February 6, 2020

Memorandum #2020-22

TO: Regional Connectors Study (RCS) Working Group

BY: Camelia Ravanbakht, RCS Project Coordinator

RE: Regional Connectors Study Working Group Meeting – February 13, 2020

Attached is the agenda for the **Regional Connectors Study Working Group Meeting** scheduled for **Thursday, February 13, 2020 at 9:30 a.m.** in the Regional Building Board Room A, located at 723 Woodlake Drive, Chesapeake, Virginia 23320.

MK/nb

RCS WG Voting Members:
Earl Sorey (CH)
Jason Mitchell (HA)
Bryan Stilley (NN)
Brian Fowler (NO)
James Wright (PO)
Jason Souders (SU)
Phil Pullen (VB)

RCS WG Nonvoting Members:
Jason Flowers (Army Corps)
George Janek (Army Corps)
Robert Pruhs (Army Corps)
Ivan Rucker (FHWA)
Kevin Page (HRTAC)
Tim Dolan (US Coast Guard)
Gene Leonard (US Coast Guard)
Michael King (US Navy)
Tony Gibson (VDOT)
Jennifer Salyers (VDOT)
Kit Chope (VPA)
Barbara Nelson (VPA)

RCS WG Other:
Pat Jones (CH)
Amy Inman (NO)
Anne Doyle (NO)
Robert Brown (NO)
Evandro Santos (NO)
Carl Jackson (PO)
Tara Reel (VB)
Rick Dwyer (HRMFFA)
Meghan Robinson (PRRBIZ)
COL Patrick Kinsman (US Army)
Robin Grier (VDOT)

Staff:
Bob Crum (HRTPO)
Mike Kimbrel (HRTPO)
Rob Case (HRTPO)
Kendall Miller(HRTPO)
Keith Nichols (HRTPO)
Dale Stith (HRTPO)
Sharon Lawrence (HRPDC)
Keith Cannady (HRPDC)

Project Coordinator:
Camelia Ravanbakht

Project Consultants:
Craig Eddy
Lorna Parkin

Agenda

Regional Connectors Study

Working Group Meeting

February 13, 2020

9:30 AM

The Regional Building, Board Room A, 723 Woodlake Drive, Chesapeake, Virginia

1. Call to Order
2. Welcome and Introductions
3. Public Comment Period (Limit 3 minutes per individual)
4. Minutes

   Summary Minutes from December 3, 2019 Working Group Meeting – Attachment 4

   Recommended Action: For Approval

5. Regional Connectors Study: Phase 2 Update: Craig Eddy/Consultant Team, MBI

   - Scenario Planning
   - Travel Demand Model
   - Website
   - Schedule – April 2020
   - Deliverables – see below:
     - Scenario Planning Methodology White Paper (includes some narrative on framework
     - scenarios and control totals (Task 4.2) – complete
     - Memo Summarizing Economic Trends and Opportunities (includes some narrative on framework scenarios and control totals (Task 4.2) – complete
     - Tech Memo on Performance Measures – complete
     - Memo Summarizing Travel Behavior Data Review – draft in mid-February
     - Memo Summarizing Travel Demand Model Evaluation – draft in mid-February
     - Tech Memo on Drivers, Spatial Assumptions, and Travel Parameters – draft in late-February
     - Tech Memo on Scenario Evaluation (includes narrative on infographics and visualizations of framework scenarios (Task 4.2), performance dashboard (Task 4.3), infographics for performance measures (Task 4.3) – draft in mid-March

Recommended Action: For Information and Discussion

6. Regional Connectors Study and On-Going Regional Studies – Camelia Ravanbakht- RCS Project Coordinator

Review regional on-going parallel studies and conduct discussions regarding RCS network assumptions dealing with consistency between parallel regional studies and what enhancements to the E+C network (existing plus committed improvements) should be included in the RCS.

- Regional Express Lanes Network – Mike Kimbrel
  October 2019 HRTPO Board Resolution (attachment 6)
- B-H Interchange Study – Mike Kimbrel
- I-64/I264 Interchange Study-Phase 3 – Dale Stith
- Transit Transformation Study/Other Regional Transit Studies – HRT staff (invited)

This agenda item has been thoroughly discussed during January weekly coordination calls. The consultant team has been requested to provide guidance on the impact of these studies to the RCS.

Recommended Action: For Information and Discussion

7. RCS Phase 3 Scope of Work, Budget and Schedule – Craig Eddy, MBI

- Approved by HRTPO Board, January 16, 2020 (attachment 7)
- Begin preliminary discussion of tasks and timeline

Recommended Action: For Information and Discussion

8. Next Meetings and Planned Activities

- Weekly Coordination Call: Thursday, February 20, 2020, 9:00 AM
- Working Group Meeting: Thursday March 12, 2020, 9:30 AM, Regional Building, Conference Room D, Chesapeake
- Proposed 4th Marine Terminal Site Visit and Presentation: Spring 2020

9. Other Items of Interest

10. FYI – HRTPO recently received an updated Regional Travel Demand Model. The technical documentation associated with the model are available on the HRTPO website at the following links:

- 2020 Hampton Roads Model v2 User's Guide
- 2020 Hampton Roads Model v2 Methodology Report

11. Adjournment

Regional Connectors Study
Working Group Meeting
Minutes
December 3, 2019, 10:00am
Regional Building, Chesapeake

The following were in attendance (alphabetically by last name):

Rob Case (HRTPO)
Rick Dwyer (HRMFFA)
Craig Eddy (Michael Baker Intl.)
Brian Fowler (Norfolk)
Vlad Gavrilovic (EPR)
Robin Grier (VDOT)
Greg Grootendorst (HRPDC)
Carl Jackson (Portsmouth)
George Janek (Corps of Engineers)
Sara Kidd (HRPDC)
Mike Kimbrel (HRTPO)
Nina Malone (Port of Va.)
Keith Nichols (HRTPO)
Lorna Parkins (Michael Baker Intl.)
Pam Phillips (VDOT)
Camelia Ravanbakht (RCS Project Coordinator)
Tara Reel (Va. Beach)
Dustin Rinehart (Port of Va.)
Jennifer Salyers (VDOT)
Evandro Santos (Norfolk)
Earl Sorey (Chesapeake)
Bryan Stilley (NN)
Dale Stith (HRTPO)
Eric Stringfield (VDOT)
Bill Thomas (Michael Baker Intl.)

1. Call to Order

Bryan Stilley (Chair, Newport News) called the meeting to order at 10:00am.

2. Welcome and Introductions

Two attendees introduced themselves.

3. Public Comment Period

There were no public comments.

4. Minutes

The minutes of the October 21, 2019 Working Group meeting were approved.

5. Phase 2 Update

Craig Eddy (Michael Baker Intl.) gave an update on phase 2.

6. Scenario Planning Review and Progress

Lorna Parkins (Michael Baker Intl.) gave an update using slides, and then led a discussion of Technology Drivers. Attendees provided answers to questions on the slides via an electronic voting device at each seat, as follows:

What Worries You Most About The Influence Of Technology On Transportation?

	Responses	
	Percent	**Count**
Safety of Passengers	40%	8
Safety of Pedestrians/Bicyclists	30%	6
Privacy	0%	0
Cybersecurity	10%	2
Suburban Sprawl	5%	1
Increased Traffic	15%	3
Totals	**100%**	**20**

What Is The Most Important Benefit From Emerging Transportation Technology?

	Responses	
	Percent	**Count**
Fewer Vehicle Collisions	52.38%	11
Improved Mobility	28.57%	6
Increased Travel Time Reliability	14.29%	3
Decreased Environmental Impact	0%	0
More Efficient Goods Movement	4.76%	1
Easier Multimodal Connections	0%	0
Totals	**100%**	**21**

Bill Thomas (Michael Baker Intl.) presented Operational and Behavioral Impacts of technology (e.g. connected/autonomous vehicles) using slides. Noting that the recent update of the regional model added abilities to model new transportation technologies, he presented associated modeling assumptions for each of the four study scenarios. Vlad Gavrilovic (EPR) presented a Land Use Modeling Update with slides.

7. 2020 Proposed Schedule for Working Group

Proposed 2020 Working Group meetings at Regional Building (second Thursday of month):

- Jan. 9, 2020 at 9:30am
- Feb. 13, 2020 at 9:30am
- Mar. 12, 2020 at 9:30am
- Apr. 9, 2020 at 1:30pm
- May 14, 2020 at 9:30am
- Jun. 11, 2020 at 9:30am
- Jul. 9, 2020 at 9:30am
- Aug. 13, 2020 at 1:30pm
- Sep. 10, 2020 at 9:30am
- Oct. 8, 2020 at 1:30pm
- Nov. 12, 2020 at 1:30pm
- Dec. 10, 2020 at 9:30am

The working group voted to accept this schedule.

8. Next Meetings and Planned Activities

- Weekly Coordination Call: Dec. 12, 2019 at 10:00am
- Webinar: Travel Demand Model adjustments and calibration results for RCS: Dec. 19, 2019 at 10:00am (tentative)
- 4th Marine Terminal Site Visit and Presentation: Spring 2020

9. Other Items of Interest

No other items were discussed.

10. Adjournment

The meeting was adjourned at 12:00pm.

the heartbeat of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION
BOARD RESOLUTION 2019-06

A RESOLUTION OF THE HAMPTON ROADS TRANSPORTATION PLANNING ORGANIZATION ENDORSING THE HAMPTON ROADS REGIONAL EXPRESS LANES NETWORK.

