streams may be beverical or undercut. AND/OR 60-80% of stream is covered by sediment. Sediment may be temporary/transient, contributing to instability. Deposition that contributes to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.		Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.		Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.			
	Score		3		2.4		2		1.6		CI	
	NOTES>>		Entire stream segment flows through an existing culvert and therefore lacks incision.									
	2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)											
Riparian Buffers	Optimal		Suboptimal		Marginal		Poor		NOTES>> Entire stream segment is within an existing culvert and therefore does not have a riparian buffer.			
	Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.		High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).		High Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover and a maintained understory.			Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree canopy cover and a maintained understory.		
			High		Low		High			Low		
	Condition Scores		1.5		1.2		1.1			0.85		
										0.75		
										0.6		
								0.5				
1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors. 2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below. 3. Enter the % Riparian Area and Score for each riparian category in the blocks below.										Ensure the sums of % Riparian Blocks equal 100 CI= (Sum % RA * Scores*0.01)/2		
Right Bank		% Riparian Area>	100%						100%			
		Score >	0									
Left Bank		% Riparian Area>	100%						100%			
		Score >	0									
3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddedness; shade; undercut banks; root mats; SAV; riffle pool complexes, stable features.												NOTES>> Entire stream segment is within an existing culvert and lacks most habitat elements.
Instream Habitat/ Available Cover	Optimal		Suboptimal		Marginal		Poor					
	Habitat elements are typically present in greater than 50% of the reach.		Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.		Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.		Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.					
	Score		1.5		1.2		0.9		0.5			
										CI		
										0.50		

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
	MDOT SHA	Fairfax	R3	02070008	3/31/2020		1075	0.0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

Channel Alteration	Conditional Category					NOTES>> Entire stream segment has been altered and consists of a waterway flowing through an existing culvert.	
	Negligible	Minor	Moderate	Severe			
	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.		
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	0.50

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.

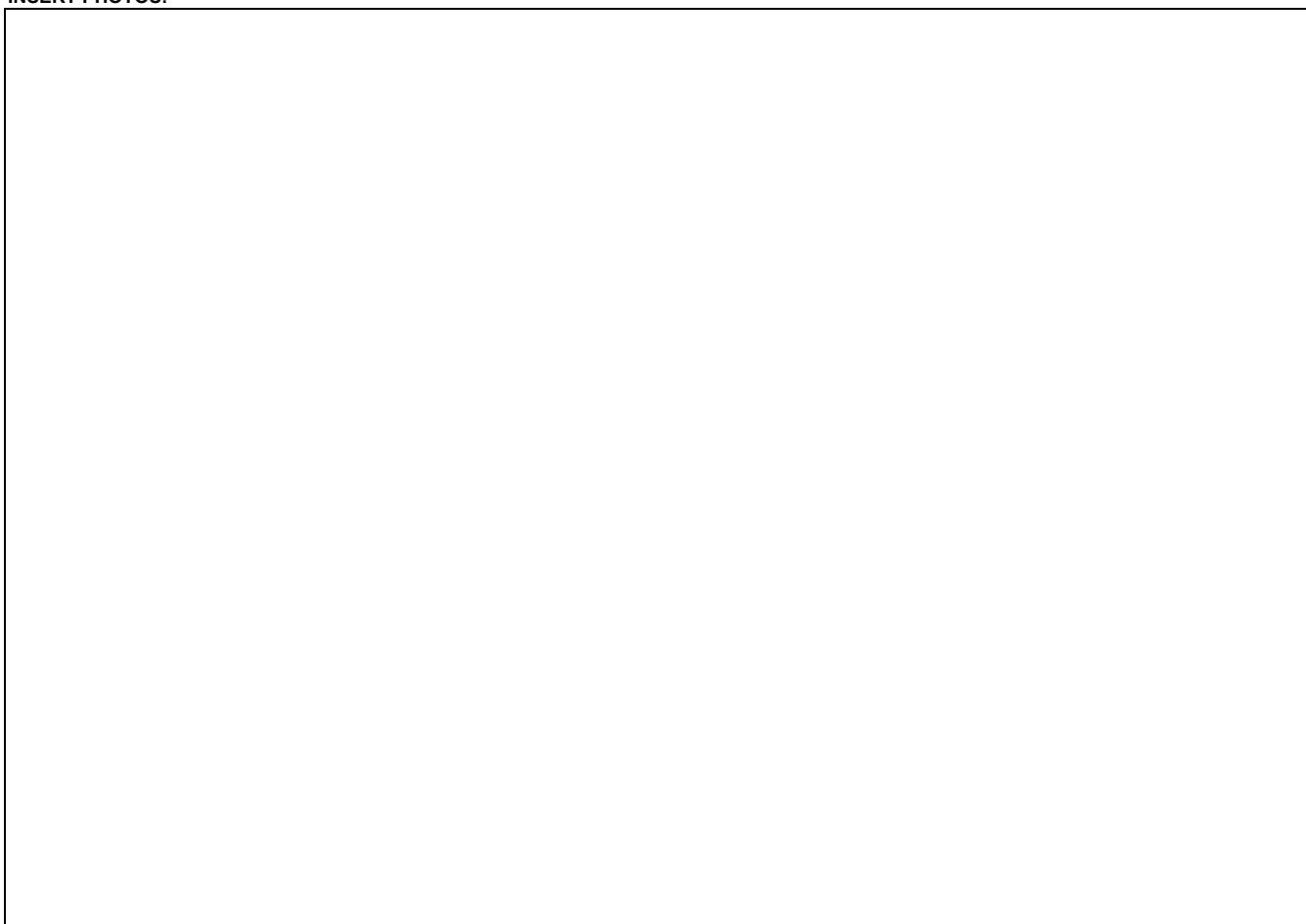
THE REACH CONDITION INDEX (RCI) >> 0.80

RCI= (Sum of all CI's)/5

COMPENSATION REQUIREMENT (CR) >> 0

CR = RCI X LF X IF

INSERT PHOTOS:



DESCRIBE PROPOSED IMPACT:

Existing culvert to remain - temporary impact

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APPENDIX D: ON-SITE STREAM MITIGATION TABLES

ALTERNATIVES 8 AND 9

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
1D_1	1989+50	Perennial	Medium	121	0.5:1	60.5
1D_2	1987+50	Perennial	Medium	78	0.5:1	39
1G	1994+50	Ephemeral	Low	19	1:1	19
1H	1995+00	Intermittent	Low	2	1:1	2
1H_D	1999+00	Intermittent	Low	625	1:1	625
1O	1929+00	Ephemeral	Low	227	1:1	227
1P	1931+00	Intermittent	Low	178	1:1	178
1Q	1930+00	Perennial	High	56	0:1	0
1Q_1	1927+00	Perennial	High	252	0:1	0
1R	1943+00	Perennial	Medium	482	0.5:1	241
1R_1	1936+00	Perennial	Medium	548	0.5:1	274
1RR	1958+50	Intermittent	Low	26	1:1	26
1SS	1957+00	Ephemeral	Low	317	1:1	317
1TT	1969+00	Intermittent	Low	53	1:1	53
1VV	1973+00	Perennial	Medium	39	0.5:1	19.5
1VV_1	1974+50	Perennial	Medium	18	0.5:1	9
1XX	1975+00	Ephemeral	Medium	136	0.5:1	68
1XX_1	1974+00	Intermittent	Medium	141	0.5:1	70.5
1YY	1972+00	Intermittent	Low	362	1:1	362
2A	1924+50	Ephemeral	Low	170	1:1	170
2AA	1857+00	Intermittent	Low	50	1:1	50
2D	1917+00	Ephemeral	Low	13	1:1	13
2E	1916+50	Intermittent	Low	77	1:1	77
2F	1901+00	Intermittent	Medium	669	0.5:1	334.5
2F_D	1896+00	Intermittent	Medium	499	0.5:1	249.5
2H	1870+00	Intermittent	Low	53	1:1	53
2HH	1902+50	Intermittent	Low	52	1:1	52
2I	1871+00	Intermittent	Low	244	1:1	244
2J	1864+50	Perennial	Medium	44	0.5:1	22
2J_1	1863+00	Perennial	Medium	30	0.5:1	15
2JJ	1917+00	Intermittent	Low	73	1:1	73
2L	1862+00	Intermittent	Medium	313	0.5:1	156.5
2MM	1904+00	Perennial	Medium	4	0.5:1	2
2OO	1915+00	Ephemeral	Low	33	1:1	33
2R	1870+00	Perennial	Medium	27	0.5:1	13.5
2T	1874+00	Intermittent	Medium	989	0.5:1	494.5
2V	1857+50	Perennial	Medium	16	0.5:1	8
2VV	1921+00	Intermittent	Low	17	1:1	17
2W	1914+00	Intermittent	Low	451	1:1	451
2X	1916+50	Perennial	Medium	16	0.5:1	8
2X_1	1916+50	Perennial	Medium	203	0.5:1	101.5
2Y	1928+00	Perennial	Low	241	1:1	241

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
2Y_1	1926+00	Perennial	Low	388	1:1	388
2YY	1921+00	Intermittent	Low	51	1:1	51
3A	1836+00	Perennial	Medium	44	0.5:1	22
3AA_1	1803+00	Perennial	Low	40	1:1	40
3BB	1804+00	Ephemeral	Low	120	1:1	120
3BBB	1804+00	Intermittent	Low	41	1:1	41
3CC	1819+50	Intermittent	Low	303	1:1	303
3D	1822+50	Perennial	Medium	45	0.5:1	22.5
3D_1	1820+50	Perennial	Medium	87	0.5:1	43.5
3DD	1821+00	Perennial	Medium	45	0.5:1	22.5
3F	1801+50	Ephemeral	Low	244	1:1	244
3FFF	1804+50	Intermittent	Low	52	1:1	52
3FFF_D	1805+00	Intermittent	Low	66	1:1	66
3H	1823+00	Intermittent	Low	102	1:1	102
3I	1818+00	Intermittent	Low	551	1:1	551
3JJ	1758+00	Intermittent	Low	321	1:1	321
3L	1792+50	Perennial	Medium	35	0.5:1	17.5
3L_1	1793+50	Perennial	Medium	38	0.5:1	19
3LL	1754+50	Intermittent	Low	92	1:1	92
3LL_1	1759+00	Intermittent	Low	521	1:1	521
3LLL	1794+00	Ephemeral	Low	16	1:1	16
3PP	1764+00	Ephemeral	Low	87	1:1	87
3Q	1790+00	Ephemeral	Low	73	1:1	73
3RR	1764+00	Ephemeral	Low	206	1:1	206
3S	1792+50	Perennial	Medium	183	0.5:1	91.5
3SS	1792+50	Intermittent	Low	9	1:1	9
3U	1789+50	Intermittent	Low	44	1:1	44
3UU	1817+00	Intermittent	Low	6	1:1	6
3ZZ	1764+00	Perennial	Medium	95	0.5:1	47.5
4H	1754+00	Ephemeral	Low	331	1:1	331
4YYY	1755+00	Intermittent	Low	35	1:1	35
7AA	1347+00	Intermittent	Low	102	1:1	102
7BB	1395+00	Intermittent	Low	56	1:1	56
7BB_1	1394+00	Intermittent	Low	76	1:1	76
7BB_D	1397+00	Intermittent	Low	518	1:1	518
7D	1425+50	Intermittent	Low	27	1:1	27
7E	1424+00	Perennial	Low	327	1:1	327
7F	1422+50	Intermittent	Low	32	1:1	32
7G	1431+50	Perennial	Medium	20	0.5:1	10
7G_1	1428+00	Perennial	Medium	484	0.5:1	242
7GG	1409+50	Intermittent	Low	255	1:1	255
7H	1427+00	Intermittent	Low	373	1:1	373

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
7I	1410+00	Intermittent	Medium	37	0.5:1	18.5
7JJ	1411+50	Perennial	Medium	11	0.5:1	5.5
7JJ_1	1411+00	Perennial	Medium	7	0.5:1	3.5
7MM	1347+00	Intermittent	Low	150	1:1	150
7N	1396+50	Perennial	Low	218	1:1	218
7N_1	1394+50	Perennial	Low	76	1:1	76
7NN	1347+00	Ephemeral	Low	134	1:1	134
7O	1393+00	Perennial	Low	53	1:1	53
7O_1	1394+00	Perennial	Low	41	1:1	41
7PP	1347+00	Intermittent	Low	35	1:1	35
7S	1347+00	Perennial	Medium	128	0.5:1	64
7T	1424+00	Perennial	Low	17	1:1	17
7T_1	1425+00	Perennial	Low	207	1:1	207
7V	1429+00	Ephemeral	Low	46	1:1	46
8A	1334+50	Intermittent	Low	186	1:1	186
8E	1338+50	Intermittent	Low	106	1:1	106
8F	1336+00	Intermittent	Low	70	1:1	70
8G_1	1339+00	Intermittent	Low	47	1:1	47
8HH	1347+00	Intermittent	Medium	133	0.5:1	66.5
8I	1337+50	Ephemeral	Low	45	1:1	45
8J	1328+50	Intermittent	Low	181	1:1	181
8J_2	1333+50	Perennial	Medium	29	0.5:1	14.5
8MM	1334+00	Intermittent	Low	41	1:1	41
8N	1330+00	Intermittent	Medium	112	0.5:1	56
8N_1	1332+00	Perennial	Medium	319	0.5:1	159.5
8N_D	1329+50	Intermittent	Medium	51	0.5:1	25.5
8R_D1	1282+50	Intermittent	Low	347	1:1	347
8S	1292+00	Ephemeral	Low	137	1:1	137
8S_1	1289+00	Ephemeral	Low	7	1:1	7
8T	1289+00	Ephemeral	Low	118	1:1	118
8V	1310+00	Intermittent	Low	46	1:1	46
8W	1347+00	Intermittent	Medium	211	0.5:1	105.5
8W_1	1347+00	Intermittent	Medium	502	0.5:1	251
8Z	1347+00	Perennial	Medium	60	0.5:1	30
9A	1290+00	Intermittent	Low	141	1:1	141
9C	1289+00	Intermittent	Low	196	1:1	196
9CC	1227+00	Perennial	Low	325	1:1	325
9F	1186+00	Intermittent	Low	292	1:1	292
9FF	1229+00	Ephemeral	Low	103	1:1	103
9G	1184+50	Perennial	Medium	133	0.5:1	66.5
9G_1	1184+50	Perennial	Medium	50	0.5:1	25
9GG	1228+00	Intermittent	Low	5	1:1	5

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
9J	1203+00	Perennial	Medium	49	0.5:1	24.5
9JJ	1242+50	Perennial	Medium	407	0.5:1	203.5
9LL	1245+00	Ephemeral	Low	32	1:1	32
9M	1204+00	Intermittent	Low	308	1:1	308
9M_D	1208+00	Intermittent	Low	419	1:1	419
9MM	1244+00	Intermittent	Low	106	1:1	106
9P	1202+00	Ephemeral	Low	198	1:1	198
9QQ	1200+50	Intermittent	Low	99	1:1	99
9QQ_1	1199+50	Ephemeral	Low	89	1:1	89
9R	1289+50	Intermittent	Low	589	1:1	589
9RR	1204+00	Intermittent	Low	456	1:1	456
9RR_1	1206+00	Ephemeral	Low	113	1:1	113
9T	1264+00	Intermittent	Low	18	1:1	18
9T_1	1263+00	Perennial	Low	78	1:1	78
9VV	1225+00	Intermittent	Low	119	1:1	119
9Y	1240+50	Perennial	Medium	61	0.5:1	30.5
9Y_1	1240+00	Perennial	Medium	33	0.5:1	16.5
9Z	1240+50	Intermittent	Low	31	1:1	31
10AA	1115+00	Perennial	Low	265	1:1	265
10B_1	1163+50	Intermittent	Low	48	1:1	48
10BB	1119+00	Perennial	Low	586	1:1	586
10C	1163+50	Perennial	Medium	101	0.5:1	50.5
10C_1	1165+50	Perennial	Medium	53	0.5:1	26.5
10E	1160+50	Perennial	Low	73	1:1	73
10F	1160+00	Intermittent	Low	11	1:1	11
10F_1	1162+50	Intermittent	Low	79	1:1	79
10F_2	1163+00	Intermittent	Low	53	1:1	53
10FF	1158+00	Intermittent	Low	136	1:1	136
10J	1156+00	Intermittent	Low	174	1:1	174
10JJ	1158+00	Intermittent	Low	12	1:1	12
10KK	1158+00	Intermittent	Low	200	1:1	200
10L	1145+00	Intermittent	Low	524	1:1	524
10MM	1158+00	Intermittent	Low	25	1:1	25
10MM_1	1158+00	Intermittent	Medium	342	0.5:1	171
10N	1142+50	Intermittent	Low	74	1:1	74
10N_1	1140+50	Intermittent	Low	269	1:1	269
10N_D	1142+50	Intermittent	Low	191	1:1	191
10PP	1158+00	Intermittent	Medium	28	0.5:1	14
10PP_1	1158+00	Intermittent	Medium	80	0.5:1	40
10Q	1109+00	Ephemeral	Low	123	1:1	123
10S	1112+50	Perennial	Low	450	1:1	450
10U	1114+00	Intermittent	Low	176	1:1	176

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
10X	1134+00	Ephemeral	Low	174	1:1	174
11A	1104+00	Intermittent	Low	111	1:1	111
11A_1	1103+50	Perennial	Low	30	1:1	30
11AA	1067+50	Intermittent	Low	343	1:1	343
11C	1103+00	Intermittent	Low	257	1:1	257
11CC	1069+50	Intermittent	Low	18	1:1	18
11D	1102+50	Intermittent	Low	97	1:1	97
11E_D	1097+00	Perennial	Low	915	1:1	915
11E_D2	1092+00	Perennial	Low	46	1:1	46
11G	1095+00	Intermittent	Low	861	1:1	861
11GG	1034+50	Ephemeral	Low	156	1:1	156
11H	1079+50	Intermittent	Low	16	1:1	16
11L	1071+00	Perennial	Medium	51	0.5:1	25.5
11L_2	1071+00	Perennial	Medium	81	0.5:1	40.5
11M	1068+00	Intermittent	Low	4	1:1	4
11M_1	1069+00	Intermittent	Low	211	1:1	211
11M_B	1068+50	Intermittent	Low	31	1:1	31
11R	1014+00	Perennial	Low	99	1:1	99
11R_1	1014+50	Perennial	Low	60	1:1	60
11R_D	1011+00	Intermittent	Low	593	1:1	593
11T	1013+50	Perennial	Low	21	1:1	21
11V	1072+50	Perennial	Low	191	1:1	191
11Y	1060+00	Intermittent	Low	387	1:1	387
12C	0915+00	Perennial	Low	271	1:1	271
12CCC	0923+50	Perennial	Low	213	1:1	213
12F	0918+50	Perennial	Low	33	1:1	33
12FFF	0929+00	Ephemeral	Low	422	1:1	422
12GGG	0906+50	Ephemeral	Low	79	1:1	79
12H	0908+50	Perennial	Low	28	1:1	28
12H_2	0924+00	Perennial	Low	8	1:1	8
12H_3	0926+00	Perennial	Low	286	1:1	286
12H_4	0930+00	Perennial	Low	475	1:1	475
12H_5	0933+50	Perennial	Low	22	1:1	22
12HHH	0906+00	Intermittent	Low	176	1:1	176
12HHHH	0895+50	Intermittent	Low	43	1:1	43
12II	0928+00	Perennial	High	71	0:1	0
12II_4	0938+00	Perennial	High	292	0:1	0
12II_5	0938+00	Perennial	High	91	0:1	0
12JJJ	0906+50	Perennial	Low	28	1:1	28
12K	0910+00	Perennial	Low	60	1:1	60
12K_1	0912+50	Perennial	Low	3	1:1	3
12KK	0943+00	Perennial	Low	489	1:1	489

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
12KKK	0906+50	Intermittent	Low	265	1:1	265
12LL	0951+00	Ephemeral	Low	123	1:1	123
12MM	0967+00	Intermittent	Low	402	1:1	402
12MMM	0907+00	Ephemeral	Low	34	1:1	34
12NNN	0907+50	Intermittent	Low	174	1:1	174
12O	0907+50	Intermittent	Low	167	1:1	167
12O_1	0908+00	Intermittent	Low	84	1:1	84
12OO	0976+50	Perennial	Medium	65	0.5:1	32.5
12OO_1	0976+50	Perennial	Medium	33	0.5:1	16.5
12P	0909+00	Intermittent	Low	44	1:1	44
12PPP	0939+50	Intermittent	Low	74	1:1	74
12QQQ	0939+00	Intermittent	Low	168	1:1	168
12RRR	0946+00	Perennial	Low	29	1:1	29
12S	0923+00	Intermittent	Low	351	1:1	351
12T	0923+50	Intermittent	Low	40	1:1	40
12T_D	0921+50	Intermittent	Low	386	1:1	386
12UUU	0976+00	Perennial	Low	32	1:1	32
12VVV	0931+00	Intermittent	Low	431	1:1	431
12WW	0935+00	Perennial	Low	97	1:1	97
12WW_1	0934+50	Perennial	Low	24	1:1	24
12WW_2	0931+00	Perennial	Low	35	1:1	35
12WWW	0937+00	Intermittent	Low	84	1:1	84
12WWW_1	0935+00	Intermittent	Low	90	1:1	90
12XX	0925+00	Perennial	Medium	100	0.5:1	50
12XX_1	0923+50	Perennial	Medium	15	0.5:1	7.5
12Y	0929+50	Intermittent	Low	18	1:1	18
12Y_D	0929+00	Intermittent	Low	215	1:1	215
12YYY	0934+50	Perennial	Low	843	1:1	843
12YYY_1	0931+00	Perennial	Low	160	1:1	160
12Z	0917+50	Intermittent	Low	113	1:1	113
13A	0807+50	Intermittent	Low	143	1:1	143
13C	0863+00	Intermittent	Low	145	1:1	145
13C_1	0870+00	Intermittent	Low	601	1:1	601
13E	0794+00	Ephemeral	Low	28	1:1	28
13G	0792+00	Intermittent	Low	11	1:1	11
13H	0785+50	Perennial	Low	211	1:1	211
13I	0795+00	Ephemeral	Low	154	1:1	154
13I_1	0796+50	Intermittent	Low	170	1:1	170
13J	0767+00	Intermittent	Low	59	1:1	59
13J_1	0770+00	Intermittent	Low	235	1:1	235
13J_2	0774+00	Intermittent	Low	49	1:1	49
13K	0798+50	Intermittent	Low	158	1:1	158

