



Evaluation of Transportation Projects in Northern Virginia Transportation District Overview

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Presentation Outline

- **Study Context**
- **Statutory Framework For Study**
- **VDOT's Considerations For Study**
- **Study Organization**
- **Technical Approach For Study (*Consultant Team*)**
- ***Schedule (Consultant Team)***
- ***Study Tasks And Coordination***
- ***Questions / Comments***

Study Context

2012 VA-GA : § 33.1-13.03:1

(Code Chp. 768/825)
(HB 599 / SB 531)



**Evaluating and Rating at
Least 25 Significant Projects**



Publish Project Ratings

Informs
allocations

CTB / Others

Governs allocations
(Non-transit capacity adding projects)

**New NVTA
Transportation Funds**

Statutory Framework For Study

➤ **CTB establishes priorities for NoVA**

§ 33.1-13.03:1.D: For purposes of this section, the significant transportation projects to be evaluated shall comprise at least 25 such projects selected according to priorities determined by the Commonwealth Transportation Board..

➤ **Significant multi-modal projects to be evaluated**

§ 33.1-13.03:1.A:shall evaluate all significant transportation projects, including highway, mass transit, and technology projects,....

➤ **Projects over wide area**

§ 33.1-13.03:1.A: projects, in and near the Northern Virginia Transportation District ..

➤ **Project's funding source not considered**

§ 33.1-13.03:1.D: For purposes of this section, 25 such projects selectedwithout regard to the funding source of the project,...

➤ **Analytical Evaluation**

§ 33.1-13.03:1.A: evaluation shall rely on analytical techniques and transportation modeling, including those that employ computer simulations

➤ **Quantitative Rating**

§ 33.1-13.03:1.A: shall provide an objective, quantitative rating for each project....

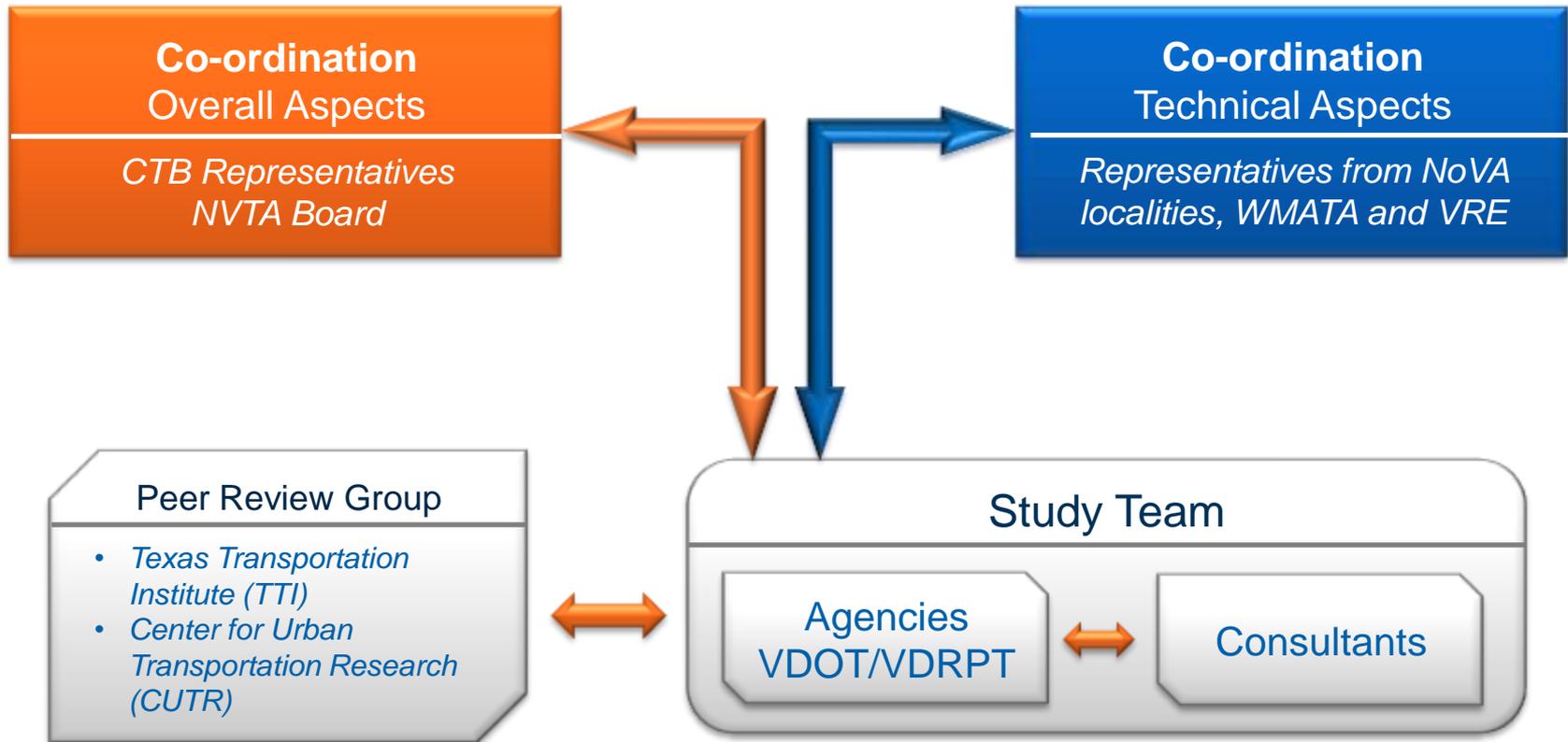
➤ **Rating Based on Congestion and Mobility Considerations only**

