

ATTACHMENT P.2

SCOPE OF SERVICES



RFP No. 010-003
Environmental and Engineering Services
for the Gainesville-Haymarket Extension

SCOPE OF SERVICES

1.0 OVERVIEW

1.1 The scope of services under this Contract include completion of an Environmental Assessment, Preliminary (30%) Design and related transportation planning services for the addition of up to approximately eleven (11) miles of mainline track and upgrade of existing track to extend VRE service to the Gainesville-Haymarket area of Prince William County, Virginia. The project limits extend from the City of Manassas to Haymarket in western Prince William County on the Norfolk Southern (NS) "B" Line. The scope of services shall also address the influence of alternatives for locating up to three (3) commuter rail stations along the extension at (or near) the Town of Haymarket, Gainesville and Sudley Manor/Innovation. Stations shall include double platforms with an overhead pedestrian bridge, parking and related (e.g., kiss and ride area) facilities. Possible alternatives for a layover siding/yard shall also be addressed.

1.2 The work shall be conducted in the following phases:

A. Phase I - Alternatives Refinement

1. This initial phase shall produce a detailed definition of the service structure and infrastructure associated with the proposed alternatives under consideration, expanding upon the work conducted in the previously completed VRE Gainesville-Haymarket Alternatives Analysis study. It shall address ridership potential, operating plans, equipment requirements, the identification of station sites/park & ride locations, development of capital, operations, and maintenance costs (for both opening year and longer term scenarios), and the development/refinement of Conceptual Plans for each of the alternatives being considered. It is anticipated that the alternatives (Baseline and Build) identified in the Alternatives Analysis will be the starting point for this analysis.
2. Utilizing the results of the Alternatives Refinement, VRE will decide whether or not to advance the proposed service extension as a Small Starts candidate for FTA funding. If it is decided to seek Small Starts funding, the Contract will be modified to include the preparation of a Small Starts Evaluation and Documentation.
3. An initial Notice-to-Proceed (NTP) will be issued for the work associated with Phase I. A separate NTP will be issued for Phase II tasks.



4. At its discretion and based upon the results of the Phase I analysis, VRE may decide not to advance the project to Phase II - Environmental Assessment and Preliminary Engineering.

B. Phase II - Environmental Assessment and Preliminary Engineering

1. It is anticipated that an Environmental Assessment (EA) is the appropriate National Environmental Policy Act (NEPA) document for this project. If it is determined that an Environmental Impact Statement (EIS) is required, the Contract will be modified to include preparation of the EIS.
 2. Upon completion of the EA, the Consultant shall advance the selected design alternative for the extension to thirty percent (30%) design. Track-bed for the new mainline track may not exist. Therefore, design shall include provisions to expand the existing track bed and supporting structures in accordance with the Federal Railroad Administration (FRA), AREMA and Norfolk Southern (NS) standards.
- 1.3 The Consultant shall provide all labor, supervision, materials, supplies, and transportation as well as have sufficient financial resources to complete the scope of services indicated herein to the satisfaction of VRE.

2.0 GENERAL REQUIREMENTS

The Contractor shall perform the following tasks:

2.1 Phase I - Alternatives Refinement

A. Alternatives Definition

1. A refined set of alternatives shall be developed to include both full extension option(s) to Haymarket, as defined in the VRE Gainesville-Haymarket Alternatives Analysis Report (May 29, 2009), and phased alternatives that could be implemented as a minimum, initial extension. The Baseline Alternative shall also be evaluated.
2. It is anticipated that the alternatives identified in the Alternatives Analysis will be the starting point for this analysis. However, revisions to those alternatives and/or additional alternatives not previously considered may be identified through the refinement process.



3. The alternatives shall be evaluated relative to ridership potential, operational and infrastructure requirements, cost, and other factors to determine the extension alternative(s) to carry forward to Phase II.

B. Ridership Forecasts

Refined ridership forecasts shall be prepared for each of the alternatives under consideration, including, where applicable, opening year and analysis year forecasts. The effort shall include:

1. Review of previously completed studies and forecasts and development of a methodology to update/refine those forecasts, including identification of forecasts for initial/opening year and long-term (2030) horizons.
2. Coordination with MWCOG, DRPT and FTA regarding the approach to the forecast development.
3. Preparation of the revised forecasts.

C. Operating Plans

Refined operating plans based on the revised ridership forecasts for each of the alternatives under consideration. These plans shall include a draft operating schedule, layover schedule, equipment needs, and operations and maintenance costs for each of the alternatives.

D. Station Site/Storage Facility Evaluation

1. Utilizing the revised ridership forecasts and refined operating plans, the preferred locations for the station and park and ride sites shall be identified. The evaluation shall encompass criteria such as access (in terms of both railroad geometry and vehicular access), parking capacity, potential environmental impacts, potential property acquisition issues, land use requirements, configuration of property, and overall feasibility as a station or park and ride lot.
2. The preferred location to accommodate VRE equipment storage/layover needs shall also be identified. The evaluation shall address the relative merits of various storage options (e.g., yard versus storage siding, mid-line



versus end-of-the-line location) as well as the relationship to VRE equipment maintenance facilities. The evaluation shall also encompass criteria such as potential environmental impacts, potential property acquisition issues, land use requirements, and configuration of the property.

3. A specific location shall be identified for each of the general station/park and ride areas and for a storage facility.

E. Rail Operations Simulation (Coordination)

1. As part of this phase of work, Northern Southern will prepare a capacity simulation of the B Line using the refined operating plans for each of the alternatives and forecast NS traffic along the route. This task shall involve coordination with NS on the Capacity Analysis/Operations Simulation.
2. Coordination shall include ensuring that Norfolk Southern has the appropriate VRE operations information to incorporate it into the simulation model, reviewing the NS model output, commenting on the results, and meeting and coordinating with NS.

