66 Express Lanes Project
Pre-Draft Technical Requirements
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TECHNICAL INFORMATION & REQUIREMENTS

PURPOSE

The purpose of this Exhibit is to identify the scope and technical requirements (“Technical Requirements”) to develop and operate the Project. The Work required by the Technical Requirements shall be undertaken by or on behalf of the Developer.

ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AACE</td>
<td>Association for the Advancement of Cost Engineering</td>
</tr>
<tr>
<td>AFC</td>
<td>Approved for Construction</td>
</tr>
<tr>
<td>BCWP</td>
<td>Budgeted Cost of Work Performed</td>
</tr>
<tr>
<td>BCWS</td>
<td>Budgeted Cost of Work Scheduled</td>
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<tr>
<td>BMS</td>
<td>Building Management System</td>
</tr>
<tr>
<td>CADD</td>
<td>Computer Aided Drafting and Design</td>
</tr>
<tr>
<td>CCI</td>
<td>Critical Condition Index</td>
</tr>
<tr>
<td>CRM</td>
<td>Customer Relations Management</td>
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<tr>
<td>CTA</td>
<td>Cement Treated Aggregate</td>
</tr>
<tr>
<td>DBE</td>
<td>Disadvantaged Business Enterprise</td>
</tr>
<tr>
<td>DE</td>
<td>Design Exception</td>
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<tr>
<td>DW</td>
<td>Design Waiver</td>
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<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>FDC</td>
<td>Field Design Change</td>
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<tr>
<td>F.O.B.</td>
<td>Free on Board</td>
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<tr>
<td>GCS</td>
<td>Gate Control System</td>
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<tr>
<td>GP</td>
<td>General Purpose</td>
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<tr>
<td>HOT-OC</td>
<td>HOT Operations Center</td>
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<tr>
<td>HPC</td>
<td>High Performance Concrete</td>
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<tr>
<td>HPS</td>
<td>High Performance Steel</td>
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<tr>
<td>ICD</td>
<td>Interface Control Document</td>
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<tr>
<td>ID</td>
<td>Asset Identification</td>
</tr>
<tr>
<td>IDMS</td>
<td>Incident Detection and Monitoring System</td>
</tr>
<tr>
<td>IPPM</td>
<td>Internal Policy/Procedure Memorandum</td>
</tr>
<tr>
<td>IRI</td>
<td>International Roughness Index</td>
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<tr>
<td>JOMP</td>
<td>Joint Operating and Maintenance Protocols</td>
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<tr>
<td>LCAMS</td>
<td>Lane Closure Advisory Management System</td>
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<tr>
<td>LDR</td>
<td>Load-related Distress Rating</td>
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<tr>
<td>LL</td>
<td>Live Load</td>
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<tr>
<td>LPN</td>
<td>License Plate Number</td>
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<tr>
<td>LRFD</td>
<td>Load and Resistance Factor Design</td>
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</table>
## Sample Acronym Table and Definitions

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>MATOC</td>
<td>Metropolitan Area Transportation Operations Coordination</td>
</tr>
<tr>
<td>MLHCC</td>
<td>Modified Latex Hydraulic Cement Concrete</td>
</tr>
<tr>
<td>MOMS</td>
<td>Maintenance Online Management System</td>
</tr>
<tr>
<td>MPSTOC</td>
<td>McConnell Public Safety and Transportation Operations Center</td>
</tr>
<tr>
<td>MRP</td>
<td>Maintenance Rating Program</td>
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<tr>
<td>MSE</td>
<td>Mechanically Stabilized Earth</td>
</tr>
<tr>
<td>MUA</td>
<td>Master Utility Agreement</td>
</tr>
<tr>
<td>NADR</td>
<td>Noise Abatement Design Report</td>
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<tr>
<td>NBIS</td>
<td>National Bridge Inspection Standards</td>
</tr>
<tr>
<td>NCR</td>
<td>Non-Conformance Report</td>
</tr>
<tr>
<td>NDC</td>
<td>Notice of Design Change</td>
</tr>
<tr>
<td>NDR</td>
<td>Non Load-related Distress Rating</td>
</tr>
<tr>
<td>NRO</td>
<td>Northern Regional Operations</td>
</tr>
<tr>
<td>NTCIP</td>
<td>National Transportation Communications for ITS Protocol</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>Operations and Maintenance</td>
</tr>
<tr>
<td>OCR</td>
<td>Optical Character Recognition</td>
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<tr>
<td>ORT</td>
<td>Open Road Tolling</td>
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<td>OSPS</td>
<td>Operating Speed Performance Standard</td>
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<tr>
<td>PDM</td>
<td>Precedence Diagram Method</td>
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<tr>
<td>PE</td>
<td>Professional Engineer</td>
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<tr>
<td>PIP</td>
<td>Public Information Plan</td>
</tr>
<tr>
<td>PS&amp;E</td>
<td>Plans, Specifications, and Estimate</td>
</tr>
<tr>
<td>PVC</td>
<td>Polyvinyl Chloride</td>
</tr>
<tr>
<td>RWIS</td>
<td>Road Weather Information System</td>
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<tr>
<td>SPI</td>
<td>Schedule Performance Index</td>
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<tr>
<td>SWaM</td>
<td>Small, Women- and Minority-owned Business Enterprise</td>
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<tr>
<td>T&amp;DI</td>
<td>Toll and Driver Information</td>
</tr>
<tr>
<td>TAC</td>
<td>Transit Advisory Committee</td>
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<tr>
<td>TAMS</td>
<td>Turnkey Asset Maintenance Services</td>
</tr>
<tr>
<td>TCP</td>
<td>Traffic Control Plan</td>
</tr>
<tr>
<td>TCRO</td>
<td>Traffic Control Room Officers</td>
</tr>
<tr>
<td>TOC</td>
<td>Traffic Operations Center</td>
</tr>
<tr>
<td>TS&amp;L</td>
<td>Type, Size, and Location</td>
</tr>
<tr>
<td>UIT</td>
<td>Ultrasonic Impact Testing</td>
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<tr>
<td>VDEM</td>
<td>Virginia Department of Emergency Management</td>
</tr>
<tr>
<td>VECTOR</td>
<td>Virginia Evacuation Coordination Team for Operational Response</td>
</tr>
<tr>
<td>VES</td>
<td>Vehicle Enforcement System</td>
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<tr>
<td>VOD</td>
<td>Vehicle Occupancy Detection</td>
</tr>
<tr>
<td>VOS</td>
<td>Volume, Occupancy &amp; Speed</td>
</tr>
<tr>
<td>VSLS</td>
<td>Variable Speed Limit Signs</td>
</tr>
<tr>
<td>WBS</td>
<td>Work Breakdown Structure</td>
</tr>
<tr>
<td>WMATA</td>
<td>Washington Metropolitan Area Transit Authority</td>
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</table>
DEFINITIONS

Capitalized terms used but not otherwise defined in this Exhibit have the respective meanings set forth in the Agreement. In addition, the following terms have the meanings specified below:

**Best Efforts** means exerting every available resource and allowing sufficient time (a minimum of 30 days) to settle claims with landowners amicably.

**Bridge Class Culvert** is as defined in Section 3 of the Technical Requirements.

**Consolidation Settlement** is as defined in AASHTO LRFD Bridge Design Specifications Section 10.6.2.4.

**Design Exception** is defined as a document required when deviations from VDOT’s design criteria occur. When design criteria meet or exceed AASHTO minimal design but fall short of VDOT’s minimal design, a Design Waiver shall be required. Design Waivers will be applicable to all projects regardless of functional classification and funding and shall be documented and approved in accordance with the Design Waiver Request form LD-448. This Design Waiver Policy is applicable to VDOT owned and maintained roadways only.

**Design Waiver** is defined as a document required where it is neither impractical nor economical to obtain the AASHTO minimum design criteria as shown in the Geometric Design Tables. In such a case, an exception shall be secured from the State Location and Design Engineer and FHWA (if applicable).

**Disaster Recovery Plan** is as defined in Section 3 of the Technical Requirements.

**Elastic Settlement** is as defined in AASHTO LRFD Bridge Design Specifications Section 10.6.2.4.

**Federal Degradation Standard** is as defined in Section 4 of the Technical Requirements.

**Free Flow** means conditions where vehicular traffic can maintain generally consistent speeds without experiencing undue delay or breakdown in flow.

**In-service Availability** means a percentage of time equivalent to (hours available) / (hours in service) x 100%; in service time excludes scheduled down time and loss of power outside Developer control.

**International Roughness Index (IRI)** is the standard measure of ride quality used by the Department.

**Load-related Distress Rating (LDR)** is a deduct-based index having a value of 100 when the pavement being evaluated has no discernible load-related distress.

**Mainline** is the primary roadway in which the traffic sensors for speed and other traffic data operate excluding auxiliary lanes, collector-distributor roads or ramps.

**Monthly Progress Earning Schedule** is as defined in Section 1 of the Technical Requirements.

**Non Load-related Distress Rating (NDR)** is a deduct-based index similar to the Load Rated Distress Rating (LDR) except that the distresses assigned to the index are non-load rated.

**Notification Center** is as defined in Section 56.265.15.of the Code of Virginia.

**Peak Period** is the period from 5:30 a.m. – 9:00 a.m. or 4:00 p.m. – 7:00 p.m., Monday through Friday, excluding holidays.

**Percent Degradation** is defined in Section 4 of the Technical Requirements.
Potomac Formation [silts/clays] are silts/clays defined as such in the Geologic Map of Virginia published by the Virginia Division of Mineral Resources.

Project Recovery Schedule is schedule submitted by the Developer to the Department whenever the Monthly Progress Report shows the Guaranteed Substantial Completion Date has 90 days of negative float; Project Recovery Schedule submittals shall include a list of all activities changed, added or deleted along with all logic changes, and an accompanying narrative explaining the nature of the changes.

Project Roll Plan is a scaled signage plan or plans showing proposed, existing, or relocated DMS and static signs on the 66 Express Lanes and connecting roadways.

Quality Assurance Manager means the person reporting to the Quality Manager responsible for the independent process of determining conformance of work by examining the quality control data.

Residual Life means the calculated duration that any Asset of the Project, subject to the type of routine maintenance of the Asset which is normally included as an annually recurring cost in highway maintenance and repair budgets, will continue to comply with any applicable Performance Requirement or standard after the end of the Term, before Major Maintenance is required, determined through the application of Residual Life methodology and residual life inspections.

Secondary Settlement is as defined in AASHTO LRFD Bridge Design Specifications Section 10.6.2.4.

Security Plan is as defined in Section 3 of the Technical Requirements.

Standard Documents means the standards, special provisions and specifications listed in Attachment 1.5a – Standards and Specifications of the Technical Requirements.

Standard of Care means using logical, rational, and commonsensible calculation and precaution in determining whether there is reason to believe that property to be acquired for rights of way may contain concealed or hidden wastes or other materials or hazards requiring remedial action or treatment.

Station is one or more traffic monitoring sensors at a single location used to collect traffic volume, lane occupancy, and speed data on the Express Lanes.

Substandard Station is a Station whose weighted average speed over the a.m. or p.m. Peak Period falls below the minimum average operating speed defined for each degradation standard.

Timeliness Requirements are as defined in Attachment 4.5 of the Technical Requirements.

Trail Blazer Roll Plan is a scaled signage plan or plans showing proposed, existing, or relocated static signs on highways, feeder roads, and other roadways notifying motorists of the access to the HOT Lanes.

Transponder Transaction Performance means the percentage of vehicles with transponders that are correctly identified by the Tolling System.
66 Express Lanes Project

Pre-Draft Technical Requirements
Attachment 1.3
Project Development Plans
Project Development Plans

General

A. The general requirements for Project Development Plans (PDPs) are noted in Section 1.3 of the Technical Requirements.


C. The PDPs shall comply with the requirements of the Agreement including the Technical Requirements, and shall ensure that when implemented, the Work covered by the Plans will comply with such requirements.

D. The PDPs shall be applicable to each procurement method to the extent appropriate.

1.1 Developer Management Plan

A. The purpose of the Developer Management Plan is to provide the Department with a clear view of Project management approach undertaken by the Developer for all aspects and tiers of the Project. It shall clearly identify responsibilities and procedures for each Project management activity and demonstrate a thorough understanding of the Agreement and Project requirements.

B. The Developer Management Plan shall reference and consider all other PDPs and link their relevance to each other and to the management approach.

C. The Developer Management Plan is an umbrella document that describes the Developer’s managerial approach, strategy, and quality procedures to design, build, operate and maintain the Project and achieve all requirements of the Agreement. The Developer Management Plan shall include an organization chart outlining the basic structure of the Developer’s Project organization including well defined roles for the design, construction, operations and maintenance; sub-organizations (such as consulting, subcontractors, suppliers) and a description of the roles; relationship with the Department the Lender’s Independent Engineer, and third parties; organizational chart with responsibilities, professional qualifications, and Work to be accomplished by each member of the management team and each sub-organization, including identified subcontractors and suppliers.
D. The Developer Management Plan shall describe how all PDPs fit within the overall quality management system, responsibilities for developing and maintaining the plans and the schedule for implementation.

E. The Developer Management Plan shall address the Developer’s schedule and procedures for preparation of amendments and submission of amendments to any part of the PDP.

F. The Concession Management Plan shall be linked to the QMSP.

1.2 Document Management Plan

A. The Document Management Plan will define the document management approach for all Project documentation and will address:
   1) The document management system;
   2) Document management procedures;
   3) Requirements for records retention;
   4) Electronic and hardcopy data transmission, storage and sharing;
   5) A logical, auditable and Project-compatible tracking system of all Project correspondence and documents for all phases of the Project.

B. The Document Management Plan shall clearly define document management applicable to all aspects of the Project-management structure, tracking, updates, originator/recipient, document approvals tracking, searchable database, links amongst various documents, hard-copy and electronic filing.

C. The Document Management Plan shall be appropriately structured to consider roles and participation by the Department, the Lender’s Independent Engineer, Developer, and third parties participating and having input regarding the Project.

D. The Plan shall also provide for electronic data management and storage, and electronic access to project documents remotely, with the required electronic security procedures.

E. The Document Management Plan shall be linked to the QMSP.

1.3 Quality Management System Plan

A. The Quality Management System Plan (QMSP) will define the quality management systems during the design, construction and operations and maintenance. The Developer shall or shall cause to be completed all quality assurance and quality control activities required to manage its own processes as well as those of its Contractors, and suppliers of any tier. The QMSP shall:
1) Be fully compliant with the Department’s *Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects – January 2012*;

2) Be developed consistent with ISO 9001 principles and clearly demonstrate how it will lead to continuing improvement;

3) Define the Quality Management System roles and auditing responsibilities and procedures (internal and external);

4) Establish quality objectives that are measurable and quantifiable;

5) Provide an organizational chart with roles, responsibilities and professional qualifications applicable to all stages of the project;

6) Describe how the relevant requirements of the contract will be met;

7) Integrate the services of the Lender’s Independent Engineer for selected portions of the Work;

8) Require any Contractor, or supplier employed by the Developer for design, construction, maintenance or operation activities to develop, implement and maintain a quality management system compatible with the requirements of the Agreement;

9) Be able to provide reports on quality with a tracking system, which at a minimum, includes:
   a) searchable data
   b) summary of inspection and quality control activities
   c) internal and external quality audits performed
   d) non-conformances and their status, such as quality item description; date opened; date closed; status (open, closed, pending, follow-up required); disposition (repair, reject, rework); status; corrective actions
   e) how the non-conformity has been accepted by the Department, if applicable
   f) updates the QMSP

10) Provide a means and procedure for “escalating” quality concerns of the Department or the Developer;

11) Provide a linkage amongst relevant Project Development Plans and address all quality-related items in those plans;

12) Provide a document management system;
13) Be updated regularly and produce a track-able record and reports of quality control, assurance and audits;

14) Explain the corrective action process for workmanship related quality issues in order to minimize the recurrence of such errors and quality problems.

1.4 Design Quality Management Plan

A. The Design Quality Management Plan (DQMP) shall provide the organization, relationship and procedures that define clear lines of responsibility and well defined approach for meeting Project requirements and innovation in design approach.

B. The Design Quality Management Plan shall be linked to the QMSP.

C. The Design Quality Management Plan shall define the design approach, flow charts and activities for the design of the Project and will address:

1) The design organization, responsibilities and professional certification;

2) A drawing tier indicating organization and hierarchy of the Developer’s drawings;

3) The design basis (e.g. design criteria, design standards and specifications);

4) Design validation, ensuring that the intended design meets its intended use;

5) Stages where design reviews are conducted and design work is certified by appropriate design professionals, including Professional Engineers registered in the State;

6) Work zone and worker safety review during design;

7) Quality assurance and control;

8) The breakdown of the Project design into design packages;

9) The process the engineering consultants and subconsultants will use to design and seal each design package;

10) The system engineering process for the design of the systems components;

11) The proposed strategy for integrating the facilities and systems component into the design process;design deliverables;

12) Design control-design input reviews, output reviews and verifications (design checks and professional review and seals) to ensure requirements have been;
13) Design changes;
14) Internal and external audits;
15) Document management;
16) Provide regularly updated quality records and a tracking record of all quality control, quality assurance and audit records and a log of items and how they have been addressed, such as conformance, non-conformance, corrective actions and preventative actions;
17) The process by which the Developer’s team, the Lender’s Independent Engineer, and the Department will be involved in the design review process;
18) Reporting and documentation mechanism;
19) Linkage to other relevant PDPs and the QMSP.

1.5 Construction Quality Management Plan
A. The Construction Quality Management Plan will define the construction approach and activities for the construction of the Project and will address:

1) The construction organization and responsibilities – including the contractors and subcontractors;
2) Roles and professional qualifications of persons responsible for various aspects of the project;
3) Outline of procedures and schedules;
4) Sequence of construction activities;
5) Project permitting and coordination with the Department and external agencies;
6) Safety during construction;
7) Site security and access;
8) Environmental management;
9) Quality as outlined in the QMSP, specific to the construction phase;
10) The breakdown of the Project construction into construction areas/segments;
11) The general construction sequence;
12) Site temporary facilities and storage areas;
13) Field equipment and materials management;
14) Coordination with other projects, stakeholders, and impact of permitting;
15) Compliance with the Agreement;
16) Reporting and documenting changes;
17) Industrial relation;
18) As-built documents;
19) Reporting and documentation mechanism;
20) The process for conducting all activities related to achieving Substantial Completion including the representative inspection and documentation verification steps of all parties;
21) Linkage to other relevant PDPs and the QMSP.

1.6 Environmental Management Plan

A. The Developer shall develop and implement a thorough approach to environmental management. The Developer shall or shall cause to be maintained and updated an Environmental Management Plan that shall include:

1) Procedures and a contingency plan (emergency response plan) for reporting, immediate actions, and Remedial Actions to be taken in the event of a potential environmental permit violation, dump, discharge, or spill of Hazardous Substances, including, as required by Law, the development and implementation of a Spill Prevention, Control and Countermeasures (SPCC) plan(s);
2) Plans for investigation, handling, monitoring, discharge, release, storage, removal, remediation transportation, tracking, reporting, and other disposition of any Hazardous Substance encountered or used on the Project, whether or not the presence of such Hazardous Substances constitutes a Hazardous Environmental Condition;
3) Plans for initiating Remedial Actions in respect of any Hazardous Substances encountered on or used on the Project that constitute or could reasonably be expected to constitute a Hazardous Environmental Condition;
4) Procedures for coordination with the Department and other emergency response-related agencies and organizations; and
5) Procedures for submission of “incident” reports for releases of Hazardous Substances.

B. The Environmental Management Plan shall include the procedure and the party responsible for obtaining the required Governmental Approvals, interface with Governmental Authorities, and identifying and controlling the permit conditions to assure environmental compliance.
C. The Environmental Management Plan shall define the environmental activities required during the design and construction of the Project and shall address:

1) Compliance (monitoring, control, follow-up and audits) with the environmental requirements and regulations;
2) Erosion and sediment control plans, including monitoring and approach to erosion and sediment control,
3) Stormwater management plans;
4) Stormwater pollution prevention plans;
5) Environmental impact avoidance, minimalization, and mitigation measures;
6) Identify environmental monitoring and recording requirements;
7) On-going monitoring and compliance records tracking system;
8) Compatible with ISO 19011:2004 Guidelines for Quality and/or Environmental Management Systems Auditing; and ISO 14001:2004 Environmental Management Systems- Specifications with Guidance for Use; and
9) Linkage to other relevant PDPs, including the QMSP.

1.7 ROW Acquisition and Relocation Plan

A. The ROW Acquisition and Relocation Plan will define the approach to acquisition of the Project ROW and will address:

1) The roles and responsibilities of the Developer and the Department for ROW acquisition;
2) The ROW acquisition process and procedures;
3) Applicable guidelines and Laws;
4) The ROW acquisition services;
5) Coordination with the Department and property owners;
6) ROW acquisition costs management;
7) The use of RUMS;
8) The utility acquisition and relocation schedule;
9) Environmental concerns;
10) Document management; and
11) Linkage with other relevant PDPs and the QMSP.
1.8 Utilities Plan

A. The Utilities Plan will define the utility coordination, adjustment, and relocation activities during the design and construction of the Project and will address:

1) The roles and responsibilities of the Developer, the Department, and Utility companies/owners;
2) Utility agency coordination plans and process;
3) The Utility Relocation and adjustment process;
4) Applicable guidelines, laws and regulation;
5) The application of prior rights and cost allocations;
6) The utility easement acquisition process
7) Utility agreements including the Department Master Utility Agreement (“MUA”) and/or the development of Project specific utility relocation agreements;
8) Relocations and adjustments of utility facilities included in the Developer’s Contract;
9) Relocations and adjustments of utility facilities performed by the utility company or their contractor;
10) The coordination with the Developer, the Department, Utilities, Utilities’ designers, and contractors;
11) The identification and resolution of utility conflicts and interdisciplinary coordination;
12) The development and maintenance of a Utility tracking report;
13) The process for revising utility plan and estimates;
14) The process of payment of utility company progress and final billings.
15) The process for close out of utility relocations and processing as-built land use permit applications
16) Identify monitoring and recording requirements;
17) On-going monitoring and compliance records tracking system;
18) The roles and responsibilities related to Developer provided MOT services for utilities and/or their contractors.
19) Regularly updated impact on project schedule;
20) Reporting and documentation mechanism;
21) Linkage to other relevant PDPs and the QMSP.
1.9 Maintenance of Traffic (MOT) Plan

A. The Developer shall develop a MOT Plan pursuant to Section 1.9 of the Technical Requirements. The MOT Plan will consider the impact of construction activities on the access and egress of traffic to the I-66 Corridor within the immediate construction zone and provide for a proactive approach to address the impact of such activities on the traveling public and transit providers.

B. The MOT Plan shall be consistent with, and included as part of, the TMP for the Construction Period.

C. The MOT Plan shall include:
   1) Construction phasing plans (including diagrams and narratives) plans shall include temporary drainage design to minimize travel lane flooding and preventing damage to adjacent property during construction; erosion and sediment control plans;
   2) Detours and timeline schedules;
   3) Emergency access plans for first responders and facilities such as hospitals, police stations, and fire stations;
   4) Incident management coordination with the Department;
   5) A description of the Developer’s proposed approach for the development of detailed traffic control plans;
   6) Coordination with the Communications, Consultation, Public Outreach, and Community Engagement Plan for the dissemination of construction-related communications;
   7) A description of the process to be used for ongoing reviews of active work zones;
   8) A description of the process to ensure all persons responsible for design, implementation, and inspection of work zone traffic controls are trained adequately; and
   9) Coordination with other relevant PDP.

1.10 Communications Plan

A. The Developer is expected to develop and maintain an effective Communications Plan throughout the Project, including during the Operating Period. The Developer will deliver an integrated Communications, Consultation, Public Outreach, and Community Engagement Plan that at a minimum does the following:
   1) Provides an effective framework for communication between the Developer and stakeholders;
2) Effectively engages the community in the design, construction and operation of the Project to minimize negative impacts, and maximize positive outcomes;

3) Builds a strong and enduring relationship with stakeholders and the community within the I-66 Corridor over the life of the Project;

4) Identifies and manages risks associated with the Project;

5) Develops a strong and enduring brand relationship among the communities, I-66 Corridor drivers and the owners and operators of the Project;

6) Maximizes public awareness of features and benefits of the 66 Express Lanes;

7) Ensures the public understands how best to use the 66 Express Lanes, and the requirements for travel on the system;

8) Will be consistent with the goals for the Project;

9) Provides a detailed outline of communication tools and strategies to be employed during each phase of the Project development, delivery and operation, including:
   a) project branding
   b) market research and analysis
   c) media outreach
   d) stakeholder outreach and information
   e) department interface and liaison
   f) project communication team
   g) design-build phase– public information and involvement
   h) pre-operations phase - public education and awareness

10) Develop a Crisis Communications Plan and Procedures, addressing coordination with the Department and responsiveness to the media

11) Reporting and documentation mechanisms;

12) Linkage to other PDPs and the QMSP.

B. The Developer shall or shall cause to be developed a Public Information Plan (PIP) for the Work period as part of its overall Communication Plan.

C. The PIP will fit within the context of the broader Communication, Consultation, Public Outreach, and Community Engagement Plan and will address:
1) The identification of stakeholders and the outreach tactics that will be used to engage them

2) Training of relevant Project personnel in crisis communications, media relations and community outreach techniques

3) Development of a Community Engagement Program, outlining the approach to consulting with the community about design and construction matters, including:
   a) mechanism to engage and communicate applicable design and construction activities to the community
   b) communicate mitigation measures to directly impacted properties (dust, noise, access constraints, utility impacts, etc.)
   c) hosting community information meetings to provide updated Project information as required
   d) education and awareness related to public safety surrounding the work zone

4) The approach to communication with the public about construction activities, including:
   a) notification of forthcoming construction activity to surrounding homes and businesses
   b) commitment of key Project staff to participate in community outreach activities such as public meetings and media interviews
   c) commit to provide information to assist VDOT in responding to inquiries received through VDOT’s various hotlines
   d) facilitation and maintenance of Project signage, including information to pedestrians and cyclists, and Project branding and information
   e) planning for and communicating project activities impacting the public, such as changes to traffic patterns and pedestrian or bicycle access.

5) Provision of information to motorists and stakeholders to facilitate the Maintenance of Traffic (MOT) during construction. This will include:
   a) packaging of all MOT information, such as anticipated delays and lane closures, for provision to the Project Communication Team on a regular basis, to facilitate communication to the media, stakeholders and the broader community
   b) communication with direct impact area property owners
   c) communication with elected officials and other key stakeholders
d) coordination with local agencies

e) notification program to inform motorists and the broader community including bicyclists and pedestrians about expected traffic changes/delays (such as on-road signage, SMS and email alerts)

f) information to stakeholders about events in the area that may be affected by construction activities

6) Coordination of construction-related information for inclusion on all Project communication material as developed under the Communication, Marketing and Public Outreach Plan (including web, bulletins, etc.)

7) Management of construction site tours, including stakeholder events

8) Recording of Project progress through photography

9) Packaging and timely delivery to the Department of information on expected, major traffic changes for inclusion in the Department public advertising, online communications and media outreach programs. The Department will manage and execute all advertising related specifically to construction-related lane closures and anticipated delays

10) Reporting and documentation mechanism

11) Linkage to other relevant PDPs and the QMSP.

1.11 DBE/SWaM Plan

A. The DBE/SWaM Plan will define the approach to meet the DBE/SWaM participation goal and will address:

1) The proposed method to achieve the DBE/SWaM participation goal or demonstrate a good faith effort to meet the goal;

2) A proactive DBE/SWaM outreach program for DBE/SWaM participation;

3) The reporting requirements to the Department regarding DBE/SWaM participation;

4) Regular updates on the progress in meeting DBE/SWaM requirements;

5) On-going tracking of efforts and corrective actions required and how they have been met;

6) Reporting and documentation mechanism; and

7) Linkage to the other PDPs and the QMSP.
1.12 **Health, Safety and Security Plan**

A. The Health, Safety and Security Plan will define the health, safety and security activities required during the design and construction of the Project and will address:

1) The health and safety policy for the Project;
2) The health and safety goals for the Project;
3) The organization and responsibilities of the various positions related to health, safety and security;
4) Construction occupational health and safety;
5) The Project health and safety rules and regulations;
6) Site security;
7) Documented procedures on meeting the health and safety requirements for the Developer and its Contractors and suppliers;
8) On-going tracking of efforts and corrective actions required and how they have been met;
9) Reporting and documentation mechanism;
10) Linkage to other relevant PDPs and the QMSP.

1.13 **Operations and Maintenance Plan**

A. The Operations and Maintenance Plan will identify the methods, systems and procedures whereby the Developer will comply with the operation and maintenance requirements of the Agreement.

B. It is intended to address routine and seasonal operation and maintenance planning and activities.

C. The Operations and Maintenance Plan shall be consistent with or include as its components, and address the following areas, consistent with the approach noted earlier for the PDPs during the design and construction phase:

1) Developer Management Plan
2) Document Management Plan
3) Quality Management System Plan
4) Life Cycle Maintenance Plan
5) Communication, Consultation, Public Outreach, and Community Engagement Plan (which includes Public Information Plan)
6) Environmental Management Plan
7) Transportation Management Plan
8)  DBE/SWaM Plan  
9)  Health, Safety and Security Plan  
10)  Tolling operations and maintenance shall be addressed as a separate component of the Operations and Maintenance Plan  

D.  The Operations and Maintenance Plan shall address the following:  
1)  Organization structure including key operations and maintenance personnel and their responsibilities and level of authority;  
2)  Key suppliers and subcontractors;  
3)  Service delivery and operating procedures;  
4)  Incident management;  
5)  Inspection methods and inspection schedule;  
6)  Identification and scheduling of routine maintenance;  
7)  Stakeholder communication program;  
8)  Environmental compliance;  
9)  Site safety;  
10)  Emergency response;  
11)  Tolling operations and maintenance plan;  
12)  Documentation and reporting procedures;  
13)  An internal audit program and recording of findings, conformance, non-conformance, corrective actions and preventative actions;  
14)  Making available documentation for external audits;  
15)  Submission of quarterly reports indicating all activities and requirements as noted in Section 1.10-B of the Technical Requirements;  
16)  Submission of annual operations and maintenance report addressing the requirements in Section 1.10 B of the Technical Requirements.  
17)  Reporting and documentation mechanism;  
18)  Coordination with other projects; and  
19)  Linkage to other relevant PDPs and the QMSP.  

1.14  Life Cycle Maintenance Plan (operations phase)  
A.  The Life Cycle Maintenance Plan shall address the following:  
1)  The Life Cycle Maintenance Plan will be developed in accordance with Section 9.04 of the Agreement.
2) The Life Cycle Maintenance Plan shall provide the procedures in place for successful management of maintenance, operation and handover of the assets to the Department.

3) The Life Cycle Maintenance Plan is intended to focus on non-routine maintenance, such as annual or seasonal maintenance, and provide a status of the assets under the control of the Developer.

B. The Life Cycle Maintenance Plan shall be updated annually and submitted to the Department for review and approval.

C. The Life Cycle Maintenance Plan shall clearly identify the life cycle maintenance activities planned, organization, implementation, and quality management measures.

1.15 Joint Operation and Maintenance Protocol (JOMP)

A. The JOMP will define the protocols for the operation and maintenance of 66 Express Lanes, consistent with all the requirements of the Agreement which shall include but not limited to the following:

1) Maintenance Responsibility Matrix
2) Detailed plan sheets each parties maintenance responsibilities consistent with (e)
3) Operation and Maintenance Plan
4) Life Cycle Maintenance Plan
5) Department and Developer key personel contact list
6) Current Department’s Lane Closure Policy
7) Current copy of Performance Requirements of NOVA TAMS Contract
8) Emergency Access Protocol for Maintenance
9) Snow and Ice Removal Plans
10) Express Lanes Submittal Calendar

B. If any provision of this JOMP should be in conflict with any provision of the CA or any exhibits to the CA, then the CA or any such exhibit shall govern.

1.16 Service Commencement Plan

A. The Developer shall develop and submit a Service Commencement plan for Department review and approval. This plan shall include detail procedures and protocols to be followed by Developer for the conversion
of the HOV lanes to Express Lanes. The Service Commencement Plan shall include but not limited to:

1) Opening Day Plan that outlines the detailed sequence of operations for service commencement. The changing operational rules from a completely free roadway system to a tolled roadway system require a sensitive opening process to minimize traveler frustration and confusion.

2) Sign Unveiling Plan that provides a detailed procedure for the unveiling of every type of sign including the dates on which these signs can be unveiled. This plan shall include plan sheets detailing signs to be unveiled, timeline and resources available for sign unveiling.

3) Public Outreach and Marketing Plan that introduces drivers to new and changing signage. The plan shall include a plan for deployment of On-road signs to provide concise, simple messages about the Express Lanes’ opening to the public.
Submission Timetable

D. Submission Timetable

Project Development Plans are to be developed to implementation status and updated in accordance with the following table, or earlier if required by the Project Agreements.

