Resilient Tampa Bay Transportation

FHWA Resilience & Durability to Extreme Weather Pilot Program – Kick Off Meeting

presented to
Tampa Bay TMA Coordinating Agencies

presented by
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Hillsborough MPO
Karen Kiselewski, AICP
Cambridge Systematics, Inc.

August 10, 2018
Agenda

» Introductions
» Roundtable
» Project Overview
» Coordination
» Next Steps
Introductions
Resilient Tampa Bay – Transportation: Project Team Leads

Allison Yeh, AICP, LEED GA
Executive Planner

Rodney S. Chatman, AICP
Planning Division Manager

John Villeneuve
Pasco MPO Director

Roger Roscoe
FDOT District 7 Liaison

Sean Sullivan
Executive Director

Karen Kiselewski, AICP
Senior Project Manager
FHWA 2018-2020 Pilot Program: Resilience & Durability to Extreme Weather

- 1 of 11 Pilot projects looking at integrating into agency practices, tools & resources, or deployment & monitoring.

- **Tampa Bay TMA**
  - Caltrans

- **MassDOT**

- **PennDOT**

- **Atlanta Regional Commission**

- **Corpus Christi MPO**

- **Mid-America Regional Council (Kansas City, MO & Johnson Co, KS)**

- **UDOT**

- **Quad Cities - Iowa/Illinois MPO**

- **Houston-Gaveston Area Council**

- **Navel Facilities Engineering Command (East and Gulf Coast)**
Resilient Tampa Bay – Transportation: Background

» Tampa Bay TMA
  • 2.8M Population
  • 2nd largest pop. In FL.
  • 1000+ miles of shoreline
  • 58% pop. in flood zones

» Regional vulnerability assessment of surface transportation assets
  • Incorporate into LRTPs, hazard mitigation, emergency mgt, and PDRP plans
Roundtable
Project Overview
Purpose

» Provide information and recommendations to ensure the region’s transportation system meets the near and long term functional, economic, and quality of life goals of Tampa Bay’s residents, businesses, and visitors in the face of weather and climate changes.
Purpose

» Address FAST Act requirements for MPO long range transportation planning:
  • Consider projects/strategies to improve the resilience and reliability of the transportation system; stormwater mitigation
  • Consultation with agencies and officials responsible for natural disaster risk reduction

» Focus on inland flooding, storm surge, and sea level rise
Work Plan

Climate & Weather
- Obtain Data
- Identify Vulnerable Areas
- Identify at risk Transportation

Critical Linkages
- Stakeholder Engagement
- Quantitative Analysis of Critical links

Adaptation Strategies
- Econometric Analysis
- Adaptation/ Mitigation Strategies
- Include in Decision Making

Final Report
- Winter/Spring 2019
- Summer/Fall 2019
Incorporating stakeholder input into quantitative assessment

Weighting facilities/locations based on stakeholder input

• GIS-based Quantitative Analysis
• Context Sensitive Criticality Construct (Transportation disadvantaged population, social & economic importance)
• Sensitivity, exposure level and adaptive capacity

Qualitative Assessment

• Stakeholder and practitioner input
• Persistent flooding locations
• Leveraging prior planning work (Current LRTP, hazard mitigation and local mitigation strategies)

Quantitative Assessment

Criticality Determination

Supporting Image Sources: Sustainable Convos, Northern Arizona Healthcare
Modeling Scenarios

» Sea Level Rise – 2045 NOAA
  • High and Intermediate-Low curves.

» Storm Surge - Current
  • Categories 1, 3, and 5

» Sea Level Rise plus Surge
  • Cat 1 High, Cat 1 Int-Low, Cat 3 High, Cat 3 Int-Low (detailed analysis: Cat 3 High)

» Precipitation

» Transportation – 2040
  • Adopted network and socio-economic data

» Econometric – 2040
Adaptation Strategies

» Physical asset adaptations
  • Design changes

» Natural landscapes
  • Topographical changes
  • Vegetation
  • Wave mitigation

» Water management
  • Drainage and flood control
Integration into LRTPs

» Regional and per-county representative projects
» Cost estimates for planning purposes
Coordination
# Data/Information Coordination

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<thead>
<tr>
<th>One Bay</th>
<th>Hillsborough County Perils of Flood Act Matrix of Impacts Initiative</th>
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<tbody>
<tr>
<td>Tampa Bay RPC</td>
<td>Pinellas County Restore Act Vulnerability Assessment</td>
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<tr>
<td>Local Government Public Works</td>
<td>Tampa Sea Level Rise Vulnerability Assessment</td>
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<td>Local Mitigation Strategies Post Disaster Redevelopment Plans</td>
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<th>Resilient Tampa Bay Transportation: Durability &amp; Resilience to Extreme Weather Pilot</th>
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<td>Tampa Bay RPC</td>
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<td>Transit Agency Asset and Operational Plans</td>
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<td>MPO Long Range Transportation Plans</td>
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**Resilient Tampa Bay Transportation**

**Water**

**Transportation**
Resilience Coordination

» What key climate/weather resilience projects or programs are currently underway?

» What does your organization need to move forward?

» What timelines and scenarios are being considered?

Source: Getty Images
Flooding Coordination

» Do you have areas with repeat flooding?

» Do you have projects in capital improvement programs or plans?

» Do you have other related information to share?

Bayshore Boulevard, Tampa, 2004
Technical Coordination

How can we best work together?

- Project team
- Local Mitigation Strategy (LMS) working groups
- Public works or stormwater officials
- Electronic surveys and webinars

Hurricane Irma, Citgo Station, Crowdsourced Photo Tampa Bay Times
Next Steps
Contact Information

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Karen Kiselewski
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Thank you!
NOAA et al. 2017 Relative Sea Level Change Scenarios for: ST. PETERSBURG

|------|------------------|---------------|-------------------|-----------------------|-------------------|--------------|--------------|--------------|-----------|-----------|-----------|
East of US 19 in Palm 8/3/2015. JIM DAMASKE |
Linkages to the Long Range Planning Process

Needs Assessment: Vulnerability Reduction, State & Federal Mandates

Vulnerability Screening and Project Prioritization Framework

Leveraging Emergency Management, Local Hazard Management Plans

Vulnerability Performance Metrics

Regional Vision and Goals

Alternate Improvement Strategies
- Operations
- Capital

Evaluation & Prioritization of Strategies

Development of Transportation Plan (LRP)

Development of Transportation Improvement Programs (S/IBP)

Project Development

Systems Operations (Implementation)

Monitor System Performance (Data)

Planning objectives inform Vulnerability and Risk Assessment scope setting

Assets profile and investment portfolio characterize exposure

System level Impact Assessment, MOEs

Develop customized suite of adaptation strategies

Emergency Management and Evacuation Planning

Regional Mobility and Economic Impacts