WHEREAS, the Hampton Roads Transportation Planning Organization (HRTPO) is the federally-mandated authority responsible for carrying out the transportation planning and programming process for the Hampton Roads Region, and, as such, is responsible for the selection and prioritization of regionally-significant projects to be built in Hampton Roads; and

WHEREAS, due to the relationship between the HRTPO, the Hampton Roads Transportation Accountability Commission (HRTAC), and the Virginia Department of Transportation (VDOT), significant improvements have been made to the Interstate system in Hampton Roads as projects prioritized by HRTPO have been funded and executed by HRTAC and constructed by VDOT; and

WHEREAS, technical analyses conducted by VDOT and HRTPO have demonstrated that users of the Interstate system in Hampton Roads currently experience, or are expected to experience by 2040, significant congestion at a number of locations along the I-64 corridor; and

WHEREAS, the VDOT and HRTPO analyses have demonstrated that an Express Lanes Network comprised of High-Occupancy/Toll (HOT) lanes along I-64 from Jefferson Avenue in Newport News to Bowers Hill in Chesapeake would provide an option for a reliable trip for High Occupancy Vehicles (HOV), public transit vehicles, and non-HOV users willing to pay a toll; and

WHEREAS, the HRTPO believes it is important to pursue the concept of a fully connected and consistent Express Lanes Network to ensure the future needs of the Region will be addressed; and

WHEREAS, the HRTPO believes it is important that such an Express Lanes Network be managed by the Hampton Roads Transportation Accountability Commission (HRTAC).

NOW, THEREFORE, BE IT RESOLVED that the Hampton Roads Transportation Planning Organization hereby endorses the Hampton Roads Regional Express Lanes Network as follows:

1. A consistent Express Lanes Network that begins on I-64 at Jefferson Avenue in Newport News, proceeds along I-64 through Bowers Hill in Chesapeake and continues along I-664 to I-64 in the vicinity of the Hampton Coliseum.
2. That the Express Lanes Network be a consistent HOT-2 network, with one HOT lane and one part-time HOT shoulder lane where practical and necessary.
3. That to minimize impacts to the Region's motorists, wherever practicable, the roadways that comprise the Express Lanes Network be restricted to HOT operation during high volume traffic times and be open to all traffic outside of the restricted periods.
4. That funding and operation of the Express Lanes Network be managed by HRTAC.
5. That a free alternative (general purpose lanes) be available throughout the roadway system associated with the Express Lanes Network.

BE IT FURTHER RESOLVED that the Hampton Roads Transportation Planning Organization recommends that HRTAC consider the following items when developing the master tolling agreement with VDOT:

- Prioritize optimal congestion pricing.
- Develop tolling approaches that mitigate impacts on Hampton Roads residents, including options that maximize revenue collection on weekends.
- Ensure a free alternative (general purpose lanes) be available throughout the roadway system associated with the Express Lanes Network.
- Funding, operation, and the use of toll revenues of the Express Lanes Network to be managed by HRTAC directly or indirectly through the master tolling agreement.

APPROVED and ADOPTED by the Hampton Roads Transportation Planning Organization Board at its meeting on the 17th day of October, 2019.

John L. Rowe, Jr.
Chair
Hampton Roads
Transportation
Planning Organization

Robert A. Crum, Jr.
Executive Director/Secretary
Hampton Roads
Transportation
Planning Organization

REGIONAL CONNECTORS STUDY

PHASE 3 – STUDY COMPLETION

SCOPE OF WORK, SCHEDULE, and COST PROPOSAL

January 8, 2020

Attachment 7

Table of Contents

PHASE 3 – STUDY COMPLETION

SCOPE OF WORK

Introduction

Phase 3 of the study will entail the development and screening of preliminary alternatives, the determination of candidate alternatives, and the recommendation of a preferred alternative to enhance connectivity between the Peninsula and the Southside of Hampton Roads. The Phase 3 scope is intended to include all tasks required to bring the Regional Connectors Study (RCS) to a successful conclusion. Phase 3 tasks are described in the following paragraphs.

TASK 1 – Execute Engagement Plan

This task outlines the process for the implementation of a Public Engagement Plan developed in Phase 1 of the Hampton Roads Regional Connectors Study (RCS). The subtasks associated with implementation of the Public Engagement Plan seek to inform, educate and engage stakeholders, residents, businesses, and travelers in the Hampton Roads Region. The Consultant Team will adhere to all applicable policies and procedures as directed by HRTPO and applicable federal guidelines covering MPOs and recipients of federal funds for planning purposes. Social media will be a highly emphasized medium through which study information and public meeting information will be made available in the Hampton Roads area (see Task 1.3g).

Task 1.1: Task Management

The engagement task lead will provide a task-based progress report, participate in monthly team meetings and bi-weekly calls as appropriate with HRTPO staff and the Working Group. Progress reports will summarize and report the percentage complete of each task and provide the basis for the monthly invoice. The engagement task leader will attend Consultant Team meetings as needed, including but not limited to bi-weekly Consultant team meetings, internal team meetings, and meetings with HRTPO staff

as required. The engagement task leader will provide schedule updates to inform the master project schedule.

Task 1.2: Engagement Plan Review

The Public Engagement Plan will be reviewed on a quarterly basis to ensure alignment with the goals and objectives of the study and to address any additional information obtained through the engagement process. This review will include evaluation of the demographic profile, tools and tactics, metrics, stakeholder groups and key messages. Any revisions will be provided to the Working Group and HRTPO staff in track changes for review and acceptance. An electronic copy of each plan revision will be submitted.

Task 1.3: Implementation of Engagement Program

The Consultant team will conduct stakeholder outreach tasks to engage regional stakeholders as directed and approved by the Working Group and HRTPO. This will consist of outreach to the targeted stakeholders representing or living in the jurisdictions covered by HRTPO agreements. Activities to be implemented include:

Task 1.3a Study Mailing list and Comment Database

The Consultant team will create, organize, and maintain a project database and mailing list to house contact details for agency representatives, elected officials, civic groups, businesses, and other important stakeholders. The Consultant team will work closely with HRTPO to update the agency and locality mailing list. The list will be used to disseminate project status information such as a study brochure and to notify people of upcoming in-person and online engagement opportunities.

Throughout the course of the study, the Consultant team will expand and update the mailing list and database by encouraging interested parties to refer others to the Consultant team or through mailing list signups via the study website. The Consultant team will utilize database software such as MailChimp to maintain the database.

This database can also be used to house public meeting comments for extraction and future response development. The Consultant team will accept all public comments submitted during public outreach efforts and at public meetings. This effort will include: developing a public comment section of the database; collecting and cataloging all correspondence sent to the Consultant team; categorizing all comments for inclusion in comment analysis or reports and creating the public outreach comment table summary for inclusion in the Engagement Report.

Task 1.3b Scenario Planning Virtual Meeting

At the conclusion of Phase 2, the Consultant team will prepare and lead a Virtual Public Meeting (VPM) to share information regarding the scenario planning process and the initial scenario performance results with the existing + committed transportation network.

The VPM will consist of educational material and an interactive interface that can record reactions and feedback related to the scenario planning process and results. The meeting will be hosted on the project

website, with links to the component materials such as a recorded webinar and interactive material in a platform such as MetroQuest. The virtual meeting will be available online for a period of 3-4 weeks, and the educational component will be available thereafter on the project website.

The Consultant team will coordinate with HRTPO staff and study jurisdictions to promote participation in the virtual meeting through social media, email, and other forms of electronic communication. The Consultant team will monitor the patterns of participation in the interactive component to identify areas to supplement with Facebook advertising or similar cost-effective means within the stipulated budget to encourage balanced participation from within the region and demographic subgroups. Also, the Consultant team will prepare a simple display board to facilitate publicizing the virtual meeting at community events. The HRTPO and study jurisdictions can use the display with their own laptop or tablet computer to gather input at community events, and the Consultant team will utilize up to two of the pop-up meetings in Task 1.3g to enhance participation in the Virtual meeting.

The Consultant Team will summarize the participation in the VPM, and input received through the interactive component in a presentation to the Working Group and for inclusion in the Engagement Report.

Task 1.3c Community Briefings and Presentations

The Consultant team will schedule and attend 25 community nonprofit and organization meetings to provide an overview of the project. Presentation task elements will include the development of handouts, PowerPoint presentations, maps, and the recording of meeting minutes as appropriate. A total of 25 presentations will be conducted in Phase 3.

Task 1.3d Brochures, Factsheets and Handouts

The Consultant team will prepare one (1) draft meeting brochure per round of public meetings (2 total) to report on key project elements, milestones, and recommended meeting dates. The brochure will be distributed at public meetings in Phase 3 and made available on the project website. The content will include background information, schedule, study area maps, and other pertinent project information to support full participation by the public at the meetings. In addition, the Consultant team will prepare postcards or rack cards throughout the duration of the study to be featured at community facilities. These smaller, more portable formats could highlight topics or special interests and could be distributed at outreach events, community facilities, and as notification tools in advance of public meetings. The study team will print a total of 20,000 postcards or rack cards for distribution.

The Consultant team will develop posters, flyers and meeting presentation templates for the study. The team will generate 6 comment cards, fact sheets and/or flyers that highlight topics, promote events, or announce key milestones in the process. They may target specific audiences or interests or be oriented more generally. The fact sheets and flyers will support and supplement key messages throughout the process to keep the public and stakeholders informed.

Task 1.3e Public Meetings

The Consultant team will work with HRTPO to plan, host and facilitate two rounds of nine (9) public meetings during Phase 3 of the study for a total of eighteen (18) public meetings. Each meeting will have an informational component and targeted and purposeful input opportunities. Meetings will be

developed in a way that manages stakeholder expectations, promotes transparency and accountability for the process, creates understanding, and builds consensus for decisions and recommendations. The team will incorporate appropriate tools and techniques to engage and inform minority, low-income, and Title VI populations. The team anticipates each meeting series to be held as follows: three (3) Peninsula meetings (Williamsburg, Newport News, and Hampton) and six (6) Southside meetings (north Norfolk, south Norfolk, Virginia Beach, Chesapeake, Western Branch/Churchland area, and Suffolk). The Consultant team will identity meeting locations for HRTPO approval, conduct onsite walk throughs and verify ADA accessibility, book meeting locations, provide refreshments, book court reporters, advertise meetings in various media (newspapers, social media, ad buys, etc.) and secure, if required, any sign language interpreter and/or language translator as appropriate. All meetings will be accessible by public transit.