<table>
<thead>
<tr>
<th>Project Development Plan</th>
<th>PDP submission date for review by VDOT</th>
<th>Updates *</th>
<th>VDOT Review Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developer Management Plan</td>
<td>TBD</td>
<td>Annually (during the Term)</td>
<td>Review and approve</td>
</tr>
<tr>
<td>Document Management Plan</td>
<td>TBD</td>
<td>Quarterly, if required (during the Construction Period)</td>
<td>Review and approve</td>
</tr>
<tr>
<td>Quality Management System Plan</td>
<td>TBD</td>
<td>Monthly reporting &amp; quarterly updates, if required (during the Construction Period)</td>
<td>Review and approve</td>
</tr>
<tr>
<td>Design Quality Management Plan</td>
<td>Needs to be approved prior to first design package submittal</td>
<td>Quarterly, if required (during the Construction Period)</td>
<td>Review and approve</td>
</tr>
<tr>
<td>Construction Quality Management Plan</td>
<td>TBD</td>
<td>Quarterly, if required (during the Construction Period)</td>
<td>Review and approve</td>
</tr>
<tr>
<td>Environmental Management Plan</td>
<td>TBD</td>
<td>Quarterly, if required (during the Construction Project); Annually, if required (during the remainder of the Term)</td>
<td>Review and approve</td>
</tr>
<tr>
<td>ROW Acquisition and Relocation Plan</td>
<td>TBD</td>
<td>Quarterly, if required (during the Construction Project)</td>
<td>Review and approve</td>
</tr>
<tr>
<td>Utilities Plan</td>
<td>TBD</td>
<td>Quarterly, if</td>
<td>Review</td>
</tr>
<tr>
<td>Plan / Plan Component</td>
<td>Frequency and Approval Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance of Traffic Plan</td>
<td>Quarterly, if required (during the Construction Project)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communications, Consultation, Public Outreach and Community Education Plan</td>
<td>Annually, if required (during the Term)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DBE/SWaM Plan</td>
<td>Quarterly, if required (during the Term)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health, Safety and Security Plan</td>
<td>Quarterly, if required (during the Construction Period); Annually, if required (during the remainder of the Term)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Operations and Maintenance Plan                                                      | Quarterly: Operations and Maintenance status and update reports.  
Anually: Operations and Maintenance Plan update and report on previous year activities |
| Life Cycle Maintenance Plan (operations phase)                                        | Annually |
| JOMP                                                                                 | Annually |

* Plans, records and logs shall be available for review by the Department on an ongoing basis in accordance with the Agreement. Changes as required will be in accordance with these Technical Requirements. The term “updates” in this column means updates to the already-approved PDPs.
66 Express Lanes Project

Pre-Draft Technical Requirements
Attachment 1.5a
Standards and Specifications
The standards, special provisions and reference guides applicable for the Construction Period shall be the version of those documents as noted herein below or those in effect as of final issuance of RFP, including all supplements, errata, revisions and interims. Following the Work period, all subsequent design and construction must meet the standards current at the time the Work is performed. Groupings of standards are for ease of reference only and certain reference documents have been included. It is the responsibility of the Developer to ensure that all relevant standards and specifications have been applied.

The Developer must verify and use the latest version of the documents listed herein. The Developer shall meet or exceed the minimum design standards and criteria.

1 Standards and References Documents

General
2. VDOT Materials Approved Lists
4. VDOT Post Construction Manual (August 2014)
5. VDOT Construction Inspection Manual (January 2015)
11. VDOT Land Use Permit Regulations 24 VAC 30-151 (3/17/2010)
12. VDOT Policy Manual for Public Participation in Transportation Projects (Revised August 29, 2011)
13. VDOT Instructional & Information Memorandums (IIM) – All Divisions (as of date of RFP)
14. VDOT Traffic Engineering Division Memoranda, as of March 10, 2015
15. VDOT Road and Bridge Standards, Vol. 1 and Vol. 2 (2008), including all revisions
16. VDOT Road and Bridge Specifications (2007), including the Revisions to the Road and Bridge Specifications (Revised August 4, 2015)
18. 2010 ADA Standards for Accessible Design
21. VDOT Policy for Integrating Bicycle and Pedestrian Accommodations, adopted March 18, 2004 by the CTB
23. VDOT Manual of Instruction for Material Division (Revised 2009) to include all associated memorandum
25. Revisions to VDOT CADD Manual
26. VDOT State Noise Abatement Policy (July 13, 2011)
27. ISO 9001 Quality Management Systems 2008
30. Uniform Relocation Assistance and Real Property Act of 1970, as amended
31. 1950 Code of Virginia, Titles 25.1 and 33.1, as amended

Roadway Design
33. VDOT State Bicycling Policy Plan (September 2011)
34. VDOT Road Design Manual (all revisions as of July 2015)
35. AASHTO A Policy on Geometric Design of Highways and Streets (2011)
37. AASHTO: A Policy on Design Standards Interstate System, Jan 2005

Geotechnical and Pavement Design
41. VDOT Soil Design Parameters for Sound Barrier Walls, Retaining Walls and Non-Critical Slopes – April 14, 2011
42. VDOT Requirements for Geotechnical Investigation, Geotechnical Design and Minimum Pavement Sections for the I-66 Outside the Beltway Corridor Improvements Project, October 2, 2015.
44. AASHTO “Manual on Subsurface Investigations” (1988)
46. VDOT Manual of Instruction for Material Division
47. VDOT Manual of Structure and Bridge Division, Volume V – Part 11 Geotechnical Manual for Structures
48. FHWA 23CFR626 - Part 626 Pavement Policy

Structures
50. VDOT Manual of Structure and Bridge Division, Vol. V Series
52. AASHTO LRFD Bridge Design Specifications, 7th Edition, 2014; and VDOT Modifications
58. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals, 4th Edition, 2001 (to be used for the design of anchor bolts and dynamic message sign supports only)
60. FHWA Guidelines for the Installation, Inspection, Maintenance and Repair of Structural Supports for Highway Signs, Luminaires, and Traffic Signals (March 2005), FHWA NHI 05-036
61. FHWA Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges, December 1995, including Errata sheets and Revisions
62. 23CFR625 - Design Standards for Highways
63. 23CFR630 Subpart B – Plans, Specifications, and Estimates
64. 23CFR650 - Subpart C – National Bridge Inspection Standards (“NBIS”)
65. Stage I - Plan Review Check List – August 2011 Draft
66. Virginia Department of Transportation Structure and Bridge Division Stage I - Report Template – January 7, 2004 Draft
67. Stage II - Plan Review Check List – July 1, 2011 Draft
68. AASHTO LRFD Guide Specifications for Pedestrian Bridges, 2nd Edition with 2015 Interim Revisions; and VDOT Modifications
70. AASHTO Guide for Protective Screening of Overpass Structures, 1990
73. AASHTO Manual for Bridge Element Inspection, 1st Edition, with 2015 Interim Revisions
74. AASHTO Guide Specifications - Thermal Effects in Concrete Bridge Superstructure, 1st Edition
76. AASHTO/NSBA Steel Bridge Collaboration Shop Detail Drawing Presentation Guidelines, G1.3 - 2002
79. gINT Manual
81. AASHTO Manual for Assessing Safety Hardware, 1st Edition
82. AASHTO/FHWA Joint Implementation Plan for the AASHTO Manual for Assessing Safety Hardware, 2009
84. NFPA 70 National Electrical Code, 2011 Edition
86. VDOT Element Data Collection Manual, 2007
87. VDOT Memorandum – Asbestos Containing Materials on Bridges – October 23, 2009
88. Virginia Department of Transportation Asbestos Inspection Procedures, dated May 4, 2004
89. Virginia Department of Transportation Asbestos Monitoring Procedures, dated May 4, 2004

Drainage
90. VDOT 2002 Drainage Manual (including current Errata Sheets) and revisions (Revised 7/2014)
93. 2013 BMP Standards and Specifications
95. FHWA Hydraulic Design Series Number 5 (HDS-5), Hydraulic Design of Highway Culverts, 2012
96. FHWA Hydraulic Design Series Number 6 (HDS-6), River Engineering for Highway Encroachments, 2001
97. FHWA Hydraulic Engineering Circular Number 9 (HEC-9), Debris Control Structures – Evaluation and Counter Measures, 2005
100. FHWA Hydraulic Engineering Circular Number 17 (HEC-17), The Design of Encroachments on Flood Plains Using Risk Analysis, 1981
103. FHWA Hydraulic Engineering Circular Number 21 (HEC-21), Design of Bridge Deck Drainage Systems, 1993
106. FHWA Culvert Design for Aquatic Organism Passage, 2010
107. FHWA Culvert Inspection Manual, 1986
108. US Army COE, Hydrologic Modeling System (HEC HMS) Version 4.0
110. FEMA National Flood Insurance Program Regulations
111. US Army COE, River Analysis System (HEC RAS), Version 4.1
112. The Virginia SWM Law dated 2015(as listed in the Code of Virginia)
113. The Virginia SWM Regulations dated 2015 (as listed in the Virginia Administrative Code)

**Traffic Control Devices and Lighting**

114. USDOT FHWA Standard Highway Signs
117. ANSI/IESNA RP-8-00 Roadway Lighting
119. Virginia Standard Highway Signs, Revision 1, January 2015
Pre-Draft Technical Requirements Attachment 1.5a
Standards and Specifications

2. **Special Provision Copied Notes, Special Provisions, and Supplemental Sections**

1. SU421000A Special Provision for Elastic Inclusion – June 24, 2003a
4. Virginia Department of Transportation Special Provision for Lightweight Aggregate – May 16, 2011
5. Virginia Department of Transportation Special Provision for Soldier Pile Retaining Walls – June 6, 2011
7. Virginia Department of Transportation Special Provision for Hydraulic Cement Concrete Operations for Massive Construction – March 3, 2010
8. Virginia Department of Transportation Special Provision for Asbestos Removal for Road Construction Demolition Projects – March 18, 2009
10. Virginia Department of Transportation Special Provision for Density Control of Embankments and Backfill, Revised – November 26, 2006
12. Virginia Department of Transportation Special Provision for Design-Build Tracking (DBT) Numbers – February 8, 2008
13. Virginia Department of Transportation Special Provision for Reflection Cracking Retardant Material (English Units) – March 22, 2010
14. Virginia Department of Transportation Special Provision for Sealing Cracks in Asphalt Concrete Pavement or Hydraulic Cement Concrete Pavements (Prior to Overlay) – October 19, 2014
15. Virginia Department of Transportation Special Provision for Undersealing Portland Cement Concrete Pavement – January 3, 1995
16. S223AG2-0313 Special Provision for Corrosion Resistant Reinforcing Steel
17. S404C00-0708 Special Provision for Gravity Filled Polymer Crack Sealing
18. S404D01-0815 Special Provision for Sealing Expansion Joints
19. S404G01-0412 Special Provision for Filling and Sealing Pattern Cracks in Concrete Decks and Overlays
20. S407B00-0708 Tooth Expansion Joint
21. SU404000A Special Provision for Epoxy Concrete Overlay
22. Virginia Department of Transportation Special Provision for Shotcrete and Permanent Concrete Facing – June 6, 2011
23. Virginia Department of Transportation Special Provision for Secant Pile or Tangent Pile (Drilled Shaft) Walls – June 8, 2011
24. Virginia Department of Transportation Special Provision for Permanent Soil Nails – June 7, 2011
25. Virginia Department of Transportation Special Provision for Low Density Cementitious Fill – June 24, 2011
26. Virginia Department of Transportation Special Provisions for Mechanically Stabilized Earth Walls With Low Density Cementitious Fill (LDCF) – June 24, 2011
27. Virginia Department of Transportation Special Provision for Densified Aggregate Piers for Foundation Reinforcement – June 24, 2011
28. Virginia Department of Transportation Project-Specific Special Provision for Densified Cement-Treated/Grouted Aggregate Piers for Foundation Reinforcement – June 10, 2011
29. Special provision for Crushed Hydraulic Cement Concrete 9CHCC) as Subbase and Aggregate base Material, October 1, 2015
30. Special provision for Needle-Punched, Non-Woven Geotextile Stabilization Fabric, October 1, 2015
31. Virginia Department of Transportation Special Provision for CCTV Video Equipment and CCTV General Requirements – August 26, 2013
33. Virginia Department of Transportation Special Provision for Dynamic Pile Testing for End Bearing Piles for LRFD for Design-Build and PPTA Contracts – December 10, 2009
34. Virginia Department of Transportation Special Provision for Wave Equation Analysis for LRFD for Design-Build and PPTA Contracts – December 10, 2009
35. c504c00-0708 Exposed Aggregate Finish
36. Special Provision for Architectural Finish, Concrete Form Liners And Color Stain Coating, March 29, 2013
37. Special Provision for Architectural Treatment, February 27, 2012
38. Special Provision for Mechanically Stabilized Earth Walls (Segmental Block Facing) for Design Build and PPTA Projects, December 17, 2012
39. Special Provision for Mechanically Stabilized Earth Walls (Concrete Panel Facing) for Design Build and PPTA Projects, December 17, 2012
40. Special Provision for Micropiles for Design Build and PPTA Projects, January 20, 2010
41. Special Provision for MSE Walls (Modular Cantilever Facing), December 10, 2009
42. Special Provision for Sound Barrier Walls, March 29, 2013
43. January Special Provision for Structure Demolition for Design Build and PPTA Projects, 7, 2010
44. Special Provision for T-Wall Retaining Wall System for Design-Build and PPTA Contracts, December 10, 2009
45. Special Provision for Removal of Asbestos from Bridge Structures, March 18, 2009
46. Special Provision for Asbestos-Containing Soil, February 2, 2000
47. S404B00-0708 Special Provision for Concrete Surface Color Coating
48. S404F00-0708 Special Provision for Concrete Surface Penetrant Sealant
49. S404H01-0412 Special Provision for Sealing Linear Cracks in Concrete Decks and Overlays Using Epoxy and Carbon Fiber Mesh
50. S407D00-0708 Special Provision for Metallization of Ferrous Metal Structures
51. SS40801-0211 Supplemental Section 408 for Bearing Devices and Anchors
52. SS22601-0609 Supplemental Section 226 - Structural Steel
54. Special Provision for Crack Repair by Epoxy Injection, November 28, 2012
55. Special Provision for Latex Modified Concrete Very Early Strength Overlays, August 25, 2010
56. Special Provision for Embedded Galvanic Anodes, February 20, 2013
57. SPCN for Waterproofing Coating, October 28, 2014
58. SS40603-0714 Supplemental Section 406 - Reinforcing Steel
59. SS40703-0912 Supplemental Section 407 - Steel Structures SS41201-0609 Supplemental Section 412 - Widening, Repairing and Reconstructing Existing Structures
60. SS41301-0609 Supplemental Section 413 - Dismantling and Removing Existing Structures or Removing Portions of Existing Structures
61. SS41401-0310 Supplemental Section 414 – Riprap
62. SS42300-1112 Supplemental Section 423, - NBIS Inspection Using Bridge Inspection Device
63. Special Provision for Inspection of Structures For Asbestos Containing Materials (ACM) On Design-Build Projects, June 22, 2009
64. SS40102-0912 Supplemental Section 401—STRUCTURE EXCAVATION
65. Special Provision for Low Cracking Bridge Concrete, March 10, 2013
66. S303J00-0708 Special Provision for Turbidity Curtain
67. SS21402-0908 Special Provision - Hydraulic Cement
68. SS21501-0908 Special Provision - Hydraulic Cement Concrete Admixtures
69. SS21706-0214 Special Provision - Hydraulic Cement Concrete
70. SS40404-0714 Special Provision - Hydraulic Cement Concrete Operations
71. SS40502-0211 Supplemental Section 405 - Prestressed Concrete
72. SS500A00-0708 Special Provision for Removal or Connection of Asbestos Pipe
73. SS70005-0815 Supplemental Section 700 – General Dismantling and Removing Existing Structures or Removing Portion of Existing Structures
74. Special Provisions for VDOT Intelligent Transportation Systems (ITS) – Conduit – August 26, 2013
76. Special Provisions for VDOT Intelligent Transportation Systems (ITS) – Fiber Optic Cable and Interconnect – August 26, 2013
79. Special Provisions for VDOT Intelligent Transportation Systems (ITS) – Managed Field Ethernet Switch – August 26, 2013
80. Special Provisions for VDOT Intelligent Transportation Systems (ITS) – Primary Network Switch and Layer 3 Field Aggregation Ethernet Switch – August 26, 2013
82. Special Provisions for VDOT Intelligent Transportation Systems (ITS) – Vehicle Detection and Data Collection – August 26, 2013
87. Virginia Department of Transportation Special Provision for Sawing and Sealing Joints in Asphalt Overlays Over Jointed Concrete Pavements – October 31, 2008a

100
1. Virginia Department of Transportation Special Provision for Use of Domestic Material – February 26, 2009 (S102CF1)
2. Virginia Department of Transportation Special Provision for Section 1051.10 Construction Stakes, Lines and Grades – July 9, 2002 (S105A0B)

200

300
1. Virginia Department of Transportation Special Provision for Flowable Backfill – March 11, 2010
2. Virginia Department of Transportation Special Provision for Rideability – October 1, 2015

500
1. Virginia Department of Transportation Special Provision Copied Notes c504b0b – Section 504 – Sidewalks, Steps, and Handrailings – January 12, 2005

700
1. SS70005—Supp. Sec. 700 – General 4-15-15
2. SS70103—Supp. Sec. 701 – Traffic Signs 4-15-15
3. SS70301—Supp. Sec. 703 – Traffic Signals 1-6-09
5. SS70402—Supp. Sec. 704 – Pavement Markings & Markers 4-15-15
6. Preformed Thermoplastic Pavement Markings 11-29-11b

Reference Documents

1. FHWA Geotechnical Engineering Circular No. 2 - Earth Retaining Systems, FHWA-SA-96-038, 1996
2. FHWA Geotechnical Engineering Circular No. 4 - Ground Anchors and Anchored Systems, FHWA-IF-99-015, 1999
3. FHWA Geotechnical Engineering Circular No. 7 - Soil Nail Walls, FHWA-IF-03-017, 2003
6. FHWA Geotechnical Engineering Circular No. 6, Shallow Foundations, September 2002, FHWA-SA-02-054
8. FHWA Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Volumes I & II, November 2009, FHWA-NHI-10-024
9. FHWA Drilled Shafts Construction Procedures and LRFD Design Methods, May 2010, FHWA NHI-10-016
12. FHWA The Osterberg Cell for Load Testing Drilled Shafts And Driven Piles, FHWA-SA-94-035, 1994
13. Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures (April 2007), FHWA-NHI-08-048
14. Load and Resistance Factor Design (LRFD) for Highway Bridge Substructures (April 2007), FHWA-NHI-08-036
15. Load and Resistance Factor Design (LRFD) For Highway Bridge Superstructures - Examples (April 2007), FHWA-NHI-08-049
16. LFRD for Highway Bridge Substructures and Earth Retaining Structures (Jan 2007), FHWA-NHI-05-095
19. Earth Retaining Structures (RM), FHWA-NHI-07-071
21. Mechanically Stabilized Earth Walls And Reinforced Soil Slopes - Design And Construction Guidelines (March 2001), FHWA-NHI-00-043
22. VDOT Clearance Chart (08-18-03)
23. VDOT Conductor Cable and Conduit Sizes (08-18-03)
24. VDOT Preliminary Sub Example
25. VDOT Rest in Walk pedestrian phasing (01-13-05)
26. VDOT Right Turn overlap phasing (01-13-05)
27. VDOT Right-of-way Diagrams (01-13-05)
28. VDOT Side street split phasing (01-13-05)
29. VDOT Signal Control Justification (08-18-03)
30. VDOT Signal Plan Update (01-13-05)
31. VDOT NOVA Signal Symbols (08-18-03)
32. VDOT Signal Timing Submission Process (08-18-03)
33. VDOT Span Wire Design Notes (08-18-03)
34. VDOT Telespar Sign Supports (01-13-05)
35. VDOT NOVA Timing Template-170 format (01-3-05)
36. VDOT Design Notes (08-18-03)
38. VDOT Detector Placement (01-13-05)
39. VDOT Double Left-turn Lane Diagram (08-18-03)
40. VDOT General Guidelines for Signal Design (08-18-03)
41. VDOT Left Turn Phasing Guide (08-18-03)
42. VDOT Light Emitting Diode Module (08-18-03)
43. VDOT Mast Arm Signage (08-18-03)
44. VDOT Mast Arm Design Notes (08-18-03)
45. VDOT Mast Arm Traffic Signal Pole Guide (08-18-03)
46. American Water Works Association Standards
47. FHWA Hydrology Design Series No. 2, Highway Hydrology, 2002
48. FHWA Hydraulic Design Series No. 3, Design Charts for Open Channel Flow, 1961
49. FHWA Hydraulic Design Series No. 4, Introduction to Highway Hydraulics, 2008
50. FHWA Hydraulic Design Series No. 5, Hydraulic Design of Highway Culverts 2005
51. FHWA Hydraulic Engineering Circular No. 11, Design of Riprap Revetment, 1989
52. USDA, NRCS, Urban Hydrology for Small Watersheds, TR-55, June 1986
53. FHWA - A Guide for HOT Lane Development, March 2003
54. ITE TMDD - Traffic Management Data Dictionary and Message Sets for External TMC Communication (TMDD and MS/ETMCC)
55. VDOT DBE Program, March 15, 2007
56. Virginia Department of Transportation CII/SSI Policy Guide For Employees, Vendors, Contractor or other Persons Accessing VDOT’s CII/SSI – March, 2006 (Interim Revision November, 2009)
57. DMS Upgrade and Expansion Program Concept of Operations, February 25, 2008
58. VDOT NRO Vehicle Detector Master Plan, June 13, 2008
59. VDOT NRO CCTV Master Plan, May 2008
60. VDOT NRO CCTV Concept of Operations, May 2008
61. VDOT NRO Vehicle Detector Concept of Operations, May 14, 2008
63. VDOT ITS Projects – Systems Engineering and Architecture Compliance (Rule 940) Checklist
64. Virginia Megaprojects Program Lane Closure Policy and Procedures, April 23, 2012

WMATA
1. WMATA Adjacent Construction Project Manual - September 16, 2013
3. WMATA – Standard Specifications - Release 9, Revision 3a - 2014
5. WMATA - Traction Power Substation – Updated Information – Standard Drawings for Supervisory Control and Data Acquisition (SCADA) – March, 2015
7. WMATA - Communications – Updated information – Design Criteria and Specifications, Rev 01.01 dated October 1, 2014
9. WMATA - K (Orange) - Line Traction Power Contact Rail Schematic Diagram and emergency Trip Stations, October 1989
10. WMATA - K (Orange) – Line Traction Power Feeder Cable Inventory, May, 2015
11. WMATA – K (Orange) – Line Track Charts, October 2000
12. WMATA – K99 (Orange) – WFC Line Track Charts, November 2000
13. WMATA 7000 Series Rail Cars Technical Specification - December 17, 2009

**Norfolk-Southern**

2. Norfolk-Southern Operating Guidelines for Contractors - effective April 19, 2010
<table>
<thead>
<tr>
<th>DE or DW</th>
<th>No.</th>
<th>Item</th>
<th>Location</th>
<th>Design Feature</th>
<th>Proposed Design</th>
<th>Min AASHTO (for DE) and VDOT (for DW) Standards Required</th>
<th>Remarks</th>
<th>Required for Standard to be Fully Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>1</td>
<td>No shoulder width on left of GP lanes, right of Express lanes due to 4' Buffer with Pylons</td>
<td>Entire Corridor</td>
<td>Shoulder Width</td>
<td>No Shoulder</td>
<td>12' Shoulder for GP Lanes; 10' Shoulder for Express Lanes</td>
<td>6' Buffer with pylons to separate General Purpose Lanes from Express Lanes</td>
<td>Additional 250 pavement widening requires reconfiguration of all existing interchanges, bridges, adjacent structures, and realignment of local streets, resulting in larger project footprint and right-of-way impact. Major impact to the existing creeks, park, school and residential/commercial properties. The two metro stations at Dunn Loring and Vienna will have to be relocated. (Estimated $xx.xx Million additional cost)</td>
</tr>
<tr>
<td>DE</td>
<td>2</td>
<td>Express Lane &amp; GP Lane Shoulder Width Reduction due to Sign, Lighting, Traffic Management System (TMS), Toll Structures, Bridge Piers and Misc.</td>
<td>Entire Corridor</td>
<td>Shoulder Width</td>
<td>Varies (6' to 8')</td>
<td>12 ft. Shoulder</td>
<td>This design exception is for the localized reduction in shoulder width due to barrier blockage to accommodate signage, lighting, TMS, toll structures, and bridge piers near existing WMATA MetroRail.</td>
<td>Dedicate existing concrete barriers and bridge piers. Also includes, but not limited to, the replacement of all existing bridges, realignment of EB/VB GP lanes and associated ramps; relocation of roadside structures and retaining walls; right-of-way acquisition; larger project footprint; impact on drainage system. Estimated $xx.xx Million additional cost</td>
</tr>
<tr>
<td>DE</td>
<td>3</td>
<td>General Purpose Lanes Outside Shoulder Width Reduction</td>
<td>Varies (6' to 8')</td>
<td>Shoulder Width</td>
<td>Varies (6' to 11')</td>
<td>12' Shoulder</td>
<td>This design exception is for the localized reduction in shoulder width due to close proximity to Manassas National Battlefield Park, Historic District Areas, Bull Run Regional Park and Izzak Walton Park. Avoidance Alternatives required by section 4J.</td>
<td>Dedicate safely constructed concrete median facilities including pad bridge, buffer bay facilities, parking lot - with disruption to Metro operations; additional widening of proposed bridges, additional right-of-way acquisition; larger project footprint; impact on drainage system. Estimated $xx.xx Million additional cost</td>
</tr>
<tr>
<td>DE</td>
<td>4</td>
<td>Non-standard Horizontal Curve</td>
<td>Route 28</td>
<td>Horizontal Alignment (K Value) &amp; Vertical Alignment (Ramp)</td>
<td>216' Radius K=19</td>
<td>316' Minimum (VDOT GS-R; 35 mph)</td>
<td>This design exception is for the reduction of Horizontal Radius due to close proximity to Manassas National Battlefield Park, Historic District Areas, Bull Run Regional Park and Izzak Walton Park. Avoidance Alternatives required by section 4J.</td>
<td>Fake property from EC Lawrence Park</td>
</tr>
<tr>
<td>DE</td>
<td>5</td>
<td>Reduced Express Lane Inside Shoulder Width</td>
<td>Vienna Metro Station</td>
<td>Shoulder Width</td>
<td>Varies (4' Min) on the Left</td>
<td>12' Shoulder</td>
<td>Restripe the existing single lane ramp to two-lane ramp without roadway widening between existing bridge piers.</td>
<td>Re-align Metro corridors; various locate facilities replacing pad bridge. Also includes, but not limited to, the replacement of all existing bridges, realignment of EB/VB GP lanes and associated ramps; relocation of roadside structures and retaining walls; right-of-way acquisition; larger project footprint; impact on drainage system. Estimated $xx.xx Million additional cost</td>
</tr>
</tbody>
</table>

### Vienna Metro Station
- Varieties of Shoulder Width
  - Shoulder Width Varies (2' Min): 6' (Lt.); 8' (Rt.) Bridge
  - Shoulder Width Varies (4' Min): 8' (Lt.); 12' (Rt.) Roadway

### Vienna Metro Station
- Varieties of Shoulder Width
  - Shoulder Width Varies (4' Min) on the Left: 8' (Lt.); 12' (Rt.) Bridge

### Restripe the existing single lane ramp to two-lane ramp without roadway widening between existing bridge piers.
**DE or DW** | **No.** | **Item** | **Location** | **Design Feature** | **Proposed Design** | **Min AASHTO (for DE)** | **VDOT (for DW)** | **Remarks** | **Required for Standard to be FULLY Met**
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
**DE** | 6 | Express Lane Ramp Shoulder Reduced Width (BRIDGE) | EB GP to EB Express Lanes | Shoulder Width | 2’ Min. | 4’ Min. | 2’ Min. provided on one side while providing 10’ on the other side to meet SSD requirements. | Sidewalk the ramp bridge width. Or, redesign the ramp geometry with flatter curve to provide adequate SSD with standard shoulder width on both sides, which will significantly increase the project first print and ROW impact. | Addendum for ours.
**DE** | 7 | Substandard shoulder Cross Slopes | RTE. 50 to RTE. 495 | Shoulder Width | 2’ Min. | 4’ Min. | 2’ Min provided adjacent to barrier while providing a minimum of 10’ for both shoulders combined. | Additional right of way impacts on shopping centers of Fair Oaks Mall | Addendum for our.
**DE** | 8 | Printed Arterials Road Reduced Shoulder Width | Route 28 | Shoulder Width | 4’ Outside Shoulder | 8’ Outside Shoulder | Lanes on Route 28 north of the interchange reduce to 11’ with a 6’-12’ shoulder in order to avoid the park property. This design exception is required in order to prevent right of way takes on the park. This was presented as the avoidance option. | Take property from EC Lawrence Park | Addendum for ours.
**DE** | 9 | Existing Vertical Clearance Roadway (PHASE 1 Req6) | Rte. 29 Centerville (B662, B663) | Vertical Clearance | Maintain Existing Clearance | VDOT 16’-6” | AASHTO 18’-0” | The superstructure of the bridges are fairly new and are not considered to be reused rather than replaced. The existing vertical clearances are 14’-7” as per the inspection reports. Design Exception is required for Reduce Shoulder Width. | Bridges to be replaced for Preferred Alternative. Increase the clearance to 16’-4” (VDOT standard) by REPLACE and reconstruction of approach roadway in phases. | Addendum for ours.

**DW** | 1 | Reduced Ramp Recovery Areas | Antioch Road Express Ramps | Reduced Exit Ramp Recovery Area | 12’ Shoulder on Express and 4’ Shoulder on Ramp | VDOT RDM App C Figure C-8-1 | This design exception is for not providing the "N1 & N2" extra with beyond edge of shoulder and the transition length "Z1 & Z2" from the ramp terminal design criteria (RDM Figure C-8-1 Gone For Exit Ramp). See RDM Table C-8-2. | Re-align Mardinie with potential impacts to Historic District Areas, National Park Service, Inland Wetlands and Impacts to adjacent properties. Including, additional ROW takes; larger project footprint; impact on drainage system (Estimated $9,000 Million additional cost) | Addendum for ours.
**DW** | 2 | Vertical Grades on Ramps | Route 28 | Ramps | 8% Max Grade | 6% Max | A couple ramps on Route 28 have grades of 7% or 8%. This is to meet the proposed bifurcated interchange without having additional property impacts. | Lengthen ramp with additional structural costs and right of way impacts. | Addendum for ours.
**DW** | 3 | Buffer Strip on Poplar Tree Road has been reduced to 3’ and the trail to 8’ | Poplar Tree | Trail width, buffer width | 8’ Trail, 2’ Buffer | 10’ Trail, 8’ Buffer | The buffer strip has been reduced to 3’ and the trail to 8’ in order to avoid using right of way on the adjacent property. | Right of way takes from PT/CDL USG Chantilly LLC requiring the loss of tree buffer strip as well as parking during construction. Parking losses could break the lease that the property owner has with their tenants. | Addendum for ours.

**Notes:**
- Addendum 8 of 2016 updated with conceptual plans that based on multiple iterations - Additional ROW may be required in the design phase.
- Notes were added in progress, although is intended for informational only.
- Addendum 8 may be required to the design phase.

1. In-progress, conceptual plans that are based on multiple iterations. Addendum may be required in the design.
2. Addendum may be required to the design phase.

**Summary of Design Exceptions and Waivers**

66 Express Lanes Project

Updated Date: 09-03-2015

<table>
<thead>
<tr>
<th>Min AASHTO (for DE)</th>
<th>VDOT (for DW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2’ Min. provided on one side while providing 10’ on the other side to meet SSD requirements.</td>
<td>2’ Min provided adjacent to barrier while providing a minimum of 10’ for both shoulders combined.</td>
</tr>
<tr>
<td>DE or DW</td>
<td>No.</td>
</tr>
<tr>
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</tbody>
</table>

### Summary

<table>
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<tr>
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</thead>
</table>

Updated DATE: 09-03-2015
Lane Closure Guidelines

- For Northern Virginia

VDOT Northern region operations

August 4th 2015
**Instruction**

The purpose of this memorandum is to present guidelines for lane closure hours for construction, maintenance, permits, and special events in Northern Virginia.

The first version of the guidelines was issued in April 2012. In the past three years, there were ongoing and completed roadway constructions in NoVA District, such as I-495 and I-95 express lanes and I-66 spot improvements. Therefore, the modifications are considered to this guideline. Same as the previous version, the modifications were made based on traffic volume; roadway characteristics; comments from staff; and considering the public tolerance for the lane closure during certain time periods of the day.

It should be noted that the guidelines must be used as a starting point for discussion at the project level. On large scale projects with robust community outreach and the Traffic Management Plan, these hours could be extended. If the project staff would like to modify these hours, they must work with NRO Traffic Operations staff and get approval of their functional Assistant District Administrator.

Please review the existing contracts and discuss the deviations from these hours with your functional Assistant District Administrator.

**Restriction of Operations:**

In addition to the allowable lane closure hours specified in the tables, the restrictions listed shall be followed.

1. **Peak Hour Lane Closures**
   If there are any lane reductions (temporary or permanent) during the peak periods (Monday to Friday, 6:00AM to 9:00AM and 3:30PM to 6:30PM) on roads with AADT above or equal to 10,000 vehicles, Regional Operations Director and Public Affairs Manager must be consulted.

2. **Complete Roadway Closures**
   If there are complete road closures on any road for construction or maintenance work, Regional Operational Director and Public Affair Manager must be consulted.

   Complete Roadway Closures shall be limited to 20 to 30 minutes intermittent stoppage for some specific work activities.

   If the closure duration is above 30 minutes, it shall be approved separately with full Maintenance of Traffic and Traffic Management Plans.

3. **Construction in Residential Subdivisions**
   If there are any work within the residential subdivisions and cul-de-sac streets, the work should be conducted during daytime hours to avoid night time noise issues.
4. **Express Lanes (I-95&I-395)**

All closures in the Express Lanes on either 95 or 495 shall be coordinated with the Express Lanes Operations Center at least 5 business days in advance using their Authorization to Work form (available from the Express Lanes Operations Center at (571)419-6046. Complete road closures on the 95 Express Lanes and 495 Express Lanes will only be for 30 minutes or less.

