Downtown Tunnel/Midtown Tunnel/ MLK Extension Project

Project Management Plan

For Design, Construction, and Operations

Submitted to

Federal Highway Administration

Submitted by

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Contents Amendment Record Table

This Project Management Plan has been issued and amended as follows:

Issue	Rev	Description	Date	Signed
1	0	Original Issue	June 2009	
1	1	Document edited to include preliminary engineering activities and project design and construction activities (Design/Build Phase) and to responsd to FHWA Janaur 2011 comments to December 2010 draft update.	March, 2011	

TABLE OF CONTENTS

PREFACE: PURPOSE ---------- **7**

SECTION 1: INTRODUCTION ---------- **9**

1.1 Background/Development of Project ---------- 9
1.2 Project Scope ---------- 10
1.2.1 The Midtown Tunnel ---------- 10
1.2.2 The MLK Extension ---------- 10
1.2.3 The Downtown Tunnel ---------- 11
1.3 Project Phases ---------- 11
1.4 PPTA Process/Private Entities Involvement ---------- 11
1.4.1 Background ---------- 11
1.4.2 Oversight of Private Entities ---------- 11
1.4.3 Partnering ---------- 12
1.5 Financial Overview ---------- 13
1.5.1 Preliminary Engineering Activities ---------- 13
1.5.2 Construction Activities ---------- 14
1.5.3 Financial Plan ---------- 14
1.6 Project Status ---------- 14
1.6.1 Schedule ---------- 14
1.6.2 Progress to Date ---------- 15
1.6.3 Negotiations ---------- 15
1.6.4 Preliminary Engineering Activities ---------- 16
1.7 Maps ---------- 18
1.8 Formal Agreements ---------- 19
1.9 Other Government Agencies and Organizations ---------- 19

SECTION 2: GOALS AND OBJECTIVES ---------- **21**

2.1 Goals ---------- 21
2.1 Objectives ---------- 21
2.2 Standards of Measure/Metrics ---------- 21
2.3 Performance Management ---------- 22

SECTION 3: PROJECT ORGANIZATION ---------- **23**

3.1 Organizational Structure ---------- 23
3.2 Management Team - VDOT ---------- 24
3.2.1 VDOT Roles and Responsibilities ---------- 28
3.2.2 Additional Staffing ---------- 29
3.3 Management Team - FHWA ---------- 31
3.3.1 FHWA Roles and Responsibilities ---------- 31
3.3.2 FHWA Approval and Process Participation ---------- 32
3.3.3 FHWA Staffing ---------- 32
3.4 Other Government and Stakeholder Organization Roles and Responsibilities ---------- 32
3.4.1 Stakeholder Partnering Corroboration ---------- 32
3.4.2 Primary Stakeholders ---------- 33
3.4.3 Secondary Stakeholders ---------- 33

SECTION 4: PROJECT MANAGEMENT AND CONTROL ---- **35**

4.1 Scope Management ---- 35
4.2 Schedule Management ---- 35
4.2.1 Contract Schedules ---- 36
4.3 Financial Management ---- 38
4.3.1 FHWA Requirements ---- 38
4.3.2 Finance Plan ---- 38
4.3.3 Cost Estimate ---- 38
4.3.4 Budget ---- 40
4.4 Project Change Control Management ---- 41
4.4.1 Objectives of Change Control ---- 41
4.4.2 Baseline Change Control ---- 41
4.4.3 Change Control Process ---- 42
4.5 Project Reporting ---- 44
4.5.1 Reports ---- 44
4.5.2 Meetings ---- 46
4.6 Document Control ---- 46
4.6.1 Approach ---- 46
4.6.2 Management ---- 46
4.7 Risk Management ---- 47
4.7.1 Risk Workshops ---- 47
4.7.2 Risk Assessment Methodology ---- 49
4.8 Issues Management ---- 50
4.9 Lessons Learned ---- 50

SECTION 5: PROCUREMENT AND CONTRACT MANAGEMENT ---- **51**

5.1 Innovative Procurement Strategies ---- 51
5.2 Procurement Requirements ---- 51
5.2.1 VDOT Requirements ---- 51
5.2.2 Federal and State Requirements ---- 52
5.2.3 Project Team Review of Procurement Documents ---- 52
5.2.4 Authority Delegations ---- 52
5.2.5 Protest Procedures ---- 52
5.4 Administration of Contracts and Grants ---- 52
5.4.1 Overall Strategy ---- 52
5.4.2 VDOT Administered Contracts ---- 53
5.4.3 Federal-Aid Grant ---- 54
5.4.4 Other Contracts ---- 54
5.5 Contract Change Management ---- 54
5.6 Contract Closeout ---- 55

SECTION 6: ENVIRONMENTAL MANAGEMENT ---- **56**

6.1 NEPA Documentation ---- 56
6.2 Water Quality Permits ---- 56
6.3 Environmental Commitment Tracking Process ---- 57
64 Environmental Compliance Monitoring ---- 57

SECTION 7: DESIGN MANAGEMENT ---- **58**

7.1. Management of Design ---------- 58
7.1.1 Design Criteria, Basis of Design, Standards, and Specifications ---------- 58
7.1.2 Concept of Design ---------- 59
7.1.3 Design Exceptions and Design Waivers ---------- 59
7.2 Design Quality Management ---------- 60
7.3 Real Estate/Right-of-Way and Utilities ---------- 62

SECTION 8: CONSTRUCTION MANAGEMENT ---------- 64

8.1 Construction Management ---------- 64
8.1.5 Change Management ---------- 65
8.1.6 Project Schedule and Cost ---------- 65
8.1.7 Progress Meetings ---------- 66
8.1.8 Acceptance of Work ---------- 66
8.2 Construction Quality Management ---------- 66
8.3 Transportation Management ---------- 68
8.4 Safety and Security ---------- 68
8.4.1 Private Entities Safety ---------- 69
8.4.2 Agency Involvement ---------- 69

SECTION 9: OPERATIONS AND ASSET MANAGEMENT ---------- 71

9.1 Operations and Asset Management ---------- 71
9.1.2 Operations Prior to Construction and During Construction ---------- 71
9.2 Operations and Maintenance ---------- 72

SECTION 10: COMMUNICATIONS MANAGEMENT ---------- 73

10.1 Communications Overview ---------- 73
10.2 Public Involvement and Communications Plan ---------- 73
10.2.1 Required Public Hearings and Meetings ---------- 73
10.2.2 Public Information ---------- 73
10.2.3 Communications Quality Management ---------- 74
10.2.5 Hampton Roads District Human Resources ---------- 75
10.3 Communications Coordination ---------- 75
10.4 External Communications ---------- 75
10.4.1 Media ---------- 76
10.4.2 External Web site (VirginiaDOT.org) ---------- 76
10.5 Internal Communications ---------- 78
10.6 Coordination with ERC Communications ---------- 78
10.7 FHWA/USDOT Communications ---------- 78
10.7.1 TIFIA Office ---------- 78
10.7.2 Office of Inspector General and other Federal Agencies ---------- 78

SECTION 11: CIVIL RIGHTS MANAGEMENT ---------- 79

11.1 Overview ---------- 79
11.1.1 Disadvantage Business Enterprises (DBE) ---------- 79
11.1.2 Small Woman and Minority (SWaM) Businesses ---------- 80
11.1.3 Monitoring – Performance Indicators ---------- 80
11.1.4 Outreach Program ---------- 80
11.2 Civil Rights (DBE/SWAM) Management Plan ---------- 81

11.3 Federal Requirements ---------- 81

SECTION 12: REFERENCES ---------- 82

12.1 PPTA Publications ---------- 82
12.2 Project Management Publications ---------- 82
12.3 Publications for Project Development ---------- 82
12.4 Other Reference Documents ---------- 84

SECTION 13: APPENDICES ---------- 86

ASSESSMENT OF THE RISKS DISCLOSED ---------- 111

Key Follow-up Actions for Commercial/Financial Risks ---------- 112
Key Follow-up Actions for Technical Risks ---------- 113

Appendix A Contact List

Appendix B Baseline Rating Descriptions

Appendix C Project Change Control Form

Appendix D Procedures for Collecting Lessons Learned

Appendix E Top Project Risks, Key Results and Action Items from Initial Joint Risk Workshop

Apprndix F Project Schedule

PREFACE: Purpose

This document is intended to guide the development of the Downtown Tunnel/Midtown Tunnel/Martin Luther King (MLK) Extension Project (the "Project") from planning through to implementation of operations, and maintenance of the facility. Creation of this document fulfills the requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), whereby a Project Management Plan (the "Plan") and an Annual Financial Plan are required when the estimated total cost of a project receiving Federal financial assistance is greater than $500,000,000 (Major Project). The document is in accordance with the Federal Highway Administration's (FHWA) *Project Management Plan Guidance*, January 2009.

Currently, FHWA is providing financial assistance with funding for activities related to the development of the Project (preliminary engineering activities, which includes cost sharing on the Phase 2 project deliverables). It is anticipated that additional funding sources for the Project will consist of a combination of private equity and third party debt, including private bank loans, Private Activity Bonds, and a potential federal loan under Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA), as a form of subordinated debt.

The purpose of the Plan is to clearly define the roles, responsibilities, processes, and activities which will result in the Major Project being developed, implemented and ultimately completed (i) on-time, (ii) within budget, (iii) with the highest degree of quality, (iv) in a safe manner for both the individuals working on the Project and for the traveling public, and (v) in a manner in which the public trust, support, and confidence in the Project will be maintained. The goal of the Plan is to provide guidance to the parties involved for the effective and efficient management of the scope, budget, schedule and quality of the Project. The Plan can be viewed as the umbrella document over other guidance documents and manuals that provide significantly greater detail for the management systems and procedures for a specific functional area. The Plan refers to these other documents and manuals, but does not repeat the detailed information. Furthermore, the Plan is not a legal document, but may reference items that are included in contract documents or agreements.

This Plan has been developed by the Virginia Department of Transportation (VDOT), in cooperation with FHWA and Elizabeth River Crossings, LLC (ERC). The initial Project Management Plan was signed by the VDOT Commissioner, on June 25, 2009 and the FHWA Division Administrator, on July 15, 2009.

The Project Management Plan will be a living document, reviewed annually and updated as required to reflect current Project conditions and procedures. Updates may also be made at specific milestones as identified below:

- Prior to authorization of federal-aid for right of way acquisition or construction.
- Prior to execution of a Comprehensive Agreement to include design and construction phases, as applicable.
- Prior to initiation of operations of any phase, as applicable.

The March 2011 update to the Plan generally includes preliminary engineering activities and project design and construction activities (Design/Build Phase). After completion of construction the Project Management Plan will be further updated to reflect operations and maintenance of the facility (Operations Phase). A table of revisions has been included to tabulate changes amended versions of the Plan. The responsibility to maintain the Project Management Plan lies with the VDOT Program Manager.

SECTION 1: INTRODUCTION

This section describes the general intent of this document, the proposed Project, and the current status of Project activities to-date. It also presents the Project schedule, financing overview, the status of the environmental review process. This section also documents important Project decisions.

1.1 Background/Development of Project

In April 2005, VDOT decided to pursue the Project under the Public-Private Transportation Act of 1995, PPTA of 1995 (Code of Virginia, §56.556-56.573), as amended. The Project will consist of three facilities (the Midtown Tunnel, the Martin Luther King Extension, and the Downtown Tunnel) in the Hampton Roads District of Virginia that has been defined as a single Project corridor.

VDOT issued a Solicitation for Conceptual Proposals (SFP) on May 30, 2008 to request receipt of Conceptual Proposals to enable VDOT to identify and short list Offerors qualified to submit Detailed Proposals to finance, design, construct, operate, and maintain the Project. VDOT plans to contract with a private entity, or any combination thereof, utilizing the procedures allowed by the PPTA, and the *PPTA Implementation Guidelines, October 2005, to develop*, finance, design, construct, maintain and operate the Project. The PPTA procurement process will allow VDOT to contract with a private entity, which will provide the financing flexibility that will allow the Project to advance without the constraint of the public funds.

The following are milestones that have been achieved during the procurement phase of the project:

1. Industry Briefing	04/24/2007
2. Site Tours No.1	04/25/2007
3. Site Tour No. 2	07/29-30/2008
4. SFP Document Available to Offerors	05/30/2008
5. Conceptual Proposals Submissions	09/29/2008
6. Quality Control and Responsiveness Check	10/08/2008
7. Elizabeth River Crossings Withdraws Confidentiality Request Amends Proposal with Cost Information	10/17/2008
8. Commissioner Acceptance of Conceptual Proposals (Pending – No official document from Commissioner)	10/21/2008
9. Formation of VDOT Executive Team (Steering Committee)	11/07/2008
10. Local Comments Due	01/12/2009
11. Secretary Appoints Independent Review Panel	02/02/2009
12. Commence Independent Review (IRP) Panel Meetings	03/25/2009
12.1 Meeting 1 - Proposal Team Presentations to the IRP	03/25/2009
12.2 Meeting 2 – VDOT Technical Presentation & Public Comment	04/21/2009
12.3 Meeting 3 – IRP Discussion and Recommendation	04/22/2009
12.4 Meeting 4 – VDOT Finanical Presentation	05/13/2009
12.5 Meeting 5 – ERC Remarks and IRP Final Recommendation	06/10/2009

13. CTB Workshop/Action Meeting for advancement to Interim Agreement (IA) 07/16/2009
14. Commissioner Direction to Commence Negotiations 07/23/2009
15. CTB Workshop Action Meeting 10/15/2009
16. VDOT and ERC execute the Interim Agreement 01/07/2010
17. Phase 1 – Project Feasibility Determination 06/29/2010
18. Phase 2 - Initiation of Fixed Price Proposal & Commercial Terms 07/01/2010
19. Ongoing Engineering Studies 07/2010 – Spring 2011
20. Commercial/Financial Close Summer 2011

1.2 Project Scope

1.2.1 The Midtown Tunnel

The proposed Midtown Tunnel consists of a new tunnel under the Elizabeth River running parallel and westward of the existing Midtown Tunnel and modifications to the existing tunnel to provide increased capacity for east-west travel linking Route 58 and I-264 in Portsmouth to the interchange at Brambleton Avenue/Hampton Boulevard in Norfolk.

Daily congestion occurs at the existing Midtown Tunnel in both the AM and PM peak hours, with traffic back-ups frequently extending into West Ghent on the Norfolk side and to Pinners Point on the Portsmouth side. The proposed Midtown Tunnel would enable two (2) travel lanes in the west bound direction; thereby allowing the existing Midtown Tunnel to accommodate two (2) travel lanes in the east bound direction. It would also provide greater flexibility for maintenance and emergency responses by allowing closure of one tunnel facility and diverting traffic to the adjacent tunnel for short-term maintenance operations. Traffic in both tunnels could also be directed in a single direction during emergency evacuations, providing more options for state and regional planners.

The proposed improvements to the existing Midtown Tunnel facility will include, among other things: new roadways, drainage, communications/intelligent transportation systems, lighting, flood protection, fire detection and suppression, ventilation, and power control systems.

1.2.2 The MLK Extension

The proposed MLK Extension consists of extending U.S. Route 58 south from London Boulevard, U.S. Route 141, approximately 0.8 mile and constructing a new interchange at I-264 (four lane limited access freeway) between the existing interchanges on I-264 at US Route 17 and Des Moines Avenue to provide a direct freeway-to-freeway connection from I-264 to the Midtown Tunnel between the Cities of Portsmouth and Norfolk. The extension to I-264 would provide improved access to and from West Norfolk and would serve as an alternate route for I-264 traffic when the Downtown Tunnel is congested.

A comparable reduction to traffic is expected on local streets in the immediate vicinity of the Project, north of I-264, including US Route 17. More significantly, the current heavy volume of

trucks, which exceed 25 percent of peak hour traffic at some locations, would be reduced on local streets. This new connection would also improve system linkage with the recently completed Pinners Point interchange and improve access to existing port facilities.

1.2.3 The Downtown Tunnel

The proposed improvements to the Downtown Tunnel consist of modifications to the existing northbound and southbound tunnels necessary for the existing facility to conform to the National Fire Protection Association Standard 502 "Standard for Road Tunnels, Bridges, and Other Limited Access Highways" (NFPA 502). These modifications will include but may not be limited to upgrades to: the existing water supply, ventilation, electrical, and emergency response systems, as well as any other system identified in NFPA 502 or its successor. Additional modifications may include communications, tolling, and intelligent transportation systems as required to operate the tunnel as part of an integrated regional system.

1.3 Project Phases

The Design-Build phase of the Project will be defined in development and implementation of the design-build schedule agreed to pursuant to contract documents and Project Agreements.

Currently, FHWA has authorized Preliminary Engineering funds for the Project under Universal Project Code (UPC) 76642, 77245 and 95149.

1.4 PPTA Process/Private Entities Involvement

1.4.1 Background

The PPTA is the legislative framework enabling the Commonwealth of Virginia, local governments, and certain other responsible public entities as defined in the PPTA, to enter into agreements authorizing private entities to develop and/or operate qualifying transportation facilities. The PPTA provides a unique mechanism for supplementing public funds available for transportation in the Commonwealth.

1.4.2 Oversight of Private Entities

The Interim Agreement executed by VDOT and ERC, executed on January 7, 2010, sets forth the framework for the conceptual and preliminary development and/or operation of the Project. The Comprehensive Agreement will set forth the final development and/or operation of the Project as ERC completes the preliminary engineering work and cost estimates during Phase 2 of the IA. Completing the Phase 2 process will aid in eliminating uncertainties with construction costs and risks, and will support the execution of a Comprehensive Agreement (CA), and reduce the overall toll rate.

VDOT and ERC intend and acknowledge that a highly cooperative, mutual collaboration will be

pursued under the existing terms of the IA and during the development of the CA to engage ERC's innovation, private sector resources, entrepreneurial skills, risk sharing and management capabilities, and technical and financial expertise, to deliver a successful Project.

VDOT has aligned its resources to support the project schedule developed by ERC further discussed in Section 1.6.1. Currently, VDOT is providing oversight of preliminary engineering activities, including but not limited to the following:

- Design
    - Traffic Data
    - Basis of Design
    - Design Criteria
    - Concept Sketches
    - Technical Requirements
    - Drilling for Utility Designations
- **NEPA Re-evaluation**
- Survey Alignment
- Project Development Plans
- Geotechnical Explorations and Investigations
- Operations and Maintenance
    - Existing Asset Inspection
    - Tolling Systems
- Community Outreach and Communication Plan
- Financial
    - TIFIA & PABs Applications
    - Investment Grade Traffic & Revenue Study –

1.4.3 Partnering

VDOT and ERC are both committed to a long-term commitment of partnering to achieve specific objectives by maximizing the effectiveness and benefits afforded the Project through a public-private partnership procurement arrangement. Partnering often requires changing traditional management relationships to a shared culture without regard to organizational boundaries. The relationship is based upon trust, dedication to common goals, and an understanding of each other's individual expectations and values. Expected benefits include improved efficiency and cost effectiveness, increased opportunity for innovation, and continuous improvement of quality products and services, all of which are underlying goals for the Project participants.

On September 23, 2010 and November 13, 2010 VDOT, ERC and FHWA convened a full eight (8) hour and a four (4) hour Partnering Workshop. The workshops were facilitated by Tom Warne of Tom Warne and Associates, LLC and included morning and afternoon sessions. During these workshop, executive management matters were covered in the morning session;

the afternoon session allowed the six Working Group chairs, co-chairs and other technical team members to discuss issues relative to the success of the Project and germane to each Working Group's area of responsibility. The partnering workshop covered goals and objectives; schedule and milestones; issue resolution/decision-making; partnering structure; and overcoming barriers to success. Issues resolution was determined as indicated in the Table below.

Issue Resolution/Decision-Making Process

Level	ERC	VDOT	FHWA
1	**Working Group Chairs**	**Working Group Chairs**	**Tarsem Lal**
2	**Chris Guthkelch**	**Dusty Holcombe**	**Tarsem Lal**
3	**Andrew Ancone** **Frederick Burman**	**Mal Kerley**	**Tom Jennings**

As the Project is further developed, VDOT will continue partnering activities with our major stakeholders consistent with the *Field Guide for Partnering for VDOT Projects*, November 2005. This is further described in Section 3.

1.5 Financial Overview

ERC's preliminary estimated cost is $1.9Billion (2010) for development and operations. This estimate will be refined by work under the IA currently underway.

1.5.1 Preliminary Engineering Activities

On March 8, 2007, FHWA authorized the use of advance construction on the Midtown Tunnel Corridor Project. The authorized advance construction amount is $1,780,970 under federal agreement number 9655(057) and state numbers UPC 76642 and 77245. The funding is for qualifying costs expended by VDOT for developmental work such as technical studies, traffic and revenue study, public outreach, and preliminary design.

In May and June 2010, FHWA authorized additional funding for the Project to be used in the cost sharing of Phase 2 project deliverables under UPC 95149 as well as covering VDOT development costs under UPC 76642, including $1,668,922 to begin six (6) Phase II actvities under the IA, which is also covered under federal agreement number 9655(057). Prior to approval of additional funding by FHWA, VDOT will provide FHWA an accounting of the expenditures to-date and additional details on a scope/budget/time for the additional amounts. On June 25, 2010, FHWA authorized funds authorized for phase II project avtivities under the Interim Agreement in the amount of $26,893,934.00 of which $21,515,171.00 is federally funded (Source, FMISD064, run date 06/25/2010, runtime 12:29:36) The procedures used to track and monitor expenses are included in Section 4.

1.5.2 Construction Activities

The financing of construction activities will be the responsibility of ERC and will be detailed in the Financial Plan. VDOT will perform oversight activities related to this state of the Project. The procedures used to track and monitor expenses are included in Section 4.

1.5.3 Financial Plan

FHWA has provided guidance regarding the content and format of the Financial Plan required by Section 1904 of SAFETEA-LU. The FHWA *Financial Plan Guidance*, January 2007, is incorporated by reference (http://www.fhwa.dot.gov/programadmin/mega/fplans.cfm.) A Plan of Finance will be prepared by ERC in accordance with the terms of the CA. In addition, an initial Financial Plan will include ERC's estimated engineering, administrative, project management as well as VDOT's project oversight costs. A Finance Plan is required prior to the first federal authorization for construction funds and TIFIA loan approval.