§ 33.1-13.03:1.A:rating for each project according to the degree to which the project is expected to reduce congestion and, to the extent feasible, the degree to which the project is expected to improve regional mobility in the event of a homeland security emergency.

Considerations For Study

- **Full compliance with the law**
- **Cognizant of Legislative Intent**
- **Coordinated / Collaborative / Objective**
- **Comprehensive, Detailed, Rigorous Technical Approach**
- **Defensible, Peer reviewed, Reusable Process**
- **Mindful of considerations of potential users of the study**

Study: Organization



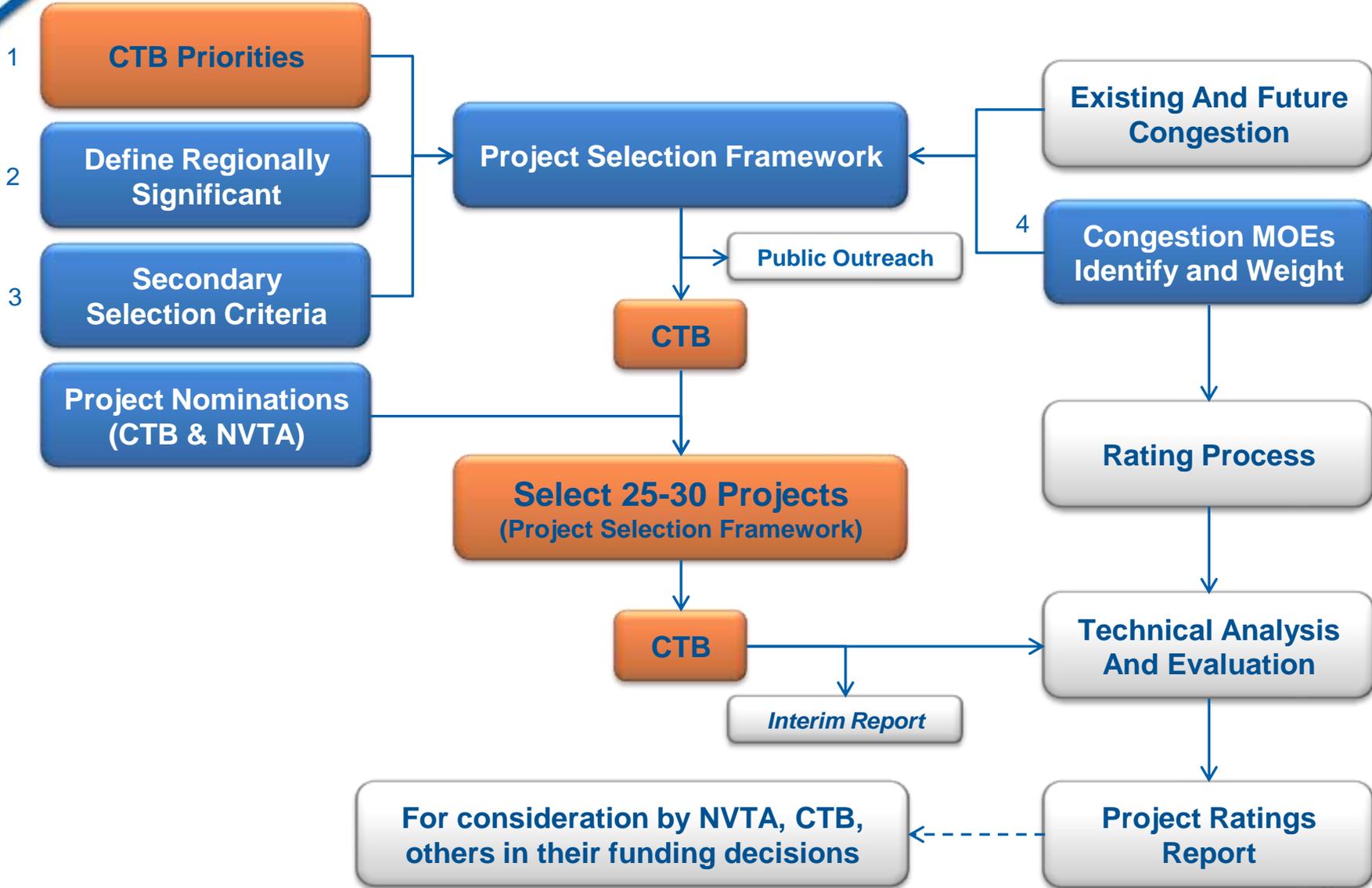
Consultant Team



Travesky & Associates, Ltd.



Study Tasks And Coordination