Meeting content will include, but not be limited to, scenario planning methodology and analysis results, potential alternatives, and alternatives' analysis results. The meeting format will be a charette style public meeting and/or small group table style.

The Consultant team will offer an online open house or live stream session for each meeting series for a total of two (2) online events. Meeting notifications will be made in accordance with HRTPO policies and will use the full mailing list. Social media (see Task 1.3g) and web announcements will be used. Additionally, in advance of the first round of meetings, a printed ad announcement with meeting information will be published in local media as approved by the Working Group and HRTPO.

An online open house is very much like a traditional public open house, but information and community discussions are offered through a web forum or webinar. A variety of options are available. With a webinar option, participants would register using the GoToMeeting software. Once registered for the online open house, participants would be able to access a library of information, view a PowerPoint presentation, and ask questions of staff through an interactive messaging feature. Interactive polling is also available. Another option is to live stream a public meeting via Facebook or another online tool. Providing these easy and accessible online tools will encourage community members to convene online to learn more about a project, share their ideas, and provide input to decision-makers.

Task 1.3f Regional Connectivity Symposium

To engage traditionally underserved populations the Consultant team will plan a symposium with the HRTPO EJ Roundtable, students and faculty from local Historically Black Colleges and Universities, and Title VI advocacy groups. The two- to three-hour meeting will be a facilitated conversation focused on regional connectivity for the purposes of informing the study recommendations and priorities.

The Consultant team will plan the Regional Connectivity Symposium, select event location, develop an event management plan, speaker talking points, review of collateral materials, and provide day-of-event coordination. The Symposium is in addition to the other outreach tools such as direct mail, community briefings, public meetings, and pop up events to reach and engage EJ populations.

Task 1.3g Community Events and Outreach

The Consultant team will plan up to five (5) informal in-person pop-up events to introduce the project and to obtain stakeholder perspectives on regional mobility, transportation planning, and connectivity. The team will select event locations, schedule, develop event activity plans, determine required staffing, and review collateral material.

In addition, the Consultant team will investigate the use of ad space on ziosks in the region and a project informational video to be priced for HRTPO and Working Group consideration and approval.

Task 1.3h Social Media Engagement

The consultant team will develop a social media program to support outreach to a variety of stakeholder groups across the region including environmental justice, Title VI and student populations for the purposes of promoting the study, events, and public meetings. The Consultant team will develop a social media content calendar to coincide with study engagement efforts and milestone announcements. Information posted on HRTPO's Facebook account will link the audience to the RCS website for additional details. HRTPO staff will review and approve draft social media content in addition to the content calendar. HRTPO will post all social media content and pay for social media advertising, if desired, on HRTPO's Facebook media account.

Task 1.3i Engagement Report

The final outreach documentation for the project will clearly highlight all activities, what we heard, and how it was considered and addressed. The final outreach summary will aid in communications for the project by telling the story of the engagement process and how the plan represents an inclusive and community-supported vision for the future.

Task 1.4: Website Upgrades and Maintenance

The team will develop content for use and subsequent uploading to the study website by the study team. This effort includes initial content development to be reviewed and approved by the Working Group and HRTPO along with the development of content updates by the study team at project milestones and other pertinent events.

Task 1.4a Prepare Website Content

The Consultant team will develop a creative brief for Phase 3 to orient readers to the Regional Connectors Study and its phases.

As a part of Phase 3, the study website will be populated with fresh information as it becomes available, including analysis results, meeting dates, reports, and meeting/briefing dates. Updates and reporting documents such as one-pagers will be shared as they become available. Templates for these updates will be designed and developed as a part of this task. New content, including microsimulation of alternatives' traffic operating conditions, will be integrated into the site, and new components will be added to the site as needed to accommodate this content. Original copywriting will be delivered as a part of these updates, and publication will be managed by the Consultant team. Regular hosting and maintenance of the study website (including the posting of meeting minutes and presentation materials) will also be covered under this scope.

A key feature of Phase 3 will be the development of an Interactive Map, which will require coordination to establish visual goals, data sources, and other content needs. Once designed, this map will be integrated into the existing study website. The budget is an estimate based on the assumption that the map will require integration with a GIS database.

Phase 3 will also feature a new Scenario Planning pages which will appear at the top-level navigation on the site. New copy will be developed, and technical analysis elements performed by team members will be uploaded. This page will be designed to feature animations and other graphical elements. The budget is an estimate based on the assumption that the subpages will require interactive functionality surpassing what is possible in the templates created for Phase I and Phase 2. Additionally, this budget assumes support and maintenance up to the project completion date of April 2021.

As the Study gathers momentum, a plan will be created to report events on a regular schedule, and a post template for these events posts will be created.

Survey results will be shared in the form of a final report. Survey-generated publications will be added, and categories for these publication types will be created and added to the website backend.

Finally, bi-monthly website analytics summaries will be submitted to HRPTO provide information regarding the number of visits to the RCS website, number and type of public comments and other pertinent information.

Timing: 27 months

Meetings:

- 14 public meetings
- 25 community briefings and presentations
- 8 “pop-up” events
- 1 Regional Connectivity Symposium
- Meetings with HRTPO staff: 0
- Working Group Meetings: 4
- Steering Committee Meetings: 2
- Other/Stakeholder Meetings: None

Deliverables:

- Study mailing list (electronic format)
- Comment database (electronic format)
- Meeting notes for stakeholder briefings, presentations, and public meetings
- Brochures, fact sheets, and handouts and comment sheets for public meetings
- Social media content calendar
- Virtual Public Meeting educational materials for project website
- Virtual Public Meeting interactive component for 3-4-week deployment
- Summary presentation of VPM participation and input
- Display board for use at community meetings to publicize the VPM
- Up to $1000 in social media advertising of the VPM

- Engagement Summary Report
- Website deliverables

TASK 2 – Development of Preliminary Alternatives

The intent of this task is to develop preliminary alternatives to a sufficient level of detail to enable construction, right-of-way, and utility relocation planning-level costs to be developed, as well as to be able to determine each alternative's potential to be permitted and constructed. Permitability and constructability are two criteria that will be used to help screen the preliminary alternatives down to candidate alternatives. More information on that screening is provided in Task 3.2.

It is assumed that a maximum of ten (10) preliminary alternatives will be developed. They will include combinations of five (5) segments not programmed for funding in the HRCS SEIS which are:

- I-664
- I-664 Connector
- I-564 Connector
- VA 164
- VA 164 Connector

In addition to combinations of these five segments, an additional five (5) combination of segments will be developed as a result of suggestions made at stakeholder interviews and comments received during other project engagement activities. Those segments may include US 17 (including the segment on the James River Bridge) and any new harbor crossing connections (roadway, ferry, or transit). These combinations of segments, 10 in all, will be called preliminary alternatives.

Task 2.1a: Summarize Background Information

The Consultant team will compile documentation on the non-programmed roadway segments from the SEIS. The information gathered will be summarized and presented to the Working Group and HRTPO staff and form the basis for the development of a next tier of preliminary alternatives (combination of segments). Estimates of cost should be redone to account for any increases in planning level unit costs since the original estimates. The rest of the information associated with these 5 segments should still be applicable to the RCS.

Task 2.1.b: Conduct Unconstrained Travel Demand Model Analysis

The Consultant team will develop AM and PM peak period demand estimates for the 2045 baseline land use scenario and the E+C roadway network in order to understand the travel market in the region. These estimates will reveal how vehicles would be distributed with no capacity constraints affixed to the roadway network. Analysis results will be summarized in a technical memorandum.

2.1.c.: Preliminary Alternatives Identification

The initial set of alternatives to be analyzed in Tasks 2 and 3 will consist of the 5 SEIS segments not selected and up to 5 additional improvements, variations on the original alternatives, and/or combinations of the alternatives. The Working Group will review the results of Phase 2 Scenario Analysis of the E+C network and the results of Tasks 2.1.a and 2.1.b to select the preliminary alternatives for analysis in the remainder of Tasks 2 and 3. The travel demand model will be used to generate traffic estimates for the selected Preliminary Alternatives. The Working Group will select the set of performance measures, a subset of the full performance dashboard for the scenario analysis, to be used to evaluate project performance in Task 3.1b. A summary of the identified Preliminary Alternatives will be prepared.

Task 2.2: Develop Geometry of Preliminary Alternatives

To the greatest extent possible, the Consultant team will use existing information available for the conceptual design of the alternatives, which includes: typical cross sections, alignments for roadways on new location, and geometric configurations of connection points to existing roadways.

The Consultant team will develop alternatives at a conceptual level in MicroStation format utilizing aerial photography and available GIS data. Elements of the conceptual development of the alternatives will include subtasks that follow.

Based on Corps of Engineers input, the Corps will offer comments during the development of the alternatives, but the alternatives development should follow a step-wise process. Milestones in the development process may include the following steps:

- Defining a project purpose and need
- Developing a scope and methodology for alternatives analysis
- Documenting the alternatives analysis, including the practicability of the different alternatives
- Developing the preferred alternative

Task 2.2a Design Criteria

Engineering design criteria for the Preliminary Alternatives will be established based on VDOT and AASHTO standards for the design speed and type of facility. Alignments will be developed to minimize known environmental impacts, minimize the need for right-of-way, minimize costs, and accommodate forecast traffic volumes. Horizontal alignments and vertical profiles will follow existing geometry where existing roadways are being widened. The beginning and ending stations of the alignments will be tabulated as well as proposed curve data.