It is anticipated that the Project will be funded by pooling resources from user fees, private activity bonds, private equity investment, a TIFIA Loan, and other innovative finance options. Prior to FHWA approval of the Financial Plan, the Independent Cost Estimate as further defined in Section 4.3.3 below will need to be reviewed and approved by FHWA. VDOT's initial conceptual Independent Cost Estimate of total project cost (prepared by Halcrow under Task Order No. 8) was approved by FHWA on August 26, 2009.

ERC will prepare its Financial Plan, to include VDOT's and ERC's estimated costs. The project Financial Plan will include costs to oversee the design and construction of the Project, safety, field inspections..

If a TIFIA loan is planned, then the initial Financial Plan will be submitted in accordance with the TIFIA loan application and possibly updated 60 days after financial close. Annual updates of the Financial Plan will occur as defined in the TIFIA loan agreement.

1.6 Project Status

The Project is in Phase 2 of the IA. ERC is completing preliminary engineering work and cost estimates during Phase 2 of the IA to eliminate uncertainties with construction costs and risks, support the execution of a CA, and reduce the overall toll rate.

The Project affects many jurisdictions, including two cities and communities along the corridor, and one planning district commission (PDC) as well as a metropolitan planning organization (MPO). The proposed Project is included in the Hampton Roads 2030 Long Range Transportation Plan approved by the Hampton Roads MPO at their meeting October 17, 2007.

1.6.1 Schedule

To address activities required for development of the Project, a preliminary schedule has been developed. A summary of the major milestones are set out below. A detailed schedule is

attached as F. As the Project is advanced, a more detailed design-build schedule will be developed.

- On-going engineering and financial studies July 2010 – Spring 2011
  - Conceptual Design January 2011
  - Design Public Hearing March 2011
  - Price Submittal to VDOT June 2011
- Commercial/Financial Close Summer 2011
- Commence Construction Summer 2011
- Initial/Interim Phase Begin Tolling July 2012
- Construction Period 2012-2015
- Tolling and O&M Commencement July 2015

The Project status will be updated regularly and will be maintained on the VDOT Project website at http://www.virginiadot.org/midtowntunnel.

1.6.2 Progress to Date

In addition to the work being performed by ERC during Phase 2 of the IA, VDOT is reviewing Phase 2 deliverables for completeness. VDOT is also performing the following activities and/or studies in support of the Project:

- Regional Transportation Plan
- NEPA Re-evaluation
- Term Sheet

Note that all completed studies, reports, and documents referenced are provided on VDOT's external website at http://www.virginiadot.org/midtowntunnel.

1.6.3 Negotiations

VDOT provided a first draft summary term sheet for the Comprehensive Agreement on Sept 13; ERC responded with comments on Sep 30. VDOT and ERC met on Oct 13, 2010 to discuss CA term sheet. The Commercial, Legal and Risk Working Group held an additional six (6) meetings during the month of October 2010 and six (6) meetings in November 2010 to develop the Comprehensive Agreement Term Sheet. A revised Term Sheet, reflecting a collaborative effort of the Commercial, Legal and Risk Working Group (CWG), was issued on November 15, 2010. The CWG finalized the Term Sheet in December, 2010 and was signed by VDOT and ERC as a good faith effort, agreement in prinicple, on January 7, 2011. VDOT and ERC began negotiations of the CA in January 2011, resulting in issuance of an initial draft Comprehensive Agreement document on March 14, 2011. Both parties expect to execute the CA in June 2011.

1.6.4 Preliminary Engineering Activities

VDOT and ERC are currently performing preliminary engineering work in support of the CA. ERC's lead designer, Parson Brinkerhoff Americas (PB) is responsible for surveys, geotechnical engineering, structural engineering, mechanical/electrical engineering for tunnel systems, civil/roadway engineering, utility coordination and relocation design, permitting, assisting VDOT with the preparation of environmental clearance documentation, and other related tasks.

PB is preparing conceptual and preliminary design plans for the tunnel structures, mechanical/electrical systems, tunnel finishes, tunnel buildings, MLK Expressway roadways, structures, lighting, utility, traffic and mitigation plans, environmental and engineering reports and permit applications as detailed in the current version of the Design Scope of Work and the current version of the List of Deliverables (D0101040501), both included in the Project electronic files.

The design effort associated with specific fire and life safety improvements for the existing Midtown Tunnel and the existing Downtown Tunnels will be defined after the Tunnel Inspection Reports are completed, submitted, and approved by ERC and the VDOT.

All design deliverables will undergo the following process to ensure appropriate consideration of constructability, usability, reliability, maintainability, availability, operability, safety, cost, aesthetics and compliance with requirements and standards.

Deliverables also include Work Plans and Method Statements which define the proposed method for executing a specific tunnel work elements, taking into account the particular requirements of the project including site conditions, safety hazards, contract drawings, specifications and industry practice. These documents will also define the proposed use of equipment, labor and materials. Needed permits are being identified and supplemented by drawings, sketches and product data as necessary.

The following highlights the status of key PE activities.

1. Initial Road Design

   ERC has developed concept plans for both MLK and the Midtown Tunnel, including provisions for truck inspection station and means to divert vehicles that fail the inspection; tunnel approach roadways including low-speed cross-overs to provide for bi-directional operation of either the existing Midtown Tunnel or the new proposed Midtown Tunnel, during emergencies; relocation of service road accessing the existing tunnel operations building and the relocated Service Road will intersect the Elizabeth River Trail at an at-grade intersection.
   .

2. Initial Structures Design

   MLK Facility - ERC Design Lead, PB has produced MLK Bridge Structures concept plans wich carries forward the information developed in VDOT's existing Stage I plans to a level of effort sufficient for the ERC to establish preliminary quantities for a construction cost estimate. The alignment has been defined in the Interchange Justification Report as Alternate E, Option 4. Option 4 provides a flyover ramp at Frederick Boulevard and eliminates the Des Moines Avenue Interchange. South Street access to I-264 WB is also eliminated. Bridges span are continuous

where practical to eliminate expansion joints on the bridge. I-264 WB over CSX Railroad and I-264 EB over Des Moines Avenue will be widened; Pedestrian Bridge over I-264 will need to be modified or replaced due to the widening of I-264 in this vicinity. Sequence of constrcution plans have also been developed.

New Midtown Tunnel Facility - Tunnel Support Buildings will be provided near each of the two tunnel portals. Each facility will be designed to house tunnel egress stairs, rooms for flood gate equipment, storm water pumps, communications systems, and rooms for electrical switchgear. The current plan layout locates the support building over the tunnel, near the portal. The functions of the Tunnel Support buildings may be spread over several buildings as required by site or operational constraints. The facilities will be the most visible vertical elements of the tunnel facility.

3. Design Exceptions and Design Waivers– ERC submitted an initial fifteen (15) design exceptions for VDOT and FHWA's consideration. ERC, SKW, PB, VDOT, STP and FHWA convened a workshop on December 3, 2010 to review this list. ERC's most recent submittal reflects, nine (9) design exceptions submitted on March 11, 2011; these design exceptions are currently under review.

4. Operational Analysis -

   ERC is responsible for the traffic operational analysis and the design and construction of the Project signing, pavement markings, roadway and sign lighting, and traffic signals.

   An operational analysis for the Norfolk Portal must be conducted by ERC and compared MLK Extension IJR (June 2007) traffic volumes with existing volumes. The analysis is required to extend through at least the first adjacent existing or proposed interchange or intersection on either side of the ramp intersection at the Norfolk Portal. All new or modified intersections will be evaluated to determine if any prooposed signalization is appropriate and a signal timing operational analyses will be performed to validate all proposed signal designs.

   The operational analysis also entails performing a multi-disciplinary review to define a configuration that provides safe and efficient movement of traffic (vehicular and pedestrian), freight, emergency evacuation, and access to connecting roadways, including engineering, operations, environmental and risk assessments. Traffic volumes, including Heavy Vehicle percentages, must be developed for the Norfolk Portal mainline lanes, ramps, roadways crossing the mainlines, ramp intersections with primary and secondary roadways. The volumes will be developed to include output of ADT, Turning Movements, and Directional Distribution for, Current Year, Opening Year and the Desgin Year Build Condtions.

1.7 Maps

See Figure 1 for location map of the Project area.

1.8 Formal Agreements

It is anticipated that VDOT will execute several agreements as the Project moves through the development phase, and ultimately into construction and operation. The required agreements will be determined as the Project is advanced and can include the following:

Independent Engineer Agreement means the agreement between VDOT, the Concessionaire, and the Independent Engineer, whose role will be to provide certain quality assurance services for the Project. Currently, it is not envisioned that an Independent Engineering Agreement will be required.

Interim Agreement means the agreement executed on January 7, 2010 between the Concessionaire and VDOT that provides for completion of studies and any other preliminary engineering activities to advance the development and/or operation of the Project, as needed. .

Cooperative Agreement means the agreement between VDOT and the FHWA dated September 4, 2009, establishing the Project as a value pricing project for purposes of operating toll lanes. The Cooperative Agreement constitutes the formal toll agreement for VDOT's implementation of a value pricing project for the Project

Comprehensive Agreement means the comprehensive agreement pursuant to the PPTA, to develop and/or operate the Project among VDOT, and the Concessionaire.

Design-Build Contract means any design-build agreement under a long-term concession structure between the Concessionaire and its design-build contractor, relating to the design and construction of the Project (or any Phase, as applicable).

Project Financing Agreements means the Initial Project Financing Agreements, the Financing Assignments and any other documents evidencing Concessionaire Debt obtained in compliance with the terms of this Agreement, together with any and all amendments and supplements thereto.

Plan of Finance means, as to the Project (or any Phase thereof, as applicable), a plan of finance for the Project (or such Phase thereof) acceptable to each of VDOT and FHWA.

Other Agreements that are being contemplated include a Tolling Services Agreement and Operations Agreement. Both agreements will specify roles, responsibilities, procedures, requirements, technical specifications, timeframes, assignment of liability, and related items relative to the Operations and tolling of the Project.

1.9 Other Government Agencies and Organizations

This Project has been coordinated with officials of a number of government agencies and organizations. A listing of those organizations involved in the Project is included in Appendix A.

Figure 1. Location Map

SECTION 2: GOALS AND OBJECTIVES

This section documents the objectives of the Project and sets forth how FHWA's requirements for a major project will be met. As stated below, the goals will govern the Project throughout its development, construction, and operation, and maintenance. However, the ability to measure the success of these goals will be reflective of the Project phase: development, design and construction, or operations and maintenance.

2.1 Goals

The principal goal is to obtain value for the investment of human and financial resources contributed by the Commonwealth. A successful Project will satisfy the following goals:

- Increase capacity, reduce congestion and provide safe and efficient operations;
- Develop a multi-modal transportation facility that may be integrated into the operations of a regional transportation network and that serves as an emergency evacuation route;
- Develop a Project that reduces and mitigates its impacts to the environment and surrounding communities while supporting the movement of commercial traffic; and
- Develop a Project that is coordinated with adjacent land uses and supports the anticipated growth in personal and commercial traffic.

2.1 Objectives

To assist in developing and executing the best solution for the Project and reach the Project goals, several critical success factors or objectives have been identified in Appendix A. VDOT has developed qualitative or quantitative measures of effectiveness (MOEs) to assist in measuring the progress toward achieving each objective, and, through them , the goals. MOE's will be monitored by VDOT's District Project Manager. This set of goals, objectives and MOEs, is included in Exhibit A.

2.2 Standards of Measure/Metrics

VDOT will STP and other on-call consultant to further develop qualitative and quantitative Measure of Effectiveness (MOEs) to help measure progress towards achieving each key objective.

Currently, VDOT's consultant staff augmentation contract is conducting a pre-construction project regional Traffic Management Plan (TMP) whereas identification of the Objectives will be addressed within the TMP. This will be considered the baseline case to compare post

construction conditions and determine if the measures have been met. It is also anticipated that this work will be used by the HRMPO for use in their large regional modeling.

Annual post construction analysis will be by VDOT consultants through Traffic On-Call contracts..

2.3 Performance Management

VDOT and ERC will develop a performance management program that compares Project performance against milestones and benchmarks. The intent of the performance management program is to evaluate the performance of the Project consistently using quantifiable metrics such as cost, schedule, quality, safety, qualitative factors such as community perceptions and traffic management.

The contract documents and Project Agreements will further define performance targets and metrics.

SECTION 3: PROJECT ORGANIZATION

This section discusses how the Project team is organized and staffed for the Design and Construction Phase of the Project. As implementation of the Project proceeds from procurement/project development to design, construction and start-up, the Project organization will evolve to maximize the efficient use of staff and adjust to changing workload. The Project Management Plan will be updated prior to those phases to reflect changes in the organization.

3.1 Organizational Structure

The Project organization has been established to recognize and consider the following:

- Role of VDOT's and FHWA's management team.
- Role of ERC
- Initial reporting structure.
- Facilitation of decision making process.
- The organizational approach, which reflects the complexity of the Project and provides flexibility through all phases of the Project.
- Inclusion of managerial and technical areas.
- Inclusion of the necessary resources in support of complex contract negotiations.

The Project team has been organized in a manner to achieve Project goals. The Project team is comprised of the primary stakeholders and includes representatives from VDOT, FHWA, and VDOT consultants. Each member of the Project team accepts the responsibility of their assigned tasks and is directly accountable to his/her own organization. A contact list is included in Appendix B.

On an annual basis, FHWA and VDOT agree to specific responsibilities as defined in *Virginia Department of Transportation Federal Highway Administration – Virginia Division 2005 SAFETEA-LU Program Efficiencies Agreement* (May 2007). This agreement defines the scope of FHWA Oversight and VDOT oversight on Projects meeting specific requirements. In the case of this Project, FHWA will be responsible for oversight and as such, the FHWA – Virginia Division will place an increased emphasis on early Project development. VDOT is the lead agency and is responsible for oversight of the Project and compliance with laws and regulations. VDOT is obligated to coordinate with FHWA and ensure early Project coordination with FHWA. FHWA can withdraw all federal funds used on the Project if VDOT fails to involve FHWA and not meet Federal requirements.

After executing a Comprehensive A, VDOT will perform oversight, through the use of its own staff, Southeastern Transportation Partners (STP), and independent engineer during project implementation of many of the activities of ERC with the roles and responsibilities further defined for each party in the contract documents or related Project Agreements.

The organization structure will be revised, as needed throughout the development of the Project.

3.2 Management Team - VDOT

VDOT recognizes the Project as technically challenging and critical to both the Commonwealth and the Region. There are several factors that make this Project unique, including:

- Project magnitude – VDOT will be responsible for managing the finance, design, construction, operation and maintenance of three highway facilities, located in the Hampton Roads valued at nearly $1.9 billion, inclusive of environmental review, preliminary engineering, right of way, congestion management initiatives, and public information outlets.

- Construction complexity – the complexity of constructing the facilities in the heavily populated, urban, Hampton Roads District, under live traffic and in navigable waters is technically challenging.

- Environmental impacts - The Environmental Plan will ensure compliance with the laws and policies of governing bodies at the federal, state, and local levels.

- Community involvement – The surrounding communities are very involved and have high expectations for the Project. A public outreach program will keep all interested parties informed of major events that may affect the Project during the construction phase. As needed or required, public meetings will be utilized to increase public awareness of the Project status and future plans.

- High visibility – The location of the Project ensures that the Project will maintain high visibility from local, state, and federal government officials.

In view of the foregoing, VDOT chose to develop a Project-specific management structure with a combination of dedicated and shared resources to manage the Project. Overall management of the Project will be the responsibility of a single full-time senior-level District Project Manager. The District Project Manager will be the primary point of contact. Overall Project direction is provided by an Executive Steering Committee, which is led by the Chief Engineer of VDOT.

Due to the size and complexity of this Project, the District Project Manager will have support through the placement of experienced, senior-level VDOT employees, and is some instances consultants, in each responsibility area. The role of each person is further defined in Section 3.2.1. All information shall flow through the District Project Manager from the various technical and other support staff that will work on the Project.

Once a Comprehensive Agreement is executed, the organizational chart for VDOT's Management Team will be modified for the design and construction phase of the project as shown in Figure 3. Organizational charts of Interim and post Comprehensive Agreement phases STP and VDOT staffing, discussed in Section 3.3.2, are shown in (Exibit D-2) immediately following Figure 3.

Figure 3: VDOT Management Team, Organizational Chart Through Design-Build

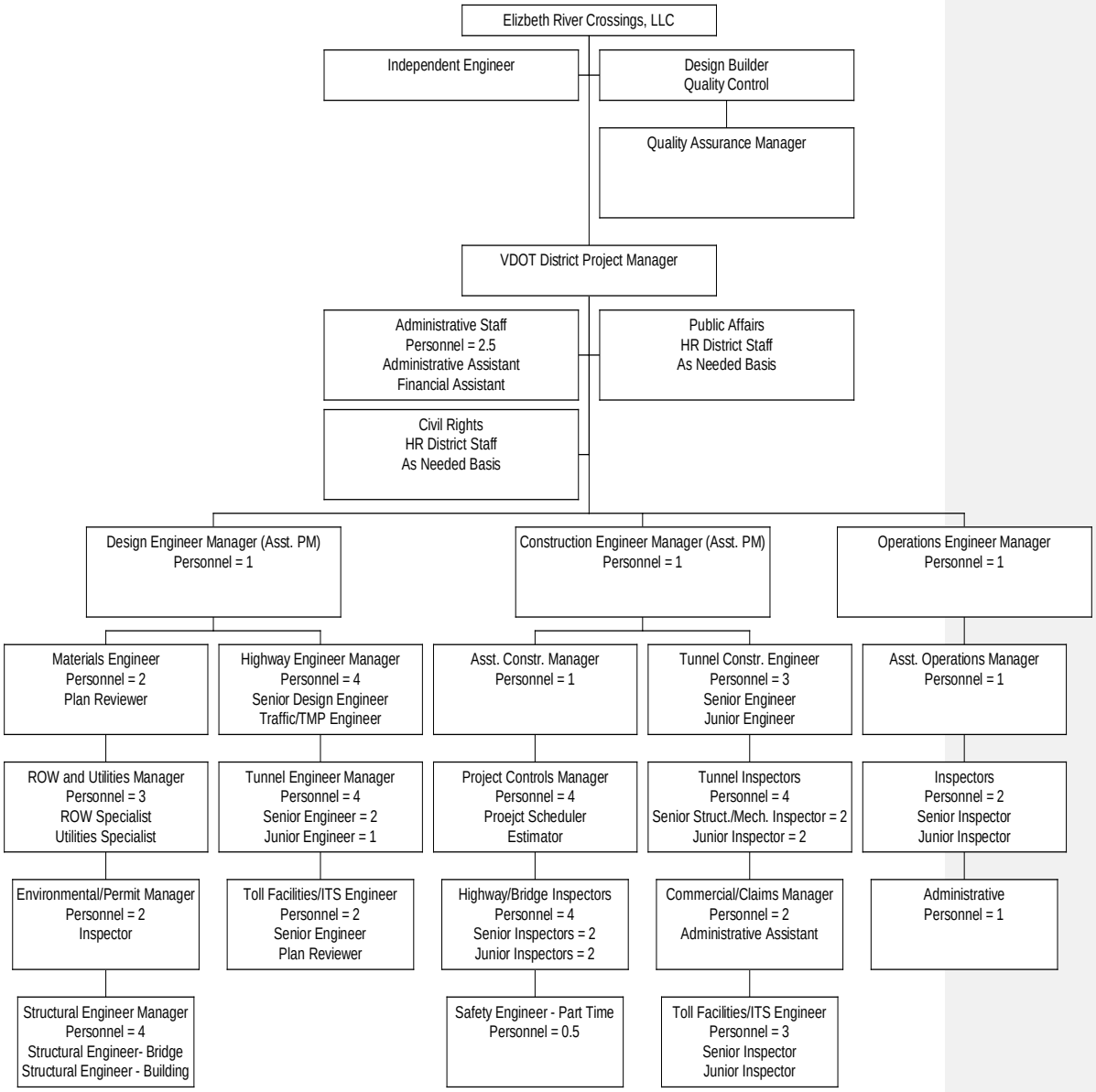
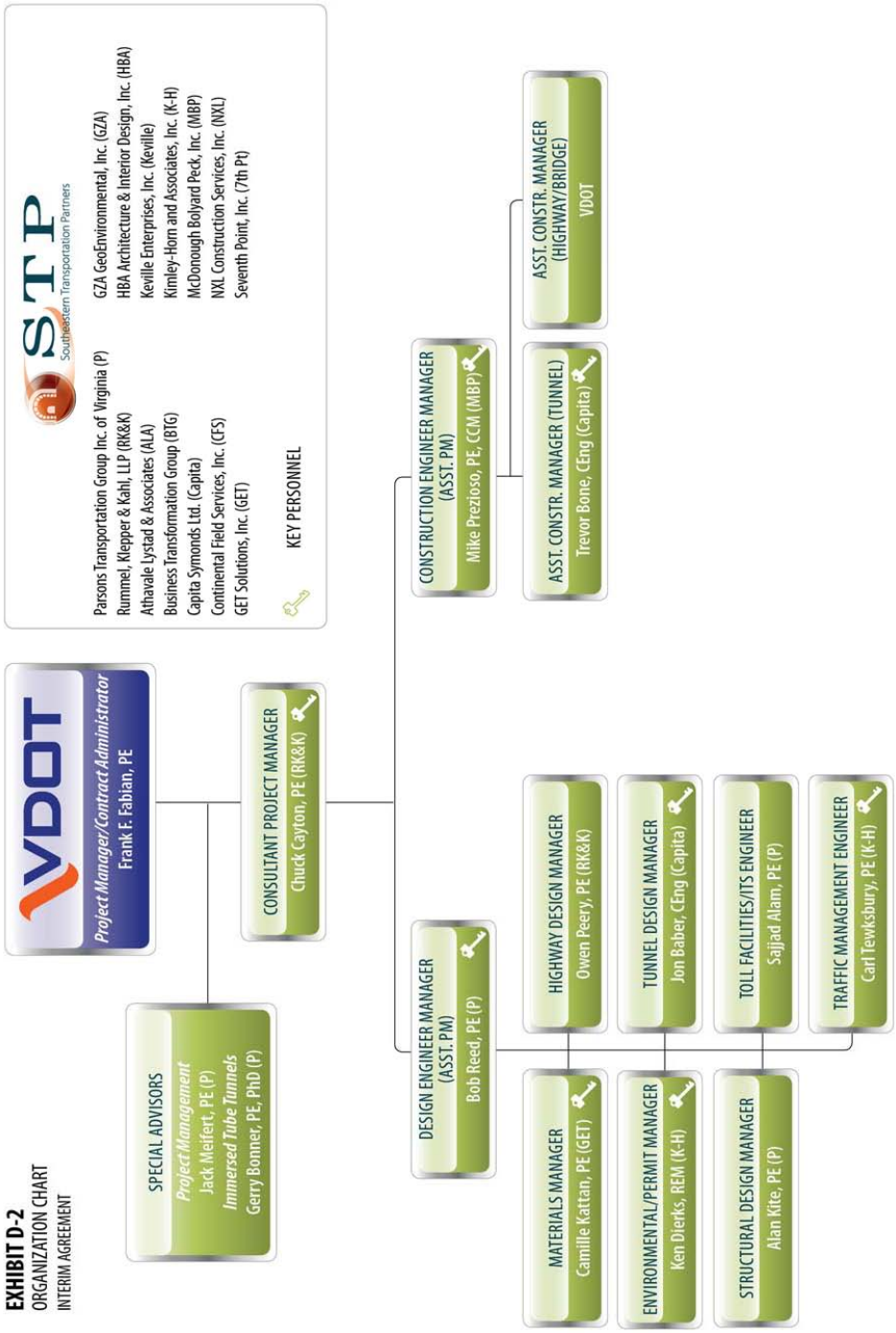