5. **Holiday**

In addition to the Sunday or Holiday work limitations, mobile, short duration, short-term stationary, or intermediate-term stationary temporary traffic control zone lane closures on mainline lanes, shoulders, or ramps shall not be performed during the following Holiday time periods without the written permission of the Engineer. Additionally, a long-term stationary temporary traffic control zone shall not be initially put in place, adjusted, or removed during the following Holiday time periods without the written permission of the Engineer (VDOT 2007 Standard Specifications, updated 12/2014):

- **January 1**: From Noon on the preceding day until Noon on the following day, except as indicated below.
- **Martin Luther King, Jr. Day and Lee Jackson Day**: From Noon on the preceding Thursday to Noon on the following Tuesday.
- **Presidents Day**: As indicated below.
- **Easter**: As indicated below.
- **Memorial Day**: As indicated below.
- **July 4**: From Noon on the preceding day until Noon on the following day, except as indicated below.
- **Labor Day**: As indicated below.
- **Columbus Day**: As indicated below.
- **Veterans Day**: From Noon on the preceding day until Noon on the following day, except as indicated below.
- **Thanksgiving Day**: From Noon on the Wednesday proceeding Thanksgiving Day until Noon on the Monday following Thanksgiving Day.
- **Christmas Day**: From Noon on the preceding day until Noon on the following day, except as indicated below.

If the Holiday occurs on a **Friday or Saturday**: From Noon on the preceding Thursday to Noon on the following Monday.

If the Holiday occurs on a **Sunday or Monday**: From Noon on the preceding Friday to Noon on the following Tuesday.

**Note:**

For low volume roadways (minor arterial), no lane closure is allowed during the holidays, but no restriction to the preceding day and the following day.
### INTERSTATE 395 & INTERSTATE 95

#### WEEKDAY

<table>
<thead>
<tr>
<th>Segment 1</th>
<th>14th St. Bridge to Springfield Interchange</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Two-Lane Closures</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10:00AM to 3:00PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
<td>12:00AM to 4:00AM</td>
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<tr>
<td></td>
<td></td>
<td>9:00PM to 5:00AM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Segment 2 | Springfield Interchange to Rt.123          | 9:30AM to 3:30PM                 | 10:00PM to 5:00AM | 11:00PM to 5:00AM      | 12:00AM to 4:00AM     |
|           |                                            | 9:00PM to 5:00AM                 |                   |                        |                       |

| Segment 3 | Rt.123 to Prince William County line       | 9:30AM to 3:30PM                 | 10:00PM to 4:30AM | 11:00PM to 4:00AM      | 12:00AM to 4:00AM     |
|           |                                            | 9:00PM to 5:00AM                 |                   |                        |                       |

All lanes open at 12:00 noon on Friday

#### Southbound

<table>
<thead>
<tr>
<th>Segment 1</th>
<th>14th St. Bridge to Springfield Interchange</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Two-Lane Closures</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10:00AM to 2:30PM</td>
<td>10:00PM to 5:00AM</td>
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<td>12:00AM to 4:00AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:30PM to 5:00AM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Segment 2 | Springfield Interchange to Rt.123          | 9:00AM to 2:00PM                 | 10:00PM to 5:00AM | 11:00PM to 5:00AM      | 12:00AM to 4:00AM     |
|           |                                            | 9:30PM to 5:00AM                 |                   |                        |                       |

| Segment 3 | Rt.123 to Prince William County line       | 9:00AM to 2:00PM                 | 10:00PM to 5:00AM | 11:00PM to 5:00AM      | 12:00AM to 4:00AM     |
|           |                                            | 9:30PM to 6:00AM                 |                   |                        |                       |

All lanes open at 11:00am on Friday

#### WEEKEND

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Northbound/Southbound</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday to Saturday</td>
<td></td>
<td>10:00PM to 9:00AM</td>
<td>11:00PM to 8:00AM</td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td>Saturday to Sunday</td>
<td></td>
<td>10:00PM to 9:00AM</td>
<td>11:00PM to 9:00AM</td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td>Sunday to Monday</td>
<td></td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 4:00AM</td>
<td>12:00AM to 4:00AM</td>
</tr>
</tbody>
</table>

#### REVERSIBLE Lanes (HOV & EXPRESS LANES)*

<table>
<thead>
<tr>
<th>Period</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Complete Road Closure**</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEEKDAY</td>
<td>9:30PM (Sunday to Thursday) to 4:00AM (Monday to Friday)</td>
<td>11:00PM to 4:00AM</td>
</tr>
<tr>
<td>WEEKEND</td>
<td>11:00PM (Friday to Saturday) to 9:00AM (Saturday to Sunday)</td>
<td>11:00PM to 4:00AM</td>
</tr>
</tbody>
</table>

* Direction of traffic control for all lane closures in reversible lanes will need to be adjusted as necessary to face direction of traffic.

** Complete Road Closure on Express Lanes for 30 minutes or less
### Interstate 495 (Beltway)

#### Inner Loop

<table>
<thead>
<tr>
<th>Segment 1</th>
<th>A. L. Bridge to Springfield Interchange</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Two-Lane Closures</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10:00AM to 3:00PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9:30PM to 5:00AM</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Segment 2</th>
<th>Springfield Interchange to W.W. Bridge</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Two-Lane Closures</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10:00AM to 3:00PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9:30PM to 5:00AM</td>
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</tr>
</tbody>
</table>

#### Outer Loop

All lanes open at 12:00 noon on Friday

<table>
<thead>
<tr>
<th>Segment 1</th>
<th>A. L. Bridge to Springfield Interchange</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Two-Lane Closures</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9:30AM to 2:30PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9:30PM to 5:00AM</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Segment 2</th>
<th>Springfield Interchange to W.W. Bridge</th>
<th>Single-Lane Closures or Shoulder</th>
<th>Two-Lane Closures</th>
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<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
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<tr>
<td></td>
<td>9:30PM to 5:00AM</td>
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</tbody>
</table>

#### Express Lanes

**WEEKDAY**

<table>
<thead>
<tr>
<th>Single-Lane Closures or Shoulder</th>
<th>Complete Road Closure**</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30PM (Sunday to Thursday) to 4:00AM (Monday to Friday)</td>
<td>11:00PM to 4:00AM</td>
</tr>
</tbody>
</table>

**WEEKEND**

<table>
<thead>
<tr>
<th>Single-Lane Closures or Shoulder</th>
<th>Complete Road Closure**</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00PM (Friday to Saturday) to 9:00AM (Saturday to Sunday)</td>
<td>11:00PM to 4:00AM</td>
</tr>
</tbody>
</table>

** Complete Road Closure on Express Lanes for 30 minutes or less
<table>
<thead>
<tr>
<th>Segment</th>
<th>Description</th>
<th>Weekday Eastbound</th>
<th>Weekday Westbound</th>
<th>Weekend Eastbound/Westbound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eastbound</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single-Lane Closures or Shoulder</td>
<td>Two-Lane Closures</td>
<td>Multiple-Lane Closures</td>
<td>Complete Road Closure</td>
</tr>
<tr>
<td><strong>Segment 1</strong></td>
<td>Prince William County line to Route 286</td>
<td>10:00AM to 3:30PM</td>
<td>9:00PM to 5:00AM</td>
<td>10:00PM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>8:00PM to 5:00AM</td>
<td></td>
<td></td>
<td>12:00AM to 4:00AM</td>
</tr>
<tr>
<td><strong>Segment 2</strong></td>
<td>Route 286 to Beltway</td>
<td>11:00AM to 3:30PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>9:00PM to 5:00AM</td>
<td></td>
<td></td>
<td>12:00AM to 4:00AM</td>
</tr>
<tr>
<td><strong>Segment 3</strong></td>
<td>Beltway to TR Bridge (Inside Beltway)</td>
<td>9:30PM to 5:00AM</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12:00AM to 4:00AM</td>
</tr>
<tr>
<td><strong>Westbound</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Segment 1</strong></td>
<td>Prince William County line to Route 286</td>
<td>9:00AM to 2:30PM</td>
<td>9:30PM to 6:00AM</td>
<td>10:30PM to 5:00AM</td>
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</tr>
<tr>
<td><strong>Segment 2</strong></td>
<td>Route 286 to Beltway</td>
<td>9:00AM to 2:30PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>9:30PM to 5:00AM</td>
<td></td>
<td></td>
<td>12:00AM to 4:00AM</td>
</tr>
<tr>
<td><strong>Segment 3</strong></td>
<td>Beltway to TR Bridge (Inside Beltway)</td>
<td>9:30AM to 2:00PM*</td>
<td>10:00PM to 5:00AM</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>10:00PM to 5:00AM</td>
<td></td>
<td></td>
<td>12:00AM to 4:00AM</td>
</tr>
</tbody>
</table>

* Only be considered for three lane segment.
**Consider opening shoulder lane, where Applicable

**All lanes open at 12:00 noon on Friday**
## ROUTE 267 CONNECTOR

<table>
<thead>
<tr>
<th>WEEKDAY</th>
<th>Eastbound</th>
<th>Westbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single-Lane Closures or Shoulder</td>
<td>Complete Road Closure</td>
</tr>
<tr>
<td>Monday to Friday</td>
<td>11:00AM to 3:00PM</td>
<td>12:00AM to 4:00AM</td>
</tr>
<tr>
<td></td>
<td>9:30PM to 5:00AM</td>
<td>9:30AM to 3:00PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:00PM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>All lanes open at 12:00 noon on Friday</td>
<td>12:00AM to 4:00AM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WEEKEND</th>
<th>Eastbound/Westbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single-Lane Closures or Shoulder</td>
</tr>
<tr>
<td>Friday to Saturday</td>
<td>10:00PM to 8:00AM</td>
</tr>
<tr>
<td>Saturday to Sunday</td>
<td>11:00PM to 8:00AM</td>
</tr>
<tr>
<td>Sunday to Monday</td>
<td>9:00PM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>Complete Road Closure</td>
</tr>
<tr>
<td></td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>12:00AM to 4:00AM</td>
</tr>
</tbody>
</table>
**Single-Lane Closures* or Shoulder**

<table>
<thead>
<tr>
<th>ARTERIAL</th>
<th>WEEKDAY</th>
<th>WEEKEND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monday to Thursday</td>
<td>Friday</td>
</tr>
<tr>
<td>Major Arterials**</td>
<td>9:30AM to 3:00PM</td>
<td>9:30AM to 2:00 PM</td>
</tr>
<tr>
<td></td>
<td>10:00PM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td>All Other Roadways</td>
<td>9:00AM to 3:30PM</td>
<td>9:00AM to 2:00 PM</td>
</tr>
<tr>
<td></td>
<td>9:00PM to 5:00AM</td>
<td></td>
</tr>
</tbody>
</table>

**Multiple-Lane Closures**

<table>
<thead>
<tr>
<th>ARTERIAL</th>
<th>WEEKDAY</th>
<th>WEEKEND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monday to Thursday</td>
<td>Friday</td>
</tr>
<tr>
<td>Major Arterials**</td>
<td>10:00PM to 5:00AM</td>
<td>Not allowed until 11:00PM</td>
</tr>
<tr>
<td>All Other Roadways</td>
<td>9:00PM to 5:00AM</td>
<td>Not allowed until 10:00PM</td>
</tr>
</tbody>
</table>

*Single-lane closures are only permitted for multiple-lane roadways*

**Major Arterials are defined as Primary Roads, high volume Secondary Roads, and all other routes that connect directly to Interstates**
Table of Contents

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Attachments
Attachment 1: Virginia I-66 Program Lane/Shoulder Closure Request Form
Attachment 2: Roadway Lane and Shoulder Closures – I-66 Program
Attachment 3: District Administrator Lane Closure Guidance Document
SECTION 1

1. Overview of Virginia I-66 Program Lane Closure Policy

1.1 Overview

This policy standardizes the lane closure management process for identifying the location, date, and time of all lane closures, shoulder closures, and work zones on all interstate, primary, and certain secondary roads within the Virginia I-66 Program construction zones.

It provides contact information for the appropriate public safety organizations; local, county, and state agencies; and project staff and media partners to notify them of the lane closures and work zones’ effective time restrictions and to facilitate community outreach within the MegaProjects corridors to avoid undue impacts to motorists.

Attachments 1 provide work hours and hours for roadway lane and shoulder closures for the Virginia I-66 Program.

1.2 Process

Contractors for the Virginia I-66 Program construction projects will use the Virginia I-66 Program Lane Closure Request Form (Attachment 1) to request either a lane or shoulder closure and submit it electronically to the Virginia I-66 Program Lane Closure Management Team and the respective VDOT Project Manager for approval. The work hours for these closures will comply with the contract agreements and the hours shown in Attachments 1 for the various types of closures. This process will facilitate the coordination between projects and identify lane/shoulder closing conflicts that may occur during the various project activities. When required, the Contractor will submit additional Maintenance of Traffic (MOT) information and/or approved traffic control plans (TCPs) (not applicable to the DCMP) in advance of submitting its lane closure requests. For the DCMP, VDOT shall review the TCPs and provide comments to the Contractor within 21 days of receipt of the project or 15 business days.

The request will include sufficient information to support the local and regional public information programs describing the location, dates and times, nature of work, lanes to close, ramp closures, field point of contact, and detours. The advance notification requirements for the type of lane closure requested are defined to support the coordination efforts within each project contract agreement.

The lane closure requests shall be submitted to the Traffic Operations Manager (Section 6 – Contact List) and the VDOT Project Manager by noon each Wednesday of the week before the lane closure is required. This allows the Lane Closure Management Team to review the request for time of work requirements and conflicting closures within the Virginia I-66 Program Program as well as to validate traffic operations and incident management impact(s) before submitting it to the VDOT Project Manager for a technical review. Once reviewed, the Traffic Information Coordinator will input the lane closure information into the Lane Closure Advisory Management System (LCAMS). The Traffic Operations Manager will furnish the necessary information to the various outreach programs and Virginia I-66 Program staff as appropriate.

The Traffic Operations Manager will submit the request to the VDOT Project Manager for approval or disapproval. The respective VDOT representative(s) will review the MegaProjects Traffic...
Operations Manager’s recommendations and will either approve the request or return it to the Contractor for resubmission through the MegaProjects Traffic Operations Manager.

If conflicting lane closures are identified, the Lane Closure Management Team will notify the respective VDOT Project Manager to facilitate the resolution of conflicts between projects. Once the conflict is resolved, the VDOT Project Manager must notify the Traffic Operations Manager of the resolution and have the Contractor resubmit the lane closure request.

Lane closure approval/disapproval will be made within three (3) calendar days of receipt of the request from the MegaProjects Traffic Operations Manager. The Construction Project Management Schedule shall provide a rolling 2- or 3-week plan of the MOT project requirements.

Once approved, the MegaProjects Lane Closure Management Team will use LCAMS to convey approved lane closures to the VDOT Northern Region Operations Traffic Operations Center (NROTOC) for internal management and to the Virginia I-66 Program public affairs personnel for appropriate outreach to external parties, such as media, businesses, trucking associations, traffic reporting agencies, and community service agencies.
SECTION 2

2. Virginia I-66 Program Lane Closure Process

2.1 Lane Closure Types
Lane closures are classified into three types, in descending order of impact:

**Type 1**—A lane closure that would have a significant impact on traffic, such as stopping traffic completely, closing two or more lanes, closing an exit or entrance ramp at freeway interchanges, or changing traffic patterns. This type of closure would require extensive media and stakeholder notification and coordination among various local and state agencies.

**Type 2**—A lane closure that would have minor or no impacts on the flow of traffic, such as closing one lane on a four-lane freeway during off-peak hours or closing the service roads adjacent to Routes 7 or 123.

**Type 3**—A lane closure that would close a shoulder (right or left) on a freeway or ramp.

2.2 Advance Notification Requirements
Minimum/maximum advance notice requirements are listed below:

<table>
<thead>
<tr>
<th>Lane Closure Type</th>
<th>Minimum Advance Notice</th>
<th>Maximum Advance Notice (Calendar Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 Days</td>
<td>21 Days</td>
</tr>
<tr>
<td>2</td>
<td>5 Days</td>
<td>14 Days</td>
</tr>
<tr>
<td>3</td>
<td>3 Days</td>
<td>14 Days</td>
</tr>
</tbody>
</table>

2.3 Advance Notification Limits
The Contractor’s working CPM schedule shall identify the activities that require lane and roadway closures. The Construction Managers and MOT team will review the schedule to ensure that the closure requested meets the objective of the project and will minimize traffic disruptions.

Lane closures or work that restricts traffic flow will not be permitted during the daytime hours on Saturdays, Sundays, and holidays from noon on the day before the holiday until noon the day after the holiday, unless approved by the VDOT Project Manager.

Failure to restore full traffic capacity within the time specified will result in a disincentive charge being assessed on the Contractor’s next month’s pay estimate, in conformance with the rates set in the I-66 Program Comprehensive Agreement). Restoration of traffic capacity shall mean the completion of all construction work, the removal of all traffic control devices and signs, and the removal of all workers, materials and equipment from the roadway, lane and/or shoulder.

The VDOT Project Manager has the right to direct the Contractor to modify, adjust or remove lane closures based on traffic or weather conditions.
2.4 State/County Police Support
The Contractor will be required to provide a uniformed, off-duty law enforcement officer with a marked law enforcement vehicle equipped with a blue flashing light for all nighttime work that is performed within the travel lanes. Provision of this service will be the responsibility of the Contractor for the I-66 project only.

When requesting police assistance from the Fairfax County Police Department, the Contractor shall coordinate all requests through To Be Determine.

2.5 Lane Closure Request
The Contractor will submit a Virginia I-66 Program Lane Closure Request Form to the VDOT Project Manager and Virginia I-66 Program Traffic Operations Manager.

The request for a lane closure will be submitted in accordance with each project contract requirements which is include Comprehensive Agreements project advance notification requirements for the type of the lane closure requested (Exhibit 1: Lane Closure Approval and Notification Process).

The Contractor shall submit the lane/shoulder closure requests electronically on the attached form or an approved alternate form (Attachment 1: Review and Approval of Lane Closure Request).

The VDOT Project Manager and Traffic Operations Manager will review all lane closure requests (Exhibit 1). The Traffic Operations Manager will review each request for conflicting closures or special events that may occur during the same time or location and for impacts to traffic operations and incident management. The Traffic Information Coordinator will verify work hours and compliance with any contract requirements. The Traffic Operations Manager will review the proposed closure to verify compliance against contract MOT plans and approved TCP, and to coordinate proposed closures with Virginia I-66 Program personnel.

If the contractor deviates from the contract approved lane closures hours, the contractor shall prepare a traffic analysis to assess the traffic impacts in advance of the lane closure requests being submitted. Traffic analysis and modeling shall also be required for all construction activities requiring a detour, requiring closure of multiple lanes, or deviating in any way from Approved Final Construction MOT phasing. The contractor shall provide adequate justification for the deviation of approved hours or MOT phasing is required which should include but not limited to the following information:

1. Justification to determine if this option is the only practical option.
2. Provide list of other options that have been considered.
3. What mitigation and backup plans will be in place?
4. Develop detour plan.
5. Public outreach plan to start a month prior to closure.
6. Plan for coordination with localities a month prior to closure.
7. Provide evidence of how implementing this option will minimize the duration of construction activities and lane closure.

Once the revised lane closures hours of operations have been approved, the project and contractor traffic operations staff must implement the coordination and outreach plan at a minimum 3 weeks in advance of the implementation of major closures.
2.6 Notification of Lane Closures

The Traffic Information Coordinator will provide the following stakeholders current information regarding approved lane closures planned within the project limits. The names, phone numbers and email addresses are in Section 6.

**Departments of Transportation**
- VDOT District Office
- VDOT- NROTOC
- Maryland State Highway Administration’s Coordinated Highway Action Response Team (CHART)
- District of Columbia DOT

**Virginia I-66 Program Communications Team - City, County, State and other agencies**
- Police Agencies
- City of Alexandria
- City of Fairfax
- Fairfax County
- National Park Service (U.S. Dept. of Interior)
- Maryland
- Washington Metropolitan Area Transit Authority
- Fire and Rescue Departments
- Arlington County Public Works
- Fairfax County Public Works
- Schools
- I-95 Corridor Coalition
- Traffic reporting agencies
- Trucking associations
- Adjacent construction projects
- Prince William County
- Stafford County
- Loudoun County
- Transit
- Fort Belvoir
- Metropolitan Area Transportation Operations Coordination (MATOC)
Exhibit 1 - Lane Closure Approval and Notification Process (Must be updated with project specific information)

Requests for lane closures provided by contractor in accordance with the contract advance notification requirements to the VDOT project manager and Megaprouects Traffic Operations Manager.

Recommended for approval or disapproval

Submit request

VDOT Project Manager

Response approval or disapproval

Lane Closures Management Team will input LCR information into LCAMS

Return for resubmission if disapproved

Notification if Approved

Public Affairs Information

Maryland Traffic

Virginia Megaprouects Staff

VDOT Transportation

Local Governments
1. Alexandria
2. Fairfax Co.
3. VSP
4. MAP
5. DDOT

Other stakeholder

Notification

Media Outreach
Traffic reporting agencies
Trucking associations
Community service agencies
3. Virginia I-66 Program Lane Closure Restrictions

3.1 General Restrictions
Lane closure requests will be submitted to comply with the work hour restrictions specified in Attachment 1 (I-66 Program). Requests shall include any pertinent information or TCPs if required.

Lane closures or traffic restrictions will not be permitted during the daytime hours on Saturdays, Sundays and holidays from noon the day before a holiday until noon the day after the holiday, unless otherwise stated in the contract documents or approved by the VDOT Project Manager.

When a holiday falls on a Friday, lane closures are not permitted from noon Thursday to noon Monday. The Annual holiday schedule is presented in Section 4 and will be updated annually.

When a holiday falls on a Monday, lane closures are not permitted from noon Friday to noon Tuesday.

When a holiday falls on a Sunday, lane closures are not permitted from noon Friday to Noon on Monday.

VDOT reserves the right to monitor traffic conditions affected by the work and to implement additional restrictions as necessary (for example, terminate a lane closure early). Additional restrictions for other holidays or special local events may be necessary.

In case of an emergency or accidents, the construction access lanes on the shoulder within the project or lane closure limits should be available when feasible for emergency vehicles.

A shoulder cutout area—nominally 10 feet by 200 feet—should be deployed for every continuous 2,000 feet of shoulder closure to provide a place for disabled vehicles.

The Contractor shall notify the VDOT NROTOC at the starts of lane closure set up and once the the closure is completely removed at (703) 877-3450.

The VDOT Project Manager has the right to modify, adjust or remove lane closures based on traffic and weather conditions.

The Virginia I-66 Program Traffic Information Coordinator shall notify the Traffic Operations Manager and representatives from Virginia State Police, VDOT NROTOC, and MD SHA CHART State Operation Center of a lane closure cancellations or delays.

3.2 Inclement Weather Restrictions
VDOT may restrict the implementation of lanes closures as result inclement weather that may include heavy rains, icy road conditions and heavy snow events. These restriction are necessary for the safety of the traveling public and workers treating the roadways. The following table are the lane closure restrictions during winter inclement weather events.
## Exhibit 2 – Lane Closure Weather Restrictions

<table>
<thead>
<tr>
<th>Weather Forecast</th>
<th>Mob. Level</th>
<th>VDOT Response Plan</th>
<th>I-66 Program Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precipitation: 20% or Greater</td>
<td>Anti-Ice</td>
<td>Springfield Interchange, Spot Treatment of Other Critical Structures &amp; Locations</td>
<td>Lane closures permitted but must allow VDOT to treat the roads</td>
</tr>
<tr>
<td><strong>Accumulation:</strong> Ice/Snow Possible <strong>Ambient or Pavement Temp:</strong> 30-36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Precipitation:</strong> 20-49% or greater <strong>Accumulation:</strong> Snow Possible <strong>Ambient or Pavement Temp:</strong> 30-36</td>
<td>Skeleton Crews</td>
<td>Spot Treatment of Critical Structures &amp; Locations Respond to Icy Conditions As needed</td>
<td>Lane closures permitted but must allow VDOT to treat the roads</td>
</tr>
<tr>
<td><strong>Precipitation:</strong> 20-49% or greater <strong>Accumulation:</strong> Snow Possible <strong>Ambient or Pavement Temp:</strong> 30-36</td>
<td>1</td>
<td>Springfield Interchange, Spot Treatment of Other Critical Structures &amp; Locations</td>
<td>Lane closures are permitted on case by case basis with prior approval</td>
</tr>
<tr>
<td><strong>Precipitation:</strong> 50-100% Chance <strong>Accumulation:</strong> Up to 1 inch of snow <strong>Ambient or Pavement Temp:</strong> 25-29</td>
<td>2</td>
<td>Light Salting Operation; Limited Work in Subdivisions. Includes Cold Spot Treatment in Subdivisions &amp; Gravel Roads</td>
<td>No lane closures permitted on major roadways.</td>
</tr>
<tr>
<td><strong>Precipitation:</strong> 50-100% chance <strong>Accumulation:</strong> Up to 2 inches of snow or up to 1/10 inch of ice <strong>Ambient or Pavement Temp:</strong> 20-24</td>
<td>3</td>
<td>Salting Operation; Potential for Plowing; Includes Cold Spot Treatment in Subdivisions &amp; Gravel Roads</td>
<td>No lane closures permitted on any roadways.</td>
</tr>
<tr>
<td><strong>Precipitation:</strong> 50-100% chance <strong>Accumulation:</strong> Up to 6 inches of snow or up to 1/4 inch of ice <strong>Ambient or Pavement Temp:</strong> 15-19</td>
<td>4</td>
<td>Salting/Plow Operation; Includes Plowing Subdivisions &amp; Sanding as Necessary</td>
<td>No lane closures permitted on any roadways.</td>
</tr>
<tr>
<td><strong>Precipitation:</strong> 50-100% chance <strong>Accumulation:</strong> More than 6 inches of snow or more than 1/4 inch of ice <strong>Ambient or Pavement Temp:</strong> 10-14</td>
<td>5</td>
<td>Salting/Heavy Plow Operation; Includes Plowing Subdivisions &amp; Sanding as Necessary. ALL RESOURCES ARE DEPLOYED!</td>
<td>No lane closures permitted on any roadways.</td>
</tr>
</tbody>
</table>

The contractor requesting lane closures during the period the restriction are in place must submit the LCR to the Traffic Information Coordinator for consideration for approval one day in advance.
## 2015 HOLIDAY SCHEDULE (Need to be updated annually)

<table>
<thead>
<tr>
<th>HOLIDAY</th>
<th>DATE</th>
<th>DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Year's Day</td>
<td>January 2, 2012</td>
<td>Monday</td>
</tr>
<tr>
<td>Martin Luther King Day</td>
<td>January 16, 2012</td>
<td>Monday</td>
</tr>
<tr>
<td>President's Day</td>
<td>February 20, 2012</td>
<td>Monday</td>
</tr>
<tr>
<td>Easter Sunday (Weekend)</td>
<td>April 06-08, 2012</td>
<td>Sunday</td>
</tr>
<tr>
<td>Memorial Day</td>
<td>May 28, 2012</td>
<td>Monday</td>
</tr>
<tr>
<td>Independence Day</td>
<td>July 4, 2012</td>
<td>Wednesday</td>
</tr>
<tr>
<td>Labor Day</td>
<td>September 3, 2012</td>
<td>Monday</td>
</tr>
<tr>
<td>Columbus Day</td>
<td>October 08, 2012</td>
<td>Monday</td>
</tr>
<tr>
<td>Veterans Day</td>
<td>November 12, 2012</td>
<td>Monday</td>
</tr>
<tr>
<td>Thanksgiving Day</td>
<td>November 22, 2012</td>
<td>Thursday</td>
</tr>
<tr>
<td>Day after Thanksgiving</td>
<td>November 23, 2012</td>
<td>Friday</td>
</tr>
<tr>
<td>Christmas Day</td>
<td>December 25, 2012</td>
<td>Tuesday</td>
</tr>
</tbody>
</table>

Lane closures or work that restricts traffic flow will not be permitted on Saturdays, Sundays and holidays from noon the day before a holiday until noon the day after a holiday unless otherwise stated in the contract documents or approved by the VDOT Project Manager. When a holiday falls on a Friday, lane closures are not permitted from noon on Thursday to noon on Monday. When a holiday falls on Monday, lane closures are not permitted from noon on Friday to noon on Tuesday. Further, as the Thanksgiving Day holiday occurs on a Thursday, work will not be permitted from noon on Wednesday until 9:30 am on the following Monday.

VDOT may adjust lane closure times to accommodate shopping seasons associated with the aforementioned holidays.
SECTION 5
5. Virginia I-66 Program Lane Closure Information

The following information is required when submitting a lane closure request for approval (Attachment 1):

1. Highway: Highway number designation
2. Project Number: (If applicable)
3. Direction: West/East or North/South
4. Lane closure type: 1, 2 or 3 (see Section 2)
5. Date(s) Scheduled: Date/time from/to
6. Nature of work: boring, milling or asphalt overlay, etc. (use plain English for description)
7. Limits: location of beginning and end points
8. Number of lanes on roadway
9. Lanes/shoulders to be closed: (specify left, right, middle, left middle, right middle or shoulder)
10. Ramp location to be closed
11. Point of contact (POC): (Field Inspector Name)
12. POC telephone number
13. Type of Typical Traffic Control: TTC from Virginia Work Area Protection Manual
14. Traffic Control Plan required: (Any TCP deviating from TTC from the VAWAPM) Yes or No
15. TCP Approved - Yes or No and Approved TCP number
16. Any detours required: Provide details of detour route
17. Notes: Any other pertinent information that may be needed to facilitate closures
18. Police request: Yes or No; number of troopers/officers requested
19. Traffic Operations Manager review: Signature
20. Traffic Operations Manager recommendation: Approved or disapproved
21. VDOT Project Manager Approval: Signature
The coordination of all work zones related to the Virginia I-66 Program requires an extensive effort to coordinate and notify major stakeholders such as local, county and state agencies project staff and media partners. The following is the contact information for these groups:

**VDOT NRO Transportation Operations Center**
Candice Gibson
Office: 571-350-2060
Email: Candice.Gibson@VDOT.Virginia.gov

Transportation Operations Center
Office: 703-877-3450
Email: NROSTC@VDOT.Virginia.Gov

**Maryland SHA District 3**
TOC-3
Office: 301-345-7130
Fax: 301-474-0539

**Maryland Traffic Operations Center-CHART**
TOC
Office: 410-582-5605
Fax: 410-582-9853

**Media and Public Affairs**
Michelle Holland
Office: 571-483-2591
Email: michelle.holland@vdot.virginia.gov

**State and Local Fire and Police Departments**

**Fairfax County**
Richard McEachin
Office: 703-280-0558
Cell: 571-238-2972
Email: Richard.mceachin@fairfaxcounty.gov

Battalion Chief John Price
Office: 703-573-6409
Email: John.Price@fairfaxcounty.gov

**Virginia State Police**
Contact: Capt. James DeFord
Office: 703-803-2617
Email: James.Deford@vsp.virginia.gov

Contact: 1st Sgt. Neil Johnson
Office: 703-323-4524
Email: Neil.Johnson@vsp.virginia.gov

**Maryland State Police**
Contact: Duty Officer
Office: 301-568-8101
Fax: 301-735-1693

**Others (Need to verify contact Info)**

**Virginia Trucking Association**
Contact: Dale Bennett
Phone 804-355-5371
Fax: 804-358-1374
Email: dbennett@Vatrucking.org

**Maryland Motor Truck Association**
Contact: Anne Ferro
Phone 410-644-2537
Fax: 410-644-2537
Email: aferro@mmtanet.com

**American Trucking Association**
Contact: Clayton Boyce
Phone 703-838-7935 ext. 1895
Fax: 703-684-4326
Email: cboyce@trucking.org

**Traffic Reporting Agencies (Need to verify contact Info)**

Rachel Crowson
Metronetworks News Director
Office: 301-628-2712
Email: rachel_crowson@metronetworks.com

Ron Balcerek
Clear Channel Communications
Email: RonBalcerek@clearchannel.com
Virginia I-66 Program Lane Closure Management
Traffic Information Coordinator
TBD
Phone: TBD
Email: TBD

Traffic Operations Manager -TBD
Phone: TBD
Email: TBD

Virginia I-66 Program VDOT Program Management
VDOT Regional Transportation Program Director
Susan Shaw
Phone: 703-691-
Email: Susan.Shaw@vdot.virginia.gov

GEC Program Management
TBD, Program Manager
Phone: TBD
Email: TBD

I-66 Project Manager
TBD (Approving Authority)
Phone: TBD
Email: TBD
Attachment 1: Virginia I-66 Program Lane/Shoulder Closure Request Form

Date of Request: __________

Highway: ___________________________ Project No: ___________________________

Direction: ___________________________ Lane Closure Type: ___________________________

Date(s) Scheduled: ___________ Time: From: ___________ To: ___________

Nature Of Work: ___________________________

Limits: ___________________________

Existing Lanes: ___________________________ Lanes/Shoulder Closed: ___________________________

Ramps Closed: ___________________________

Point of Contact: ___________________________

POC Telephone number: ___________________________

Type of TTC: ___________________________

TCP Required: □ Yes □ No TCP No: ___________________________

TCP Approved: □ Yes □ No

Detour: ___________________________

Notes: ___________________________

□ Yes □ No Troopers/officers: ___________

Traffic Operations Manager Review: ___________________________ Date: ___________

Traffic Operations Manager Recommends: □ Approval □ Disapproval of Request

VDOT Approval: ___________________________ Date: ___________

<table>
<thead>
<tr>
<th>Lane Closure Type</th>
<th>Minimum Advance Notice</th>
<th>Maximum Advance Notice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 Days</td>
<td>21 Days</td>
</tr>
<tr>
<td>2</td>
<td>5 Days</td>
<td>14 Days</td>
</tr>
<tr>
<td>3</td>
<td>3 Days</td>
<td>14 Days</td>
</tr>
</tbody>
</table>
Temporary Roadway Closures: To facilitate construction and minimize inconvenience to the public, the Contractor/concessionaire is advised of the following closure limitations:

### Weekday - Hours of Operations

<table>
<thead>
<tr>
<th>INTERSTATE 66</th>
<th>Single-Lane Closures* or Shoulder</th>
<th>Two-Lane Closures</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eastbound (Weekday)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start of Price William County line to Route 7100</td>
<td>9:00AM to 3:30PM</td>
<td>10:00PM to 5:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8:00PM to 5:00AM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route 7100 to Beltway</td>
<td>10:00AM to 3:30PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM**</td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>9:00PM to 5:00AM*</td>
<td></td>
<td><strong>Consider opening shoulder travel lane</strong></td>
<td></td>
</tr>
<tr>
<td>Beltway to TR Bridge (Inside Beltway)</td>
<td>9:30PM to 4:00AM</td>
<td>10:00PM to 5:00AM*</td>
<td>n/a</td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>All lanes open at 12:00 noon on Friday</strong></td>
</tr>
<tr>
<td><strong>Westbound (Weekday)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start of Price William County line to Route 7100</td>
<td>9:00AM to 2:30PM</td>
<td>9:00PM to 6:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9:00PM to 6:00AM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route 7100 to Beltway</td>
<td>9:00AM to 2:30PM</td>
<td>10:00PM to 5:00AM</td>
<td>11:00PM to 5:00AM</td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>9:30PM to 5:00AM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beltway to TR Bridge (Inside Beltway)</td>
<td>10:00PM to 5:00AM</td>
<td>10:00PM to 5:00AM*</td>
<td>n/a</td>
<td>12:00AM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>All lanes open at 12:00 noon on Friday</strong></td>
</tr>
</tbody>
</table>

### Weekend Hours of Operations

<table>
<thead>
<tr>
<th>INTERSTATE 66</th>
<th>Eastbound/Westbound</th>
<th>Single-Lane Closures* or Shoulder</th>
<th>Multiple-Lane Closures</th>
<th>Complete Road Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outside Beltway</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday to Saturday</td>
<td>9:00PM to 9:00AM</td>
<td>10:00PM to 6:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td>Saturday to Sunday</td>
<td>9:00PM to 6:00AM</td>
<td>10:00PM to 6:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
<tr>
<td>Sunday to Monday</td>
<td>9:00PM to 5:00AM</td>
<td>9:00PM to 5:00AM</td>
<td>12:00AM to 5:00AM</td>
<td></td>
</tr>
</tbody>
</table>

| **Inside Beltway** | | | | |
| Friday to Saturday | 10:00PM to 6:00AM | 11:00PM to 5:00AM | 12:00AM to 5:00AM |
| Saturday to Sunday | 10:00PM to 6:00AM | 10:00PM to 5:00AM | 12:00AM to 5:00AM |
| Sunday to Monday | 9:30PM to 5:00AM | 10:00PM to 5:00AM | 12:00AM to 5:00AM |
### Weekday - Hours of Operations

<table>
<thead>
<tr>
<th></th>
<th>Single-Lane Closures* or Shoulder</th>
<th>Multiple Lane Closures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Arterials</strong></td>
<td>Monday to Thursday</td>
<td>9:30AM to 3:00PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:00PM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>Friday</td>
<td>9:30AM to 12:00 Noon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:30 PM - 9:00 AM</td>
</tr>
<tr>
<td><strong>All Other Roadways</strong></td>
<td>Monday to Thursday</td>
<td>9:00AM to 3:30PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9:00PM to 5:00AM</td>
</tr>
<tr>
<td></td>
<td>Friday</td>
<td>9:00AM to 12:00 Noon</td>
</tr>
</tbody>
</table>

### Weekend - Hours of Operations

<table>
<thead>
<tr>
<th></th>
<th>Single-Lane Closures* or Shoulder</th>
<th>Multiple Lane Closures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major Arterials</strong></td>
<td>Friday to Saturday</td>
<td>10:00PM to 9:00AM</td>
</tr>
<tr>
<td></td>
<td>Saturday to Sunday</td>
<td>10:00PM to 8:00AM</td>
</tr>
<tr>
<td></td>
<td>Sunday to Monday</td>
<td>10:00PM to 5:00AM</td>
</tr>
<tr>
<td><strong>All Other Roadways</strong></td>
<td>Friday to Saturday</td>
<td>10:00PM to 9:00AM</td>
</tr>
<tr>
<td></td>
<td>Saturday to Sunday</td>
<td>9:00PM to 9:00AM</td>
</tr>
<tr>
<td></td>
<td>Sunday to Monday</td>
<td>10:00PM to 5:00AM</td>
</tr>
</tbody>
</table>

*Single Lane Closures*: Only permitted for multiple lane roadways.