The design of the alternatives will also include traffic analyses of connection points to existing facilities. These analyses will be undertaken to ensure that the design can adequately accommodate projected traffic volumes. The traffic analyses will be limited to Highway Capacity Manual (HCM) methodologies for merge, diverge, and weave sections on freeways and capacity analyses for arterial intersections. They will not include micro-simulation analyses (these will only be performed on the Candidate Alternatives).

Task 2.2b Typical sections and cross-sections

Typical sections for each alternative will be developed to meet VDOT and AASHTO requirements. Materials will match existing facilities (concrete or asphalt pavement). A description of the proposed pavement design will be developed, including proposed pavement depths for construction cost development. New facilities will be assumed to be asphalt pavement, unless otherwise directed. Cross-sections will be developed at 500' intervals for the purposes of developing earthwork quantities. Additional cross-sections will be developed at critical locations to assist in determining tie-in points and environmental and right-of-way impacts.

Task 2.3: Hydraulics and Hydrology

Conceptual analysis will be performed for major drainage structures (Q_{100} > 500 cfs), to determine feasibility and cost impacts. A description of floodplain impacts will be included where there is proposed encroachment on a floodplain. Roadway drainage will generally be assumed to be an open system (ditches). Where bridge structures, roadway barriers, sound walls, or retaining walls are required, closed drainage systems (inlets and pipes) will be assumed. These areas and approximate limits will be determined as part of the alternative development. Stormwater management will be estimated based on pollutant loading calculations for new impervious area. Approximate sizing of Stormwater management facilities to mitigate increases in Stormwater runoff will be performed based on "rule of thumb" estimates, but no design will be performed.

Task 2.4: Structures

Any new, widened, or reconstructed structures will be described. The approximate size and location of proposed bridge work will be developed at a conceptual level. The location, limits, and height of retaining walls and sound walls will also be developed at a conceptual level.

Task 2.5: Utilities and Railroad Crossings

Any major overhead utilities (such as electrical transmission lines, and transformer stations) will be identified, and the impact of any conflicts will be discussed. Any railroad crossings within the proposed roadway improvements will be identified and impacts described.

The conceptual plans will be turned into graphics for inclusion into the study report.

Task 2.6: Planning Cost Estimates

A planning level cost estimate (present year costs) will be developed for each preliminary alternative based on the conceptual designs and potential mitigation estimates. Quantities for major items such as roadway pavement, earthwork, drainage structures, bridges and walls will be based on the conceptual plans. The quantities will be multiplied by the average unit costs for the Hampton Roads District to arrive at the construction cost for these items. The cost of the remaining disciplines will be based on allowances or lump sum costs as follows:

- Mobilization
    - Mobilization will be presented as a lump sum cost based on a percentage of construction cost.
- Traffic Control & Maintenance of Traffic (MOT)
    - Ground Mounted signs will be estimated on a "per mile" basis
    - A planning level estimate will be prepared for ITS systems along all interstates. The ITS system will be presented as a lump sum amount.
    - Traffic MOT will be based on a percentage of the total construction cost of the project, typically 4-5% of construction cost.
    - Lighting will be based on a "per mile" basis where applicable.
- Stormwater Management, E&S and Wetlands
    - It will be assumed that Nutrient Credits will be purchased for approximately 25% of the increased pollutant load
    - Plantings for constructed wetlands or bioretention facilities will be based on a lump sum cost based on VDOT District averages.
    - The presence of wetlands and streams will be based on publicly available wetland inventories (NWI) and topographic maps and coordinated with the work described in Task 3.2. The impacts will be based on limits of disturbance. Wetland mitigation costs will be based on a per acre cost for both tidal and non-tidal wetland impacts; stream impacts will be based on a linear foot cost.
    - Erosion & Sediment Control (E&SC) costs will be presented as a lump sum cost.
- Preliminary Engineering (Design) costs will be based on a percentage of the total construction cost of the project.
- Right-of-Way estimated costs will be determined by categorizing the property (residential vs. commercial), quantifying the right-of-way taking and applying per acreage costs for partial takes. Total takes will include relocation costs where applicable. Unit costs for right-of-way and relocation costs will be based on VDOT unit costs for the Hampton Roads District.
- Utility Protection and Relocation costs will be based on observations of above ground features, and record research. Utilities will be aggregated by type (water, sewer, power, gas, communication) and assigned to a range of sizes. An allowance will be made for smaller utilities/distribution lines. Larger utilities/transmission lines will be based on a linear footage basis.
- Railroad crossings – A cost for railway flaggers and watchperson service will be estimated for proposed railroad crossings. The cost will be presented as a lump sum cost.

For any ferry service alternative, a planning level estimate will be prepared for the capital costs and operating costs of ferry service. This estimate will be based on a life cycle cost analysis. The length of the period used for life cycle analysis will be determined in conjunction with the HRTPO, prior to development. The design ferry vehicle will be the Pocahontas which is the largest ferry vehicle on VDOT's Jamestown-Scotland ferry route and can carry tractor trailers up to 56,000 pounds. Capital costs will be developed for major items, with allowances for smaller, aggregated items. Major capital costs will include the cost of ferries and ferry infrastructure, including the cost of docks and bulkheads, approach roadways/parking lots, right-of-way and support buildings with communications and other utilities. Operating costs will include ferry and support staff, and O&M costs for the ferries and supporting infrastructure.

Timing: 13 months

Meetings:

- Meetings with HRTPO staff: 0
- Working Group Meetings: 2
- Steering Committee Meetings: 1
- Other/Stakeholder Meetings: 0

Deliverables:

- Travel Market analysis
- Summary of Identified Preliminary Alternatives
- Roadway typical sections
- Roadway alignment plans
- Cost estimates

TASK 3 – Determination of Candidate Alternatives (Screen 1)

Evaluation criteria will be determined for use in screening the Preliminary Alternatives down to Candidate Alternatives. The criteria will include, but not be limited to:

- Congestion relief
- Permitability
- Constructability

The intent of this initial screening is twofold. First, it will eliminate from consideration any alternative whose permitability is questionable. Second, it will eliminate any alternative that does not compare favorably to the other alternatives in these criteria. An alternative matrix will be prepared to illustrate the characteristics of each Preliminary Alternative and to facilitate comparison between them.

Task 3.1a Conduct Congestion Relief Assessments

Congestion relief performance measures determined through interaction with the Working Group and HRTPO staff in Phase 2 will be used to evaluate Candidate Alternatives. It is anticipated that the congestion relief performance measure(s) are direct model outputs and do not require any traffic analysis.

The comparison of these measures is part of the screening of the Preliminary Alternatives. In this task, the Consultant Team will run each alternative using the travel demand model for the 2045 Baseline future and organize the outputs based on the approved performance measures characterizing congestion relief.

3.1.b: Performance Evaluation

The Consultant team will use the travel demand model runs of the Preliminary Alternatives with Baseline 2045 land use to prepare performance results for the subset of scenario performance measures identified in Task 2.1.c. This will include both travel demand model and TREDIS economic model outputs and will be delivered in the dashboard format.

Task 3.2: Conduct Permitability Assessments

Overview

The purpose of this task is to evaluate the regulatory permitability of preliminary alternatives. All regulatory permitability evaluations will be conducted by reviewing Federal, State, and Local regulatory requirements in conjunction with existing environmental conditions. The study team will determine potential significant regulatory flaws.

The Consultant Team understands that the Corps will not permit an alternative that would obstruct or restrict navigation to the Craney Island Dredged Material Management Area (CIDMMA), or that would otherwise impair the Corps' ability to maintain and operate the CIDMMA. Likewise, the Corps will have to assess the impact of the different alternatives on the federally authorized Norfolk Harbor and Channel Federal Navigation Project and coordinate with maritime stakeholders on the impacts of those alternatives. The Corps will offer comments on permitability issues associated with the alternatives but cannot speak for the Department of Environmental Quality (DEQ), Virginia Marine Resources Commission (VMRC), or other permitting agencies. These comments will not commit the Corps to any permitting of action, nor will they be interpreted as endorsement of any alternative(s).

The Corps can only permit the Least Environmentally Damaging Practicable Alternative (LEDPA) and cannot permit alternatives that will adversely affect other federal navigation projects.

Task 3.2a. Data Collection Review

The focus of this task will be to review and analyze environmental (natural and cultural resources) data created to develop the regional mapping, with the goal of establishing a unified dataset for GIS based environmental alternatives review. The regional mapping and environmental overlays will define where sensitive natural and cultural resources are located to determine if preliminary alternatives can avoid and /or minimize impacts as part of the risk analysis. In addition, should resources not be able to be avoided and/or minimized, mitigation concepts will be evaluated as part of the analysis. This information will form the basis for regulatory permitability evaluations as part of the alternatives analysis. The data will be evaluated to provide regional leaders and analysts with accurate information from which to make strong, technically-supported decisions regarding regulatory viability.

Task 3.2b: Develop permitability requirements and evaluation parameters

In this task, a set of evaluation parameters will be developed to evaluate environmental and regulatory viability of the alternatives. Each evaluation parameter will relate to the targeted environmental resources and potential impacts in conjunction with Federal, State, and Local laws and regulations to create a framework for risk analysis, fatal flaw analysis, and alternative prioritization.

In addition, this task will establish a series of regulatory permitability factors that will be used to measure how each alternative contributes to the direct and indirect environmental impacts to ensure there is not a negative environmental impact to the resources of the region. The factors will serve as the measures of effectiveness against which to test each alternative. A matrix will be developed that aligns each metric according to an established objective for the region.