EXHIBIT D-2
ORGANIZATION CHART
INTERIM AGREEMENT



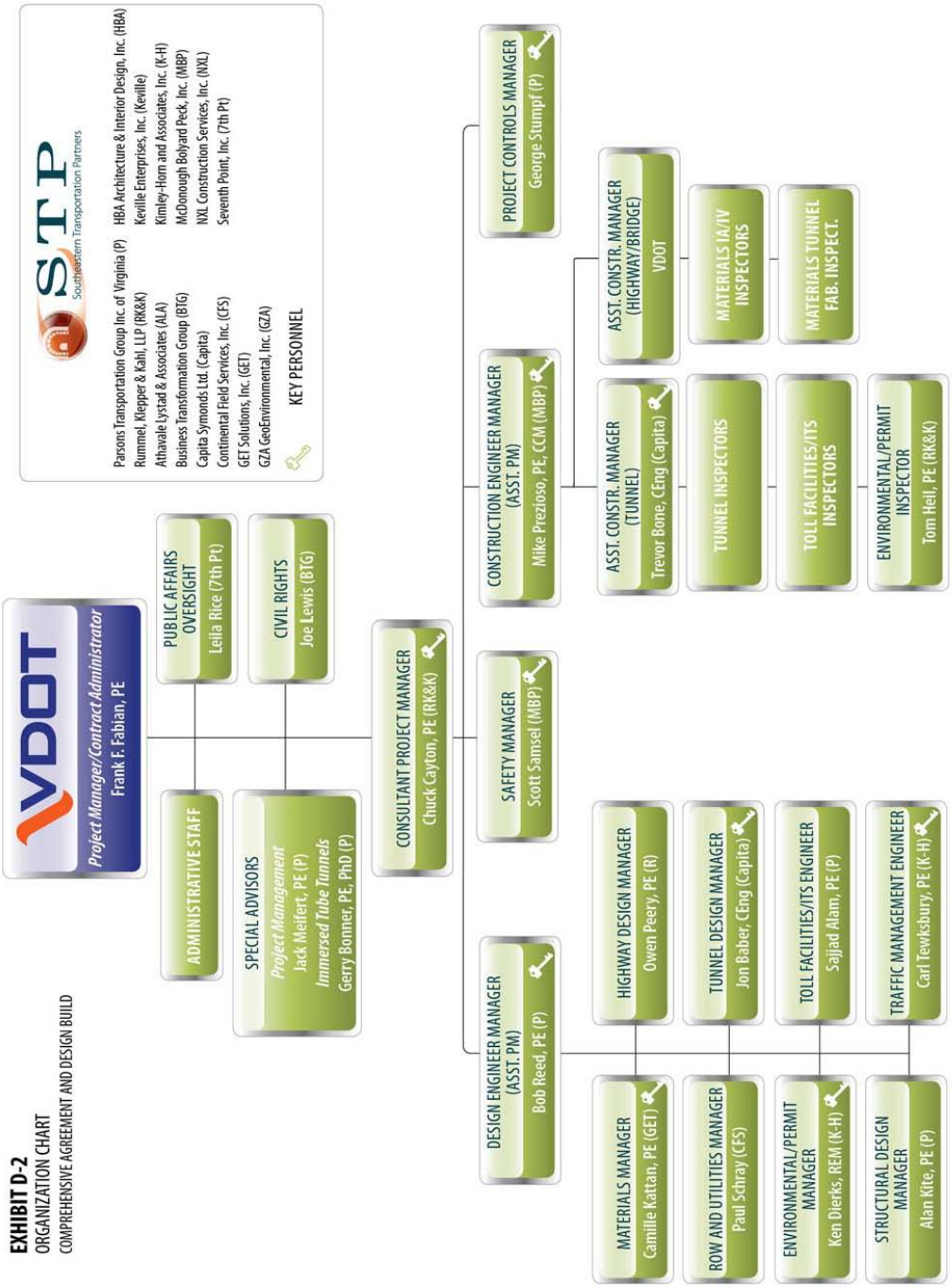


EXHIBIT D-2
ORGANIZATION CHART
COMPREHENSIVE AGREEMENT AND DESIGN BUILD
VDOT
Project Manager/Contract Administrator
Frank F. Fabian, PE
ADMINISTRATIVE STAFF
SPECIAL ADVISORS
Project Management
Jack Meifert, PE (P)
Immersed Tube Tunnels
Gerry Bonner, PE, PhD (P)
PUBLIC AFFAIRS OVERSIGHT
Leila Rice (7th Pt)
CIVIL RIGHTS
Joe Lewis (BTG)
CONSULTANT PROJECT MANAGER
Chuck Cayton, PE (RK&K)
DESIGN ENGINEER MANAGER (ASST. PM)
Bob Reed, PE (P)
MATERIALS MANAGER
Camille Kattan, PE (GET)
HIGHWAY DESIGN MANAGER
Owen Peery, PE (R)
ROW AND UTILITIES MANAGER
Paul Schray (CFS)
TUNNEL DESIGN MANAGER
Jon Baber, CEng (Capita)
ENVIRONMENTAL/PERMIT MANAGER
Ken Dierks, REM (K-H)
TOLL FACILITIES/ITS ENGINEER
Sajjad Alam, PE (P)
STRUCTURAL DESIGN MANAGER
Alan Kite, PE (P)
TRAFFIC MANAGEMENT ENGINEER
Carl Tewksbury, PE (K-H)
SAFETY MANAGER
Scott Samsel (MBP)
CONSTRUCTION ENGINEER MANAGER (ASST. PM)
Mike Prezioso, PE, CCM (MBP)
ASST. CONSTR. MANAGER (TUNNEL)
Trevor Bone, CEng (Capita)
TUNNEL INSPECTORS
TOLL FACILITIES/ITS INSPECTORS
ENVIRONMENTAL/PERMIT INSPECTOR
Tom Heil, PE (RK&K)
ASST. CONSTR. MANAGER (HIGHWAY/BRIDGE)
VDOT
MATERIALS IA/IV INSPECTORS
MATERIALS TUNNEL FAB. INSPECT.
PROJECT CONTROLS MANAGER
George Stumpf (P)
STP
Southeastern Transportation Partners
Parsons Transportation Group Inc. of Virginia (P)
Rummel, Klepper & Kahl, LLP (RK&K)
Athavale Lystad & Associates (ALA)
Business Transformation Group (BTG)
Capita Symonds Ltd. (Capita)
Continental Field Services, Inc. (CFS)
GET Solutions, Inc. (GET)
GZA GeoEnvironmental, Inc. (GZA)
HBA Architecture & Interior Design, Inc. (HBA)
Keville Enterprises, Inc. (Keville)
Kimley-Horn and Associates, Inc. (K-H)
McDonough Bolyard Peck, Inc. (MBP)
NXL Construction Services, Inc. (NXL)
Seventh Point, Inc. (7th Pt)
KEY PERSONNEL

3.2.1 VDOT Roles and Responsibilities

VDOT's responsibilities with respect to the Project will be exercised through the District Project Manager. VDOT will act as the owner for the Project on behalf of VDOT and FHWA, and will provide oversight to ERC. Additionally, VDOT will coordinate internal support for the Project, which will be in the form of Project support from functional areas, as needed.

The roles and responsibilities of VDOT's management team are described below. Further definition of roles and responsibilities will be established in the contract documents and related Project Agreements.

Executive Steering Committee

The Executive Steering Committee has the ultimate decision-making authority for the Project. This assures that the Project receives a high level of support and attention from each of the Project partners. The Executive Steering Committee has the authority to define the Project priorities, determine Project assignments for the work groups, and assures that the Project goals are achieved. At the discretion of the Governor, Secretary of Transportation, or Executive Steering Committee, advisory committees may be assigned to address specific Project issues. Such advisory committees will provide support to the Project, through the Program Manager. The Chief Engineer for VDOT is the chairperson for this committee. The VDOT Chief Engineer provides the primary Project interface with the VDOT Commissioner and the CTB. Other members of the Executive Steering Committee include:

- VDOT Chief Financial Officer
- VDOT Chief of Systems Operations
- VDOT Program Manager
- District Administrator(s)

VDOT Program Manager (Central Office IPD representative)

The Program Manager will be responsible for providing the District Project Manager assistance to any contract administration issues. Specific duties include the following:

- Facilitating Project handoff to the District Project Manager, upon execution of the Comprehensive Agreement.
- Assisting the District Project Manager in resolutions to contract issues.

District Project Manager

The District Project Manager is responsible for administering the CA and coordinating resources from the VDOT District(s) in which the Project is located. The District Project Manager will be responsible for the overall project management of the Project on behalf of VDOT and will be the primary point of contact, providing a liaison with FHWA. All information to include correspondence and communication shall flow throughout the VDOT District Project Manager from the Localities, ERC, and the VDOT Program Managers. He will coordinate VDOT's support for the Project by engaging senior VDOT resources as needed.

During the Design and Construction Phase, the District Project Manager represents VDOT with strengths project management issues.

- Managing the overall Project budget, funding, master schedule maintenance, including tracking, monitoring, and reporting.
- Administering the Project in accordance with the terms of the CA and other Project Agreements.
- Serving as a liaison to FHWA.
- Managing the Project Management Plan.

Elizabeth River Crossings, LLC

ERC is the private entity that will be responsible for developing and operating the Project in accordance with the terms of the Comprehensive Agreement.

Technical Representatives

Technical representatives will be established using personnel from VDOT's Central Office and District staff. The teams will be composed of technical staff from relevant disciplines including, but not limited to, environmental, structure and bridge, right of way and utilities, planning, traffic engineering, operations, maintenance, location and design, public affairs, Project controls, civil rights, security, etc.

Technical team members are drawn from diverse areas of VDOT to assure that any critical issues are discussed and brought forward. Technical Team members will be assigned tasks on an as needed basis. Tasks will be assigned by the District Project Manager or the Division Administrator of the specific discipline. It is the responsibility of the technical representative to complete the assigned tasks and to communicate with the associated Central Office or District staff counterpart for the task at hand. Furthermore, technical representatives have the responsibility to:

- Attend key meetings;
- Provide deliverables and recommendations, when required; and
- Incorporate expertise into deliverables and recommendations.

3.2.2 Additional Staffing

VDOT will provide additional staff positions to help support the District Project Manager. As the Project develops additional resources and functional expertise will be added, as needed. This support may come from in-house or contracted resources. In December 2010 VDOT entered into a Memorandum of Agreement with Southeastern Transportation Partners, to provide professional engineering services and staff augmentation to VDOT in the project management

and oversight of the design and construction phases of the Project.. STP's scope of services includes the development and administration of the following programs:

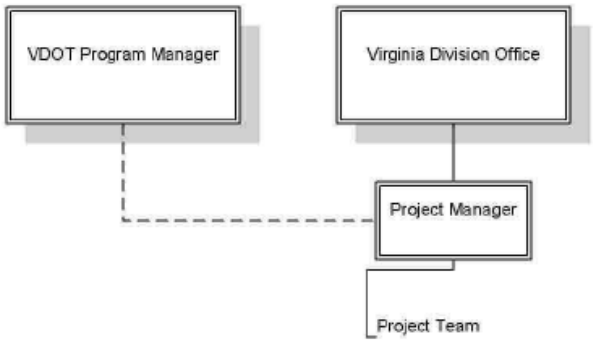
- Project Management Program
  - Development, analysis and mitigation of project risks
  - Oversight and implementation of Project controls, including forensic scheduling, estimating, project documentation systems and claim avoidance and review
  - Project communication electronic network for internal and external project participants
  - State and Federal regulatory and policy compliance
- Design Management Program
  - Engineering disciplines such as roadway, structures, tunnels, bridges and other types of infrastructure development
  - Design quality assurance and interaction as the owner's representative
  - Architectural/engineering disciplines for toll and other facilities
- Environmental Management Program
  - Environmental permit review
  - Monitoring and review of construction and mitigation measures
- Right of Way and Utility Management Program
  - Acquisition and relocations oversight
  - Appraisal reviews
  - Utility relocation oversight
- Traffic Management Program
  - Review and /or development of Traffic Management Plans
  - Oversight of congestion management activities, maintenance of traffic
  - Coordination of public information
- Public Affairs/Outreach Programs
  - Public communication plans
  - Provide information technology support services including a "one stop" public information web site/project communication program integrating all active projects
- Safety Program
  - Construction oversight and monitoring
- Construction Management Program
  - Independent assurance of Quality Control processes
  - Construction engineering inspection
  - Project partnering;
- Disadvantage Business Enterprise (DBE) and Small, Women and Minority (SWaM) Owned Business Enterprise Programs
  - Provide administrative support for monitoring DBE and SWaM programs, information collection and reporting, workforce utilization and contractor compliance guidance, supportive services and training programs
  - Business outreach and development programs
- Financial and Administrative Monitoring Program

3.3 Management Team - FHWA

The Virginia Division Office is responsible for Federal project administration and oversight, including such activities as planning and environmental requirements, design, right-of-way, Project financing, construction, and contract administration. The Virginia Division will be assisted by the FHWA Headquarters Office of Innovative Program Delivery as it relates to major project issues. If a TIFIA loan application is submitted, the Division will work with and coordinate Project details with others in the United States Department of Transportation.

The organizational chart for FHWA's Team is shown in Figure 3, which reflects the structure required for the procurement phase of the Project.

Figure 3: FHWA Management Team, Organizational Chart



3.3.1 FHWA Roles and Responsibilities

FHWA responsibilities with respect to the Project will be coordinated through the FHWA Project Manager who will be the primary FHWA representative on the Project team. The FHWA team will conduct verification activities to ensure that the Project implementation of the FHWA programs conforms to established laws, regulations, and policies. The FHWA approach will be to "trust but verify" in order to have confidence in the quality of the product and the Project team processes and, if required, work to improve the products and processes in accordance with assessment of risk and benefit. VDOT will bring important Federal issues to FHWA's attention.

3.3.2 FHWA Approval and Process Participation

The FHWA Project Manager is responsible for coordinating all Project actions and approvals, with guidance provided by the FHWA Division office and other FHWA personnel. The Project Manager is a non-voting member.

At the request of VDOT, the FHWA Project Manager or other appropriate FHWA Division representative will attend work group meetings and will participate when possible in:

- Informal reviews
- Design Coordination Meetings
- Formal Reviews
- Design and Construction QA/QC Programs

3.3.3 FHWA Staffing

FHWA will provide a Project Manager who will act as the Agency's focal point in the overall Project administration and oversight, in analyzing information concerning the status of the Project, and if appropriate coordinating the review and acceptance of FHWA required submissions. The FHWA Project Manager will be the primary contact in coordinating and providing status reports to FHWA Headquarters. The FHWA Project Manager will draw on additional FHWA resources as needed or required. FHWA specialists in the Virginia Division will be relied upon for their expertise and various Federal approvals. For instance, the environmental engineer will be the primary FHWA person for the NEPA process and will approve the NEPA documents. The FHWA Major Projects Engineer assigned will be the primary engineer for the design review including any design exceptions and Interstate access approvals. Other specialists in the areas of planning, right-of-way, bridge, civil rights, and finance will be involved.

The Virginia Division Administrator, Assistant Division Administrator, and Director of Project Delivery will provide leadership and guidance for the Project.

If a TIFIA loan application is submitted, the FHWA Virginia Division will provide a supportive role to the USDOT TIFIA Office

3.4 Other Government and Stakeholder Organization Roles and Responsibilities

The Project will involve the coordination and efforts of other governmental agencies, organizations, localities and stakeholders.

3.4.1 Stakeholder Partnering Corroboration

Due to the magnitude of the Project and the numerous primary and secondary stakeholders, the District Project Manager will facilitate (or utilize outside resources to facilitate) stakeholder meetings and other community outreach measures. The purpose of such meetings will be to ensure consistent communication of information to all stakeholders, incorporate feedback from

stakeholders and obtain consensus where needed. The partnering process will be in general agreement with the process outlined in *Field Guide for Partnering for VDOT Projects*, November 2005

3.4.2 Primary Stakeholders

For the purposes of this document, primary stakeholder is defined as a stakeholder who is both important and influential and must be fully engaged in the project to facilitate project success. The following are identified as primary stakeholders:

*Railroad Companies - VDOT and ERC will have to coordinate with two (2) railroad companies to secure agreements to complete design, construction and ongoing maintenance responsibilities. T*ypical agreements cover insurance, safety and operational issues concerning the railroad are customarily used when an active, operating railroad is involved, such as exists with the on this Project.

- *CSX* Transportation *Inc. (CSXT)* - CSX owns approximately 57 acres of land along both sides of the proposed MLK Extension. On this property CSX has maintained an active railroad and trans-flow facility since the late 1990's, including leasing relationships with Vulcan Materials and the Virginia Port Authority. VDOT and ERC will need to obtain a long term construction, operations and maintenance agreement with CSXT.

- *Norfolk* Portsmouth *Beltline (NPBL)* - The Project will require widening an existing bridge structure which passes over property owned by NPBL along Interstate 264 in the City of Portsmouth, west of the Downtown Tunnel.

Hampton Roads Planning District Commission (HRPDC) and Metropolitan Planning Organization. VDOT will continue to hold quarterly meetings to update the localities of the Project status.

Other State Agencies. Other State agencies, such as the Department of Rail and Transportation, will be notified of Project initiatives to ensure the goals of the Statewide Intermodal Long-Range Transportation Policy Plan are achieved.

While coordination with the resource agencies will be ERC's responsibility, both the Army Corp of Engineers and the Virginia Department of Environmental Quality are primary stakeholders and should be included in the partnering process to facilitate the review and approval process for required permits.

3.4.3 Secondary Stakeholders

For the purposes of this document, secondary stakeholder is defined as a stakeholder who is either important or influential and must be actively managed during the project. The following have been identified as secondary stakeholders:

Cities of Norfolk and Portsmouth (Localities). VDOT will continue to hold quarterly meetings to update the localities of the Project status.

VDOT will continue to consider the input they receive from those stakeholders as development of the Project progresses.

SECTION 4: PROJECT MANAGEMENT AND CONTROL

VDOT will perform oversight activities throughout the life of the Project and in accordance with contract documents. In the capacity of oversight, VDOT will review the work of ERC. VDOT will also forward such project deliverables to the applicable oversight organizations a required (e.g. FHWA). VDOT will foster its oversight responsibilities through:

- It's use of the Southeastern Transportation Partners, who will have daily interaction with ERC and provide daily reports to VDOT.
- Direct VDOT oversight for the Project which will include "over the shoulder" reviews as described in the Quality Management Systems Plan, field inspections by VDOT staff, review and approval of submittals as detailed in the contract documents and Project Agreements, and frequent interaction with ERC.
- Coordination with FHWA, where VDOT looks to FHWA for guidance, as appropriate; to ensure that ERC complies with federal requirements, and to serve as a liaison for FHWA interaction with ERC.

The control and management of the Project is subdivided into three interrelated variables: scope, schedule, and finance. Control and management of these variables by ERC is defined in the contract documents and Project Agreements. The District Project Manager will periodically check to determine whether the ongoing work is proceeding as planned "on time and on budget". Management of these variables cannot start effectively until the Project definition has advanced far enough to permit the Project scope, quality, cost and schedule to be reliably defined and then base-lined.

The following sections provide VDOT's Project management and control methodology for the design and construction phases of the Project. Additional detail will be provided in the subsequent updates to this Project Management Plan.

4.1 Scope Management

During Phase 2 of the IA, ERC will refine the scope which requires the development of design plans to approximately 30% for the purposes of negotiating a CA with VDOT. The cost estimate methodology and controls are further described in Section 4.3.3 herein below.

VDOT will monitor the milestones and scope development to control the final Project scope. The process for managing scope and other Project changes is included in Section 4.4.

4.2 Schedule Management

This section describes how VDOT will monitor and report progress on the Project. It describes the various elements that constitute the schedule management plan for the Project. It also describes the type of schedule reports that will be generated and used to communicate schedule information to the Project team and outside organizations.

VDOT will be in an oversight role regarding schedule management; however, VDOT will review and provide comment. ERC is responsible for development of schedules, as well as schedule reports and update

4.2.1 Contract Schedules

Contract Schedules include the Work Plan Schedule, Initial Baseline Schedule, Proposed Baseline Schedule, Updated Baseline Schedules, Monthly Progress Schedule and the As-Built Schedule.

