

EXECUTION VERSION

**I-95/395 HOV/HOT Lanes -
Fredericksburg Extension (“Fred Ex”) Project**

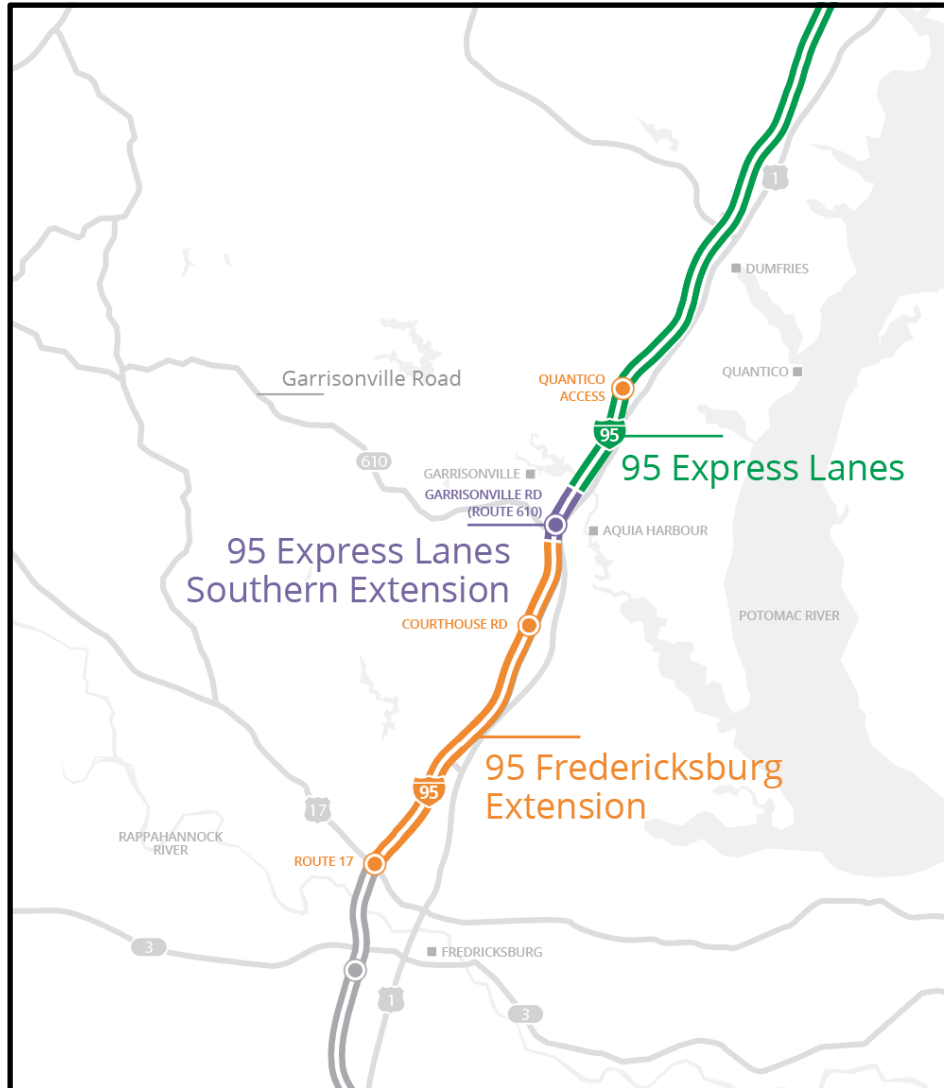
Exhibit C-5

Attachment 1.0

Fred Ex Project Scope of Work

FRED EX PROJECT SCOPE OF WORK

The 95 Express Lanes Fredericksburg Extension Project (“Fred Ex Project” or “Project”) is a 10-mile extension of the 95 Express Lanes in Stafford County, Virginia. As shown below, the Project will extend along Interstate 95 (I-95) from the current southern terminus of the 95 Express Lanes near Route 610 (Exit 143 - Garrisonville Road) in the north, to the vicinity of Route 17 (Exit 133 - Warrenton Road) in the south. I-95 currently operates with three general-purpose lanes in each direction along the Project corridor with a wide center median.