A key aspect of the evaluation parameters that will be explored in this task will be integrated with HRTPO's Project Prioritization Tool to ensure compatibility between measures that are used in this project with measures used by the HRTPO in their transportation planning and programming efforts.

The final performance measures will be vetted with the Working Group and HRTPO staff and, as needed, and will be reviewed with the Steering Committee. The result will be a consensus on the methods and metrics that will be used to gauge success in the regulatory evaluation of each of the alternatives.

Task 3.2c: Evaluate Preliminary Alternatives

The next step in the regulatory permitability analysis is to evaluate environmental factors in conjunction with the design and construction factors. The goal of this task is to assemble and evaluate the performance measures for the baseline scenario only based on land use/environmental metrics, design alternatives, and reasonable constructability. This is a key step in understanding the comprehensive environmental impacts of each alternative.

All regulatory permitability parameters and evaluations will be conducted by reviewing Federal, State, and Local regulatory requirements in conjunction with existing environmental conditions. This information will be used to determine potential regulatory fatal flaws as well as develop a prioritization tool for the analyzed alternatives.

Task 3.2d: GIS based environmental alternatives review to identify risk factors for permitability and fatal flaw analysis

At this point in the process, all the environmental conditions and regulatory drivers will have been assembled to allow the alternative evaluation process to begin. The purpose of this evaluation will be:

1. Establish the interaction between design and constructability requirements with exiting environmental conditions
2. Evaluate potential high level direct, indirect, and cumulative environmental impacts for each alternative
3. Evaluate potential regulatory fatal flaws
4. Create a framework for comparison to establish a prioritization of alternatives

Task 3.3 Conduct Constructability Assessments

Constructability assessments will consist of a benefit/cost (B/C) analysis using the planning level cost estimates prepared in Task 2.5 and costs associated with mitigation measures identified in the permitability assessment. The benefit criteria will be determined as part of the Scenario Planning Task 4.3 – Defining Measures of Success. A threshold for an acceptable B/C ratio will be determined through interaction with the Working Group and HRTPO staff and subsequently used as a determinant in the screening of the Preliminary Alternatives.

Task 3.4 Identify Candidate Alternatives

Based on the assessment results from Task 3.1-3.3, the Consultant team in conjunction with the Working Group, Steering (Policy) Committee and HRTPO staff will determine which Preliminary Alternatives will be eliminated from consideration and which ones will be advanced to further study as Candidate Alternatives (maximum of 3).

Timing: 13 months

Meetings:

- Meetings with HRTPO staff: 1
- Working Group Meetings: 2
- Steering Committee Meetings: 1
- Other/Stakeholder Meetings: 0

Deliverables:

- Alternative Matrix
- Memo Summarizing Environmental Drivers and Parameters for Evaluation
- Memo Summarizing Environmental Data and Regulatory Permit Review
- Performance evaluation dashboard and summary
- Summary of Candidate Alternatives
- Presentation materials, posters and slide decks of Deliverables for public outreach process

TASK 4 – Conduct Scenario Planning

The Regional Connectors Study (RCS) Regional Scenario Planning process will provide insight to decisionmakers regarding the need for and the benefits of alternative transportation investments considering potential alternative future trends. The Scenario Planning process will consider a baseline 2045 scenario and three alternative 2045 scenarios that present plausible futures with respect to economic, demographic and technology drivers. The scenario analysis will link alternative future economic and demographic trends with land use, and the resulting socioeconomic forecasts will be tested with the regional travel demand model to understand the impacts to transportation and other

performance measures. The scenario outcomes will provide a series of benchmarks against which to test the resilience of different transportation investments. A potential benefit of this process will be to identify those transportation investments and projects that fare best in the analysis - that provide the most cumulative benefit to the region regardless of which alternative future scenario is tested. This will be done by testing each of the Preliminary Alternatives against each scenario to gauge how robust each investment is with respect to the range of possible futures.

Throughout the RCS Regional Scenario Planning process, the RCS Working Group will work closely with HRTPO staff and the Consultant team to provide guidance, affirm scenarios, select drivers and performance measures, and evaluate interim and final results. The RCS Steering Committee that is overseeing the overall RCS process will also be updated on the progress on the Regional Scenario Planning effort and will receive the results of the scenario testing of Candidate Alternatives for evaluation and consideration in the overall RCS process. The results will also be shared with the public to provide input as part of the final assessment of investment and policy insights in the study.

Task 4.8: Evaluating the Candidate Alternatives

Overview

The final step in the scenario analysis is the assessment of transportation investment impacts by scenario. In this task, the Consultant Team will run each Candidate Alternative for each scenario (the 2045 Baseline Scenario and the three Greater Growth Scenarios). The Consultant Team will scope up to 20 model runs per scenario that will be a combination of runs used to develop demand estimates associated with each Candidate Alternative and additional runs to check for cause and effect relationships (such as particular pairings of Candidate Alternatives).

Task 4.8a: Confirmation/Network Coding of Candidate Alternatives for testing

Transportation improvements defined by the Candidate Alternatives will be "coded" into the Existing + Committed network using planning data available from HRTPO. Coding will include information such as facility description, alignment, and capacity information associated with improvements. Network coding will also specify locations of toll assessment and toll values, if applicable. The Consultant Team will review and confirm project coding assumptions with HRTPO. There will be one project network for each Candidate Alternative. Note, the schedule assumes the Candidate Alternatives will have already been coded into the travel demand model network by Michael Baker some time prior to the beginning of this task.

Task 4.8b: Travel Demand Modeling for Baseline and 3 Greater Growth Scenarios (each Candidate Alternative)

Using the networks developed in earlier tasks and scenario specific socio-economic data and parameters, The Consultant team will run the travel demand model for each Candidate Alternative over the 2045 Baseline and each of the 3 Greater Growth scenarios. The team will provide quality control checks on associated output. The modeling results for the newly coded Candidate Alternatives will be compared against results of similar alternatives or benchmarks (if available) to determine appropriateness of the results. Ad-hoc sensitivity testing may be performed under certain circumstances if the results of the Candidate Alternatives are not intuitive. The results for each

Candidate Alternative will be compared against all Candidate Alternatives, all land use scenarios and the Existing + Committed network demand estimates to uncover and flag any potential issues in the results.

Task 4.8c: Evaluate Performance of Candidate Alternatives under Baseline and 3 Greater Growth Scenarios

In this task, the Consultant team will complete the performance dashboard for each Candidate Alternative, though not necessarily each model run due to the large volume of information. The Consultant Team will work with HRTPO staff and the Working Group to identify the most meaningful comparisons and will then determine any further iterations to run to explore cause-and-effect in performance in Task 4.8c. A maximum of 5 additional iterations will be performed to help isolate cause-and-effect relationships. Also, the Consultant Team will provide all necessary input data for each set of Candidate Alternatives under each scenario to provide a ranking of each Candidate Alternative by scenario, as illustrated in the table below. This information will provide an important basis for assessing how robust the Candidate Alternatives are for potential future conditions.

Project Rank	2045 Baseline E+C	Scenario 1 E + C	Scenario 2 E + C	Scenario 3 E + C
E+C + RCS 1	5	8	15	8
E+C + RCS 2	4	6	4	2
E+C + RCS 3	5	3	20	15

HRTPO seeks to evaluate the transportation benefits of Candidate Alternatives and the extent to which they achieve the goal of enhancing economic vitality and improving the quality of life in the region. To do so, the Consultant Team will use TREDIS to translate travel model results describing travel time, distance, reliability, and market access, into regional economic impacts expressed in terms of jobs, labor income, business sales, and GDP, with detail available by industry sector, and over time, as specified in the performance measures developed in Phase 2. The TREDIS FREIGHT module will allow targeted analysis of the implications of transportation performance for freight-reliant industries. Given the number of Candidate Alternatives, and the desire to test performance of every alternative under the baseline as well as all land use scenarios, the Consultant Team will make use of TREDIS's batch mode to support easy import of project details and export of key economic performance results.

Task 4.8d: Evaluate Traffic Operating Conditions

This task will analyze three Candidate Alternatives resulting from the screening of the preliminary alternatives in Task 3. Three types of evaluations will be conducted for the traffic operations:

1. The **FREEVAL** software will be used to evaluate the **full interstate network and limited access facilities** (mainline and ramp junctions) for the AM and PM peak hours within the study area for the conditions listed below. There will be a total of 28 conditions evaluated in this process. (2 peak hours x 14 conditions = 28 total conditions)

- Existing Condition
- 2045 Baseline Condition

- 2045 Baseline Condition – Greater Growth Scenario 1
- 2045 Baseline Condition – Greater Growth Scenario 2
- 2045 Baseline Condition – Greater Growth Scenario 3

- 2045 Candidate Alternative 1 – Greater Growth Scenario 1
- 2045 Candidate Alternative 1 – Greater Growth Scenario 2
- 2045 Candidate Alternative 1 – Greater Growth Scenario 3

- 2045 Candidate Alternative 2 – Greater Growth Scenario 1
- 2045 Candidate Alternative 2 – Greater Growth Scenario 2
- 2045 Candidate Alternative 2 – Greater Growth Scenario 3

- 2045 Candidate Alternative 3 – Greater Growth Scenario 1
- 2045 Candidate Alternative 3 – Greater Growth Scenario 2
- 2045 Candidate Alternative 3 – Greater Growth Scenario 3

2. The **VISSIM** software will be used to evaluate the **six system-to-system interchanges** for the AM and PM peak hours within the study area for the conditions listed below. There will be a total of six conditions evaluated in this process. (2 peak hours x 3 conditions = 6 total conditions)

    - Existing Condition
    - 2045 No-Build (E+C) network for Baseline land use scenario
    - 2045 Preferred Alternative for Baseline land use scenario

3. The **Synchro** software will be used to evaluate the AM and PM peak hours for **up to 100 at-grade intersections** for the condition that includes the Preferred Alternative and the baseline land use scenario.