1. *Work Plan Schedule*

The Work Plan Schedule is the schedule that includes all work under the IA for Phase 2 to be completed by ERC. The Work Plan Schedule is used to measure the progress of the work during Phase 2 and allows for the accurate planning of resources by identifying submittal dates and activities for review required by VDOT or other agencies.

To identify and plan the work, the scope of work has been subdivided and organized into manageable components, tasks, subtasks and deliverables by the Work Breakdown Structure (WBS) consisting of various levels that define the entire Project and its components. Costs and physical progress are to be measured at the lowest level of the WBS, specifically, for each Project Deliverable.

The Work Plan Schedule identifies all activities, deliverables and milestones assigned to each team member that will be used to track the work progress. Schedule management interfaces directly with scope, cost, and quality management when team member roles and activities are defined, coordinated, and continually monitored.

"30 Day Look Ahead" schedules will be provided to VDOT every week. This helps project delivery teams to focus on the current work and effort needed to maintain schedule compliance.

The current Project Schedule and the 90-Day Look Ahead Schedule will be updated regularlyand submiited to VDOT for review and comment on a monthly basis.

2. *Initial Baseline Schedule*

The Initial Baseline Schedule is ERC's post CA conceptual plan for the design and construction of the Project and is the schedule used to monitor performance of the Work until the Proposed Baseline Schedule is approved by VDOT.

3. *Proposed Baseline Schedule*

The Proposed Baseline Schedule is ERC's post CA proposed detailed plan for the design and construction of the Project. The Baseline Schedule is ERC's detailed plan for the design and construction of the Project, which must be submitted for review and approval by VDOT.

ERC will develop the Proposed Baseline Schedule from the Initial Baseline Schedule noted in Section 4.2.1.2 herein above. ERC will submit the Proposed Baseline Schedule

to VDOT for review and approval within 60 days of the issuance of Work Commencement Approval. Upon approval by VDOT, the Proposed Baseline Schedule will become the Baseline Schedule.

4. Baseline Schedule

The Baseline Schedule submittal will include a narrative report which generally describes ERC Work Breakdown Structure (WBS) and the proposed methods for designing and constructing the major portions of the Work. The schedule narrative will describe the general sequence of design and construction, the initial Critical Path of the Project, and all Critical Path Milestone Schedule Deadlines.

The Baseline Schedule will include all major activities of the Work in sufficient detail to enable the Independent Engineer (if applicable), VDOT and STP to monitor and evaluate design and construction progress, from commencement of the Project to Final Acceptance. The Baseline Schedule will also include activities for ROW acquisitions, Utility Relocations, permit acquisitions, and interfaces with other projects, localities, municipalities and other Governmental Authorities as impacted by the Project. For each major activity, ERC will indicate the duration (in days) required to perform the activity and the logical dependencies and interrelationships among the activities.

5. Updates and Reporting

The Baseline Schedules will be updated monthly and on an as-needed basis to assure adherence to the schedule requirements. Any schedule changes will be analyzed to model "what-if" scenarios, and to evaluate potential delays.

Part of the schedule monitoring process is to detect adverse trends in administrative, design or construction activities early enough to initiate corrective action. The goal of the schedule monitoring process is to present the most accurate picture possible of the progress achieved by all levels and organizations involved in the Project and to demonstrate the impact on the overall baseline schedule.

Schedule reports may include: Project status, schedule conflicts, changes, and delays. The schedule will be monitored and reported on a regular basis and at least monthly. Regular schedule reports will be prepared and distributed to the Project team and other involved parties. The reports will provide a consistent basis for evaluating progress and will allow managers to focus on exceptional events or negative trends. Schedule status is included as part of the monthly Project report (see Section 4.5).

As changes or potential delays become apparent, the VDOT District Manager will initiate schedule analyses to study the situations and determine the impacts of the changes. The Project team may enlist the aid of the responsible Project participants to research and analyze changes and to recommend how these changes to the originally anticipated. If a delay to the critical path of the Project is identified, the Program Manager will provide the Project team with the necessary information to assist with corrective action.

4.3 Financial Management

Financial management incorporates the concepts used for development of the baseline budget for the estimated Project costs and the cost control measures to be utilized by VDOT's Program Manager.

4.3.1 FHWA Requirements

Section 1904 of SAFETEA-LU requires Financial Plans for all "Major Projects". FHWA guidance defines the Financial Plan content and format. The *Financial Plan Guidance* presents an outline for the "Initial Financial Plan" and for the "annual updates" used to satisfy information and oversight requirements of FHWA headquarters, the U.S. DOT Office of the Secretary, the Administration, and Congress. When TIFIA loans are considered, the requirements for finance plans in the TIFIA loan application must also be followed, which are more detailed than the major Project Finance Plan guidance.

ERC is responsible for development of a Finance Plan which will be reviewed and approved by VDOT and contains the elements necessary to identify funding sources and estimate the Project costs. ERC's Financial Plan, as approved by VDOT, will be submitted to FHWA for review.

4.3.2 Finance Plan

ERC's Work Plan Schedule reflects Commercial Close and Financial Close occurring simultaneously. Prior to Financial Close, ERC will seek private debt financing to provide the funds required to develop and operate the Project. This information will be included in the Finance Plan.

Currently there are no state or federal public funds allocated for ERC to use on this Project. Financing options will be determined through innovative financing tools.. Financing is likely to come from a variety of funding sources including: private equity investment, tolling, TIFIA loans, private activity bonds, or other innovative methods.

4.3.3 Cost Estimate

1. ERC Cost Estimating Methodology

ERC has identified the Project cost for development and operation to be approximately $1.9 billion. This estimate will be revised after completion of technical studies (i.e., geotechnical study, hazardous materials investigations, etc.), any further design development, and any major changes in scope to assess impact to the Project cost estimate.

VDOT has provided ERC with a Proforma to use in identifying cost items to ensure VDOT and ERC can compare estimates. ERC will be required to identify their Cost Estimate Methodology based on the Proforma provided by VDOT.

On October 7, 2010 VDOT, ERC, FHWA and key members of Southeastern Transportation Partners, met to review ERC's proposed methodology for carrying out design and construction cost estimating. ERC was represented at the meeting by its construction joint venture partner, SKW. SKW produced an Estimation Coordination Book which defines the cost structure and methodology that will be used by ERC in estimating design and construction elements of the work. It was determined that ERC's Estimate Coordination Book mirrors FHWA's Major Project requirements. Cost methodologies for the operations and maintenance will be further developed during Phase 2 activities and will be subject to VDOT's and FHWA's review.

A three day estimate kick-off meeting was conducted on January 18, 19 and 20, 2011 to formally commence the pricing of Phase 2 design and construction related activities; over eighty (80) participants representing members of VDOT, ERC, SKW, STP, FHWA, PB Americas and multiple subcontractors and vendors attended this meeting. Similarly, on February 23, 2011, VDOT, ERC, STP and FHWA met to formally commence the estimating process for O&M related activities. VDOT, ERC and SKW will each develop and independent estimate which is currently scheduled for completion in May 2011.

2. *VDOT Cost Estimating Methodology*

VDOT has completed an independent cost estimate in 2008 dollars and in year of expenditure, in conformance with FHWA's Major Project Guidelines, developed in year of expenditure, includes design and construction costs for MLK Extension, new Midtown tunnel, and upgrades to the existing Midtown and Downtown Tunnels; non-construction "soft" costs including design fees, management fees, program management fees, construction engineering, testing, and inspection fees; and a conceptual level cost estimates for the operation and maintenance of the proposed include capital expenditure for periodic refurbishment and replacement, and operating expenditure for routine maintenance., which is used for validating the VDOT in-house cost estimate, utilized in the financial model, and as a baseline in comparison to ERC's cost estimate to be submitted during Phase 2 of the IA. On August 26, 2009 VDOT obtained FHWA concurrence of VDOT's March 2008 independent cost estimate, noting that review comments in the Comment Resolution form had been satisfied.

As Phase 2 preliminary engineering work is further developed, ERC and VDOT will complete independent cost estimates. An independent review will be performed on these estimates as well as all major cost estimates developed for this Project. A team of individuals have been selected based on area of expertise to complete and review the cost estimate. Areas of expertise include; Right of Way, Utilities, Location and Design (Structure/Bridge, Hydraulics), Construction, and Environmental, Marine and Dreding, Geotechnical, Immersed Tube Tunnels, Mechanical and Electrical, ITS/Tolling Systems, Quality Assurance and Quality Controls and Operations and Maintenance.

The FHWA Project Manager will be included among these individuals. Comments from the team review will be considered for final cost estimate and the independent team will be listed in the supporting text. Prior to approval of the Financial Plan, FHWA will need to review and approve the updated Independent Cost Estimate. This estimating process should be finalized in May 2011.

The results of the independent cost estimate have been used in development of financial modeling. As estimates are updated to reflect further development of preliminary engineering and other Phase 2 deliverable, the financial model will be refined to reflect these updates.

4.3.4 Budget

VDOT is committed to the goal of delivering the Project on time and on budget. A key element in achieving this goal is a comprehensive approach to managing the budget and the expenditures by both VDOT and its consultants/contractors. This section describes the means by which the Project costs will be managed. Should impact to the cost and/or schedule appear likely, then the Project Change Control Process identified in Section 4.4 will be applied.

1. *Cost Control Procedures*

Proper controls (e.g. information systems software) have been implemented in the cost control system to ensure accurate and timely information regarding actual cost, forecasted cost, and revisions that occur to the baseline budget throughout the Project. The cost control system reflects the budget information for VDOT and VDOT's consultants/contractors to ensure all parties are aware of their respective budgets.

There are two elements to cost control. One element is the total cost of the Project: the cost to develop, design, construct, maintain and operate. An estimate has been prepared for the total cost of the Project; however, the final cost of the Project will be negotiated with ERC and agreed to in the Comprehensive Agreement. (may include allowances, in which case amounts would not be allowed to exceed a guaranteed maximum price).

The second element of budget control is related to internal costs incurred by VDOT staff in managing, reviewing, and overseeing the Project. On an annual basis, VDOT's Program Manager will request each area, including VDOT's District Project Manager, to develop a staffing budget by year based upon the Project schedule. It will be the responsibility of VDOT's Program Manager to coordinate annual budget development, and allocate funding to capture costs attributable to staff involvement with this Project.

2. *Cost Tracking System*

VDOT will utilize Financial Management System II (FMS II) to track costs associated with the Project. The VDOT Program Manager will be responsible for monitoring and updating the Project costs in FMSII with the support of the District Project Control Group. VDOT Program Manager will prepare spreadsheets using Excel that will detail expenditures against each source of funding, including Federal-Aid funding. This information will be provided to the Program Manager for his/her use in monitoring the Project, as well as for inclusion in the reports indicated in Section 4.5.1.

3. *Value Engineering*

To meet FHWA requirements and follow good business practices, VDOT's independent Value Engineering (VE) program will be implemented as a means of providing

opportunities to reduce costs, reduce schedule, or otherwise improve the Project performance or efficiency.

The VE process teams independent design professionals, experienced in major design disciplines associated with the Project, and other cost estimating and construction experts. The VE team reviews the design to identify and evaluate potential cost saving options (construction and total life-cycle cost) and recommends options that maintain the design intent, improve value, and/or improve constructability. The VE team submits the results of this study to VDOT's Program Manager. The VDOT Program Manager distributes the VE study to the Executive Steering Committee who reviews the recommendations. The VE study is provided to FHWA for approval. The results of the VE study are included in the negotiation process for incorporation into the Project design.

VDOT has conducted and completed a VE study for this Project, see Section 1.7.2. The VE study results and recommendations was made available in advance of Solicitation for proposals, so ERC has taken the VE study in consideration in developing its Conceptual Proposal.

VE is also recognized as an on-going discipline throughout the Procurement and Development Phase. Contractor submitted VE proposals are another form of VE. In this Project, it is anticipated that the detailed proposal will include a request for a Concept of Design to include design plans and a narrative. ERC may submit Alternative Technical Concepts (ATCs). ATCs are concepts that conflicts with a design, construction, operation or maintenance requirement.

Upon submission of design elements the VDOT District Manager will request technical review of ERC's submittal by the Design-Build Solutions Working Group.

4.4 Project Change Control Management

4.4.1 Objectives of Change Control

Change control ensures that Project changes are identified, evaluated, coordinated, controlled, reviewed, approved, and documented in a manner that best serves the Project. Uncontrolled changes may lead to far-reaching effects on the Project's technical scope, schedule and cost baseline, as well as effects on safety, risk, quality, and products.

An approved Project cost and schedule baseline is the highest controlling element of a Project. Controlling changes within the cost and schedule baseline is directly related to managing the risks and uncertainties associated with the Project. Change control provides a system to approve and document Project changes and minimize the risk of violating the cost and schedule baseline. The objective of the change management process is to ensure a central control point for all recommended changes to the Project.

4.4.2 Baseline Change Control

Changes to the design and construction projects will most likely cause a change to the Project cost, scope or both. During this phase of the Project, the results of the environmental studies may also impact design and construction projects, again possibly resulting in a change to the Project cost, scope or both. These changes must be documented with respect to their impact on the Project baseline and an appropriate baseline change initiated.

Changes can only be controlled after a baseline is established. During the establishment of the baseline schedule, the results of additional design and other Project development activities may result in a change to the Project cost, scope or both. Additionally, during the Phase 2 of the IA proposed changes by ERC may result in a change to the Project cost, scope or both. These changes must be documented with respect to their impact on the Project baseline and an appropriate baseline change initiated.

Control of the Project baseline is not possible without timely and accurate data. The baseline must continually be compared to actual costs and schedule. The District Project Manager will implement a method to monitor/track and conduct trend and variance analyses to assess the impact on the baseline.

4.4.3 Change Control Process

Once change is recognized it must be evaluated by the VDOT District Project Manager and technical representatives affected by the change. Ideally change is recognized by the Technical Representatives and VDOT District Project Manager prior to affecting influence over the project or deadline. As such it is critical that all technical representatives be cognizant of the project requirements in general and the specific requirements with their area of expertise. Changes in the Work during Phase 2 of the IA will be implemented in accordance with the change order process set out in the Interim Agreement.

For changes that may occur after execution of a Comprehensive Agreement, such changes will be processed in accordance with the requirments of Article 14 setout in the CA. The initiation change request, espeecially related to an errors or omissions claims against the Department would most likely occur during the construction phase of a Project. At this point, steps must be taken to collect information for determining the validity of the claim or change request, specific responsibilities, and extent of the requested change. The communication between VDOT's District Project Manager, VDOT's Project Manager, Concessionaire, Design-Build Contractor, FHWA, and consultant (STP) must be clear, open, and well documented..

- Identification and Supporting Documentation identifying the matter. i.e. the use of Change Control Forms PMO-Form-2 or Project Variance Notice (PVN) forms,
- Review of Contract Documents, Field Verification and follow up discussions to validate the Change,
- Development of Change Order Documentation and agreement and sign off by authorizing parties recommending the change, using VDOT's Construction Directive, CD-2010-1 as applicalble.

- Use VDOT's Construction Directive, CD-2010-1 as applicalble for funding is identified, acquired and approved, authorization and implementation of the work to be executed.
- Work would be executed using a modified form of VDOT's Scheduling and Contract's Division Form C-10.

VDOT and ERC will process as a part of the overall Quality Systems Management Plan. It is anticipated this plan will be completed prior to the execution of the Comprehensive Agreement..

The Project controls to be agreed upon will include change control procedures to ensure that Project changes are identified, evaluated, coordinated, controlled, reviewed, approved, and documented in a manner that best serves the Project. Project controls procedures will be integrated with document control procedures.

4.5 Project Reporting

VDOT will generate reports to monitor the health of the Project and to provide Project updates to FHWA and other stakeholders. Reports will be managed according to the Document Control Procedures identified in Section 4.6.

The Program Manager will be responsible for reporting and updating VDOT controlled reporting mechanisms including the integrated Project Manager (iPM), Dashboard, PPMS and FMSII. The Program Manager will prepare monthly reports for internal usage and in support of the reports identified below. The standard reports will be in general compliance with the FHWA *Project Management Plan Guidance* (January 2009) or guidelines in effect at the time of reporting and will include, but are not limited to the reports identified below.

4.5.1 Reports

During the design and construction phase, the following standard reports will be developed and will include at a minimum:

1. Monthly Cost Report and Progress Report - The VDOT District Project Manager will collect and publish pertinent data such as the status of project activities and deliverables, action items/outstanding issues, project schedule, project cost, project quality, lessons learned, if any, and any other pertinent information for the Project, if applicable. Data will be presented in graphical and tabular forms as prescribed in the FHWA *Project Management Guidance* on Project reporting and tracking. Unresolved issues will be identified and required actions presented. The resulting report package will be reviewed at a progress meeting with the VDOT Project team.

2. Quarterly FHWA Reports - The VDOT District Project Manager will prepare quarterly reports that conform to the FHWA *Project Management Guidance* on Project reporting and tracking. FHWA guidance is included by reference. FHWA recommends reports containing information on Project costs, schedules, quality issues, compliance with Federal requirements and other status items in sufficient detail to allow all involved parties to be fully aware of the significant status issues and actions planned to mitigate any adverse impacts. Additionally, the quarterly report will include a report on the status of the critical success factors/measures of effectiveness. VDOT will work with FHWA to ensure that reports include the required information.

3. FHWA Annual Financial Update – Once the Financial Plan is prepared and approved by VDOT and FHWA, it will be updated annually. The Financial Plan year shall conform to the Federal fiscal year. The FHWA quarterly reports will be the basis for the information required in the Annual Financial Plan Updates. In this way, all

concerned parties will be informed and updated on a regular reporting basis with information consistent with that provided to meet the annual requirements of Section 1904 of SAFETEA-LU. The annual updates require formal certification and approval by the Successful Offeror and VDOT prior submittal to FHWA.

4. FHWA Monthly Report – The FHWA Virginia Division provides a monthly status report to their Headquarters since the Project is considered a Major Project. The VDOT Program Manager will support the FHWA, as needed.

5. Value Pricing Pilot Program Reporting – The VDOT Project Manager will prepare reports setting forth the results of VDOT's monitoring of the Project, pursuant to the Cooperative Agreement. VDOT and FHWA Virginia Division will agree upon the frequency of the reports prior to the beginning of toll collections on the Project.

   An overall monitoring, evaluation and reporting plan will be developed including plans for data collection and analysis, before and after assessment and documentation of results. Consistent with the Cooperative Agreement, such monitoring will occur for at least 10 years from the date of implementation of the Project, as appropriate, on driver behavior, traffic volume, transit ridership, air quality, and availability of funds for transportation purposes. VDOT and FHWA Virginia Division will agree upon the frequency of the reports prior to the beginning of toll collections on the Project.

6. Concessionaire Monthly Reporting - The Project Technical Requirements will require the publishing of reports reflecting the current forecasted cost vs. the latest approved budget vs. the baseline budget should be included in this section. During the Construction Period, ERC will be required to submit monthly reports that will include the following:

   1. specific construction activities and deliverables planned for the next reporting period;

   2. a progress narrative that describes, at a minimum, the overall progress for the preceding month, a critical path analysis, detailing the current cost status, reasons for cost deviations, impacts of cost overruns, and efforts to mitigate cost overruns, a discussion of problems encountered and proposed solutions thereof, any pending TIAs, float compensation;

   3. a comparison of actual and planned progress including (1) illustrating schedule variance graphically by plotting and budgeted cost of work performed (BCWP) and the budgeted cost of work scheduled (BCWS), and (2) reporting the scheduled performance index (SPI), defined as the ratio of BCWP divided by BCWS; and

4. A schedule of values to include all significant cost centers, such as prior costs, right-of-way, preliminary engineering, environmental mitigation, general engineering consultant, section design contracts, construction administration, utilities, construction packages, force accounts/task orders, wrap-up insurance, construction contingencies, management contingencies, and other contingencies.

This reporting format takes the schedule slippage into account when comparing actual versus planned expenditures, and provides an early and more accurate indication of whether or not the Project will be completed within budget. If such reporting indicates that the Project is trending to be over-budget, early action can be taken to reverse the trend, plan for contingency use, implement plans to recover any cost overruns, and/or dedicate additional resources to the Project.

4.5.2 Meetings

Project team meetings will be held on an as needed basis. As a minimum, Project Progress Meetings will be held on a monthly basis. The monthly reports will be the basis of the discussions at each meeting. Additional meetings may be conducted on an as needed basis. The Project Management Plan is flexible in recognizing that the type and frequency of meetings may change as the Project progresses and the needs of the Project change.

4.6 Document Control

4.6.1 Approach

Because numerous parties will be responsible for design and construction tasks during the life of the Project, document control will be an essential management function. To effectively manage, control, and coordinate this effort, the Program Manager should develop a document control system. The Program Manager will maintain a log of the major documents. .

4.6.2 Management

ERC and VDOT are sharing a team site for submittal documents. VDOT also requires its team representatives to perform all work on a common drive (repository) and discourages performance of work on a computer hard drive as this can result in lost files and dissemination of incorrect Project information.

The CA will require ERC to develop a Document Management Plan which will define the document management approach for all Work Product. The document management plan will address document management procedures; electronic document management systems; requirements for records retention; electronic and hardcopy data transmission, storage, sharing and retrieval; and will require a logical, auditable and project-compatible tracking system of all Project correspondence and documents for all phases of the Project.

The Document Management Plan will be required to clearly define document management applicable to all aspects of the project management structure, including: methods for controlling

updates, methods for identification of the originator/recipient of all documents, document approvals tracking, methods for enabling a searchable database, methods to establish links among various documents, and protocols for hard-copy and electronic filing.

The Plan shall also provide for electronic data management and storage, and electronic access to project documents remotely, with the required safety and security procedures including requirements for handling all Critical Infrastructure Information/Sensitive Security Information Policy (CII/SSI); which is more specifically detailed in ERC's Security Plan, Phase 2 IA deliverable Work Package ID D0101040301-2.