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
13L	0798+50	Ephemeral	Low	198	1:1	198
13M	0836+00	Perennial	Low	1528	1:1	1528
13M_1	0828+50	Perennial	Low	78	1:1	78
13M_D	0844+50	Intermittent	Low	151	1:1	151
13N	0828+00	Ephemeral	Low	58	1:1	58
13P	0797+00	Perennial	High	100	0:1	0
13P_1	0797+50	Perennial	High	256	0:1	0
13Q	0863+00	Intermittent	Low	519	1:1	519
13R	0849+00	Intermittent	Low	192	1:1	192
13S	0846+00	Intermittent	Low	23	1:1	23
13X_1	0830+00	Perennial	Low	29	1:1	29
13Y	0830+00	Perennial	Low	86	1:1	86
13Z	0869+00	Intermittent	Low	380	1:1	380
14A	0745+00	Intermittent	Medium	9	0.5:1	4.5
14A_1	0745+00	Intermittent	Medium	161	0.5:1	80.5
14E	0745+00	Perennial	Medium	41	0.5:1	20.5
14G	0707+50	Intermittent	Medium	10	0.5:1	5
14G_1	0707+50	Intermittent	Medium	16	0.5:1	8
15A	0664+00	Intermittent	Low	581	1:1	581
15B	0662+50	Intermittent	Low	99	1:1	99
15C	0686+00	Intermittent	Low	14	1:1	14
15D	0685+50	Perennial	Medium	21	0.5:1	10.5
15E	0685+00	Ephemeral	Low	7	1:1	7
16A	0604+00	Perennial	Medium	50	0.5:1	25
16A_1	0597+00	Perennial	Medium	1116	0.5:1	558
16A_2	0589+00	Perennial	Medium	84	0.5:1	42
16D	0599+50	Intermittent	Low	36	1:1	36
16E	0638+00	Intermittent	Low	164	1:1	164
16G	0614+00	Perennial	Medium	172	0.5:1	86
16G_1	0606+00	Perennial	Medium	165	0.5:1	82.5
16G_D	0626+00	Perennial	Medium	56	0.5:1	28
16G_D1	0619+50	Perennial	Medium	141	0.5:1	70.5
16J	0610+50	Ephemeral	Low	42	1:1	42
16J_1	0610+00	Ephemeral	Low	3	1:1	3
17B	0544+00	Ephemeral	Low	50	1:1	50
17BB	0568+00	Intermittent	Medium	31	0.5:1	15.5
17DD	0565+50	Intermittent	Medium	26	0.5:1	13
17F	0588+50	Perennial	Medium	3	0.5:1	1.5
17Y	0558+00	Intermittent	Low	31	1:1	31
17Z	0579+50	Ephemeral	Low	197	1:1	197
18A	0527+00	Intermittent	Low	13	1:1	13
18B	0526+50	Ephemeral	Low	35	1:1	35

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-1a. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
18C_1	0517+50	Perennial	Medium	20	0.5:1	10
18G	0537+00	Intermittent	Low	5	1:1	5
18I	0509+00	Perennial	Low	5	1:1	5
19B	0436+00	Intermittent	Low	26	1:1	26
19C	0432+00	Perennial	Medium	33	0.5:1	16.5
19F	0434+00	Perennial	Low	104	1:1	104
19F_1	0438+00	Perennial	Low	110	1:1	110
19F_2	0441+00	Perennial	Low	67	1:1	67
19F_3	0454+00	Perennial	Low	59	1:1	59
19F_4	0468+00	Perennial	Low	4	1:1	4
19J_1	0408+00	Perennial	Low	32	1:1	32
19J_2	0410+00	Perennial	Low	67	1:1	67
19K_1	0470+00	Perennial	High	8	0:1	0
19K_2	0491+00	Perennial	Medium	135	0.5:1	67.5
19K_7	0588+50	Perennial	Medium	69	0.5:1	34.5
19K_8	0588+50	Perennial	Medium	71	0.5:1	35.5
19R	0462+50	Intermittent	Low	3	1:1	3
19R_1	0463+50	Intermittent	Low	1	1:1	1
19T	0467+50	Perennial	Low	74	1:1	74
19T_1	0468+50	Perennial	Low	121	1:1	121
19V	0490+00	Perennial	Medium	53	0.5:1	26.5
23G	4799+00	Perennial	Medium	1124	0.5:1	562
23G_1	4805+00	Perennial	Medium	56	0.5:1	28
23Q	4774+50	Intermittent	Medium	256	0.5:1	128
23Q_1	4782+00	Perennial	Medium	61	0.5:1	30.5
23Q_2	4783+50	Perennial	Medium	46	0.5:1	23
23R	4770+00	Perennial	Medium	36	0.5:1	18
23S	4796+00	Intermittent	Medium	33	0.5:1	16.5
Total						43,551

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-2a. On-Site Stream Mitigation - Middle-Potomac-Catoctin
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
20B	0342+00	Intermittent	Low	19	1:1	19
20D	0324+00	Perennial	Low	438	1:1	438
20E	0332+00	Intermittent	Low	22	1:1	22
21B	0305+00	Perennial	Medium	1024	0.5:1	512
21C	0276+00	Perennial	Medium	2298	0.5:1	1149
21C_1	0245+00	Perennial	Medium	1844	0.5:1	922
21C_2	0233+00	Perennial	Medium	406	0.5:1	203
21D	0225+50	Intermittent	Low	86	1:1	86
21D_1	0227+00	Intermittent	Low	215	1:1	215
21F	0246+00	Intermittent	Low	75	1:1	75
21G	0239+00	Intermittent	Low	57	1:1	57
21H	0247+50	Ephemeral	Low	27	1:1	27
21L_D	0278+50	Perennial	Low	71	1:1	71
21M	0262+50	Intermittent	Low	23	1:1	23
21V	0297+00	Ephemeral	Low	87	1:1	87
22A	0222+00	Intermittent	Low	140	1:1	140
22AA	0224+00	Perennial	Medium	82	0.5:1	41
22AA_1	0200+50	Perennial	Medium	16	0.5:1	8
22AA_2	0200+00	Perennial	Medium	98	0.5:1	49
22AA_3	0198+00	Perennial	Medium	188	0.5:1	94
22B	0219+00	Intermittent	Low	35	1:1	35
22C	0219+00	Intermittent	Low	50	1:1	50
22D	0218+50	Intermittent	Low	144	1:1	144
22EE	0192+00	Ephemeral	Low	45	1:1	45
22FF	0177+00	Ephemeral	Low	34	1:1	34
22H	0198+00	Intermittent	Low	7	1:1	7
22H_1	0198+00	Intermittent	Low	10	1:1	10
22HH	0132+00	Intermittent	Medium	260	0.5:1	130
22HH_1	0129+00	Intermittent	Medium	154	0.5:1	77
22HH_2	0127+50	Intermittent	Medium	117	0.5:1	58.5
22KK	0198+00	Perennial	Low	26	1:1	26
22M_1	0114+00	Perennial	Medium	30	0.5:1	15
22MM	0106+00	Perennial	High	1025	0:1	0
22MM_B	0106+00	Perennial	High	138	0:1	0
22NN	0110+00	Intermittent	Low	275	1:1	275
22NN_B	0109+00	Intermittent	Low	166	1:1	166
22P	0125+00	Intermittent	Medium	9	0.5:1	4.5
22Q	0125+00	Perennial	Medium	136	0.5:1	68
22Q_1	0125+00	Perennial	Medium	61	0.5:1	30.5
22QQ	0113+50	Intermittent	Low	106	1:1	106
22T_D	0128+50	Intermittent	Low	8	1:1	8
22T_D1	0128+50	Intermittent	Low	34	1:1	34
22T_D2	0128+50	Intermittent	Low	92	1:1	92
22V	0118+50	Intermittent	Low	76	1:1	76

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-2a. On-Site Stream Mitigation - Middle-Potomac-Catoctin
Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
22V_1	0118+50	Intermittent	Low	39	1:1	39
22V_2	0118+50	Intermittent	Low	26	1:1	26
22Z	0198+00	Perennial	Medium	72	0.5:1	36
22Z_1	0197+00	Perennial	Medium	38	0.5:1	19
23A_1	3744+00	Perennial	High	110	0:1	0
23A_3	3758+00	Perennial	High	352	0:1	0
23AA	3749+50	Perennial	Medium	73	0.5:1	36.5
23AA_1	3751+00	Perennial	Medium	210	0.5:1	105
23D	3755+50	Intermittent	Medium	677	0.5:1	338.5
23DD	3701+50	Intermittent	Low	100	1:1	100
23K	3701+00	Perennial	Medium	70	0.5:1	35
23K_D	3688+00	Perennial	Medium	601	0.5:1	300.5
23N	4718+00	Intermittent	Medium	164	0.5:1	82
23N_D	4730+00	Intermittent	Medium	32	0.5:1	16
23V	3722+00	Intermittent	Low	13	1:1	13
24A	3683+00	Perennial	High	33	0:1	0
24A_1	3683+00	Perennial	High	50	0:1	0
24D	3639+50	Perennial	Medium	12	0.5:1	6
24F_2	3627+00	Perennial	High	50	0:1	0
24F_3	3626+00	Perennial	High	35	0:1	0
25F	3582+00	Ephemeral	Low	203	1:1	203
25G	3597+00	Intermittent	Low	125	1:1	125
25L	3597+00	Intermittent	Low	66	1:1	66
26B	3509+00	Intermittent	Medium	37	0.5:1	18.5
26C	3525+00	Intermittent	High	96	0:1	0
26G	3534+00	Ephemeral	Medium	139	0.5:1	69.5
26G_1	3530+50	Intermittent	Medium	418	0.5:1	209
26J	3524+00	Intermittent	Medium	31	0.5:1	15.5
27A	3478+50	Perennial	High	34	0:1	0
27A_1	3480+00	Perennial	High	85	0:1	0
27A_2	3484+00	Perennial	High	59	0:1	0
27B	3479+00	Intermittent	Medium	16	0.5:1	8
27K	3484+00	Ephemeral	Low	41	1:1	41
28B	3340+00	Intermittent	Low	64	1:1	64
29A_2	3340+00	Perennial	High	30	0:1	0
29B	3329+00	Perennial	High	35	0:1	0
29B_1	3329+00	Perennial	High	34	0:1	0
29D_D	3340+00	Intermittent	Low	93	1:1	93
29K	3340+00	Intermittent	Medium	12	0.5:1	6
Total						7,801

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-3a. On-Site Stream Mitigation - Patuxent

Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
4B	1687+50	Intermittent	Low	20	1:1	20
4BBB	1675+00	Perennial	Medium	372	0.5:1	186
4BBB_1	1672+50	Perennial	Medium	40	0.5:1	20
4BBBB	1735+00	Ephemeral	Low	71	1:1	71
4C	1687+00	Ephemeral	Low	42	1:1	42
4E	1694+00	Intermittent	Medium	36	0.5:1	18
4EE	1665+00	Perennial	Low	71	1:1	71
4GG	1745+00	Intermittent	Low	72	1:1	72
4GGG	1667+00	Ephemeral	Low	236	1:1	236
4GGGG	1733+00	Perennial	Low	11	1:1	11
4J	1744+00	Ephemeral	Low	98	1:1	98
4JJJ	1693+00	Perennial	Low	17	1:1	17
4K	1725+50	Intermittent	Low	15	1:1	15
4L	1724+50	Intermittent	Low	19	1:1	19
4LLL	1692+50	Ephemeral	Low	87	1:1	87
4M	1718+00	Perennial	High	105	0:1	0
4MMMM	1694+50	Ephemeral	Low	87	1:1	87
4NN	1713+50	Intermittent	Low	37	1:1	37
4NNN_1	1631+50	Intermittent	Medium	42	0.5:1	21
4O	1706+00	Intermittent	Medium	343	0.5:1	171.5
4OO	1712+00	Intermittent	Low	50	1:1	50
40000	1693+50	Intermittent	Medium	72	0.5:1	36
4P	1703+00	Ephemeral	Low	40	1:1	40
4PPPP	1715+00	Perennial	Medium	232	0.5:1	116
4Q	1713+00	Perennial	Medium	144	0.5:1	72
4Q_1	1713+50	Perennial	Medium	51	0.5:1	25.5
4QQ	1708+00	Intermittent	Low	18	1:1	18
4QQQQ	1713+00	Intermittent	Medium	90	0.5:1	45
4RRR	1687+00	Intermittent	Medium	81	0.5:1	40.5
4S	1714+50	Ephemeral	Low	118	1:1	118
4T	1674+50	Intermittent	Low	40	1:1	40
4U	1675+00	Intermittent	Low	78	1:1	78
4UUU	1688+00	Intermittent	Medium	69	0.5:1	34.5
4W	1665+00	Perennial	Medium	36	0.5:1	18
4W_2	1665+50	Perennial	Medium	26	0.5:1	13
4Z_1	1631+50	Perennial	Medium	50	0.5:1	25
4Z_2	1630+50	Perennial	Medium	42	0.5:1	21
4Z_3	1623+00	Perennial	Medium	98	0.5:1	49
5BB	1547+00	Intermittent	Low	108	1:1	108
5F	1619+00	Perennial	Medium	49	0.5:1	24.5
5F_1	1620+50	Perennial	Medium	142	0.5:1	71
5J	1621+00	Intermittent	Low	5	1:1	5
5JJ	1570+00	Ephemeral	Low	10	1:1	10
5KK	1563+00	Intermittent	Low	5	1:1	5
5MM	1555+00	Intermittent	Low	20	1:1	20

ALTERNATIVES 8 AND 9: ONSITE MITIGATION

Table D-3a. On-Site Stream Mitigation - Patuxent

Alternatives 8 and 9

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
5N	1620+00	Intermittent	Low	122	1:1	122
5O	1596+00	Ephemeral	Low	197	1:1	197
5P	1594+00	Intermittent	Low	144	1:1	144
5Q	1554+50	Perennial	Low	943	1:1	943
5QQ	1551+00	Intermittent	Low	12	1:1	12
5S	1558+00	Perennial	Medium	70	0.5:1	35
5S_1	1558+00	Perennial	Medium	47	0.5:1	23.5
5T	1557+50	Perennial	Low	11	1:1	11
5Y	1549+00	Ephemeral	Low	111	1:1	111
6AA	1480+50	Intermittent	Low	6	1:1	6
6AAA	1527+50	Intermittent	Low	47	1:1	47
6AAA_1	1527+00	Intermittent	Low	33	1:1	33
6AAA_2	1526+00	Intermittent	Low	25	1:1	25
6AAAA	1464+50	Ephemeral	Low	9	1:1	9
6B	1511+00	Perennial	Low	9	1:1	9
6EEE	1457+50	Intermittent	Low	22	1:1	22
6FFFF_1	1526+50	Intermittent	Low	3	1:1	3
6G	1451+50	Perennial	Medium	1	0.5:1	0.5
6G_1	1467+00	Perennial	Medium	1064	0.5:1	532
6G_2	1493+00	Perennial	Medium	672	0.5:1	336
6G_3	1500+00	Perennial	Medium	1063	0.5:1	531.5
6G_6	1555+50	Perennial	Medium	270	0.5:1	135
6GGG	1543+00	Intermittent	Low	112	1:1	112
6GGG_1	1546+50	Intermittent	Low	200	1:1	200
6III	1511+00	Intermittent	Low	409	1:1	409
6J	1509+50	Ephemeral	Low	24	1:1	24
6JJ	1513+00	Perennial	Low	32	1:1	32
6L	1521+00	Intermittent	Low	13	1:1	13
6LLL	1498+00	Perennial	Low	738	1:1	738
6MM	1539+00	Ephemeral	Low	149	1:1	149
6MMM	1496+00	Perennial	Low	33	1:1	33
6NNN_1	1496+00	Intermittent	Low	30	1:1	30
6RRR	1461+00	Intermittent	Low	52	1:1	52
6RRR_D	1460+00	Intermittent	Low	115	1:1	115
6T	1493+50	Intermittent	Low	59	1:1	59
6TTT	1479+00	Intermittent	Low	211	1:1	211
6UU	1465+00	Intermittent	Medium	35	0.5:1	17.5
6UUU	1478+00	Intermittent	Low	62	1:1	62
6V	1485+50	Ephemeral	Low	185	1:1	185
6WW	1456+50	Intermittent	Medium	61	0.5:1	30.5
6XX	1456+00	Ephemeral	Low	53	1:1	53
6YY	1456+50	Ephemeral	Low	63	1:1	63
7B	1443+50	Ephemeral	Low	482	1:1	482
Total						8,740

ALTERNATIVE 9M

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan

Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
1D_1	1989+50	Perennial	Medium	121	0.5:1	60.5
1D_2	1987+50	Perennial	Medium	78	0.5:1	39
1G	1994+50	Ephemeral	Low	19	1:1	19
1H	1995+00	Intermittent	Low	2	1:1	2
1H_D	1999+00	Intermittent	Low	625	1:1	625
1O	1929+00	Ephemeral	Low	227	1:1	227
1P	1931+00	Intermittent	Low	178	1:1	178
1Q	1930+00	Perennial	High	56	0:1	0
1Q_1	1927+00	Perennial	High	252	0:1	0
1R	1943+00	Perennial	Medium	482	0.5:1	241
1R_1	1936+00	Perennial	Medium	548	0.5:1	274
1RR	1958+50	Intermittent	Low	26	1:1	26
1SS	1957+00	Ephemeral	Low	317	1:1	317
1TT	1969+00	Intermittent	Low	53	1:1	53
1VV	1973+00	Perennial	Medium	39	0.5:1	19.5
1VV_1	1974+50	Perennial	Medium	18	0.5:1	9
1XX	1975+00	Ephemeral	Medium	136	0.5:1	68
1XX_1	1974+00	Intermittent	Medium	141	0.5:1	70.5
1YY	1972+00	Intermittent	Low	362	1:1	362
2A	1924+50	Ephemeral	Low	170	1:1	170
2AA	1857+00	Intermittent	Low	50	1:1	50
2D	1917+00	Ephemeral	Low	13	1:1	13
2E	1916+50	Intermittent	Low	77	1:1	77
2F	1901+00	Intermittent	Medium	669	0.5:1	334.5
2F_D	1896+00	Intermittent	Medium	499	0.5:1	249.5
2H	1870+00	Intermittent	Low	53	1:1	53
2HH	1902+50	Intermittent	Low	52	1:1	52
2I	1871+00	Intermittent	Low	244	1:1	244
2J	1864+50	Perennial	Medium	44	0.5:1	22
2J_1	1863+00	Perennial	Medium	30	0.5:1	15
2JJ	1917+00	Intermittent	Low	73	1:1	73
2L	1862+00	Intermittent	Medium	313	0.5:1	156.5
2MM	1904+00	Perennial	Medium	4	0.5:1	2
2OO	1915+00	Ephemeral	Low	33	1:1	33
2R	1870+00	Perennial	Medium	27	0.5:1	13.5
2T	1874+00	Intermittent	Medium	989	0.5:1	494.5
2V	1857+50	Perennial	Medium	16	0.5:1	8
2VV	1921+00	Intermittent	Low	17	1:1	17
2W	1914+00	Intermittent	Low	451	1:1	451
2X	1916+50	Perennial	Medium	16	0.5:1	8
2X_1	1916+50	Perennial	Medium	203	0.5:1	101.5
2Y	1928+00	Perennial	Low	241	1:1	241