The evaluation procedure for each condition listed previously is described in the following sections.

<u>Existing Conditions</u>

This task will involve developing FREEVAL models based on the traffic conditions for the existing study area roadway network. The FREEVAL model will evaluate the interstate network in Hampton Roads and other limited access facilities (US 17 James River bridge to I-664, SR 164, and US 58/13/460 west of Bowers Hill).

A VISSIM model will also be developed to evaluate the six system-to-system interchanges within the study area. The most important aspect of this existing conditions VISSIM model is to accurately model existing roadway operations and driving behavior so that these characteristics can be carried forward

when the model is updated with future land use travel patterns and future traffic data. This will involve calibrating the microsimulation using the queue lengths obtained from INRIX data and travel times developed as part of Phase 1. This task may also involve some adjustment of the model inputs and additional model runs to ensure that the existing conditions microsimulation model accurately outputs known measurable conditions in the Region.

2045 Baseline

Similar to the task of updating the Regional Travel Demand Model to a 2045 baseline scenario, the existing conditions AM and PM FREEVAL models will be updated to establish baseline 2045 models. This will include adding committed roadway projects and updating traffic volumes and travel patterns based on the outputs from the Regional Travel Demand Model for the 2045 baseline scenario.

It is important that this task be coordinated with 2045 regional model updates so that the baseline scenarios for both components (travel demand model and regional model) correlate with the HRTPO's Long Range Transportation Plan.

This task will also involve affirming the assumptions and outputs to-date with the Working Group as an important check before proceeding to the next steps.

2045 Traffic Analysis for 3 Scenarios (3 No-Build Conditions)

It is important to note that each of the Greater Growth Scenarios will allocate traffic volume growth that is in addition to the growth inherent in the 2045 Baseline microsimulation model. This means that each Scenario is dealing with an additional increment of traffic increases above and beyond the assumed growth for the 2045 baseline microsimulation model. The 2045 baseline FREEVAL model will be updated by adding the traffic volumes and traffic patterns for each of the three alternative scenarios.

The AM and PM 2045 Baseline VISSIM models will be updated with traffic volumes and traffic patterns for **the baseline land use scenario only**.

The outputs from these three 2045 Scenario **No-Build** analyses will used for comparison against the 2045 Scenario **Build** analyses to determine the congestion relief achieved by each planning scenario/Candidate Alternative pair. This will maintain consistency and provide an 'apples-to-apples' comparison among Candidate Alternatives for each land use scenario.

2045 Traffic Analysis for 3 Greater Growth Scenarios (3 Candidate Alternatives)

Three Candidate Alternatives will be analyzed using updated FREEVAL models for each of the three Greater Growth Scenarios. The AM and PM FREEVAL models from the no-build conditions discussed previously will be updated to include the Candidate Alternative and changes in traffic volumes. There are no VISSIM models included in this step.

Evaluate the Preferred Alternative and the Baseline Scenario Plan

The Preferred Alternative will be coded into the AM and PM 2045 VISSIM models for the baseline land use scenario. These VISSIM models will only include the major highways and system-to-system

interchanges, not the entire study area roadway network. The outputs of the AM and PM models will be compared to the 2045 baseline no-build models that includes the baseline land use.

The Consultant team will also conduct AM and PM peak hour intersection capacity analyses with the Synchro software for up to 100 intersections within the Hampton Roads area. Traffic volumes for the Synchro analyses will be obtained from the Regional Travel Demand Model.

Additional iterations to check for cause and effect relationships and preparation of final results

After the initial testing of individual Candidate Alternatives, the Consultant Team will hold a workshop with the Working Group and HRTPO staff to identify any final questions to be addressed with final model runs and/or extraction of data (such as select link analysis) from the model set. After this meeting, the Consultant Team will conduct any final iterations and will prepare the final results for presentation to the Working Group and Steering Committee. In these meetings, these groups will provide input on the most relevant data, insights, and 'story lines' to be carried forward in final reporting.

Timing:

- 4.5 months

Meetings:

- Meetings with HRTPO staff: 3
- Working Group Meetings: 2
- Steering Committee Meetings: 1
- Other/Stakeholder Meetings: 0

Deliverables:

- VISSIM models
- Technical Memorandum on microsimulation analysis results
- Travel Demand model, economic model, and prioritization tool runs
- Dashboard Outputs for Model Runs
- Tech Memo on RCS project evaluation
- Final scenario planning land use and travel demand model files

Task 4.9: Reporting Results

Overview

The Consultant Team will work with HRTPO Staff, the Working Group, and the Steering Committee to distill the insights from the scenario process and package them for sharing with the public.

Task 4.9a Scenario Results Workshops

In this task, the Consultant Team will take the materials and input generated in Task 4.8 and prepare a work session to be held individually or jointly with the Working Group and Steering Committee to discuss the scenario analysis results, risks, costs, and public comment associated with each Candidate

Alternative. This information will be presented in a concise format and illustrate the advantages and disadvantages of each Candidate Alternative so comparisons between them can be made easily. This information will be used by voting members of the Working Group and Steering Committee to recommend an alternative, which is the intended outcome of this subtask and the most important outcome of the entire study as the recommendation will provide input to regional investment and policy decisions.

Task 4.9b Recommendation Documentation

The Consultant Team will document the results of the Task 4.9a workshop in the form of a presentation, website content, and a draft report that capture the full scenario planning steps and findings. This information will be used for ongoing outreach. After a period of initial outreach and input, the Consultant Team will present final recommendations to the Working Group and Steering Committee at the conclusion of Task 4.9.

Timing: 8 months

Meetings:

- Meetings with HRTPO staff: 1
- Working Group Meetings: 4
- Steering Committee Meetings: 2
- Other/Stakeholder Meetings: 0

Deliverables:

- Draft and final presentation of scenario planning results
- Draft and final website content of scenario planning results
- Draft and final scenario planning report

TASK 5– Prepare for and Attend Meetings (Working Group and Steering Committee)

Task 5.1: Working Group Meetings

The Consultant team will be represented by the Project Manager at all meetings (barring unforeseen conflicts) and supplemental team members depending upon the type of expertise being presented/discussed at each meeting. Discipline experts have estimated the number of Working Group meetings they will attend in each of the task/subtask summaries in this scope of services.

Task 5.2 Steering Committee Meetings

The Consultant team will be represented by the Project Manager at all meetings (barring unforeseen conflicts) and supplemental team members depending upon the type of expertise being presented/discussed at each meeting. Discipline experts have estimated the number of Working Group meetings they will attend in each of the task/subtask summaries in this scope of services.

Timing: 27 months

Meetings:

- Meetings with HRTPO staff: 0
- Working Group Meetings: 27
- Steering Committee Meetings: 10
- Other/Stakeholder Meetings: 0

Deliverables:

- Power Point slides and meeting handouts

TASK 6 – Manage the Project

Task 6.1: Weekly Coordination with HRTPO leadership

Consultant Project Manager will participate in weekly coordination calls with Working Group and HRTPO staff (assume 108 conference calls).

Task 6.2: Schedule and Budget Oversight

Consultant Project Manager will monitor schedule and budget on monthly basis and make changes to schedule, as needed. Budget monitoring will occur monthly during preparation of monthly progress reports so that any budget issues can be included in those reports.

Task 6.3: Quality Assurance of Deliverables

Consultant PM will review all documentation and deliverables before they are forwarded to the HRTPO Project Manager for distribution to the Working Group and HRTPO staff.

Timing: 27 months

Meetings:

- Meetings with HRTPO staff: 108 (weekly calls for 27 months)
- Working Group Meetings: 0
- Steering Committee Meetings: 0
- Other/Stakeholder Meetings: 0

Deliverables:

- Coordination meeting minutes

TASK 7 – Prepare Documentation

Task 7.1: Draft Study Report

The study report will include summaries of Phases 1-3 activities and be supplemented via appendices, which will include, but not be restricted to, the technical reports and technical memorandums for each of the major tasks in Phases 1-3. The report outline is shown below:

- Executive Summary
- Introduction
- Existing Conditions
- Regional Survey
- Stakeholder Interviews
- Travel Demand Model
- Engagement
- Scenario Planning/Alternatives
- Recommendations

Review comments will be solicited from the Working Group, Steering Committee, and HRTPO staff. Comments from the Working Group, the Steering Committee, and HRTPO staff will be discussed in the respective Working Group and Steering Committee meeting forums (unless a joint meeting is preferred). Those meetings will provide direction regarding the revisions to be made to the draft report that will subsequently be made available to the public prior to the second round of public information meetings. An electronic version of the draft report will be made available through channels outlined in the engagement plan.

Following the second round of public meetings, comments received at the meetings will be presented to the Working Group, Steering Group and HRTPO staff for discussion that will lead to decisions regarding the revisions to be made. If the revisions are substantive (i.e. – new alternatives are agreed to be studied, or more detailed analyses are required), another draft report will be prepared for review by the Working Group, Steering Committee, and HRTPO staff. An electronic version of the revised draft report will be made available. 50 hard copies will be produced, complete with appendices.

If the revisions are not substantive, the Consultant Team will initiate the preparation of the final report.

Task 7.2: Final Study Report

Following discussion of the comments received on the Draft Report and the notice to proceed on the preparation of the Final Report from the Working Group and Steering Committee, the Consultant Team will prepare the Final Report.

An electronic version of the final report will be made available through engagement channels. 50 hard copies will be produced, complete with appendices.