VDOT's District Project Manager with the support of the Project team will manage and retain documentation and as such will be responsible to ensure that all CII/SII information is protected from unauthorized release and distribution. Refer to the VDOT CII/SSI Policy and accompanying CII/SSI Guide for Employees, Vendors, Contractors, or Other Persons Accessing VDOT's CII/SSI for further information regarding CII/SSI requirements. This guide provides general guidance that the user/originator can use to designate CII/SSI and specific procedures for handling, marking, disseminating, releasing and destroying CII/SSI.

Document management and control will be in accordance with applicable laws and regulations, including:

- §42.1 – 76 et seq. Code of Virginia (Virginia Public Records Act)
- 23 CFR Federal Highway Administration
- *A Manual for Public Records Management in the Commonwealth of Virginia*, 1992 ed.
- *VDOT Records and Information Management Guide*, September 2004
- VDOT's CII/SSI Guide for Employees, Vendors and Contractors, V6.0, March 9, 2006 (Interim Revision – November, 2009)

4.7 Risk Management

VDOT will continue to perform its own risk analysis of the Project in order to identify and mitigate Project risks, especially those pertinent to VDOT functions. VDOT will perform risk assessments considering guidance in the *Guide to Risk Assessment and Allocation for Highway Construction Management*, October 2006. The VDOT District Project Manager will lead this effort and include the Technical Representatives along with the FHWA Project Manager, who will as a team address this section. Pursuant to the guidance document, risks should be addressed systematically throughout the Project development at each milestone. The risk management model will be repeated to identify new risks once a risk event has passed.

As part of its Risk Management Plan (RMP), risk will be assigned to the appropriate party through an interactive process with proposer teams during the solicitation process. Risk registers will be submittal requirement and will be incorporated into contract documents before execution the CA.

4.7.1 Risk Workshops

Risk workshops have already been conducted internally within VDOT and jointly with ERC and FHWA. Risk Workshops/Assessments will continue prior to executing the CA. Prior to Solicitation for Conceptual Proposals, an initial Risk Workshop was conducted on February 11, 2008 to review and record significant risks as perceived by project team experts to include commercial, procurement, political, schedule, environmental and major technical risks.

The result of the initial Risk Workshop was development of a qualitative risk register. In October 2009, VDOT conducted additional risk assessment in two additional Risk Workshops in support of and in furtherance of the February 2008 risk analysis. The Risk Workshops were held on October 2 and October 9, 2009 and were divided into three (3) functional expert risk groups to include: commercial/financial, design-build/technical, and operations and maintenance.

The purpose and objective of additional risk assessment was to:

1. Update the February 2008 risk register as a result of additional project development activities;
2. Address risk impact (probability, cost and schedule), risk assignment/allocation, and mitigation strategies;
3. Further develop VDOT's cost and contingency estimation process to establish a budget contingency; and
4. Output of an "Integrated Project Risk Register (IPRR), providing a quantitative risk assessment to be used by VDOT leadership in future negotiation throughout the procurement process.

Joint Risk Workshops

As setout in Exhibit B of the Interim Agreement, VDOT and ERC will meet and participate in good faith in Risk Workshops. The goal of the Risk Workshops is for VDOT and ERC to understand each others position on high level risk assignment and mitigation strategies for a selected number of risks. The IA has two phases: (1) Feasibility Determination and (2) Development to Execution of a Comprehensive Agreement (CA). A key deliverable of Phase 1 is a jointly agreed on project risk matrix. Clearly, a full understanding by VDOT and ERC of the risks inherent in this Project as well as with public-private partnership arrangements in general is vital to further development of the Project.

VDOT and ERC held a two-day, facilitated risk workshop VDOT and ERC held its initial, facilitated joint Risk Workshop on February 11 and February 12, 2010 prior to the Phase 1 Interim Agreement Project feasibility determination where: (a) commercial/financial risks and (b) technical risks related to the Project were discussed.

Prior to the workshop, VDOT and ERC disclosed their top ten risks in each category. Seventeen (17) unique commercial/financial risks and fifteen (15) unique technical risks were disclosed and are shown in Appendix E. For each risk, the parties identified the nature of the risk and its proposed allocation. Key issues were highlighted and important follow-up actions were identified. Additionally, the allocations proposed did not change during the course of the workshop. Output from the joint risk workshops, the Project Risk Matrix, which identifies the major Project risks and mitigations strategies, will be used as the framework of the risk allocation set forth in the CA.

ERC submitted the initial Design Risk Register (D0101040401) is as a Phase 2 deliverable. The Risk Register currently includes over 70 specifically identified project risks primarily associated with design and construction. In addition, the Risk Register includes a discussion of risk mitigation and a quarterly update of the risk and the proposed mitigation. Finally, the Risk Register includes a rudimentary method to factor the probability (P) and importance (I) of each identified risk. Thus, ERC's Design Management Team will focus attention on those risks with the greatest product of or multiple of "P" and "I" (PxI).

During each quarterly update of the Risk Register, ERC's Design Management Team will evaluate the mitigation proposed with specific attention to those risks with the higher PxI factors. As the project design is further developed, some identified risks will be eliminated while other new risks may be identified and included on the Risk Register. The regular (quarterly) updates to the Risk Register will continue to focus periodic attention on identified risks and mitigation strategies. VDOT and FHWA will review and comment on ERC's Risk Register, including quarterly updates.

VDOT's District Project Manager will further develop and maintain the Risk Management Plan. Further development of mitigating strategies for the highest ranked risk and development of a response plan for the mitigating strategies to define the options and actions needed to reduce the likelihood of occurrence or impact of the defined mitigating strategies. Additional Risk Workshops will be scheduled as the Project advances.

Once all steps one through five in Section 4.7.2, below, have been updated the VDOT District Project Manager will ensure the Risk Management Plan (RMP) is implemented as stated in step six below. The RMP will be updated periodically to monitor the status and effectiveness of mitigating strategies.

4.7.2 Risk Assessment Methodology

A RMP should be implemented as follows:

Step 1: Identify Risks

Use a well thought-out and consistent approach to identify and categorize risks that could affect the Project and document these risks. Be specific when identifying and describing the risk. Some techniques to identify risk are brainstorming and expert interviews.

Step 2: Assess Risks

The primary objective is to utilize a systematic consideration of each risk, its likelihood of occurring, and consequences of such occurrence. Develop a risk management matrix with all the risks grouped in categories. Assign the risk to the owner, private partner, or shared (to be agreed) and show on the matrix. Determine the probability of the occurrence and impact (severity) to cost and/or schedule for each risk and show on the matrix using quantifiable designations. (i.e. Low, Medium, High) Define these

designations. Use this matrix to compare the probability to the level of impact for each risk.

Step 3: Analyze and Prioritize Risks

Identify the top 20% of the risks based on the risk exposure (probability and impact) that must be monitored using the matrix. Identify the estimated dollar value and/or length of delay for each monitored risk. Prioritize the monitored risks using dollar estimates and time schedule delays. A technique to prioritize is paired comparison, which takes into account the degree of control the Project team has over the risk event followed by the timing of the risk event. (i.e. High Probability-Medium Impact). Identify the responsible party for each risk.

Step 4: Mitigation and Planning for Risks

Create risk response strategies for each monitored risk. Evaluate and select a primary response. Incorporate options into the risk and Project plans.

Step 5: Allocate

Evaluate each risk and identify the party best able to manage them.

Step 6: Monitoring and Control of Risks

Execute the RMP. Keep track of the monitored risks, examine residual risks, and identify new risks to ensure the execution of the RMP and to evaluate their effectiveness in reducing risk. Continually update the RMP. Acquire necessary documentation.

4.8 Issues Management

The VDOT District Project Manager, will maintain an updated log of all issues (including closed or resolved issues) showing dates when resolution is needed, status, and assignments of individuals responsible for securing the resolution. This will be maintained on-line and accessible to all team members.

The log should identify issues that are pertinent to meeting Project milestones, when in the Project development process the issue must be resolved/completed, and other actions that must be completed in order to resolve the specific issue. The list should also identify new/unexpected issues and task dependencies.

4.9 Lessons Learned

VDOT's District Project Manager will capture lessons learned to identify what went right, what went wrong, and why, throughout the Project and before the project team disbands. The lessons learned will be maintained and updated in VDOT's Lessons Learned Database for easy access and to encourage full cycle feedback. Procedures for Collecting Lessons Learned are provided in Appendix D.

SECTION 5: PROCUREMENT AND CONTRACT MANAGEMENT

Procurement and contract management is the process of planning, forming, and administering contracts. Throughout the development of the Project, there are many contracting opportunities involving multiple subject areas. When done well, the process of managing the procurement and administration of contracts facilitates successful Project implementation.

5.1 Innovative Procurement Strategies

VDOT is administering the procurement of the Project under the Virginia PPTA process and FHWA is monitoring and has formally concurred in the use of the PPTA procurement process. In conformance with the PPTA, and through a competitive negotiation process, VDOT has entered into an IA as previously stated with ERC. As such, VDOT and ERC anticipate negotiating and executing a CA. Components of the negotiations will, among other things, outline the rights and obligations of the parties, determine liability, and establish requirements for termination of the ERC's authority and handover of the Project to VDOT.

5.2 Procurement Requirements

5.2.1 VDOT Requirements

VDOT will procure all services in accordance with applicable State and Federal laws, including but not limited to the Public Private Transportation Act of 1995 (PPTA; Sections 56.556 through 56.573 of the Code of Virginia) and the Virginia Public Procurement Act (VPPA; Sections 2.2-4300 through 2.2.4377 of the Code of Virginia), which enunciate the public policies pertaining to governmental procurement from non-governmental sources for all agencies of State and Local government. VDOT will utilize the following guidance documents to assist in the procurement and selection process, as appropriate:

- *PPTA Implementation Guidelines*, VDOT, October 2005
- *2009 Manual for the Procurement and Management of Professional Services*, VDOT, Revised July 1, 2010
- *Agency Procurement and Surplus Property Manual*, Department of General Services, September 1998, plus updates (PIMs), referred to as APSPM
- Office of Transportation P3s (Innovative Project Delivery Division) Memoranda, VDOT

The practices, framework and authority outlined in these procedures are intended to allow acquisitions within the parameters of federal, state, and local requirements. The procurement manuals set forth the minimum standards for contracts. These standards are established to ensure that the materials and services are obtained timely, efficiently, and economically within the parameters of good administrative practices and sound business judgment.

At times, VDOT requires outside services to augment its professional staff and to carry out VDOT's goals effectively. Some projects may require an expertise that VDOT does not possess, while others may require manpower that is not available. VDOT will determine when outside services are needed to accomplish the Project objectives.

5.2.2 Federal and State Requirements

1. *FHWA Procedures for Contract Approvals*
   The FHWA must review and approve all agreements which utilize FHWA funds in accordance with Title 23 of the United States Code and 23 Code of Federal Regulations, unless otherwise delegated. The FHWA Project Manager will facilitate any required FHWA review process.

2. *OAG Procedures*
   When required, the Office of the Attorney General will review and approve contract documents.

5.2.3 Project Team Review of Procurement Documents

The VDOT Project team will review documents for the procurement of services to be directly administered by VDOT.

5.2.4 Authority Delegations

The configuration of the organizations for procurement and contract management may necessitate the delegation of authorities in order to avoid decision delays, especially during the construction and operation phase, to include any startup activities. Further to avoid confusion among the parties to the contracts, these delegations must be defined in the contract terms and conditions.

5.2.5 Protest Procedures

Protest procedures will be in compliance with applicable laws and regulations and will be further defined in the solicitations, as needed. In addition, agreements in effect should be reviewed to determine protest procedure requirements.

5.4 Administration of Contracts and Grants

5.4.1 Overall Strategy

The purpose of contract administration is to ensure fulfillment of contractual obligations by all parties. Additionally, to properly administer a contract, the contract administrator will: monitor compliance with the terms and conditions; ensure effective communication between all parties;

ensure effective control of contract change; ensure effective resolution of problems; and ensure timely payment.

5.4.2 VDOT Administered Contracts

VDOT will assign a Contract Administrator to each contract procured for this Project. The Contract Administrator may be the Program Manager. When the Project is handed off to the District, the district contract administration group/project controls group will provide the necessary support to the Contract Administrator and/or the VDOT Program Manager. VDOT will utilize Financial Management System II (FMSII) to track financial data. It is the responsibility of the Program Manager to ensure that data is input into FMSII.

Contract Administration will follow the guidelines included in Chapter 10 of *APSPM* for non-professional services and Chapters 6 through 9 of the *2007 Manual for Procurement and Management of Professional Services*, or the version that is currently in use. The following list identifies contracts that may be the result of procurement for this Project.

Comprehensive Agreement
Interim Agreement
Cooperative Agreement
Tolling Agreement
Design/Build Contract
Operations and Maintenance Contract
Concession Contract
Transportation Partnership Opportunity Fund Agreement
Federal-Aid Grant
Professional Services Contracts
Non-Professional Services Contracts

The information below identifies contract administration activities, for agreements that are currently in effect, that differ from those prescribed in the referenced guidance documents.

5.4.3 Federal-Aid Grant

The FHWA may provide federal-aid to VDOT administered projects. Administration of the federal-aid grant will be identified in Section 4, specifically with financial management and reporting and tracking, Sections 4.3 through 4.5.

5.4.4 Other Contracts

VDOT will procure the services of technical, legal and financial services in support of the Project under professional and non-professional service agreements. VDOT is currently finalizing a technical services contract with Southeastern Transportation Partners. A summary of these services is discussed in Section 3.2.2. Contract Administration will be as described in the Professional Services manual and the Procurement Manual.

The Contract Administrator will be responsible for ensuring compliance with the contract terms and conditions and legal aspects of the contract while the Program Manager is responsible for ensuring compliance with the contractual scope of work.

5.5 Contract Change Management

During the Design and Construction Phase, contract change will be managed as defined in the CA and referenced guidelines.

Ideally, disputes should be handled informally at the lowest appropriate level and in the least disruptive manner. Additionally, the dispute or claim should be submitted in writing when first determined to be a problem. If the dispute is not resolved to the mutual satisfaction of all parties then dispute resolution will be in accordance with the contract agreement.

- For ERC, the Dispute Resolution procedures will be covered in the CA.
- For VDOT consultant contracts (professional services), dispute resolution is covered under Item 17 of the General Terms and Conditions in the Memorandum of Agreement.
- For Construction and Maintenance Contracts the procedures for filing and managing claims is addressed in the *Claims Manual*, VDOT, May 2006 and in the Standard Specifications.

The VDOT Project team will review all dispute and claim settlements prior to the conclusions of negotiation for the claim for impact on other project segments. Dispute and claim issues will be brought to the attention of the FHWA Virginia Division in accordance with the Efficiencies Agreement.

If disputes occur concerning FHWA issues, VDOT should try and resolve them at the Division level with the FHWA Project Manager or other members of the FHWA Project team. If VDOT and the FHWA Project Manager can not resolve them, then VDOT should bring them to the attention of the Director of Project Delivery. If resolution is still not achieved then VDOT should bring the issues to the FHWA Assistant Division Administrator and then the FHWA

Division Administrator. This issue is also being facilitated through the partnering process, further discussed in Section 1.4.3 herein above.

5.6 Contract Closeout

As a condition precedent to Contract Closeout and Final Payment for professional and non-professional service contracts, the responsible VDOT Contract Administrator will verify that all terms and conditions of the contract have been satisfactorily completed and that required documentation has been submitted. Upon satisfaction of the foregoing conditions and approval by the authorized VDOT representative of the Certificate of Final Completion, Final Payment, constituting payment of the unpaid balance of the Contract Price will be made. The acceptance of Final Payment by the Contractor/Consultant will constitute a release and waiver of all Claims by the Contractor against the Project except those previously made in writing and specifically identified by the Contractor in its application for Final Payment as unsettled at the time of Final Payment.

Upon execution of the Comprehensive Agreement, the Interim Agreement will be terminated pursuant to the Interim Agreement. The Federal-aid preliminary engineering Project will be closed out when all such activities are completed. This information will be tracked and reported as identified in Section 4.4. If the Project is terminated prior to execution of a Comprehensive Agreement, then ERC will provide Work Product to VDOT as setout in the Interim Agreement.

The contract closeout procedures to follow for PPTA projects are documented in the Innovative Project Delivery PPTA Procedures No. 2, *Project Closeout and Final Acceptance Procedures*, January 30, 2006. The closeout procedures include an exercise in lessons learned and documentation of such lessons.

The 2008 *Efficiencies Agreement* between VDOT and FHWA addresses closeout procedures and requires FHWA to provide Final Inspection and Acceptance for FHWA Oversight Projects. The Program Manager will coordinate with the FHWA Project Manager to address items necessary to document project closeout. FHWA requires that documentation be retained for three years after closeout.

SECTION 6: ENVIRONMENTAL MANAGEMENT

The Project is subject to the requirements of the National Environmental Policy Act of 1969 (NEPA), which requires Federal Agencies to consider the potential environmental consequences of proposed projects, documents the analysis, and make this information available to the public for comment prior to implementation. ERC will be responsible for any other federal, state or local regulatory approvals, permits, licenses, etc.

The Technical Requirements, Section 1.3 Environmental, identifies specific roles and responsibilities for VDOT, FHWA, and ERC to demonstrate environmental compliance during design and construction of the Project.

6.1 NEPA Documentation

VDOT will prepare technical studies to support the NEPA documentation for the Project. VDOT will provide oversight and quality assurance for both the technical studies and NEPA documentation.

VDOT prepared and submitted for FHWA review an Environmental Assessment to serve as a reevaluation of the previous NEPA documentation for Phase 2 efforts currently underway. It assesses potential changes in environmental impacts resulting from changes to the project components, changes in the affected environment, and changes in regulatory requirements and guidance since completion of the previous documentation, and to determine if new information or new circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not previously evaluated. FHWA approved the NEPA reevaluation on March 24, 2011.

ERC will notify VDOT of any proposed changes in scope or footprint of the Project during the design and construction phases of the Project, including work currently underway under Phase 2 of the Interim Agreement. VDOT will coordinate with FHWA to determine the required level of documentation required for NEPA compliance. VDOT will coordinate the changes with FHWA and ERC will carry out any additional NEPA commitments (as per Section 1.3.1 B and C Technical Requirements).

6.2 Water Quality Permits

ERC will be responsible for obtaining all required state and federal water quality permits necessary for construction, any permit modifications, as well as compensatory mitigation. ERC will be responsible for compliance with pre-construction, construction, and post-construction-related permit conditions.

ERC will provide copies of all permits and related documentation to VDOT (as per Section 1.3.2 Technical Requirements).

6.3 Environmental Commitment Tracking Process

VDOT will track environmental commitments made in NEPA documentation through the use of the Comprehensive Environmental Data and Reporting (CEDAR) system. Commitments will be uploaded into CEDAR by VDOT. As environmental commitments are implemented during design and/or construction, ERC will provide evidence of commitment implementation to VDOT. ERC will be responsible for developing an Environmental Management Plan to address tracking of environmental commitments throughout the design and construction of the Project.

64 Environmental Compliance Monitoring

ERC will be responsible for monitoring and any corrective action necessary to maintain compliance with all applicable environmental laws and regulations (see Section 1.3.5 Technical Requirements). VDOT will perform quality assurance monitoring to ensure ERC is in compliance with environmental commitments made to Governmental Authorities. ERC will develop an Environmental Management Plan to document how environmental requirements will be addressed throughout the design and construction of the Project. VDOT will review and accept this plan.

SECTION 7: DESIGN MANAGEMENT

The primary objectives of the design management task is to ensure that the Project, as designed by ERC, meets the objectives of a safe facility with a design that meets or exceeds the requirements set out in the Technical Requirements and Standard Documents. In the capacity of oversight, VDOT will provide the level of review and approval as specified in the Technical Requirements, Standard Documents and related Project Agreements. During the design-build phase, ERC will further refine the design. ERC will have developed as a part of its Project Management Plan a Quality Systems Management Plan that incorporates how ERC will manage its design quality. This will identify the guiding principles for the quality control and quality assurance measures necessary through design.

7.1. Management of Design

VDOT is required by FHWA to certify that all plans have been developed in accordance with applicable federal and state laws and regulations. To accomplish this, VDOT's District Project Manager should, at a minimum, attend project scoping meetings and other scheduled meetings to gain an understanding of the Project and to offer advice, guidance, and consultation. Plans will be reviewed by VDOT at milestones in accordance with the contract documents and related Project Agreements. Generally, plans should be reviewed by VDOT prior to the public hearing, before right of way acquisition, prior to construction, and ready for construction to mitigate any potential conflicts. Other milestone meetings may be appropriate and should be coordinated with ERC. ERC's project manager and the VDOT District Project Manager will collaboratively make the final determination regarding the number of reviews and project meetings. Additional quality control reviews will be conducted at the appropriate stages of plan development, as described below.

Reviews focus on relative completeness of the plans, comprehensiveness, constructability, and adherence to sound engineering practices and principles. Design reviews will not focus on format or presentation preferences.

VDOT's District Project Manager will include Technical Team Representatives representing the appropriate design discipline as needed and facilitate coordination among design, construction, quality and other functional units.

All PE-level documents will be prepared under VDOT oversight by the "engineer or architect in responsible charge".

7.1.1 Design Criteria, Basis of Design, Standards, and Specifications

Design work will be undertaken in accordance with all applicable Federal, State, and AASHTO requirements/guidelines, pursuant to the Technical Requirements, Standard Documents and related Project Agreements.

Design Criteria and Standards are as set out in the Technical Requirements.

7.1.2 Concept of Design

VDOT and ERC are working together during Phase 2 of the Interim Agreement to develop the concept of design and as a result, 30% design plans will be completed prior to the design public hearing scheduled for Spring 2011. VDOT reviews ERC's plan submittals, and shares the results of the review with ERC and further design work is on going. Issues for consideration during the conceptual design process include:

- Preliminary designs and considerations on the project termini at new tunnel facility.
- Preliminary geotechnical investigation and pavement design.
- Identification of access and egress points.
- Initiation and coordination with FHWA on Interstate access points.
- Consideration of vulnerability assessments
- Initiation and integration of intelligent transportation system (ITS) design concepts.
- Preliminary tolling system design.
- Review of bridge and tunnel type, size and location.

