Executive Summary

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential natural, cultural, and socioeconomic effects that may result from the proposed Corridor Cities Transitway (CCT) Project. The Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) is the Project sponsor and the Federal Transit Administration (FTA) is the lead federal agency. The Environmental Protection Agency (EPA), the U.S. Army Corp of Engineers (USACE), the National Institute of Standards and Technology (NIST), and National Capital Planning Commission (NCPC) are cooperating agencies (**Appendix A**).

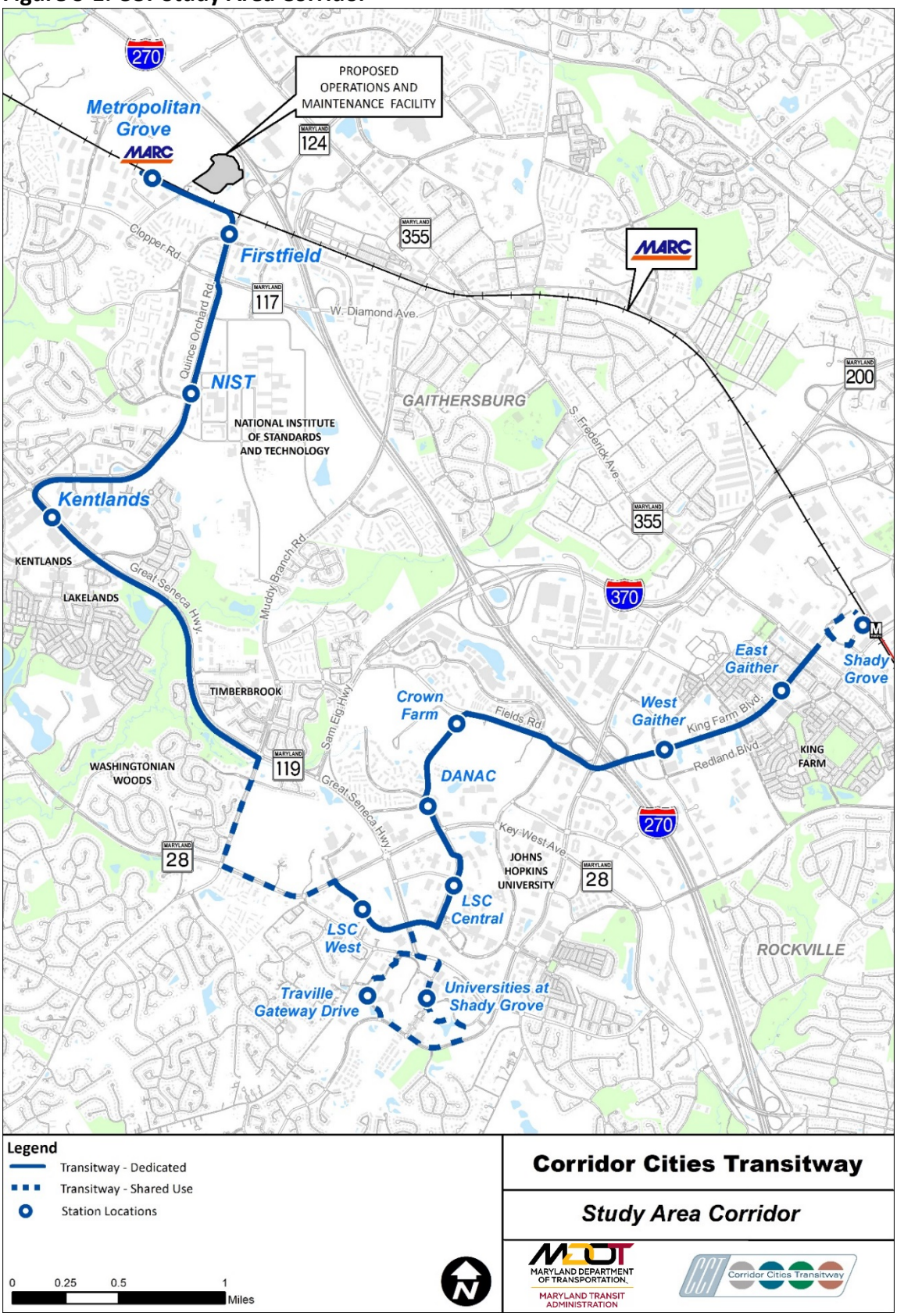
Funding for final design and construction, including right-of-way acquisition for the CCT, has been deferred until fiscal year (FY) 2023. Lower than expected fuel prices and gas tax collection resulted in a shortfall of $746 million in overall Maryland Department of Transportation (MDOT) revenue for state transportation projects. Of the $746 million shortfall, approximately $78 million was deferred, which had previously been allocated to fund CCT final design and right-of-way acquisition. If funding for the CCT becomes available via increased gas tax revenue, private interests, county or city funds, the CCT may move forward on finalizing the EA, updating the design, and entry into FTA's Capital Investment Grant Program, prior to FY 2023.