The primary objective of the Fred Ex Project is to extend the High Occupancy Toll (HOT) lanes (Express Lanes) on I-95 further south to provide additional capacity in the corridor, which will be available at no charge to HOV 3+ vehicles, and open to other permitted vehicles for a user fee (toll). The future Fred Ex Express Lanes will be subject to the same operating rules and regulations as the existing 95 Express Lanes, and when complete will operate together with the future 395

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Express Lanes as a single, fully-integrated 95 Express Lanes facility between the Potomac and Rappahannock Rivers.

The scope of the Project includes design and construction (or installation) of the following:

- Ten miles of new two-lane reversible Express Lanes (with full shoulders) from the existing southern terminus at Route 610 to Route 17 North (Exit 143 to Exit 133)
- Approximately 1.5 miles of an additional reversible Express Lane within the STE Corridor, as defined in the First ARCA
- New Express Lanes access points with adequate merge lengths as follows (at-grade Express Lanes access points other than those stated below are prohibited):
 - Southbound access points:
 - Flyover ramp at approximately mile marker 147
 - Flyover ramp at approximately mile marker 134.5 (Route 17)
 - At-grade access point at Route 17
 - Northbound access points:
 - At-grade access point at Route 17
 - Flyover ramp at approximately mile marker 135 (Route 17)
 - Flyover ramp at approximately mile marker 147.5
 - Reversible access point:
 - Direct connection to Courthouse Road
- Seven new bridge structures:
 - Express Lanes mainline across Potomac Creek
 - Northbound GP Lanes flyover entrance to Express Lanes north of Route 17
 - Northbound Express Lanes flyover exit to (General Purpose) GP Lanes and Russell Road
 - Southbound GP Lanes flyover entrance to Express Lanes south of Russell Road
 - Southbound Express Lanes flyover to GP Lanes and Route 17 at Southern Terminus
 - American Legion Road overpass (demolish and rebuild existing structure)
 - Truslow Road overpass (demolish and rebuild existing structure)
- Three new toll locations with toll gantries spanning the two reversible travel lanes and two shoulders at each location:
 - #1 in vicinity of Centerport Parkway north of Route 17 and south of Courthouse Road
 - #2 a short distance north of Courthouse Road and south of Garrisonville Road
 - #3 a short distance north of Garrisonville Road and south of Russell Road

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- Comprehensive Traffic Management System (TMS), including the following Intelligent Transportation Systems (ITS) components: dynamic message signs, microwave vehicle detectors, closed circuit television cameras, automated incident detectors, and supporting infrastructure (e.g., fiber optic communications network, power, controllers, cabinets, etc.) and associated computer systems and software updates;
- Electronic toll collection system including tolling equipment, supporting infrastructure (e.g., fiber optic communications network, power, controllers, cabinets, etc.) and associated computer systems and software updates;
- Signage and ITS enhancements on local approach roadways to I-95; and
- Construction of required noise barrier walls along the Project corridor (and connecting roadways, where applicable).

Roadway Alignment

The two lane reversible Express Lanes roadway shall be located in the median of I-95 and be constructed in accordance with the Agreement. The basis for the Fred Ex Express Lanes roadway alignment and profile has been determined after an analysis of numerous alternatives and coordination with Department and the Federal Highway Administration (FHWA). The Concessionaire shall provide a Fred Ex Express Lanes alignment design that is in accordance with the Agreement, including the Technical Requirements and the RFP Conceptual Plans. The Concessionaire shall accommodate a future fourth general purpose lane utilizing a typical section with a closed drainage system between Route 17 and American Legion Road Bridge, and a typical section with an open drainage system between American Legion Road Bridge and the connection to the current Southern Terminus Extension at Garrisonville Road (Route 610). Additional details on the roadway alignment and typical sections are provided in Appendix A.