For ITS elements, including design, testing, installation and operation of the equipment, communications systems and associated control center systems and equipment necessary to operate the Project facilities, the FHWA Rule 940 Checklist will be prepared to ensure that the Project's ITS elements are developed in accordance with the Systems Engineering Process and in compliance with the VDOT Northern Regional ITS Architecture.

Regular design meetings and reviews will be scheduled by the VDOT District Project Manager and issues covered during the meetings will be documented and distributed. The meeting s will include VDOT, ERC and FHWA staff, as needed.

7.1.3 Design Exceptions and Design Waivers

Through the iterative review process, potential design exceptions and design waivers will be identified. Joint review of design issues will be conducted to include ERC, VDOT, and FHWA representatives. All design exceptions must be approved by VDOT and FHWA per *VDOT IIM-LD-227.3*, or current version. Determination of design exceptions to the Project must be evaluated during the environmental review process. It is also required that as part of the Interstate Justification Report (IJR) process design exceptions be clearly identified and VDOT and FHWA will require a list of design exceptions.

ERC will need to submit design exceptions for anything that does not meet current standards and defined by the Code of Federal Regulations (CFR). Design exceptions on the Interstate/NHS are not grandfathered. Additionally, VDOT and FHWA will not approve "blanket exceptions" for these types of facilities on this Project.

ERC will use VDOT *Form LD-440* for format and guidance, included in *VDOT-IIM-LD-227.3*, or current version for 14 Controlling Criteria. Submittals will be stand-alone packages and will include all schematics, backup calculations and full design criteria for the roadway in question. ERC will be required to provide backup calculations consistent with the conditions and assumptions made within the approved operational analysis of the facility.

ERC has identified a list of preliminary design exceptions/waivers; this list of design exceptions and waivers was presented to VDOT, FHWA and STP during a workshop on December 3, 2010. VDOT, STP and FHWA offered comment on this initial list. As Phase 2 development design activities and preliminary engineering progress, additional design exceptions and waivers are anticipated. Currently, as of March 11, 2011 ERC has submitted nine (9) design exceptions, which are currently under review as Phase 2 activities, and will be finalized in accordance with *VDOT IIM-LD-227.3*.

7.2 Design Quality Management

Design work products meeting quality requirements are achieved through the implementation of design controls that include application of standard design criteria, independent checking, design and interface reviews, and engineering analysis. Design quality management must include the requirements for completeness of work, constructability, operability, maintainability, and conformance to applicable local codes and standards.

- VDOT will define its minimum requirements for a quality management plan in the Technical Requirements and Standard Documents, which includes a requirement for meeting the Virginia *Department Of Transportation's Minimum Quality Control & Quality Assurance Requirements for Design Build and Public-Private Transportation Act Projects*, August 2008.

- ERC will identify its quality management program in its Quality Systems Management Plan (QSMP), which will be reviewed and approved by VDOT prior to the execution of the CA. The QSMP will communicate how ERC's design deliverables will undergo a process to ensure consideration of constructability, usability, reliability, maintainability, availability, operability, safety, cost and compliance with the Technical Requirements and Standard Documents. The QAMP will contain a requirements for Quality Assurance/Quality Control

(QA/QC) to be used during the design phase. At a minimum, the design QA/QC procedures will include the following:

- An overall Design QA/QC Plan.
- Basis of Design ;
- Design criteria specific to the Project.
- Procedures for preparing and checking individual plans, specifications, estimates, calculations, and other submittal items.
- Procedures for preparing and checking any unique or highly specialized designs.
- Procedures for coordinating work performed by different persons and/or subcontractor for related tasks, to ensure that conflicts, omissions, or errors do not occur between drawings or between drawings and other design documents;
- Procedures for coordinating and obtaining permits from permitting agencies, utility companies, and CSXT and NPBL railroad companies, including procedures for ensuring that all permitting, utility, and railroad requirements are incorporated into the design of the Project; and procedures for coordinating submittals and agency reviews such that the overall Project schedule is not delayed;
- Level, frequency, and methods of review of the adequacy of the total project design;
- Methods by which all final design documents will be independently reviewed; verified for constructability, completeness, clarity, and accuracy; and back-checked;
- Procedures for reviewing and checking design drawings and documents required during construction; and
- Documentation and submission procedures to ensure that the established design QA/QC procedures have been followed.

- VDOT will perform independent assurance and independent verification and oversight on design work completed by VDOT or its consultants.

  - Independent Assurance will generally follow the requirements outlined in VDOT's *Quality Control, Quality Assurance, Independent Assurance and Independent Verification Guide for use on Public-Private Transportation Act & Design Build Projects*, August 2008, or as outlined in the contract documents. Independent assurance may be conducted by a third party consultant, or Independent Engineer, provided that the Independent Engineer reports directly to VDOT, regardless of how the Independent Engineer is procured and paid. The requirements of the Independent Engineer will be established in contract documents.

- Independent Verification will generally follow the requirements outlined in VDOT's Quality Control, Quality Assurance, Independent Assurance and Independent Verification Guide for use on Public-Private Transportation Act & Design Build Projects, August 2008 or as outlined in the contract documents. Independent Verification will be conducted by VDOT.

- Quality Assurance and Quality Control reviews will be conducted at specific milestones, generally 30%, 60%, 90% and 100% as described above, to ensure:

  - Standards are met,
  - Constructability of facility,
  - Operability of facility, and
  - Maintainability of facility.

7.3 Real Estate/Right-of-Way and Utilities

Pursuant to the Technical Requirements, Standard Documents and Project Agreements, ERC must adhere to all Federal and State regulations and guidelines including preparation of a Right-of-Way Acquisition and Utilities Relocation Plan, in accordance with the VDOT *Right of Way and Utilities Manual, Volumes I and II and with the VDOT Land Use Manual*. ERC will submit a Right-of-Way Acquisition and Utilities Relocation Plan, which requirements are set out in the Technical Requirements and Standard Documents. The Right-of-Way Acquisition and Utilities Relocation Plan will be coordinated with FHWA and provided for review and comment prior to commencing right-of-way activities.

ERC will perform services related to the acquisition of all required ROW and all permanent, temporary and utility easements, including the following:

- Submit a Right of Way Acquisition and Relocation Plan including a schedule of ROW activity including the specific parcels to be acquired and all relocations.
- Prepare appraisals in accordance with applicable VDOT guidelines.
- Prepare any engineered drawings required for appraisals or condemnation hearings.
- Provide appraisal reviews and make a recommendation of just compensation.
- Provide a current title certificate for each parcel as of the date of closing or the date of filing of the Condemnation Notice.

ROW will be acquired through a direct transaction between ERC and the property owner of record or via exercise of the State's Eminent Domain authority. In cases where Eminent Domain is exercised, the following procedure will apply.

When ERC is ready to initiate the Right of Way phase for a federal project, a request will be submitted to the VDOT District Project Manager. ERC will follow VDOT's I&IM –LD-204.15 for the signature process.

1. VDOT's District Project Manager will initiate the right of way evaluation process and the District Right of Way and Utilities Manager will contact the Private Entities to discuss their right of way requirements and project schedule. Section 9.1.3 of Volume I, Manual of Instructions, Right of Way and Utilities Division provides further guidance.

2. VDOT's District Project Manager will coordinate with FHWA for appropriate submission and review by FHWA.

VDOT will review Right of Way Plans and will render such assistance to ERC in the acquisition of Right of Way as specified in the Technical Requirements, Standard Documents and Project Agreements. A listing of anticipated ROW parcels and easements to be acquired is noted below:

Area	Properties for Acquisition	Easements
Norfolk Approach	• Road sliver #1 • Road sliver #2 • Metro Machine property	• Paper Street • Regional Hiking Trail • Norfolk Raw Water Line
Portsmouth Approach	NA	• VPA property • Norfolk Raw Water Line
MLK Extension	• 18 Owner family properties • 2 Tenant family properties • 7 Business properties - H.E.R.C. - Little Tiny Pallet Company - Unnamed - A&A Sheet Metal - Rogers Electric - Stick It - The Young Peoples Guild	• CSX • I-264

Option 4 – Improvements along I-264	• Two family properties – Parcels 002 & 003 -	• Bridge at Frederick Blvd • C-D Roads identified in the IJR

SECTION 8: CONSTRUCTION MANAGEMENT

VDOT will provide oversight during construction of the Project. Because VDOT, ERC and SKW Constructors (the construction joint venture design-build team) and other Private Entities will need to operate in an integrated organizational structure, this section defines critical processes and procedures for managing and administering construction. This section also identifies specific reference documents or other sections of the Project Management Plan that VDOT and ERC will use as the base guidelines pursuant to the Technical Requirements, Standard Documents and relevant Project Agreements.

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8.1 Construction Management

The Technical Requirements will address construction management activities required by the ERC and SKW for review and approval by VDOT. This will include coordination of the maintenance of traffic plan with VDOT's Project Manager to address impacts to VDOT's Traffic Management Plan. This will also include Federal-aid construction requirements, such as Davis Bacon wage rates and Buy America.

8.1.1 Construction Management Organization

During the construction phase, VDOT or its consultant will monitor the construction activities utilizing a multi-disciplinary approach and Project Team Representatives with expertise in environmental monitoring and compliance, materials, construction monitoring, geotechnical engineering support, structural engineering support, right of way and utilities and civil rights, etc.. In VDOT's role of oversight it will be important to monitor the Project to ensure that the requirements as setout in the Technical Requirements and Standard Documents have been met. The organization chart for the construction phase is included as Figure 3.

8.1.2 Field Organization

VDOT's District Project Manager and the Project Team Representatives will assign project engineers and inspectors utilizing VDOT staff or consultant contracts to monitor field

inspection and construction management processes. ERC will document their procedures in a Construction Management Plan, which is a component of their Quality Systems Management Plan, which will be reviewed by VDOT.

8.1.3 Construction Schedule Coordination

ERC is responsible for administering the Project construction and will develop a schedule for implementation. As described in Section 4.2.2, VDOT will review the schedule and provide comment on how ERC proposes to carry out the work. Schedule reviews will be conducted at other milestones as identified in the Technical Requirments and other relevant Project Agreements..

8.1.4 Financial Oversight

VDOT and ERC are committed to delivering the Project on time and on budget. A key element in achieving this goal is a comprehensive approach to managing the project budget and expenditures. Financial oversight for the construction phase will be in accordance with the methods described in Section 4.4.

8.1.5 Change Management

A project of this size will likely require changes either during design or during construction. The design build process affords SKW, the construction joint venture, the ability to partner to produce the most cost-effective product possible ERC is responsible for proactive management of design and field related changes. Therefore, when proposed changes, such as design waivers, design exceptions, value engineering proposals and/or field changes are introduced, ERC and its construction joint venture must evaluate them in terms of life-cycle cost, including operation and maintenance; safety and quality. ERC's Project Manager, the construction joint venture teams design manager, the quality assurance manager, the construction manager, VDOT's District Project Manager and FHWA will take part in the decision process, as appropriate. Changes affecting the milestone schedule or project scope will be managed in accordance with Section 4.4.

8.1.6 Project Schedule and Cost

Completing the construction work on time and on budget with acceptable quality is a VDOT mandate. Project schedule and costs reporting will be provided in accordance with Technical and related Project Agreements.

In addition VDOT will track actual, measured progress against the baseline schedule as modified by any approved changes. VDOT will apprise FHWA and their respective financial managers of the financial and Project schedule status. VDOT will work closely with ERC to assemble the financial, progress and schedule information from multiple contracts and produce program reports.

8.1.7 Progress Meetings

ERC will hold construction progress/coordination meetings on a regular basis and as identified in the QSMP. The VDOT District Project Manager or his designee has the responsibility of attending these meetings. VDOT District Project Manager will include FHWA on all meeting invitations.

8.1.8 Acceptance of Work

Acceptance of the work will be in accordance with the Technical Requirements, Standard Documents and related Project Agreements. Both VDOT and the FHWA Operations Engineer or designee will participate in the final inspection and provide input for development of a punch list. The Punch list will be developed through a process of punch-out inspections where the in-place work will be reviewed for its conformance with the Technical Requirements, Standard Documents, Approved For Construction Documents and other relevant construction documents and will be created near the end of the Project, such as, at the completion of each respective structure, definable feature of work, or at the time of substantial completion of a definable feature of work . The Quality Assurance Manager will be responsible for maintaining the punchlist; multiple parties may contribute to its development.. After all Punch list items have been satisfied as certified by the quality assurance manager and accepted by VDOT's District Project Manager, VDOT' Project Manager will draft and provide acceptance documents for signature by VDOT's Chief Engineer.

8.2 Construction Quality Management

To construct a facility which meets the Project goals, ERC will provide quality assurance and quality control for the construction elements of the Project, including but not limited to sampling, testing, inspection, management control, change management, document control, communication requirements, and non-compliant work corrective action plans to ensure that the work conforms to the contract requirements. The Plan will also detail ERC's QA/QC program for the construction elements to be completed by a subcontractor, supplier, vendor, agent, or other entity with contractual obligations to complete design or construction elements of the Project.

- VDOT will define its minimum requirements for a quality management plan in the Tehncial Requirements in accordance with Virginia *Department of Transportation's Minimum Quality Control & Quality Assurance Requirements for Design Build and Public-Private Transportation Act Projects*, August 2008 and as further detailed in the Technical Requirements.

- ERC will identify the philosophy, procedures, and requirements of a Quality Program to be reviewed and approved by VDOT. The Quality Program will be defined in the Quality System Management Plan Manual, which also includes a construction Quality

Assurance/Quality Control; at a minimum, construction QA/QC procedures will include the following:

- An overall Construction QA/QC Plan.
- Construction standards to be adhered to for performing construction inspection, including mechincal, electical, ITS and tolling systems.
- Documents to be used that will define materials to be certified, materials to be tested, sampling procedures, testing procedures, record keeping and reporting procedures, and nonconformance plan, including requirements mechincal, electical, ITS and tolling systems.
- Agency or party responsible for QA and QC, i.e., responsibilities of the contractor versus VDOT for sampling, testing, monitoring, and reporting test results.
- Frequency and VDOT involvement for construction coordination (progress) and/or partnering meetings.
- Procedures for coordinating with permitting agencies, utility companies, and CSXT and NPBL railroad companies during construction to ensure that all requirements are incorporated into the Project such that the overall project schedule is not delayed.
- Level and frequency of inspections to identify and correct any deficiencies in the project construction that do not meet the requirements of the plans, specifications, and other binding documents.
- Level and frequency of audit and oversight construction reviews (concerning QA/QC and validity of contractor payments) to be performed by VDOT, FHWA or independent engineer, and/or other agencies.
- Qualifications for all key construction personnel.
- Documentation and submission procedures to ensure that the established construction QA/QC procedures have been followed.

VDOT and STP team will perform oversight, Independent Verification and Indepdent Assurance testing and certain field observations, testing, independent inspection coverage; performance reviews, decision-making processes, report preparation and distribution, performance feedback mechanisms, and other evaluation, verification and observation techniques to systematically ascertain and document the quality and progress of the work incorporated in a project undergoing construction necessary to ensure proper implementation of ERC's QA/QC plan.

Other responsibilities will include reviewing, tracking and/or documenting the following:

- Submittals received,

- Processing Payment Applications,
- Independent Verification tests performed,
- Preparatory inspections attended,
- Intermediate Inspections performed,
- Final Inspections performed,
- Schedule Reviews (including updates)
- Communications and instructions given to the Contractor and its QA/QC Team,
- Non-conformance reports received and
- Reports of corrected and pending actions to correct Non-conformance Reports.

8.3 Transportation Management

ERC will be required to develop a Project level Traffic Management Plan to include Maintenance of Traffic Plans and Public Information Plans in accordance with the contract documents and related Project Agreements. VDOT's District Project Manager will coordinate the Project Level Traffic Management Plan with VDOT's Regional Transportation Plan. VDOT will develop a Regional Transportation Plan to reduce impacts of this Project and any other major projects occurring at the same time. Details of this plan have not been developed at this time; however, FHWA will be invited to participate in development of the Regional Transportation Plan and its implementation. Requirements for traffic management are the result of the FHWA Final Rule on Work Zone Safety and Mobility, 23 CFR 630 Subpart J.

Requirements in the development and implementation of ERC's Traffic Management Plan are set out in the Technical Requirements.

8.4 Safety and Security

VDOT and ERC note that safety of the workers and traveling public are of the highest priority. The Construction Management Plan, a component of the Quality Systems Management Plan, to be developed by ERC and reviewed by VDOT, will address all aspects of safety, security, and other requirements in accordance with state and federal laws.

The Technical Requirements will require that ERC develop a comprehensive Health and Safety Plan for the Project; this safely plan will fully describe policies, plans, training programs, worksite controls and incident response plans to ensure the health and safety of personnel involved in the project and the public affected by the project during its duration. Each person or entity employed in the work will understand that he or she is responsible for working in a safe manner and will be accountable for any failure to follow established safety procedures.

ERC's Health and Safety Plan will be required to ensure that its construction operations do not put the public or the environment at risk. Because of its paramount importance, public safety is integral to the project design, as well as construction scheduling, planning, and implementation.

Additionally, ERC will develop a Concept of Operations Plan (COOP) to address management of the system in the event of a natural disaster or other catastrophe. VDOT and ERC will give consideration for development of an all hazards based Emergency Action Plan. Finally, VDOT policy will be reviewed for a determination of Critical Infrastructure Information (CII) and if determined to be critical, further determination of the requirements to protect the critical infrastructure information.

8.4.1 Private Entities Safety

ERC is solely responsible for the safety of their work, their workers, and the work zone. As part of the Health and Safety Plan, ERC will address Safety and Security Issues.

8.4.2 Agency Involvement

VDOT and FHWA recognize the importance of safety as it relates to the lives and families of those who participate in building this project. A strong safety record benefits everyone through such tangible ways as higher productivity, better schedule performance, reduced construction cost, and enhanced public perception. Accordingly, project safety includes the following activities:

- Encouraging partnership agreements between Virginia Occupational Safety and Health (VOSH) and the Private Entities' construction contractors.
- Providing VDOT safety resources to the Project at the request of the VDOT Project Manager.
- Monitoring safety compliance.

Should VDOT observe failures in the required safety standards, then VDOT may issue a Safety Compliance Order, in accordance with the contract documents. The VDOT District Project Manager has full authority to order a stop to construction work should a safety compliance order identify an extremely unsafe situation. The VDOT District Project Manager is responsible for maintaining documentation of such failures and ensuring that the Private Entities comply.

8.4.3 Incident Management and Lane Closure Process

A Transition Plan is being developed and will be an Attachment to the Comprehensive Agreement.

The Transition Plan provides a narrative coupled with aerial maps that identifies and provides a clear understanding of Limits and Boundaries. Incident Management limits by both ERC and VDOT are identified within the project limits and areas adjacent to the project limits where applicable.

In order to assure that ERC complies with their contractual obligations relative to Incident Management, The Comprehensive Agreement will also contain a Performance Point Regime to assess ERC's compliance. Continued disregard or poor performance of Incident Management

will result in the accumulation of points that may result in Liquidated Damages or Contract Default.

As per the Technical Requirements, lane closures proposed by ERC will be in accordance with VDOT's Work Are Protection Manual and the following protocol:

- Non-emergency lane closure requests will first be submitted to VDOT for consideration, a minimum of two (2) weeks prior to the anticipated start date.
- If tunnel closures are involved, reasons for the closures must be righteous and approved by VDOT. Alternate traffic patterns must be in accordance with approved plans to be developed during the first series of activities post CA.
- VDOT or its consultant will review to assure compliance with the Technical Requirements, Traffic Control and MOT plans.
- If tunnel closures are involved, reasons for the closures must be addressed and approved
- If approved; dates, times and locations will be forwarded to VDOT's Public Affairs Department to notify the public of expected lane closures through media channels.

8.4.4. Plan Approval Process

ERC will be required to provide design drawings and requested calculations at the 30% complete and 90% complete levels for VDOT to review and comments. At this stageVDOT will not be "approving" plans.

During this process the ERC designer has the responsibility to complete all design elements in accordance with the standards, design guidelines, codes and procedures identified in the Technical Requirements.

It is ERC's designers' responsibility to adhere to the design QA/QC program that will be established, perform internal reviews and determine if the plans are at a level of Approved for Construction (AFC).

When that level of confidence is achieved, ERC will professionally seal the drawings and issue them as AFC to VDOT and FHWA for review and concurrence.

SECTION 9: OPERATIONS AND ASSET MANAGEMENT

The primary objective of the operations and asset management task is to evaluate operational, tolling, and maintenance requirements of the facility during construction, and post construction, and manage assets over the life of the concession.

9.1 Operations and Asset Management

The operations, tolling, maintenance and asset management requirements will be set forth in the Technical Requirements. Under Phase 2 development, the Operations Maintenance and Rehabilitation Working Group is currently conducting a series of meetings with key VDOT operations and maintenance staff and development of key issues important to VDOT.

This group is also identifying the key elements to be included in a Concept of Operations. Similar activities will be completed with key staff from Asset Management for development of key elements to be included in a Maintenance Concept. These processes will result in development of technical and performance requirements, which will be included in the Technical Requirements and Comprehensive Agreement.

9.1.2 Operations Prior to Construction and During Construction

Requirements related to operations prior to the construction phase and during the construction phase of the project to ensure safety, and minimize level of service degradation are provided for in the contract documents. The control of operations prior to the construction phase and during construction will be identified in ERC's Transportation Management Plan, which identifies such items as work zone parameters, construction hours, operating speeds, lane shifts and closures, signage, diversion routes, turning movements, signal control, emergency access, and snow/ice removal. ERC will work closely with VDOT to coordinate operational issues.

9.1.2 Regular Operations and Tolling

The contract documents and related Project Agreements will address the requirements of operation of the Project once the Project is open to the public.