Description of Project

The CCT Project is a nine-mile bus rapid transit (BRT) line operating between the Metropolitan Grove MARC Station and the Shady Grove Metrorail Station. The transitway would travel adjacent to or in the median of existing and proposed roadways for the majority of the alignment with grade-separated crossings of selected roadways at busy intersections. The term **transitway** is used to describe the horizontal and vertical location of the BRT route proposed in the Build Alternative. The Build Alternative includes the transitway with 13 stations and an Operations and Maintenance (O&M) Facility.

Two CCT routes would operate along the transitway: CCT Direct Service and CCT via Universities and Shady Grove (USG) (**Figure S-1**). The CCT Direct Service route would operate between the Metropolitan Grove and Shady Grove Stations of the CCT, stopping at every station along the transitway. The CCT Service via USG would operate along the transitway, stopping at all stations, but would divert off the transitway to serve two additional stations. For example, buses traveling from the Shady Grove Station on this route would leave the transitway after the Life Sciences Center (LSC) Central Station, stop at the USG and Traville Gateway Drive Stations, return to the transitway, and stop at the LSC West Station and all stations to the Metropolitan Grove Station.

Figure S-1: CCT Study Area Corridor



The CCT Direct Service would operate on five-minute headways[1] during peak periods, six minutes during mid-day, and ten-minute headways during off-peak periods. The one-way travel time from Shady Grove Station to Metropolitan Grove Station would be approximately 42 minutes. The CCT via USG would operate on 15-minute headways during peak periods and 30 minute-headways during off-peak periods. The one-way travel time for CCT service via USG would be approximately 46 minutes.

The 13 stations for the CCT would be specially designed with CCT branding for easy recognition by transit users. Stations would include shelters, seating, fare machines, and both fixed and variable signage to provide customers with information on the CCT route and services, as well as current operations. Safe access for pedestrians and parking for bikes would be provided at all CCT stations. The 11 stations along the CCT Direct Service transitway include the following locations:

- Shady Grove
- East Gaither
- West Gaither
- Crown Farm
- DANAC
- LSC Central
- LSC West
- Kentlands
- NIST
- Firstfield
- Metropolitan Grove

On the CCT via USG, there will be two stations at the following locations:

- Universities at Shady Grove
- Traville Gateway Drive

The CCT would include parking at five stations: Shady Grove, Crown Farm, LSC West, Kentlands, and Metropolitan Grove. To maintain the CCT vehicles, an O&M Facility would be located near the Metropolitan Grove MARC Station.

All CCT service would operate seven days per week. The hours of operation would be consistent with the Washington Metropolitan Area Transit Authority's (WMATA) Red Line Metrorail service for weekday and weekend service. Metrorail service begins at 5 AM on weekdays and 7 AM on weekends, and ends at 12 AM on Sunday through Thursday or 3 AM on Friday and Saturday. The projected ridership on the CCT in 2035 is 30,429 trips per day.

Refer to **Chapter 2** for additional information on the proposed Project components of the Build Alternative.