Pavement

The Concessionaire shall be responsible for the design and construction of the paving elements including necessary geotechnical evaluations, geotechnical improvements, full depth asphalt pavement, and asphalt mill and overlay.

The anticipated locations for new pavement and mill and overlay areas are provided in the RFP Conceptual Plans. The Concessionaire shall be responsible for the final design and construction of all pavements in accordance with the Technical Requirements.

Bridges and Retaining Walls

The Design-Builder shall be responsible for the design and construction of various bridge and structural elements, including but not limited to:

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- Construction of seven new bridge structures:
 - Express Lanes mainline across Potomac Creek
 - Northbound GP Lanes flyover entrance to Express Lanes north of Route 17
 - Northbound Express Lanes flyover exit to GP Lanes and Russell Road
 - Southbound GP Lanes flyover entrance to Express Lanes south of Russell Road
 - Southbound Express Lanes flyover to GP Lanes and Route 17 at Southern Terminus
 - American Legion Road overpass (demolish and rebuild existing)
 - Truslow Road overpass (demolish and rebuild existing)
- Repair, reconstruction, and/or replacement of existing concrete barriers including construction of bridge pier protection; and
- Construction of new retaining walls and repair and/or modification of existing retaining walls.

Other Structures

The Concessionaire shall be responsible for the design, repairs and construction of various existing structures and new structures associated with the Fred Ex Project, including but not limited to:

- Repair, removal, and/or modification of existing overhead sign structures;
- Design and construction of proposed overhead sign structures and toll gantries;
- Design and construction of proposed light poles and miscellaneous lighting structures;
- Design and construction of sound barriers at approved locations;
- Design and construction of ITS, TMS and tolling roadside equipment structures; and
- Removal and disposal of existing structures as required.

Drainage and Storm Water Management

The Concessionaire shall be responsible for the design and construction of the integrated storm water conveyance system (including but not limited to culverts, junction boxes, storm sewers, erosion control, sediment control, outfall conveyance channels through the Fred Ex Project area) to meet all applicable hydraulic requirements, including current Federal Emergency Management Administration, FHWA, and Department guidelines and standards as described in the Department's Drainage Manual, Hydraulic Design Advisories and applicable Informational and Instructional Memoranda.

Part II-B criteria of the Virginia Stormwater Management Protection Regulations applies for water quality control of the Fred Ex Project. The Virginia Runoff Reduction Method shall be used for determining post construction phosphorous removal and nutrient credit requirements.

Signing and Pavement Markings

The Concessionaire shall be responsible for the design and construction of roadway signing for all new signs necessary for the safe operations of the Fred Ex Project. Concessionaire shall replace, reuse, relocate or modify all existing ground mounted and overhead mounted signs and sign structures that are affected by the Fred Ex Project. Any signing on adjacent roadways beyond the Fred Ex Project limits that require relocation, replacement, or modification due to the proposed design shall be the responsibility of Concessionaire.

Existing traffic structures that are impacted by the addition, removal or replacement of sign panels, Dynamic Message Signs, Variable Message Signs, including structures with signage that are outside the Fred Ex Project limits, shall be identified on the Signing and Pavement Marking RFP Conceptual Plans as either “Re-use Existing Structure”, “Existing Structure - Analysis Required”, or “Remove Existing Structure”. The specific requirements relating to each type is described in Section 3.15.7 (Traffic Structures) of the Technical Requirements. The signing design shall include a Sign Sequencing Plan and a Sign Unveiling Plan.

The Concessionaire shall design and construct all pavement markings, markers, and delineators as described in Section 3.9.2 (Pavement Markings) of the Technical Requirements.

Tolling and Traffic Management System (TTMS) Roadside Equipment

The Concessionaire shall design and construct Toll and Traffic Management equipment as needed for the operations of the Fred Ex Express Lanes.

Roadway elements associated with the toll locations include at least the following:

- Toll gantry structures, integrated roadside units, and associated TTMS infrastructure at each toll location that are designed, procured and installed in time to meet all testing and toll point turnover requirements; and
- Generator sites and associated equipment at each toll location.