F. Refinement of Conceptual Design

1. Using the updated ridership forecasts, the refined operating plans and the preferred station/storage facility locations, the infrastructure requirements of the alternatives under consideration shall be reviewed and refined as necessary. Conceptual Design level plans for each alternative shall be completed including:
 - a. Track/guideway;
 - b. Right-of-way;
 - c. Signal & communications;
 - d. Grade crossings;
 - e. Stations/park & ride lots; and
 - f. Storage/layover facilities.
2. This effort shall include an order-of-magnitude capital cost estimate and projected operating cost impacts associated with each alternative. Cost estimates shall be prepared in the current year and the year of expenditure dollars.



G. Assist in agency/stakeholder (e.g., DRPT, FTA, NS, local jurisdictions) coordination.

2.2 Phase II - Environmental Assessment and Preliminary (30%) Engineering

- A. Using the results of Phase I - Alternatives Refinement, as the basis for analysis, conduct environmental planning analysis and prepare an EA and related documentation for the proposed extension to comply with NEPA as administered by the FTA through their Planning and Project Development Process. Based on the EA results, prepare a draft Finding of No Significant Impact (FONSI) for the proposed action.
- B. Advance the preferred alternative for the proposed extension as identified in the Draft EA document to the Preliminary Engineering (PE) Design stage (30% Design). The PE plans shall be prepared to support the development of the Final EA document and shall address the design of each project component (expansion of rail right-of-way, additional track structure, signal system modifications, grade crossing improvements, stations/park and ride lots and layover/storage facilities) as approved by VRE, including detailed construction cost estimates. Cost estimates shall be prepared in both current year and year of expenditure dollars.
- C. Sub-tasks in support of this Phase shall include:
1. Review prior studies and reports conducted in the study area.
 2. Perform record search, site investigation and data collection to identify limits of railroad right-of-way, easements, and existing utilities within the area.
 3. Conduct analysis of the existing and proposed future traffic and parking conditions, impacts, and benefits for all elements of each alternative under consideration (including the No-Build and Baseline Alternatives).
 4. Evaluate social, economic, natural/cultural environmental data for each of the alternatives under consideration to determine their potential impacts and provide possible mitigation strategies for any adverse affects. Preliminary environmental data collection efforts to identify constraints were conducted during the Alternatives Analysis. Additional supplemental environmental information shall be gathered to update the information presented in the Alternatives



Analysis (e.g., noise and vibration, wetlands, floodplains, cultural and historic resources, threatened and endangered species, etc.).

5. Coordinate the NEPA process to comply with other federal, state or local permitting requirements that may apply to the proposed extension.
6. Identify and initiate permitting and regulatory requirements for the extension and any required infrastructure, including stations, parking and other related facilities.
7. Perform aerial and ground survey as necessary to develop preliminary design based on accurate base mapping, including utility identification/location and right-of-way (ROW) limits.
8. Collect data on existing ROW/property lines/owners adjacent to all project areas to determine ROW/property acquisition or easement needs and impacts for the project alternatives. Property acquisition requirements (including compliance with federal acquisition requirements) and associated costs shall be identified.
9. Prepare alignment alternatives for proposed new or modified track including, signal and switch work in consideration for new or modified supporting infrastructure (platforms, overhead bridges, culverts, soil stabilization, utility relocation, etc.).
10. Advance plans for the preferred alternative to the 30% level of plan development, addressing all project elements (e.g., station/park and ride sites, track/guideway, storage/layover facilities, utility relocations, roadway design for access and off-site improvements, grade crossing improvements).
11. Prepare Geotechnical report based on in-situ testing as necessary to support the track design and station/park and ride lot development.
12. Coordinate design with projects performed by others in regards to the NS Crescent Corridor initiative, including Gainesville passing siding, signals and other improvements to the B Line.



13. Review and revise, as necessary, design criteria developed as part of the Alternatives Analysis for all design elements including track/guideway, right-of-way, signals and communications, grade crossings, stations/park and ride lots, storage/layover facility, and off-site roadway and intersection improvements.
14. Prepare a Preliminary Engineering Report to include a summary of existing conditions, the design criteria utilized, design recommendations, and addressing, but not limited to track/guideway, signals, right-of-way/property acquisition requirements, structures, utilities, connector roadways and other road improvements.
15. Prepare a Financial Plan that includes a Financial Analysis, Operating and Maintenance cost estimates, capital cost estimates, and revenue estimates.
 - A. The Financial Analysis shall define a number of revenue/cost relationships, including:
 1. Operating cost ratio: revenue/operating cost;
 2. Financial profit (loss): revenue/total costs;
 3. Investment standards: passenger miles/total cost; and
 4. Break even analysis of revenues and costs.
 - B. The financial analysis shall be carried out on the basis of a detailed cash flow assessment of revenues and costs over the life of the project in both real terms and nominal dollars to show real and nominal rates of return. It shall quantify both Net Present Values and Internal Rates of return using a range of different financing instruments. An estimate of the impact of the operation of the proposed project (including initial and long-term operating scenarios) on the VRE local operating subsidy shall be included in the analysis. Cost estimates shall be prepared in both current year and year of expenditure dollars.



16. Develop data and calculate public benefit of the extension project to include but not be limited to passenger demand, service and travel time, fares, total route mileage and overall route mileage impact on existing service.
17. Assist in agency/stakeholder (e.g., DRPT, FTA, local jurisdictions, property owners, etc.) coordination.
18. Assist VRE in the continuation of the public participation program initiated as part of the previously completed Alternatives Analysis and compliance with NEPA and/or FTA public involvement requirements.
19. Attend monthly progress meetings and prepare meeting minutes.