[1] Headway is the time interval or distance between two vehicles, such as automobiles, buses, or railroad or subway cars, traveling in the same direction over the same route

Purpose and Need

The purpose of the CCT Project is to improve connectivity, mobility, and livability; increase transit capacity; and improve regional air quality by providing premium transit service in the corridor. The CCT Project would help to:

- Improve inter-modal connections in the corridor;
- Increase transit capacity and meet transit demand;
- Enhance mobility;
- Support economic development and local government master plans to enhance the livability of communities in the corridor; and
- Improve regional air quality by increasing transit use.

The need of the CCT Project results from:

- Lack of reliable connections among existing transit routes (including MARC, Metrorail, and local bus network);
- Existing transit service, which is at or near capacity and transit demand and ridership are forecasted to grow in the future;
- Roadway congestion, which contributes to unpredictable and slow travel times for automobiles and buses in the corridor;
- Demand for managed growth and economic development in the region which continues to grow; and
- A regional goal to improve air quality by providing alternatives to automobile usage.

Refer to **Chapter 1** of this EA document for additional information.

Alternatives Considered

Alternatives Evaluated Prior to this EA

Transportation studies for a CCT with transit along the I-270 corridor have been conducted since the 1970s. Preliminary concepts included both a stand-alone transit alignment and combined roadway and transit improvements. In 2011, Federal Highway Administration (FHWA) and FTA jointly concurred that the CCT transit improvements had independent utility from the highway components and the projects could proceed separately. In 2012, the State of Maryland announced the Locally Preferred Alternative (LPA) for the CCT corridor. The CCT LPA was identified as BRT service that extended a total of 15 miles, from the Shady Grove Metro Station to Communications Satellite Corporation (COMSAT). This EA document focuses on the nine-mile portion of the CCT alignment that extends from the Metropolitan Grove MARC Station to the Shady Grove Metro Station.

Subsequent to the announcement of the LPA in May 2012, the MDOT MTA has continued to refine the LPA alignment. These refinements were made based on additional engineering, stakeholder, and public input; additional station planning; and additional environmental analysis. These refinements have been incorporated into the Build Alternative that is described in this EA. Refer to **Chapter 2** for additional information on alternatives previously evaluated.

Alternatives Evaluated in this EA

This EA includes the evaluation of two alternatives: the No-Build Alternative and the Build Alternative. Refer to **Chapter 2** for the complete descriptions of these alternatives.

The **No-Build Alternative** assumes no new BRT transitway in the study area corridor and represents the future conditions of transportation facilities and service in 2035 if the CCT Project is not built. This alternative provides a baseline by which the environmental impacts of the Build Alternative are compared.

Under the **Build Alternative,** the BRT service would travel adjacent to or in the median of existing and proposed roadways for the majority of the alignment. The transitway would typically be 26 feet wide, with one 13-foot lane per direction, including the gutter. In areas with tight horizontal curves, the transitway width would be widened to 30 feet, with one 15-foot lane per direction. In general, the alignment was located to maximize area for stormwater management (SWM) bioretention facilities on one or both sides of the alignment, where feasible. Through the design process, the Build Alternative alignment has been modified in the following locations since the LPA was announced in May 2012:

- Along the CSX tracks by Metropolitan Grove, the transitway would shift from the north side of the tracks to the south side of the tracks.
- Along Muddy Branch Road and Darnestown Road, the transitway would be in shared-use lanes with vehicular traffic and avoid use of the Belward Farm property.
- Near Key West Avenue, the transitway alignment would shift from the east side to the west side of Broschart Road at an intersection with an existing driveway; it would then cross over Key West Avenue.

Environmental Effects

The No-Build Alternative would not result in any adverse natural or cultural resource effects as there will not be physical impact from this alternative. The No-Build Alternative could affect the land use, quality of life, and local economy in the study area corridor. The land use and zoning objectives would not be met and congestion could continue to worsen.

The Build Alternative for the CCT Project would not create significant environmental effects within the study area corridor. **Table S-1** relates the natural, socioeconomic, and cultural effects in the study area. Refer to **Chapter 3** for additional detail on the environmental resources and effects.