The Project will be tolled during construction and following completion of the facility, in accordance with the Cooperative Agreement. Toll rates will vary between peak and off peak travel times in an effort to manage congestion (e.g., congestion pricing). The Project Agreements will specify the specific conditions that ERC must achieve before beginning toll collections. VDOT will prepare and submit regular reports regarding the results of the congestion pricing system, pursuant to the Cooperative Agreement and the value pricing pilot program.

VDOT and ERC will further define project requirements which will be included in the next draft of the Project Management Plan.

9.2 Operations and Maintenance

The Operations and Maintenance roles and responsibilities for both VDOT and ERC will be defined in the contract documents and related Project Agreements for the length of the concession term.

The contract documents and related Project Agreements will include performance standards. VDOT will implement the appropriate measures to monitor the performance standards.

SECTION 10: COMMUNICATIONS MANAGEMENT

This section deals with the several means of communication that VDOT will employ to support and implement the various project management mechanisms. VDOT, at various staff levels, needs to communicate internally with the Project team, including consultants. Day-to-day communication among team members will take place on an informal basis. This will be supplemented with written reports that become matters of record. Among the more important communications are the periodic reports to FHWA and other stakeholders.

10.1 Communications Overview

VDOT is committed to strong, proactive communication at all levels, including internal and external stakeholders. The key objective in our communications management is to maintain the public trust, support, and confidence throughout the life of the Project. Keeping internal and external stakeholders informed of the Project in a consistent, timely and truthful manner will help meet that objective.

10.2 Public Involvement and Communications Plan

The Communications Working Group is currently working on a communication protocol that will be implemented by ERC and VDOT through execution of the Comprehensive Agreement. In accordance with the Technical Requirements, ERC will establish a Public Information and Communication Plan to be implemented through the remaining phases of the Project. This plan will be reviewed by and approved by VDOT prior to execution of the CA.

10.2.1 Required Public Hearings and Meetings

Public hearings and meetings will be conducted in accordance with the *Policy Manual for Public Participation in Transportation Projects***,** located on the VDOT Web site at http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/Public%20Involvement%20Manual/Public-Involvement-Manual.pdf. Public notice will be in accordance with regulatory requirements and agency policy.

The schedule for these meetings will be posted on VDOT's Web site and the meetings will be advertised in local papers as well as communicated to the media through press releases and other means. VDOT currently contemplates a Design Public Hearing in early May 2011.

10.2.2 Public Information

Brochures, newsletters, and other handouts will be developed and provided at public meetings and made available on the Web site as required by the Communications Protocol and/or the Public Information and Communication Plan.

10.2.3 Communications Quality Management

VDOT will perform independent verification of communication efforts and products from ERC prior to dissemination to the public or other agencies as defined in the Communication Protocol or Public Information and Communication Plan.

10.2.5 Hampton Roads District Human Resources

The VDOT District Project Manager will coordinate with Human Resources, ERC, and the Communication Working Group to ensure information is disseminated in accordance with a comprehensive transition plan for all employees impacted.

10.3 Communications Coordination

The VDOT District Project Manager is VDOT's Point of Contact for the Project after the execution of the CA. All communication will be coordinated with the assigned VDOT District Project Manager, in close partnership with VDOT Public Affairs.

If a Project team member receives questions regarding the Project, these requests will be coordinated with the VDOT District Project Manager and the main communications contact in VDOT Public Affairs. As identified in Section 10.4, below, internal communication is facilitated through an internal team site. Additionally, internal communications are conducted via e-mail.

Designated spokespersons for media and elected officials' calls should be identified during the communications planning process. All Project team members should work through these spokespersons to coordinate responses to the media and officials.

For additional information related to communication protocol, especially in the context of communication with the public and the media, refer to the Media Tool Kit on Inside VDOT at http://insidevdot/sites/Media_Tool_Kit/default.aspx.

- The Communication Working Group has already been established for this Project and includes ERC representatives, VDOT District Project Manager, District and Central Office Public Affairs Managers, VDOT Civil Rights representatives and VDOT Program Manager.

10.4 External Communications

When dealing with external audiences, it is important to present and respond to information in a positive, transparent, honest and proactive manner.

Proactive communications:

- Minimizes speculation, inaccurate and negative publicity
- Prevents inappropriate information from getting out
- Gives VDOT more influence on what the media reports
- Allows VDOT to tell the story first – setting the facts before journalists do
- Contributes to public support of projects

- Shows VDOT as proactively addressing issues instead of reacting to them

10.4.1 Media

VDOT believes in solid, proactive and open media relations. The agency has a strong team of Public Affairs professionals to provide prompt and accurate information to the media and public.

Because VDOT is a public agency supported by taxpayers, it has an obligation to respond to inquiries from the news media in a timely and honest manner. The media is the most powerful and influential resource for informing the public about VDOT programs, projects, initiatives and issues. It is to VDOT's advantage to communicate clearly and effectively and seek good relationships with reporters.

Media will sometimes use Freedom of Information Act (FOIA) requests to obtain information. Every media inquiry should be handled in an open and honest format, thus preventing a negative and adversarial relationship with the press. FOIA requests must be processed according to state law, within five business days of receipt and tracked using VDOT's FOIA Tracker system. All media requests do not need tracked in this manner, but should be coordinated with Public Affairs.

- A strategic communications plan to govern the messaging and communications goals of this Project will be set forth in the Communications Protocol and/or the Public Information and Communication Plan.

Media inquiries received by the Project team should be discussed with the ERC and VDOT Public Affairs points of contact. Discussion prior to answering media calls will ensure consistency in messages, and will give Public Affairs a chance to provide Project team members with background on particular reporters or media outlets, corresponding issues that may arise during an interview, and assistance in preparing responses. When this is not possible due to deadlines or other issues, the District Project Manager and all members of the Project team shall submit and maintain records of media contacts using the Public Affairs News Media Contact Alert. Team members will copy the District Project Manager.

The VDOT District Project Manager, subject to direction from the Hampton Roads District Administrator, the Chief Engineer or the Chief Financial Officer, is the absolute and final authority on all matters related to public information and communications after execution of the Comprehensive Agreement. The VDOT District Project Manager will work with Public Affairs to coordinate communications and public information.

10.4.2 External Web site (VirginiaDOT.org)

VDOT's external Web site provides a location for the public to learn information and provide comment on the Project at http://www.virginiadot.org/midtowntunnel. Comments submitted in this format are directed to the Program Manager who will provide a response, unless they are

media or elected officials responses, which should be handled in partnership with Public Affairs. Public comments are filed in accordance with document management protocol, Section 4.6.

Information to be made available to the public will be provided on VDOT's external Web site. VDOT will periodically post notices regarding the Project status and provide timely, accurate and easily accessible Project information.

The Program Manager should work closely with the Public Affairs staff to ensure that all content on VDOT Project Web pages is concise, easy to read, accurate and timely. Continuous updating of this material is important to keeping the public informed and winning trust for VDOT and the Project.

Web sites should be reviewed by the Program Manager or a designee at least every 30 days to ensure accuracy and timeliness.

10.5 Internal Communications

VDOT will maintain an internal Web site (team site) for communication within VDOT. The Project team site has been created for access by VDOT personnel working on the Project. This will be a way for technical and other staff to keep up to date on submission status, Project progress, and to access Project resources. This has been established through the VDOT portal and can be accessed through http://midtowntunnel.sharepointspace.com/default.aspx.

It is the responsibility of the Program Manager and team members to post information on the internal Web site in a timely fashion. Permissions for adding content have been established by the team site administrator. Requests to change permission levels should be made to the team site administrator.

10.6 Coordination with ERC Communications

Coordination of communications becomes even more important in PPTA projects. Both teams will have individual goals for their communications, target audiences and agendas. These must be closely coordinated to prevent confusion in messaging, contradictory statements or other communications shortfalls.

VDOT and ERC will operate in accordance with communications practices and guidelines set out in the Communication Protocol and/or the Public Information and Communication Plan.

10.7 FHWA/USDOT Communications

The FHWA Project manager is the conduit for most communication between various offices within FHWA and the TIFIA Office. Briefings, status reports and Project information from the Division will be communicated on a regular basis to FHWA Headquarters as per Section 4.5.

10.7.1 TIFIA Office

If a TIFIA loan application is processed, and approved, communication with the TIFIA Office will be developed. This will include the communication between the Division Office, the TIFIA Office, VDOT and ERC. A TIFIA oversight agreement will be developed between the FHWA Virginia Division and TIFIA office including communications mechanisms, with VDOT involvement.

10.7.2 Office of Inspector General and other Federal Agencies

The FHWA and VDOT District Project Manager will be involved in all requests for information from the USDOT OIG inspectors or other Federal agencies.

SECTION 11: CIVIL RIGHTS MANAGEMENT

VDOT is committed to complying with the legal requirements associated with Civil Rights. Civil Rights management is comprised of four areas: Equal Opportunity, On-the-Job Training, Labor Compliance, and Disadvantaged Business Enterprise.

11.1 Overview

VDOT, as a recipient of federal financial assistance is committed to ensure that Title VI of the Civil Rights Act of 1964 and related articles pertaining to nondiscrimination in Federally Assisted Programs is adhered to in regard to the Project. VDOT's Central Office Civil Rights Division is responsible for ensuring that all applicable federal requirements are adhered to.

VDOT's Civil Rights Central Office and Hampton Roads District staff will actively work with the Concessionaire to fulfill employment and business opportunities for the Project. VDOT's Central Office Civil Rights Division is in the process of determining SWAM and DBE participation goals for the Project. These goals will be a part of the Comprehensive Agreement

The Civil Rights Program will be comprised of the following key focus areas:

- Title VI, including Limited English Proficiency (LEP) and Environmental Justice (EJ);
- Disadvantaged Business Enterprises (DBE);
- Small, Women and Minority-owned Businesses (SWaM);
- On-the-Job Training Program (OJT);
- DBE Supportive Services;
- OJT Supportive Services;
- Section 504 of the Rehabilitation Act/Americans with Disabilities Act (504/ADA);
- DBE Compliance Review; and
- Equal Employment Opportunity Contractor Compliance.

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11.1.1 Disadvantage Business Enterprises (DBE)

VDOT is committed to a Civil Rights Program for the participation of Disadvantaged Business Enterprises (DBEs) in VDOT contracting opportunities in accordance with 49 Code of Federal Regulations (CFR) Part 26. It is the policy of VDOT to ensure that DBEs, as defined in 49 CFR Part 26, have an equal opportunity to receive and participate in USDOT federally funded contracts. VDOT adopts the following objectives:

- To ensure nondiscrimination in the award and administration of FHWA assisted contracts;

- To create a level playing field on which DBEs can compete fairly for FHWA assisted contracts;
- To ensure that the DBE Program is narrowly tailored in accordance with applicable laws;
- To ensure that only firms that fully meet 49 CFR Part 26 eligibility standards are permitted to participate as DBEs;
- To help remove barriers to the participation of DBEs in FHWA assisted contracts;
- To assist the development of rims that can compete successfully in the marketplace outside of the DBE Program; and
- To provide appropriate flexibility to recipients of Federal financial assistance in establishing and providing opportunities for DBEs.

The Concessionaire will be required to meet stated DBE goal requirements or provide evidence of good faith efforts in meeting stated DBE project goals.

11.1.2 Small Woman and Minority (SWaM) Businesses

The SWaM Program is a Commonwealth of Virginia Program to support small, women and minority businesses in doing business with State Government agencies and is designed to promote economic justice and eliminate impediments to . In accordance with the Commonwealth of Virginia Executive Order 33, VDOT requires a SWaM Business Utilization Plan for the contracting of construction and for goods and services relating to the Project. The Concessionaire will be required to take all necessary and reasonable steps to ensure that SWaM firms have the maximum opportunity to compete for contracts on the Project. The SWaM Program is designed to promote economic justice, eliminate impediments and barriers in the procurement process.

11.1.3 Monitoring – Performance Indicators

The Project will be monitored for the implementation of the Civil Rights Programs on an on-going basis. Monitoring activities include, but are not limited to, the following:

- Analyzing progress reports to identify trends, provide feedback and recommendations;
- Participation in VDOT-initiated contract compliance reviews, goal-achievement teams, process improvement work groups, and other meetings as necessary/appropriate.

11.1.4 Outreach Program

As a member of the Project Communications Working Group, the Civil Rights Division will campaign to promote procurement opportunities by ensuring:

- Disadvantaged communities are included in the public outreach effort;
- DBE and SWaM outreach sessions are held to discuss upcoming Project contracting opportunities in construction and goods and services; and
- On-the-Job training opportunities are available for minorities and women.

11.2 Civil Rights (DBE/SWAM) Management Plan

ERC will develop a DBE/SWaM Plan for VDOT's review and approval. Additionally, when developing the Civil Rights Management Plan, the following will be considered:

Executive Order 11246, Notice of Affirmative Action to Ensure EEO
Required Contract Provisions (FHWA-1273)
Section 110.03 – EEO
Section 110.06 – Bulletin Boards
Section 110.02 – Labor & Wages
Section 518 – Trainees
Section 110.04 – Use of DBEs
Executive Order 33, Enhancing Opportunities for Small, Woman, and Minority Owned Businesses

11.3 Federal Requirements

VDOT must conform to certain Federal requirements in the personnel/labor areas as well as in the procurement process. Those cited here in Section 11.2 cover most of the Federal requirements that apply. Addtionally, Federal requirements are detailed in Exhibit F and Exhbit M, exhibits to the Comprehensive Agreement, currently under development, such as FHWA Form 1273, Wage Determination of the Secretary of Labor, Debarment and Suspension Certifications, Lobbying Certifcation, Compliance with Buy America Requirements and Special Provisions related to Executeive Order 11246 and use of domestic metals.

SECTION 12: REFERENCES

12.1 PPTA Publications

The following manuals and policies are available from VDOT. Many can be viewed at http://www.vdot.virginia.gov/default_flash.asp using the "business center" tab.

PPTA Implementation Guidelines, VDOT, October 2005

Innovative Project Delivery Division Memoranda

IPD 05-02.0 PPTA Proposal Quality Control Review Procedures

12.2 Project Management Publications

*Project Management Plan Guidan*ce, FHWA, January 2007
http://www.fhwa.dot.gov/programadmin/mega/pmpguide.cfm

Project Management Handbook, Florida DOT, 2006
http://www.dot.state.fl.us/projectmanagementoffice/PMhandbook/default.htm

12.3 Publications for Project Development

The following manuals and policies are available from VDOT. Many can be viewed at www.virginiadot.org using the "business networks" tab.

VDOT Road and Bridge Standards
http://www.virginiadot.org/business/locdes/road-and-bridge-standards.asp

VDOT Road and Bridge Specifications
http://www.virginiadot.org/business/const/spec-default.asp

VDOT Instructional and Informational Memoranda (Location & Design)
http://www.virginiadot.org/business/locdes/rd-ii-memoranda-index.asp

VDOT Road Design Manual
http://www.virginiadot.org/business/locdes/rdmanual-index.asp

VDOT Public Involvement Policy & Procedure Manual
http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/Public%20Involvement%20Manual/Public-Involvement-Manual.pdf

VDOT Drainage Manual

http://www.vdot.virginia.gov/business/locdes/hydra-drainage-manual.asp

VDOT CADD Manual
http://www.extranet.vdot.state.va.us/locdes/caddman/html/frameset.htm

VDOT Survey Manual
http://www.virginiadot.org/business/locdes/manual-survey-index.asp

VDOT Traffic Engineering Design Manual
http://www.virginiadot.org/business/locdes/traffic-engineering-manual.asp

VDOT Manuals of the Structure and Bridge Division – Volume V Series
http://www.virginiadot.org/business/bridge-engineering.asp

VDOT Materials Manual
http://www.virginiadot.org/business/resources/bu-mat-MANUAL2004.pdf

VDOT Post Construction Manual
http://www.virginiadot.org/business/const/resources/pc_manual.pdf

VDOT Underground Utilities Policy
http://www.virginiadot.org/projects/resources/UrbanManual.pdf

VDOT Lighting Policy
http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/iim/IIM231.pdf

Policy for Integrating Bicycle and Pedestrian Accommodations
http://www.virginiadot.org/infoservice/resources/draft%20bikeped%20plan.pdf.

VDOT Inspection Manual
http://www.virginiadot.org/business/const/resources/Inspection%20Manual.pdf

VDOT Manual of Instructions, Right of Way and Utilities Division
VDOT *Right of Way and Utilities Manual, Volumes I and II*
Please contact Right of Way and Utilities Division for further information

VDOT Landscaping Procedures
Please contact Location & Design Division for further information

VDOT Traffic Engineering Numbered memoranda
Please contact Traffic Engineering Division for further information

VDOT Supplement to the Manual on Uniform Traffic Control Devices
Please contact Traffic Engineering Division for further information

VDOT Construction Manual
http://www.virginiadot.org/business/const/resources/2005%20Construction%20Manual.pdf

VDOT Minimum Quality Assurance and Quality Control Requirements for Design Build and Public Private Transportation Act Projects
http://www.virginiadot.org/business/resources/ApprovedQA_QC_Guide4DB.pdf

VDOT Guide for Local Administration of Virginia Department of Transportation Projects
http://www.vdot.virginia.gov/business/resources/LAP_Guide.pdf

2007 Manual for the Procurement of Professional Services
http://www.vdot.virginia.gov/business/resources/

Urban Manual
http://www.virginiadot.org/projects/resources/UrbanManual.pdf

Enhancement Program Procedures Manual
http://www.virginiadot.org/projects/resources/2005_EnhancementManual%20_3_.pdf

Construction Directive, Contract Change Management, CD-2010-1, March 23, 2010
http://www.virginiadot.org/business/resources/const/cdmemo-1001.pdf

12.4 Other Reference Documents

A Manual for Public Records Management in the Commonwealth of Virginia, 1992, ed. *Records and Information Management Guide*, VDOT, September 2004

Agency Procurement and Surplus Property Manual plus updates (PIMs), Virginia Department of General Services, September 1998, referred to APSPM
http://www.eva.state.va.us/aspm-manual/aspm-manual.htm

Procurement Manual, Administrative Services Division, VDOT, November 2005

Title 23 and 49 and CFR 23 and 49
http://www.fhwa.dot.gov/legsregs/legislat.html

The Manual on Uniform Traffic Control Devices
http://mutcd.fhwa.dot.gov/

Lessons Learned
http://insidevdot/sites/Lessons_Learned/Shared%20Documents/Forms/AllItems.aspx

SECTION 13: APPENDICES

Appendix A Critical Success Factors Measures of Effectivness
Appendix B Contact List
Appendix C Project Change Control Form
Appendix D Procedures for Collecting Lessons Learned
Appendix E Top Project Risk, Key Results and Action Items from Initial Joint Risk Workshop
Appendix F Project Schedule

Appendix A

Critical Success Factors
Measures of Effectiveness

Goal 1: Increase capacity, reduce congestion and provide safe and efficient operations

Objective		Measure of Effectiveness (MOE)
1.1	Improve Peak Hour Level Of Service (LOS)	Develop and implement an annual task of performing a Traffic Operational Study. Compare pre-construction to post construction results. A measure of effectiveness would be an improvement of at least one letter grade. i.e. LOS D to LOS C.
1.2	Reduction of Traffic Accidents	Develop and implement an annual review of accident incidents. Compare pre-construction to post construction results. This review should take into consideration all areas of the project and determine if a specific location is susceptible to incidents. Resolve and remedy as required. A measure of effectiveness would be an annual decrease of incidents by 20%.

Goal 2 – Develop a multi-modal transportation facility that may be integrated into the operations of a regional transportation network and that serves as an emergency evacuation route

Objective		Measure of Effectiveness (MOE)
2.1	Design and Construct a Multi-Modal Transportation Facility	This project will be designed and constructed to allow access for high occupancy busses. The operator of this transportation mode is Hampton Roads Transit (HRT). HRT will be provided toll discounts as well as other financial incentives to use this facility. A measure of effectiveness would be to validate annual increase of buss trips from present day counts. A 10%-20% increase would be acceptable. The utilization of this mode would entice the public to take HRT busses, which will result in less personal vehicles in the project area, thus assisting in congestion relief.
2.2	Provide Intelligent Transportation Systems (ITS) and Connectivity	The project will incorporate modern technological equipment to provide communications and data links with VDOT's Smart Traffic Center (STC). The STC will then utilize this information to inform traveling patrons and the general public of current traffic conditions within the area of the project. This will enable the traveling public to make informed decisions about traveling and which routes to take during an emergency. In conjunction with the STC, the Hampton Roads Metropolitan Planning Organization HRMPO will utilize the data and include it in their regional traffic models. A measure of effectiveness would be an improvement to

	regional traffic flow measured by an improvement in LOS.

Goal 3 – Develop a project that reduces and mitigates its impacts to the environment and surrounding communities while supporting the movement of commercial traffic

Objective	Measure of Effectiveness (MOE)
3.1 Develop and Incorporate Context Sensitive Solutions in the Designs	The design of this project will be developed through Context Sensitive Solutions (CSS), appropriate for the cities of Norfolk and Portsmouth. Both city planning departments will be engaged to inform and apprise them of the project elements. The project team will then receive recommendations from the planning departments and incorporate them, if practical, into the design and construction of the project. A post construction survey should be developed and submitted to the local residents of both communities who are impacted by the project. This solicitation should inquire as to what their views are on the aesthetics of the project. A measure of effectiveness would be a survey return that reflects a 60% in favor of the aesthetics used.
3.2 Provide and Account for Environmental Justice	Environmental Justice will be mandatory on this project, especially in the arena of Stormwater Management (SWM). ALL SWM facilities will be constructed and maintained with the highest regards for the environment and the least impact to the local residents. Facilities will be developed out of the travel way to enhance traffic flow and minimize right of way impacts. Air Quality and Sound Reduction methods will be employed to minimize the project impacts to the environment and the local residences. . A measure of effectiveness would be a periodic study highlighting these critical areas to validate that the post construction environment has improved and is better than the pre-construction environment.