The Concessionaire’s scope includes, but is not limited to, the following ITS and TMS roadside equipment elements:

- Dynamic Message Signs (DMS) to provide Toll and Driver Information;
- Pan-Tilt-Zoom (PTZ) Closed-Circuit Television (CCTV) and Automated Incident Detection (AID) cameras to provide video surveillance;
- Microwave vehicle detectors to monitor and report in real-time traffic volume, lane occupancy and speed data on Fred Ex Express and General Purpose Lanes;
- Roadway gates (and all related systems) at all reversible access points;

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- Variable Speed Limit Signs and Lane Use Control Signs that comprise the Lane Use Management System (if applicable);
- A fully redundant fiber optic communication network to ensure reliability and no single points of failure;
- ITS and TMS roadside equipment cabinets and integrated roadside units;
- A power distribution system with back-up generators and Uninterruptible Power Supplies to support Tolling and Traffic Management Systems; and
- Testing and commissioning of the ITS and TMS roadside equipment with the existing I-95 Express Lanes TTMS.

The Concessionaire shall relocate existing Department ITS roadside equipment located within the Fred Ex Project Right of Way that is affected by construction, including power and communication service to the equipment, and shall ensure that loss of functionality is minimized.

Systems Integration and Concessionaire Interface

Systems integration will be performed by the TTMS Contractor. The TTMS Interface Plan shall identify the responsibilities of the Concessionaire and TTMS Contractor as they pertain to the Fred Ex Project TTMS and system integration. Generally, under the TTMS Interface Plan, the Concessionaire's Fred Ex Design-Build Contractor is responsible for the management, design, procurement, and construction of the toll gantries and the procurement, installation and commissioning of all TTMS roadside equipment, and necessary supporting infrastructure. TTMS Contractor will be responsible for Systems Integration, Back Office Systems, Traffic Management System, and the procurement, installation and commissioning of the ETC equipment. The Concessionaire shall provide continuous and effective coordination with the TTMS Contractor and the Fred Ex Design-Build Contractor throughout the duration of the project.

Lighting

The Concessionaire shall be responsible for the design and construction of lighting for the Fred Ex Project and associated ramps. Service panels shall be designed for the new lighting power requirements. Existing service panels may be upgraded as needed to support lighting requirements as approved by the Department. Separate meters shall be provided for the Fred Ex Project lighting.

Maintenance of Traffic

The Concessionaire shall be responsible for developing and implementing a Transportation Management Plan for all construction activities in accordance with the Technical Requirements. The Concessionaire shall maintain traffic consistent with the Department-approved Transportation Management Plan and other Project requirements throughout the duration of the Fred Ex Project.

Environmental

The Concessionaire shall ensure that the environmental commitments and all conditions of regulatory approvals made in the approved National Environmental Policy Act (NEPA) Document(s) are implemented at the appropriate phase of the Fred Ex Project development. The Concessionaire shall be responsible for compliance with pre-construction, construction-related, and post-construction permit conditions.

The Concessionaire shall also develop and implement a comprehensive Environmental Management Plan and additional project-specific environmental controls (such as a Stormwater Pollution Prevention Plan, Erosion and Sediment Control Plan, and Stormwater Management Plan) and performing the Work in accordance with these approved plans and related specifications and standards.

Noise Barriers

The Concessionaire shall be responsible for the design and construction of required sound barriers along the Fred Ex Project corridor (and connecting roadways, where applicable) as described in Section 3.3.9 (Noise Mitigation) of the Technical Requirements. Potential sound barrier locations will be shown in the Draft NEPA environmental document. The Concessionaire shall provide permanent noise mitigation and final sound barriers in compliance with the Virginia State Noise Abatement Policy and the Highway Traffic Noise Impact Analysis Guidance Manual. The final sound barrier location(s) and dimension(s) at approved locations will be determined by the Concessionaire based on the final design noise analysis. A final Noise Abatement Design Report (NADR) that covers all sound barrier locations shall be furnished by the Concessionaire.