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
2Y_1	1926+00	Perennial	Low	388	1:1	388
2YY	1921+00	Intermittent	Low	51	1:1	51
3A	1836+00	Perennial	Medium	44	0.5:1	22
3AA_1	1803+00	Perennial	Low	40	1:1	40
3BB	1804+00	Ephemeral	Low	120	1:1	120
3BBB	1804+00	Intermittent	Low	41	1:1	41
3CC	1819+50	Intermittent	Low	303	1:1	303
3D	1822+50	Perennial	Medium	45	0.5:1	22.5
3D_1	1820+50	Perennial	Medium	87	0.5:1	43.5
3DD	1821+00	Perennial	Medium	45	0.5:1	22.5
3F	1801+50	Ephemeral	Low	244	1:1	244
3FFF	1804+50	Intermittent	Low	52	1:1	52
3FFF_D	1805+00	Intermittent	Low	66	1:1	66
3H	1823+00	Intermittent	Low	102	1:1	102
3I	1818+00	Intermittent	Low	551	1:1	551
3JJ	1758+00	Intermittent	Low	321	1:1	321
3L	1792+50	Perennial	Medium	35	0.5:1	17.5
3L_1	1793+50	Perennial	Medium	38	0.5:1	19
3LL	1754+50	Intermittent	Low	92	1:1	92
3LL_1	1759+00	Intermittent	Low	521	1:1	521
3LLL	1794+00	Ephemeral	Low	16	1:1	16
3PP	1764+00	Ephemeral	Low	87	1:1	87
3Q	1790+00	Ephemeral	Low	73	1:1	73
3RR	1764+00	Ephemeral	Low	206	1:1	206
3S	1792+50	Perennial	Medium	183	0.5:1	91.5
3SS	1792+50	Intermittent	Low	9	1:1	9
3U	1789+50	Intermittent	Low	44	1:1	44
3UU	1817+00	Intermittent	Low	6	1:1	6
3ZZ	1764+00	Perennial	Medium	95	0.5:1	47.5
4H	1754+00	Ephemeral	Low	331	1:1	331
4YYY	1755+00	Intermittent	Low	35	1:1	35
7AA	1347+00	Intermittent	Low	102	1:1	102
7BB	1395+00	Intermittent	Low	56	1:1	56
7BB_1	1394+00	Intermittent	Low	76	1:1	76
7BB_D	1397+00	Intermittent	Low	518	1:1	518
7D	1425+50	Intermittent	Low	27	1:1	27
7E	1424+00	Perennial	Low	327	1:1	327
7F	1422+50	Intermittent	Low	32	1:1	32
7G	1431+50	Perennial	Medium	20	0.5:1	10
7G_1	1428+00	Perennial	Medium	484	0.5:1	242
7GG	1409+50	Intermittent	Low	255	1:1	255
7H	1427+00	Intermittent	Low	373	1:1	373

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
7I	1410+00	Intermittent	Medium	37	0.5:1	18.5
7JJ	1411+50	Perennial	Medium	11	0.5:1	5.5
7JJ_1	1411+00	Perennial	Medium	7	0.5:1	3.5
7MM	1347+00	Intermittent	Low	150	1:1	150
7N	1396+50	Perennial	Low	218	1:1	218
7N_1	1394+50	Perennial	Low	76	1:1	76
7NN	1347+00	Ephemeral	Low	134	1:1	134
7O	1393+00	Perennial	Low	53	1:1	53
7O_1	1394+00	Perennial	Low	41	1:1	41
7PP	1347+00	Intermittent	Low	35	1:1	35
7S	1347+00	Perennial	Medium	128	0.5:1	64
7T	1424+00	Perennial	Low	17	1:1	17
7T_1	1425+00	Perennial	Low	207	1:1	207
7V	1429+00	Ephemeral	Low	46	1:1	46
8A	1334+50	Intermittent	Low	186	1:1	186
8E	1338+50	Intermittent	Low	106	1:1	106
8F	1336+00	Intermittent	Low	70	1:1	70
8G_1	1339+00	Intermittent	Low	47	1:1	47
8HH	1347+00	Intermittent	Medium	133	0.5:1	66.5
8I	1337+50	Ephemeral	Low	45	1:1	45
8J	1328+50	Intermittent	Low	181	1:1	181
8J_2	1333+50	Perennial	Medium	29	0.5:1	14.5
8MM	1334+00	Intermittent	Low	41	1:1	41
8N	1330+00	Intermittent	Medium	112	0.5:1	56
8N_1	1332+00	Perennial	Medium	319	0.5:1	159.5
8N_D	1329+50	Intermittent	Medium	51	0.5:1	25.5
8R_D1	1282+50	Intermittent	Low	347	1:1	347
8S	1292+00	Ephemeral	Low	137	1:1	137
8S_1	1289+00	Ephemeral	Low	7	1:1	7
8T	1289+00	Ephemeral	Low	118	1:1	118
8V	1310+00	Intermittent	Low	46	1:1	46
8W	1347+00	Intermittent	Medium	211	0.5:1	105.5
8W_1	1347+00	Intermittent	Medium	502	0.5:1	251
8Z	1347+00	Perennial	Medium	60	0.5:1	30
9A	1290+00	Intermittent	Low	141	1:1	141
9C	1289+00	Intermittent	Low	196	1:1	196
9CC	1227+00	Perennial	Low	325	1:1	325
9F	1186+00	Intermittent	Low	292	1:1	292
9FF	1229+00	Ephemeral	Low	103	1:1	103
9G	1184+50	Perennial	Medium	133	0.5:1	66.5
9G_1	1184+50	Perennial	Medium	50	0.5:1	25
9GG	1228+00	Intermittent	Low	5	1:1	5

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
9J	1203+00	Perennial	Medium	49	0.5:1	24.5
9JJ	1242+50	Perennial	Medium	407	0.5:1	203.5
9LL	1245+00	Ephemeral	Low	32	1:1	32
9M	1204+00	Intermittent	Low	308	1:1	308
9M_D	1208+00	Intermittent	Low	419	1:1	419
9MM	1244+00	Intermittent	Low	106	1:1	106
9P	1202+00	Ephemeral	Low	198	1:1	198
9QQ	1200+50	Intermittent	Low	99	1:1	99
9QQ_1	1199+50	Ephemeral	Low	89	1:1	89
9R	1289+50	Intermittent	Low	589	1:1	589
9RR	1204+00	Intermittent	Low	456	1:1	456
9RR_1	1206+00	Ephemeral	Low	113	1:1	113
9T	1264+00	Intermittent	Low	18	1:1	18
9T_1	1263+00	Perennial	Low	78	1:1	78
9VV	1225+00	Intermittent	Low	119	1:1	119
9Y	1240+50	Perennial	Medium	61	0.5:1	30.5
9Y_1	1240+00	Perennial	Medium	33	0.5:1	16.5
9Z	1240+50	Intermittent	Low	31	1:1	31
10AA	1115+00	Perennial	Low	265	1:1	265
10B_1	1163+50	Intermittent	Low	48	1:1	48
10BB	1119+00	Perennial	Low	586	1:1	586
10C	1163+50	Perennial	Medium	101	0.5:1	50.5
10C_1	1165+50	Perennial	Medium	53	0.5:1	26.5
10E	1160+50	Perennial	Low	73	1:1	73
10F	1160+00	Intermittent	Low	11	1:1	11
10F_1	1162+50	Intermittent	Low	79	1:1	79
10F_2	1163+00	Intermittent	Low	53	1:1	53
10FF	1158+00	Intermittent	Low	136	1:1	136
10J	1156+00	Intermittent	Low	174	1:1	174
10JJ	1158+00	Intermittent	Low	12	1:1	12
10KK	1158+00	Intermittent	Low	200	1:1	200
10L	1145+00	Intermittent	Low	524	1:1	524
10MM	1158+00	Intermittent	Low	25	1:1	25
10MM_1	1158+00	Intermittent	Medium	342	0.5:1	171
10N	1142+50	Intermittent	Low	74	1:1	74
10N_1	1140+50	Intermittent	Low	269	1:1	269
10N_D	1142+50	Intermittent	Low	191	1:1	191
10PP	1158+00	Intermittent	Medium	28	0.5:1	14
10PP_1	1158+00	Intermittent	Medium	80	0.5:1	40
10Q	1109+00	Ephemeral	Low	123	1:1	123
10S	1112+50	Perennial	Low	450	1:1	450
10U	1114+00	Intermittent	Low	176	1:1	176

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
10X	1134+00	Ephemeral	Low	174	1:1	174
11A	1104+00	Intermittent	Low	111	1:1	111
11A_1	1103+50	Perennial	Low	30	1:1	30
11AA	1067+50	Intermittent	Low	343	1:1	343
11C	1103+00	Intermittent	Low	257	1:1	257
11CC	1069+50	Intermittent	Low	18	1:1	18
11D	1102+50	Intermittent	Low	97	1:1	97
11E_D	1097+00	Perennial	Low	915	1:1	915
11E_D2	1092+00	Perennial	Low	46		46
11G	1095+00	Intermittent	Low	861	1:1	861
11GG	1034+50	Ephemeral	Low	156	1:1	156
11H	1079+50	Intermittent	Low	16	1:1	16
11L	1071+00	Perennial	Medium	51	0.5:1	25.5
11L_2	1071+00	Perennial	Medium	81	0.5:1	40.5
11M	1068+00	Intermittent	Low	4	1:1	4
11M_1	1069+00	Intermittent	Low	211	1:1	211
11M_B	1068+50	Intermittent	Low	31	1:1	31
11R	1014+00	Perennial	Low	99	1:1	99
11R_1	1014+50	Perennial	Low	60	1:1	60
11R_D	1011+00	Intermittent	Low	593	1:1	593
11T	1013+50	Perennial	Low	21	1:1	21
11V	1072+50	Perennial	Low	191	1:1	191
11Y	1060+00	Intermittent	Low	387	1:1	387
12C	0915+00	Perennial	Low	276	1:1	276
12CCC	0923+50	Perennial	Low	213	1:1	213
12F	0918+50	Perennial	Low	33	1:1	33
12FFF	0929+00	Ephemeral	Low	422	1:1	422
12GGG	0906+50	Ephemeral	Low	78	1:1	78
12H	0908+50	Perennial	Low	28	1:1	28
12H_2	0924+00	Perennial	Low	8	1:1	8
12H_3	0926+00	Perennial	Low	286	1:1	286
12H_4	0930+00	Perennial	Low	475	1:1	475
12H_5	0933+50	Perennial	Low	22	1:1	22
12HHH	0906+00	Intermittent	Low	176	1:1	176
12HHHH	0895+50	Intermittent	Low	43	1:1	43
12II	0928+00	Perennial	High	71	0:1	0
12II_4	0938+00	Perennial	High	292	0:1	0
12II_5	0938+00	Perennial	High	84	0:1	0
12JJJ	0906+50	Perennial	Low	28	1:1	28
12K	0910+00	Perennial	Low	59	1:1	59
12K_1	0912+50	Perennial	Low	3	1:1	3
12KK	0943+00	Perennial	Low	489	1:1	489

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
12KKK	0906+50	Intermittent	Low	265	1:1	265
12LL	0951+00	Ephemeral	Low	123	1:1	123
12MM	0967+00	Intermittent	Low	402	1:1	402
12MMM	0907+00	Ephemeral	Low	34	1:1	34
12NNN	0907+50	Intermittent	Low	174	1:1	174
12O	0907+50	Intermittent	Low	167	1:1	167
12O_1	0908+00	Intermittent	Low	79	1:1	79
12OO	0976+50	Perennial	Medium	65	0.5:1	32.5
12OO_1	0976+50	Perennial	Medium	33	0.5:1	16.5
12P	0909+00	Intermittent	Low	44	1:1	44
12PPP	0939+50	Intermittent	Low	75	1:1	75
12QQQ	0939+00	Intermittent	Low	167	1:1	167
12RRR	0946+00	Perennial	Low	29	1:1	29
12S	0923+00	Intermittent	Low	343	1:1	343
12T	0923+50	Intermittent	Low	40	1:1	40
12T_D	0921+50	Intermittent	Low	386	1:1	386
12UUU	0976+00	Perennial	Low	32	1:1	32
12VVV	0931+00	Intermittent	Low	433	1:1	433
12WW	0935+00	Perennial	Low	97	1:1	97
12WW_1	0934+50	Perennial	Low	24	1:1	24
12WW_2	0931+00	Perennial	Low	35	1:1	35
12WWW	0937+00	Intermittent	Low	84	1:1	84
12WWW_1	0935+00	Intermittent	Low	90	1:1	90
12XX	0925+00	Perennial	Medium	100	0.5:1	50
12XX_1	0923+50	Perennial	Medium	14	0.5:1	7
12Y	0929+50	Intermittent	Low	18	1:1	18
12Y_D	0929+00	Intermittent	Low	215	1:1	215
12YYY	0934+50	Perennial	Low	843	1:1	843
12YYY_1	0931+00	Perennial	Low	160	1:1	160
12Z	0917+50	Intermittent	Low	113	1:1	113
13A	0807+50	Intermittent	Low	122	1:1	122
13C	0863+00	Intermittent	Low	147	1:1	147
13C_1	0870+00	Intermittent	Low	615	1:1	615
13E	0794+00	Ephemeral	Low	27	1:1	27
13G	0792+00	Intermittent	Low	11	1:1	11
13H	0785+50	Perennial	Low	210	1:1	210
13I	0795+00	Ephemeral	Low	154	1:1	154
13I_1	0796+50	Intermittent	Low	170	1:1	170
13J	0767+00	Intermittent	Low	63	1:1	63
13J_1	0770+00	Intermittent	Low	210	1:1	210
13J_2	0774+00	Intermittent	Low	83	1:1	83
13K	0798+50	Intermittent	Low	116	1:1	116

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
13L	0798+50	Ephemeral	Low	197	1:1	197
13M	0836+00	Perennial	Low	1518	1:1	1518
13M_1	0828+50	Perennial	Low	66	1:1	66
13M_D	0844+50	Intermittent	Low	152	1:1	152
13N	0828+00	Ephemeral	Low	65	1:1	65
13P	0797+00	Perennial	High	62	0:1	0
13P_1	0797+50	Perennial	High	231	0:1	0
13Q	0863+00	Intermittent	Low	519	1:1	519
13R	0849+00	Intermittent	Low	167	1:1	167
13X_1	0830+00	Perennial	Low	14	1:1	14
13Y	0830+00	Perennial	Low	72	1:1	72
13Z	0869+00	Intermittent	Low	384	1:1	384
14A	0745+00	Intermittent	Medium	2	0.5:1	1
14A_1	0745+00	Intermittent	Medium	162	0.5:1	81
14E	0745+00	Perennial	Medium	53	0.5:1	26.5
14G	0707+50	Intermittent	Medium	9	0.5:1	4.5
14G_1	0707+50	Intermittent	Medium	16	0.5:1	8
15A	0664+00	Intermittent	Low	578	1:1	578
15B	0662+50	Intermittent	Low	104	1:1	104
15D	0685+50	Perennial	Medium	8	0.5:1	4
16A	0604+00	Perennial	Medium	38	0.5:1	19
16A_1	0597+00	Perennial	Medium	1116	0.5:1	558
16A_2	0589+00	Perennial	Medium	84	0.5:1	42
16D	0599+50	Intermittent	Low	29	1:1	29
16E	0638+00	Intermittent	Low	153	1:1	153
16F	0626+50	Ephemeral	Low	21	1:1	21
16G	0614+00	Perennial	Medium	136	0.5:1	68
16G_1	0606+00	Perennial	Medium	148	0.5:1	74
16G_D	0626+00	Perennial	Medium	56	0.5:1	28
16G_D1	0619+50	Perennial	Medium	141	0.5:1	70.5
16J	0610+50	Ephemeral	Low	7	1:1	7
16J_1	0610+00	Ephemeral	Low	3	1:1	3
17B	0544+00	Ephemeral	Low	50	1:1	50
17BB	0568+00	Intermittent	Medium	31	0.5:1	15.5
17DD	0565+50	Intermittent	Medium	3	0.5:1	1.5
17Y	0558+00	Intermittent	Low	31	1:1	31
17Z	0579+50	Ephemeral	Low	177	1:1	177
18A	0527+00	Intermittent	Low	13	1:1	13
18B	0526+50	Ephemeral	Low	38	1:1	38
18C_1	0517+50	Perennial	Medium	20	0.5:1	10
18G	0537+00	Intermittent	Low	5	1:1	5
18I	0509+00	Perennial	Low	5	1:1	5

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-1b. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan

Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
19B	0436+00	Intermittent	Low	26	1:1	26
19C	0432+00	Perennial	Medium	33	0.5:1	16.5
19F	0434+00	Perennial	Low	104	1:1	104
19F_1	0438+00	Perennial	Low	110	1:1	110
19F_2	0441+00	Perennial	Low	67	1:1	67
19F_3	0454+00	Perennial	Low	59	1:1	59
19F_4	0468+00	Perennial	Low	4	1:1	4
19J_1	0408+00	Perennial	Low	33	1:1	33
19J_2	0410+00	Perennial	Low	61	1:1	61
19K_1	0470+00	Perennial	High	8	0:1	0
19K_2	0491+00	Perennial	Medium	135	0.5:1	67.5
19K_7	0588+50	Perennial	Medium	46	0.5:1	23
19K_8	0588+50	Perennial	Medium	47	0.5:1	23.5
19R	0462+50	Intermittent	Low	3	1:1	3
19R_1	0463+50	Intermittent	Low	1	1:1	1
19T	0467+50	Perennial	Low	74	1:1	74
19T_1	0468+50	Perennial	Low	121	1:1	121
19V	0490+00	Perennial	Medium	39	0.5:1	19.5
23G	4799+00	Perennial	Medium	1131	0.5:1	565.5
23G_1	4805+00	Perennial	Medium	55	0.5:1	27.5
23Q	4774+50	Intermittent	Medium	234	0.5:1	117
23Q_1	4782+00	Perennial	Medium	58	0.5:1	29
23Q_2	4783+50	Perennial	Medium	43	0.5:1	21.5
23R	4770+00	Perennial	Medium	10	0.5:1	5
23S	4796+00	Intermittent	Medium	17	0.5:1	8.5
Total						43,234

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-2b. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
20B	0342+00	Intermittent	Low	21	1:1	21
20D	0324+00	Perennial	Low	438	1:1	438
20E	0332+00	Intermittent	Low	22	1:1	22
21B	0305+00	Perennial	Medium	965	0.5:1	482.5
21C	0276+00	Perennial	Medium	2298	0.5:1	1149
21C_1	0245+00	Perennial	Medium	1844	0.5:1	922
21C_2	0233+00	Perennial	Medium	406	0.5:1	203
21D	0225+50	Intermittent	Low	86	1:1	86
21D_1	0227+00	Intermittent	Low	215	1:1	215
21F	0246+00	Intermittent	Low	75	1:1	75
21G	0239+00	Intermittent	Low	57	1:1	57
21H	0247+50	Ephemeral	Low	27	1:1	27
21L_D	0278+50	Perennial	Low	71	1:1	71
21M	0262+50	Intermittent	Low	23	1:1	23
21V	0297+00	Ephemeral	Low	87	1:1	87
22A	0222+00	Intermittent	Low	140	1:1	140
22AA	0224+00	Perennial	Medium	82	0.5:1	41
22AA_1	0200+50	Perennial	Medium	16	0.5:1	8
22AA_2	0200+00	Perennial	Medium	98	0.5:1	49
22AA_3	0198+00	Perennial	Medium	188	0.5:1	94
22B	0219+00	Intermittent	Low	35	1:1	35
22C	0219+00	Intermittent	Low	50	1:1	50
22D	0218+50	Intermittent	Low	144	1:1	144
22EE	0192+00	Ephemeral	Low	45	1:1	45
22FF	0177+00	Ephemeral	Low	34	1:1	34
22H	0198+00	Intermittent	Low	7	1:1	7
22H_1	0198+00	Intermittent	Low	10	1:1	10
22HH	0132+00	Intermittent	Medium	260	0.5:1	130
22HH_1	0129+00	Intermittent	Medium	154	0.5:1	77
22HH_2	0127+50	Intermittent	Medium	117	0.5:1	58.5
22KK	0198+00	Perennial	Low	26	1:1	26
22M_1	0114+00	Perennial	Medium	30	0.5:1	15
22MM	0106+00	Perennial	High	1025	0:1	0
22MM_B	0106+00	Perennial	High	138	0:1	0
22NN	0110+00	Intermittent	Low	275	1:1	275
22NN_B	0109+00	Intermittent	Low	166	1:1	166
22P	0125+00	Intermittent	Medium	9	0.5:1	4.5
22Q	0125+00	Perennial	Medium	136	0.5:1	68
22Q_1	0125+00	Perennial	Medium	61	0.5:1	30.5
22QQ	0113+50	Intermittent	Low	106	1:1	106
22T_D	0128+50	Intermittent	Low	8	1:1	8
22T_D1	0128+50	Intermittent	Low	34	1:1	34
22T_D2	0128+50	Intermittent	Low	92	1:1	92
22V	0118+50	Intermittent	Low	76	1:1	76