General Approach



Focus on the Legislation

- Evaluate 25-30 regionally significant projects that reduce congestion
- Projects that also improve mobility during a Homeland Security emergency will be given additional consideration

Translate the wording of the legislation into quantifiable measures

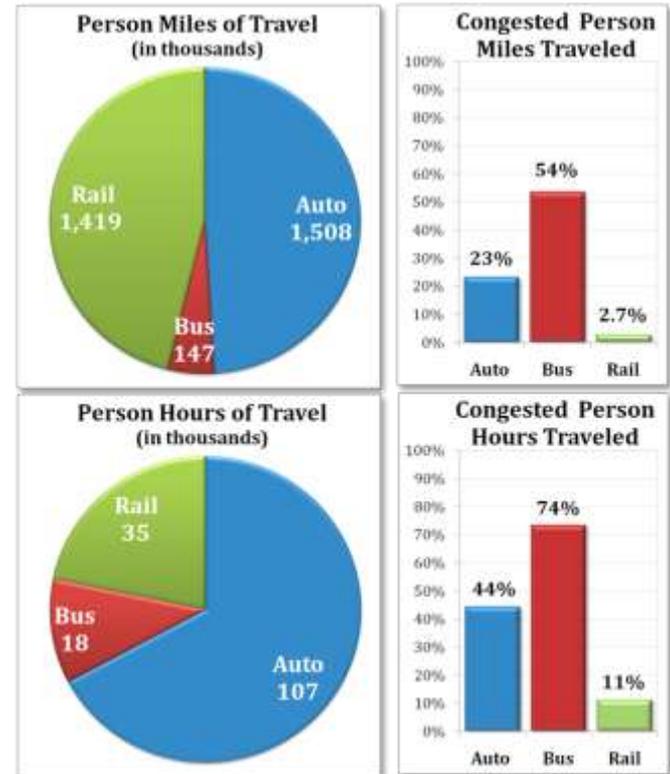
- Define multi-modal “Congestion” and “Regional Significance”



Project Selection and Evaluation Process

- Establish the analytical and decision framework
- Identify existing and future congestion problems
- Solicit projects to address identified problems
- Select 25-30 regionally significant projects
- Analyze and evaluate projects
- Rate project performance