Right of Way

The Concessionaire shall be responsible for all Right of Way (ROW) acquisitions, including dedications and easements (permanent and/or temporary) necessary for the construction and operation of the Fred Ex Project as described in Section 1.6 of the Technical Requirements.

Utilities

The Concessionaire shall be responsible for all Utility work necessary for the construction and operation of the Fred Ex Project, including the identification and avoidance or adjustment (if necessary) of conflicting utilities as described in Section 1.7 of the Technical Requirements. Utility work includes all items necessary to provide new services, perform relocation(s) or adjustments and associated coordination with utility owners.

Permits

Other than the initial NEPA and FHWA approvals, the Concessionaire shall be responsible for acquiring and maintaining in its name (or the Design-Builder's name, as applicable) all environmental, water quality, and other permits necessary for the construction of the Fred-Ex

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Project as described in Section 1.11.1 (Permitting) of the Technical Requirements. In those instances where the Department must be the permittee, the Concessionaire shall be responsible for preparing all necessary materials to support the issuance of a permit and ensuring compliance with the permit terms during the construction period.

Coordination with Third Parties

The Concessionaire shall be responsible for coordination with the affected public and private entities (third parties) and local jurisdictions necessary for the design and construction of the Fred Ex Project, including but not limited to the Department, Stafford County, City of Fredericksburg, Department of Defense (Marines Corps Base Quantico), and utility owners as described in Section 1.11.2 (Third Parties) of the Technical Requirements.

Adjacent VDOT Project Coordination

The timing and scope of the Fred Ex Project will overlap with other VDOT projects, including the Courthouse Road Interchange Replacement Project and the southbound Rappahannock River Crossing (RRC) Project. The Design-Builder shall coordinate and interface with the respective project teams, including VDOT and their associated consultants and contractors throughout the duration of the Fred Ex Project to ensure that the respective projects are properly coordinated and scheduled. Cooperation between all parties is essential in those areas where two projects will be under construction in the immediate vicinity of each other at the same time.

Public Information and Communication Services

The Concessionaire shall provide the services of a public affairs manager and adequate staff to support the Department on community outreach and information activities as described in Section 2.0 of the Technical Requirements. The Concessionaire will have primary responsibility for performing the project-specific day-to-day activities associated with the Design-Build activities.

APPENDIX A – RFP CONCEPTUAL PLANS

- RFP Conceptual Plan Sheets (11”x17”) *dated March 15, 2018*
 - **Plan Revision Set 1** dated April 27, 2018 containing:
 - Roadway and Drainage Sheets 28, 31, 32, 33, 34, 35, 36
 - ITS/TTMS Sheets CC28, CC28B, CC28D, CC28E, CC31 – CC36, CC50, CC52, CC53
 - Signing/Pavement Marking Sheets SP(A1), SP(A2), SP(A3), SP(A5)
 - **Plan Revision Set 2** *dated August 3, 2018* containing:
 - Roadway and Drainage Sheets: IG(13), IG(15), IG(16), 2A(1), 2A(2), 2A(3), 2A(4), 2A(5), 3, 3C, 3E, 4, 4D, 4E, 5, 5E, 6, 6B, 6C, 6D, 6G, 7, 7B, 8, 8B

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- ITS/TTMS Sheets: CC3C, CC3D, CC3E, CC3F, CC3, CC4, CC5, CC6, CC7, CC8, CC(J1), CC(J2)
- Signing/Pavement Marking Sheets: SP(A1), SP(A2), SP(A3), SP(A4), SP(A5)
- **Plan Revision Set 3** *dated August 30, 2018 containing:*
 - ITS/TTMS Sheets: CC3F, CC3, CC6
- **Plan Revision Set 4** *dated October 1, 2018 containing:*
 - ITS/TTMS Sheets: CC(F4)
- Roadway and Drainage Roll Plots, Revision 3 *dated August 30, 2018*
- Signing, Pavement Marking and Lighting Roll Plots, Revision 2 *dated August 3, 2018*