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-2b. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
22V_1	0118+50	Intermittent	Low	39	1:1	39
22V_2	0118+50	Intermittent	Low	26	1:1	26
22Z	0198+00	Perennial	Medium	72	0.5:1	36
22Z_1	0197+00	Perennial	Medium	38	0.5:1	19
23A_1	3744+00	Perennial	High	110	0:1	0
23A_3	3758+00	Perennial	High	363	0:1	0
23AA	3749+50	Perennial	Medium	76	0.5:1	38
23AA_1	3751+00	Perennial	Medium	202	0.5:1	101
23D	3755+50	Intermittent	Medium	700	0.5:1	350
23DD	3701+50	Intermittent	Low	97	1:1	97
23K	3701+00	Perennial	Medium	70	0.5:1	35
23K_D	3688+00	Perennial	Medium	640	0.5:1	320
23N	4718+00	Intermittent	Medium	164	0.5:1	82
23N_D	4730+00	Intermittent	Medium	32	0.5:1	16
23V	3722+00	Intermittent	Low	25	1:1	25
24A	3683+00	Perennial	High	33	0:1	0
24A_1	3683+00	Perennial	High	50	0:1	0
24D	3639+50	Perennial	Medium	15	0.5:1	7.5
24F_2	3627+00	Perennial	High	50	0:1	0
24F_3	3626+00	Perennial	High	35	0:1	0
25F	3582+00	Ephemeral	Low	208	1:1	208
25G	3597+00	Intermittent	Low	133	1:1	133
25L	3597+00	Intermittent	Low	42	1:1	42
26B	3509+00	Intermittent	Medium	43	0.5:1	21.5
26C	3525+00	Intermittent	High	99	0:1	0
26G	3534+00	Ephemeral	Medium	140	0.5:1	70
26G_1	3530+50	Intermittent	Medium	406	0.5:1	203
26J	3524+00	Intermittent	Medium	31	0.5:1	15.5
27A	3478+50	Perennial	High	34	0:1	0
27A_1	3480+00	Perennial	High	85	0:1	0
27A_2	3484+00	Perennial	High	59	0:1	0
27B	3479+00	Intermittent	Medium	16	0.5:1	8
27D	3476+00	Intermittent	Medium	10	0.5:1	5
27K	3484+00	Ephemeral	Low	41	1:1	41
28B	3340+00	Intermittent	Low	89	1:1	89
29A_1	3340+00	Perennial	Medium	19	0.5:1	9.5
29A_2	3340+00	Perennial	High	30	0:1	0
29B	3329+00	Perennial	High	35	0:1	0
29B_1	3329+00	Perennial	High	34	0:1	0
29D_D	3340+00	Intermittent	Low	118	1:1	118
29K	3340+00	Intermittent	Medium	12	0.5:1	6
Total						7,863

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-3b. On-Site Stream Mitigation - Patuxent

Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
4B	1687+50	Intermittent	Low	20	1:1	20
4BBB	1675+00	Perennial	Medium	372	0.5:1	186
4BBB_1	1672+50	Perennial	Medium	40	0.5:1	20
4BBBB	1735+00	Ephemeral	Low	71	1:1	71
4C	1687+00	Ephemeral	Low	42	1:1	42
4E	1694+00	Intermittent	Medium	36	0.5:1	18
4EE	1665+00	Perennial	Low	71	1:1	71
4GG	1745+00	Intermittent	Low	72	1:1	72
4GGG	1667+00	Ephemeral	Low	236	1:1	236
4GGGG	1733+00	Perennial	Low	11	1:1	11
4J	1744+00	Ephemeral	Low	98	1:1	98
4JJJ	1693+00	Perennial	Low	17	1:1	17
4K	1725+50	Intermittent	Low	15	1:1	15
4L	1724+50	Intermittent	Low	19	1:1	19
4LLLL	1692+50	Ephemeral	Low	87	1:1	87
4M	1718+00	Perennial	High	105	0:1	0
4MMMM	1694+50	Ephemeral	Low	87	1:1	87
4NN	1713+50	Intermittent	Low	37	1:1	37
4NNN_1	1631+50	Intermittent	Medium	42	0.5:1	21
4O	1706+00	Intermittent	Medium	343	0.5:1	171.5
4OO	1712+00	Intermittent	Low	50	1:1	50
40000	1693+50	Intermittent	Medium	72	0.5:1	36
4P	1703+00	Ephemeral	Low	40	1:1	40
4PPPP	1715+00	Perennial	Medium	232	0.5:1	116
4Q	1713+00	Perennial	Medium	144	0.5:1	72
4Q_1	1713+50	Perennial	Medium	51	0.5:1	25.5
4QQ	1708+00	Intermittent	Low	18	1:1	18
4QQQQ	1713+00	Intermittent	Medium	90	0.5:1	45
4RRR	1687+00	Intermittent	Medium	81	0.5:1	40.5
4S	1714+50	Ephemeral	Low	118	1:1	118
4T	1674+50	Intermittent	Low	40	1:1	40
4U	1675+00	Intermittent	Low	78	1:1	78
4UUU	1688+00	Intermittent	Medium	69	0.5:1	34.5
4W	1665+00	Perennial	Medium	36	0.5:1	18
4W_2	1665+50	Perennial	Medium	26	0.5:1	13
4Z_1	1631+50	Perennial	Medium	50	0.5:1	25
4Z_2	1630+50	Perennial	Medium	42	0.5:1	21
4Z_3	1623+00	Perennial	Medium	98	0.5:1	49
5BB	1547+00	Intermittent	Low	108	1:1	108
5F	1619+00	Perennial	Medium	49	0.5:1	24.5
5F_1	1620+50	Perennial	Medium	142	0.5:1	71
5J	1621+00	Intermittent	Low	5	1:1	5
5JJ	1570+00	Ephemeral	Low	10	1:1	10
5KK	1563+00	Intermittent	Low	5	1:1	5
5MM	1555+00	Intermittent	Low	20	1:1	20

ALTERNATIVE 9M: ONSITE STREAM MITIGATION

Table D-3b. On-Site Stream Mitigation - Patuxent

Alternative 9M

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
5N	1620+00	Intermittent	Low	122	1:1	122
5O	1596+00	Ephemeral	Low	197	1:1	197
5P	1594+00	Intermittent	Low	144	1:1	144
5Q	1554+50	Perennial	Low	943	1:1	943
5QQ	1551+00	Intermittent	Low	12	1:1	12
5S	1558+00	Perennial	Medium	70	0.5:1	35
5S_1	1558+00	Perennial	Medium	47	0.5:1	23.5
5T	1557+50	Perennial	Low	11	1:1	11
5Y	1549+00	Ephemeral	Low	111	1:1	111
6AA	1480+50	Intermittent	Low	6	1:1	6
6AAA	1527+50	Intermittent	Low	47	1:1	47
6AAA_1	1527+00	Intermittent	Low	33	1:1	33
6AAA_2	1526+00	Intermittent	Low	25	1:1	25
6AAAA	1464+50	Ephemeral	Low	9	1:1	9
6B	1511+00	Perennial	Low	9	1:1	9
6EEE	1457+50	Intermittent	Low	22	1:1	22
6FFFF_1	1526+50	Intermittent	Low	3	1:1	3
6G	1451+50	Perennial	Medium	1	0.5:1	0.5
6G_1	1467+00	Perennial	Medium	1064	0.5:1	532
6G_2	1493+00	Perennial	Medium	672	0.5:1	336
6G_3	1500+00	Perennial	Medium	1063	0.5:1	531.5
6G_6	1555+50	Perennial	Medium	270	0.5:1	135
6GGG	1543+00	Intermittent	Low	112	1:1	112
6GGG_1	1546+50	Intermittent	Low	200	1:1	200
6III	1511+00	Intermittent	Low	409	1:1	409
6J	1509+50	Ephemeral	Low	24	1:1	24
6JJ	1513+00	Perennial	Low	32	1:1	32
6L	1521+00	Intermittent	Low	13	1:1	13
6LLL	1498+00	Perennial	Low	738	1:1	738
6MM	1539+00	Ephemeral	Low	149	1:1	149
6MMM	1496+00	Perennial	Low	33	1:1	33
6NNN_1	1496+00	Intermittent	Low	30	1:1	30
6RRR	1461+00	Intermittent	Low	52	1:1	52
6RRR_D	1460+00	Intermittent	Low	115	1:1	115
6T	1493+50	Intermittent	Low	59	1:1	59
6TTT	1479+00	Intermittent	Low	211	1:1	211
6UU	1465+00	Intermittent	Medium	35	0.5:1	17.5
6UUU	1478+00	Intermittent	Low	62	1:1	62
6V	1485+50	Ephemeral	Low	185	1:1	185
6WW	1456+50	Intermittent	Medium	61	0.5:1	30.5
6XX	1456+00	Ephemeral	Low	53	1:1	53
6YY	1456+50	Ephemeral	Low	63	1:1	63
7B	1443+50	Ephemeral	Low	482	1:1	482
Total						8,740

ALTERNATIVE 10

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
1D_1	1989+50	Perennial	Medium	121	0.5:1	60.5
1D_2	1987+50	Perennial	Medium	78	0.5:1	39
1G	1994+50	Ephemeral	Low	19	1:1	19
1H	1995+00	Intermittent	Low	2	1:1	2
1H_D	1999+00	Intermittent	Low	625	1:1	625
1O	1929+00	Ephemeral	Low	227	1:1	227
1P	1931+00	Intermittent	Low	178	1:1	178
1Q	1930+00	Perennial	High	56	0:1	0
1Q_1	1927+00	Perennial	High	252	0:1	0
1R	1943+00	Perennial	Medium	482	0.5:1	241
1R_1	1936+00	Perennial	Medium	548	0.5:1	274
1RR	1958+50	Intermittent	Low	26	1:1	26
1SS	1957+00	Ephemeral	Low	317	1:1	317
1TT	1969+00	Intermittent	Low	53	1:1	53
1VV	1973+00	Perennial	Medium	39	0.5:1	19.5
1VV_1	1974+50	Perennial	Medium	18	0.5:1	9
1XX	1975+00	Ephemeral	Medium	136	0.5:1	68
1XX_1	1974+00	Intermittent	Medium	141	0.5:1	70.5
1YY	1972+00	Intermittent	Low	362	1:1	362
2A	1924+50	Ephemeral	Low	170	1:1	170
2AA	1857+00	Intermittent	Low	50	1:1	50
2D	1917+00	Ephemeral	Low	13	1:1	13
2E	1916+50	Intermittent	Low	77	1:1	77
2F	1901+00	Intermittent	Medium	669	0.5:1	334.5
2F_D	1896+00	Intermittent	Medium	499	0.5:1	249.5
2H	1870+00	Intermittent	Low	53	1:1	53
2HH	1902+50	Intermittent	Low	52	1:1	52
2I	1871+00	Intermittent	Low	244	1:1	244
2J	1864+50	Perennial	Medium	44	0.5:1	22
2J_1	1863+00	Perennial	Medium	30	0.5:1	15
2JJ	1917+00	Intermittent	Low	73	1:1	73
2L	1862+00	Intermittent	Medium	313	0.5:1	156.5
2MM	1904+00	Perennial	Medium	4	0.5:1	2
2OO	1915+00	Ephemeral	Low	33	1:1	33
2R	1870+00	Perennial	Medium	27	0.5:1	13.5
2T	1874+00	Intermittent	Medium	989	0.5:1	494.5
2V	1857+50	Perennial	Medium	16	0.5:1	8
2VV	1921+00	Intermittent	Low	17	1:1	17
2W	1914+00	Intermittent	Low	451	1:1	451
2X	1916+50	Perennial	Medium	16	0.5:1	8
2X_1	1916+50	Perennial	Medium	203	0.5:1	101.5
2Y	1928+00	Perennial	Low	241	1:1	241

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
2Y_1	1926+00	Perennial	Low	388	1:1	388
2YY	1921+00	Intermittent	Low	51	1:1	51
3A	1836+00	Perennial	Medium	44	0.5:1	22
3AA_1	1803+00	Perennial	Low	40	1:1	40
3BB	1804+00	Ephemeral	Low	120	1:1	120
3BBB	1804+00	Intermittent	Low	41	1:1	41
3CC	1819+50	Intermittent	Low	303	1:1	303
3D	1822+50	Perennial	Medium	45	0.5:1	22.5
3D_1	1820+50	Perennial	Medium	87	0.5:1	43.5
3DD	1821+00	Perennial	Medium	45	0.5:1	22.5
3F	1801+50	Ephemeral	Low	244	1:1	244
3FFF	1804+50	Intermittent	Low	52	1:1	52
3FFF_D	1805+00	Intermittent	Low	66	1:1	66
3H	1823+00	Intermittent	Low	102	1:1	102
3I	1818+00	Intermittent	Low	551	1:1	551
3JJ	1758+00	Intermittent	Low	321	1:1	321
3L	1792+50	Perennial	Medium	35	0.5:1	17.5
3L_1	1793+50	Perennial	Medium	38	0.5:1	19
3LL	1754+50	Intermittent	Low	92	1:1	92
3LL_1	1759+00	Intermittent	Low	521	1:1	521
3LLL	1794+00	Ephemeral	Low	16	1:1	16
3PP	1764+00	Ephemeral	Low	87	1:1	87
3Q	1790+00	Ephemeral	Low	73	1:1	73
3RR	1764+00	Ephemeral	Low	206	1:1	206
3S	1792+50	Perennial	Medium	183	0.5:1	91.5
3SS	1792+50	Intermittent	Low	9	1:1	9
3U	1789+50	Intermittent	Low	44	1:1	44
3UU	1817+00	Intermittent	Low	6	1:1	6
3ZZ	1764+00	Perennial	Medium	95	0.5:1	47.5
4H	1754+00	Ephemeral	Low	331	1:1	331
4YYY	1755+00	Intermittent	Low	35	1:1	35
7AA	1347+00	Intermittent	Low	102	1:1	102
7BB	1395+00	Intermittent	Low	56	1:1	56
7BB_1	1394+00	Intermittent	Low	76	1:1	76
7BB_D	1397+00	Intermittent	Low	518	1:1	518
7D	1425+50	Intermittent	Low	27	1:1	27
7E	1424+00	Perennial	Low	327	1:1	327
7F	1422+50	Intermittent	Low	32	1:1	32
7G	1431+50	Perennial	Medium	20	0.5:1	10
7G_1	1428+00	Perennial	Medium	484	0.5:1	242
7GG	1409+50	Intermittent	Low	255	1:1	255
7H	1427+00	Intermittent	Low	373	1:1	373

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
7I	1410+00	Intermittent	Medium	37	0.5:1	18.5
7JJ	1411+50	Perennial	Medium	11	0.5:1	5.5
7JJ_1	1411+00	Perennial	Medium	7	0.5:1	3.5
7MM	1347+00	Intermittent	Low	150	1:1	150
7N	1396+50	Perennial	Low	218	1:1	218
7N_1	1394+50	Perennial	Low	76	1:1	76
7NN	1347+00	Ephemeral	Low	134	1:1	134
7O	1393+00	Perennial	Low	53	1:1	53
7O_1	1394+00	Perennial	Low	41	1:1	41
7PP	1347+00	Intermittent	Low	35	1:1	35
7S	1347+00	Perennial	Medium	128	0.5:1	64
7T	1424+00	Perennial	Low	17	1:1	17
7T_1	1425+00	Perennial	Low	207	1:1	207
7V	1429+00	Ephemeral	Low	46	1:1	46
8A	1334+50	Intermittent	Low	186	1:1	186
8E	1338+50	Intermittent	Low	106	1:1	106
8F	1336+00	Intermittent	Low	70	1:1	70
8G_1	1339+00	Intermittent	Low	47	1:1	47
8HH	1347+00	Intermittent	Medium	133	0.5:1	66.5
8I	1337+50	Ephemeral	Low	45	1:1	45
8J	1328+50	Intermittent	Low	181	1:1	181
8J_2	1333+50	Perennial	Medium	29	0.5:1	14.5
8MM	1334+00	Intermittent	Low	41	1:1	41
8N	1330+00	Intermittent	Medium	112	0.5:1	56
8N_1	1332+00	Perennial	Medium	319	0.5:1	159.5
8N_D	1329+50	Intermittent	Medium	51	0.5:1	25.5
8R_D1	1282+50	Intermittent	Low	347	1:1	347
8S	1292+00	Ephemeral	Low	137	1:1	137
8S_1	1289+00	Ephemeral	Low	7	1:1	7
8T	1289+00	Ephemeral	Low	118	1:1	118
8V	1310+00	Intermittent	Low	46	1:1	46
8W	1347+00	Intermittent	Medium	211	0.5:1	105.5
8W_1	1347+00	Intermittent	Medium	502	0.5:1	251
8Z	1347+00	Perennial	Medium	60	0.5:1	30
9A	1290+00	Intermittent	Low	141	1:1	141
9C	1289+00	Intermittent	Low	196	1:1	196
9CC	1227+00	Perennial	Low	325	1:1	325
9F	1186+00	Intermittent	Low	292	1:1	292
9FF	1229+00	Ephemeral	Low	103	1:1	103
9G	1184+50	Perennial	Medium	133	0.5:1	66.5
9G_1	1184+50	Perennial	Medium	50	0.5:1	25
9GG	1228+00	Intermittent	Low	5	1:1	5

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
9J	1203+00	Perennial	Medium	49	0.5:1	24.5
9JJ	1242+50	Perennial	Medium	407	0.5:1	203.5
9LL	1245+00	Ephemeral	Low	32	1:1	32
9M	1204+00	Intermittent	Low	308	1:1	308
9M_D	1208+00	Intermittent	Low	419	1:1	419
9MM	1244+00	Intermittent	Low	106	1:1	106
9P	1202+00	Ephemeral	Low	198	1:1	198
9QQ	1200+50	Intermittent	Low	99	1:1	99
9QQ_1	1199+50	Ephemeral	Low	89	1:1	89
9R	1289+50	Intermittent	Low	589	1:1	589
9RR	1204+00	Intermittent	Low	456	1:1	456
9RR_1	1206+00	Ephemeral	Low	113	1:1	113
9T	1264+00	Intermittent	Low	18	1:1	18
9T_1	1263+00	Perennial	Low	78	1:1	78
9VV	1225+00	Intermittent	Low	119	1:1	119
9Y	1240+50	Perennial	Medium	61	0.5:1	30.5
9Y_1	1240+00	Perennial	Medium	33	0.5:1	16.5
9Z	1240+50	Intermittent	Low	31	1:1	31
10AA	1115+00	Perennial	Low	265	1:1	265
10B_1	1163+50	Intermittent	Low	48	1:1	48
10BB	1119+00	Perennial	Low	586	1:1	586
10C	1163+50	Perennial	Medium	101	0.5:1	50.5
10C_1	1165+50	Perennial	Medium	53	0.5:1	26.5
10E	1160+50	Perennial	Low	73	1:1	73
10F	1160+00	Intermittent	Low	11	1:1	11
10F_1	1162+50	Intermittent	Low	79	1:1	79
10F_2	1163+00	Intermittent	Low	53	1:1	53
10FF	1158+00	Intermittent	Low	136	1:1	136
10J	1156+00	Intermittent	Low	174	1:1	174
10JJ	1158+00	Intermittent	Low	12	1:1	12
10KK	1158+00	Intermittent	Low	200	1:1	200
10L	1145+00	Intermittent	Low	524	1:1	524
10MM	1158+00	Intermittent	Low	25	1:1	25
10MM_1	1158+00	Intermittent	Medium	342	0.5:1	171
10N	1142+50	Intermittent	Low	74	1:1	74
10N_1	1140+50	Intermittent	Low	269	1:1	269
10N_D	1142+50	Intermittent	Low	191	1:1	191
10PP	1158+00	Intermittent	Medium	28	0.5:1	14
10PP_1	1158+00	Intermittent	Medium	80	0.5:1	40
10Q	1109+00	Ephemeral	Low	123	1:1	123
10S	1112+50	Perennial	Low	450	1:1	450
10U	1114+00	Intermittent	Low	176	1:1	176

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
10X	1134+00	Ephemeral	Low	174	1:1	174
11A	1104+00	Intermittent	Low	111	1:1	111
11A_1	1103+50	Perennial	Low	30	1:1	30
11AA	1067+50	Intermittent	Low	343	1:1	343
11C	1103+00	Intermittent	Low	257	1:1	257
11CC	1069+50	Intermittent	Low	18	1:1	18
11D	1102+50	Intermittent	Low	97	1:1	97
11E_D	1097+00	Perennial	Low	915	1:1	915
11E_D2	1092+00	Perennial	Low	46	1:1	46
11G	1095+00	Intermittent	Low	861	1:1	861
11GG	1034+50	Ephemeral	Low	156	1:1	156
11H	1079+50	Intermittent	Low	16	1:1	16
11L	1071+00	Perennial	Medium	51	0.5:1	25.5
11L_2	1071+00	Perennial	Medium	81	0.5:1	40.5
11M	1068+00	Intermittent	Low	4	1:1	4
11M_1	1069+00	Intermittent	Low	211	1:1	211
11M_B	1068+50	Intermittent	Low	31	1:1	31
11R	1014+00	Perennial	Low	99	1:1	99
11R_1	1014+50	Perennial	Low	60	1:1	60
11R_D	1011+00	Intermittent	Low	593	1:1	593
11T	1013+50	Perennial	Low	21	1:1	21
11V	1072+50	Perennial	Low	191	1:1	191
11Y	1060+00	Intermittent	Low	387	1:1	387
12C	0915+00	Perennial	Low	271	1:1	271
12CCC	0923+50	Perennial	Low	175	1:1	175
12F	0918+50	Perennial	Low	33	1:1	33
12FFF	0929+00	Ephemeral	Low	422	1:1	422
12GGG	0906+50	Ephemeral	Low	79	1:1	79
12H	0908+50	Perennial	Low	44	1:1	44
12H_2	0924+00	Perennial	Low	8	1:1	8
12H_3	0926+00	Perennial	Low	286	1:1	286
12H_4	0930+00	Perennial	Low	475	1:1	475
12H_5	0933+50	Perennial	Low	22	1:1	22
12HHH	0906+00	Intermittent	Low	176	1:1	176
12HHHH	0895+50	Intermittent	Low	43	1:1	43
12II	0928+00	Perennial	High	71	0:1	0
12II_4	0938+00	Perennial	High	267	0:1	0
12II_5	0938+00	Perennial	High	91	0:1	0
12JJJ	0906+50	Perennial	Low	28	1:1	28
12K	0910+00	Perennial	Low	60	1:1	60
12K_1	0912+50	Perennial	Low	3	1:1	3
12KK	0943+00	Perennial	Low	535	1:1	535