Example Congestion Measures



Analytical and Decision Framework

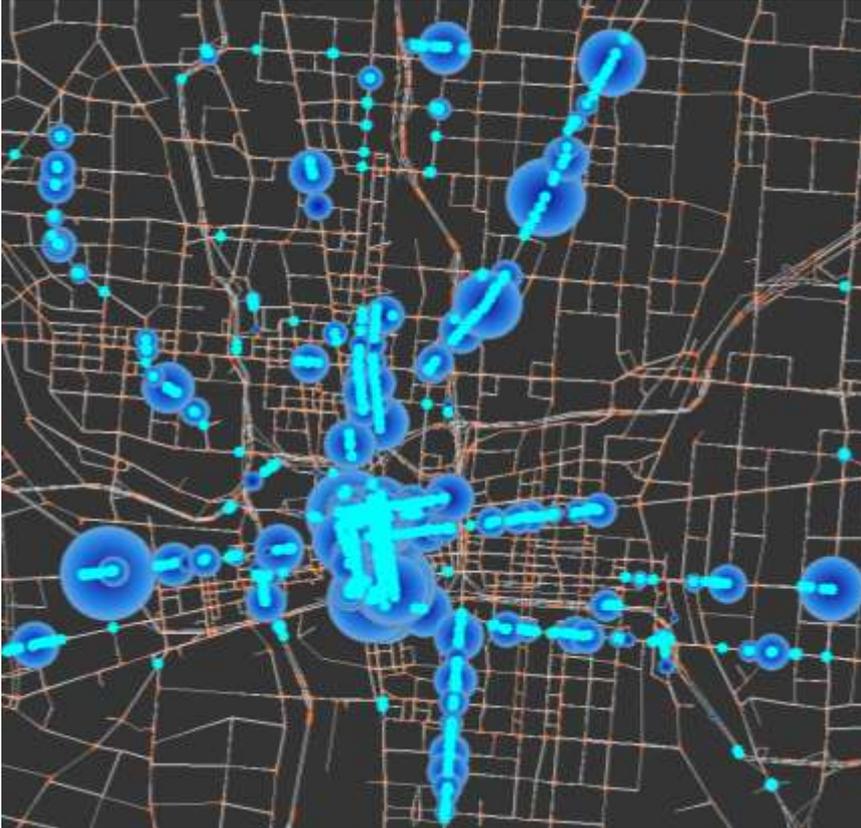
Work with the CTB and NVTA to clearly define:

- the study objectives,
- the selection criteria,
- the analytical methods,
- the performance measures,
- the decision-making process, and
- the location and severity of congestion

prior to project nomination



Project Nomination Inputs



The CTB and NVTA will receive:

- Description of the study objectives
- List of CTB priorities and secondary project selection criteria
- Measures and methods used to select and rate projects based on congestion reduction and regional significance
- Regional simulations that highlight the location and intensity of congestion problems based on pre-defined criteria

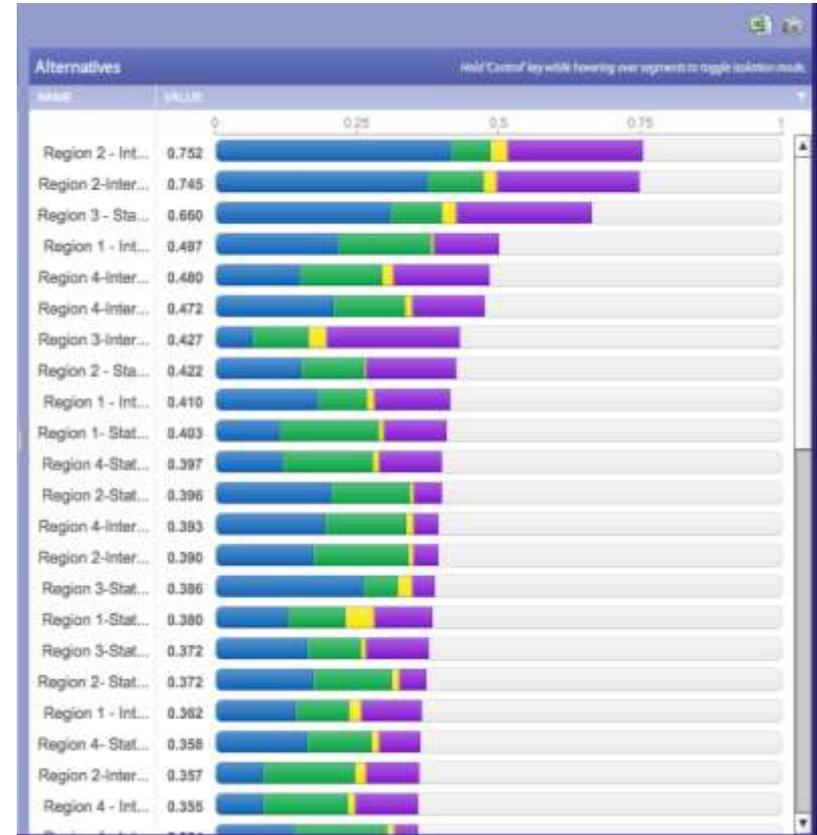
Project Selection Process

Selection criteria will be established in consultation with the CTB and NVTA

- **Establish measures for identifying regional significance and congestion reduction potential**