Goal 4 – Develop a project that is coordinated with adjacent land uses and supports the anticipated growth of personal and commercial traffic

Objective	Measure of Effectiveness (MOE)
4.1 Land Use Compatibility	This project will work closely with the Planning Departments of the Cities of Portsmouth and Norfolk to determine land use objectives from their City Master Plans. The project will reflect the necessary infrastructure, compatible with the existing and proposed land use types. The project also recognizes that vehicle impacts from the industrial, commercial and private sector will occur and needs to account for these types coming from the adjacent lands. A measure of effectiveness would be acceptance from the Cities that the project is compatible with their current and future plans.

4.2	Maximize Facility Capacity	This project has two major components in adding capacity to account for future growth. One component is an additional tunnel adding two (2) new lanes; the second component is an extension of the Martin Luther King Expressway. This connection will bring four (4) lanes of traffic directly to I-264. A measure of effectiveness will be shown in the Operational Study identified in 1.1.
4.3	Alleviate Traffic from City Routes	Currently, the Martin Luther King Expressway discharges traffic directly onto the City of Portsmouth's residential streets. This project will alleviate that scenario and will create a high speed connection to I-264. A measure of effectiveness will be shown in the Operational Study identified in 1.1.

Appendix B

Contact List

Name	Address	#'s	E-Mail	Role
STATE/FEDERAL CONTACTS				
Virginia Department of Transportation - Central Office				
Ahlin, Jennifer	VDOT Central Office 1401 E. Broad Street Richmond, VA	(P) 804-786-8157 (F) 804- 786-xxxx (C)	jennifer.ahlin@VDOT.Virginia.gov	Fin. Ser. Specialist Innovative Finance & Rev. Ops.
Collins, Chris	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-225-4249 (F) 804 786-7221 (C) 804 921-4831	CG.collins@VDOT.Virginia.gov	Environmental Quality Project Studies Manager
Crommwell, Jackie	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-371-6829 (F) 804 786-7221 (C) 804	jackie.cromwell@VDOT.Virginia.gov	Chair - Work Group Planning/Environment
Daoulas, John, P.E.	VDOT Central Office 1410 East Main Street Richmond, VA 23219	(P) 804 221-7011 (F) 804-786-6929 C - 804-328-3141	john.daoulas@VDOT.Virginia.gov	Materials - Geotechnical Engineer
Grier, Robin	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-786-2964 (F) 804 (C) (804)	Robin.Grier@VDOT.Virginia.gov	Transportation Mobility Planning Assist. Div. Admin.
Griggs, Les	VDOT Central Office	(P) 804-786-2917	les.griggs@VDOT.Virginia.gov	Programmer/Analysist.

	1401 E. Broad Street Richmond, VA	(F) 804- 786-xxxx (C)		Right of Way/Utilities
Henry, Jim B.	VDOT Central Office 1401 E. Broad Street Richmond, VA	(P) 804-371-2980 (F) 804- 786-xxxx (C)	jim.henry@VDOT.Virginia.gov	Operations and Security Personnel Surety Secialist
Holcombe, Dusty	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-786-3173 (F) 804 786-7221 (C) 804 515-1727	dusty.holcombe@VDOT.Virginia.gov	Innovative Project Delivery - Assistant Director Chair - Commercial Group
Johnson, Grindly	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-786-2711 (cell) 804 (F) 804	grindly.johnson@VDOT.Virginia.gov	Ch. Eq.Bus.& Emp.Opp Commissioner's Office
Marshall, Shannon	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-371-6844 (F) 804 (C) 804	shannon.marshall@VDOT.Virginia.gov	Chair - Communications Work Group
Nallapaneni, Prasad L., P.E.	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-371-2770 (F) 804 (C) 804	prasad.nallapaneni@VDOT.Virginia.gov	Structure & Bridge Transportation Engineer
Nies, Nicholas	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-786-1092 (F) 804 786-7221 (C) 804	nicholas.nies@VDOT.Virginia.gov	Environmental Quality MLK EA Project Manager
Opperman, Tony	VDOT Central Office 1401 E. Broad Street	(P) 804-371-6749 (F) 804 786-7221	A.Opperman@VDOT.Virginia.gov	Environmental Quality Preservation Prog. Mngr.

	Richmond, VA 23219	(C) 804		
Partridge, Raymond	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-371-0128 (F) 804 786-7221 (C) 804 840-1765	raymond.partridge@VDOT.Virginia.gov	Innovative Project Delivery - Program Manager
Pedraza, Ryan	VDOT Central Office 1410 East Main Street Richmond, VA 23219	(P) 804 371-9870 (F) 804-786-7221 C - 804-840-2723	Ryan.Pedraza@VDOT.Virginia.gov	Innovative Project Delivery - Program Manager
Pletch, Donna M.	VDOT Central Office 1401 E. Broad Street Richmond, VA	(P) 804-371-2745 (F) 804- 786-xxxx (C)	donna.pletch@VDOT.Virginia.gov	Sec. & Emerg. Mgmnt. Agency Security Manager.
Reynolds, Matthew W.	VDOT Central Office 1401 E. Broad Street Richmond, VA	(P) 804-786-2934 (F) 804- 786-xxxx (C)	matt.reynolds@VDOT.Virginia.gov	Asst. State Utili. Eng. Location & Design
Sorrell, Connie S.	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-786-1476 (cell) 804 (F) 804	connie.sorrell@VDOT.Virginia.gov	Chief of Systems Ops Commissioner's Office
Trachey, Larry	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) (804) 371-0849 (F) (804) (C)	Larry.Trachey@VDOT.Virginia.gov	Chair - Operations Work Group
Simpson, Cara	VDOT Central Office 1410 East Main Street	(P) 804 786-9074	cara.simpson@VDOT.Virginia.gov	Design Section Manager

	Richmond, VA 23219	C		
Worssam, Richard C., P.E.	VDOT Central Office 1401 E. Broad Street Richmond, VA 23219	(P) 804-786-2501 (F) 804 (C) 804	richard.worssam@VDOT.Virginia.gov	Asst. State Eng. Location & Design (MLK IJR)
Virginia Department of Transportation - Hampton Roads				
Cook, Dwayne K.	VDOT Hampton Roads District 1700 N. Main St. Suffolk, VA 23663	(P) 757-925-2405 (cell) 757 374-9817 (F) 757-925-1618	dwayne.cook@VDOT.Virginia.gov	Eastern Region Regional Operations Director
Deusebio, John	VDOT Hampton Roads District 1700 N. Main St. Suffolk, VA 23663	(P) 757-925-2681 (cell) 757 477-3487 (Pager) 757-925-6173	John.Deusebio@VDOT.Virginia.gov	Materials - Geologist
Fabian, Frank, P.E.	VDOT Hampton Roads District 1700 N. Main St. Suffolk, VA 23663	(P) 757-925-2481 (F) 757925-5294 (C)757-272-9203	dfarmer@hrpdcva.gov	Deputy Executive Director
Farmer, Dwight, P.E.	Hampton Roads District Planning Com. The Regional Building 723 Woodlake Drive Chesapeake, Virginia 23320	(P) 757 420-8300 (F) 757 523-4881 (C)	dfarmer@hrpdcva.gov	Deputy Executive Director
Gibson, Tony	VDOT Hampton Roads District 1700 N. Main Street Suffolk, VA 23663	(P) 757 925-1525 (F) 757 925 6039 (C)	Tony.Gibson@VDOT.Virginia.gov	Transportation Planning Engineer
Heurer, Dennis. W. , P.E.	VDOT Hampton Roads District	(P) 757-925-2511	dennis.heuer@VDOT.Virginia.gov	Hampton Roads District

	1700 N. Main St. Suffolk, VA 23663	(cell) 757 373-8326 (F) 757-925-1618		District Administrator
Friedland, Randy.	VDOT Hampton Roads District 1700 N. Main St. Suffolk, VA 23663	(P) 757-925-1648 (F) 757-925-1618 (C) 757	randy.friedland@VDOT.Virginia.gov	Assitstant Right of Way/Utilities
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Department of The Treasury				
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	Richmond, VA 23219			
US Army Corps of Engineers				
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Federal Highway Administration				
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Technical Consultant				
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	Norfolk, VA 23510	(F) 757-683-8211 (C) (757)		Interagency Agreement.

Appendix C

Project Change Control Form

PMO-Form-2
Rev.1.11.08

Change Control Form

PROJECT UPC	PROJECT NUMBER	PREPARED BY	DATE PREPARED

Formatted Table

NAME OF PERSON INITIATING CHANGE	ORGANIZATION NAME (ID AS INTERNAL OR EXTERNAL)

ORGANIZATION ADDRESS

TELEPHONE NUMBER	FAX NUMBER	E-MAIL

LAST PROJECT PLAN UPDATE	CURRENT PROJECT PLAN STATUS

DESCRIPTION OF CHANGE

Change Impact	
☐Scope ☐Budget ☐(out of threshold)	DETAIL BREADTH OF CHANGE TO PROJECT COST, INCLUDING ORGANIZATIONAL RESPONSIBILITY
☐Schedule ☐(out of threshold) ☐Quality	DETAIL BREADTH OF CHANGE TO PROJECT SCHEDULE, INCLUDING ORGANIZATIONAL RESPONSIBILITY
☐Resources ☐Other (_____)	DETAIL BREADTH OF CHANGE TO PROJECT TECHNICAL SPECIFICATION, INCLUDING ORGANIZATIONAL RESPONSIBILITY

☐Change Accepted ☐Change Rejected

Project Manager Date:

Project Sponsor Date:

(If scope changes or out of threshold)

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

CHANGE ORDER

Contract ID. No.: _____ FHWA No.: _____ Change Order No.: _____

State Project No.: 1 _____ Category: _____

Original Department Funding $ Total of Other Change Orders $ 0.00

This Change Order is executed by the parties pursuant to Section_____ of the Comprehensive Agreement (the "CA") between Virginia Department of Transportation ("VDOT") and Elizabeth River Crosssing, LLC (the "Concessionaire") dated _____. All capitalized terms used in this Change Order that are not otherwise defined by this Change Order shall have the meanings ascribed to them by the CA.

I. ENGINEER'S EXPLANATION OF NECESSITY FOR PROPOSED WORK:

II. DESCRIPTION OF PROPOSED WORK:

III. ESTIMATED COST OF PROPOSED WORK

Pursuant to the Proposal, VDOT agrees to compensate the Concessionaire at the unit prices set forth below: The unit price specified shall be considered full compensation for all labor, equipment, material, engineering, acceleration, incidentals, overhead and profit, necessary to fully complete the work as outlined. To the extent provided by the Proposal, the quantities set forth herein will be subject to adjustment and, unless otherwise stated, the unit prices set forth herein will be applicable to the adjusted quantities.

ITEM CODE	SPEC. NO.	PCN NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	INCREASE	DECREASE
						$	$	$
				NET Increase/Decrease:			$	$
				NET TOTAL			$	$

IV. OTHER TERMS:

A. Payment Terms: VDOT shall make payment of the unit prices due to the Concessionaire in accordance with the attached _____.

B. Baseline Schedule: The Baseline Schedule shall be adjusted as follows (indicate "unchanged" if applicable: _____.

C. Guaranteed Substantial Completion Date: As a consequence of this Change Order, the Guaranteed Substantial Completion Date is _____ [indicated "unchanged, if applicable].

D. Damages; Compensation/Delay Event: The Concessionaire and VDOT agree that this Change Order fully resolves and settles all claims, demands, or damages of any kind relating to or arising out of the work covered by this Change Order, including, but not limited to all labor, equipment, material, time, engineering, acceleration, incidentals, overhead, profit, interest, time extensions, delays, and schedule impact. Furthermore, any potential future or present time impacts or delays or other impacts related to the changes to the CA as set forth in this Change Order have been considered and are hereby waived by the Concessionaire. The Concessionaire further acknowledges that the work covered by this Change Order shall not constitute or give rise to a Compensation Event or Delay Event, and hereby rescinds any notice of intent, notice of a Delay Event, Compensation Event Notice, or request for Change Order it has filed or may be entitled to file with regard to the work.

V. FUNDING SOURCE/CHARGE _____

Participation: State: 20% FHWA: 80%

VI. ATTACHMENTS:

The following attachments are hereby incorporated into this Change Order:

Exhibit A – Proposal, consisting of: _____

Schedule 1 – Payment Schedule and Terms

The parties hereby agree to the terms set forth herein.

Concessionaire _____ BY _____

(Elizabeth River Crossings, LLC) (Officer of the Firm) Date

RECOMMENDED FOR APPROVAL:

RECOMMENDED BY: TITLE DATE

RECOMMENDED BY: TITLE DATE

APPROVED:

APPROVED BY* (VDOT) TITLE DATE

APPROVED:

APPROVED BY (FHWA) DATE

* See CD-2006-02 for Process and Authorities

Appendix D

Procedures for Collecting Lessons Learned

Procedures for Collecting Lessons Learned (LL)

Purpose

The purpose of capturing lessons learned is to identify what went right, what went wrong, and why, throughout the project and before the project team disbands. The goal is to help VDOT's program development and project management effort, to develop and share best practices, and to support VDOT staff in carrying out their work. Specifically, LL are intended to support agency and staff to:

1. Learn from the good decisions made and effective actions taken and from any poor decisions, inadequate actions, or mistakes made,
2. Learn from the appropriate and efficient use of techniques and tools,
3. Focus on work done well to provide appropriate recognition,
4. Document the finding for the VDOT's knowledge base that may be accessed before and during future projects, and
5. Consider or implement best practices and policy changes as appropriate.

Who

The Design or Construction Project Manager (PM) is the primary source of information about lessons learned on a project as this person is most likely to be aware of lessons learned as they arise over the course of the project. Other team members will also be able to identify lessons learned in their areas of expertise, such as structure and bridge, environmental, or right of way and utilities.

The IPD Project Manager will work with the PM to identify, capture and review submitted LL as they arise. LL will be captured using the given format and standard set of indexing terms.

When

LL emerge as part of the ongoing process of any project and they may be captured at any point during the life of the project. However, there are times in a normal project process when capturing LL may be most advantageous. For example, the CFX project decided to include the capturing of lessons learned during the closeout process for each of the key events or milestones in the project schedule as the core team, supplemented by others as appropriate, met to discuss what had occurred. Consideration could also be given to collecting LL as part of periodic risk assessments. The PM should determine what process will work best for his or her project for collecting lessons learned.

How

A template has been developed to make the capturing of LL consistent. Several sections have been provided. These sections may be very brief (or not) depending on what is needed for reviewers to understand the LL. See template.

The capturing of LL will involve a collaborative team effort. The PM is encouraged to identify LL, and to encourage his or her team members to do so as well, and to work with the IPD PM to draft those LL for consideration by management. The IPD PM, in turn, will initiate the identification of LL at key milestones by contacting the PM and others as appropriate and encouraging and supporting the drafting of LL into the template format. The IPD PM should discuss a reasonable plan with the PM for collecting LL that will integrate with the ongoing project process.

Initial drafting of LL can be done outside of the PPTA LL team site or within the site. Draft versions that are created outside of the site should be forwarded to the IPD PM for uploading to the PPTA LL team site. The IPD PM will be made the administrator of the subsite for his or her project and should make others, such as the PM, members as appropriate so that they can use the site at their convenience. This subsite is restricted to use for drafting and changing LL.

Once the IPD PM and PM are comfortable that the LL is ready for the next level of review, then the IPD PM should upload the LL into the parent PPTA LL site in the shared documents realm. PMs are encouraged to offer resolution, best practices or policy changes for consideration by the LL Steering Committee.

The LL that are in the parent site will be considered by the LL Steering Commitment for appropriate resolution. The LL Steering Committee makes final determination on the form and content of the LL and on how to best address the content of the LL in order to support the agency.

What is a Lessons Learned?
It is not a complaint
It has clear implications for other projects
It includes what we learned about how to do it right

Appendix E

Top Project Risks, Key Results and Action Items from Initial Joint Risk Workshop

ASSESSMENT OF THE RISKS DISCLOSED

Seven days prior to day 1 of the workshop, VDOT and ERC disclosed their top ten commercial/financial risks and their top ten technical risks. These risks were assessed to identify common and exclusive issues. Generally, the assessment process treated the risks explicitly; in other words, inferences were not made with respect to the description of the risks disclosed. Three categories for the risks were established: (1) identified mutually and allocated similarly, (2) mutually identified and allocated differently, and (3) exclusively identified and allocated. The risks were then prioritized according to: (1) difference in allocation and (2) need for clarification and/or potential ramifications for either or both parties.

Table 1 depicts the prioritization and basic characterization of the commercial/financial risks disclosed whereas Table 2 illustrates the same for the technical risks.

	Table 1. **Commercial/Financial Risks Disclosed**	**Allocation**	
Item	**Description**	**ERC**	**VDOT**
1	Revenue impacting facilities	Shared	N/A
2	Latent defects in existing facilities	Shared	Shared
3	Timely decisions to negotiate CA	N/A	Shared
4	Handback conditions and concession term	Shared	N/A
5	Revenue risk	ERC	ERC
6	Risk relating to level of tolling rates	N/A	VDOT
7	Connecting facilities/scope optimization	Shared	N/A
8	Market conditions to achieve financial close	VDOT	ERC
9	Financing (general)	ERC	N/A
10	Termination rights and payment	Shared	N/A
11	Transparency and cost validation during CA pricing	N/A	Shared
12	Toll collections, violations enforcement and legislation	Shared	N/A
13	Performance during operating period	N/A	ERC
14	Changes in law	Shared	Shared
15	Required insurance/availability at commercially reasonable rates	Shared	N/A
16	Hurricane/flooding	Shared	N/A
17	Force Majeure events	Shared	N/A

	Table 2. **Technical Risks Disclosed**	**Allocation**	
Item	**Description**	**ERC**	**VDOT**
1	Existing facility/tunnel	Shared	ERC
2	Design & construction requirements/approval	Shared	Shared
3	Project scope/scope creep*	N/A	VDOT

4	Quality assurance/quality control	N/A	Shared
5	Conflicting priorities between concessionaire and DBC	N/A	ERC
6	Permits & Approvals: General	Shared	ERC
7	Permits & Approvals: Dredging	Shared	ERC
8	Permits & Approvals: TOYR	Shared	ERC
9	Right of Way	Shared	N/A
10	Utilities	Shared	N/A
11	Coordination with CSX	N/A	VDOT
12	Site Conditions (other than geotechnical)	Shared	Shared
13	Geotechnical Conditions	Shared	Shared
14	Construction Cost/Materials Escalation and/or Availability*	ERC	ERC
15	SWAM and DBE Participation	Shared	N/A

The more significant follow-up actions for each party are summarized below.

KEY FOLLOW-UP ACTIONS FOR COMMERCIAL/FINANCIAL RISKS

ERC	VDOT
• **Identify assumptions and constraints for base-case traffic and revenue study**	• **Continue dialogue with ERC with respect to planned initiatives, constraints and any actions that would be considered compensation events due to revenue impacts**
• **Perform necessary inspections to establish baseline conditions of existing facilities** • **Identify range/threshold for major vs. minor latent issues and potential remedies**	• **Continue to share information with ERC to reach concurrence on baseline conditions of existing facilities**
• **Gather necessary and sufficient information (including market precedents, technical requirements, financial information) prior to initiating any negotiations** • **Establish ground rules that ensure appropriate representation at subsequent meetings to ensure timely decisions**	
• **Prepare and present preliminary tolling structures to the steering committee** • **Subsequently agree upon basic tolling principles (lowest toll, market-based toll, revenue sharing, downside protection, etc.)**	• **After presentation to steering committee, agree upon basic tolling principles (lowest toll, market-based toll, revenue sharing, downside protection, etc.)**
• **Subsequent to consensus on tolling scheme, present concepts for, and implications of, sharing refinancing gains to steering committee for review/comment**	• **Continue dialogue with ERC regarding refinancing issues**

ERC	VDOT
• Propose methods regarding how it would like sensitive information handled in compliance with FOIA • Work with VDOT to clarify expectations with regard to information exchange	• Work with ERC to clarify expectations with regard to information exchange
• Should currently assume it must develop tolling plan and back-office infrastructure • Present tolling plan (outlining implications, benefits, costs, constraints of various issues) to steering committee	• Continue efforts on legislative front to get enabling legislation enacted to improve tolling environment in Virginia

KEY FOLLOW-UP ACTIONS FOR TECHNICAL RISKS

ERC	VDOT
• Identify long-lead-time or priority inspection needs to investigate existing structures • Investigate and establish baseline for allowable stresses and tolerance for tunnel movement (caution: notoriously difficult to quantify) • Iteratively develop a base-case design and construction plan which complies with standards established above	• Discuss/consider how to potentially handle departures from the base-case design and construction plan in the event of damage or unanticipated stress to existing structures
• Identify perceived gaps in existing QA/QC framework for design and construction • Subsequently meet to discuss expectations for QA/QC process • Conduct separate meeting regarding roles of independent engineer, etc.	• After identification of perceived gaps, subsequently meet to discuss expectations for QA/QC process • Conduct separate meeting regarding roles of independent engineer, etc.
• Follow through with development and approvals of base scope deliverables • Identify alternative technical concepts as soon as practical	• Work with ERC regarding scope requirements and deliverables
• Incorporate permitting process into base-case schedule and identify strategies for mitigating delay risk • Investigate unbundling high-impact permitting issues for consideration as relief events vs. blanket permitting relief • Schedule meeting with VDOT to clarify definition of hazmat generator status	• Schedule meeting with ERC to clarify definition of hazmat generator status

ERC	VDOT
• **Continue with due diligence with respect to utilities** • **Use VDOT form of agreement with utilities** • **Note: no "betterments" that impact project** • **Develop strategy to handle unknown utilities and schedule delays for non-performance of utilities, with goal of allocating risk**	• **Develop strategy to handle unknown utilities and schedule delays for non-performance of utilities, with goal of allocating risk**
• **Review available data and materials regarding geotechnical and other site conditions** • **Note: VDOT precedent has been to treat certain unforeseeable impacts as delay events** • **Characterize unforeseeable events for which compensation/relief would be requested**	• **Work with ERC to establish mechanisms for handling unforeseeable events**

N/A indicates not explicitly identified by party)

Appendix F
Project Schedule

INSERT ERC's PRIMAVERA, JUNE 30, 2010 PHASE 1 DEVLIVERABLE SCHEDULE HERE