Agenda

» Introductions
» Project Overview
» Preliminary Findings
» Critical Facilities Survey
» Next Steps
» Map Reviews
» RTBT Citizens Advisory Committee Meeting
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
  • 2\textsuperscript{nd} 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
Data/Information Coordination

One Bay

Hillsborough County Perils of Flood Act Matrix of Impacts Initiative

Pinellas County Restore Act Vulnerability Assessment

Tampa Sea Level Rise Vulnerability Assessment

Local Mitigation Strategies Post Disaster Redevelopment Plans

Resilient Tampa Bay Transportation: Durability & Resilience to Extreme Weather Pilot

Tampa Bay RPC

Transit Agency Asset and Operational Plans

MPO Long Range Transportation Plans

Local Government Public Works

Resilient Tampa Bay Transportation

Water

Transportation

Resilient Tampa Bay Transportation

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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
Criticality Determination

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

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

Incorporating stakeholder input into quantitative assessment

Weighting facilities/locations based on stakeholder input

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
Preliminary Findings
Rain Event Model

- Not an Event Predictor
- Hybrid Runoff-Ponding Model
- Not a Dry-Season Model, Assumes Moderate Saturation
- Runoff Coefficients Based on Soil & Land Cover
- Precipitation Modifier Based on Multi-Year PRISM Data
Surge & Sea Level Rise Modeling

Hydrology /Sea layer
SLOSH Basin
LIDAR Elevation Model

Surge Depth Output

Hydrology /Sea layer
Tidal Surface from Gauges
LIDAR Elevation Model

SLR Output
Critical Transportation Facilities

Transportation Facilities

Criticality
- High
- Moderate
- Low

Counties
- Outside Study Area
- Hillsborough
- Pasco
- Pinellas

Water Bodies
Critical Facilities Survey
https://tinyurl.com/critical-loc
Next Steps
# Contact Information

<table>
<thead>
<tr>
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</tbody>
</table>
Thank you!
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
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

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