Table S-1: Summary of Environmental Effects and Mitigation and Minimization Measures

Resource Area	No-Build Alternative Effects	Build Alternative Effects	Mitigation and Minimization Measures
Land Use	May slow pace of development due to inadequate infrastructure	Convert 98 acres to transportation use from intuitional, commercial, residential, and industrial uses	None proposed
Neighborhoods	No change	Minor strip right-of-way takes, 1 displacement, low to moderate visual impacts since transitway would be compatible with existing transportation right-of-way; moderate noise impacts at Washingtonian Woods and the Vistas	Mitigation for visual impacts and noise impacts proposed (Section 3.27.1)
Community Facilities	No change	No effects	None proposed
Property Acquisitions, Displacements & Right-of-way	0 acres	108 acres (98 permanent; 10 temporary) 1 residential and 1 business displacement	Property acquisition activities, including relocations, will be performed in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* and applicable FTA requirements and state laws Displaced persons and businesses within the area needed for the Project may be eligible for benefits under Maryland's Relocation Assistance Program
Economy	Slow the pace and density of planned development that is tied to the implementation of the Build Alternative	1 business displacement; creation of permanent jobs associated with operating & maintaining the CCT; temporary construction jobs created; economic benefits from improved mobility and transit options for accessing jobs	Minimize disruption to businesses during construction and continue ongoing coordination with business in the corridor during design and construction.

Resource Area	No-Build Alternative Effects	Build Alternative Effects	Mitigation and Minimization Measures
Visual Resources	No change	Low to moderate visual landscape change, since transitway would be compatible with existing transportation right-of-way	Stations and lighting will be designed to minimize negative visual impacts; preserve existing tree buffers and replace removed trees.
Environmental Justice Populations	No change	No disproportionate high or adverse effect on EJ populations	None proposed
Parks and Recreational Facilities	0 acres	4.9 acres (0.7 acres from Washingtonian Woods Park & 4.2 acres from Muddy Branch Park)	To be determined with the City of Gaithersburg through on going coordination related to the *de minimis* request
Historic Properties	No change	No adverse effect	None proposed
Archeological Properties	No change	No impacts	None proposed
100-Year Floodplain	0 acres	1.0 acres (0.7 permanent; 0.3 temporary)	Compliance with SWM requirements
Streams/Waterways	0 linear feet	2,247 linear feet (2,102 permanent; 145 temporary)	Time of year restrictions for work in Use I and Use IV streams will be followed; compliance with SWM requirements; stream mitigation to be determined through coordination with MDE and USACE through development and approval of the Compensatory Mitigation Plan
Wetlands	0 acres	0.5 acres (0.4 permanent; 0.1 temporary)	Wetland mitigation to be determined through coordination with MDE and USACE through development and approval of the Compensatory Mitigation Plan
Forest Stands	0 acres	31 acres (28 permanent; 3 temporary)	1:1 reforestation required; no forest clearing between April 1 and August 31
Tree Cover	0 acres	7.9 acres (6.8 permanent; 1.1 temporary)	1:1 replacement

Resource Area	No-Build Alternative Effects	Build Alternative Effects	Mitigation and Minimization Measures
Hedgerows	0 acres	1.5 acres (1.3 permanent; 0.2 temporary)	Further minimization during design and protection fencing installed during construction
Specimen Trees	No change	256 trees (243 permanent; 13 temporary)	1:1 replacements
Street/Individual Trees	No change	1,890 trees (1,717 permanent; 173 temporary)	1:1 replacement
Rare, Threatened, and Endangered Species	No Change	No impacts	No forest clearing between April 1 and August 31 to avoid impacts to the habitat of the northern long-eared bat
Noise and Vibration	No change	Moderate impact at 3 receptor sites	2, 10-foot-high noise barriers for two clusters of residences along Great Seneca Highway
Air Quality	No improvement	Improvements - reduce regional pollutants between 0.1 to 0.2 percent; lower mobile source air toxins; no change in carbon monoxide levels; not a Project of air quality concern for $PM_{2.5}$; decrease in greenhouse gases	Mitigation measures to minimize air quality effects during construction (**Section 3.27.15**)
Energy	No change	Reduce regional energy use by 0.13%	None proposed
Hazardous Materials	No impact	No impact	During final design and construction, if contaminated soils are identified and encountered, off-site remediation, chemical stabilization, or other treatments and disposal options would be evaluated
Utilities	No impact	Relocations will be identified in Final Design; temporary outages are likely	Minimize disruptions during construction