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
12KKK	0906+50	Intermittent	Low	265	1:1	265
12LL	0951+00	Ephemeral	Low	123	1:1	123
12MM	0967+00	Intermittent	Low	402	1:1	402
12MMM	0907+00	Ephemeral	Low	34	1:1	34
12NNN	0907+50	Intermittent	Low	174	1:1	174
12O	0907+50	Intermittent	Low	147	1:1	147
12O_1	0908+00	Intermittent	Low	84	1:1	84
12OO	0976+50	Perennial	Medium	65	0.5:1	32.5
12OO_1	0976+50	Perennial	Medium	33	0.5:1	16.5
12P	0909+00	Intermittent	Low	31	1:1	31
12PPP	0939+50	Intermittent	Low	74	1:1	74
12QQQ	0939+00	Intermittent	Low	168	1:1	168
12RRR	0946+00	Perennial	Low	29	1:1	29
12S	0923+00	Intermittent	Low	351	1:1	351
12T	0923+50	Intermittent	Low	40	1:1	40
12T_D	0921+50	Intermittent	Low	386	1:1	386
12UUU	0976+00	Perennial	Low	32	1:1	32
12VVV	0931+00	Intermittent	Low	431	1:1	431
12WW	0935+00	Perennial	Low	97	1:1	97
12WW_1	0934+50	Perennial	Low	24	1:1	24
12WW_2	0931+00	Perennial	Low	35	1:1	35
12WWW	0937+00	Intermittent	Low	84	1:1	84
12WWW_1	0935+00	Intermittent	Low	90	1:1	90
12XX	0925+00	Perennial	Medium	100	0.5:1	50
12XX_1	0923+50	Perennial	Medium	15	0.5:1	7.5
12Y	0929+50	Intermittent	Low	4	1:1	4
12Y_D	0929+00	Intermittent	Low	215	1:1	215
12YYY	0934+50	Perennial	Low	843	1:1	843
12YYY_1	0931+00	Perennial	Low	160	1:1	160
12Z	0917+50	Intermittent	Low	100	1:1	100
13A	0807+50	Intermittent	Low	143	1:1	143
13C	0863+00	Intermittent	Low	145	1:1	145
13C_1	0870+00	Intermittent	Low	601	1:1	601
13E	0794+00	Ephemeral	Low	28	1:1	28
13G	0792+00	Intermittent	Low	11	1:1	11
13H	0785+50	Perennial	Low	211	1:1	211
13I	0795+00	Ephemeral	Low	154	1:1	154
13I_1	0796+50	Intermittent	Low	170	1:1	170
13J	0767+00	Intermittent	Low	59	1:1	59
13J_1	0770+00	Intermittent	Low	218	1:1	218
13J_2	0774+00	Intermittent	Low	49	1:1	49
13K	0798+50	Intermittent	Low	158	1:1	158

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
13L	0798+50	Ephemeral	Low	198	1:1	198
13M	0836+00	Perennial	Low	1528	1:1	1528
13M_1	0828+50	Perennial	Low	78	1:1	78
13M_D	0844+50	Intermittent	Low	151	1:1	151
13N	0828+00	Ephemeral	Low	58	1:1	58
13P	0797+00	Perennial	High	100	0:1	0
13P_1	0797+50	Perennial	High	256	0:1	0
13Q	0863+00	Intermittent	Low	519	1:1	519
13R	0849+00	Intermittent	Low	192	1:1	192
13S	0846+00	Intermittent	Low	23	1:1	23
13X_1	0830+00	Perennial	Low	29	1:1	29
13Y	0830+00	Perennial	Low	86	1:1	86
13Z	0869+00	Intermittent	Low	380	1:1	380
14A	0745+00	Intermittent	Medium	9	0.5:1	4.5
14A_1	0745+00	Intermittent	Medium	161	0.5:1	80.5
14E	0745+00	Perennial	Medium	41	0.5:1	20.5
14G	0707+50	Intermittent	Medium	10	0.5:1	5
14G_1	0707+50	Intermittent	Medium	16	0.5:1	8
15A	0664+00	Intermittent	Low	581	1:1	581
15B	0662+50	Intermittent	Low	99	1:1	99
15C	0686+00	Intermittent	Low	14	1:1	14
15D	0685+50	Perennial	Medium	21	0.5:1	10.5
15E	0685+00	Ephemeral	Low	7	1:1	7
16A	0604+00	Perennial	Medium	50	0.5:1	25
16A_1	0597+00	Perennial	Medium	1116	0.5:1	558
16A_2	0589+00	Perennial	Medium	81	0.5:1	40.5
16D	0599+50	Intermittent	Low	36	1:1	36
16E	0638+00	Intermittent	Low	164	1:1	164
16G	0614+00	Perennial	Medium	172	0.5:1	86
16G_1	0606+00	Perennial	Medium	165	0.5:1	82.5
16G_D	0626+00	Perennial	Medium	56	0.5:1	28
16G_D1	0619+50	Perennial	Medium	141	0.5:1	70.5
16J	0610+50	Ephemeral	Low	42	1:1	42
16J_1	0610+00	Ephemeral	Low	3	1:1	3
17B	0544+00	Ephemeral	Low	50	1:1	50
17BB	0568+00	Intermittent	Medium	31	0.5:1	15.5
17DD	0565+50	Intermittent	Medium	26	0.5:1	13
17F	0588+50	Perennial	Medium	3	0.5:1	1.5
17Y	0558+00	Intermittent	Low	31	1:1	31
17Z	0579+50	Ephemeral	Low	197	1:1	197
18A	0527+00	Intermittent	Low	13	1:1	13
18B	0526+50	Ephemeral	Low	35	1:1	35

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-1c. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
18C_1	0517+50	Perennial	Medium	20	0.5:1	10
18G	0537+00	Intermittent	Low	5	1:1	5
18I	0509+00	Perennial	Low	5	1:1	5
19B	0436+00	Intermittent	Low	26	1:1	26
19C	0432+00	Perennial	Medium	33	0.5:1	16.5
19F	0434+00	Perennial	Low	104	1:1	104
19F_1	0438+00	Perennial	Low	110	1:1	110
19F_2	0441+00	Perennial	Low	67	1:1	67
19F_3	0454+00	Perennial	Low	49	1:1	49
19F_4	0468+00	Perennial	Low	4	1:1	4
19J_1	0408+00	Perennial	Low	32	1:1	32
19J_2	0410+00	Perennial	Low	67	1:1	67
19K_1	0470+00	Perennial	High	8	0:1	0
19K_2	0491+00	Perennial	Medium	135	0.5:1	67.5
19K_7	0588+50	Perennial	Medium	69	0.5:1	34.5
19K_8	0588+50	Perennial	Medium	71	0.5:1	35.5
19R	0462+50	Intermittent	Low	3	1:1	3
19R_1	0463+50	Intermittent	Low	1	1:1	1
19T	0467+50	Perennial	Low	74	1:1	74
19T_1	0468+50	Perennial	Low	121	1:1	121
19V	0490+00	Perennial	Medium	18	0.5:1	9
23G	4799+00	Perennial	Medium	1125	0.5:1	562.5
23G_1	4805+00	Perennial	Medium	55	0.5:1	27.5
23Q	4774+50	Intermittent	Medium	416	0.5:1	208
23Q_1	4782+00	Perennial	Medium	81	0.5:1	40.5
23Q_2	4783+50	Perennial	Medium	94	0.5:1	47
23R	4770+00	Perennial	Medium	72	0.5:1	36
23S	4796+00	Intermittent	Medium	18	0.5:1	9
Total						43,594

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-2c. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
20B	0342+00	Intermittent	Low	19	1:1	19
20D	0324+00	Perennial	Low	505	1:1	505
20E	0332+00	Intermittent	Low	22	1:1	22
21B	0305+00	Perennial	Medium	1024	0.5:1	512
21C	0276+00	Perennial	Medium	2298	0.5:1	1149
21C_1	0245+00	Perennial	Medium	1844	0.5:1	922
21C_2	0233+00	Perennial	Medium	406	0.5:1	203
21D	0225+50	Intermittent	Low	86	1:1	86
21D_1	0227+00	Intermittent	Low	215	1:1	215
21F	0246+00	Intermittent	Low	75	1:1	75
21G	0239+00	Intermittent	Low	57	1:1	57
21H	0247+50	Ephemeral	Low	27	1:1	27
21L_D	0278+50	Perennial	Low	71	1:1	71
21M	0262+50	Intermittent	Low	23	1:1	23
21V	0297+00	Ephemeral	Low	87	1:1	87
22A	0222+00	Intermittent	Low	140	1:1	140
22AA	0224+00	Perennial	Medium	82	0.5:1	41
22AA_1	0200+50	Perennial	Medium	16	0.5:1	8
22AA_2	0200+00	Perennial	Medium	98	0.5:1	49
22AA_3	0198+00	Perennial	Medium	188	0.5:1	94
22B	0219+00	Intermittent	Low	35	1:1	35
22C	0219+00	Intermittent	Low	50	1:1	50
22D	0218+50	Intermittent	Low	144	1:1	144
22EE	0192+00	Ephemeral	Low	45	1:1	45
22FF	0177+00	Ephemeral	Low	34	1:1	34
22H	0198+00	Intermittent	Low	7	1:1	7
22H_1	0198+00	Intermittent	Low	10	1:1	10
22HH	0132+00	Intermittent	Medium	260	0.5:1	130
22HH_1	0129+00	Intermittent	Medium	154	0.5:1	77
22HH_2	0127+50	Intermittent	Medium	117	0.5:1	58.5
22KK	0198+00	Perennial	Low	26	1:1	26
22M_1	0114+00	Perennial	Medium	30	0.5:1	15
22MM	0106+00	Perennial	High	1025	0:1	0
22MM_B	0106+00	Perennial	High	138	0:1	0
22NN	0110+00	Intermittent	Low	275	1:1	275
22NN_B	0109+00	Intermittent	Low	166	1:1	166
22P	0125+00	Intermittent	Medium	9	0.5:1	4.5
22Q	0125+00	Perennial	Medium	136	0.5:1	68
22Q_1	0125+00	Perennial	Medium	61	0.5:1	30.5
22QQ	0113+50	Intermittent	Low	106	1:1	106
22T_D	0128+50	Intermittent	Low	8	1:1	8
22T_D1	0128+50	Intermittent	Low	34	1:1	34
22T_D2	0128+50	Intermittent	Low	92	1:1	92
22V	0118+50	Intermittent	Low	76	1:1	76
22V_1	0118+50	Intermittent	Low	39	1:1	39

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-2c. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
22V_2	0118+50	Intermittent	Low	26	1:1	26
22Z	0198+00	Perennial	Medium	72	0.5:1	36
22Z_1	0197+00	Perennial	Medium	38	0.5:1	19
23A_1	3744+00	Perennial	High	99	0:1	0
23A_3	3758+00	Perennial	High	371	0:1	0
23AA	3749+50	Perennial	Medium	73	0.5:1	36.5
23AA_1	3751+00	Perennial	Medium	213	0.5:1	106.5
23D	3755+50	Intermittent	Medium	702	0.5:1	351
23DD	3701+50	Intermittent	Low	87	1:1	87
23K	3701+00	Perennial	Medium	132	0.5:1	66
23K_1	3692+00	Perennial	Medium	226	0.5:1	113
23K_D	3688+00	Perennial	Medium	597	0.5:1	298.5
23N	4718+00	Intermittent	Medium	275	0.5:1	137.5
23N_D	4730+00	Intermittent	Medium	32	0.5:1	16
23V	3722+00	Intermittent	Low	34	1:1	34
24A	3683+00	Perennial	High	33	0:1	0
24A_1	3683+00	Perennial	High	75	0:1	0
24D	3639+50	Perennial	Medium	14	0.5:1	7
24F_2	3627+00	Perennial	High	53	0:1	0
24F_3	3626+00	Perennial	High	49	0:1	0
25E	3561+00	Perennial	Medium	35	0.5:1	17.5
25F	3582+00	Ephemeral	Low	178	1:1	178
25G	3597+00	Intermittent	Low	129	1:1	129
25H_1	3560+50	Perennial	High	20	0:1	0
25L	3597+00	Intermittent	Low	66	1:1	66
26B	3509+00	Intermittent	Medium	37	0.5:1	18.5
26C	3525+00	Intermittent	High	96	0:1	0
26G	3534+00	Ephemeral	Medium	143	0.5:1	71.5
26G_1	3530+50	Intermittent	Medium	442	0.5:1	221
26J	3524+00	Intermittent	Medium	31	0.5:1	15.5
27A	3478+50	Perennial	High	53	0:1	0
27A_1	3480+00	Perennial	High	85	0:1	0
27A_2	3484+00	Perennial	High	58	0:1	0
27B	3479+00	Intermittent	Medium	24	0.5:1	12
27C	3476+00	Ephemeral	Medium	8	0.5:1	4
27D	3476+00	Intermittent	Medium	91	0.5:1	45.5
27K	3484+00	Ephemeral	Low	41	1:1	41
28B	3340+00	Intermittent	Low	64	1:1	64
29A_2	3340+00	Perennial	High	26	0:1	0
29B	3329+00	Perennial	High	35	0:1	0
29B_1	3329+00	Perennial	High	34	0:1	0
29D_D	3340+00	Intermittent	Low	93	1:1	93
29K	3340+00	Intermittent	Medium	12	0.5:1	6
Total						8,152

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-3c. On-Site Stream Mitigation - Patuxent

Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
4B	1687+50	Intermittent	Low	20	1:1	20
4BBB	1675+00	Perennial	Medium	372	0.5:1	186
4BBB_1	1672+50	Perennial	Medium	40	0.5:1	20
4BBBB	1735+00	Ephemeral	Low	71	1:1	71
4C	1687+00	Ephemeral	Low	42	1:1	42
4E	1694+00	Intermittent	Medium	36	0.5:1	18
4EE	1665+00	Perennial	Low	71	1:1	71
4GG	1745+00	Intermittent	Low	72	1:1	72
4GGG	1667+00	Ephemeral	Low	236	1:1	236
4GGGG	1733+00	Perennial	Low	11	1:1	11
4J	1744+00	Ephemeral	Low	98	1:1	98
4JJJ	1693+00	Perennial	Low	17	1:1	17
4K	1725+50	Intermittent	Low	15	1:1	15
4L	1724+50	Intermittent	Low	19	1:1	19
4LLLL	1692+50	Ephemeral	Low	87	1:1	87
4M	1718+00	Perennial	High	105	0:1	0
4MMMM	1694+50	Ephemeral	Low	87	1:1	87
4NN	1713+50	Intermittent	Low	37	1:1	37
4NNN_1	1631+50	Intermittent	Medium	42	0.5:1	21
4O	1706+00	Intermittent	Medium	343	0.5:1	171.5
400	1712+00	Intermittent	Low	50	1:1	50
40000	1693+50	Intermittent	Medium	72	0.5:1	36
4P	1703+00	Ephemeral	Low	40	1:1	40
4PPPP	1715+00	Perennial	Medium	232	0.5:1	116
4Q	1713+00	Perennial	Medium	144	0.5:1	72
4Q_1	1713+50	Perennial	Medium	51	0.5:1	25.5
4QQ	1708+00	Intermittent	Low	18	1:1	18
4QQQQ	1713+00	Intermittent	Medium	90	0.5:1	45
4RRR	1687+00	Intermittent	Medium	81	0.5:1	40.5
4S	1714+50	Ephemeral	Low	118	1:1	118
4T	1674+50	Intermittent	Low	40	1:1	40
4U	1675+00	Intermittent	Low	78	1:1	78
4UUU	1688+00	Intermittent	Medium	69	0.5:1	34.5
4W	1665+00	Perennial	Medium	36	0.5:1	18
4W_2	1665+50	Perennial	Medium	26	0.5:1	13
4Z_1	1631+50	Perennial	Medium	50	0.5:1	25
4Z_2	1630+50	Perennial	Medium	42	0.5:1	21
4Z_3	1623+00	Perennial	Medium	98	0.5:1	49
5BB	1547+00	Intermittent	Low	108	1:1	108
5F	1619+00	Perennial	Medium	49	0.5:1	24.5
5F_1	1620+50	Perennial	Medium	142	0.5:1	71
5J	1621+00	Intermittent	Low	5	1:1	5
5JJ	1570+00	Ephemeral	Low	10	1:1	10
5KK	1563+00	Intermittent	Low	5	1:1	5
5MM	1555+00	Intermittent	Low	20	1:1	20

ALTERNATIVE 10: ONSITE STREAM MITIGATION

Table D-3c. On-Site Stream Mitigation - Patuxent

Alternative 10

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
5N	1620+00	Intermittent	Low	122	1:1	122
50	1596+00	Ephemeral	Low	197	1:1	197
5P	1594+00	Intermittent	Low	144	1:1	144
5Q	1554+50	Perennial	Low	943	1:1	943
5QQ	1551+00	Intermittent	Low	12	1:1	12
5S	1558+00	Perennial	Medium	70	0.5:1	35
5S_1	1558+00	Perennial	Medium	47	0.5:1	23.5
5T	1557+50	Perennial	Low	11	1:1	11
5Y	1549+00	Ephemeral	Low	111	1:1	111
6AA	1480+50	Intermittent	Low	6	1:1	6
6AAA	1527+50	Intermittent	Low	47	1:1	47
6AAA_1	1527+00	Intermittent	Low	33	1:1	33
6AAA_2	1526+00	Intermittent	Low	25	1:1	25
6AAAA	1464+50	Ephemeral	Low	9	1:1	9
6B	1511+00	Perennial	Low	9	1:1	9
6EEE	1457+50	Intermittent	Low	22	1:1	22
6FFFF_1	1526+50	Intermittent	Low	3	1:1	3
6G	1451+50	Perennial	Medium	1	0.5:1	0.5
6G_1	1467+00	Perennial	Medium	1064	0.5:1	532
6G_2	1493+00	Perennial	Medium	672	0.5:1	336
6G_3	1500+00	Perennial	Medium	1063	0.5:1	531.5
6G_6	1555+50	Perennial	Medium	270	0.5:1	135
6GGG	1543+00	Intermittent	Low	112	1:1	112
6GGG_1	1546+50	Intermittent	Low	200	1:1	200
6III	1511+00	Intermittent	Low	409	1:1	409
6J	1509+50	Ephemeral	Low	24	1:1	24
6JJ	1513+00	Perennial	Low	32	1:1	32
6L	1521+00	Intermittent	Low	13	1:1	13
6LLL	1498+00	Perennial	Low	738	1:1	738
6MM	1539+00	Ephemeral	Low	149	1:1	149
6MMM	1496+00	Perennial	Low	33	1:1	33
6NNN_1	1496+00	Intermittent	Low	30	1:1	30
6RRR	1461+00	Intermittent	Low	52	1:1	52
6RRR_D	1460+00	Intermittent	Low	115	1:1	115
6T	1493+50	Intermittent	Low	59	1:1	59
6TTT	1479+00	Intermittent	Low	211	1:1	211
6UU	1465+00	Intermittent	Medium	35	0.5:1	17.5
6UUU	1478+00	Intermittent	Low	62	1:1	62
6V	1485+50	Ephemeral	Low	185	1:1	185
6WW	1456+50	Intermittent	Medium	61	0.5:1	30.5
6XX	1456+00	Ephemeral	Low	53	1:1	53
6YY	1456+50	Ephemeral	Low	63	1:1	63
7B	1443+50	Ephemeral	Low	482	1:1	482
Total						8,740

ALTERNATIVE 13B

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
1D_1	1989+50	Perennial	Medium	121	0.5:1	60.5
1D_2	1987+50	Perennial	Medium	78	0.5:1	39
1G	1994+50	Ephemeral	Low	19	1:1	19
1H	1995+00	Intermittent	Low	2	1:1	2
1H_D	1999+00	Intermittent	Low	625	1:1	625
1O	1929+00	Ephemeral	Low	227	1:1	227
1P	1931+00	Intermittent	Low	178	1:1	178
1Q	1930+00	Perennial	High	56	0:1	0
1Q_1	1927+00	Perennial	High	252	0:1	0
1R	1943+00	Perennial	Medium	482	0.5:1	241
1R_1	1936+00	Perennial	Medium	548	0.5:1	274
1RR	1958+50	Intermittent	Low	26	1:1	26
1SS	1957+00	Ephemeral	Low	317	1:1	317
1TT	1969+00	Intermittent	Low	53	1:1	53
1VV	1973+00	Perennial	Medium	39	0.5:1	19.5
1VV_1	1974+50	Perennial	Medium	18	0.5:1	9
1XX	1975+00	Ephemeral	Medium	136	0.5:1	68
1XX_1	1974+00	Intermittent	Medium	141	0.5:1	70.5
1YY	1972+00	Intermittent	Low	362	1:1	362
2A	1924+50	Ephemeral	Low	170	1:1	170
2AA	1857+00	Intermittent	Low	50	1:1	50
2D	1917+00	Ephemeral	Low	13	1:1	13
2E	1916+50	Intermittent	Low	77	1:1	77
2F	1901+00	Intermittent	Medium	669	0.5:1	334.5
2F_D	1896+00	Intermittent	Medium	499	0.5:1	249.5
2H	1870+00	Intermittent	Low	53	1:1	53
2HH	1902+50	Intermittent	Low	52	1:1	52
2I	1871+00	Intermittent	Low	244	1:1	244
2J	1864+50	Perennial	Medium	44	0.5:1	22
2J_1	1863+00	Perennial	Medium	30	0.5:1	15
2JJ	1917+00	Intermittent	Low	73	1:1	73
2L	1862+00	Intermittent	Medium	313	0.5:1	156.5
2MM	1904+00	Perennial	Medium	4	0.5:1	2
2OO	1915+00	Ephemeral	Low	33	1:1	33
2R	1870+00	Perennial	Medium	27	0.5:1	13.5
2T	1874+00	Intermittent	Medium	989	0.5:1	494.5
2V	1857+50	Perennial	Medium	16	0.5:1	8
2VV	1921+00	Intermittent	Low	17	1:1	17
2W	1914+00	Intermittent	Low	451	1:1	451
2X	1916+50	Perennial	Medium	16	0.5:1	8
2X_1	1916+50	Perennial	Medium	203	0.5:1	101.5
2Y	1928+00	Perennial	Low	241	1:1	241