**Complete Roadway Closure**: 30-minute maximum or a time frame to be mutually agreed between VDOT and Contractor to facilitate the lifting and placing of bridge beams, demolition and removal of bridge elements and erection or removal of overhead sign panels and structures.

***Major Arterials*: Defined as – *Need to verify major arterials*
MEMORANDUM

Date: March 23, 2012

To: Assistant District Administrators
   Section Heads

Subject: Lane Closures

Our staff has worked hard through the personnel changes of the last few years to focus and ensure successful outcomes with a full design, construction and maintenance workload. However, I believe because of the higher personnel turnover we have lost some of our base of corporate knowledge during this time.

One basic area needing reemphasis is lane closure management. In the past nine months, we have had a number of cases where a lane has been closed during peak or near peak travel times. These cases have at times involved most if not all of the functional areas from design through construction or maintenance. Please review and emphasize the following guidelines with your sections, our consultants, maintenance contractors, and permittees:

1. Taking a lane during or near the peak period is an absolute last resort. It is a last resort because we don't want the "cure" to be worse than the disease. It is even less desirable when the closure is on an Interstate/Primary/High Volume Secondary, in the dominant direction, lasts longer than a few days, and there hasn't been a media blitz starting a minimum of 10 to 14 days in advance of the planned closure.

2. Additionally, unless it is an emergency, the recommendation to do a closure during peak period needs to be presented to the Assistant District Administrator responsible for the action well prior to the contract being submitted or the closure being planned.

The recommendation to the Assistant District Administrator needs to include:

- How this is the only practical option.
- Other options that have been considered.
- What mitigation and backup plans will be put in place?
- The detour plan.
- The media plan to start a month prior to closure.
- Plan for coordination with the localities a month prior to closure.
- How the duration of the closure will be minimized.
- The use of incentive/disincentive payments to encourage for early completion.

VirginiaDot.org
WE KEEP VIRGINIA MOVING
Lane Closures
March 23, 2012
Page 2 of 2

Our Regional Operations Director, Hari Sripathi, will be coming out with additional guidance on maintenance of traffic and District wide limitations on lane closure time frames. Success here will help us in avoiding the additional rework necessary when we have to recover from a bad traffic situation. Please distribute this memorandum throughout your work units. Thank you for your help in refreshing and reemphasizing this fundamental of our business with our employees and contractors.

Assistant District Administrators keep Public Affairs and the District Administrator aware of high visibility closings. All supervisors keep a copy of this memorandum in your desktop procedures/turnover folder.

[Signature]
Garrett Moore, P.E.
NOVA District Administrator
66 Express Lanes Project

Technical Requirements
Attachment 1.10
Security Requirements for Developer
Operated Critical Infrastructure Facilities and Structures
Security Requirements for Developer Operated Critical Infrastructure Facilities and Structures

The Department and the Developer will mutually agree during the Construction Period to the requirements of the Security Management Systems (SMS) and protocols which may include requirements and/or protocols listed below. All costs and funding associated with these requirements and protocols will be mutually agreed between the Department and the Developer.

Definitions

1. “SMS” - Throughout this document the term Security Management Systems (“SMS”) is intended to include all systems and equipment that directly and indirectly relate to the physical security of the facility, structure or compound the facility or structure is located on. Examples include but are not limited to Physical Access Control Systems (PACS), Cipher locks, security surveillance systems (CCTV), intrusion detection, security lighting, security related fiber optic and wireless communications systems and all associated hardware, security fencing, gates, gate operators, intercommunications, bollards and other forms of security systems and technology. SMS does not include standard door and/or office door knob locks and keys.

Documents

The Developer shall adhere to the below listed policies, procedures, or laws pertaining to Criminal History Records Checks, Critical Infrastructure Information / Sensitive Security Information (CII/SSI), Freedom of Information Act requests and Records Retention pertaining to security.

1. The Department’s Criminal History Records Check Policy (DPM 1-25)
2. The Department’s Freedom of Information Act Policy (DPM 1-5)
3. The Department’s CII/SSI Policy and Guide
4. Commonwealth of Virginia Records Retention Schedule(s) 108 and/or other applicable

Construction Period

1. The Department shall review and approve of all plans containing SMS components to determine the extent and type of needed SMS systems and
potentially specific placement of components of the SMS. The Department shall review the technical specifications and/or equipment to be used in order to ensure compatibility, interoperability, and integration with current systems utilized by the Developer and the Department.

2. In general, through layered security, the following types (not all inclusive) of SMS will need to be incorporated into the facility or structure to mitigate common security vulnerabilities:
   a. Perimeter intrusion detection
   b. Vehicular and pedestrian access control (exterior)
   c. Access control (interior)
   d. Security camera system (exterior & interior)
   e. Security Lighting
   f. Security Network
   g. Interoperability with existing Department Security systems
   h. Other as determined necessary

3. The Developer shall be responsible for any and all onsite security and security planning.

**Operations Period**

1. The Department shall have compliance oversight authority in order to ensure all SMS equipment, components and related security protocols are maintained at the Express Operations Center.

2. The Developer shall allow the Department remote viewing and monitoring access to all security surveillance camera systems (CCTV) and shall allow the Department to extend this remote viewing capability to Department security consultants or local, state and Federal security partners who perform Homeland Security initiatives such as DHS, JTTF, USCG, VSP, etc.

3. The Developer shall ensure all security surveillance camera systems (CCTV) operating platforms remain interoperable with security surveillance camera systems (CCTV) operating platforms utilized by the Department.

4. The Developer shall be responsible for maintaining all SMS in accordance with manufacturer’s recommendations and industry best practices, and will ensure all SMS is maintained in a functional and operational capacity.

5. The Developer shall maintain a SMS preventative and corrective maintenance program, to include records documentation of all preventative and corrective maintenance activities.
6. The Developer shall maintain and be responsible for all SMS monitoring and all associated SMS administrative functions.

7. The Developer shall provide the Department a detailed inventory of all SMS installed to include location, SMS equipment documentation, including but not limited to as-builts, installation manuals, user manuals, programming manuals, training manuals, warranty documentation, etc.

8. The Developer shall not remove, relocate, change, alter, disconnect or impede any piece of SMS equipment without the Department’s prior review and approval, unless it’s a direct replace in kind or upgrade.

9. The Developer shall utilize, operate and incorporate all SMS into Developer’s daily operational protocols and procedures.

10. The Developer shall ensure all staff is adequately trained in the use and operations of SMS equipment and protocols.

11. The Developer shall designate an employee to serve as an onsite security representative. This representative shall be the Point of Contact (POC) with the Department responsible for coordinating security initiatives and programs with the Department.

12. The Developer shall notify the Department of all security requests (i.e. requests for security information, assessments, and tours, to include foreign visitor’s tour requests, etc).

13. All foreign visitor tour/site visit requests will be forward to the Department for processing in accordance with FHWA’s Office of International Programs protocols.

14. The Developer shall not release any security related information to include SMS information without the consent of the Department. FOIA requests for security information will be handled in accordance with the Department’s FOIA policy and procedures; additionally the Developer shall notify the Department of all security related FOIA requests.

15. The Developer will notify the appropriate VDOT Traffic Operations Center of all suspicious activity, or criminal activity in addition to reporting to local authorities having jurisdiction.

16. The Developer shall provide the Department, Department consultants or Federal security partners access to Developer operated Operations Center(s), SMS equipment, components, systems and SMS maintenance records for the purpose of completing SMS compliance reviews to ensure SMS is being maintained in a functional and operational capacity. Adequate notice shall be given to Developer, prior to any compliance review visit.

17. The Developer shall support local, state and federal security initiatives involving the Express Operations Center and will allow deployment of equipment which
supports security and or anti-terrorism operations, on the Express Operations Center at the discretion of the Department.

18. The Developer in accordance with the Department’s Criminal History Records Check Policy (DPM 1-25) shall ensure all persons to include the Department, contractor(s) and or subcontractor personnel working at, or having unrestricted access to the Express Operations Center, or having access to designated CII/SSI information have been vetted through the Department’s Criminal History Records Check process.

19. The Department reserves the right to require the Department’s Criminal History Records Check on any Department, contractor and or subcontractor personnel.

20. The Developer shall ensure all documents which are exempt from the FOIA under COV §2.2-3705.2., are marked in accordance with the Department’s CII/SSI policy. Developer shall consult the Department for any CII/SSI marking or handling guidance.

21. The Developer shall develop and incorporate business continuity, resiliency, and emergency action planning as an element of their planning and operations at the Express Operations Center and 66 Express Lanes Project. It is the Developer’s responsibility, during the Construction Period and Operations Period to plan, develop, maintain and test these plans in accordance with Commonwealth of Virginia and federal requirements. The Department will have compliance oversight authority to verify that these elements do in fact exist, that they are maintained and tested according to industry best practices and that the level of preparedness will reasonably assure rapid recovery at minimum and continuous operation at best.

22. The Developer shall ensure that all voice communications systems meet FCC requirements and are of such nature that will foster effective interoperability.

23. The Developer shall ensure and document all employees, to include contractors working in an employee position, have completed the State’s Terrorism and Security Awareness Orientation training or state equivalent versions. The Developer shall initiate and maintain the same level of NIMS competency as equivalent Department staff positions.

24. The Developer shall work directly with the Department to implement and maintain all security, NIMS, Emergency Response, Incident Management, programs, policies and procedures which may not have been addressed in all other associated contractual documents pertaining to the Express Operations Center and 66 Express Lanes Project, in order to maintain the same level of security, NIMS, and Emergency Response, Incident Management which the Department maintains.

25. The Department’s Criminal History Records Check Policy (DPM 1-25) shall be followed, which may require background checks for those entities placing equipment on designated Critical Infrastructure facilities and structures or the right of way thereof, and therefore needing access to said equipment.
66 Express Lanes Project

Construction Emergency Operations Communications Plan

4975 Alliance Drive
Fairfax, VA

Date Issued: _______
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Attachments

Acknowledgement of Receipt

66 Express Lanes – Contract Incident Flow Chart

Incident Management Team Information Card

Contractors Contact Information

Inspector’s Emergency Contact Information Card
1. Overview

This Construction Emergency Operations Communications Plan outlines the notification protocol to be followed in the event of a major incident occurring within the Virginia 66 Express Lanes (the Program) limits, to ensure that all appropriate Program and agency personnel are notified of the incident. This Plan also provides the Program’s definition of major incidents that require a timely and coordinated response by Program personnel to address any Program-related issues. The Plan also identifies the appropriate Task Managers to be notified and provides contact information for each team member on the Incident Management Team.

2. Incident Definition

The 66 Express Lanes definition of a major incident is: An incident within an active work zone that may endanger the safety of traveling motorists and/or Virginia 66 Express Lanes’ and contractor’s staff. The following are examples of the incidents that fall under this definition:

- Traffic accident resulting in property damage to any devices or structures installed by any 66 Express Lanes contractors.

- Traffic accident resulting in a fatality.

- Any incident resulting from inclement weather, such as flooding or heavy snow.

- Any lane closure unable to be demobilized before the required time limit per the contract requirement.

- Any incident involving a contractor’s equipment that causes property damage or injuries to workers or the public.

- Traffic accident resulting in a hazard material spill that will cause environmental concerns.

- Unsafe work operations that present potential imminent danger.

- Any incident occurring within the project limits that may result in any public scrutiny.
3. Incident Management Team

The Incident Management Team is responsible for notifying individuals within their respective agencies which is determined based on the level of crisis of the incident. The team shall take the following actions:

1) Assess the situation either in person or by conference call, with the individuals listed in Table 1: Program Staff Contact Information.

2) Identify and prioritize key audiences, coordinate and implement incident response or verbal response as appropriate. Identify a plan for effectively communicating the “who, what, where, when and what we’re doing about it” to designated key audiences. The priority ranking of the project’s various constituents may shift depending on the incident’s nature and severity, as will the methods of reaching the key audiences. Information is disseminated to key audiences in order of the greatest need to know. Key audiences may include:
   - Transportation Operations Center (TOC)
   - Local authorities/emergency responders (medical, fire, law)
   - News media
   - Employees (contractor and Virginia MegaProjects team)
   - Local, state, and federal elected and appointed officials
   - Neighbors and community leaders
   - General public and motorists in the metropolitan area

Incident Management Team members have responsibilities specific to their disciplines. After initial activities and contacts are complete, team members engage in incident recovery as it relates to their job duties.

3) Contact designated individuals and agencies as appropriate. Table 2: Incident Management Team Contact Information is provided for this purpose. The degree and timing of notification should be determined and could range from an immediate contact to a subsequent wrap-up contact.

The Incident Management Team consists of the following Program Staff:
   - VDOT Regional Transportation Program Director – Susan Shaw
   - GEC Program Manager – TBD
   - GEC Incident Manager – TBD
   - VDOT Regional Transportation Program Communications Director – Hari Sripathi
   - VDOT PIO Manager – Michelle Holland
   - GEC 66 Express Lanes PIO Manager - TBD
   - GEC 66 Express Lanes Safety & Health Manager - TBD
   - VDOT 66 Express Lanes – Project Manager – TBD
   - GEC I 66 Express Lanes – Construction Manager – TBD
   - VDOT Transportation Operations Manager - Jim Turner
   - VDOT PSTOC Operations Manager – Candice Gibson
4. Notification Process

When an incident occurs, Program personnel must follow the notification process shown in Exhibit 1: Construction Emergency Operations Communications Plan Flow Diagram to ensure that all appropriate project personnel are notified:

a) The field staff will be the first line of defense in the event of an incident. Field staff members should report the incident to members of the Virginia 66 Express Lanes Management team who will:

- Assess the severity of the incident using the “severity test.” A severe incident includes:
  - Evaluate the scene for hazards
  - Personal injury requiring more than first aid
  - A traffic accident
  - Emergency response (hazmat response or ambulance called)
  - Significant damage to work, material (including spill) or equipment

- Take needed immediate action (unless completed by reporting person) such as:
  - Call 911
  - Mitigate/control the incident

- Determine who is contacted next, based on severity.
  If severe, contact the Incident Manager; if not severe, but a Virginia MegaProjects staff member is injured, contact Construction Management
  Otherwise send an incident report to the Safety Health Manager before the close of the next business day.

- Complete an Incident Report and deliver to the Safety Health Manager.

b) The Incident Manager, when contacted, shall do the following:

- Call the NRO TOC
- Contacts team members as appropriate.
- Determines whether the Incident Management Team needs to be:
  - Briefed only
  - Communicated with via conference call or Incident Management Team conference call:
    - Phone Number: TBD
    - Incident Manager (Host) Access Code: TBD
    - Incident Management Team Access Code: TBD
  - Meet in person

The Incident Manager or his designee will provide email updates to the Incident Management Team as to the status of the incident.

The Incident Manager will conduct a debriefing if necessary with the Incident Management Team, contractor’s management staff and include the TOC Manager or designee, following the incident to discuss lessons learned. Key individuals directly involved with the project who have not yet been informed of the incident should be notified for the debriefing.
Documentation should be continued through the debriefing. The Incident Manager ensures that the incident is documented, including how it was resolved and the ultimate outcome. Documentation can take the form of an email/memo or Incident Report Form. No field staff will communicate with the media unless authorized by the VDOT or GEC PIO Manager.

5. Holiday and Inclement Weather Events

During extended holidays and anticipated inclement weather events, Program Management team members and individual Task Managers will identify an on-call staff member. This person must be available to respond to any inquiries or complaints received that require a response. When an inclement weather event is anticipated, the Incident Manager will conduct a coordination meeting with VDOT area offices, VDOT TOC, and I-66 Program contractors to develop an action plan in preparedness for the inclement weather.

Contact information for VDOT’s area offices and NRO TOC personnel who will need to be part of the coordination efforts is presented below: *(To be updated as new projects are executed)*

**Interstate Administration**
703-366-1961/ FAX 703-335-2208

**Interstate 495 Area Headquarters**
703-313-8066 (Main Number)
Gayla Hill 571-220-5322 (Cell)

**Interstate 395 & 95 Area Headquarters**
703- 494-7575 (Main Number)
Doug Holsapple 703- 749-8050 (Cell) 571-722-5322

**Van Dorn Area Headquarters**
703-921-5091 (Main Number)
Tommy Selvage 703- 921-5093(Office) / 571- 749-8050 or 301-873-9183 (Cell)
Gary Carpenter 703-921-5091 (Office) /703-296-2141 (Cell)

**Newington Area 7 Headquarters**
703-339-1444 (Main Number)
Howard Akers 703- 339-1444 (Office) / 571- 749-8061 (Cell)
Shane White 703-346-0941 (Office) / 703-656-1520 (Cell)
### Table 1: Program Staff Contact Information

<table>
<thead>
<tr>
<th>Contract</th>
<th>VDOT Project Staff</th>
<th>GEC Project Staff</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>66 Program</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>
Table 2: Incident Management Team Contact Information (Example Flow Chart, Construction Emergency Communications Plan, would be updated prior to NTP with project specific information)
Exhibit 1: Construction Emergency Communications Plan Flow Diagram Operations (The Department and Developer will develop Construction Emergency Communications Plan prior to NTP with project specific information)
Attachments
Attachment 1:

Acknowledgement of Receipt

I, ________________________________ have received a copy of the Virginia 66 Express Lanes Construction Emergency Operations Communications Plan.

__________________________________________  ______________________
Employee Name (Please print)  Date

__________________________________________  ______________________
Employee Signature  Date
Unless approved by the State Structure and Bridge Engineer, the Developer shall design all structures to meet the design requirements listed below:

1. Virginia Department of Transportation Structure and Bridge Division Instructional and Informational Memorandum No. IIM-S&B-80.5 dated August 25, 2015.


3. Foundation settlements shall be investigated using all applicable loads in Service I Load Combination (AASHTO 7th Edition, Section 10.5.2.2).

4. As measured from the bottom of the bridge bearing, or top of pier cap, the settlement limits are defined as follows:
   a. Total settlement of the substructure unit over its entire design life \( S_{TOT} \) shall be limited to 2 inches with \( S_{TOT} \) defined as:
      \[
      S_{TOT} = \text{Elastic Settlement} + \text{Consolidation Settlement} + \text{Secondary Settlement}.
      \]
      Elastic Settlement includes both that for the soil/rock plus the elastic shortening of the deep foundation element and the pier column.
   b. Total settlement to occur after completion of the bridge to the end of its design life \( S_{POST} \) shall be limited to 1 inch.

5. Plans shall incorporate the following “General Note” populated with the actual settlement values used in the design of the structure:
   “This structure has been analyzed and designed to accommodate settlement as noted below: Total Settlement of (__)” has been accommodated. The total settlement \( S_{TOT} \) is defined as the arithmetic sum; \( S_{TOT} (__) = \text{Elastic Settlement (__) + Consolidation Settlement (__) + Secondary Settlement (__)}. \) In addition, Differential Settlement of (__) radians, as measured center to center between adjacent columns or footings, has been accommodated.”

6. During construction and after all settlements have occurred the bridge structure (consisting of the superstructure, substructure and associated elements in the load path) must meet all structural capacity requirements for
all loading combinations requiring such analysis. In addition, the structure must meet all structural capacity requirements for all load combinations for the listed differential settlement (AASHTO LRFD 7th Edition Section 3.12.6).

7. The bearings and substructure shall be designed and detailed to accommodate increases or decreases in loads due to total or differential settlement shown on the plans. The superstructure shall be designed and detailed to accommodate changes in loads, locations of inflection points or fatigue stress ranges. (AASHTO LRFD 7th Edition Sections 3.1, 3.4.1, 3.12.6, 5.7.3.6.1).

8. Creep and/or shrinkage may only be used to offset settlement effects when it occurs CONCURRENTLY with settlement, and the designer is responsible for determining time rate of settlement and creep. [For instance, if all settlement is elastic (instantaneous), creep cannot be used to offset loads imposed].

9. Joint rotations and bearing rotations due to settlement shall be considered in addition to all tolerances for rotations due to live load (LL) effects or for constructability (AASHTO LRFD 5th Edition Section 5.7.3.6.1).

10. Settlements which change super elevation shall not reduce super elevation below the minimum specified by AASHTO for the roadway design speed and roadway type, nor shall they negatively impact the performance of the deck or approach paving.

11. Settlements which change profile grade shall not:
   a. Increase spread of drainage beyond limits specified in AASHTO.
   b. Change performance or maintainability of utilities.
   c. Introduce a low or flat spot on the bridge or reduce the minimum grade specified in the roadway drainage manual.
   d. Negatively impact rideability except as limited by the special provision for rideability.

12. Coordinate predicted/expected settlement of the approach embankments and bridge structure to comply with contract rideability requirements.

13. The structure must be capable of carrying a future wearing surface equal to the magnitude of the total anticipated settlement placed uniformly from curb to curb and abutment to abutment. The total future wearing surface loads, inclusive of any additional loads needed to mitigate for anticipated settlement, shall not exceed 15 psf. All parapets and railings shall accommodate the
additional layer of surfacing with no modification or reduction in crash test level after construction.

14. Jacking and shimming shall not be allowed to correct differential settlement, unless approved by the Department.

15. Settlements shall be treated as a load condition with $\gamma_{SE} = 1.0$ for all AASHTO indicated groups. Load combinations which include settlement shall also be applied without settlement (AASHTO LRFD 7th Edition Section 3.4.1).

16. Differential settlement at a single substructure unit shall be limited to a vertical value which does not exceed a slope from the horizontal of 0.001 radians as measured center to center between adjacent columns or footings within the same substructure unit.

17. When differential settlement at a single substructure unit is anticipated, both the superstructure and substructure shall be analyzed and detailed to account for the changes resulting from differential deflection.

18. Under no condition shall settlement be used to justify use of simple span configurations instead of continuous span configurations.
NUTRIENT CREDIT ASSIGNMENT AGREEMENT

INSTRUCTIONS

There are times when someone other than VDOT (e.g., Design Build contractor, locality, etc.) purchases nutrient credits to satisfy water quality requirements on projects involving VDOT owned or operated roadways/facilities (existing or future). The Assignment Agreement is to be used for the transfer of the ownership of such nutrient credits from the purchaser to VDOT. The Assignment Agreement is to be completed with the appropriate project specific information and a copy of the bill of sale between the Nutrient Credit Bank and the purchaser is to be attached as Exhibit A. The Chief Engineer’s office has delegated signatory authority to the District Administrator or his designee.

A copy of the executed agreement is to be included with the BMP information submitted either 1) with the VPDES Construction Permit Termination form LD-445D (where VDOT is the permittee) or 2) when the project is completed and the roadway/facility is turned over to VDOT for maintenance and operation (when VDOT is not the permittee).
ASSIGNMENT AGREEMENT

This Assignment Agreement (this “Agreement”), dated as of the [_____] day of [___________], 201_, is between [____________________] (“Assignor”) and the Virginia Department of Transportation, an agency of the Commonwealth of Virginia (“Assignee”).

RECITALS

WHEREAS, on [DATE] the Assignor purchased nonpoint source phosphorus from [GENERATOR/SELLER]; and

WHEREAS, Assignor purchased [__] pounds of phosphorus credits and retired [__] pounds of nitrogen credits associated with such phosphorus credits;

WHEREAS, such phosphorus credits were generated at [FACILITY NAME] located in [COUNTY/CITY], Virginia; and

WHEREAS, Assignor has received a Bill of Sale from [GENERATOR/SELLER] dated [_______] and evidencing the purchase and attached hereto as Exhibit A; and

WHEREAS, the purchase of such phosphorus credits is associated with [PROJECT/PERMIT]; and

WHEREAS, Assignor desires to assign its rights and obligations under the Bill of Sale to Assignee and Assignee desires to assume the same.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth below and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Recitals. The foregoing recitals are hereby incorporated by reference herein and made a substantive part hereof.

2. Assignment. Assignor hereby transfers, assigns, and conveys to Assignee all of Assignor’s right, title and interest in the phosphorus credits and associated nitrogen credits that are the subject of the Bill of Sale attached hereto as Exhibit A.

3. Assumption. Assignee hereby accepts all of Assignor’s right, title and interest in the phosphorus credits and associated nitrogen credits that are the subject of the Bill of Sale attached hereto as Exhibit A.

4. Counterparts. This Agreement may be executed in counterparts (including by means of telecopied signature pages), any one of which need not contain the signatures of more than one party, but all such counterparts taken together shall constitute one and the same
5. **Governing Law.** All matters relating to the interpretation, construction, validity and enforcement of this Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia, including all matters of construction, validity and performance.

6. **Severability.** Whenever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

7. **Amendment.** Any provision of this Agreement may be amended or waived only in a writing signed by the Assignor and Assignee.

This space intentionally left blank
IN WITNESS WHEREOF, the Assignor and Assignee have caused their duly authorized representative to execute this Agreement as of the date first above written.

ASSIGNOR:

By: ____________________________________

Name: __________________________________
Title: ___________________________________

ASSIGNEE:

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: ____________________________________

Name: __________________________________
Title: __________________________________
CBAY-VA LLC - MIDLAND

AFFIDAVIT OF PHOSPHORUS CREDIT SALE

CBAY-VA LLC, a Virginia limited liability company (the “Company”), hereby certifies the following:

1. Pursuant to that certain Contract #43961 (“Contract”) and Purchase Order # 50100-0001125257 (“Purchase Order”), between the Company (as Seller) and The Commonwealth of Virginia, Department of Transportation ("Purchaser"), the Company, for the benefit of the Purchaser, agrees to sell 102.30 pounds of nonpoint source phosphorus Credits to Purchaser and refite the associated ratio of nonpoint source nitrogen Credits at the credit generating facility in the amount of 1,367.75 pounds of nitrogen Credits;

2. The Company and the Purchaser will close the transaction contemplated by the Agreement on September 1, 2015 (the “Closing Date”) and, as of the date hereof, the Company shall reserve for Purchaser the phosphorus Credits.

WITNESS the following signature:

CBAY-VA LLC,
a Virginia limited liability company

By: ____________________________
   Manager

Date: September 1, 2015

Sworn to and subscribed before me this 1st day of September, 2015, by David Joyce, Manager, on behalf of CBAY-VA LLC, a Virginia limited liability company.

My commission expires: 5/11/18

State of Texas
County of Harris

Notary Public

Permit #: Permit
Permittee: The Commonwealth of Virginia, Department of Transportation
Phosphorus Credits: 102.30 pounds
Associated Nitrogen Credits: 1,367.75 pounds
VDOT UPIC: 105500
VDOT Project #: Route 66; 0066-96A-297, P101
District: Fairfax County, Prince William County, Town of Vienna, Town of Fairfax, Town of Manassas -NOVA

CBAY-VA LLC
PRE-DRAFT TECHNICAL REQUIREMENTS

Attachment 3.8: Minimum Pavement Sections

The minimum pavement sections detailed herein shall be used for all construction, reconstruction or widening on this project. The Developer shall validate the adequacy of the minimum pavement sections and notify the Department of its findings prior to submitting the price proposal. If the Developer’s findings require a deviation from the RFP requirements, the Developer shall notify the Department and submit the proposed revised pavement typical sections with supporting calculations for review at least 10 days prior to submission of the price proposal. Any proposed changes shall be included in the price proposal. Acceptable changes to the minimum pavement sections are limited to increasing the specified thickness of the base or subbase layers. Any changes to the specified minimum pavement sections and/or location of the pavement sections shown on the RFP Conceptual Plans require approval by the Department. The Developer shall be responsible for the final design and construction of the pavements for this project in accordance with the Agreement.

The general intent of this project is to salvage the existing mainline pavement and full strength shoulders where they exist between the western limits of the project and Route 29 in Centreville by widening and building up the existing pavement. Between Route 29 in Centreville and the Capital Beltway, the intent is to remove the existing concrete and composite pavements to expose the existing subbase and/or stabilized subgrade layers. The native soils shall not be exposed where existing pavement layers are being salvaged. Any exposure of the existing subgrade soils (excluding cement stabilized subgrade) will require additional SWM treatment at the Developer’s risk/expense. The Developer shall take particular care not to damage the existing cement stabilized base and/or cement stabilized subgrade during removal of the existing concrete pavements. Therefore, removal means and methods shall be limited to non-impact/non-vibratory means such as saw-cutting and lifting of existing slabs.

Any pavement sections requiring replacement or reconstruction outside of those listed above shall be designed in accordance with the 1993 AASHTO Guide for the Design of Pavement Structures (1993 edition) as modified by VDOT Materials Division’s Manual of Instructions and submitted to VDOT for review. All interstate mainline pavements shall be constructed/reconstructed with full strength paved shoulders.