Resource Area	No-Build Alternative Effects	Build Alternative Effects	Mitigation and Minimization Measures
Traffic and Transportation Network	Continued traffic increase and deterioration	Declines in levels of service at some intersections; new signals and modifications to existing signals proposed; changes to medians and entrances; changes to turn lanes; temporary impacts during construction; maintenance of traffic plans will be developed	MDOT MTA finalize the Transportation Management Plan and a Maintenance of Traffic Plan during final design
Pedestrian and Bicycle Facilities	No change	No permanent closures of existing pedestrian or bicycle facilities; proposed improvements with new and reconstructed sidewalks and paths	Facilities constructed in accordance with Americans with Disabilities Act (ADA)
Safety and Security	Not applicable	Designed to meet federal and state safety standards	None proposed
Indirect and Cumulative Effects	No beneficial indirect effects to employment and planned developments would not occur	Indirect benefits from planned developments and properties adjacent to proposed stations; minimal indirect and cumulative effects	None proposed

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Appendix B: Property Impacts – Permanent and Temporary by Land Use

Appendix C: Environmental Justice Outreach

Appendix D: Natural Resources Features Map Series including Wetlands, Waters of the US, Soils, Forests, Hedgerows, and Street Trees

Appendix E: Engineering Plans

Appendix F: Technical Studies - A DVD is included with this EA which contains the following technical reports and memorandums that were prepared in May 2014, unless otherwise noted where additional technical analysis was needed. The analysis presented in these technical studies was based on the 5 percent design. The technical studies on the DVD include:

- Air Quality Technical Report, 2015
- Alternatives Technical Report
- Energy Technical Memorandum, 2015
- Environmental Justice Technical Report, 2016
- Hazardous Materials Technical Report
- Indirect and Cumulative Effects Technical Report
- Natural Resources Technical Report
- Noise Technical Report, 2015
- Socioeconomic Technical Report
- Visual Analysis Technical Memorandum
- Identification and Evaluation of Historic Architectural Properties Technical Report
- Phase I Archaeological Survey Technical Report (redacted)

Abbreviations and Acronyms

AA/EA	Alternatives Analysis/Environmental Assessment
AACs	Area Advisory Committees
ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
ADA	Americans with Disabilities Act
APE	Area of Potential Effect
ASCE	American Society of Civil Engineers
ASCE SUE	American Society of Civil Engineers Subsurface Utility Engineering
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
B&O	Baltimore and Ohio
Block Group	Census Tract Block Group
BMC	Baltimore Metropolitan Council
BMP	Best Management Practice
BRT	Bus Rapid Transit
Btu	British thermal units
CAA	Clean Air Act
CBP	Chesapeake Bay Program
CCT	Corridor Cities Transitway
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulation
CLRP	Constrained Long Range Transportation Plan
CLV	Critical Lane Volume Analysis
CO	Carbon monoxide
CO2e	Carbon dioxide equivalent
COMAR	Code of Maryland Regulations
COMCOR	Code of Montgomery County Regulations
COMSAT	Communication Satellite Corporation
CPOC	Commercial Property Owners Coalition
CRZ	Critical Root Zone