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
2Y_1	1926+00	Perennial	Low	388	1:1	388
2YY	1921+00	Intermittent	Low	51	1:1	51
3A	1836+00	Perennial	Medium	44	0.5:1	22
3AA_1	1803+00	Perennial	Low	40	1:1	40
3BB	1804+00	Ephemeral	Low	120	1:1	120
3BBB	1804+00	Intermittent	Low	41	1:1	41
3CC	1819+50	Intermittent	Low	303	1:1	303
3D	1822+50	Perennial	Medium	45	0.5:1	22.5
3D_1	1820+50	Perennial	Medium	87	0.5:1	43.5
3DD	1821+00	Perennial	Medium	45	0.5:1	22.5
3F	1801+50	Ephemeral	Low	244	1:1	244
3FFF	1804+50	Intermittent	Low	52	1:1	52
3FFF_D	1805+00	Intermittent	Low	66	1:1	66
3H	1823+00	Intermittent	Low	102	1:1	102
3I	1818+00	Intermittent	Low	551	1:1	551
3JJ	1758+00	Intermittent	Low	321	1:1	321
3L	1792+50	Perennial	Medium	35	0.5:1	17.5
3L_1	1793+50	Perennial	Medium	38	0.5:1	19
3LL	1754+50	Intermittent	Low	92	1:1	92
3LL_1	1759+00	Intermittent	Low	521	1:1	521
3LLL	1794+00	Ephemeral	Low	16	1:1	16
3PP	1764+00	Ephemeral	Low	87	1:1	87
3Q	1790+00	Ephemeral	Low	73	1:1	73
3RR	1764+00	Ephemeral	Low	206	1:1	206
3S	1792+50	Perennial	Medium	183	0.5:1	91.5
3SS	1792+50	Intermittent	Low	9	1:1	9
3U	1789+50	Intermittent	Low	44	1:1	44
3UU	1817+00	Intermittent	Low	6	1:1	6
3ZZ	1764+00	Perennial	Medium	95	0.5:1	47.5
4H	1754+00	Ephemeral	Low	331	1:1	331
4YYY	1755+00	Intermittent	Low	35	1:1	35
7AA	1347+00	Intermittent	Low	102	1:1	102
7BB	1395+00	Intermittent	Low	56	1:1	56
7BB_1	1394+00	Intermittent	Low	76	1:1	76
7BB_D	1397+00	Intermittent	Low	518	1:1	518
7D	1425+50	Intermittent	Low	27	1:1	27
7E	1424+00	Perennial	Low	327	1:1	327
7F	1422+50	Intermittent	Low	32	1:1	32
7G	1431+50	Perennial	Medium	20	0.5:1	10
7G_1	1428+00	Perennial	Medium	484	0.5:1	242
7GG	1409+50	Intermittent	Low	255	1:1	255
7H	1427+00	Intermittent	Low	373	1:1	373

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
7I	1410+00	Intermittent	Medium	37	0.5:1	18.5
7JJ	1411+50	Perennial	Medium	11	0.5:1	5.5
7JJ_1	1411+00	Perennial	Medium	7	0.5:1	3.5
7MM	1347+00	Intermittent	Low	150	1:1	150
7N	1396+50	Perennial	Low	218	1:1	218
7N_1	1394+50	Perennial	Low	76	1:1	76
7NN	1347+00	Ephemeral	Low	134	1:1	134
7O	1393+00	Perennial	Low	53	1:1	53
7O_1	1394+00	Perennial	Low	41	1:1	41
7PP	1347+00	Intermittent	Low	35	1:1	35
7S	1347+00	Perennial	Medium	128	0.5:1	64
7T	1424+00	Perennial	Low	17	1:1	17
7T_1	1425+00	Perennial	Low	207	1:1	207
7V	1429+00	Ephemeral	Low	46	1:1	46
8A	1334+50	Intermittent	Low	186	1:1	186
8E	1338+50	Intermittent	Low	106	1:1	106
8F	1336+00	Intermittent	Low	70	1:1	70
8G_1	1339+00	Intermittent	Low	47	1:1	47
8HH	1347+00	Intermittent	Medium	133	0.5:1	66.5
8I	1337+50	Ephemeral	Low	45	1:1	45
8J	1328+50	Intermittent	Low	181	1:1	181
8J_2	1333+50	Perennial	Medium	29	0.5:1	14.5
8MM	1334+00	Intermittent	Low	41	1:1	41
8N	1330+00	Intermittent	Medium	112	0.5:1	56
8N_1	1332+00	Perennial	Medium	319	0.5:1	159.5
8N_D	1329+50	Intermittent	Medium	51	0.5:1	25.5
8R_D1	1282+50	Intermittent	Low	347	1:1	347
8S	1292+00	Ephemeral	Low	137	1:1	137
8S_1	1289+00	Ephemeral	Low	7	1:1	7
8T	1289+00	Ephemeral	Low	118	1:1	118
8V	1310+00	Intermittent	Low	46	1:1	46
8W	1347+00	Intermittent	Medium	211	0.5:1	105.5
8W_1	1347+00	Intermittent	Medium	502	0.5:1	251
8Z	1347+00	Perennial	Medium	60	0.5:1	30
9A	1290+00	Intermittent	Low	141	1:1	141
9C	1289+00	Intermittent	Low	196	1:1	196
9CC	1227+00	Perennial	Low	325	1:1	325
9F	1186+00	Intermittent	Low	292	1:1	292
9FF	1229+00	Ephemeral	Low	103	1:1	103
9G	1184+50	Perennial	Medium	133	0.5:1	66.5
9G_1	1184+50	Perennial	Medium	50	0.5:1	25
9GG	1228+00	Intermittent	Low	5	1:1	5

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
9J	1203+00	Perennial	Medium	49	0.5:1	24.5
9JJ	1242+50	Perennial	Medium	407	0.5:1	203.5
9LL	1245+00	Ephemeral	Low	32	1:1	32
9M	1204+00	Intermittent	Low	308	1:1	308
9M_D	1208+00	Intermittent	Low	419	1:1	419
9MM	1244+00	Intermittent	Low	106	1:1	106
9P	1202+00	Ephemeral	Low	198	1:1	198
9QQ	1200+50	Intermittent	Low	99	1:1	99
9QQ_1	1199+50	Ephemeral	Low	89	1:1	89
9R	1289+50	Intermittent	Low	589	1:1	589
9RR	1204+00	Intermittent	Low	456	1:1	456
9RR_1	1206+00	Ephemeral	Low	113	1:1	113
9T	1264+00	Intermittent	Low	18	1:1	18
9T_1	1263+00	Perennial	Low	78	1:1	78
9VV	1225+00	Intermittent	Low	119	1:1	119
9Y	1240+50	Perennial	Medium	61	0.5:1	30.5
9Y_1	1240+00	Perennial	Medium	33	0.5:1	16.5
9Z	1240+50	Intermittent	Low	31	1:1	31
10AA	1115+00	Perennial	Low	265	1:1	265
10B_1	1163+50	Intermittent	Low	48	1:1	48
10BB	1119+00	Perennial	Low	586	1:1	586
10C	1163+50	Perennial	Medium	101	0.5:1	50.5
10C_1	1165+50	Perennial	Medium	53	0.5:1	26.5
10E	1160+50	Perennial	Low	73	1:1	73
10F	1160+00	Intermittent	Low	11	1:1	11
10F_1	1162+50	Intermittent	Low	79	1:1	79
10F_2	1163+00	Intermittent	Low	53	1:1	53
10FF	1158+00	Intermittent	Low	136	1:1	136
10J	1156+00	Intermittent	Low	174	1:1	174
10JJ	1158+00	Intermittent	Low	12	1:1	12
10KK	1158+00	Intermittent	Low	200	1:1	200
10L	1145+00	Intermittent	Low	524	1:1	524
10MM	1158+00	Intermittent	Low	25	1:1	25
10MM_1	1158+00	Intermittent	Medium	342	0.5:1	171
10N	1142+50	Intermittent	Low	74	1:1	74
10N_1	1140+50	Intermittent	Low	269	1:1	269
10N_D	1142+50	Intermittent	Low	191	1:1	191
10PP	1158+00	Intermittent	Medium	28	0.5:1	14
10PP_1	1158+00	Intermittent	Medium	80	0.5:1	40
10Q	1109+00	Ephemeral	Low	123	1:1	123
10S	1112+50	Perennial	Low	450	1:1	450
10U	1114+00	Intermittent	Low	176	1:1	176

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
10X	1134+00	Ephemeral	Low	174	1:1	174
11A	1104+00	Intermittent	Low	111	1:1	111
11A_1	1103+50	Perennial	Low	30	1:1	30
11AA	1067+50	Intermittent	Low	343	1:1	343
11C	1103+00	Intermittent	Low	257	1:1	257
11CC	1069+50	Intermittent	Low	18	1:1	18
11D	1102+50	Intermittent	Low	97	1:1	97
11E_D	1097+00	Perennial	Low	915	1:1	915
11E_D2	1092+00	Perennial	Low	46	1:1	46
11G	1095+00	Intermittent	Low	861	1:1	861
11GG	1034+50	Ephemeral	Low	156	1:1	156
11H	1079+50	Intermittent	Low	16	1:1	16
11L	1071+00	Perennial	Medium	51	0.5:1	25.5
11L_2	1071+00	Perennial	Medium	81	0.5:1	40.5
11M	1068+00	Intermittent	Low	4	1:1	4
11M_1	1069+00	Intermittent	Low	211	1:1	211
11M_B	1068+50	Intermittent	Low	31	1:1	31
11R	1014+00	Perennial	Low	99	1:1	99
11R_1	1014+50	Perennial	Low	60	1:1	60
11R_D	1011+00	Intermittent	Low	593	1:1	593
11T	1013+50	Perennial	Low	21	1:1	21
11V	1072+50	Perennial	Low	191	1:1	191
11Y	1060+00	Intermittent	Low	387	1:1	387
12C	0915+00	Perennial	Low	271	1:1	271
12CCC	0923+50	Perennial	Low	175	1:1	175
12F	0918+50	Perennial	Low	33	1:1	33
12FFF	0929+00	Ephemeral	Low	422	1:1	422
12GGG	0906+50	Ephemeral	Low	79	1:1	79
12H	0908+50	Perennial	Low	44	1:1	44
12H_2	0924+00	Perennial	Low	8	1:1	8
12H_3	0926+00	Perennial	Low	286	1:1	286
12H_4	0930+00	Perennial	Low	475	1:1	475
12H_5	0933+50	Perennial	Low	22	1:1	22
12HHH	0906+00	Intermittent	Low	176	1:1	176
12HHHH	0895+50	Intermittent	Low	43	1:1	43
12II	0928+00	Perennial	High	71	0:1	0
12II_4	0938+00	Perennial	High	267	0:1	0
12II_5	0938+00	Perennial	High	91	0:1	0
12JJJ	0906+50	Perennial	Low	28	1:1	28
12K	0910+00	Perennial	Low	60	1:1	60
12K_1	0912+50	Perennial	Low	3	1:1	3
12KK	0943+00	Perennial	Low	535	1:1	535

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
12KKK	0906+50	Intermittent	Low	265	1:1	265
12LL	0951+00	Ephemeral	Low	123	1:1	123
12MM	0967+00	Intermittent	Low	402	1:1	402
12MMM	0907+00	Ephemeral	Low	34	1:1	34
12NNN	0907+50	Intermittent	Low	174	1:1	174
12O	0907+50	Intermittent	Low	147	1:1	147
12O_1	0908+00	Intermittent	Low	84	1:1	84
12OO	0976+50	Perennial	Medium	65	0.5:1	32.5
12OO_1	0976+50	Perennial	Medium	33	0.5:1	16.5
12P	0909+00	Intermittent	Low	31	1:1	31
12PPP	0939+50	Intermittent	Low	74	1:1	74
12QQQ	0939+00	Intermittent	Low	168	1:1	168
12RRR	0946+00	Perennial	Low	29	1:1	29
12S	0923+00	Intermittent	Low	351	1:1	351
12T	0923+50	Intermittent	Low	40	1:1	40
12T_D	0921+50	Intermittent	Low	386	1:1	386
12UUU	0976+00	Perennial	Low	32	1:1	32
12VVV	0931+00	Intermittent	Low	431	1:1	431
12WW	0935+00	Perennial	Low	97	1:1	97
12WW_1	0934+50	Perennial	Low	24	1:1	24
12WW_2	0931+00	Perennial	Low	35	1:1	35
12WWW	0937+00	Intermittent	Low	84	1:1	84
12WWW_1	0935+00	Intermittent	Low	90	1:1	90
12XX	0925+00	Perennial	Medium	100	0.5:1	50
12XX_1	0923+50	Perennial	Medium	15	0.5:1	7.5
12Y	0929+50	Intermittent	Low	4	1:1	4
12Y_D	0929+00	Intermittent	Low	215	1:1	215
12YYY	0934+50	Perennial	Low	843	1:1	843
12YYY_1	0931+00	Perennial	Low	160	1:1	160
12Z	0917+50	Intermittent	Low	100	1:1	100
13A	0807+50	Intermittent	Low	143	1:1	143
13C	0863+00	Intermittent	Low	145	1:1	145
13C_1	0870+00	Intermittent	Low	601	1:1	601
13E	0794+00	Ephemeral	Low	28	1:1	28
13G	0792+00	Intermittent	Low	11	1:1	11
13H	0785+50	Perennial	Low	211	1:1	211
13I	0795+00	Ephemeral	Low	154	1:1	154
13I_1	0796+50	Intermittent	Low	170	1:1	170
13J	0767+00	Intermittent	Low	59	1:1	59
13J_1	0770+00	Intermittent	Low	218	1:1	218
13J_2	0774+00	Intermittent	Low	49	1:1	49
13K	0798+50	Intermittent	Low	158	1:1	158

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
13L	0798+50	Ephemeral	Low	198	1:1	198
13M	0836+00	Perennial	Low	1528	1:1	1528
13M_1	0828+50	Perennial	Low	78	1:1	78
13M_D	0844+50	Intermittent	Low	151	1:1	151
13N	0828+00	Ephemeral	Low	58	1:1	58
13P	0797+00	Perennial	High	100	0:1	0
13P_1	0797+50	Perennial	High	256	0:1	0
13Q	0863+00	Intermittent	Low	519	1:1	519
13R	0849+00	Intermittent	Low	192	1:1	192
13S	0846+00	Intermittent	Low	23	1:1	23
13X_1	0830+00	Perennial	Low	29	1:1	29
13Y	0830+00	Perennial	Low	86	1:1	86
13Z	0869+00	Intermittent	Low	380	1:1	380
14A	0745+00	Intermittent	Medium	9	0.5:1	4.5
14A_1	0745+00	Intermittent	Medium	161	0.5:1	80.5
14E	0745+00	Perennial	Medium	41	0.5:1	20.5
14G	0707+50	Intermittent	Medium	10	0.5:1	5
14G_1	0707+50	Intermittent	Medium	16	0.5:1	8
15A	0664+00	Intermittent	Low	581	1:1	581
15B	0662+50	Intermittent	Low	99	1:1	99
15C	0686+00	Intermittent	Low	14	1:1	14
15D	0685+50	Perennial	Medium	21	0.5:1	10.5
15E	0685+00	Ephemeral	Low	7	1:1	7
16A	0604+00	Perennial	Medium	50	0.5:1	25
16A_1	0597+00	Perennial	Medium	1116	0.5:1	558
16A_2	0589+00	Perennial	Medium	81	0.5:1	40.5
16D	0599+50	Intermittent	Low	36	1:1	36
16E	0638+00	Intermittent	Low	164	1:1	164
16G	0614+00	Perennial	Medium	172	0.5:1	86
16G_1	0606+00	Perennial	Medium	165	0.5:1	82.5
16G_D	0626+00	Perennial	Medium	56	0.5:1	28
16G_D1	0619+50	Perennial	Medium	141	0.5:1	70.5
16J	0610+50	Ephemeral	Low	42	1:1	42
16J_1	0610+00	Ephemeral	Low	3	1:1	3
17B	0544+00	Ephemeral	Low	50	1:1	50
17BB	0568+00	Intermittent	Medium	31	0.5:1	15.5
17DD	0565+50	Intermittent	Medium	26	0.5:1	13
17F	0588+50	Perennial	Medium	3	0.5:1	1.5
17Y	0558+00	Intermittent	Low	31	1:1	31
17Z	0579+50	Ephemeral	Low	197	1:1	197
18A	0527+00	Intermittent	Low	13	1:1	13
18B	0526+50	Ephemeral	Low	35	1:1	35

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-1d. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan

Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
18C_1	0517+50	Perennial	Medium	20	0.5:1	10
18G	0537+00	Intermittent	Low	5	1:1	5
18I	0509+00	Perennial	Low	5	1:1	5
19B	0436+00	Intermittent	Low	26	1:1	26
19C	0432+00	Perennial	Medium	33	0.5:1	16.5
19F	0434+00	Perennial	Low	104	1:1	104
19F_1	0438+00	Perennial	Low	110	1:1	110
19F_2	0441+00	Perennial	Low	67	1:1	67
19F_3	0454+00	Perennial	Low	49	1:1	49
19F_4	0468+00	Perennial	Low	4	1:1	4
19J_1	0408+00	Perennial	Low	32	1:1	32
19J_2	0410+00	Perennial	Low	67	1:1	67
19K_1	0470+00	Perennial	High	8	0:1	0
19K_2	0491+00	Perennial	Medium	135	0.5:1	67.5
19K_7	0588+50	Perennial	Medium	69	0.5:1	34.5
19K_8	0588+50	Perennial	Medium	71	0.5:1	35.5
19R	0462+50	Intermittent	Low	3	1:1	3
19R_1	0463+50	Intermittent	Low	1	1:1	1
19T	0467+50	Perennial	Low	74	1:1	74
19T_1	0468+50	Perennial	Low	121	1:1	121
19V	0490+00	Perennial	Medium	18	0.5:1	9
23G	4799+00	Perennial	Medium	1135	0.5:1	567.5
23G_1	4805+00	Perennial	Medium	56	0.5:1	28
23Q	4774+50	Intermittent	Medium	256	0.5:1	128
23Q_1	4782+00	Perennial	Medium	61	0.5:1	30.5
23Q_2	4783+50	Perennial	Medium	46	0.5:1	23
23R	4770+00	Perennial	Medium	36	0.5:1	18
23S	4796+00	Intermittent	Medium	33	0.5:1	16.5
Total						43,475

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-2d. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
20B	0342+00	Intermittent	Low	19	1:1	19
20D	0324+00	Perennial	Low	505	1:1	505
20E	0332+00	Intermittent	Low	22	1:1	22
21B	0305+00	Perennial	Medium	1024	0.5:1	512
21C	0276+00	Perennial	Medium	2298	0.5:1	1149
21C_1	0245+00	Perennial	Medium	1844	0.5:1	922
21C_2	0233+00	Perennial	Medium	406	0.5:1	203
21D	0225+50	Intermittent	Low	86	1:1	86
21D_1	0227+00	Intermittent	Low	215	1:1	215
21F	0246+00	Intermittent	Low	75	1:1	75
21G	0239+00	Intermittent	Low	57	1:1	57
21H	0247+50	Ephemeral	Low	27	1:1	27
21L_D	0278+50	Perennial	Low	71	1:1	71
21M	0262+50	Intermittent	Low	23	1:1	23
21V	0297+00	Ephemeral	Low	87	1:1	87
22A	0222+00	Intermittent	Low	140	1:1	140
22AA	0224+00	Perennial	Medium	82	0.5:1	41
22AA_1	0200+50	Perennial	Medium	16	0.5:1	8
22AA_2	0200+00	Perennial	Medium	98	0.5:1	49
22AA_3	0198+00	Perennial	Medium	188	0.5:1	94
22B	0219+00	Intermittent	Low	35	1:1	35
22C	0219+00	Intermittent	Low	50	1:1	50
22D	0218+50	Intermittent	Low	144	1:1	144
22EE	0192+00	Ephemeral	Low	45	1:1	45
22FF	0177+00	Ephemeral	Low	34	1:1	34
22H	0198+00	Intermittent	Low	7	1:1	7
22H_1	0198+00	Intermittent	Low	10	1:1	10
22HH	0132+00	Intermittent	Medium	260	0.5:1	130
22HH_1	0129+00	Intermittent	Medium	154	0.5:1	77
22HH_2	0127+50	Intermittent	Medium	117	0.5:1	58.5
22KK	0198+00	Perennial	Low	26	1:1	26
22M_1	0114+00	Perennial	Medium	30	0.5:1	15
22MM	0106+00	Perennial	High	1025	0:1	0
22MM_B	0106+00	Perennial	High	138	0:1	0
22NN	0110+00	Intermittent	Low	275	1:1	275
22NN_B	0109+00	Intermittent	Low	166	1:1	166
22P	0125+00	Intermittent	Medium	9	0.5:1	4.5
22Q	0125+00	Perennial	Medium	136	0.5:1	68
22Q_1	0125+00	Perennial	Medium	61	0.5:1	30.5
22QQ	0113+50	Intermittent	Low	106	1:1	106
22T_D	0128+50	Intermittent	Low	8	1:1	8
22T_D1	0128+50	Intermittent	Low	34	1:1	34
22T_D2	0128+50	Intermittent	Low	92	1:1	92