All widening of the existing pavements shall be accomplished in accordance with Standard WP-2 so that the proposed widening pavement layers match the existing pavement layers in types and thicknesses) prior to building up and/or placing the surface course except as noted in Tables 4.2.1 and 4.2.2 above. All existing pavement shall be saw-cut to a smooth vertical face a minimum of one foot inside the existing edge of full strength pavement in all widening areas. Widening of existing pavement shall provide for lateral drainage of the existing pavement layers by providing a free-draining aggregate (such as 21B) on the low side of the pavement cross-slope connected to a standard UD-4 edgeredrain placed beneath the outside edge of the paved shoulder. An impervious base/subbase (such as CTA) shall be provided for widening on the high side of existing pavement cross-slopes. The following note shall be added to the construction plans: The VDOT District materials Engineer shall be notified as soon as the pavement saw-cuts are complete but no less than 48 hours prior to subbase/base placement in the widening areas”. All existing pavement shall be milled to a depth of 2” and resurfaced up to the nearest longitudinal lane divide wherever pavement markings will be eradicated or snow plowable raised pavement markers are removed.
### Table 3.8.1 – Mainline I-66, EB and WB

<table>
<thead>
<tr>
<th>Roadway</th>
<th>Limits</th>
<th>Build-Up</th>
<th>Widening</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66, EB &amp; WB</td>
<td>Fr.: 1.18 Miles W. of Route 15 To: 0.02 Miles E. of Catharpin Road</td>
<td>Mill 2” 1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2&quot; IM-19.0D 12.5” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2” IM-19.0D (Min. grade increase = 1.5”)</td>
<td>2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SM-9.5 (76-22) 2” IM-19.0D 14” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2” IM-19.0D</td>
<td>3” IM-19.0D 11.5” BM-25.0A 14” 21B(^6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SM-9.5 (76-22) 3” IM-19.0D 14” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td>I-66, EB &amp; WB</td>
<td>Fr.: 0.02 Miles E. of Catharpin Road To: 0.16 Miles E. of Business Route 234</td>
<td>Mill 1.5” 1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td></td>
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<td>2” IM-19.0D</td>
<td>2” IM-19.0D 14” BM-25.0A 10” 21B(^6)</td>
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<td>1.5” SMA-9.5 (76-22)</td>
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<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 14” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td>I-66, EB &amp; WB</td>
<td>Fr.: 0.16 Miles E. of Business Route 234 To: 1.75 Miles E. of Business Route 234</td>
<td>Mill 2” 1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6)</td>
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<tr>
<td></td>
<td></td>
<td>2” IM-19.0D</td>
<td>2” IM-19.0D 14” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td>I-66, EB &amp; WB</td>
<td>Fr.: 1.75 Miles E. of Business Route 234 To: 0.48 Miles E. of Route 29</td>
<td>Mill 2” 1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6)</td>
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<tr>
<td></td>
<td></td>
<td>2” IM-19.0D</td>
<td>2” IM-19.0D 14” BM-25.0A 10” 21B(^6)</td>
</tr>
<tr>
<td>I-66, EB &amp; WB</td>
<td>Fr.: To: 0.48 Miles E. of Route 29 To: Route 50</td>
<td>Remove Ex. 11” PCC and 3” OGDL to expose CTA 1.5” SMA-9.5 (76-22) 2” IM-19.0D 16.5” BM-25.0A 3” OGDL (grade increase = 6”)</td>
<td>1.5” SMA-9.5 (76-22) 2” SMA-12.5 (76-22) 13.5” BM-25.0A 6” CTA(^8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” SMA-12.5 (76-22) 13.5” BM-25.0A 6” CTA(^8)</td>
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<tr>
<td></td>
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<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” SMA-12.5 (76-22) 13.5” BM-25.0A 6” CTA(^8)</td>
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<td>(grade increase = 6”)</td>
<td>(grade increase = 6”)</td>
</tr>
<tr>
<td>I-66, EB &amp; WB</td>
<td>Fr.: Route 50 To: I-495 (outside the limits of the existing Nutley Street Interchange C-D Road)</td>
<td>Remove Ex. 4” AC, 9”-11” PCC and 3” OGDL/5” 21A to expose soil cement or CTA 1.5” SMA-9.5 (76-22) 2” IM-19.0D 16” BM-25.0A 3” OGDL (grade increase = 4.5”)</td>
<td>1.5” SMA-9.5 (76-22) 2” SMA-12.5 (76-22) 16” BM-25.0A 1” 21B 12” #2/#3 aggregate wrapped in needle punch non-woven geotextile fabric</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” SMA-12.5 (76-22) 16” BM-25.0A 1” 21B 12” #2/#3 aggregate wrapped in needle punch non-woven geotextile fabric</td>
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<tr>
<td></td>
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<td>(grade increase = 4.5”)</td>
<td>(grade increase = 4.5”)</td>
</tr>
<tr>
<td>I-66, EB &amp; WB</td>
<td>Fr.: Route 50 To: I-495 (within the limits of the existing Nutley Street Interchange C-D Road)</td>
<td>Remove Ex. 4” AC, 9”-11” PCC and 3” OGDL/5” 21A to expose soil cement or CTA 1.5” SMA-9.5 (76-22) 2” IM-19.0D 16” BM-25.0A 3” OGDL (grade increase = 5”)</td>
<td>1.5” SMA-9.5 (76-22) 2” SMA-12.5 (76-22) 16.5” BM-25.0A 1” 21B 12” #2/#3 aggregate wrapped in needle punch non-woven geotextile fabric</td>
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<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” SMA-12.5 (76-22) 16.5” BM-25.0A 1” 21B 12” #2/#3 aggregate wrapped in needle punch non-woven geotextile fabric</td>
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<td>(grade increase = 5”)</td>
<td>(grade increase = 5”)</td>
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<tr>
<td>I-66 WB, E. of I-495 (Widening)</td>
<td>Fr.: Eastern limits of project To: I-495</td>
<td>Mill 1.5” 1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6) 4” CBR 30(^7)</td>
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<tr>
<td></td>
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<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6) 4” CBR 30(^7)</td>
</tr>
<tr>
<td>I-66 &amp; I-495 I/C Ramps and Loops(^9)</td>
<td>N/A</td>
<td>Mill 1.5” 1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6) 4” CBR 30(^7)</td>
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<td>1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6) 4” CBR 30(^7)</td>
</tr>
<tr>
<td>All Other Interchange Ramps/Loops/C-D Roads and Express Access Ramps not identified in Table 3.8.2(^9)</td>
<td>N/A</td>
<td>Mill 1.5” 1.5” SMA-9.5 (76-22)</td>
<td>1.5” SMA-9.5 (76-22) 2” IM-19.0D 12.5” BM-25.0A 10” 21B(^6) 4” CBR 30(^7)</td>
</tr>
</tbody>
</table>

Notes:
1. The Developer shall determine exact limits based upon archive plans and field verification of in-situ pavement sections
2. Thicknesses of existing pavement materials are approximate; Developer should expect some variability in these thicknesses; no impact methods to be used for removal (must saw cut and lift existing PCC slabs)
3. Final surface shall be placed in a continuous operation across the full pavement width after all previous layers have been completed in the salvage and widening sections
4. CTA = Agg. Base Material, Type I, Size No. 21A pugmill mixed with 4% hydraulic cement by weight
5. Connected to a standard UD-4 edgedrain
6. Replace 21B with CTA for widening on the high side of existing pavement cross-slopes
7. CBR 30 = Select Material, Type I, Min. CBR 30
8. Soil cement = subgrade soil mixed with min. 12% hydraulic cement by volume
9. All paved shoulders on interstate including ramps and loops shall have the same pavement section as the mainline lanes
10. Mainline pavement includes all acceleration/deceleration lanes and auxiliary lanes
<table>
<thead>
<tr>
<th>Roadway</th>
<th>SM-9.5</th>
<th>IM-19.0A</th>
<th>BM-25.0A</th>
<th>OGDL</th>
<th>CTA</th>
<th>21B</th>
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<tbody>
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<td>Antioch Road – Widening/New Construction</td>
<td>1.5”</td>
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<td>--</td>
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<tr>
<td>Heathcote Boulevard – Extension/New Construction</td>
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<td>Route 29 – Widening (North of I-66)</td>
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<td>Pageland Lane &amp; Vandor Lane – Realignment</td>
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<td>3”</td>
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<td>Cushing Road &amp; P&amp;R Lot Access Road</td>
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<td>--</td>
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<td>8”</td>
<td>3”</td>
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<td>Route 28 – Widening</td>
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<td>Stonecroft Blvd/Poplar Tree Road – New Construction</td>
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<td>1.5”</td>
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<td>3”</td>
<td>--</td>
<td>6”</td>
<td>--</td>
</tr>
<tr>
<td>Stringfellow Road - Widening</td>
<td>1.5”</td>
<td>2”</td>
<td>8”</td>
<td>--</td>
<td>--</td>
<td>8”</td>
</tr>
<tr>
<td>Stringfellow Road Access Ramp</td>
<td>1.5”</td>
<td>2”</td>
<td>12”</td>
<td>--</td>
<td>--</td>
<td>10”</td>
</tr>
<tr>
<td>Fairfax County Parkway – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>8”</td>
<td>3”</td>
<td>12”</td>
<td>--</td>
</tr>
<tr>
<td>West Ox Road – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>6”</td>
<td>--</td>
<td>12”</td>
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<tr>
<td>Monument Drive – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>7”</td>
<td>--</td>
<td>--</td>
<td>10”</td>
</tr>
<tr>
<td>Route 50 – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>12”</td>
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<td>6”</td>
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<tr>
<td>Waples Mill Road – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>7”</td>
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<tr>
<td>Jermantown Road – North Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>7”</td>
<td>3”</td>
<td>7”</td>
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<tr>
<td>Jermantown Road – South Widening only</td>
<td>1.5”</td>
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<td>8”</td>
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<td>--</td>
<td>10”</td>
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<tr>
<td>Route 123 – New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>10”</td>
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<td>6”</td>
<td>6”</td>
</tr>
<tr>
<td>Route 123 - Widening</td>
<td>1.5”</td>
<td>2”</td>
<td>6”</td>
<td>--</td>
<td>6”</td>
<td>10”</td>
</tr>
<tr>
<td>Vaden Drive – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>6”</td>
<td>6”</td>
<td>8”</td>
<td>6”</td>
</tr>
<tr>
<td>Nutley Street – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>10”</td>
<td>--</td>
<td>6”</td>
<td>6”</td>
</tr>
<tr>
<td>Nutley Street – Widening of ex. Ramps/Loops</td>
<td>1.5”</td>
<td>2”</td>
<td>4”</td>
<td>--</td>
<td>6”</td>
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</tr>
<tr>
<td>Cedar Lane – Widening/New Construction</td>
<td>1.5”</td>
<td>2”</td>
<td>6”</td>
<td>--</td>
<td>--</td>
<td>8”</td>
</tr>
<tr>
<td>Gallows Road</td>
<td>1.5”</td>
<td>2”</td>
<td>10”</td>
<td>--</td>
<td>--</td>
<td>8”</td>
</tr>
</tbody>
</table>

Notes:
1. All widened pavements shall be milled full width for at least the thickness of the proposed surface and within the limits of eradication of existing pavement markings.
2. The final surface course shall be placed in a continuous operation across the full pavement width after all previous layers have been completed in the salvage and widening sections.
3. For existing ADT < 10,000 vpd, use SM-9.5A; for ADT > 10,000 vpd, use SM-9.5D; for ADT > 50,000 vpd, use SM-9.5E.
4. OGDL = asphalt stabilized open graded drainage layer.
5. CTA = Aggregate Base Material, Type I, Size No. 21A pugmill mixed with 4% hydraulic cement by weight.
6. Connected to a standard UD-4 edgerdrain.
7. Replace 21B with CTA for widening on the high side of existing pavement cross slopes.
8. All widened pavement shall use the layers identified above or match the existing pavement layer thicknesses, whichever is greater.
9. Mill 2” on existing pavement and then build-up with 3” IM-19.0A and 1.5” SM-9.5D.
10. Mill 2” on existing pavement and then build-up with 3” BM-25.0A, 2” IM-19.0A and 1.5” SM-9.5D.
Park and Ride Lots, Aisles and Entrance/Exit Roads (excluding bus transfer bays):

Surface – 1.5” Asphalt Concrete, Type SM-9.5A estimated at 175 lbs/sq.yd.
Base – 6” Asphalt Concrete, Type BM-25.0A
Subbase – 7” Aggregate Base Material, Type I, Size No. 21B extended 1 foot behind the curb and gutter and connected to an edgedrain, in accordance with UD-4 standard details.

If the number of parking spaces exceeds 2,000 or the subgrade soil CBR value is less than 5, the Developer shall increase the thicknesses of the above layers, as necessary to meet AASHTO design requirements in accordance with Chapter III of the Materials Division’s Manual of Instructions.

Bus Loops and Transfer Bays:

Surface – 9” Hydraulic Cement Concrete Pavement in accordance with standard PR-2 with 15 foot transverse joint spacing.
Base – 6” Aggregate Base Material, Type I, Size No. 21B extended 1 foot behind the curb and gutter and connected to an edgedrain, in accordance with UD-4 standard details.

A joint layout plan shall be included in the final plans for construction. An expansion joint shall be placed between all concrete pavement and curb/gutter. If the number of bus trips exceeds 150/day or the subgrade soil CBR value is less than 5, the Developer shall increase the thicknesses of the above layers, as necessary to meet AASHTO design requirements in accordance with Chapter III of the Materials Division’s Manual of Instructions.

Sidewalk and Shared Use Paths

Sidewalk
Surface - 4" Hydraulic Cement Concrete, Class A3
Base - 4” Aggregate base material Type I, Size No. 21A or No. 21B extended 4” on either side of the surface.

Shared Use Paths
Surface - 2" Asphalt Concrete, Type SM-9.0A estimated at 242 lbs/yd²
Base - 6" Plain Aggregate, Type I, Size No. 21B extended 6” on either side of the surface.

Temporary Pavement

The Developer shall be responsible for any temporary pavement design. Temporary pavements shall be designed in accordance with the AASHTO Guide for the Design of Pavement Structures (1993 edition) and the VDOT Materials Division’s Manual of Instructions. All temporary pavement designs shall be submitted to the Department for review. All temporary pavement shall be completely removed once it is no longer in service. All temporary pavement designs for mainline or ramp pavements shall have a minimum 6 inches of asphalt concrete and shall meet the following minimum design criteria.

- Design Life – 6 months minimum
- Reliability – 85% minimum
- Initial Serviceability – 4.2 minimum
- Terminal Serviceability – 2.8 minimum
- Standard Deviation – 0.49 minimum
- CBR value for subgrade soils determined by laboratory tests

Note: Existing paved shoulders shall not be used for maintenance of traffic in their present condition unless approved by the Department.
**Typical Mainline Sections for I-66**

### 1.18 Mi. W. of Route 15 to 0.02 Mi. E. of Catharpin Road

1.5” BUILD-UP

1.5” SMA-9.5 (76-22)

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2” Mill: 2” IM-19.0D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ex. AC 14.5”</td>
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</tr>
<tr>
<td></td>
<td>Ex. AGG 10” 21B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.5” BM-25.0A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10” 21B*</td>
<td></td>
</tr>
</tbody>
</table>

*10” CTA for widening on high side of pavement cross slope

**New Widening**

Exist. Pavement

→ saw cut 1' from edge of ex. shldr.

### 0.02 Mi. E. of Catharpin Road to 0.16 Mi. E. of Bus. Route 234

1.5” Mill; 1.5” SMA-9.5 (76-22)

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.5” SMA-9.5 (76-22)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2” IM-19.0D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ex. AC 17.5”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ex. AGG 10” 21B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14” BM-25.0A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10” 21B*</td>
<td></td>
</tr>
</tbody>
</table>

*10” CTA for widening on high side of pavement cross slope

**New Widening**

Exist. Pavement

→ saw cut 1' from edge of ex. shldr.
0.16 Mi. E. of Bus. Route 234 to 1.75 Mi. E. of Bus. Route 234

2.5" BUILD-UP

2" Mill; 3" IM-19.0D  1.5" SMA-9.5 (76-22)
Ex. AC 13.5"  3" IM-19.0D
Ex. 3" OGDLC  11.5" BM-25.0A
Ex. 8" 21B  14" 21B*

*10" CTA for widening on high side of pavement cross slope

New Widening

Exist. Pavement

→ saw cut 1' from edge of ex. shldr.

1.75 Mi. E. of Bus. Route 234 to 0.48 Mi. E. of Route 29

2.5" BUILD-UP

2" Mill; 3" IM-19.0D  1.5" SMA-9.5 (76-22)
Ex. AC 14.5"  3" IM-19.0D
Ex. 3" OGDLC  12.5" BM-25.0A
Ex. 8" 21B  14" 21B*

*10" CTA for widening on high side of pavement cross slope

New Widening

Exist. Pavement

→ saw cut 1' from edge of ex. shldr.
0.48 Mi. E. of Route 29 to Route 50

**6" BUILD-UP**

Remove ex. 11" PCC and 3" Ex. OGDL

---

1.5" SMA-9.5 (76-22)
2" SMA-12.5 (76-22)

13.5" BM-25.0A

New 3" OGDL

---

Ex. 6" CTA
Ex. 6" Soil Cement

New 6" CTA
New 6" Soil Cement

---

Ex. PCC

---

saw cut 1' from edge of ex. shldr.

---

Route 50 to I-495 (outside limits of Ex. Nutley Street C-D Road)

**4.5" BUILD-UP**

Remove Ex. 4" AC, 9"-11" PCC and 3" Ex. OGDL/5" 21A

---

1.5" SMA-9.5 (76-22)
2" SMA-12.5 (76-22)

16" BM-25.0A

1" Ex. Agg. 21A
New 1" Agg. 21B
New 3" OGDL

---

Ex. 6" Soil Cement
Ex. 6" CTA

---

New 12" #2/#3 Agg*

---

New Widening

---

saw cut 1' from edge of ex. shldr.

*reverse slope subgrade for widening on high side of pavement cross slope
Route 50 to I-495 (within limits of Ex. Nutley Street C-D Road)

5” BUILD-UP

Remove Ex. 4” AC, 9”-11” PCC and 3” Ex. OGDL/5”21A

1.5” SMA-9.5 (76-22)
2” SMA-12.5 (76-22)

16.5” BM-25.0A

1” Ex. Agg. 21A
3” New CQDL

New 0.5” Agg. 21B

Ex. 6” Soil Cement

New 12” #2/#3 Agg*

New Widening

Ex. 6” 21A

New Widening

Cut 1’ from edge of ex. shldr.

*reverse slope subgrade for widening on high side of pavement cross slope
1 Aesthetic Treatments for Bridges

The aesthetic treatments of bridges shall be as outlined in Section 3.11 - Aesthetics, of the Technical Requirements. The following bridge pier aesthetic details are provided to supplement the requirements listed in the section above.

Architectural Treatment on Pier Columns

1.1 Straddle Bent Piers with Round Columns

ELEVATION
I-66 Corridor Improvements Project

1.2 Hammerhead Piers with Rectangular Column

ELEVATION
1.3 Multi Column Pier with Square Columns

ELEVATION
1.4 Detail of Architectural Treatment

Note: Repeating pattern of treatment similar for round columns.
# Attachment 3.15a

## Existing Bridge and Culvert Information Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Blvd. Route 840</td>
<td>I-66 &amp; Norfolk Southern Railroad</td>
<td>26694 0766188</td>
<td>285-18</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widений and Repairs</td>
</tr>
<tr>
<td>Ramp A of PWP Rte. 234</td>
<td>Tributary of Catharpin Run (Culvert)</td>
<td>25234 0761042</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need. *Double Box Culvert 6’W x 4’H x 47’</td>
</tr>
<tr>
<td>I-66 &amp; Pageland Lane</td>
<td>Tributary of Young's Branch (Culvert)</td>
<td>24862 0762029</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need. *Triple Box Culvert 6'W x 5'H x 288' (Total length = 24.9')</td>
</tr>
<tr>
<td>Prince William Parkway EBL Route 234</td>
<td>I-66</td>
<td>24787 0761052</td>
<td>271-72</td>
<td>No</td>
<td>Meet project purpose and need</td>
</tr>
<tr>
<td>Prince William Parkway WBL Route 234</td>
<td>I-66</td>
<td>24788 0761053</td>
<td>271-72</td>
<td>No</td>
<td>Meet project purpose and need</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Young’s Branch (Culvert)</td>
<td>14209 0762047</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need. *Double Box Culvert (sizes differ)</td>
</tr>
<tr>
<td>Groveton Road</td>
<td>I-66</td>
<td>25960 0766082</td>
<td>280-04</td>
<td>No</td>
<td>Meet project purpose and need</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Holkums Branch (Culvert)</td>
<td>28465 0762033</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need. *Double Box Culvert 5’ x 5’ x 270'</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Young's Branch (Culvert)</td>
<td>28464 0762032</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need. *Double Box Culvert 8’ x 4’ x 291’</td>
</tr>
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</table>
## Attachment 3.15a
### Existing Bridge and Culvert Information Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66</td>
<td>Tributary of Young's Branch (Culvert)</td>
<td>28463 0762030</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 8' x 4' x 213'</td>
</tr>
<tr>
<td>I-66 WBL</td>
<td>Sudley Road Route 234</td>
<td>14202 0762000</td>
<td>136-21, A, B, C</td>
<td>No</td>
<td>Design Exception proposed for reduced shoulders on bridge. Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 EBL</td>
<td>Sudley Road Route 234</td>
<td>28305 0762001</td>
<td>136-21, A, B, C, D</td>
<td>Yes</td>
<td>Design Exception proposed for reduced shoulders on bridge. Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66</td>
<td>Holkums Branch (Culvert)</td>
<td>14208 0762046</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Single Box 6' x 6' x 369'</td>
</tr>
<tr>
<td>I-66 WBL</td>
<td>Bull Run</td>
<td>6380 0292900</td>
<td>136-22, A, B, C</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
</tr>
<tr>
<td>I-66 EBL</td>
<td>Bull Run</td>
<td>6381 0292901</td>
<td>136-22, A, B, C</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
</tr>
<tr>
<td>Bull Run Drive Route 2548</td>
<td>I-66</td>
<td>6959 0296213</td>
<td>136-16, A</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
<tr>
<td>I-66 WBL</td>
<td>Cub Run</td>
<td>24993 0292010</td>
<td>272-29</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
</tr>
<tr>
<td>I-66 EBL</td>
<td>Cub Run</td>
<td>24994 0292011</td>
<td>272-29</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
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</table>
## Attachment 3.15a
### Existing Bridge and Culvert Information Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66 WBL</td>
<td>Compton Road Route 658</td>
<td>6311 0292012</td>
<td>136-19, A, B, C</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
</tr>
<tr>
<td>I-66 EBL</td>
<td>Compton Road Route 658</td>
<td>6313 0292013</td>
<td>136-19, A, B, C</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
</tr>
<tr>
<td>I-66</td>
<td>Branch of Big Rocky Run (Culvert)</td>
<td>6328 0292123</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. Double Box Culvert 6' x 6' x 465'</td>
</tr>
<tr>
<td>I-66 WBL</td>
<td>Lee Highway Route 29 (Centreville)</td>
<td>6315 0292019</td>
<td>148-07, A, B, C, D, E, F</td>
<td>Yes</td>
<td>Design Exception proposed for reduced shoulders on bridge. Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 EBL</td>
<td>Lee Highway Route 29 (Centreville)</td>
<td>6317 0292020</td>
<td>148-07, A, B, C, D, E, F</td>
<td>Yes</td>
<td>Design Exception proposed for reduced shoulders on bridge. Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66</td>
<td>Branch of Big Rocky Run (Culvert)</td>
<td>6319 0292057</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Triple Box Culvert 5' x 5' x 321'</td>
</tr>
<tr>
<td>Sully Road Route 28</td>
<td>I-66</td>
<td>6260 0291029</td>
<td>260-31, A, B</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
</tbody>
</table>

### Segment 2

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66 WBL</td>
<td>Stringfellow Road Route 645</td>
<td>6320 0292059</td>
<td>271-09</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
</tr>
<tr>
<td>I-66 EBL</td>
<td>Stringfellow Road Route 645</td>
<td>6322 0292060</td>
<td>271-09</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widenings and Repairs</td>
</tr>
</tbody>
</table>
### Attachment 3.15a
**Existing Bridge and Culvert Information Table**

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66 WB CD Road</td>
<td>Fairfax County Parkway Route 286</td>
<td>24090 0292091</td>
<td>269-55</td>
<td>Yes</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 WBL</td>
<td>Fairfax County Parkway Route 286</td>
<td>6376 0292266</td>
<td>268-21, A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widening and Repairs</td>
</tr>
<tr>
<td>I-66 EBL</td>
<td>Fairfax County Parkway Route 286</td>
<td>6378 0292267</td>
<td>268-21, A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widening and Repairs</td>
</tr>
<tr>
<td>I-66 EB CD Road</td>
<td>Fairfax County Parkway Route 286</td>
<td>24089 0292099</td>
<td>269-56</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widening and Repairs</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Big Rocky Run (Culvert)</td>
<td>6330 0292126</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. <em>Double Box Culvert 4’ x 6’ x 166’</em></td>
</tr>
<tr>
<td>West Ox Road</td>
<td>I-66</td>
<td>6667 0296229</td>
<td>268-25</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>Monument Drive</td>
<td>I-66 &amp; Route 656</td>
<td>7076 0296023</td>
<td>268-18, A</td>
<td>No</td>
<td>Modifications to bridge providing direct access ramps to and from WB and EB Express Lanes. Meet the requirements of attachment 3.15c Bridge Widening and Repairs.</td>
</tr>
<tr>
<td>Lee Jackson</td>
<td>I-66</td>
<td>6299 0291121</td>
<td>148-09, A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements. If future bike/pedestrian facility, consider using BR27C</td>
</tr>
<tr>
<td>Lee Jackson</td>
<td>I-66</td>
<td>6297 0291120</td>
<td>148-10, A</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
</tbody>
</table>
## Attachment 3.15a

### Existing Bridge and Culvert Information Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee Jackson Memorial Highway WBL</td>
<td>I-66 EB Ramp B</td>
<td>6301 0291122</td>
<td>148-11</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
<tr>
<td>I-66 Ramp A (Rte. 50 Interchange)</td>
<td>Difficult Run (Culvert)</td>
<td>6331 0292133</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Triple Box Culvert 6' x 8' x 903'</td>
</tr>
<tr>
<td>Ramp F (Rte. 50 Interchange)</td>
<td>Tributary of Difficult Run (Culvert)</td>
<td>6345 0292172</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Triple Box Culvert 6' x 8' x 335'</td>
</tr>
<tr>
<td>Ramp E (Rte. 50 Interchange)</td>
<td>Tributary of Difficult Run (Culvert)</td>
<td>6344 0292171</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 5' x 6' x 253'</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Difficult Run (Culvert)</td>
<td>6332 0292134</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 5' x 6' x 287'</td>
</tr>
<tr>
<td>Ramps B and H (Rte. 50 Interchange)</td>
<td>Tributary of Difficult Run (Culvert)</td>
<td>6343 0292169</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 5' x 6' x 174'</td>
</tr>
<tr>
<td>Waples Mill Road Route 665</td>
<td>I-66</td>
<td>6817 0296228</td>
<td>148-14, A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
<tr>
<td>I-66 Tributary of Difficult Run (Culvert)</td>
<td>6333 0292135</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 4' x 6' x 305'</td>
<td></td>
</tr>
</tbody>
</table>

### Segment 3

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jermantown Road Route 655</td>
<td>I-66</td>
<td>6798 0296223</td>
<td>148-05, A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
</tbody>
</table>
## Attachment 3.15a

### Existing Bridge and Culvert Information Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6334 0292136</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 4' x 6' x 30'</td>
</tr>
<tr>
<td>Rte. 123 Ramp to I-66 WB</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6353 0292196</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 4' x 6' x 30'</td>
</tr>
<tr>
<td>Ramp A of I-66</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6347 0292174</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 5' x 6' x 258'</td>
</tr>
<tr>
<td>Ramp A of I-66</td>
<td>I-66</td>
<td>6326 0292080</td>
<td>148-12, A</td>
<td>Yes</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>Rte. 123 Ramp to I-66 EB</td>
<td>Tributary of Daniels Run (Culvert)</td>
<td>6351 0292194</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 5' x 6' x 276'</td>
</tr>
<tr>
<td>Ramp A of I-66</td>
<td>I-66</td>
<td>6326 0292080</td>
<td>148-12, A</td>
<td>Yes</td>
<td>Existing bridge to be demolished</td>
</tr>
<tr>
<td>Chain Bridge Road SBL Route 123</td>
<td>Ramp A</td>
<td>6459 0291110</td>
<td>148-13, A, B</td>
<td>Yes</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>Chain Bridge Road NBL Route 123</td>
<td>Ramp A</td>
<td>6461 0291111</td>
<td>148-13, A, B</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>Chain Bridge Road SBL Route 123</td>
<td>I-66</td>
<td>6455 0291108</td>
<td>148-06 A, B, C</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
</tbody>
</table>
### Attachment 3.15a

**Existing Bridge and Culvert Information Table**

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chain Bridge Road NBL Route 123</td>
<td>I-66</td>
<td>6457 0291109</td>
<td>148-06, A, B, C</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
<tr>
<td>Rte. 123 Ramp to I-66 EB</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6352 0292195</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 4' x 5' x 82'</td>
</tr>
<tr>
<td>I-66 Ramp to Rte. 123 NB</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6346 0292173</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 4' x 4' x 64'</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6335 0292137</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 4' x 5' x 190'</td>
</tr>
<tr>
<td></td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6336 0292138</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Triple Box Culvert 5' x 5' x 247'</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6337 0292139</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Single Box Culvert 6' x 6' x 251'</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6338 0292140</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>Blake Lane Route 655</td>
<td>I-66</td>
<td>6796 0296218</td>
<td>264-16</td>
<td>Yes</td>
<td>Meet project purpose and need</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6339 0292141</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 5' x 6' x 413', Double 4' x 4' BC adjoins into this BC at middle and ends at same. Outlet shows a</td>
</tr>
</tbody>
</table>
### Attachment 3.15a

**Existing Bridge and Culvert Information Table**

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaden Drive</td>
<td>I-66 &amp; Metro</td>
<td>6198 0292262</td>
<td>260-81, A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements and Attachment 3.15e Vaden Ramp.</td>
</tr>
<tr>
<td>WMATA Pedestrian Bridge</td>
<td>I-66 WBL</td>
<td>6384 Not avail.</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>WMATA Pedestrian Bridge</td>
<td>I-66 EBL</td>
<td>6385 Not avail.</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66</td>
<td>Tributary of Accotink Creek (Culvert)</td>
<td>6340 0292142</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 10' x 12' x 1700'</td>
</tr>
<tr>
<td>Nutley Street Route 243</td>
<td>I-66 &amp; Metro</td>
<td>6492 0291163</td>
<td>258-42, A, B</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15b Bridge Replacements.</td>
</tr>
<tr>
<td>I-66 &amp; Metrorail</td>
<td>Bear Branch (Culvert)</td>
<td>6341 0292143</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 10' x 10' x 288'</td>
</tr>
<tr>
<td>Cedar Lane Route 698</td>
<td>I-66 &amp; Metro</td>
<td>6865 0296220</td>
<td>162-03, A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of attachment 3.15b Bridge Replacements.</td>
</tr>
<tr>
<td>WMATA Pedestrian Bridge</td>
<td>I-66 EBL</td>
<td>6383 Not avail.</td>
<td>–</td>
<td>–</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>Gallows Road Route 650</td>
<td>I-66 &amp; Metro</td>
<td>6783 0296219</td>
<td>162-04A</td>
<td>Yes</td>
<td>Meet project purpose and need and the requirements of attachment 3.15b Bridge Replacements.</td>
</tr>
</tbody>
</table>
## Attachment 3.15a
### Existing Bridge and Culvert Information Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Interception</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66</td>
<td>Tributary of Holmes Run (Culvert)</td>
<td>30299 0292303</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Barrel Culvert 84&quot; dia. x 295'</td>
</tr>
<tr>
<td>I-495</td>
<td>Tributary of Holmes Run (Culvert)</td>
<td>6631 0292201</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 6' x 6' x 266'</td>
</tr>
<tr>
<td>I-66 WBL (Ramp H)</td>
<td>Tributary of Holmes Run (Culvert)</td>
<td>6629 0292199</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 5' x 5' x 191'</td>
</tr>
<tr>
<td>I-66 WBL</td>
<td>Holmes Run (Culvert)</td>
<td>6355 0292210</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Triple Box Culvert 6' x 8' x 323'</td>
</tr>
<tr>
<td>Ramp F to I-66 WB</td>
<td>Holmes Run (Culvert)</td>
<td>6354 0292209</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Triple Box Culvert 6' x 8' x 106' with 6' x 6' x 587' extension.</td>
</tr>
<tr>
<td>I-66 EBL and Ramp</td>
<td>Tributary of Holmes Run (Culvert)</td>
<td>6350 0292178</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 6' x 5' x ?'</td>
</tr>
<tr>
<td>I-495</td>
<td>Holmes Run (Culvert)</td>
<td>6605 0292103 06605</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 6' x 5' x 294'</td>
</tr>
<tr>
<td>I-495</td>
<td>Holmes Run (Culvert)</td>
<td>6604 0292102</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need. *Double Box Culvert 8' x 6' x 206'</td>
</tr>
<tr>
<td>I-495</td>
<td>Holmes Run (Culvert)</td>
<td>6603 0292100</td>
<td>–</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
</tbody>
</table>
## Attachment 3.15a
### Existing Bridge and Culvert Information Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian W&amp;OD (Trail)</td>
<td>I-495</td>
<td>28658 0295024</td>
<td>287-67</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 Ramp ES</td>
<td>I-495 Main, HOT &amp; I-66 Ramps</td>
<td>28667 0292281</td>
<td>287-68</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 Ramp ESH</td>
<td>I-495 HOT &amp; I-66 Ramps</td>
<td>28677 0292287</td>
<td>287-69</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 Ramp NWH</td>
<td>I-66 Ramp</td>
<td>28676 0292286</td>
<td>287-70</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widening and Repairs</td>
</tr>
<tr>
<td>I-66 WB</td>
<td>495 NBL &amp; HOT, I-66 Ramps</td>
<td>28666 0292280</td>
<td>287-71</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widening and Repairs</td>
</tr>
<tr>
<td>I-66 WB</td>
<td>I-495 SB &amp; Ramp I-66 ESH</td>
<td>28665 029-2279</td>
<td>287-72</td>
<td>No</td>
<td>Meet project purpose and need and the requirements of Attachment 3.15c Bridge Widening and Repairs</td>
</tr>
<tr>
<td>I-66 EB &amp; Ramp SHE</td>
<td>I-495 NBL &amp; HOT &amp; I-66 Ramps</td>
<td>28664 0292278</td>
<td>287-73</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 EB &amp; Ramp</td>
<td>I-495 SB &amp; HOT</td>
<td>28663 0292277</td>
<td>287-74</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 Ramp WN</td>
<td>I-495 SB &amp; HOT, Ramp &amp; Holmes Run</td>
<td>28662 0292276</td>
<td>287-75</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
</tbody>
</table>
## Attachment 3.15a

