To: Chairman Cook and the VRE Operations Board

From: Doug Allen

Date: January 16, 2015

Re: Authorization to Award a GEC VI Task Order for Capacity Simulation Support

Recommendation:

The VRE Operations Board is asked to authorize the Chief Executive Officer to award a Task Order under the General Engineering Services VI contract to AECOM for planning consulting services in the amount of $129,703, plus a 10% contingency of $12,970 for a total amount not to exceed $142,673.

Background:

The adopted VRE System Plan 2040 calls for a significant expansion of service over the next 25 years, along with capital investments in capacity improvements to the host railroad properties. The number of trains VRE can operate over CSX Transportation railroad lines is presently governed by agreements that define a specific number of slots and stations. In order to add trains or stations, VRE will be expected to make capacity improvements to offset the operational impacts of the addition and maintain or improve traffic flow for all trains. Presently, there is no agreed-upon methodology to determine or predict the amount of traffic flow benefit derived from a capital investment.

In conjunction with its host railroads, VRE seeks to establish a methodology to [1] quantify the effects of future capacity improvements in terms of traffic flow and [2] evaluate the operational impacts of alternative configurations of new stations,
tracks, and other planned improvements. VRE believes that software simulating the movement of trains through the rail network at a detailed and realistic level will best address both objectives and optimize where and in what order investments in capital infrastructure should be advanced.

All three host railroads use *Rail Traffic Controller* (RTC) from Berkeley Simulation Software, LLC, as their standard tool for rail operations analysis and simulation. It is recommended that VRE adopt the same software standard in order to maintain a comparable basis for analysis and design.

This Task Order will provide consultant services in support of VRE’s efforts to estimate capacity and identify the operational impacts resulting from capital investments. The Consultant will:

- Assemble necessary input regarding physical infrastructure, train consists, and schedules for construction of a functional simulation of the present VRE rail network;
- Construct and validate a functional simulation of the present VRE rail network;
- Provide training regarding RTC capabilities to VRE staff and more detailed training pertaining to routine RTC operation and editing to one VRE staff member designated as our prime RTC operator;
- Support VRE staff in developing a consistent and predictable methodology for capacity valuation based on RTC outputs;
- Support VRE staff discussions with host railroads concerning capacity effects; and,
- Support VRE staff review of independent simulations produced by the host railroads.

The RTC rail network model will also be used to develop and evaluate alternatives for the upcoming Gainesville-Haymarket Extension Study.

**Fiscal Impact:**

Funding for the project is provided in the FY 2015 Budget and approved Capital Improvement Plan through a DRPT Technical Assistance Grant with VRE funds as match.
Virginia Railway Express
Operations Board

Resolution
9A-01-2015

Authorization to Award a GEC VI Task Order for
Capacity Simulation Support

WHEREAS, the adopted VRE System Plan 2040 calls for a significant expansion of VRE service and investments in capacity improvements to the host railroad properties over the next 25 years; and,

WHEREAS, VRE seeks a consistent methodology to determine the effects of future capacity improvements in terms of traffic flow and to evaluate the operational impacts of alternative configurations of new stations, tracks, and other planned improvements; and,

WHEREAS, a software model simulating the movement of trains through the rail network used by VRE would provide the needed methodology and add a useful internal analysis capability to evaluate other upcoming projects such as the Gainesville-Haymarket Extension; and,

WHEREAS, expert technical advice is needed to assemble and validate the software model and assist in discussions with host railroads about its application in the evaluation of capacity investments;

NOW, THEREFORE, BE IT RESOLVED THAT, the VRE Operations Board does hereby authorize the Chief Executive Officer to award a Task Order under the GEC VI contract to AECON for Capacity Simulation Support in the amount of $129,703, plus a 10% contingency of $12,970 for a total amount not to exceed $142,673.

Approved this 16th day of January 2015

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John Cook
Chairman

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Paul Smedberg
Secretary