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-2d. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
22V	0118+50	Intermittent	Low	76	1:1	76
22V_1	0118+50	Intermittent	Low	39	1:1	39
22V_2	0118+50	Intermittent	Low	26	1:1	26
22Z	0198+00	Perennial	Medium	72	0.5:1	36
22Z_1	0197+00	Perennial	Medium	38	0.5:1	19
23A_1	3744+00	Perennial	High	110	0:1	0
23A_3	3758+00	Perennial	High	345	0:1	0
23AA	3749+50	Perennial	Medium	76	0.5:1	38
23AA_1	3751+00	Perennial	Medium	206	0.5:1	103
23D	3755+50	Intermittent	Medium	696	0.5:1	348
23DD	3701+50	Intermittent	Low	100	1:1	100
23K	3701+00	Perennial	Medium	55	0.5:1	27.5
23K_1	3692+00	Perennial	Medium	1	0.5:1	0.5
23K_D	3688+00	Perennial	Medium	600	0.5:1	300
23N	4718+00	Intermittent	Medium	164	0.5:1	82
23N_D	4730+00	Intermittent	Medium	32	0.5:1	16
23V	3722+00	Intermittent	Low	13	1:1	13
24A	3683+00	Perennial	High	33	0:1	0
24A_1	3683+00	Perennial	High	50	0:1	0
24D	3639+50	Perennial	Medium	15	0.5:1	7.5
24F_2	3627+00	Perennial	High	50	0:1	0
24F_3	3626+00	Perennial	High	34	0:1	0
25F	3582+00	Ephemeral	Low	203	1:1	203
25G	3597+00	Intermittent	Low	129	1:1	129
25L	3597+00	Intermittent	Low	66	1:1	66
26B	3509+00	Intermittent	Medium	37	0.5:1	18.5
26C	3525+00	Intermittent	High	96	0:1	0
26G	3534+00	Ephemeral	Medium	140	0.5:1	70
26G_1	3530+50	Intermittent	Medium	406	0.5:1	203
26J	3524+00	Intermittent	Medium	31	0.5:1	15.5
27A	3478+50	Perennial	High	34	0:1	0
27A_1	3480+00	Perennial	High	85	0:1	0
27A_2	3484+00	Perennial	High	59	0:1	0
27B	3479+00	Intermittent	Medium	16	0.5:1	8
27K	3484+00	Ephemeral	Low	41	1:1	41
28B	3340+00	Intermittent	Low	64	1:1	64
29A_2	3340+00	Perennial	High	30	0:1	0
29B	3329+00	Perennial	High	35	0:1	0
29B_1	3329+00	Perennial	High	34	0:1	0
29D_D	3340+00	Intermittent	Low	93	1:1	93
29K	3340+00	Intermittent	Medium	12	0.5:1	6
Total						7,869

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-3d. On-Site Stream Mitigation - Patuxent

Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
4B	1687+50	Intermittent	Low	20	1:1	20
4BBB	1675+00	Perennial	Medium	372	0.5:1	186
4BBB_1	1672+50	Perennial	Medium	40	0.5:1	20
4BBBB	1735+00	Ephemeral	Low	71	1:1	71
4C	1687+00	Ephemeral	Low	42	1:1	42
4E	1694+00	Intermittent	Medium	36	0.5:1	18
4EE	1665+00	Perennial	Low	71	1:1	71
4GG	1745+00	Intermittent	Low	72	1:1	72
4GGG	1667+00	Ephemeral	Low	236	1:1	236
4GGGG	1733+00	Perennial	Low	11	1:1	11
4J	1744+00	Ephemeral	Low	98	1:1	98
4JJJ	1693+00	Perennial	Low	17	1:1	17
4K	1725+50	Intermittent	Low	15	1:1	15
4L	1724+50	Intermittent	Low	19	1:1	19
4LLLL	1692+50	Ephemeral	Low	87	1:1	87
4M	1718+00	Perennial	High	105	0:1	0
4MMMM	1694+50	Ephemeral	Low	87	1:1	87
4NN	1713+50	Intermittent	Low	37	1:1	37
4NNN_1	1631+50	Intermittent	Medium	42	0.5:1	21
4O	1706+00	Intermittent	Medium	343	0.5:1	171.5
4OO	1712+00	Intermittent	Low	50	1:1	50
40000	1693+50	Intermittent	Medium	72	0.5:1	36
4P	1703+00	Ephemeral	Low	40	1:1	40
4PPPP	1715+00	Perennial	Medium	232	0.5:1	116
4Q	1713+00	Perennial	Medium	144	0.5:1	72
4Q_1	1713+50	Perennial	Medium	51	0.5:1	25.5
4QQ	1708+00	Intermittent	Low	18	1:1	18
4QQQQ	1713+00	Intermittent	Medium	90	0.5:1	45
4RRR	1687+00	Intermittent	Medium	81	0.5:1	40.5
4S	1714+50	Ephemeral	Low	118	1:1	118
4T	1674+50	Intermittent	Low	40	1:1	40
4U	1675+00	Intermittent	Low	78	1:1	78
4UUU	1688+00	Intermittent	Medium	69	0.5:1	34.5
4W	1665+00	Perennial	Medium	36	0.5:1	18
4W_2	1665+50	Perennial	Medium	26	0.5:1	13
4Z_1	1631+50	Perennial	Medium	50	0.5:1	25
4Z_2	1630+50	Perennial	Medium	42	0.5:1	21
4Z_3	1623+00	Perennial	Medium	98	0.5:1	49
5BB	1547+00	Intermittent	Low	108	1:1	108
5F	1619+00	Perennial	Medium	49	0.5:1	24.5
5F_1	1620+50	Perennial	Medium	142	0.5:1	71
5J	1621+00	Intermittent	Low	5	1:1	5
5JJ	1570+00	Ephemeral	Low	10	1:1	10
5KK	1563+00	Intermittent	Low	5	1:1	5
5MM	1555+00	Intermittent	Low	20	1:1	20

ALTERNATIVE 13B: ONSITE MITIGATION

Table D-3d. On-Site Stream Mitigation - Patuxent

Alternative 13B

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
5N	1620+00	Intermittent	Low	122	1:1	122
5O	1596+00	Ephemeral	Low	197	1:1	197
5P	1594+00	Intermittent	Low	144	1:1	144
5Q	1554+50	Perennial	Low	943	1:1	943
5QQ	1551+00	Intermittent	Low	12	1:1	12
5S	1558+00	Perennial	Medium	70	0.5:1	35
5S_1	1558+00	Perennial	Medium	47	0.5:1	23.5
5T	1557+50	Perennial	Low	11	1:1	11
5Y	1549+00	Ephemeral	Low	111	1:1	111
6AA	1480+50	Intermittent	Low	6	1:1	6
6AAA	1527+50	Intermittent	Low	47	1:1	47
6AAA_1	1527+00	Intermittent	Low	33	1:1	33
6AAA_2	1526+00	Intermittent	Low	25	1:1	25
6AAAA	1464+50	Ephemeral	Low	9	1:1	9
6B	1511+00	Perennial	Low	9	1:1	9
6EEE	1457+50	Intermittent	Low	22	1:1	22
6FFFF_1	1526+50	Intermittent	Low	3	1:1	3
6G	1451+50	Perennial	Medium	1	0.5:1	0.5
6G_1	1467+00	Perennial	Medium	1064	0.5:1	532
6G_2	1493+00	Perennial	Medium	672	0.5:1	336
6G_3	1500+00	Perennial	Medium	1063	0.5:1	531.5
6G_6	1555+50	Perennial	Medium	270	0.5:1	135
6GGG	1543+00	Intermittent	Low	112	1:1	112
6GGG_1	1546+50	Intermittent	Low	200	1:1	200
6III	1511+00	Intermittent	Low	409	1:1	409
6J	1509+50	Ephemeral	Low	24	1:1	24
6JJ	1513+00	Perennial	Low	32	1:1	32
6L	1521+00	Intermittent	Low	13	1:1	13
6LLL	1498+00	Perennial	Low	738	1:1	738
6MM	1539+00	Ephemeral	Low	149	1:1	149
6MMM	1496+00	Perennial	Low	33	1:1	33
6NNN_1	1496+00	Intermittent	Low	30	1:1	30
6RRR	1461+00	Intermittent	Low	52	1:1	52
6RRR_D	1460+00	Intermittent	Low	115	1:1	115
6T	1493+50	Intermittent	Low	59	1:1	59
6TTT	1479+00	Intermittent	Low	211	1:1	211
6UU	1465+00	Intermittent	Medium	35	0.5:1	17.5
6UUU	1478+00	Intermittent	Low	62	1:1	62
6V	1485+50	Ephemeral	Low	185	1:1	185
6WW	1456+50	Intermittent	Medium	61	0.5:1	30.5
6XX	1456+00	Ephemeral	Low	53	1:1	53
6YY	1456+50	Ephemeral	Low	63	1:1	63
7B	1443+50	Ephemeral	Low	482	1:1	482
Total						8,740

ALTERNATIVE 13C

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
1D_1	1989+50	Perennial	Medium	121	0.5:1	60.5
1D_2	1987+50	Perennial	Medium	78	0.5:1	39
1G	1994+50	Ephemeral	Low	19	1:1	19
1H	1995+00	Intermittent	Low	2	1:1	2
1H_D	1999+00	Intermittent	Low	625	1:1	625
1O	1929+00	Ephemeral	Low	227	1:1	227
1P	1931+00	Intermittent	Low	178	1:1	178
1Q	1930+00	Perennial	High	56	0:1	0
1Q_1	1927+00	Perennial	High	252	0:1	0
1R	1943+00	Perennial	Medium	482	0.5:1	241
1R_1	1936+00	Perennial	Medium	548	0.5:1	274
1RR	1958+50	Intermittent	Low	26	1:1	26
1SS	1957+00	Ephemeral	Low	317	1:1	317
1TT	1969+00	Intermittent	Low	53	1:1	53
1VV	1973+00	Perennial	Medium	39	0.5:1	19.5
1VV_1	1974+50	Perennial	Medium	18	0.5:1	9
1XX	1975+00	Ephemeral	Medium	136	0.5:1	68
1XX_1	1974+00	Intermittent	Medium	141	0.5:1	70.5
1YY	1972+00	Intermittent	Low	362	1:1	362
2A	1924+50	Ephemeral	Low	170	1:1	170
2AA	1857+00	Intermittent	Low	50	1:1	50
2D	1917+00	Ephemeral	Low	13	1:1	13
2E	1916+50	Intermittent	Low	77	1:1	77
2F	1901+00	Intermittent	Medium	669	0.5:1	334.5
2F_D	1896+00	Intermittent	Medium	499	0.5:1	249.5
2H	1870+00	Intermittent	Low	53	1:1	53
2HH	1902+50	Intermittent	Low	52	1:1	52
2I	1871+00	Intermittent	Low	244	1:1	244
2J	1864+50	Perennial	Medium	44	0.5:1	22
2J_1	1863+00	Perennial	Medium	30	0.5:1	15
2JJ	1917+00	Intermittent	Low	73	1:1	73
2L	1862+00	Intermittent	Medium	313	0.5:1	156.5
2MM	1904+00	Perennial	Medium	4	0.5:1	2
2OO	1915+00	Ephemeral	Low	33	1:1	33
2R	1870+00	Perennial	Medium	27	0.5:1	13.5
2T	1874+00	Intermittent	Medium	989	0.5:1	494.5
2V	1857+50	Perennial	Medium	16	0.5:1	8
2VV	1921+00	Intermittent	Low	17	1:1	17
2W	1914+00	Intermittent	Low	451	1:1	451
2X	1916+50	Perennial	Medium	16	0.5:1	8
2X_1	1916+50	Perennial	Medium	203	0.5:1	101.5
2Y	1928+00	Perennial	Low	241	1:1	241

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
2Y_1	1926+00	Perennial	Low	388	1:1	388
2YY	1921+00	Intermittent	Low	51	1:1	51
3A	1836+00	Perennial	Medium	44	0.5:1	22
3AA_1	1803+00	Perennial	Low	40	1:1	40
3BB	1804+00	Ephemeral	Low	120	1:1	120
3BBB	1804+00	Intermittent	Low	41	1:1	41
3CC	1819+50	Intermittent	Low	303	1:1	303
3D	1822+50	Perennial	Medium	45	0.5:1	22.5
3D_1	1820+50	Perennial	Medium	87	0.5:1	43.5
3DD	1821+00	Perennial	Medium	45	0.5:1	22.5
3F	1801+50	Ephemeral	Low	244	1:1	244
3FFF	1804+50	Intermittent	Low	52	1:1	52
3FFF_D	1805+00	Intermittent	Low	66	1:1	66
3H	1823+00	Intermittent	Low	102	1:1	102
3I	1818+00	Intermittent	Low	551	1:1	551
3JJ	1758+00	Intermittent	Low	321	1:1	321
3L	1792+50	Perennial	Medium	35	0.5:1	17.5
3L_1	1793+50	Perennial	Medium	38	0.5:1	19
3LL	1754+50	Intermittent	Low	92	1:1	92
3LL_1	1759+00	Intermittent	Low	521	1:1	521
3LLL	1794+00	Ephemeral	Low	16	1:1	16
3PP	1764+00	Ephemeral	Low	87	1:1	87
3Q	1790+00	Ephemeral	Low	73	1:1	73
3RR	1764+00	Ephemeral	Low	206	1:1	206
3S	1792+50	Perennial	Medium	183	0.5:1	91.5
3SS	1792+50	Intermittent	Low	9	1:1	9
3U	1789+50	Intermittent	Low	44	1:1	44
3UU	1817+00	Intermittent	Low	6	1:1	6
3ZZ	1764+00	Perennial	Medium	95	0.5:1	47.5
4H	1754+00	Ephemeral	Low	331	1:1	331
4YYY	1755+00	Intermittent	Low	35	1:1	35
7AA	1347+00	Intermittent	Low	102	1:1	102
7BB	1395+00	Intermittent	Low	56	1:1	56
7BB_1	1394+00	Intermittent	Low	76	1:1	76
7BB_D	1397+00	Intermittent	Low	518	1:1	518
7D	1425+50	Intermittent	Low	27	1:1	27
7E	1424+00	Perennial	Low	327	1:1	327
7F	1422+50	Intermittent	Low	32	1:1	32
7G	1431+50	Perennial	Medium	20	0.5:1	10
7G_1	1428+00	Perennial	Medium	484	0.5:1	242
7GG	1409+50	Intermittent	Low	255	1:1	255
7H	1427+00	Intermittent	Low	373	1:1	373

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
7I	1410+00	Intermittent	Medium	37	0.5:1	18.5
7JJ	1411+50	Perennial	Medium	11	0.5:1	5.5
7JJ_1	1411+00	Perennial	Medium	7	0.5:1	3.5
7MM	1347+00	Intermittent	Low	150	1:1	150
7N	1396+50	Perennial	Low	218	1:1	218
7N_1	1394+50	Perennial	Low	76	1:1	76
7NN	1347+00	Ephemeral	Low	134	1:1	134
7O	1393+00	Perennial	Low	53	1:1	53
7O_1	1394+00	Perennial	Low	41	1:1	41
7PP	1347+00	Intermittent	Low	35	1:1	35
7S	1347+00	Perennial	Medium	128	0.5:1	64
7T	1424+00	Perennial	Low	17	1:1	17
7T_1	1425+00	Perennial	Low	207	1:1	207
7V	1429+00	Ephemeral	Low	46	1:1	46
8A	1334+50	Intermittent	Low	186	1:1	186
8E	1338+50	Intermittent	Low	106	1:1	106
8F	1336+00	Intermittent	Low	70	1:1	70
8G_1	1339+00	Intermittent	Low	47	1:1	47
8HH	1347+00	Intermittent	Medium	133	0.5:1	66.5
8I	1337+50	Ephemeral	Low	45	1:1	45
8J	1328+50	Intermittent	Low	181	1:1	181
8J_2	1333+50	Perennial	Medium	29	0.5:1	14.5
8MM	1334+00	Intermittent	Low	41	1:1	41
8N	1330+00	Intermittent	Medium	112	0.5:1	56
8N_1	1332+00	Perennial	Medium	319	0.5:1	159.5
8N_D	1329+50	Intermittent	Medium	51	0.5:1	25.5
8R_D1	1282+50	Intermittent	Low	347	1:1	347
8S	1292+00	Ephemeral	Low	137	1:1	137
8S_1	1289+00	Ephemeral	Low	7	1:1	7
8T	1289+00	Ephemeral	Low	118	1:1	118
8V	1310+00	Intermittent	Low	46	1:1	46
8W	1347+00	Intermittent	Medium	211	0.5:1	105.5
8W_1	1347+00	Intermittent	Medium	502	0.5:1	251
8Z	1347+00	Perennial	Medium	60	0.5:1	30
9A	1290+00	Intermittent	Low	141	1:1	141
9C	1289+00	Intermittent	Low	196	1:1	196
9CC	1227+00	Perennial	Low	325	1:1	325
9F	1186+00	Intermittent	Low	292	1:1	292
9FF	1229+00	Ephemeral	Low	103	1:1	103
9G	1184+50	Perennial	Medium	133	0.5:1	66.5
9G_1	1184+50	Perennial	Medium	50	0.5:1	25
9GG	1228+00	Intermittent	Low	5	1:1	5

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
9J	1203+00	Perennial	Medium	49	0.5:1	24.5
9JJ	1242+50	Perennial	Medium	407	0.5:1	203.5
9LL	1245+00	Ephemeral	Low	32	1:1	32
9M	1204+00	Intermittent	Low	308	1:1	308
9M_D	1208+00	Intermittent	Low	419	1:1	419
9MM	1244+00	Intermittent	Low	106	1:1	106
9P	1202+00	Ephemeral	Low	198	1:1	198
9QQ	1200+50	Intermittent	Low	99	1:1	99
9QQ_1	1199+50	Ephemeral	Low	89	1:1	89
9R	1289+50	Intermittent	Low	589	1:1	589
9RR	1204+00	Intermittent	Low	456	1:1	456
9RR_1	1206+00	Ephemeral	Low	113	1:1	113
9T	1264+00	Intermittent	Low	18	1:1	18
9T_1	1263+00	Perennial	Low	78	1:1	78
9VV	1225+00	Intermittent	Low	119	1:1	119
9Y	1240+50	Perennial	Medium	61	0.5:1	30.5
9Y_1	1240+00	Perennial	Medium	33	0.5:1	16.5
9Z	1240+50	Intermittent	Low	31	1:1	31
10AA	1115+00	Perennial	Low	265	1:1	265
10B_1	1163+50	Intermittent	Low	48	1:1	48
10BB	1119+00	Perennial	Low	586	1:1	586
10C	1163+50	Perennial	Medium	101	0.5:1	50.5
10C_1	1165+50	Perennial	Medium	53	0.5:1	26.5
10E	1160+50	Perennial	Low	73	1:1	73
10F	1160+00	Intermittent	Low	11	1:1	11
10F_1	1162+50	Intermittent	Low	79	1:1	79
10F_2	1163+00	Intermittent	Low	53	1:1	53
10FF	1158+00	Intermittent	Low	136	1:1	136
10J	1156+00	Intermittent	Low	174	1:1	174
10JJ	1158+00	Intermittent	Low	12	1:1	12
10KK	1158+00	Intermittent	Low	200	1:1	200
10L	1145+00	Intermittent	Low	524	1:1	524
10MM	1158+00	Intermittent	Low	25	1:1	25
10MM_1	1158+00	Intermittent	Medium	342	0.5:1	171
10N	1142+50	Intermittent	Low	74	1:1	74
10N_1	1140+50	Intermittent	Low	269	1:1	269
10N_D	1142+50	Intermittent	Low	191	1:1	191
10PP	1158+00	Intermittent	Medium	28	0.5:1	14
10PP_1	1158+00	Intermittent	Medium	80	0.5:1	40
10Q	1109+00	Ephemeral	Low	123	1:1	123
10S	1112+50	Perennial	Low	450	1:1	450
10U	1114+00	Intermittent	Low	176	1:1	176