**Existing Bridge and Culvert Information Table**

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersection</th>
<th>Federal ID / VA Struct. No.</th>
<th>Bridge Plan Number</th>
<th>Potential Asbestos</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramp B of I-495 (NB to I-66 WB)</td>
<td>I-66 &amp; Metro</td>
<td>6598 0292065</td>
<td>162-09, A, B, C 162-09B (495 Express)</td>
<td>No info available, assumed No</td>
<td>Meet project purpose and need.</td>
</tr>
<tr>
<td>I-66 Ramp SWH</td>
<td>I-495 SB &amp; HOT</td>
<td>28675 0292285</td>
<td>287-77</td>
<td>No</td>
<td>Meet project purpose and need.</td>
</tr>
</tbody>
</table>

* Based on latest Safety Inspection Report and provided for information only. Developer to verify as needed.
Attachment 3.15b
Bridge Replacements Table

*Transverse Sections shall be in accordance with Manual of the Structure and Bridge Division Volume V - Part 2 Chapter 6 unless noted below.*

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Main Feature Intersected</th>
<th>Existing Federal ID / VA Struct. No.</th>
<th>FACILITIES INTERSECTED</th>
<th>LANE / SHOULDER WIDTHS FOR FACILITIES INTERSECTED</th>
<th>REPLACEMENT BRIDGE - TYPICAL SECTION</th>
<th>Bridge Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bull Run Drive Route 2548</td>
<td>I-66</td>
<td>6959 0296213</td>
<td>I-66 GP and Aux Lanes, Shldrs; I-66 Exp Lanes, Shldrs and future Metro facility</td>
<td>See attached</td>
<td>See attached</td>
<td></td>
</tr>
<tr>
<td>Sully Road Route 28</td>
<td>I-66</td>
<td>6260 0291029</td>
<td>I-66 GP and Aux Lanes, Shldrs; I-66 XP Lanes, Shldrs and future Metro facility.</td>
<td>See attached</td>
<td>See attached</td>
<td></td>
</tr>
<tr>
<td>Lee Jackson Memorial Highway EBL Route 50</td>
<td>I-66</td>
<td>6299 0291121</td>
<td>I-66 GP, Aux and CD Lanes, Shldrs; I-66 XP Lanes, Shldrs and future Metro facility.</td>
<td>See attached</td>
<td>See attached</td>
<td></td>
</tr>
</tbody>
</table>
**Attachment 3.15b**  
**Bridge Replacements Table**

*Transverse Sections shall be in accordance with Manual of the Structure and Bridge Division Volume V - Part 2 Chapter 6 unless noted below.*

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Main Feature Intersected</th>
<th>Existing Federal ID / VA Struct. No.</th>
<th>FACILITIES INTERSECTED</th>
<th>LANE / SHOULDER WIDTHS FOR FACILITIES INTERSECTED</th>
<th>REPLACEMENT BRIDGE - TYPICAL SECTION</th>
<th>Bridge Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee Jackson Memorial Highway WBL Route 50</td>
<td>I-66</td>
<td>6297 0291120</td>
<td>I-66 GP, Aux and CD Lanes, Shldrs; I-66 XP and Ramp Lanes, Shldrs and future Metro facility.</td>
<td>See attached</td>
<td>See attached</td>
<td></td>
</tr>
<tr>
<td>Lee Jackson Memorial Highway WBL Route 50</td>
<td>Ramp B (to I-66 EB)</td>
<td>6301 0292080</td>
<td>Rte. 50 EB Ramp Lane</td>
<td>See attached</td>
<td>See attached</td>
<td></td>
</tr>
<tr>
<td>Waples Mill Road Route 665</td>
<td>I-66</td>
<td>6817 0296228</td>
<td>I-66 GP and Aux Lanes, Shldrs; I-66 XP and Ramp Lanes, Shldrs and future Metro facility.</td>
<td>See attached</td>
<td>See attached</td>
<td></td>
</tr>
</tbody>
</table>
Attachment 3.15b
Bridge Replacements Table

Transverse Sections shall be in accordance with Manual of the Structure and Bridge Division Volume V - Part 2 Chapter 6 unless noted below.

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Main Feature Intersected</th>
<th>Existing Federal ID / VA Struct. No.</th>
<th>FACILITIES INTERSECTED</th>
<th>LANE / SHOULDER WIDTHS FOR FACILITIES INTERSECTED</th>
<th>REPLACEMENT BRIDGE - TYPICAL SECTION</th>
<th>Bridge Information</th>
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</thead>
<tbody>
<tr>
<td>Jermantown Road Route 655</td>
<td>I-66</td>
<td>6798 0296223</td>
<td>I-66 GP and Aux Lanes, Shldrs; I-66 XP Lanes, Shldrs and future Metro facility.</td>
<td>See attached</td>
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<tr>
<td>Chain Bridge Road SBL and NBL Route 123</td>
<td>I-66</td>
<td>6455 0291108</td>
<td>I-66 GP and Aux Lanes, Shldrs; I-66 XP Lanes, Shldrs and future Metro facility.</td>
<td>See attached</td>
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<tr>
<td>Vaden Drive I-66 &amp; Metro</td>
<td>I-66 Metro</td>
<td>6198 0292262</td>
<td>I-66 GP, Aux and CD Lanes; I-66 XP and Ramp Lanes, Shldrs and existing Metro facility</td>
<td>See attached</td>
<td>See attached</td>
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</table>
Attachment 3.15b
Bridge Replacements Table

Transverse Sections shall be in accordance with Manual of the Structure and Bridge Division Volume V - Part 2 Chapter 6 unless noted below.

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<th>Facility Carried</th>
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<th>Existing Federal ID / VA Struct. No.</th>
<th>FACILITIES INTERSECTED</th>
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<th>Bridge Information</th>
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<td>Route 243 Nutley Street</td>
<td>I-66 &amp; Metro</td>
<td>6492 0291163</td>
<td>I-66 GP and CD Lanes, Shldr; I-66 XP Lanes, Shldr and existing Metro facility.</td>
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<td>Cedar Lane</td>
<td>I-66 &amp; Metro</td>
<td>6865 0296220</td>
<td>I-66 GP and Aux Lanes, Shldr; I-66 XP Lanes, Shldr and existing Metro facility.</td>
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<td>Gallows Road</td>
<td>I-66 &amp; Metro</td>
<td>6783 0296219</td>
<td>I-66 GP and Aux Lanes, Shldr; I-66 XP Lanes, Shldr and existing Metro facility.</td>
<td>See attached</td>
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</table>

Miscellaneous Notes:
1. Reference DE's and DW's as necessary
2. Piers outside current tracks (west of Vienna Metro) to be centered in median area
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - University Blvd. (Rte. 840) over I-66
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - Bull Run Drive (Rte. 2548) over I-66
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - Sully Road (Rte. 28) Southbound over I-66

Typical Section - Sully Road (Rte. 28) Northbound over I-66
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - U.S. Rte. 50 EB over I-66 & Metro

Typical Section - U.S. Rte. 50 WB over I-66 & Metro
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - U.S. Rte. 50 Over I-66 EB Ramp B (STA. 6032+00)

Typical Section - Waples Mill Road (Rte. 665) over I-66 & Metro
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - Jermantown Road (Rte. 655) over I-66 & Metro

Typical Section - Chain Bridge Road (Rte. 123) over I-66 & Metro
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - Vaden Drive over I-66 & Metro

Typical Section - Nutley Street (Rte. 243) over I-66 & Metro
I-66 Corridor Improvement Project

Attachment 3.15b

Typical Section - Cedar Lane (Rte. 698) over I-66 & Metro

Typical Section - Gallows Road (Rte. 650) over I-66 & Metro
I-66 Corridor Improvement Project

Proposed Facilities Under Bull Run Drive (Rte.2548) over I-66

TO BE DETERMINED BY FINAL DESIGN

TO BE DETERMINED BY FINAL DESIGN
Proposed Facilities Under University Blvd. (Rte. 840) over I-66
I-66 Corridor Improvement Project

Attachment 3.15b

Proposed Facilities under Sully Road (Rte. 28) SB over I-66 (STA. 5771+00)

Proposed Facilities under Sully Road (Rte. 28) NB over I-66 (STA. 5772+00)
I-66 Corridor Improvement Project

Attachment 3.15b

Proposed Facilities under U.S. Route 50 EB over I-66 (STA. 6020+00)

Proposed Facilities under U.S. Route 50 WB over I-66 (STA. 6028+00)
I-66 Corridor Improvement Project

Attachment 3.15b

Existing Facilities under U.S. Rte 50 WB over I-66 Ramp B (STA. 6032+00)

Proposed Facilities under Waples Mill Road (Rte. 665) over I-66 (STA. 6051+00)
I-66 Corridor Improvement Project

Attachment 3.15b

Proposed Facilities Under Jermantown Road (Rte. 655) over I-66 & Metro (Sta. 6093+00)

Proposed Facilities Under Chain Bridge Road (Rte. 123) over I-66 & Metro (Sta. 6131+50)
I-66 Corridor Improvement Project

Attachment 3.15b

Proposed Facilities Under Vaden Drive Bridge over I-66 & Metro (Sta. 6233+50)

Proposed Facilities Under Nutley Street (Rt. 243) over I-66 & Metro (Sta. 6256+00)
I-66 Corridor Improvement Project

Attachment 3.15b

Proposed Facilities Under Cedar Lane (Rte. 698) over I-66 & Metro (Sta. 6314+00)

Proposed Facilities Under Gallows Road (Rte. 650) over I-66 & Metro (Sta. 6370+00)
## Attachment 3.15c

### Bridge Widening and Repair Table

<table>
<thead>
<tr>
<th>Facility Carried</th>
<th>Feature Intersected</th>
<th>Federal ID / VA Struct. No.</th>
<th>MODIFIED BRIDGE - TYPICAL SECTION</th>
<th>ADDITIONAL REQUIREMENT / RESTRICTIONS / NOTES</th>
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<tr>
<td>University Blvd. Route 840</td>
<td>I-66 &amp; Norfolk Southern Railroad</td>
<td>26694 0766188</td>
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<td>I-66 WBL</td>
<td>Bull Run</td>
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<td>Bull Run</td>
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<td>I-66 WBL</td>
<td>Cub Run</td>
<td>24993 0292010</td>
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<td>I-66 EBL</td>
<td>Cub Run</td>
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</table>
| I-66 EBL | Compton Road Route 658 | 6313 0292013 | Meet project purpose and need. | See Attachment 3.15d Bridge Repair Quantities Table.  
Existing vertical clearance = 15'-5" |
| I-66 WBL | Compton Road Route 658 | 6311 0292012 | Meet project purpose and need. | See Attachment 3.15d Bridge Repair Quantities Table. |
| I-66 WBL | Stringfellow Road Route 645 | 6320 0292059 | Meet project purpose and need. | See Attachment 3.15d Bridge Repair Quantities Table. |
| I-66 EBL | Stringfellow Road Route 645 | 6322 0292060 | Meet project purpose and need. | See Attachment 3.15d Bridge Repair Quantities Table. |
### Attachment 3.15c

#### Bridge Widening and Repair Table

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<th>MODIFIED BRIDGE - TYPICAL SECTION</th>
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<td>I-66 WBL</td>
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<td>Fairfax County Parkway Route 286</td>
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<td>Fairfax County Parkway Route 286</td>
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<td>I-66 &amp; Route 656</td>
<td>7076 0296023</td>
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## Bridge Repair Quantities Table

### University Blvd over I-66 & Norfolk Southern Railroad

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<th>Item No.</th>
<th>Description</th>
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</tr>
<tr>
<td>NS</td>
<td>Repair Areas of Slope Apron Undermining</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>NS</td>
<td>Repair Gaps Between Back Walls and MSE Panels</td>
<td>EA</td>
<td>2</td>
<td></td>
<td></td>
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<td>NS</td>
<td>Unload Deck Drains</td>
<td>LS</td>
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<tr>
<td>NS</td>
<td>Fill eroded hole with fill</td>
<td>CY</td>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>NS</td>
<td>Cut off end of girder ~&quot;1&quot;</td>
<td>LS</td>
<td>1</td>
<td></td>
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</tbody>
</table>

### Totals

| Item No. | Description | Units | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity | Quantity |
|----------|-------------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|          |             |       |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |

### Segments

- **Segment 1**: University Blvd over Bull Run & Norfolk Southern Railroad
- **Segment 2**: I-66 WBL over Bull Run & Norfolk Southern Railroad

**Note**: Totals may not match due to rounding.
I-66 Corridor Improvement Project

Attachment 3.15e

Proposed Facilities at Proposed Express Lanes Access Ramp Structure at Vaden Drive

For maximum limit on number of intermediate transverse joints, see Notes 4 and 5.

Concrete trough at expansion joint shall be used at east end of ramp bridge.

As required by Section 3.15.2.3(i), no joint shall be permitted between main Vaden Drive bridge deck and flared connector deck. Flared connector deck shall be considered part of the main Vaden Drive bridge.
NOTES:

1. ONLY STEEL H-GIRDERS OR PRESTRESSED BULB-T GIRDERS WILL BE PERMITTED AS MAIN SUPPORTING MEMBERS IN BRIDGE SUPERSTRUCTURE.

2. REGARDLESS OF THE ORIENTATION OF THE MAIN SUPPORTING GIRDERS, THE TRANSVERSE DIRECTION IS DEFINED AS THAT DIRECTION GENERALLY ORIENTED PERPENDICULAR TO METRO TRACKS AND THE LONGITUDINAL DIRECTION IS THAT DIRECTION GENERALLY ORIENTED PARALLEL TO METRO TRACKS.

3. NO LONGITUDINAL JOINTS WILL BE PERMITTED.

4. IF ORIENTATION OF MAIN SUPPORTING GIRDERS IS LONGITUDINAL, THEN THE FOLLOWING REQUIREMENTS SHALL APPLY:
   I. EXCLUSIVE OF THE JOINTS AT THE WEST AND EAST ENDS OF THE BRIDGE, NO MORE THAN FIVE (5) INTERMEDIATE TRANSVERSE OPEN / EXPANSION TRANSVERSE JOINTS SHALL BE PERMITTED.
   II. THE CONCRETE TROUGH DETAIL SHOWN IN FIG. 1 SHALL BE USED AT EACH INTERMEDIATE JOINT LOCATION.

5. IF THE ORIENTATION OF THE MAIN SUPPORTING GIRDERS IS TRANSVERSE, THEN THE FOLLOWING REQUIREMENTS SHALL APPLY:
   I. EXCLUSIVE OF THE JOINTS AT THE WEST AND EAST ENDS OF THE BRIDGE, NO MORE THAN NINE (9) INTERMEDIATE TRANSVERSE OPEN / EXPANSION JOINTS SHALL BE PERMITTED.
   II. THE CONCRETE TROUGH DETAIL SHOWN IN FIG. 1 SHALL BE USED AT EACH INTERMEDIATE JOINT LOCATION.
   III. ALL GIRDER ENDS SHALL BE FULLY ENCAPSULATED BY A CURTAIN WALL. CURTAIN WALLS SHALL BE CONNECTED TO ENDS OF GIRDER IN A MANNER SIMILAR TO THAT USED FOR SEMI-INTEGRAL BACKWALLS, AS SHOWN IN THE DETAILS INCLUDED IN CHAPTER 17, VOLUME 5, PART 2 OF THE STRUCTURE AND BRIDGE MANUALS.

6. WITH THE USE OF ALTERNATE VIRGINIA ABUTMENT AT THE WEST END OF BRIDGE AND SPECIAL CONCRETE TROUGH DETAIL SHOWN IN FIG. 1 OF THIS ATTACHMENT AT ALL JOINTS, THIS RAMP BRIDGE STRUCTURE MAY BE CONSIDERED TO BE IN COMPLIANCE WITH THE JOINTLESS DESIGN CONCEPT FOR THE PURPOSE OF DETERMINING LIMITS OF STRUCTURAL STEEL PAINTING.
I-66 Corridor Improvement Project

Attachment 3.15e

Proposed Facilities at Proposed Express Lanes Access Ramp Structure at Vaden Drive

NOTES:
1. CRR STEEL CLASS III SHALL BE USED FOR ALL REINFORCING STEEL IN CONCRETE TROUGH.
2. TWO LAYERS OF STEEL SHALL BE USED IN TROUGH WALLS AND BASE (3" MIN. COVER ON TROUGH SIDE).
3. THE TROUGH SHALL BE CONNECTED TO A CLOSED DRAINAGE SYSTEM SUCH THAT NO RUNOFF (INCLUDING WATER USED FOR FLUSHING THE TROUGH) SHALL BE PERMITTED TO DISCHARGE AT ENDS OF TROUGH.

FIGURE 1 - TROUGH DETAIL
Notes:

1. All abutment elements, including piling, walls (MSE, Soil Nail, etc.) shall be located behind this line (i.e. outside clearance box).
2. Bridge piers may be located within clearance box provided that such piers locations are coordinated with roadway designer to provide required horizontal clearance to edge of existing / future roadways, other facilities including any existing or proposed paths.
3. Location of clearance box in reference to centerline/baseline of facility intersected shall be coordinated with and approved by the Department to maximize flexibility for expansion of facilities intersected.

PROPOSED BRIDGE CLEARANCE BOX

Proposed Bridges:

1. Proposed I-66 WBL CD over Route 234 (Sudley Road): \( D = 190 \) ft.
2. Proposed I-66 EBL CD over Route 645 (Stringfellow Road): \( D = 121.33 \) ft.
66 Express Lanes Project Concept of Operations

1 Scope
This document defines the concept of operations for the Express and General Purpose Lanes on I-66 between I-495 and Route 29 in Gainesville. It covers three different possible scenarios corresponding to three different procurement methods. The procurement method will not be decided until all qualifications and non-binding bids are received in response to the RFQ.

The purpose of this document is to inform the technical requirements for all three possible scenarios.

2 Referenced Documents
N/A

3 Current System or Situation
VDOT currently owns and operates all Intelligent Transportation Systems (ITS) in the corridor. All operations and maintenance is contracted to third parties and accountable to VDOT according to contractual performance measures. VDOT has its own ATMS software provider through which it integrates and all systems in the corridor, with a few exceptions (e.g., road weather information systems, continuous count stations, connected vehicle research test bed equipment).

An Active Traffic Management (ATM) system has been built between I-495 and Route 29 and is operational as of 16 September 2015.

The Virginia Center for Transportation Innovation and Research (VCTIR) has a deployment of Dedicated Short Range Communications (DSRC) radios for connected vehicles research on I-66 between I-495 and Route 50.

Elsewhere in the region, a private concessionaire has constructed, and is operating, HOT (Express) Lanes on I-495 and I-95 in Virginia. VDOT is in the process of releasing a design-bid-build project to construct an open road tolling system on I-66 inside the Beltway that VDOT or a contracted entity will operate and maintain. The Virginia Secretary of Transportation also recently announced the I-395 HOV lanes may soon begin a process of being converted to Express Lanes.

4 Justification and Nature of Changes
VDOT has chosen to address growing mobility challenges in the corridor through the construction of High Occupancy Toll lanes. These lanes will be constructed by a design-build team according to technical requirements and plans developed to date, which will be included in the RFP.
5 Concepts for the Proposed System

The operator and maintainer of these lanes will be subject to a decision by the department after bids are received. The three Options are:

1. DBFOM (P3): Design-Build-Finance-Operate-Maintain. This is the same approach used for I-495 and I-95 Express Lanes. This is anticipated to be a 50-year agreement.
2. DBOM: Design-Build-Operate-Maintain. Under this scenario VDOT will finance the project but engage a contractor team to design and build the system, and to operate and maintain it for an initial 5-year term with a 5-year optional term.
3. DB: Design-Build. This scenario is the same as the DBOM except VDOT will take over operations and maintenance after a 6-month burn-in period. It is anticipated VDOT will outsource the operations and maintenance, but this has not been determined.

The main distinctions between the three scenarios is as follows.

DBFOM (P3)

Contract is a turnkey operation. The Developer funds a significant portion of the construction and earns the revenues over the concession period. Incentivized by the revenue, VDOT can be hands off with respect to the particulars of the operations, as long as contract performance criteria are met. The interface definitions between VDOT and the Developer are critical given the long time horizon of the contract and VDOT's ultimate responsibility as the owner of the road and entity accountable to the public and elected officials for transportation in the Commonwealth.

DBOM

Similar to the DBFOM with the critical distinction that VDOT earns the revenues while shouldering the full cost of the project. The operating and maintaining entities are under the same contract as the design-builder so the contractor is incentivized to design and construct a maintainable system. The interface between the Contractor and VDOT is also important as VDOT will have responsibility over setting toll rates. The Contractor will not be as incentivized to maximize revenues and VDOT must take additional responsibility to ensure operations meet minimum performance criteria.

DB (with ATCs)

The design-builder hands the project over to VDOT to operate and maintain after a short (e.g., 6 month) burn-in period. VDOT will keep the system integrator under contract to ensure the system can be maintained and upgraded. All responsibility beyond the initial period falls to VDOT. And, while VDOT will likely contract out much of the operations and maintenance, they will be separate contracts from the design-build work. This requires much more attention to the design and construction to ensure an operable and maintainable system is delivered to VDOT. It does offer efficiencies in that the operations and maintenance of the Express Lanes will be the same as for the General Purpose Lanes, and common systems and communications networks can be used for both.
5.1 MAJOR SYSTEMS COMPONENT ROLES AND RESPONSIBILITIES

In general, except where called out specifically in this document, the operations responsibility falls to whomever is contracted for it. Under the DBFOM, it is the Developer, under the DBOM it is the DBOM contractor and under the DB it is VDOT. Any of these could be outsourced, but this is ultimately where the responsibility lies. For example, where VDOT is responsible they would in many cases contract out the work. However, they would be responsible for directly funding the contract, managing the contractor and ensuring performance criteria are met.

5.1.1 Tolling Operations
The main differentiator between the three options is in who earns the toll revenues. Under the DBFOM scenario, the Developer funds a significant portion of the project up front and earns the toll revenues over the 50-year concession period. Under the DBOM and DB scenarios, VDOT earns the revenues. As a result, responsibility for rate setting is determined by who earns the toll revenues.

VDOT would contract out the toll operations under all scenarios, but under the DBFOM and DBOM scenarios, the toll operator is a member of the Design-Build team.

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Lanes</th>
<th>DBFOM (P3)</th>
<th>DBOM</th>
<th>DB (with ATCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toll revenues</td>
<td>Express</td>
<td>Developer</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
<tr>
<td>Rate setting</td>
<td>Express</td>
<td>Developer</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
<tr>
<td>Trip construction</td>
<td>Express</td>
<td>Developer</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
<tr>
<td>Toll collection and processing</td>
<td>Express</td>
<td>Developer</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
<tr>
<td>Violation processing</td>
<td>Express</td>
<td>Developer</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
</tbody>
</table>

5.1.2 Incident Management
All incident management activities would be the responsibility of the Developer, DBOM Contractor and VDOT, respectively, under each of the three scenarios. VDOT would use its current SSP contractor for the Express Lanes.

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Lanes</th>
<th>DBFOM (P3)</th>
<th>DBOM</th>
<th>DB (with ATCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All, including SSP</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>VDOT</td>
</tr>
</tbody>
</table>

5.1.3 Law Enforcement
Law enforcement, while conducted by Virginia State Police (VSP), will be funded by the Developer, DBOM Contractor and VDOT, respectively, under each of the three scenarios. This includes speed enforcement, HOV violation enforcement, DUI/DWI, and all other law enforcement.
5.1.4 Traveler Information Data Provision

The sustained provision of traveler information will be the responsibility of the Developer, DBOM Contractor and VDOT, respectively, under each of the three scenarios. This includes keeping the systems that generate the information and the API feeds up and running according to contractual availability minimums.

Park and ride information would be provided by VDOT under all three scenarios, although under all scenarios the design-build contractor would be responsible for installing the park and ride information systems such as traffic counters and message boards.

5.1.5 Maintenance

Under the DBFOM and DBOM scenarios, maintenance of all Express Lanes equipment will be done by the Developer and DBOM Contractor, respectively. Under the DB scenario, VDOT will be responsible for device maintenance, which will likely be added to its current maintenance contractor's responsibilities. The same contractor would then be responsible for all system maintenance on the Express and on the General Purpose Lanes.

5.1.6 Systems Integration and Support

The same process will be followed for all three procurement methods. VDOT will keep the systems integrator under contract for an extended duration to ensure bug fixes and upgrades can be implemented as needed.
5.1.7 Traffic Operations Center
Under the first two scenarios, the Developer or DBOM Contractor will need to provide their own facility and capabilities for traffic operations activities. While termed “Traffic Operations Center,” this does not imply a large facility with video wall, etc. Rather, it is the minimum required to monitor traffic, respond to incidents, and perform all other duties as required under the contract. It will be required to meet VDOT physical security requirements. Servers and systems could reside at the TOC or at a data center “in the cloud,” as long as it enables the operator to meet its operations requirements.

Under the DB scenario, VDOT will provide seats at the PSTOC for traffic operations. All TMS devices will integrate back to the VDOT network and ATMS.

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Lanes</th>
<th>DBFOM (P3)</th>
<th>DBOM</th>
<th>DB (with ATCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic management system</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>VDOT</td>
</tr>
<tr>
<td>Operations center staffing</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>VDOT</td>
</tr>
<tr>
<td>Building/facility</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>VDOT (PSTOC)</td>
</tr>
</tbody>
</table>

5.1.8 Toll Operations Center
This is a staff of multiple people reviewing license plate images and handling customer service. It does not need to be the same facility as the Traffic Operations Center and does not need to be located in Northern Virginia. Under the first two scenarios, the Developer and DBOM Contractor will be responsible for providing this facility and staff. Under the DB scenario, VDOT will likely contract it out and may roll the facility into the toll operations contract. Regardless, it will not be the same contractor as the Developer or DBOM.

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Lanes</th>
<th>DBFOM (P3)</th>
<th>DBOM</th>
<th>DB (with ATCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building/facility</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>Contractor for VDOT</td>
</tr>
<tr>
<td>Toll operations staffing</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>Contractor for VDOT</td>
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</tbody>
</table>

5.1.9 Handover/Handback
At the end of the contract term, all assets will be handed back to VDOT to operate and maintain. The requirements must stipulate a minimum expected life on the devices so VDOT does not take over failing equipment. In the DBFOM scenario, this date is far enough in the future that the technology will have changed over multiple times. In the DBOM scenario, in 5 or 10 years the devices will be either within or at the end of their initial life expectancy. In the DB scenario, VDOT will take over new devices.
Concept of Operations

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Lanes</th>
<th>DBFOM (P3)</th>
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<th>DB (with ATCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As-built documentation</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>DB Contractor</td>
</tr>
<tr>
<td>Training</td>
<td>Express</td>
<td>Developer</td>
<td>Contractor</td>
<td>DB Contractor</td>
</tr>
</tbody>
</table>

5.2 SYSTEM INTERFACES

Various new interfaces with other systems will be required under each of the three scenarios. In the DBFOM and DBOM scenarios, there will be interfaces with the Developer's or Contractor's traffic management system (HOT TMS) and VDOT's ATMS. This interface would include the provision of traffic data, camera video and DMS control.

In addition, there will be interfaces between the HOT TMS and VDOT's Transportation Video and Data (TVD) information system (which includes 511). In the DB scenario, there wouldn't be a separate HOT TMS and integration already exists between VDOT's ATMS and TVD systems.

<table>
<thead>
<tr>
<th>DBFOM (P3)</th>
<th>DBOM</th>
<th>DB (with ATCs)</th>
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<tbody>
<tr>
<td>HOT TMS ↔ VDOT ATMS</td>
<td>HOT TMS ↔ VDOT ATMS</td>
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<tr>
<td>HOT TMS ↔ VDOT TVD System (511)</td>
<td>HOT TMS ↔ VDOT TVD System (511)</td>
<td></td>
</tr>
</tbody>
</table>

6 Operational Scenarios

*Not applicable to this draft.*

7 Summary of Impacts

*Not applicable to this draft.*

8 Analysis of the Proposed System

While these three scenarios all include similar services, the risks associated with each of them are quite different. The following list represents just a few possible risks.

8.1 DBFOM (P3)

- Long term agreement presents financial risks and potential rewards to both parties.
- There is a reputational risk to VDOT the Express Lanes will not be managed well.
- There is a risk toll rates will be set so high the Express Lanes are underutilized and the General Purpose Lanes remain highly congested, with any proposed improvements invoking “compensation events,” or payment to the Developer by VDOT.
- Having redundant TMS, communications and power systems may increase overall costs to the Department.
8.2 DBOM

- There is a risk to VDOT the operations and maintenance contractor will not perform and will lose revenue for the Department.
- Any construction delays will cost VDOT in lost toll revenue.
- There is a risk to VDOT that political pressures will affect toll rates in a way that does not optimize revenues.
- Having redundant TMS, communications and power systems may increase overall costs to the Department.