Selected based on multi-criteria ranking

- **Secondary criteria such as equity, local support, or cost considerations would be used to break ties**



Dynamic Analysis Tools

Traditional travel models cannot address the operational aspects of congestion

- **No congestion impacts on the upstream or downstream links**

Key performance measures can only be captured with time-dependent networks

- **Queue spillbacks**
- **Congestion duration**
- **Cycle failures**
- **Traffic density and transit crowding**
- **Trip-based travel time savings**
- **Technology impacts**
- **Distribution of benefits to various traveler groups or vehicle types**
 - Residents of each NoVA locality, NoVA residents vs. non-residents, autos vs. trucks, etc.



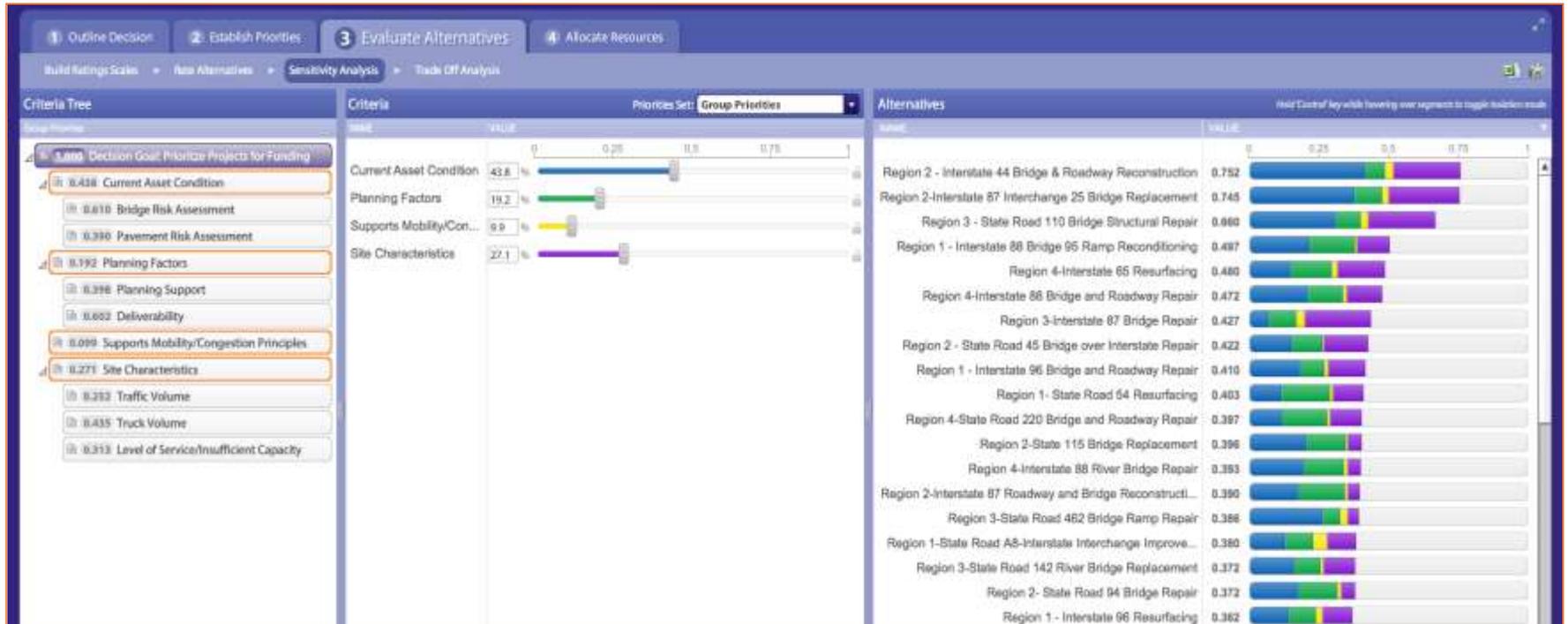
Measures of Effectiveness with Unique Rating Scales