CSX	Chessie-Seaboard Merger, Railway Transportation
CWA	Clean Water Act
DANAC	Real Estate Development Firm
dB	Decibels
dB(A)	A-weighted decibels
dbh	Diameter at Breast Height
DEIS	Draft Environmental Impact Statement
DHS	Department of Homeland Security
DOE	Determination of Eligibility
DOI	Department of Interior
EA	Environmental Assessment
EDR	Environmental Data Resources
EJ	Environmental Justice
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ETL	Express Toll Lane
FCP	Forest Conservation Plan
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIDS	Forest Interior Dwelling Species
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FSD	Forest Stand Delineation
FTA	Federal Transit Administration
FY	Fiscal Year
GIS	Geographic Information System
GPS	Global Positioning System
GSA	US General Services Administration
GSSC	Great Seneca Science Corridor
HC	Hydrocarbon

HCM	Highway Capacity Manual
HHS	Health and Human Services
HOV	High Occupancy Vehicle
IPaC	Information, Planning and Conservation
IRM	Interagency Review Meeting
ITS	Intelligent Transportation Systems
Ldn	Day-night noise levels
Leq(h)	Hourly Equivalent Noise Level
LLC	Limited Liability Company
LNG	Liquefied Natural Gas
LOD	Limit of Disturbance
LOS	Level of Service
LPA	Locally Preferred Alternative
LRT	Light Rail Transit
LSC	Life Sciences Center
MARC	Maryland Area Regional Commuter
MBSS	Maryland Biological Stream Survey
MCDEP	Montgomery County Department of Environmental Protection
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MDOT	Maryland Department of Transportation
MDOT CTP	Maryland Department of Transportation Consolidated Transportation Plan
MDMUTCD	Maryland Manual on Uniform Traffic Control Devices
MHT	Maryland Historic Trust
MIHP	Maryland Inventory of Historic Places
MMBtu	One Million Btu
M-NCPPC	Maryland-National Capital Park & Planning Commission
MOA	Memorandum of Agreement
MOVES	Motor Vehicle Emission Simulator
MSAT	Mobile Source Air Toxins

MDOT MTA	Maryland Department of Transportation Maryland Transit Administration
MWAQC	Metropolitan Washington Air Quality Committee
MWCOG	Metropolitan Washington Council of Governments
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NCPC	National Capital Planning Commission
NEPA	National Environmental Protection Act
NETR	Natural Environmental Technical Report
NIST	National Institute of Standards and Technology
NO_x	Nitrogen Oxide
NO_2	Nitrogen dioxide
NRHP	National Register of Historic Places
NSA	Noise-Sensitive Area
NWI	National Wetlands Inventory
O&M	Operations and Maintenance
O_3	Ozone
Pb	Lead
PCB	Polychlorinated Biphenyl
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter less than 2.5 micrometers in diameter
PM_{10}	Particulate Matter less than 10 micrometers in diameter
POI	Point of Investigation
PSS	Palustrine Scrub-Shrub
PSTA	Public Safety Training Academy
RECs	Recognized Environmental Conditions
RTE	Rare, Threatened, and Endangered
SCC	Standard Cost Categories
SEA	Supplemental Environmental Assessment

SHA	State Highway Administration
SHPO	State Historic Preservation Officer
SO_x	Sulphur Oxides
SO_2	Sulphur dioxide
SSPP	System Safety Program Plan
SUE	Subsurface Utility Engineering
SWM	Stormwater Management
TAZ	Traffic Analysis Zones
TDM	Transportation Demand Management
TIP	Transportation Improvement Plan/Program
TMDL	Total Maximum Daily Load
TMP	Transportation Management Plan
TOD	Transit Oriented Development
TPB	Transportation Planning Board
TPH	Total Petroleum Hydrocarbons
TSM	Transportation Systems Management
TSP	Transit Signal Priority
TSS	Total Suspended Solid
TVM	Ticket Vending Machine
USACE	United States Army Corps of Engineers
USC	United States Code
USDA-NRCS	United States Department of Agriculture Natural Resource Conservation Service
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USG	Universities at Shady Grove
USGS	United States Geological Survey
UST	Underground Storage Tank
VdB	Velocity decibels
VOC	Volatile Organic Compound
VMT	Vehicle Miles Traveled

WMATA	Washington Metropolitan Area Transit Authority
WQLs	Water Quality Limited segments
YOE	Year of Expenditure