8.3 DB

- Any construction delays will cost VDOT in lost toll revenue.
- There is a risk to VDOT the system will be difficult or costly to maintain.
- There is a risk to VDOT that political pressures will affect toll rates in a way that does not optimize revenues.
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<tbody>
<tr>
<td>Phase 1</td>
<td>University Blvd (Rte. 840) over I-66 &amp; NSRR</td>
<td>26094</td>
<td>076-6188</td>
<td>285-18</td>
<td>Shared Facility</td>
<td>Bridge widening with Direct Access Ramps</td>
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<tr>
<td>Phase 1</td>
<td>Prince William Parkway EB (Rte. 234 Bypass) over I-66</td>
<td>24787</td>
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<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
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<td>Phase 1</td>
<td>Prince William Parkway WBL (Rte. 234 Bypass) over I-66</td>
<td>24788</td>
<td>076-1053</td>
<td>271-72</td>
<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
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<td>Groveton Road over I-66</td>
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<td>076-4082</td>
<td>280-04</td>
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<td>Existing bridge to remain - no changes</td>
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<td>Phase 1</td>
<td>Park and Ride Lot (Balls Ford Road) Direct Access Bridge over I-66 EB</td>
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<td>TBD</td>
<td>TBD</td>
<td>Shared Facility</td>
<td>Proposed new bridge with Direct Access Ramps</td>
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</tr>
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<td>Phase 1</td>
<td>I-66 CD WBL over Sudley Road (Rte. 234 Business)</td>
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<td>TBD</td>
<td>VDOT</td>
<td>Proposed new bridge</td>
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<td>Phase 1</td>
<td>I-66 GP and Express WBL over Sudley Road (Rte. 234 Business)</td>
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<td>076-2000</td>
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<td>I-66 GP and Express WBL over Sudley Road (Rte. 234 Business)</td>
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<td>076-2001</td>
<td>136-21, A-D</td>
<td>Shared Facility</td>
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<tr>
<td>Phase 1</td>
<td>I-66 GP and Express WBL over Bull Run</td>
<td>6380</td>
<td>029-2900</td>
<td>136-22, A-C</td>
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<td>Mainline Widening</td>
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<tr>
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<td>029-2901</td>
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<td>Mainline Widening</td>
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<td>Phase 1</td>
<td>Bull Run Drive (Rte. 2548) over I-66</td>
<td>6559</td>
<td>029-6213</td>
<td>136-16, A</td>
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<tr>
<td>Phase 1</td>
<td>I-66 GP and Express WBL over Cub Run</td>
<td>25993</td>
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<td>Shared Facility</td>
<td>Mainline Widening</td>
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</tr>
<tr>
<td>Phase 1</td>
<td>I-66 GP and Express EB over Cub Run</td>
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<td>029-2011</td>
<td>272-29</td>
<td>Shared Facility</td>
<td>Mainline Widening</td>
<td></td>
</tr>
<tr>
<td>Phase 1</td>
<td>I-66 GP and Express WBL over Compton Road</td>
<td>6311</td>
<td>029-2012</td>
<td>136-19, A-C</td>
<td>Shared Facility</td>
<td>Mainline Widening</td>
<td></td>
</tr>
<tr>
<td>Phase 1</td>
<td>I-66 GP and Express EB over Compton Road</td>
<td>6313</td>
<td>029-2013</td>
<td>136-19, A-C</td>
<td>Shared Facility</td>
<td>Mainline Widening</td>
<td></td>
</tr>
<tr>
<td>Phase 1</td>
<td>I-66 GP and Express WBL over Lee Highway (Rte. 29) - Centreville</td>
<td>6315</td>
<td>029-2019</td>
<td>148-07, A-F</td>
<td>Shared Facility</td>
<td>Existing bridge to remain</td>
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<tr>
<td>Phase 1</td>
<td>I-66 GP and Express WBL over Lee Highway (Rte. 29) - Centreville</td>
<td>6317</td>
<td>029-2020</td>
<td>148-07, A-F</td>
<td>Shared Facility</td>
<td>Existing bridge to remain</td>
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<tr>
<td>Phase 1</td>
<td>Rte. 28 SBL Ramp Flyover to I-66 Express Lanes WBL</td>
<td>TBD</td>
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<td>66 Express</td>
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<tr>
<td>Phase 1</td>
<td>Braddock Rd (Rte. 620) / Walney Rd (Rte. 657) over Sully Rd (Rte. 28) with access to Rte. 28</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>VDOT</td>
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<tr>
<td>Phase 1</td>
<td>Sully Road (Rte. 28) GP SB over I-66</td>
<td>TBD</td>
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<td>VDOT</td>
<td>Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>Sully Road (Rte. 28) GP NB over I-66</td>
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<td>TBD</td>
<td>VDOT</td>
<td>Existing bridge replaced</td>
<td></td>
</tr>
<tr>
<td>Phase 1</td>
<td>I-66 Express EB Direct Access Flyover to Sully Road (Rte. 28) GP NB</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>66 Express</td>
<td>Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>I-66 Express EB Direct Access Flyover to Sully Road (Rte. 28) GP NB</td>
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<td>TBD</td>
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<td>Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>I-66 Express WBL Direct Access Flyover to Sully Road (Rte. 28) GP NB</td>
<td>TBD</td>
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<td>TBD</td>
<td>66 Express</td>
<td>Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>Sully Road (Rte. 28) NB GP Direct Access Flyover to I-66 Express Lanes WBL</td>
<td>TBD</td>
<td>TBD</td>
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<td>66 Express</td>
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<td>Phase 1</td>
<td>Poplar Tree Road over Sully Road (Rte. 28)</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>Proposed new bridge</td>
<td></td>
</tr>
<tr>
<td>Phase 2</td>
<td>I-66 Express WBL Flyover to I-66 GP WBL (to Sully Road - Rte. 28)</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>66 Express</td>
<td>Proposed new bridge</td>
<td></td>
</tr>
<tr>
<td>Phase 2</td>
<td>I-66 Express EB Flyover to I-66 GP EB (to Fairfax County Parkway - Rte. 286)</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>66 Express</td>
<td>Proposed new bridge</td>
<td></td>
</tr>
<tr>
<td>Phase 2</td>
<td>I-66 GP and Express WBL over Stringfellow Road (Rte. 645)</td>
<td>6320</td>
<td>029-2059</td>
<td>271-09</td>
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<td>Mainline Widening</td>
<td></td>
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<tr>
<td>Phase 2</td>
<td>I-66 GP and Express WBL over Stringfellow Road (Rte. 645)</td>
<td>6322</td>
<td>029-2060</td>
<td>271-09</td>
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<tr>
<td>Phase 2</td>
<td>I-66 Express WBL Flyover to Stringfellow Road</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>VDOT</td>
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<tr>
<td>Phase 2</td>
<td>I-66 Express WBL Flyover to Stringfellow Road Ramp</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>Proposed new bridge</td>
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<tr>
<td>Phase 2</td>
<td>I-66 CD Road WBL over Fairfax County Parkway (Rte. 286)</td>
<td>24090</td>
<td>292091</td>
<td>269-55</td>
<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
<td></td>
</tr>
<tr>
<td>Phase 2</td>
<td>I-66 GP and Express WBL over Fairfax County Parkway (Rte. 286)</td>
<td>6376</td>
<td>029-2266</td>
<td>268-21, A</td>
<td>Shared Facility</td>
<td>Mainline Widening</td>
<td></td>
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<tr>
<td>Phase 2</td>
<td>I-66 GP and Express EBL over Fairfax County Parkway (Rte. 286)</td>
<td>6378</td>
<td>029-2267</td>
<td>268-21, A</td>
<td>Shared Facility</td>
<td>Mainline Widening</td>
<td></td>
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<tr>
<td>Phase 2</td>
<td>I-66 CD Road EBL over Fairfax County Parkway (Rte. 286)</td>
<td>24089</td>
<td>292099</td>
<td>Not avail.</td>
<td>VDOT</td>
<td>CD Road Widening</td>
<td></td>
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<tr>
<td>Phase 2</td>
<td>Monument Drive over I-66</td>
<td>7076</td>
<td>029-1122</td>
<td>268-18</td>
<td>VDOT</td>
<td>Existing bridge with modifications for direct access ramp</td>
<td></td>
</tr>
<tr>
<td>------------</td>
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<tr>
<td>Phase 1</td>
<td>Lee Jackson Memorial Highway (Rte. 50) EBL over I-66 with Direct Access to I-66 Express EBL</td>
<td>6299  029-1121</td>
<td>148-09, A</td>
<td>Shared Facility</td>
<td>Existing bridge replaced</td>
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<tr>
<td>Phase 1</td>
<td>Lee Jackson Memorial Highway (Rte. 50) WBL over I-66 EB Ramp B</td>
<td>6301  029-2080</td>
<td>148-11</td>
<td>VDOT</td>
<td>Existing bridge replaced</td>
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<tr>
<td>Phase 1</td>
<td>Lee Jackson Memorial Highway (Rte. 50) WBL over I-66 with Direct Access from I-66 Express WBL</td>
<td>6297  029-1120</td>
<td>148-10, A</td>
<td>Shared Facility</td>
<td>Existing bridge replaced</td>
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<tr>
<td>Phase 1</td>
<td>Lee Jackson Memorial Highway (Rte. 50) WBL Ramp over Rte. 50 EBL to I-66 GP WBL</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>New Bridge</td>
<td></td>
<td></td>
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<tr>
<td>Phase 1</td>
<td>Lee Jackson Memorial Highway (Rte. 50) WBL Flyover Rte. 50 EBL and Ramp to Fair Oaks Mall</td>
<td>6176  029-1124</td>
<td>159-73</td>
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<td>Existing bridge to remain</td>
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<tr>
<td>Phase 1</td>
<td>Waples Mill Road (Rte. 665) over I-66</td>
<td>6817  029-6228</td>
<td>148-14, A</td>
<td>VDOT</td>
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<tr>
<td>Phase 1</td>
<td>Jeramett Road (Rte. 655) over I-66</td>
<td>6798  029-6223</td>
<td>148-05, A</td>
<td>VDOT</td>
<td>Existing bridge replaced</td>
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<tr>
<td>Phase 1</td>
<td>Chain Bridge Road (Rte. 123) SBL over Ramp A</td>
<td>6459  029-1110</td>
<td>148-13, A, B</td>
<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
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<tr>
<td>Phase 1</td>
<td>Chain Bridge Road (Rte. 123) NBL over Ramp A</td>
<td>6461  029-1111</td>
<td>148-13, A, B</td>
<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
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<td>Bread Bridge Road (Rte. 123) over I-66 with Direct Access to Express Lanes</td>
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<td>TBD</td>
<td>VDOT</td>
<td>Bridge replaced with Direct Access Ramps</td>
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<td>Blake Lane (Rte. 655) over I-66 &amp; Metro Facility</td>
<td>6299  029-6218</td>
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<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
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<td>Phase 1</td>
<td>Bridge Ramp Structure over Metro Facility to Vaden Drive Bridge</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>66 Express Proposed new bridge</td>
<td></td>
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<td>Vaden Drive over I-66 &amp; Metro Facility with Direct Access to I-66 Express Lanes</td>
<td>6198  029-2262</td>
<td>260-81, A</td>
<td>VDOT</td>
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<td>Phase 1</td>
<td>Vaden Drive Direct Access Express Lanes Ramp Structure</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>66 Express Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>Metro Pedestrian Bridge To Vienna Station North</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>WMATA</td>
<td>Existing bridge replaced</td>
<td></td>
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<tr>
<td>Phase 1</td>
<td>Metro Pedestrian Bridge To Vienna Station South</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>WMATA</td>
<td>Existing bridge to remain - no changes</td>
<td></td>
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</tr>
<tr>
<td>Phase 1</td>
<td>Vaden Bridge (Rte. 243) SBL over I-66 &amp; Metro Facility</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
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<tr>
<td>Phase 1</td>
<td>Vaden Bridge (Rte. 243) NBL over I-66 &amp; Metro Facility</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>Cedar Lane (Rte. 698) over I-66 &amp; Metro Facility</td>
<td>6865  029-6220</td>
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<td>VDOT</td>
<td>Existing bridge replaced</td>
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<td>I-66 GP WBL Flyover to I-66 Express EBL</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>66 Express Proposed new bridge</td>
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<tr>
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<td>Metro Pedestrian Bridge To Dunn Loring Station</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>WMATA</td>
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<td>Galloway Road (Rte. 650) over I-66 &amp; Metro Facility</td>
<td>6783  029-6219</td>
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<tr>
<td>Phase 1</td>
<td>I-66 GP and Express WBL over I-495 GP and Express SBL</td>
<td>28665  029-2279</td>
<td>287-72</td>
<td>Shared Facility</td>
<td>Mainline Widening</td>
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<td>Phase 1</td>
<td>I-66 GP and Express WBL over I-495 GP and Express NBL</td>
<td>28666  029-2380</td>
<td>287-71</td>
<td>Shared Facility</td>
<td>Mainline Widening</td>
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<tr>
<td>Phase 1</td>
<td>I-495 Express SBL over Ramp to I-495 GP and Express WBL</td>
<td>28676  029-2286</td>
<td>287-70</td>
<td>Shared Facility</td>
<td>Existing Ramp Bridge widened</td>
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<tr>
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<td>I-495 Express SBL Ramp Flyover I-66 WBL to I-66 Express WBL</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>66 Express Proposed new bridge</td>
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</tr>
<tr>
<td>Phase 1</td>
<td>I-495 Express NBL Flyover I-495 Express and GP NBL to Flyover Ramp to I-66 GP WBL</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>66 Express Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>I-495 GP and Express NBL Flyover I-495 and Metro Facility to I-66 GP WBL</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>Proposed new bridge</td>
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<tr>
<td>Phase 1</td>
<td>I-495 Express NBL Flyover I-495 GP and Express SBL to I-66 Express WBL</td>
<td>28675  029-2285</td>
<td>287-77</td>
<td>66 Express</td>
<td>Existing bridge to remain - no changes</td>
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<tr>
<td>Phase 1</td>
<td>I-495 Express NBL Flyover I-495 GP, Express WBL and Metro Facility EBL to I-495 Express WBL</td>
<td>6598  029-2085</td>
<td>162-9A, B, C</td>
<td>66 Express</td>
<td>Existing bridge to remain - no changes</td>
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<tr>
<td>Phase 1</td>
<td>I-495 Express NBL Ramp Flyover I-495 GP and Express to I-66 Express WBL</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>66 Express Proposed new bridge</td>
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<td>I-66 GP EBL Flyover I-495 to I-495 GP NBL</td>
<td>28662  029-2276</td>
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<td>Existing bridge to remain - no changes</td>
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<td>Phase 1</td>
<td>I-66 GP and Express EBL over I-495 GP and Express SBL</td>
<td>28663  029-2277</td>
<td>287-74</td>
<td>Shared Facility</td>
<td>Existing bridge to remain</td>
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<tr>
<td>Phase 1</td>
<td>I-66 GP and Express EBL over I-495 GP and Express NBL</td>
<td>28664  029-2278</td>
<td>287-73</td>
<td>Shared Facility</td>
<td>Existing bridge to remain</td>
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<tr>
<td>Phase 1</td>
<td>I-66 Express EBL Flyover I-66 WBL to Ramp to I-495 GP SBL</td>
<td>TBD   TBD</td>
<td>TBD</td>
<td>VDOT</td>
<td>66 Express Proposed new bridge</td>
<td></td>
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<tr>
<td>Phase 1</td>
<td>I-66 GP WBL and I-66 Express EBL Ramp Flyover I-495 to I-495 GP SBL</td>
<td>28667  029-2281</td>
<td>287-68</td>
<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
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<tr>
<td>Phase 1</td>
<td>I-66 GP WBL Ramp Flyover I-495 GP and Express NBL to I-495 Express SBL</td>
<td>28677  029-2287</td>
<td>287-69</td>
<td>VDOT</td>
<td>Existing bridge to remain - no changes</td>
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</tr>
</tbody>
</table>

Total VDOT Maintained 30
Total Shared Facility Maintained 23
Total 66 Express Maintained 17
Total WMATA Maintained 3
Private Owner 1
Total Bridges 73
66 Express Lanes Project

Pre-Draft Technical Requirements
Attachment 4.5
Performance Requirements Baseline Tables
The Performance Requirements are stated in the Performance Requirements Baseline Tables.

An Asset meets a Performance Requirement provided that, where applicable:

- the requirement(s) stated in Table 4.5a under Performance Requirement are fulfilled;

- the Asset fulfils the “Asset Condition Criteria” set forth in the third column of Table 4.5a to the extent required in the fourth column of Table 4.5b (entitled “Target”) as a percentage of the total measurements performed with respect to each criterion; and

- the requirements(s) stated in Table 4.5b under Outcome (second column) are fulfilled;

- the Asset fulfils the “Ordinary Maintenance Criteria” set forth in the fourth column of Table 4.5b to the extent required in the third column of Table 4.5b (entitled “Minimum”) as a percentage of the total measurements performed with respect to each criterion; and

- the Developer meets the “Timeliness Requirements” set forth in the fourth column of Table 4.5b of the Technical Requirements, subject to environmental conditions and ability to perform maintenance or as mutually agreed in the Life Cycle Maintenance Plan.

The Performance Baseline Tables are reviewed and updated following Substantial Completion as described in Section 4.5 of the Technical Requirements.
# 1 Asset Condition Performance Requirements

## Table 4.5a: Asset Condition Performance Requirements Baseline Table

<table>
<thead>
<tr>
<th>Asset</th>
<th>Performance Requirement</th>
<th>Asset Condition Criteria and Timeliness Requirements</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement</td>
<td>Roadways have a smooth and quiet surface course with adequate skid resistance and free from defects. All measurement methods and application for the HOT lanes based on the asset condition reports and a full 5-year period maintenance plan prepared will be considered in determination of performance requirements for Pavement.</td>
<td>The methodology of data collection, quality assurance of data, derivation of condition measures, and the use of pavement condition data to assess pavement deficiencies, and develop the 5-year period maintenance plan shall be consistent with the latest VDOT roadway condition assessment and maintenance practice guidelines(^1). The condition data shall be compatible with VDOT Pavement Manager System database.(^1) The latest practice guidelines and related standards can be found in the “State of the Pavement” - an annual statewide pavement condition report issued by VDOT Maintenance Division.</td>
<td>NA</td>
</tr>
<tr>
<td>Rut depth</td>
<td></td>
<td>Rut depth Maximum ¾”.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Timeliness Requirement</strong></td>
<td>Pavement rut depth is brought below maximum within 3 months of the measurement of failure to meet the target.</td>
<td></td>
</tr>
<tr>
<td>International Roughness Index Rating (IRI)</td>
<td><strong>Timeliness Requirement</strong></td>
<td>Pavement rut depth is brought below Target within 3 months of the measurement of failure to meet the target.</td>
<td>170 or less</td>
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<tr>
<td></td>
<td><strong>Asset Condition Criteria</strong></td>
<td>Critical Condition Index (CCI) (^1) CCI is calculated as the lower of Load Rated Distress Rating (LDR) and Non Load Rated Distress</td>
<td>70 and above</td>
</tr>
</tbody>
</table>

\(^1\) The latest practice guidelines and related standards can be found in the “State of the Pavement” - an annual statewide pavement condition report issued by VDOT Maintenance Division.
<table>
<thead>
<tr>
<th>Asset</th>
<th>Performance Requirement</th>
<th>Asset Condition Criteria and Timeliness Requirements</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rating (NDR)</td>
<td></td>
</tr>
<tr>
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<td></td>
<td><strong>Timeliness Requirement</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CCI is brought above minimum within 6 months of measurement of failure to meet target.</td>
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</tr>
<tr>
<td></td>
<td></td>
<td><strong>Asset Condition Criteria</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skid resistance, measured using standard test method (ASTM E-274) compared to mean skid resistance of the I 66 GP lanes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Timeliness Requirement</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skid resistance is brought above minimum within 3 months of measurement of failure to meet target,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shoulder</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Condition assessment of the paved shoulder will be subjective, simply for safety, convenience and efficiency.</td>
<td></td>
</tr>
<tr>
<td>Bridges and Bridge Class Culverts</td>
<td>Bridges and Bridge Class Culverts are safe, fully functional, and structurally sound.</td>
<td><strong>Asset Condition Criteria</strong></td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintain a general condition rating for Decks (Item 58), Superstructures (Item 59), Substructures (Item 60), Channels and Channel Protections (Item 61), and Bridge Class Culverts (Item 62) at a level of 5/“Fair Condition” or better, as defined in the FHWA Recording and Coding Guide for Structure Inventory and Appraisal of the Nation’s Bridges.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>For Bridges and Bridge Class Culverts, the Handback Requirements shall be as follows:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The general condition rating for Decks (Item 58), Superstructures (Item 59), Substructures (Item 60), Channels and Channel Protections (Item 61), and Bridge Class Culverts (Item 62) at a level of 6/“Satisfactory Condition” or better, as defined in the FHWA Recording and Coding Guide.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4.5a: Asset Condition Performance Requirements Baseline Table

<table>
<thead>
<tr>
<th>Asset</th>
<th>Performance Requirement</th>
<th>Asset Condition Criteria and Timeliness Requirements</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Guide for Structure Inventory and Appraisal of the Nation’s Bridges.</strong> Maintain the following bridge element state condition as defined in the VDOT Element Data Collection Manual for: 1. Coated Steel/Metal Elements (Paint) at a condition state 2 or higher. 2. Expansion Joints at a condition state of 1. 3. Bearings at a condition state of 2 or higher. Perform inspections and assessment in accordance with the requirements of federal National Bridge Inspection Standards (NBIS) of the Code of Federal Regulations, 23CFR650 Subpart C - National Bridge Inspection Standards and IIM-S&amp;B 27-Bridge Safety Inspections and IIM-S&amp;B-86 -Load Rating and Posting of Structures (Bridges and Culverts). All inspection reports and load ratings shall be submitted to the Department. Bridge deck ride quality shall conform to “Localized Roughness” criteria for pavement (i.e., Continuous IRI ≤300 in/mi per 0.01-mile segment length). There are no Structurally Deficient Bridges or Bridge Class Culverts. There are no weight restricted bridges or Bridge Class Culverts. <strong>Timeliness Requirements</strong> Structure condition ratings are brought above minimum performance levels within 6 months of measurement of failure to meet minimum. Localized roughness is brought below maximum within 6 months of measurement of failure to meet minimum.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4.5a: Asset Condition Performance Requirements Baseline Table

<table>
<thead>
<tr>
<th>Asset</th>
<th>Performance Requirement</th>
<th>Asset Condition Criteria</th>
<th>Timeliness Requirements</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Control Device Structures</td>
<td>Traffic Control Device Structures are safe, fully functional, and structurally sound.</td>
<td>Maintain a general condition rating of Traffic Control Devices at a level of 6/&quot;Satisfactory Condition&quot; or better (the term “Satisfactory” shall be a condition similar to that as described in Items 58 through 62 in the FHWA Recording and Coding Guide for Structure Inventory and Appraisal of the Nation’s Bridges). Traffic control device structures include: Overhead sign structures, cantilever sign structures, butterfly sign structures, toll gantries, High mast lighting poles, offset lighting poles, conventional lighting poles, camera poles and traffic signal structures. The Department shall perform inspections and assessment in accordance with the requirements IIM-S&amp;B-73-High Mast Light Poles-Inspection and Maintenance and IIM-S&amp;B-82-Traffic Structures. Copies of all inspection reports shall be submitted to the Developer.</td>
<td>Structure condition ratings are brought above minimum performance levels within 6 months of measurement of failure to meet minimum.</td>
<td>100%</td>
</tr>
<tr>
<td>Drainage</td>
<td>Drainage system is effective at ensuring travel way is free from water such that the water does not present a hazard by virtue of its location, size and depth</td>
<td>Length of roadway with visual inspection confirming no hazardous free standing water</td>
<td>Conditions giving rise to hazardous free standing water are rectified within 3 months of discovery.</td>
<td>90%</td>
</tr>
<tr>
<td>Electrical supply</td>
<td>Electrical supply, feeder pillars, cabinets, switches and fittings are electronically, mechanically and structurally sound and</td>
<td>Percentage of pillars, cabinets and fittings confirmed sound and functioning by visual</td>
<td></td>
<td>90%</td>
</tr>
</tbody>
</table>
### Table 4.5a: Asset Condition Performance Requirements Baseline Table

<table>
<thead>
<tr>
<th>Asset</th>
<th>Performance Requirement</th>
<th>Asset Condition Criteria and Timeliness Requirements</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>functionning</td>
<td></td>
<td><strong>Timeliness Requirements</strong>&lt;br&gt;Instances of unsound and non-functioning equipment are rectified within three months of discovery or as agreed in the Life Cycle Maintenance Plan.</td>
<td></td>
</tr>
<tr>
<td>Hazardous materials / spillage</td>
<td>Control of hazardous materials shall be in accordance with Chapter 13, NFPA 502</td>
<td><strong>Asset Condition Criteria</strong>&lt;br&gt;Incident reports showing compliance&lt;br&gt;<strong>Timeliness Requirements</strong>&lt;br&gt;Failures to comply with Chapter 13, NFPA 502 are investigated and revised procedures put in place within 1 month of completion of investigation.</td>
<td>100%</td>
</tr>
<tr>
<td>Structural assessment</td>
<td>Evaluate structural damage to structures and liaise with emergency services to ensure safe working in clearing incidents</td>
<td><strong>Asset Condition Criteria</strong>&lt;br&gt;Inspections and surveys as required by incident that are correctly reported.&lt;br&gt;<strong>Timeliness Requirement</strong>&lt;br&gt;Failures to evaluate damage to structures and to assist emergency services with clearing of incidents are investigated and revised procedures put in place within 1 month of completion of investigation.</td>
<td>90%</td>
</tr>
</tbody>
</table>

(1) The latest practice guidelines and related standards can be found in the “State of the Pavement” – an annual renewable pavement condition report issued by the VDOT Maintenance Division.

I-66 will utilize the prevailing methods of pavement assessment the Department employs at a given time in the future. The year 2015 Department condition assessment method for the pavement utilizes a continuous digital imaging and automated crack detection technology. The surface condition of only one travel lane in each direction along the 66 Express Lanes will be inspected annually. The assessment data will then be processed and characterized into a series of rating indices to represent the overall condition of the pavement and the basis for the maintenance and rehabilitation schedules.

Where existing pavement remains as part of the 66 Express Lanes, the Department’s maintenance history and assumptions in regards to conditions, including the information documented in the will be the basis for the I-66 reporting in the future.
(2) Structurally Deficient: A bridge or a bridge class culvert is deemed structurally deficient if any of its NBI general condition rating (deck, superstructure, substructure, or culvert) is 4 or less, or one of two appraisal ratings (structural condition or waterway adequacy) is 2 or less.

(3) Weight Restricted: When the load carrying capacity of a structure as a result of a structural evaluation is determined to be less than Virginia’s legal loads, the bridge is then posted in accordance with VDOT’s policies. All structures are to be analyzed and load rated in accordance with the National Bridge Inspection Standards, AASHTO Bridge Evaluation Manual, and the latest VDOT Structure and Bridge Division’s IIM-S&B-86-Load Rating and Posting of Structures (Bridges and Culverts), and memorandum dealing with load ratings.
2 Ordinary Maintenance Performance Requirements

The Project shall be subject to the Department’s Maintenance Rating Program (MRP), or subsequent update or replacement program. The Developer shall use the MRP to verify performance of each Asset against the criteria set out in the Performance Requirements Baseline Tables. The Developer shall include in the end of year report outlined in Section 1.10 of the Technical Requirements, a summary of the results of annual assessments in a format to be agreed between the Developer and the Department. The Developer shall achieve and maintain an MRP rating of 90% or above for all Assets in accordance with the most current Northern Virginia TAMS performance requirements in effect on other similar highways within Northern Virginia, unless otherwise noted in Table 4.5b below. The Developer shall achieve the criteria in TAMS or Table 4.5b and shall cause the level of maintenance attained to be uniform and consistent at all times. All Asset Groups shall achieve a minimum rating of 90% unless otherwise noted herein.

<table>
<thead>
<tr>
<th>Asset</th>
<th>Outcome</th>
<th>Minimum (%)</th>
<th>Ordinary Maintenance Criteria and Timeliness Requirements</th>
<th>UOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROADSIDE ASSET GROUP</td>
<td>In accordance with the most current VDOT TAMS requirements in place in Northern Virginia on other similar highways.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRAINAGE ASSET GROUP</td>
<td>In accordance with the most current VDOT TAMS requirements in place in Northern Virginia on other similar highways.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAFFIC ASSET GROUP</td>
<td>In accordance with the most current VDOT TAMS requirements in place in Northern Virginia on other similar highways or as specified below.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Cable Locating: Electric, Fiber, Communications | Maintain Cable Facilities | 90 | Ordinary Maintenance Criteria  
• No errors per cable markings.  
• <2 linear ft. tolerance from actual cable plant.  
• Must maintain any and all cable infrastructure as as-built drawings.  
• Excavators are not to begin until all underground utilities have been marked including those that might be maintained by Miss Utility.  
• Developer will mark all VDOT cables, Developer responsible for Miss Utility for work done under the contract | |
### Table 4.5b – Ordinary Maintenance Performance Requirements Baseline Table

<table>
<thead>
<tr>
<th>Asset</th>
<th>Outcome</th>
<th>Minimum (%)</th>
<th>Ordinary Maintenance Criteria and Timeliness Requirements</th>
</tr>
</thead>
</table>
| Junction Boxes       | Maintain Junction Boxes        | 90          | • All junction or pull boxes shall be free from damage or missing parts.  
• Boxes, frames, and covers shall be watertight except for approved weep holes.  
• Must maintain any and all junction boxes infrastructure as as-built drawings.  
• Covers shall be fitted with gaskets and secured with approved securing screws.  
**Timeliness Requirement:**  
• All damaged cable junction boxes and or pull boxes must be repaired within 7 days of discovery or notification if hazardous conditions exist, or within 30 day otherwise. |

**ROADWAY & SHOULDER ASSET GROUP** – In accordance with the most current VDOT TAMS requirements in place in Northern Virginia on other similar highways.

**BRIDGE ASSET GROUP** – In accordance with the most current VDOT TAMS requirements in place in Northern Virginia on other similar highways.

**SERVICES GROUP** – In accordance with the most current VDOT TAMS requirements in place in Northern Virginia on other similar highways, or as specified below.
### Table 4.5b – Ordinary Maintenance Performance Requirements Baseline Table

<table>
<thead>
<tr>
<th>Asset</th>
<th>Outcome</th>
<th>Minimum (%)</th>
<th>Ordinary Maintenance Criteria and Timeliness Requirements</th>
<th>UOM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emergency Access Barrier Gates</strong></td>
<td>Clean and Fully Operational</td>
<td>100</td>
<td><strong>Timeliness Requirements:</strong>&lt;br&gt;• Quarterly operations check and inspection (or as needed) due to maintenance monitoring alert&lt;br&gt;• Quarterly cleaning or as needed</td>
<td>Each</td>
</tr>
<tr>
<td><strong>TRAFFIC MANAGEMENT SERVICE</strong></td>
<td></td>
<td></td>
<td><strong>MISCELLANEOUS INFRASTRUCTURE AND REST AREA ASSET GROUP</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Building Maintenance and Repair</strong></td>
<td>Buildings structurally sound and serviceable</td>
<td>90</td>
<td><strong>Ordinary Maintenance Criteria</strong>&lt;br&gt;• Structural integrity of all buildings is maintained at all times&lt;br&gt;• Electrical systems, HVAC systems, and communication lines, fully functioning&lt;br&gt;• No material paint blistering or peeling, mildew, or mold, rusted metal fittings.</td>
<td>Annual Report</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Timeliness Requirements</strong>&lt;br&gt;• General maintenance issues of a material nature to be addressed within 7 days of notification or discovery.&lt;br&gt;• Issues affecting public safety to be addressed immediately</td>
<td></td>
</tr>
</tbody>
</table>
## Recommended Maintenance Responsibility Matrix

### 66 Express Lanes Project

<table>
<thead>
<tr>
<th>MAINTENANCE ITEM</th>
<th>INSPECTIONS (I)</th>
<th>ROUTINE (R)</th>
<th>MAJOR (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pavement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Mainline for Express Lanes</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>(2) Mainline Striping for Express Lanes</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Ramps to and from the Express Lanes</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>Bollards</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td><strong>Structures - HOT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Signs</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>(2) Walls</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>(3) Bridges</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td><strong>Structures - Shared</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Signs</td>
<td>Shared</td>
<td>D</td>
<td>Shared</td>
</tr>
<tr>
<td>(2) Walls</td>
<td>Shared</td>
<td>D</td>
<td>Shared</td>
</tr>
<tr>
<td>(3) Bridges</td>
<td>VDOT</td>
<td>D</td>
<td>Shared</td>
</tr>
<tr>
<td>Duct Bank (Power &amp; Communications) - Shared</td>
<td>Shared</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td><strong>Sign Panel - VDOT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signs</td>
<td>VDOT</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
<tr>
<td><strong>Sign Panel - HOT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signs</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>Drainage - Inlets (within Express Lanes)</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>Drainage - Inlets &amp; Pipes (within footprint of Express)</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>Drainage - Systems</td>
<td>VDOT</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
</tbody>
</table>
# Recommended Maintenance Responsibility Matrix

<table>
<thead>
<tr>
<th>MAINTENANCE ITEM</th>
<th>INSPECTIONS (I)</th>
<th>ROUTINE (R)</th>
<th>MAJOR (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater Management Ponds &amp; BMP's (outside of VDOT)</td>
<td>VDOT</td>
<td>VDOT</td>
<td>VDOT</td>
</tr>
<tr>
<td>Stormwater Management Ponds &amp; BMP's (inside VDOT)</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>Snow &amp; Ice Removal</td>
<td></td>
<td>VDOT</td>
<td></td>
</tr>
<tr>
<td>ITS - Managed Lanes</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
</tbody>
</table>

## TTMS - HOT

<p>| (1) Equipment | D | D | D |
| (2) Toll Gantries | D | D | D |
| (3) ITS Poles | D | D | D |
| (4) ITS Poles - Shared | D | D | D |
| Median Mowing &amp; Median Maintenance | D | D | D |
| Lighting - HOT Ramps | D | D | D |
| Lighting - Mainline | VDOT | VDOT | VDOT |
| Lighting - Median | D | D | D |
| Utility Marking - HOT &amp; GP | D | | |
| Roadside Safety Treatment - HOT | D | D | D |
| Roadside Safety Treatment - Shared | Shared | Shared | Shared |
| Roadside Safety Treatment - VDOT | VDOT | VDOT | VDOT |
| Sound Walls - HOT Ramps | D | D | D |
| Sound Walls - GP | | VDOT | |
| Maintenance Yard | | D | |</p>
<table>
<thead>
<tr>
<th>OPERATIONS</th>
<th>66 Express Lanes Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Service Patrol</td>
<td>D</td>
</tr>
<tr>
<td>Ops Center</td>
<td>D</td>
</tr>
<tr>
<td>Incident Management</td>
<td>D</td>
</tr>
<tr>
<td>Traffic Management</td>
<td>D</td>
</tr>
<tr>
<td>Traffic Signals</td>
<td>VDOT</td>
</tr>
<tr>
<td>Back Office Support</td>
<td>D</td>
</tr>
<tr>
<td>Center-to-Center Connectivity</td>
<td>Shared</td>
</tr>
<tr>
<td>Redundancy Ring</td>
<td>D</td>
</tr>
<tr>
<td>Emergency Evacuation - Managed</td>
<td>VDOT</td>
</tr>
<tr>
<td>Emergency Evacuation - Operations</td>
<td>D</td>
</tr>
<tr>
<td>Enhancement</td>
<td>D</td>
</tr>
<tr>
<td>Operating Speed Performance Standard (OSPS)</td>
<td>D (65/45)</td>
</tr>
<tr>
<td>GP Lane Management - Operating Shoulder Lane</td>
<td>VDOT</td>
</tr>
<tr>
<td>Tolling System Requirements</td>
<td>D</td>
</tr>
<tr>
<td>Express Lanes Enforcement by VSP</td>
<td>D</td>
</tr>
<tr>
<td>Express Lanes Incident Management by VSP</td>
<td>D</td>
</tr>
<tr>
<td>Park &amp; Ride Lots (O&amp;M)</td>
<td>VDOT</td>
</tr>
<tr>
<td>E-Zpass Logo &amp; Purple Pavement Marking</td>
<td>D</td>
</tr>
<tr>
<td><strong>HOT OPS</strong></td>
<td></td>
</tr>
<tr>
<td>Customer Service</td>
<td>D</td>
</tr>
<tr>
<td>Future Enhancements</td>
<td>D</td>
</tr>
</tbody>
</table>

*D - Developer*
TURNOVER PLAN

1. INTRODUCTION
This Turnover Plan outlines the framework of the operational relationship between the Developer and the Department and forms the basis for the development of more specific protocols and turnover of assets prior to Service Commencement.

OPERATIONAL MANAGEMENT
The Developer and the Department shall establish a management committee to coordinate operations of the Express Lanes and the General Purpose Lanes in accordance with the terms of the Agreement. The senior members of the committee shall include the Northern Virginia District Administrator and the Developer's General Manager. The committee’s operational management shall be administered by the Department's Northern Region Operations Director and the Developer's Operations Manager. Day-to-day coordination between the Developer and the Department as required by the Agreement shall be coordinated by Department's Northern Region Traffic Operations Manager (based in the Department's Traffic Management Center) and the Developer’s Senior Control Room Officer.

