U.S. DOT Quantification Initiative: DOT’s Collaboration with the Hampton Roads Sea Level Rise Pilot

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U.S. DOT Quantification Initiative

DOT’s Collaboration with the Hampton Roads Sea Level Rise Pilot

5/18/16

Alan Strasser
Steering Committee Member
U.S. DOT Climate Change Center
DOT’s Role in Hampton Roads

• **Past**: DOT has led or contributed to:
  – HR Climate Change Vulnerability Assessment Pilot Project (2011)
  – HR Military Transportation Needs Study (2013)

• **Currently**: Participates on the HR Pilot
  – Infrastructure WG (IWG)
  – Economic Impacts WG
Gulf Coast II: Criticality and Engineering

Example: Assessed Infrastructure Criticality in Mobile, AL

Gulf Coast Tools can be augmented by quantification

<table>
<thead>
<tr>
<th>Facility List</th>
<th>Facility A</th>
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<thead>
<tr>
<th>HIGHWAYS</th>
<th>SocioEconomic</th>
<th>Ops.</th>
<th>Health and Safety</th>
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<tbody>
<tr>
<td>Component of National/International Commerce System</td>
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<tr>
<td>Important Multi-Modal Linkage</td>
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<td>Functions as Community Connection</td>
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<td>No System Redundancy</td>
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<td>Serves Regional Economic Centers</td>
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<td>Functional Classification (Interstate, etc.)</td>
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<tr>
<td>Usage</td>
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<tr>
<td>Identified Evacuation Route</td>
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<td>Component of Disaster Relief and Recovery Plan</td>
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<td>Identified Hazardous Materials Route</td>
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<td>Component of National Defense System</td>
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<td>Provides Access to Health Facilities</td>
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Objectives of DOT’s Quantification Initiative

• **Supports Hampton Roads Pilot Phase I Report (2015):**
  “IWG has concluded that any planning activities taken to address infrastructure need to address the cost and benefits of proposed actions to aid in decision-making.” (p. 24)

• In collaboration with Hampton Roads Pilot, DOT developing cost tool that provides methods for:

1. Voluntary grantee consideration of financial impacts in infrastructure planning due to climate change and severe weather
2. Augmenting science-based implementation of the Federal Flood Risk Management Std. (EO 13690)
3. Prioritizing and managing U.S. DOT facilities to address EO 13653
Why Quantification Is Important

Addresses Key Questions:

• What is the CO$T of preparing the national transportation network for climate change?
• What communities are most vulnerable based on private and public a$$ets?
• How do we define co$t and vulnerability (e.g., assets risk management and/or loss of use)?
• What tools can assist in project-specific justification and prioritizing future inve$tment$ (e.g., FFRMS)?
Methodology and Status

Current Task (1) Developing a baseline of the transportation system:
- Modal assets: size, scale, geographic location, function
- Asset condition, structural integrity, asset vulnerabilities and exposure
- Adapting, estimating costs of preventive vs. post-disruption improvements.

Future Tasks (2016 - 8/31/17)
- Task 2: Determining future costs using different scenarios and time scales
- Task 3: Small-scale pilot analysis using different scenarios and time scales
- Task 4: Region-scale using different scenarios and time scales
Status and Next Steps

• Next Steps:
  – Continued coordination with HR Pilot and HR stakeholders on asset RM and disruption analysis
  – Continue coordination with TRB/NCHRP and FHWA on cost-benefit studies
  – Seeking partnership opportunities