

FTP-SIS Resilience Subcommittee Kick-Off Meeting

July 22, 2019

2:00 to 4:00 p.m. EST

Florida Department of Transportation
Executive Conference Room, Teleconference
605 Suwannee St, Tallahassee, FL 32399

Meeting Objectives

The FTP-SIS Resilience Subcommittee will meet regularly to focus on transportation system resilience to environmental, community, and economic disruptors and support the update of the FTP. The objectives of this meeting include:

- Review the upcoming FTP-SIS Plan update cycle
- Review the FTP-SIS Resilience Subcommittee charge and work plan
- Discuss FDOT priorities and cross-cutting topics
- Discuss current transportation system resilience trends, issues, initiatives, and best practices

For additional information, please contact Jennifer Carver at (850) 414-4280 or Jennifer.Carver@dot.state.fl.us.

Meeting Attendees

Attendees

Alix Miller, *Florida Trucking Association*
Casey Grigsby, *Florida Ports Council*
Dennis Smith, *Florida State University*
Janet Bowman, *The Nature Conservancy*
Laura Waterman, *Florida Division of Emergency Management*

Call-in Attendees

April Combs, *Florida Department of Agriculture and Consumer Services, Office of Energy*
Britney Moore, *Florida Department of Environmental Protection*
Crystal Goodison, *University of Florida GeoPlan Center*
Doyle Walsh, *Pinellas County*
Jake Leech, *Palm Beach County, Office of Resilience*

Jenifer Rupert, *East Central Florida Regional Planning Council*

Jesse Anderson, *University of Florida*

Jim Murley, *Miami-Dade County, Southeast Florida Climate Compact*

John Leeds, *Florida Department of Agriculture and Consumer Services*

John Linden, *Commissioner of Town of Lake Park*

Jon Philipsborn, *AECOM*

Katherine Preston, *HMMH*

Ken Bryan, *Rails-to-Trails Conservancy*

Kristine Williams, *University of South Florida, Center for Urban Transportation Research*

Laura Beagle, *Florida Division of Emergency Management*

Lauren Jackson

Mary Beth Washnock, *Florida-Alabama TPO*

Nathaniel Chan, *University of Florida*
 Obeysekera Jayantha, *Director, Sea Level Solutions Center at Florida International University*
 Paul Owens, *1000 Friends of Florida*
 Samantha Danchuk, *Broward County Environmental Planning and Community Resilience Division*
 Sean Sullivan, *Florida Regional Councils Association*
 Tara McCue, *East Central Florida Regional Planning Council*
 The Honorable Bill K. Ribble, *Mayor of Estero*
 Tia Boyd

FDOT Staff

Brian Richardson, *Emergency Management*
 Chris Edmonston, *Systems Implementation Office*
 Craig Fox, *District Seven*
 Dana Reiding, *Office of Policy Planning*
 Huiwei Shen, *Systems Implementation Office*
 James Poole, *District Four*

Jason Watts, *Office of Environmental Management*
 Jean Parlow, *District Five*
 Jennifer Carver, *Office of Policy Planning*
 Jim Halley, *Office of Policy Planning*
 John Podczewinsky, *District Four*
 Kellie Smith, *District Five*
 Larry Hymowitz, *District Four*
 Lois Bush, *District Four*
 Mark Reichert, *Office of Policy Planning*
 Michael Miller, *District Four*
 Monica Zhong, *Office of Forecasting and Trends*
 Paul Lampley, *District Four*
 Steven Craig James, *District Six*

Consultants

Bob Chamberlin, *RSG*
 Danny Shopf, *Cambridge Systematics*
 Jim Wood, *Kimley-Horn*
 John Kaliski, *Cambridge Systematics*
 Jon Sewell, *Kimley-Horn*
 Macy Fricke, *Kimley-Horn*

Meeting Summary

Introduction

Jennifer Carver opened the meeting with introductions around the room and on the phone. Dana Reiding provided an overview of the Florida Transportation Plan (FTP), the purpose of the Resilience Subcommittee, and timing of FTP and Statewide Intermodal System (SIS) updates.