Timing: 6 months

Meetings:

- Meetings with HRTPO staff: 1
- Working Group Meetings: 1
- Steering Committee Meetings: 1
- Other/Stakeholder Meetings: 0

Deliverables:

- Draft study report (200 Executive Summaries and 50 complete reports)
- Final study report (200 Executive Summaries and 50 complete reports)
- Draft and final study report appendices (50 copies for draft and 50 copies for final)
- Draft and final website content of study report

DRAFT - Regional Connectors Study - Phase 3 Schedule

Task No.	Task	2020 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	2021 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2022 JAN	FEB	MAR
TASK 1	EXECUTE ENGAGEMENT PLAN																											
1.1	Task Management																											
1.2	Engagement Plan Review																											
1.3a	Study Mailing List and Comment Database																											
1.3b	Scenario Planning Virtual Meeting																											
1.3c	Community Briefings and Presentations																											
1.3d	Brochures, Factsheets, and Handouts																											
1.3e	Public Meetings																											
1.3f	Regional Connectivity Symposium																											
1.3g	Community Events and Outreach																											
1.3h	Social Media Engagement																											
1.3i	Engagement Report																											
1.4	Website Upgrades and Maintenance																											
TASK 2	DEVELOPMENT OF PRELIMINARY ALTERNATIVES																											
2.1a	Summarize Background Information																											
2.1b	Conduct Unconstrained Travel Demand Model Analysis																											
2.1c	Preliminary Alternatives Identification																											
2.2	Develop Geometry of Preliminary Alternatives																											
2.3	Hydraulics and Hydrology																											
2.4	Structures																											
2.5	Utilities and Railroad Crossings																											
2.6	Planning Cost Estimates																											
TASK 3	DETERMINATION OF CANDIDATE ALTERNATIVES																											
3.1a	Conduct Congestion Relief Assessments																											
3.1b	Performance Evaluation																											
3.2	Conduct Permitability Assessments																											
3.3	Conduct Constructability Assessments																											
3.4	Identify Candidate Alternatives																											
TASK 4	CONDUCT SCENARIO PLANNING																											
4.8a	Confirmation/Network Coding of Candidate RCS projects for testing																											
4.8b	Travel Demand Modeling for Baseline and 3 Greater Growth Scenarios (each Candidate Project)																											
4.8c	Evaluate Performance of Candidate Projects under Baseline and 3 Greater Growth Scenarios																											
4.8d	Evaluate Traffic Operating Conditions																											
4.9a	Scenario Results Workshops																											
4.9b	Recommendation Documentation																											
TASK 5	PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE)																											
5.1	Working Group Meetings																											
5.2	Steering Committee Meetings																											
TASK 6	MANAGE THE PROJECT																											
6.1	Weekly Coordination with Study Leadership																											
6.2	Schedule and Budget Oversight																											
6.3	Quality Assurance of Deliverables																											
TASK 7	PREPARE DOCUMENTATION																											
7.1	Draft Study Report																											
7.2	Final Study Report																											

Steering Committee Meetings
Working Group Coordination Meeting
Public Meeting

Continuous Task
Task Schedule
Key Decision Point

Michael Baker International, Inc.

Cost Proposal

HRTPO REGIONAL CONNECTORS STUDY PHASE 3

October 18, 2019

TASK SUMMARY

Task No.	Task	Hours	Labor Costs	ODC's	TOTAL COST
1	**EXECUTE ENGAGEMENT PLAN**				
1.1	Task Management	171	$29,903	$0	$29,903
1.2	Engagement Plan Review	82	$13,081	$0	$13,081
1.3a	Study Mailing List and Comment Database	100	$11,153	$0	$11,153
1.3b	Scenario Planning Virtual Meeting	496	$78,999	$6,500	$85,499
1.3c	Community Briefings and Presentations	566	$99,040	$7,103	$106,143
1.3d	Brochures, Factsheets, and Handouts	216	$31,565	$6,150	$37,715
1.3e	Public Meetings	2138	$361,939	$25,356	$387,295
1.3f	Regional Connectivity Symposium	76	$14,524	$695	$15,219
1.3g	Community Events and Outreach	349	$61,918	$3,500	$65,418
1.3h	Social Media Engagement	312	$50,668	$0	$50,668
1.3i	Engagement Report	252	$41,413	$0	$41,413
1.4	Website Upgrades and Maintenance	1054	$188,493	$2,500	$190,993
	Total Task 1	**5812**	**$982,697**	**$51,804**	**$1,034,501**
2	**DEVELOPMENT OF PRELIMINARY ALTERNATIVES**				
2.1a	Summarize Background Information	160	$29,731	$0	$29,731
2.1b	Conduct Unconstrained Travel Demand Model Analysis	96	$16,697	$0	$16,697
2.1c	Preliminary Alternatives Identification	690	$123,674	$0	$123,674
2.2	Develop Geometry of Preliminary Alternatives	904	$126,923	$0	$126,923
2.3	Hydraulics and Hydrology	88	$13,831	$0	$13,831
2.4	Structures	360	$58,936	$0	$58,936
2.5	Utilities and Railroad Crossings	72	$9,828	$0	$9,828
2.6	Planning Cost Estimates	292	$45,447	$0	$45,447
	Total Task 2	**2,662**	**$425,068**	**$0**	**$425,068**
3	**DETERMINATION OF CANDIDATE ALTERNATIVES (Screen 1)**				
3.1a	Conduct Congestion Relief Assessments	376	$61,944	$0	$61,944
3.1b	Performance Evaluation	507	$89,735	$33,300	$123,035
3.2	Conduct Permitability Assessments	600	$77,268	$3,600	$80,868
3.3	Conduct Constructability Assessments	80	$11,683	$0	$11,683
3.4	Identify Candidate Alternatives	68	$13,747	$0	$13,747
	Total Task 3	**1631**	**$254,376**	**$36,900**	**$291,276**
4	**CONDUCT SCENARIO PLANNING**				
4.8a	Confirmation/Network Coding of Candidate RCS projects for testing	150	$26,098	$0	$26,098
4.8b	Travel Demand Modeling for Baseline and 3 Greater Growth Scenarios (each Candidate Project)	800	$139,189	$500	$139,689
4.8c	Evaluate Performance of Candidate Projects under Baseline and 3 Greater Growth Scenarios	739	$116,435	$22,115	$138,550
4.8d	Evaluate Traffic Operating Conditions	5020	$644,303	$50	$644,353
4.9a	Scenario Results Workshops	404	$67,762	$400	$68,162
4.9b	Recommendation Documentation	668	$106,804	$100	$106,904
	Total Task 4	**7781**	**$1,100,591**	**$23,165**	**$1,123,756**
5	**PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE)**				
5.1	Working Group Meetings	1238	$251,978	$13,365	$265,343
5.2	Steering Committee Meetings	410	$89,045	$2,750	$91,795
	Total Task 5	**1,648**	**$341,023**	**$16,115**	**$357,138**
6	**MANAGE THE PROJECT**				
6.1	Weekly Coordination with Study Leadership	1610.84	$328,902	$100	$329,002
6.2	Schedule and Budget Oversight	732	$142,919	$0	$142,919
6.3	Quality Assurance of Deliverables	412	$112,317	$1,000	$113,317
	Total Task 6	**2,755**	**$584,138**	**$1,100**	**$585,238**
7	**PREPARE DOCUMENTATION**				
7.1	Draft Study Report	842	$138,701	$20,300	$159,001
7.2	Final Study Report	422	$66,633	$20,100	$86,733
	Total Task 6	**1,264**	**$205,333**	**$40,400**	**$245,733**
	TOTALS	**23,553**	**$3,893,226**	**$169,484**	**$4,062,710**