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
10X	1134+00	Ephemeral	Low	174	1:1	174
11A	1104+00	Intermittent	Low	111	1:1	111
11A_1	1103+50	Perennial	Low	30	1:1	30
11AA	1067+50	Intermittent	Low	343	1:1	343
11C	1103+00	Intermittent	Low	257	1:1	257
11CC	1069+50	Intermittent	Low	18	1:1	18
11D	1102+50	Intermittent	Low	97	1:1	97
11E_D	1097+00	Perennial	Low	915	1:1	915
11E_D2	1092+00	Perennial	Low	46	1:1	46
11G	1095+00	Intermittent	Low	861	1:1	861
11GG	1034+50	Ephemeral	Low	156	1:1	156
11H	1079+50	Intermittent	Low	16	1:1	16
11L	1071+00	Perennial	Medium	51	0.5:1	25.5
11L_2	1071+00	Perennial	Medium	81	0.5:1	40.5
11M	1068+00	Intermittent	Low	4	1:1	4
11M_1	1069+00	Intermittent	Low	211	1:1	211
11M_B	1068+50	Intermittent	Low	31	1:1	31
11R	1014+00	Perennial	Low	99	1:1	99
11R_1	1014+50	Perennial	Low	60	1:1	60
11R_D	1011+00	Intermittent	Low	593	1:1	593
11T	1013+50	Perennial	Low	21	1:1	21
11V	1072+50	Perennial	Low	191	1:1	191
11Y	1060+00	Intermittent	Low	387	1:1	387
12C	0915+00	Perennial	Low	271	1:1	271
12CCC	0923+50	Perennial	Low	175	1:1	175
12F	0918+50	Perennial	Low	33	1:1	33
12FFF	0929+00	Ephemeral	Low	422	1:1	422
12GGG	0906+50	Ephemeral	Low	79	1:1	79
12H	0908+50	Perennial	Low	44	1:1	44
12H_2	0924+00	Perennial	Low	8	1:1	8
12H_3	0926+00	Perennial	Low	286	1:1	286
12H_4	0930+00	Perennial	Low	475	1:1	475
12H_5	0933+50	Perennial	Low	22	1:1	22
12HHH	0906+00	Intermittent	Low	176	1:1	176
12HHHH	0895+50	Intermittent	Low	43	1:1	43
12II	0928+00	Perennial	High	71	0:1	0
12II_4	0938+00	Perennial	High	267	0:1	0
12II_5	0938+00	Perennial	High	91	0:1	0
12JJJ	0906+50	Perennial	Low	28	1:1	28
12K	0910+00	Perennial	Low	60	1:1	60
12K_1	0912+50	Perennial	Low	3	1:1	3
12KK	0943+00	Perennial	Low	535	1:1	535

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
12KKK	0906+50	Intermittent	Low	265	1:1	265
12LL	0951+00	Ephemeral	Low	123	1:1	123
12MM	0967+00	Intermittent	Low	402	1:1	402
12MMM	0907+00	Ephemeral	Low	34	1:1	34
12NNN	0907+50	Intermittent	Low	174	1:1	174
12O	0907+50	Intermittent	Low	147	1:1	147
12O_1	0908+00	Intermittent	Low	84	1:1	84
12OO	0976+50	Perennial	Medium	65	0.5:1	32.5
12OO_1	0976+50	Perennial	Medium	33	0.5:1	16.5
12P	0909+00	Intermittent	Low	31	1:1	31
12PPP	0939+50	Intermittent	Low	74	1:1	74
12QQQ	0939+00	Intermittent	Low	168	1:1	168
12RRR	0946+00	Perennial	Low	29	1:1	29
12S	0923+00	Intermittent	Low	351	1:1	351
12T	0923+50	Intermittent	Low	40	1:1	40
12T_D	0921+50	Intermittent	Low	386	1:1	386
12UUU	0976+00	Perennial	Low	32	1:1	32
12VVV	0931+00	Intermittent	Low	431	1:1	431
12WW	0935+00	Perennial	Low	97	1:1	97
12WW_1	0934+50	Perennial	Low	24	1:1	24
12WW_2	0931+00	Perennial	Low	35	1:1	35
12WWW	0937+00	Intermittent	Low	84	1:1	84
12WWW_1	0935+00	Intermittent	Low	90	1:1	90
12XX	0925+00	Perennial	Medium	100	0.5:1	50
12XX_1	0923+50	Perennial	Medium	15	0.5:1	7.5
12Y	0929+50	Intermittent	Low	4	1:1	4
12Y_D	0929+00	Intermittent	Low	215	1:1	215
12YYY	0934+50	Perennial	Low	843	1:1	843
12YYY_1	0931+00	Perennial	Low	160	1:1	160
12Z	0917+50	Intermittent	Low	100	1:1	100
13A	0807+50	Intermittent	Low	143	1:1	143
13C	0863+00	Intermittent	Low	145	1:1	145
13C_1	0870+00	Intermittent	Low	601	1:1	601
13E	0794+00	Ephemeral	Low	28	1:1	28
13G	0792+00	Intermittent	Low	11	1:1	11
13H	0785+50	Perennial	Low	211	1:1	211
13I	0795+00	Ephemeral	Low	154	1:1	154
13I_1	0796+50	Intermittent	Low	170	1:1	170
13J	0767+00	Intermittent	Low	59	1:1	59
13J_1	0770+00	Intermittent	Low	218	1:1	218
13J_2	0774+00	Intermittent	Low	49	1:1	49
13K	0798+50	Intermittent	Low	158	1:1	158

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
13L	0798+50	Ephemeral	Low	198	1:1	198
13M	0836+00	Perennial	Low	1528	1:1	1528
13M_1	0828+50	Perennial	Low	78	1:1	78
13M_D	0844+50	Intermittent	Low	151	1:1	151
13N	0828+00	Ephemeral	Low	58	1:1	58
13P	0797+00	Perennial	High	100	0:1	0
13P_1	0797+50	Perennial	High	256	0:1	0
13Q	0863+00	Intermittent	Low	519	1:1	519
13R	0849+00	Intermittent	Low	192	1:1	192
13S	0846+00	Intermittent	Low	23	1:1	23
13X_1	0830+00	Perennial	Low	29	1:1	29
13Y	0830+00	Perennial	Low	86	1:1	86
13Z	0869+00	Intermittent	Low	380	1:1	380
14A	0745+00	Intermittent	Medium	9	0.5:1	4.5
14A_1	0745+00	Intermittent	Medium	161	0.5:1	80.5
14E	0745+00	Perennial	Medium	41	0.5:1	20.5
14G	0707+50	Intermittent	Medium	10	0.5:1	5
14G_1	0707+50	Intermittent	Medium	16	0.5:1	8
15A	0664+00	Intermittent	Low	581	1:1	581
15B	0662+50	Intermittent	Low	99	1:1	99
15C	0686+00	Intermittent	Low	14	1:1	14
15D	0685+50	Perennial	Medium	21	0.5:1	10.5
15E	0685+00	Ephemeral	Low	7	1:1	7
16A	0604+00	Perennial	Medium	50	0.5:1	25
16A_1	0597+00	Perennial	Medium	1116	0.5:1	558
16A_2	0589+00	Perennial	Medium	81	0.5:1	40.5
16D	0599+50	Intermittent	Low	36	1:1	36
16E	0638+00	Intermittent	Low	164	1:1	164
16G	0614+00	Perennial	Medium	172	0.5:1	86
16G_1	0606+00	Perennial	Medium	165	0.5:1	82.5
16G_D	0626+00	Perennial	Medium	56	0.5:1	28
16G_D1	0619+50	Perennial	Medium	141	0.5:1	70.5
16J	0610+50	Ephemeral	Low	42	1:1	42
16J_1	0610+00	Ephemeral	Low	3	1:1	3
17B	0544+00	Ephemeral	Low	50	1:1	50
17BB	0568+00	Intermittent	Medium	31	0.5:1	15.5
17DD	0565+50	Intermittent	Medium	26	0.5:1	13
17F	0588+50	Perennial	Medium	3	0.5:1	1.5
17Y	0558+00	Intermittent	Low	31	1:1	31
17Z	0579+50	Ephemeral	Low	197	1:1	197
18A	0527+00	Intermittent	Low	13	1:1	13
18B	0526+50	Ephemeral	Low	35	1:1	35

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-1e. On-Site Stream Mitigation - Middle-Potomac-Anacostia-Occoquan
Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
18C_1	0517+50	Perennial	Medium	20	0.5:1	10
18G	0537+00	Intermittent	Low	5	1:1	5
18I	0509+00	Perennial	Low	5	1:1	5
19B	0436+00	Intermittent	Low	26	1:1	26
19C	0432+00	Perennial	Medium	33	0.5:1	16.5
19F	0434+00	Perennial	Low	104	1:1	104
19F_1	0438+00	Perennial	Low	110	1:1	110
19F_2	0441+00	Perennial	Low	67	1:1	67
19F_3	0454+00	Perennial	Low	49	1:1	49
19F_4	0468+00	Perennial	Low	4	1:1	4
19J_1	0408+00	Perennial	Low	32	1:1	32
19J_2	0410+00	Perennial	Low	67	1:1	67
19K_1	0470+00	Perennial	High	8	0:1	0
19K_2	0491+00	Perennial	Medium	135	0.5:1	67.5
19K_7	0588+50	Perennial	Medium	69	0.5:1	34.5
19K_8	0588+50	Perennial	Medium	71	0.5:1	35.5
19R	0462+50	Intermittent	Low	3	1:1	3
19R_1	0463+50	Intermittent	Low	1	1:1	1
19T	0467+50	Perennial	Low	74	1:1	74
19T_1	0468+50	Perennial	Low	121	1:1	121
19V	0490+00	Perennial	Medium	18	0.5:1	9
23G	4799+00	Perennial	Medium	1162	0.5:1	581
23G_1	4805+00	Perennial	Medium	56	0.5:1	28
23Q	4774+50	Intermittent	Medium	279	0.5:1	139.5
23Q_1	4782+00	Perennial	Medium	58	0.5:1	29
23Q_2	4783+50	Perennial	Medium	56	0.5:1	28
23R	4770+00	Perennial	Medium	131	0.5:1	65.5
23S	4796+00	Intermittent	Medium	24	0.5:1	12
Total						43,546

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-2e. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
20B	0342+00	Intermittent	Low	19	1:1	19
20D	0324+00	Perennial	Low	505	1:1	505
20E	0332+00	Intermittent	Low	22	1:1	22
21B	0305+00	Perennial	Medium	1024	0.5:1	512
21C	0276+00	Perennial	Medium	2298	0.5:1	1149
21C_1	0245+00	Perennial	Medium	1844	0.5:1	922
21C_2	0233+00	Perennial	Medium	406	0.5:1	203
21D	0225+50	Intermittent	Low	86	1:1	86
21D_1	0227+00	Intermittent	Low	215	1:1	215
21F	0246+00	Intermittent	Low	75	1:1	75
21G	0239+00	Intermittent	Low	57	1:1	57
21H	0247+50	Ephemeral	Low	27	1:1	27
21L_D	0278+50	Perennial	Low	71	1:1	71
21M	0262+50	Intermittent	Low	23	1:1	23
21V	0297+00	Ephemeral	Low	87	1:1	87
22A	0222+00	Intermittent	Low	140	1:1	140
22AA	0224+00	Perennial	Medium	82	0.5:1	41
22AA_1	0200+50	Perennial	Medium	16	0.5:1	8
22AA_2	0200+00	Perennial	Medium	98	0.5:1	49
22AA_3	0198+00	Perennial	Medium	188	0.5:1	94
22B	0219+00	Intermittent	Low	35	1:1	35
22C	0219+00	Intermittent	Low	50	1:1	50
22D	0218+50	Intermittent	Low	144	1:1	144
22EE	0192+00	Ephemeral	Low	45	1:1	45
22FF	0177+00	Ephemeral	Low	34	1:1	34
22H	0198+00	Intermittent	Low	7	1:1	7
22H_1	0198+00	Intermittent	Low	10	1:1	10
22HH	0132+00	Intermittent	Medium	260	0.5:1	130
22HH_1	0129+00	Intermittent	Medium	154	0.5:1	77
22HH_2	0127+50	Intermittent	Medium	117	0.5:1	58.5
22KK	0198+00	Perennial	Low	26	1:1	26
22M_1	0114+00	Perennial	Medium	30	0.5:1	15
22MM	0106+00	Perennial	High	1025	0:1	0
22MM_B	0106+00	Perennial	High	138	0:1	0
22NN	0110+00	Intermittent	Low	275	1:1	275
22NN_B	0109+00	Intermittent	Low	166	1:1	166
22P	0125+00	Intermittent	Medium	9	0.5:1	4.5
22Q	0125+00	Perennial	Medium	136	0.5:1	68
22Q_1	0125+00	Perennial	Medium	61	0.5:1	30.5
22QQ	0113+50	Intermittent	Low	106	1:1	106
22T_D	0128+50	Intermittent	Low	8	1:1	8
22T_D1	0128+50	Intermittent	Low	34	1:1	34
22T_D2	0128+50	Intermittent	Low	92	1:1	92
22V	0118+50	Intermittent	Low	76	1:1	76
22V_1	0118+50	Intermittent	Low	39	1:1	39

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-2e. On-Site Stream Mitigation - Middle-Potomac-Catoctin

Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
22V_2	0118+50	Intermittent	Low	26	1:1	26
22Z	0198+00	Perennial	Medium	72	0.5:1	36
22Z_1	0197+00	Perennial	Medium	38	0.5:1	19
23A_1	3744+00	Perennial	High	99	0:1	0
23A_3	3758+00	Perennial	High	353	0:1	0
23AA	3749+50	Perennial	Medium	76	0.5:1	38
23AA_1	3751+00	Perennial	Medium	213	0.5:1	106.5
23D	3755+50	Intermittent	Medium	700	0.5:1	350
23DD	3701+50	Intermittent	Low	89	1:1	89
23K	3701+00	Perennial	Medium	152	0.5:1	76
23K_1	3692+00	Perennial	Medium	233	0.5:1	116.5
23K_D	3688+00	Perennial	Medium	596	0.5:1	298
23N	4718+00	Intermittent	Medium	204	0.5:1	102
23N_D	4730+00	Intermittent	Medium	32	0.5:1	16
23V	3722+00	Intermittent	Low	24	1:1	24
24A	3683+00	Perennial	High	33	0:1	0
24A_1	3683+00	Perennial	High	50	0:1	0
24D	3639+50	Perennial	Medium	15	0.5:1	7.5
24F_2	3627+00	Perennial	High	50	0:1	0
24F_3	3626+00	Perennial	High	34	0:1	0
25E	3560+50	Perennial	Medium	21	0.5:1	10.5
25F	3582+00	Ephemeral	Low	193	1:1	193
25G	3597+00	Intermittent	Low	129	1:1	129
25H_1	3560+00	Perennial	High	15	0:1	0
25L	3597+00	Intermittent	Low	66	1:1	66
26B	3509+00	Intermittent	Medium	37	0.5:1	18.5
26C	3525+00	Intermittent	High	96	0:1	0
26G	3534+00	Ephemeral	Medium	145	0.5:1	72.5
26G_1	3530+50	Intermittent	Medium	414	0.5:1	207
26J	3524+00	Intermittent	Medium	31	0.5:1	15.5
27A	3478+50	Perennial	High	50	0:1	0
27A_1	3480+00	Perennial	High	85	0:1	0
27A_2	3484+00	Perennial	High	58	0:1	0
27B	3479+00	Intermittent	Medium	22	0.5:1	11
27C	3475+50	Ephemeral	Medium	14	0.5:1	7
27D	3476+00	Intermittent	Medium	72	0.5:1	36
27K	3484+00	Ephemeral	Low	41	1:1	41
28B	3340+00	Intermittent	Low	64	1:1	64
29A_2	3340+00	Perennial	High	25	0:1	0
29B	3329+00	Perennial	High	35	0:1	0
29B_1	3329+00	Perennial	High	34	0:1	0
29D_D	3340+00	Intermittent	Low	93	1:1	93
29K	3340+00	Intermittent	Medium	12	0.5:1	6
Total						8,110

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-3e. On-Site Stream Mitigation - Patuxent

Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
4B	1687+50	Intermittent	Low	20	1:1	20
4BBB	1675+00	Perennial	Medium	372	0.5:1	186
4BBB_1	1672+50	Perennial	Medium	40	0.5:1	20
4BBBB	1735+00	Ephemeral	Low	71	1:1	71
4C	1687+00	Ephemeral	Low	42	1:1	42
4E	1694+00	Intermittent	Medium	36	0.5:1	18
4EE	1665+00	Perennial	Low	71	1:1	71
4GG	1745+00	Intermittent	Low	72	1:1	72
4GGG	1667+00	Ephemeral	Low	236	1:1	236
4GGGG	1733+00	Perennial	Low	11	1:1	11
4J	1744+00	Ephemeral	Low	98	1:1	98
4JJJ	1693+00	Perennial	Low	17	1:1	17
4K	1725+50	Intermittent	Low	15	1:1	15
4L	1724+50	Intermittent	Low	19	1:1	19
4LLL	1692+50	Ephemeral	Low	87	1:1	87
4M	1718+00	Perennial	High	105	0:1	0
4MMMM	1694+50	Ephemeral	Low	87	1:1	87
4NN	1713+50	Intermittent	Low	37	1:1	37
4NNN_1	1631+50	Intermittent	Medium	42	0.5:1	21
4O	1706+00	Intermittent	Medium	343	0.5:1	171.5
4OO	1712+00	Intermittent	Low	50	1:1	50
40000	1693+50	Intermittent	Medium	72	0.5:1	36
4P	1703+00	Ephemeral	Low	40	1:1	40
4PPPP	1715+00	Perennial	Medium	232	0.5:1	116
4Q	1713+00	Perennial	Medium	144	0.5:1	72
4Q_1	1713+50	Perennial	Medium	51	0.5:1	25.5
4QQ	1708+00	Intermittent	Low	18	1:1	18
4QQQQ	1713+00	Intermittent	Medium	90	0.5:1	45
4RRR	1687+00	Intermittent	Medium	81	0.5:1	40.5
4S	1714+50	Ephemeral	Low	118	1:1	118
4T	1674+50	Intermittent	Low	40	1:1	40
4U	1675+00	Intermittent	Low	78	1:1	78
4UUU	1688+00	Intermittent	Medium	69	0.5:1	34.5
4W	1665+00	Perennial	Medium	36	0.5:1	18
4W_2	1665+50	Perennial	Medium	26	0.5:1	13
4Z_1	1631+50	Perennial	Medium	50	0.5:1	25
4Z_2	1630+50	Perennial	Medium	42	0.5:1	21
4Z_3	1623+00	Perennial	Medium	98	0.5:1	49
5BB	1547+00	Intermittent	Low	108	1:1	108
5F	1619+00	Perennial	Medium	49	0.5:1	24.5
5F_1	1620+50	Perennial	Medium	142	0.5:1	71
5J	1621+00	Intermittent	Low	5	1:1	5
5JJ	1570+00	Ephemeral	Low	10	1:1	10
5KK	1563+00	Intermittent	Low	5	1:1	5
5MM	1555+00	Intermittent	Low	20	1:1	20

ALTERNATIVE 13C: ONSITE MITIGATION

Table D-3e. On-Site Stream Mitigation - Patuxent

Alternative 13C

ID	Station	Type	Function	Proposed Open Channel Length (LF)	Credit Ratio	Proposed Onsite Mitigation Credit (LF)
5N	1620+00	Intermittent	Low	122	1:1	122
5O	1596+00	Ephemeral	Low	197	1:1	197
5P	1594+00	Intermittent	Low	144	1:1	144
5Q	1554+50	Perennial	Low	943	1:1	943
5QQ	1551+00	Intermittent	Low	12	1:1	12
5S	1558+00	Perennial	Medium	70	0.5:1	35
5S_1	1558+00	Perennial	Medium	47	0.5:1	23.5
5T	1557+50	Perennial	Low	11	1:1	11
5Y	1549+00	Ephemeral	Low	111	1:1	111
6AA	1480+50	Intermittent	Low	6	1:1	6
6AAA	1527+50	Intermittent	Low	47	1:1	47
6AAA_1	1527+00	Intermittent	Low	33	1:1	33
6AAA_2	1526+00	Intermittent	Low	25	1:1	25
6AAAA	1464+50	Ephemeral	Low	9	1:1	9
6B	1511+00	Perennial	Low	9	1:1	9
6EEE	1457+50	Intermittent	Low	22	1:1	22
6FFFF_1	1526+50	Intermittent	Low	3	1:1	3
6G	1451+50	Perennial	Medium	1	0.5:1	0.5
6G_1	1467+00	Perennial	Medium	1064	0.5:1	532
6G_2	1493+00	Perennial	Medium	672	0.5:1	336
6G_3	1500+00	Perennial	Medium	1063	0.5:1	531.5
6G_6	1555+50	Perennial	Medium	270	0.5:1	135
6GGG	1543+00	Intermittent	Low	112	1:1	112
6GGG_1	1546+50	Intermittent	Low	200	1:1	200
6III	1511+00	Intermittent	Low	409	1:1	409
6J	1509+50	Ephemeral	Low	24	1:1	24
6JJ	1513+00	Perennial	Low	32	1:1	32
6L	1521+00	Intermittent	Low	13	1:1	13
6LLL	1498+00	Perennial	Low	738	1:1	738
6MM	1539+00	Ephemeral	Low	149	1:1	149
6MMM	1496+00	Perennial	Low	33	1:1	33
6NNN_1	1496+00	Intermittent	Low	30	1:1	30
6RRR	1461+00	Intermittent	Low	52	1:1	52
6RRR_D	1460+00	Intermittent	Low	115	1:1	115
6T	1493+50	Intermittent	Low	59	1:1	59
6TTT	1479+00	Intermittent	Low	211	1:1	211
6UU	1465+00	Intermittent	Medium	35	0.5:1	17.5
6UUU	1478+00	Intermittent	Low	62	1:1	62
6V	1485+50	Ephemeral	Low	185	1:1	185
6WW	1456+50	Intermittent	Medium	61	0.5:1	30.5
6XX	1456+00	Ephemeral	Low	53	1:1	53
6YY	1456+50	Ephemeral	Low	63	1:1	63
7B	1443+50	Ephemeral	Low	482	1:1	482
Total						8,740