The FTP is an overarching plan that guides Florida's transportation future by providing direction to the Florida Department of Transportation (FDOT) and statewide, regional, and local partners involved in planning and managing Florida's transportation system. The FTP-SIS Steering Committee guides the update and implementation of the FTP. During this FTP update, the Steering Committee will focus on four cross cutting topics: technology, resilience, statewide and interregional, and regional and local. Exploration into these cross-cutting topics will help the Steering Committee update the current FTP goals, objectives, and strategies. The Resilience Subcommittee supports the Steering Committee by analyzing long-range trends, disruptors, and natural and man-made hazards that may affect Florida's transportation system.

The FTP update began in May 2019 with the Long-Range Visioning Session. The second Steering Committee meeting was held July 9-10, 2019, and the next meeting will be in October or November 2019. The Vision Element will be complete in December 2019; the Policy Element will be complete in December 2020; and the SIS Policy Plan will be complete in 2021. See the [FTP website](#) for past meeting materials and upcoming meeting dates.

Overview

Jennifer reviewed the Resilience Subcommittee structure and draft work plan and charge. The Resilience Subcommittee is:

- A subcommittee of the FTP-SIS Steering Committee with a focus on transportation system resilience to environmental, community, and economic disruptors
- Includes “friends” of the subcommittee who are interested stakeholders/subject matter experts

The Resilience Subcommittee charge is to:

- Discuss themes, trends, and planning implications of transportation system resilience in Florida
- Identify policy-level objectives or strategies to address and/or maximize resilience to support the FTP goals and the SIS objectives
- Review and provide input, as requested, on related plans and processes, including those from FDOT and other partners
- Serve as transportation system resilience subject matter experts for the FTP-SIS Steering Committee and provide updates to the committee as needed

The Resilience Subcommittee will meet on the following dates:

- **July 2019:** Resilience Subcommittee Kick-off Meeting
- **September 2019:** Resilience Subcommittee Meeting (Web Conference)
- **October 2019:** Resilience Subcommittee Meeting (In Person)
- **January 2020:** Resilience Subcommittee Meeting (Web Conference)
- **March 2020:** Resilience Subcommittee Meeting (In Person)

See the [Resilience Subcommittee page](#) on the FTP website for a full list of members and friends and the Resilience Subcommittee work plan and charge. The work plan and charge provides greater detail on meeting objectives.

Jennifer also provided an overview of Federal and State guidance regarding resilience:

- U.S. Department of Transportation (USDOT) policy statement: “USDOT shall integrate consideration of climate impacts and adaptation in to the planning, operations, policies, and programs of the DOT.”
- Fixing America’s Surface Transportation (FAST) Act
 - Improve the resiliency and reliability of the transportation system and reduce or mitigation stormwater impacts
 - Reduce vulnerability of existing infrastructure to natural disasters
- FTP goal: agile, resilient, and quality infrastructure
 - Resilience as defined in the FTP (currently): The ability for the transportation system to absorb the consequences of disruptions, to reduce the impacts of disruptions and maintain mobility

Then, Jennifer and Chris Edmonston touched on resilience initiatives currently underway within FDOT:

- Developed in partnership with the University of Florida (UF) GeoPlan Center, the [Sea Level Scenario Sketch Planning Tool](#) helps FDOT, MPOs, regional planning councils, and local governments identify transportation infrastructure vulnerable to current and future flood risk using the United States Army Corps of Engineers (USACE) 2013 and National Oceanic and Atmospheric Administration (NOAA) 2012 sea level rise (SLR) projections, tide gage data, and Lidar data. The UF GeoPlan Center is currently updating the tool to reflect newer SLR projections.
- The SIS Resiliency Study includes two phases: Phase One is a data inventory and risk and vulnerability assessment that will help FDOT develop adaptation strategies to minimize risk, reduce vulnerability, and promote resilient development practices, and Phase Two is an action plan to implement the resilience strategies. Phase One is complete, and Chris will share the report following the meeting. During Phase Two, FDOT will analyze alternative evacuation routes (on SIS and non-SIS facilities) and the impacts of Hurricane Irma and Hurricane Michael. The risk assessment will also be expanded to analyze all modes of transportation. Finally, FDOT will analyze tools and processes that can be used to implement projects.
 - A meeting participant asked if FDOT considered storm surge and rainfall together when analyzing flood risk. Chris stated that the study considers a composite of storm surge and rainfall.