2. BOUNDARIES
The boundaries defined in this Turnover plan include, but are not limited to the entire 25-mile stretch of I-66, from U.S. Route 15 in Haymarket to I-495/Capital Beltway.

3. TRANSITION
4.1. List of VDOT TTMS Assets to be Transferred
The Developer shall conduct an inventory of all assets to be transferred and submit to Department for review. These Assets include but not limited to;

- HOV Access Dynamic Message Signs (DMS)
- Roadway Lighting
4.2. **Department Testing During Construction**

Testing during design and construction will be in accordance with the Technical Requirements.

4.3. **Developer Testing**

Testing during design and construction will be in accordance with the Technical Requirements.

4.3.1. Testing and Integration Procedures

The detailed procedures testing and integration of the Tolling and Traffic Management Systems (TTMS) software's ability to communicate with and control existing HOV Access DMS and new Express Lanes DMS shall be submitted by Developer for Department’s review and approval. These procedures shall include maintenance of traffic plans (MOT) that must be in place to prevent access to the reversible roadway while testing is underway. This will include what messages can be displayed on the DMS as part of the testing that will not create an unsafe situation to the motorists. It is anticipated that the majority of the testing will need to be done at night as agreed upon between Department and the Developer regarding allowable road closures.

4.3.2. Final Cut Over

The permanent transition from Department to Developer shall occur on completion of full integration and testing of the Developer’s ETTM System.

4.3.3. Ultimate System Interfaces
The ultimate interface between the Developer's ETTM System software and Department's ATMS platform will be through a center-to-center interface between the two systems. Department and the Developer will develop the operating procedures and protocols for managing the 1-66 Express Lanes prior to Service Commencement. These operating procedures will then be used to define the interface requirements between the ETTM System software and Department's ATMS platform.
4.4. **Interfaces**

The notification procedure and timeline for providing such notifications for project related impacts to existing Departmental equipment shall be as identified in Notice of Impact Process in Section 8 of this Turnover Plan.

4.4.1. **Electrical Power Distribution**

1. The existing Department power feeds all existing ITS equipment, overhead signs, lighting and traffic signals within the project footprint. The existing lighting and ITS systems will be maintained by the Department until the Developer begins impacting assets per the Technical Requirements Section 3.17.L.

2. Temporary power outages for construction purposes shall be allowed as follows:
   a. **Existing Gates/Gate Groups** - The Developer shall be allowed to de-energize gates for a period no longer than seven (7) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction conflicts with existing gates, adding new gates to an existing gate group or providing new power connections from the proposed Developer duct bank. The Developer shall not cause more than two gate group outages at a time. In the event that outages caused by the Developer require personnel to manually operate gates/gate groups, the Developer shall provide qualified personnel to manually operate the gates/gate groups under the direction of VDOT personnel in a manner consistent with the Departments normal operations. Gate controllers and the associated gate DMS are interlocked and one cannot operate without the other. In the event a gate group is taken offline and the associated DMS cannot display a message, the Developer shall supplement the message of with a portable DMS. It shall be the responsibility of the Developer to work with the Department to ensure that the message on the portable DMS reflects the accurate state of the gates (i.e. ramp open/closed, HOV restricted or open to traffic). Any delay to opening or closing gates due to de-energized gates shall not be charged to the Department MOT time bank.
b. **HOV Access DMS** - The Developer shall be allowed to de-energize DMS for a period no longer than seven (7) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction conflicts, upgrading DMS or providing new power connections from the proposed Developer duct bank. Any DMS currently used in conjunction with gate operations shall be supplemented with a portable DMS. It shall be the responsibility of the Developer to work with the Department to ensure that the message on the portable DMS reflects the accurate state of the gates (i.e. ramp open/closed, HOV restricted or open to traffic). It is understood that gate controllers and the associated DMS are interlocked and one cannot work without the other. In the event a gate associated DMS is taken offline, the Developer shall be responsible for manually operating the associated gate group gates under the direction of VDOT personnel in a manner consistent with the Departments normal operations. Removal of a gate associated DMS and by interlock, the associated gate group; shall be applied to the stipulation that the Developer cannot cause more than two gate group outages at a time.

c. **DMS for Travel Advisory** - The Developer shall be allowed to de-energize DMS for a period no longer than thirty (30) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction conflicts or providing new power connection from the proposed Developer duct bank. A portable DMS shall be provided by Developer for Department’s use and operation in replacement of de-energized DMS. This portable DMS shall be integrated into Department’s ATMS and maintained by Developer.

d. **Lighting** - The Developer shall be allowed to de-energize overhead roadway lighting for a period no longer than thirty (30) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction conflicts, adding additional lighting to an existing circuit, upgrading service panel, or modifying existing power metering. This limitation shall apply to both HOV lanes, GP lanes, and any other adjacent
ramps and roads being impacted by construction. It is understood that the Developer shall isolate outages to minimize the number of lights offline and will not cause there to be outages of both lighting and overhead sign lighting in the same vicinity.

f. **CCTV/Traffic Detection** - The Developer shall be allowed to de-energize CCTV cameras/traffic detection equipment for a period of no longer than ten (10) days, in accordance with the notification process (or as mutually agreed), for purposes of relocating or replacing-in-kind. For CCTV outages lasting longer than twenty-four (24) hours, the Developer shall provide a temporary portable camera for use by the Department. For instances where CCTV cameras/traffic detection equipment is being replaced and moved to a new location, the Developer shall wait until replacement infrastructure or equipment has been installed and accepted by the Department before de-energizing and removing the existing equipment.

g. **Signing** - The Developer shall be allowed to de-energize overhead sign lighting for a period of no longer than seven (7) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction impacts, upgrading sign panels, upgrading service panel, or modifying existing panel metering. The Developer shall not cause there to be outages of both lighting and overhead sign lighting in the same vicinity.

3. The Developer shall be responsible for paying for the power of any equipment transitioned to a Developer service meter.

4. The Department shall coordinate with the Developer for access to the Department’s portion of the power distribution system when that portion falls within the Developer's work zone during construction or within the EXPRESS Lanes following transition. The Developer and the Department shall mutually agree upon response levels that consider safe access to work zones, lane closures, and the operational impact to the affected systems.

### 4.4.2. Communication Systems

1. The Developer shall minimize impact to the existing Departmental communications
infrastructure. In locations where existing fiber-optics are relocated or replaced, the new infrastructure shall be in place and ready for connection prior to disconnecting existing infrastructure and shall be coordinated with the Department at least ten (10) days prior to the disconnection of existing fiber-optics in accordance with the notification process (or as mutually agreed). The existing fully redundant fiber optic network shall not be compromised for more than eight (8) hours in order to complete splicing exercises.

2. The Developer shall be responsible for maintaining communications to all existing to remain Department equipment as well as any upgraded Developer equipment that replaces existing equipment currently used to operate the existing HOV facility. Temporary communications outages for construction purposes shall be allowed as outlined:

   a. **Existing Gates/Gate Groups** – The Developer shall be allowed to disconnect gates for a period no longer than seven (7) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction conflicts, adding new gates to an existing gate group or providing new fiber-optic connections from the proposed Developer duct bank. The Developer shall not cause more than two gate group outages at a time. In the event that outages caused by the Developer require personnel to manually operate gates/gate groups, the Developer shall provide qualified personnel to manually operate the gates/gate groups under the direction of VDOT personnel in a manner consistent with the Departments normal operations. It is understood that gate controllers and the associated gate DMS are interlocked and one cannot operate without the other. In the event a gate group is taken offline and the associated DMS cannot display a message, the Developer shall supplement the message of with a portable DMS. It will be the responsibility of the Developer to work with the Department to ensure that the message on the DMS reflects the accurate state of the gates (i.e. ramp open/closed, HOV
restricted or open to traffic). Any delay to opening or closing gates due to de-energized gates shall not be charged to the Department MOT time bank.

b. **Replacement/ Relocation of Existing Gates/Gate Groups** – The Developer shall not be allowed to disconnect existing gates or gate groups for purposes of replacing/relocating gates without prior approval by the Department. The Developer shall prepare and submit to the Department for review and approval, a plan for maintaining access and safe operation of ramps during period gates are inoperative prior to requesting gate outage.

c. **DMS for Gate Operations**- The Developer shall be allowed to disconnect DMS boards for a period no longer than seven (7) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction conflicts, upgrading DMS or providing new fiber-optic connections from the proposed Developer duct bank. Any DMS currently used in conjunction with gate operations shall be supplemented with a portable DMS. It shall be the responsibility of the Developer to work with the Department to ensure that the message on the DMS reflects the accurate state of the gates (i.e. ramp open/closed, HOV restricted or open to traffic). It is understood that gate controllers and the associated DMS are interlocked and one cannot work without the other. In the event a gate associated DMS is taken offline, the Developer shall be responsible for manually operating the associated gate group gates under the direction of VDOT personnel in a manner consistent with the Departments normal operations. Removal of a gate associated DMS and by interlock, the associated gate group; shall be applied to the stipulation that the Developer cannot cause more than two gate group outages at a time.

d. **DMS for Traveler Advisory** – The Developer shall be allowed
to de-energize DMS for a period no longer than thirty (30) days, in accordance with the notification process (or as mutually agreed), for purposes of mitigating construction conflicts or providing new fiber-optic connections from the proposed Developer duct bank. A portable DMS shall be provided by Developer for Department’s use and operation in replacement of de-energized DMS. This portable DMS shall be integrated into Department’s ATMS and maintained by Developer.

c. CCTV/Traffic Detection – The Developer shall be allowed to disconnect CCTV cameras/traffic detection equipment for a period of no longer than ten (10) days, in accordance with the notification process (or as mutually agreed), for purposes of relocating or replacing-in-kind. For CCTV outages lasting longer than twenty-four (24) hours, the Developer shall provide a temporary portable camera for use by the Department. For instances where CCTV cameras/traffic detection equipment is being replaced and moved to a new location, the Developer shall wait until replacement infrastructure or equipment has been installed and accepted by the Department before disconnecting and removing the existing equipment.

3. The Department shall coordinate with the Developer for access to the Department’s communications system when that portion falls within the Developer's work zone during construction or within the EXPRESS Lanes following turnover. The Developer and the Department shall mutually agree upon response levels that consider safe access to work zones, lane closures, and the operational impact to the affected systems.

4. 3rd Party Cable – Under a Memorandum of Agreement between the Department, the United States Army Corps of Engineers and other 3rd Parties, the Department currently provides conduit infrastructure to the Army Corps of Engineers (COE) and other 3rd Parties for communications cable. When requested, the Department will assist in coordination with the COE and other 3rd Parties for the relocation
of conduit and cables impacted by construction of the project. The Developer shall provide access to the work zones as needed to the Department, the 3rd Party cable providers, and their contractors for installation or relocation of communications cable within Developer installed duct bank. Coordination and scheduling of access shall be mutually agreed upon by the Department, 3rd Parties, and the Developer.

4.4.1. **Existing Departmental Equipment**

Department equipment associated with HOV lane operations will be removed from the project and delivered to the Department as identified in the Design Documentation. Existing assets either being removed or relocated by the project are to be inspected and their condition recorded by the Developer prior to disconnection. Any equipment identified as defective shall be brought to the attention of the Department prior to deactivation.

4.4.2. **Snow Removal During Construction**

The Department will perform snow and ice removal on all travel ways within the project according to Section 3.17.M of the Technical Requirements.
4. MAINTENANCE DURING CONSTRUCTION

A. The Developer shall prosecute the Work so as to avoid obstructions to traffic to the greatest extent practicable. The Developer shall provide for the safety and convenience of the general public and residents along the roadway and the protection of persons and property.

B. The Developer shall maintain the Project from the beginning of construction operations until Final Acceptance.

C. The Developer shall keep the portions of the road being used by the public free from irregularities and obstructions that could present a hazard or annoyance to traffic.

D. The Developer shall maintain all Existing Department Transportation Management System devices in the General Purpose Lanes and HOV Lanes operational during construction unless otherwise approved by the Department. These Existing Department Transportation Management System devices include, but are not limited to: (i) closed-circuit television (CCTV) cameras; (ii) dynamic message signs (DMS); (iii) ramp metering; (iv) detection; (v) mile markers; (vi) the reversible gate system; and (vii) weather stations, (viii) Lane Control Signals (LCS), (ix) Shoulder Lane Monitoring System (SLMS) and (x) associated cabinets and infrastructure.

E. Existing Traffic Management Systems in the facility shall remain in place during construction activities unless written approval is provided by the Department. Replacement system shall be installed, operational, integrated, and collecting data before taking existing detection out of service. Once the Existing Traffic Management Systems are relocated/replaced, the responsibilities will be handled per the Turnover Plan (Attachment ZZ).

F. The Department will operate the gates and maintain assets (components) necessary to operate gates for the existing HOV facility for the duration of the Construction Project. Once the gates are impacted, relocated/replaced, the gate maintenance responsibilities will be handled per the Turnover Plan (Attachment ZZ).

G. Once the Existing Traffic Management Systems are impacted, relocated/replaced, the Developer shall be responsible for that System until its Final Acceptance (see Attachment ZZ for more Turnover Plan responsibilities).

H. The Developer shall be responsible for any impact to the existing ITS infrastructure within the construction limits. Prompt response is required to any damage caused by the Developer and in the event the repair isn’t completed 2 hours prior to the next traffic peak, VDOT will use its maintenance Contractor to restore critical systems and charge the Developer. The cost of repair work performed, plus twenty-
five percent (25%) for supervisory and administrative personnel, will be deducted from monies due to the Developer for the Project.

I. The Developer shall maintain existing ITS devices or replace with portable unit to provide similar functionality and coverage for the duration of construction as approved by the Department.

1. Portable CCTV shall provide uninterrupted view of the roadway with overlapping coverage.

2. Portable DMS placement and spacing shall provide adequate coverage to convey messages to motorist.

3. Both portable CCTV and DMS shall be integrated into VDOT operation center for similar functionality and coverage.

J. The Department shall maintain all existing lighting within the Project. If the highways lights have to be taken out of service within Project, these lights must be returned to service within 30 days. At no time shall the lights within Project be put out of service, unless mutually agreed between the Parties for the purposes of cutover, testing or integration into the ETTMS or VDOT ATMS at MPSTOC. The existing lighting and ITS systems will be maintained by the Department until the Developer begins impacting these assets, at which time impacted lighting and impacted ITS assets within the Project limits will become the Developer’s responsibility.

5. POST CONSTRUCTION

5.1 Traffic Control Devices to be Retained and Operated by the Department
The Department shall retain ownership of all existing ITS components with the exception of access gates and any DMS tied to the access gates. Departmental ownership include, existing DMS not associated with the gates, CCTV cameras, traffic detection equipment, ramp meters, weather stations, traffic signals, overhead lighting not specifically dedicated to the EXPRESS Lanes, and overhead Signing not related to
EXPRESS Lanes.

5.2 Traffic Control Devices to be operated by the Developer
The Developer shall maintain and operate all ITS equipment dedicated to operation of the EXPRESS Lanes including but not limited to, access gates, DMS, CCTV cameras, AID cameras, overhead lighting specifically dedicated to the EXPRESS Lanes, and overhead signing specifically dedicated to EXPRESS Lanes in accordance with the Agreement.

5.3 Department/Other Agency Assets
The existing Department communications duct bank to remain within the EXPRESS Lanes O&M Boundaries will be maintained by the Department. This includes manholes, conduit, communications cabling, and associated infrastructure.
6. MAINTENANCE, REPAIR AND REPLACEMENT ACTIVITIES

A. The Department equipment, facilities and operations shall not be impacted by the Developer without prior approval.

B. The Developer equipment facilities and operations shall not be impacted by the Department without prior approval.

C. The Developer and the Department shall agree to protocols addressing the following:

1. Department access to the EXPRESS Lanes to repair and maintain structures which span both the EXPRESS Lanes and the GP Lanes and other assets on the EXPRESS Lanes not maintained by the Developer.

2. Developer access to the General Purpose Lanes as may be required to maintain the EXPRESS Lanes and associated areas.

D. The Department shall have a right of access to the EXPRESS Lanes in order to carry out emergency repairs to address safety hazards on structures spanning both the EXPRESS Lanes and the GP Lanes, subject to complying with the Developers work practices and coordination with the Developer to facilitate and maintain safe and efficient operations or implementation of appropriate traffic management on the EXPRESS Lanes.

E. The Developer shall have the right to access its ETTM Equipment, ETTM facilities, and signage mounted on the Department's gantries, bridges, and other structures, subject to complying with the Department's work practices and coordinating such work with the Department to facilitate and maintain safe and efficient operations or implementation of appropriate traffic management on the GP Lanes.
7. ASSET MAINTENANCE SCHEDULING

The Department and the Developer shall agree and document protocols prior to Service Commencement that provide for the following:

A. Coordination of Major Maintenance activities to reduce the impact of the such work on traffic
B. Sharing of asset condition data to facilitate coordination of activities and to promote the best life cycle maintenance decision-making for shared assets
C. Coordination of relevant responsibilities as outlined in the Technical Requirements.
8. NOTIFICATION OF IMPACT (NOI) TO VDOT ASSETS

9.1. INTRODUCTION

As part of the overall construction of the project, a process for controlling the work that will impact Department traffic management system assets is required. A significant portion of this work will depend on field conditions and the state of the system, neither of which can be determined during the design phase. The provisions of this Turnover Plan will provide general requirements and processes for control of the work while additional information and specific staging of construction operations are developed. The provisions of this Turnover Plan shall supplement the construction plans and special provisions. Where inconsistencies exist, the construction plans and special provisions shall take precedence.

9.2. GENERAL REQUIREMENTS

A. This NOI process shall apply to those Department traffic management system components (referred to herein as "the assets") identified in Section 4.1 of the Turnover Plan.

B. The work shall be governed by the general requirement that the impacted Department assets shall be maintained or returned to a condition equal or better than the condition at the start of construction unless otherwise indicated in the plans or approved by the Department. This shall include both the functionality and maintainability of the assets.

C. While this NOI process is intended to provide specific controls on work impacting Department assets, a number of factors both within and beyond the control of the Contractor may impact the work. Specific elements of the proposed work plan such as schedule or means and methods of completing the work may require revisions that are not consistent with these provisions in order to safely and effectively complete the work. As such, these provisions should be treated as a typical application and general framework for control of the work. When deviations are required due to changing field conditions, no reasonable
request by the Contractor or the Department for changes may be denied without good cause.

D. Plans related to existing Department assets have been prepared using a combination of original design drawings, as-built drawings, supplemental information provided by the Department, and site visits. This NOI process recognizes that complete documentation of the existing Department system is unavailable, the ability to field verify conditions as part of design is limited, and that conditions can change between the time of design and the time of construction. As part of the design development process, it has been agreed that certain information and decisions will be made during construction at such time the elements of the system can be verified as to precise location and operational status. The Department, the Contractor, and the Engineer shall work together to identify and coordinate those items that could not be addressed during design.

E. The Department and the Contractor shall regularly work together to coordinate work that may impact Department assets. This coordination shall include, but not be limited to Department staff and representatives attending regularly scheduled construction coordination meetings held by the Contractor.

F. "Impact" is defined as any work that will interrupt the normal operation of the Department's assets.

G. No work that impacts Department assets identified in the plans shall commence without prior notification to the Department per the provisions of this NOI process.

H. The Contractor shall take all measures to protect Department assets during the course of the work and maintain operation of the equipment. The means and methods for protecting Department assets shall be determined on a case-by-case basis appropriate to the scope of the work.
I. The Department shall make staff available upon request to assist the Contractor in identifying existing system conflicts and operations; conducting asset inspections; carrying out maintenance transfers; and testing and acceptance of completed work. The availability of Department staff shall be coordinated per the requirements of this NOI process. When unexpected conditions arise that requires the input of the Department, the Department shall make staff or authorized representatives available within forty-eight (48) hours of Department receipt of the Contractor's written request.

J. The provisions of this NOI process shall apply to all work impacting Department assets shown on the plans as well as to any asset impacted during the course of construction, but not identified on the plans. When assets not identified on the plans are impacted, the Contractor shall follow the typical construction processes (RFI, FDC, etc.) to identify and resolve the impact within the bounds of this Turnover Plan.

K. The Department shall notify the Contractor of any impacts to operations that may be attributable to work at other sites that were not anticipated in the original Notification. The Contractor and the Department shall coordinate as necessary for unanticipated impacts to operations.

L. Unless specifically described on the plans or special provisions or directed by the Department in writing, means and methods for completing the work related to impacted assets shall be at the discretion of the Contractor. Means and methods shall be consistent with the requirements of all contract documents, the Standards and Specifications, and Good Industry Practice.

M. With the exception of the Notification Form, written correspondence described in this addendum may include e-mail to those parties listed as contacts in this NOI process or the Notification Form. Written correspondence shall reference the relevant Notification ID number and phase of the process.
I-66 EXPRESS LANES TURNOVER PLAN

N. Responsibility for maintenance of impacted assets shall transfer to the Contractor per the approved schedule for start of the work unless otherwise noted on the Notification Form. Responsibility for maintenance will transfer back to the Department upon final acceptance of the work as detailed in the Notification process. During the period when maintenance of Department assets has been transferred to the Contractor, events outside the control of the Contractor that impact the condition of the assets shall be addressed by the Department including the warranty claims and at-fault third parties. The Department shall be notified immediately of any damage to existing assets.

O. The Contractor shall be required to submit an Amended NOI if work described in initial notification is performed at least 48 hours after date stated in the NOI form.

P. The Contractor shall document all changes to VDOT infrastructure as a result of work in the NOI in the project As-Built plans according to the As-Built plans Technical Requirements. The As-Built plan will be required for all impacted VDOT assets even if such asset is not shown on project design plans.

9.3. Notification Procedure
## I-66 EXPRESS LANES TURNOVER PLAN

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 Days Prior to Work Start</td>
<td><strong>1st Notification</strong>&lt;br&gt;The Contractor shall submit a complete <a href="#">Notification of Impact to VDOT TMS Asset form</a> (see Attachment A) to the VDOT Engineer. The form shall be provided a minimum of 21 calendar days prior to the proposed start of the work impacting the asset.</td>
</tr>
<tr>
<td>18 Days Prior to Work Start</td>
<td><strong>Notification Review</strong>&lt;br&gt;The VDOT Engineer shall review the form for conformance with the plans and contract documents. Within 3 days of receipt, the VDOT Engineer shall respond to the submitted form. The VDOT Engineer shall provide one of three responses:&lt;br&gt;&lt;br&gt;  * <strong>Approved</strong> – The form is found to be in conformance with all documented requirements and is approved as submitted. The process moves to the Inspection phase.&lt;br&gt;  * <strong>Revise and Resubmit</strong> – The form is conditionally approved with minor corrections or clarifications required as noted in the VDOT Engineer’s response. The process moves to the Inspection phase and the Contractor revises the Form as needed for resubmittal prior to the 2nd Notification.&lt;br&gt;  * <strong>Rejected</strong> – The form has significant elements that are not in conformance with the plans or other contract documents. The VDOT Engineer notes the specific elements of the form not in conformance and cites the controlling contract requirements not met. The Contractor shall submit the form again beginning at the 1st Notification.</td>
</tr>
<tr>
<td>Schedule</td>
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<td></td>
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<tr>
<td><strong>Milestone</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>14 Days Prior to Work Start</td>
<td>Following approval or conditional approval of the Notification Form, the VDOT Engineer and the Contractor shall conduct a joint field meeting at the asset to be impacted. VDOT shall provide the Contractor access to the equipment and assets to be impacted for general inspection and demonstrate the operational status of the equipment. If the proposed impact is not limited to a single site (e.g., impact to power or communications connecting multiple devices), VDOT shall also demonstrate operation at a remote location to establish the existing condition of all elements to be impacted by the work. The Contractor shall document the condition of the site through field notes and photos as needed. The Contractor shall provide written notification to the VDOT Engineer of any site deficiencies within 24 hours of the inspection. VDOT shall assess deficiencies and provide a response to the Contractor within 48 hours of receipt of the Contractor’s report. The response shall include one of the following:</td>
</tr>
<tr>
<td>Inspection</td>
<td><strong>VDOT Repair/Replace</strong> – VDOT shall repair or replace deficient equipment prior to the start of the work. A second inspection shall be scheduled to document the existing condition of the assets prior to the start of the work.</td>
</tr>
<tr>
<td></td>
<td><strong>Proceed per Plan</strong> – VDOT shall instruct the Contractor to carry out the work as shown in the plans and proposed on the Notification Form accepting the condition of the assets as is. The Contractor shall complete the work as required by the Contract documents and return the system to its existing condition at the time of the inspection accounting for the deficiencies of the system noted in their report. For example, VDOT may instruct the Contractor to relocate a camera as called for in the plans even if the camera is inoperative at the time of inspection. The Contractor will relocate the camera noting that it was inoperative prior to start and maintaining its current condition.</td>
</tr>
<tr>
<td></td>
<td><strong>Request for Change</strong> – VDOT shall request a change to the plans to address the deficient conditions. This may include requesting the Contractor to carry out repair or replacement or removal and disposal/salvage of the impacted assets. This process shall follow the typical process for changes to the contract accounting for any impacts to schedule and scope.</td>
</tr>
</tbody>
</table>
## I-66 EXPRESS LANES TURNOVER PLAN

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Milestone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 Days Prior to Work Start</td>
<td>The Contractor shall provide a 2(^{nd}) Notification to the Department for the start of the work. If the Notification Form was required to be revised and resubmitted as part of a conditional approval, the Contractor shall provide the revised form with this notification. The Contractor may propose changes to the original request as part of the 2(^{nd}) Notification. This may include minor changes to the schedule of the work or revisions to the construction work plan. If no updates to the 1(^{st}) Notification are required, the Contractor shall provide only a written reaffirmation of the original notification. The VDOT Engineer shall approve or reject the updated form within 48 hours of its receipt and provide a written response per the requirements of the 1(^{st}) Notification.</td>
</tr>
<tr>
<td></td>
<td>24 Hours Prior to Work Start</td>
<td>The Contractor shall provide written confirmation of the planned work a minimum of 24 hours prior to the scheduled start of the work. Minor deviations of the written notification form shall be allowed (e.g., minor changes in the specific start time; updated contact information, etc.)</td>
</tr>
<tr>
<td></td>
<td>15 Minutes Prior to Work Start</td>
<td>The Contractor shall provide final notification 15 minutes prior to the start of the work if required by the Department as noted on the approved Notification Form. This notification shall be made for assets identified by the Department as being of significant operational value. An asset of “significant operational value” is one which must remain in operation until an unscheduled incident or condition is resolved. The Department shall identify these assets on the Notification Form. The Contractor shall provide this final notification to the PSTOC or other Department staff as identified by the VDOT Engineer in the Notification Process.</td>
</tr>
</tbody>
</table>
I-66 EXPRESS LANES TURNOVER PLAN

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<tr>
<th>Schedule</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Milestone</td>
<td>Description</td>
</tr>
<tr>
<td>Start of Work</td>
<td>Work</td>
<td>The Contractor shall carry out the work in accordance with the Contract documents and approved Notification Form. The Contractor should provide daily updates to the VDOT Engineer on the progress of the work or as required on the Notification Form. The Contractor shall notify the VDOT Engineer of any events or issues that arise during the course of the work that may impact the scheduled completion of the work. The Contractor shall provide a plan for recovery of schedule as needed.</td>
</tr>
<tr>
<td>Completion of Work</td>
<td>Notification of Completion</td>
<td>The Contractor shall notify the VDOT Engineer immediately upon completing the work. The VDOT Engineer shall verify the operation of the asset as needed to ensure the basic scope of the work is completed. The VDOT Engineer shall notify the Contractor immediately of any impact to normal operation of the asset following completion of the work.</td>
</tr>
<tr>
<td>48 Hours After Completion of Work</td>
<td>Return of Maintenance</td>
<td>The Contractor and the Department shall conduct a return of maintenance inspection within 48 hours of completion of the work. The Department shall inspect the work on site and provide a written punch list or acceptance as appropriate. Maintenance of the asset shall transfer back to the Department upon completion of any punch list items and issuance of the written acceptance. Written acceptance shall be provided no less than 48 hours following the final inspection.</td>
</tr>
</tbody>
</table>
Attachment A

VDOT Traffic Management System
Assets Notification of Impact

ID# __________________ (to be completed by VDOT)

Date Submitted: ____________________

Status:

For VDOT use only

Asset Information:

Type: ____________________
Milepost: ________________ Station and Offset: ________________

Asset ID (if known): ________________ Plan Package ID: ________________

End Day/Time: ________________

Description:

Type/Description of Work:

Schedule:

Start Day/Time: ________________

Interim Milestones:
Request for Waiver:

Impact Mitigation:

Contractor Contact Information:

Name: __________________________ E-mail: ____________________

Mobile Phone:

Actions Required by VDOT:

To be completed by Contractor

Information to Contractor:

To be completed by VDOT

Documents Attached:
# Instructions

<table>
<thead>
<tr>
<th>Field</th>
<th>Responsibility for data entry and instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Submitted</td>
<td>Contractor. Enter the date the form is submitted. The form will be submitted electronically by e-mail. E-mail completed Forms to [VDOT Engineer - TSO). The date should reflect the date the form is sent via e-mail. Forms sent after 3:00 p.m. shall include the next business day as the date submitted.</td>
</tr>
<tr>
<td>Notification #</td>
<td>VDOT Engineer. Enter the appropriate notification number upon receipt. The VDOT Engineer shall acknowledge receipt and provide the Notification ID to the contractor for tracking purposes and use in other correspondence.</td>
</tr>
<tr>
<td>Approval Status</td>
<td>VDOT Engineer. Following initial review indicate status and provide notes and comments as appropriate. Comments shall include specific items of the Form that are non-conforming with references to the appropriate plan or contract documents that control the work. Upon Approval, the Form will be signed and scanned with copies to the Contractor. Revised and Resubmitted Forms will include the original comments. Upon final approval, Revised and Resubmit shall be changed to Approved and signed as noted above. Rejected Forms will be closed and upon resubmittal, a new submittal date and ID number will be entered.</td>
</tr>
<tr>
<td>Asset Information / Type</td>
<td>Contractor. Enter the type of asset being impacted. E.g. Camera, gate, gate DMS, Advisory DMS, fiber, etc.</td>
</tr>
<tr>
<td>Asset Information / Location (General)</td>
<td>Contractor. Enter a description. E.g. Outside northbound GP lanes, just north of Route 29 Interchange.</td>
</tr>
<tr>
<td>Asset Information / Location (Sta./Off)</td>
<td>Contractor. Enter the station and offset of the asset (or station range) from the plans.</td>
</tr>
<tr>
<td>Asset Information / Location (Asset ID)</td>
<td>Contractor / VDOT Engineer. Enter the cabinet ID and/or device ID of the asset, if known. (E.g. Cabinet B 151, VMS 0990, etc.). The Contractor shall enter this information if shown on the plans. Otherwise, the VDOT Engineer shall enter if available.</td>
</tr>
<tr>
<td>Type of Work</td>
<td>Contractor. Indicate the type of work to be completed. E.g. relocation/reconnection of power, relocation/reconnection of communications, relocation of device, HOV Loop impact, etc. Drop down menu and free form field will be provided.</td>
</tr>
<tr>
<td>Field</td>
<td>Responsibility for data entry and instructions</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Description of Work</td>
<td>Contractor. Provide brief description on the work to be performed including any pertinent means and methods. If the work is sufficiently detailed on the plans, Standards, and special provisions, indicate &quot;Per Plan&quot;.</td>
</tr>
<tr>
<td>Reference Documents</td>
<td>Contractor. Enter Plan Package (e.g. 2NRDY02), sheet number, and special provision controlling the work. Provide other references or attach mark-ups that detail the work as needed.</td>
</tr>
<tr>
<td>Mitigation of Operational Impacts</td>
<td>Contractor. Enter a description of the work to be done to mitigate impact to operational performance as required by the Turnover Plan (e.g. Temporary CCTV camera to be provided, temporary detection to be provided, manual operation of gates, etc.). Provide as much detail as possible in order to coordinate and integrate temporary operations with the Department's normal operations (device configuration parameters, etc.). Indicate pending information for ongoing coordination as appropriate.</td>
</tr>
<tr>
<td>Schedule of Work</td>
<td>Contractor. Enter proposed date and time for start of work/impact. Enter duration of time for the work to be substantially complete and normal operation returned.</td>
</tr>
<tr>
<td>Request for Waiver</td>
<td>Contractor. Enter any deviations from the requirements of the Turnover Plan and provide justification for the request. (e.g. request for longer duration outage, request for waiver to temporary detection/camera requirement, etc.)</td>
</tr>
<tr>
<td>Contractor Contact Information</td>
<td>Contractor. Enter phone and e-mail contact information. Enter primary contact information for person responsible for planning and directing the work. Enter secondary contact information as needed. Enter Field Contact information for the person that will be on-site at the time of the work with the authority to direct the work in the field as it is being done. Mobile number must be provided for Field Contact.</td>
</tr>
<tr>
<td>VDOT Contact Information</td>
<td>VDOT Engineer. Enter phone and e-mail contact information. Enter primary contact information for person responsible for coordinating the work and authority to approve work. Enter Secondary Contact information as needed. Enter Field Contact information for the person that will be on-site at the time of the work or at a remote location with the authority to provide final approval to commence work if required.</td>
</tr>
<tr>
<td>Actions Required by VDOT</td>
<td>Contractor. Enter any actions required by VDOT or additional information needed from VDOT in order to plan or complete the work.</td>
</tr>
<tr>
<td>Information / Instructions to Contractor</td>
<td>VDOT Engineer. Provide the Contractor any additional information or instructions to plan and coordinate the work.</td>
</tr>
</tbody>
</table>