- The CTB and NVTA's input creates non-linear weights for each performance measure
- Rating scales can be quantitative and qualitative

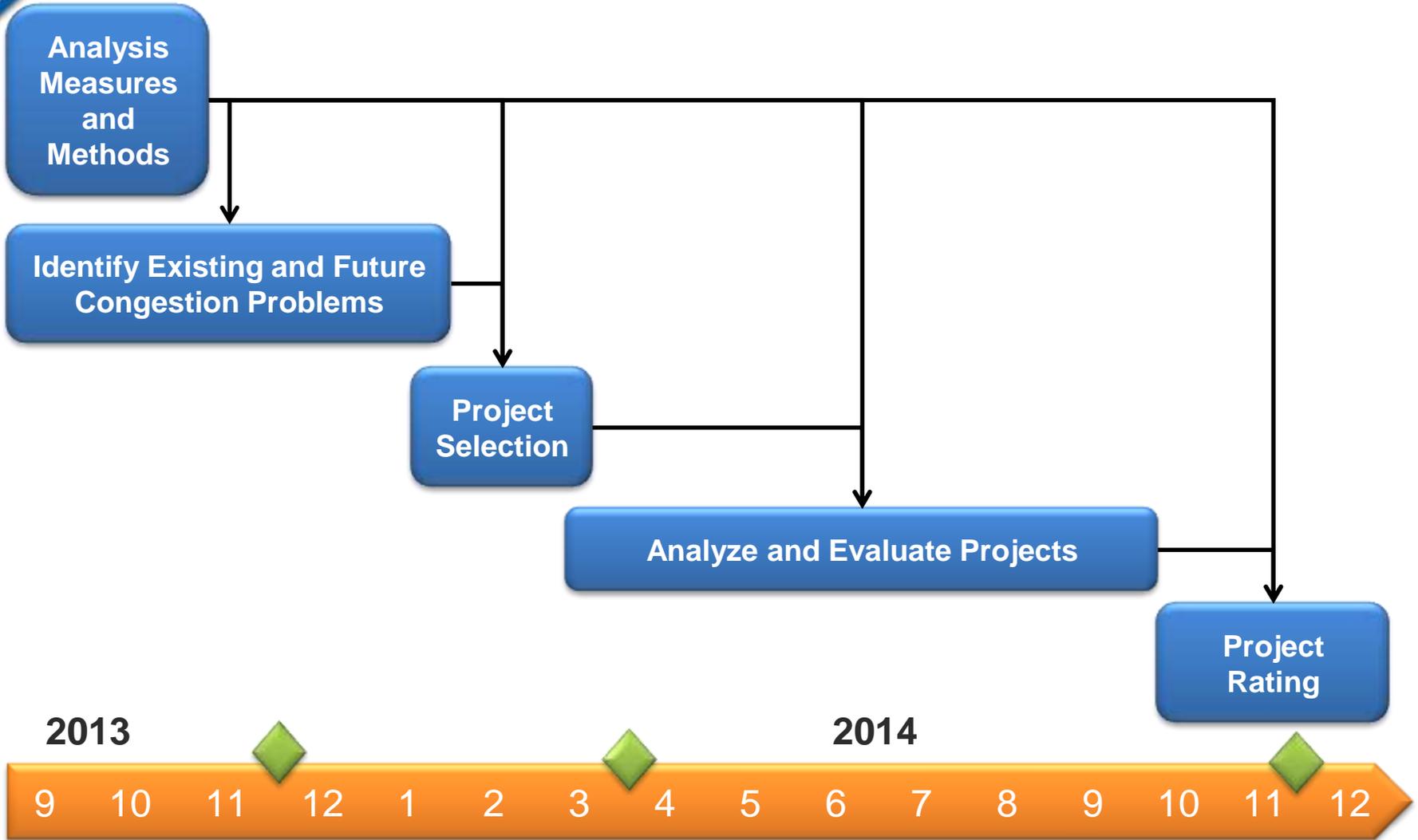


Dynamic Project Rating Analysis

- ‘On-the-fly’ sensitivity analysis and multifaceted ‘What-If’ scenarios
- Review individual criteria and test the impact of shifting priorities



Implementation Study Schedule



Materials for public outreach



Questions / Comments

THANKS!

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