TEAM SUMMARY

Task	HOURS							LABOR COSTS						
	Baker	PRR	EPR	EDR Group	McPherson	Solstice	**TOTAL**	Baker	PRR	EPR	EDR Group	McPherson	Solstice	**TOTAL**
EXECUTE ENGAGEMENT PLAN														
Task Management	0	171	0	0	0	0	171	$0	$29,903	$0	$0	$0	$0	$29,903
Engagement Plan Review	0	82	0	0	0	0	82	$0	$13,081	$0	$0	$0	$0	$13,081
Study Mailing List and Comment Database	0	100	0	0	0	0	100	$0	$11,153	$0	$0	$0	$0	$11,153
Scenario Planning Virtual Meeting	200	126	132	38	0	0	496	$35,791	$20,858	$16,380	$5,969	$0	$0	$78,999
Community Briefings and Presentations	132	230	172	0	32	0	566	$38,674	$33,186	$22,860	$0	$4,320	$0	$99,040
Brochures, Factsheets, and Handouts	20	184	0	0	0	12	216	$6,473	$23,547	$0	$0	$0	$1,545	$31,565
Public Meetings	682	748	300	0	288	120	2138	$158,833	$103,161	$45,612	$0	$38,880	$15,454	$361,939
Regional Connectivity Symposium	20	48	0	0	0	8	76	$6,473	$7,021	$0	$0	$0	$1,030	$14,524
Community Events and Outreach	200	117	0	0	0	32	349	$42,412	$15,384	$0	$0	$0	$4,121	$61,918
Social Media Engagement	96	216	0	0	0	0	312	$22,692	$27,976	$0	$0	$0	$0	$50,668
Engagement Report	172	80	0	0	0	0	252	$32,601	$8,812	$0	$0	$0	$0	$41,413
Website Upgrades and Maintenance	64	914	76	0	0	0	1054	$13,731	$166,770	$7,992	$0	$0	$0	$188,493
Total Task 1	1586	3016	680	38	320	172	5812	$357,681	$460,853	$92,844	$5,969	$43,200	$22,150	$982,697
DEVELOPMENT OF PRELIMINARY ALTERNATIVES														
Summarize Background Information	160	0	0	0	0	0	160	$29,731	$0	$0	$0	$0	$0	$29,731
Conduct Unconstrained Travel Demand Model Analysis	96	0	0	0	0	0	96	$16,697	$0	$0	$0	$0	$0	$16,697
Preliminary Alternatives Identification	680	0	0	10	0	0	690	$122,039	$0	$0	$1,635	$0	$0	$123,674
Develop Geometry of Preliminary Alternatives	704	0	0	0	200	0	904	$99,923	$0	$0	$0	$27,000	$0	$126,923
Hydraulics and Hydrology	88	0	0	0	0	0	88	$13,831	$0	$0	$0	$0	$0	$13,831
Structures	360	0	0	0	0	0	360	$58,936	$0	$0	$0	$0	$0	$58,936
Utilities and Railroad Crossings	72	0	0	0	0	0	72	$9,828	$0	$0	$0	$0	$0	$9,828
Planning Cost Estimates	292	0	0	0	0	0	292	$45,447	$0	$0	$0	$0	$0	$45,447
Total Task 2	2,452	0	0	10	200	0	2662	$396,433	$0	$0	$1,635	$27,000	$0	$425,068
DETERMINATION OF CANDIDATE ALTERNATIVES (Screen 1)														
Conduct Congestion Relief Assessments	376	0	0	0	0	0	376	$61,944	$0	$0	$0	$0	$0	$61,944
Performance Evaluation	336	0	0	171	0	0	507	$59,937	$0	$0	$29,798	$0	$0	$89,735
Conduct Permitability Assessments	0	0	0	0	0	600	600	$0	$0	$0	$0	$0	$77,268	$77,268
Conduct Constructability Assessments	80	0	0	0	0	0	80	$11,683	$0	$0	$0	$0	$0	$11,683
Identify Candidate Alternatives	56	0	0	12	0	0	68	$11,715	$0	$0	$2,032	$0	$0	$13,747
Total Task 3	848	0	0	183	0	600	1631	$145,279	$0	$0	$31,830	$0	$77,268	$254,376
CONDUCT SCENARIO PLANNING														
Confirmation/Network Coding of Candidate RCS projects for testing	150	0	0	0	0	0	150	$26,098	$0	$0	$0	$0	$0	$26,098
Travel Demand Modeling for Baseline and 3 Greater Growth Scenarios (each Candidate Project)	800	0	0	0	0	0	800	$139,189	$0	$0	$0	$0	$0	$139,189
Evaluate Performance of Candidate Projects under Baseline and 3 Greater Growth Scenarios	272	0	296	171	0	0	739	$51,933	$0	$34,704	$29,798	$0	$0	$116,435
Evaluate Traffic Operating Conditions	4,120	0	0	0	900	0	5020	$553,403	$0	$0	$0	$90,900	$0	$644,303
Scenario Results Workshops	248	0	80	76	0	0	404	$45,511	$0	$8,532	$13,718	$0	$0	$67,762
Recommendation Documentation	348	0	244	76	0	0	668	$62,141	$0	$31,680	$12,984	$0	$0	$106,804
Total Task 4	5,938	0	620	323	900	0	7781	$878,275	$0	$74,916	$56,500	$90,900	$0	$1,100,591
PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE)														
Working Group Meetings	810	48	150	174	16	40	1238	$178,390	$8,344	$27,702	$29,590	$2,800	$5,151	$251,978
Steering Committee Meetings	340	24	0	20	0	26	410	$77,632	$4,679	$0	$3,386	$0	$3,348	$89,045
Total Task 5	1,150	72	150	194	16	66	1648	$256,022	$13,023	$27,702	$32,976	$2,800	$8,499	$341,023
MANAGE THE PROJECT														
Weekly Coordination with Study Leadership	859	202	124	104	214	108	1610.84	$205,824	$42,779	$20,769	$18,043	$27,605	$13,882	$328,902
Schedule and Budget Oversight	324	324	0	30	0	54	732	$73,184	$57,702	$0	$5,079	$0	$6,954	$142,919
Quality Assurance of Deliverables	340	72	0	0	0	0	412	$92,006	$20,311	$0	$0	$0	$0	$112,317
Total Task 6	1,523	598	124	134	214	162	2,755	$371,014	$120,791	$20,769	$23,122	$27,605	$20,837	$584,138
PREPARE DOCUMENTATION														
Draft Study Report	692	0	0	30	0	120	842	$118,110	$0	$0	$5,137	$0	$15,454	$138,701
Final Study Report	352	0	0	30	0	40	422	$56,344	$0	$0	$5,137	$0	$5,151	$66,633
Total Task 7 Costs	1,044	0	0	60	0	160	1,264	$174,454	$0	$0	$10,275	$0	$20,605	$205,333
TOTALS	14,541	3,686	1,574	942	1,650	1,160	23,553	$2,579,157	$594,667	$216,231	$162,306	$191,505	$149,359	$3,893,226
							ODC	$66,555	$26,550	$8,669	$58,490	$700	$8,520	$169,484
							TOTALS	$2,645,712	$621,217	$224,900	$220,796	$192,205	$157,879	$4,062,710
							Work Split	65%	15%	6%	5%	5%	4%	100%

TEAM SUMMARY

Task No.	Task	Other Direct Costs									
		Reproduction	Travel	Lodging	Per Diem	Communication/Postage	TREDIS	MetroQuest	Social Meeting Advertising		TOTAL
1	**EXECUTE ENGAGEMENT PLAN**										
1.1	Task Management	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.2	Engagement Plan Review	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.3a	Study Mailing List and Comment Database	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.3b	Scenario Planning Virtual Meeting	$1,000	$0	$0	$0	$0	$0	$4,500	$1,000	$0	$6,500
1.3c	Community Briefings and Presentations	$950	$4,418	$1,120	$615	$0	$0	$0	$0	$0	$7,103
1.3d	Brochures, Factsheets, and Handouts	$5,150	$0	$0	$0	$1,000	$0	$0	$0	$0	$6,150
1.3e	Public Meetings	$3,550	$12,620	$3,730	$1,956	$3,500	$0	$0	$0	$0	$25,356
1.3f	Regional Connectivity Symposium	$220	$325	$100	$50	$0	$0	$0	$0	$0	$695
1.3g	Community Events and Outreach	$650	$1,400	$700	$550	$200	$0	$0	$0	$0	$3,500
1.3h	Social Media Engagement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.3i	Engagement Report	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1.4	Website Upgrades and Maintenance	$0	$0	$0	$0	$2,500	$0	$0	$0	$0	$2,500
	Total Task 1 Costs	$11,520	$18,763	$5,650	$3,171	$7,200	$0	$4,500	$1,000	$0	$51,804
2	**DEVELOPMENT OF PRELIMINARY ALTERNATIVES**										
2.1a	Summarize Background Information	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.1b	Conduct Unconstrained Travel Demand Model Analysis	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.1c	Preliminary Alternatives Identification	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.2	Develop Geometry of Preliminary Alternatives	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.3	Hydraulics and Hydrology	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.4	Structures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.5	Utilities and Railroad Crossings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.6	Planning Cost Estimates	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Task 2 Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	**DETERMINATION OF CANDIDATE ALTERNATIVES (Screen 1)**										
3.1a	Conduct Congestion Relief Assessments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3.1b	Performance Evaluation	$0	$0	$0	$0	$0	$33,300	$0	$0	$0	$33,300
3.2	Conduct Permitability Assessments	$800	$1,600	$800	$400	$0	$0	$0	$0	$0	$3,600
3.3	Conduct Constructability Assessments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3.4	Identify Candidate Alternatives	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Task 3 Costs	$800	$1,600	$800	$400	$0	$33,300	$0	$0	$0	$36,900
4	**CONDUCT SCENARIO PLANNING**										
4.8a	Confirmation/Network Coding of Candidate RCS projects for testing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.8b	Travel Demand Modeling for Baseline and 3 Greater Growth Scenarios (each Candidate Project)	$500	$0	$0	$0	$0	$0	$0	$0	$0	$500
4.8c	Evaluate Performance of Candidate Projects under Baseline and 3 Greater Growth Scenarios	$150	$265	$0	$0	$0	$21,700	$0	$0	$0	$22,115
4.8d	Evaluate Traffic Operating Conditions	$50	$0	$0	$0	$0	$0	$0	$0	$0	$50
4.9a	Scenario Results Workshops	$100	$300	$0	$0	$0	$0	$0	$0	$0	$400
4.9b	Recommendation Documentation	$100	$0	$0	$0	$0	$0	$0	$0	$0	$100
	Total Task 4 Costs	$900	$565	$0	$0	$0	$21,700	$0	$0	$0	$23,165
5	**PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE)**										
5.1	Working Group Meetings	$4,050	$7,055	$1,460	$800	$0	$0	$0	$0	$0	$13,365
5.2	Steering Committee Meetings	$1,500	$1,250	$0	$0	$0	$0	$0	$0	$0	$2,750
	Total Task 5 Costs	$5,550	$8,305	$1,460	$800	$0	$0	$0	$0	$0	$16,115
6	**MANAGE THE PROJECT**										
6.1	Weekly Coordination with Study Leadership	$100	$0	$0	$0	$0	$0	$0	$0	$0	$100
6.2	Schedule and Budget Oversight	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6.3	Quality Assurance of Deliverables	$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$1,000
	Total Task 6 Costs	$1,100	$0	$0	$0	$0	$0	$0	$0	$0	$1,100
7	**PREPARE DOCUMENTATION**										
7.1	Draft Study Report	$20,300	$0	$0	$0	$0	$0	$0	$0	$0	$20,300
7.2	Final Study Report	$20,100	$0	$0	$0	$0	$0	$0	$0	$0	$20,100
	Total Task 7 Costs	$40,400	$0	$0	$0	$0	$0	$0	$0	$0	$40,400
	TOTAL COSTS	$60,270	$29,233	$7,910	$4,371	$7,200	$55,000	$4,500	$1,000	$0	$169,484

Attachment 7