Group Discussion

Jennifer opened the general discussion about transportation system resilience by asking the question:

“What resilience trends, issues, initiatives, and best practices should we consider in the FTP update?”

Janet Bowman, Dennis Smith, and Chris suggested FDOT consider the following natural hazards and natural hazard impacts:

- Extreme heat
- Wildfires and the resulting smoke
- Debris

John Podczerwinsky stated that FDOT should consider how to improve the evacuation process. Casey Grigsby added to the suggestion by stating that FDOT should consider not only evacuations out of the state, but also evacuation trends that are shorter in nature for travel across the state. This statement was expanded to add that residents become panicked for gas during evacuations, and it was suggested that FDOT may want to consider educational and informational approaches to managing gas panic. Dennis suggested that there has been substantial planning for shelter space, but residents don't always evacuate to shelters. Obeysekera Jayantha suggested FDOT may want to consider how social media could be used to share information in general. FDOT staff followed up by stating that there are sufficient data on evacuation trends, which they are analyzing for the resiliency study. Steven James stated that, from the perspective of South Floridians, most residents evacuated to Georgia and other states during Hurricane

Irma. He also stated that residents typically stayed with friends and not at a shelter. Evacuation scenarios like Hurricane Irma may cause significant congestion before and after a hurricane because the transportation system may not have been designed to sustain the volume of traffic that is experienced when a large number of residents return home at the same time. Sean Sullivan added that I-75 and US 19 can be at a standstill due to congestion during evacuations.

Ken Bryan suggested that FDOT may want to consider how to plan for residents that do not evacuate. Ken suggested that it may be important to quickly clear sidewalks and roadways so that residents who did not evacuate are able to get around safely by walking and biking after the storm.

Katherine Preston suggested that FDOT consider long term growth/migration patterns and the associated impacts on the state's transportation system as climate change impacts become more severe or frequent (i.e., are communities in north and central Florida projected to grow faster than coastal and southern Florida communities, or are people expected to relocate from the coasts to inland or more northern locations?).

Janet stated that FDOT may want to consider risk during investment decision-making by asking whether designs should be based on a useful life that is typically longer than the timeframe that FDOT can plan with certainty? She suggested that FDOT may want to consider the level of design (design storm) and project useful life when considering development alternatives. Samantha Danchuck suggested that FDOT consider how the FDOT Design Manual could be updated to describe construction methods that are resilient to saltwater exposure and frequent inundation. Another meeting participant asked if the FDOT Design Manual will be updated to require that sea level rise and tidal flooding frequency be a part of design standards. Jennifer stated that the State Drainage Engineer is evaluating the drainage manual and the FDOT Design Manual at this time. Samantha also suggested that FDOT consider how adaptation could be integrated into the capital planning process in coordination with local jurisdictions to align adaptation investments.

Alix Miller and Casey mentioned that FDOT should also consider freight and impacts to the supply chain after a natural disaster. They mentioned how important the connection is between supplies arriving at port and making it onto Florida's roadways for distribution. Alix also pointed out that power is a significant challenge for the trucking industry because the distribution facilities need power to operate. Autumn stated that the Freight Office is developing a resilience study that will overlap with the FTP. She added that moving freight is one of the first necessary elements of hurricane recovery. She posed the question: how do we communicate alternative routing information to the industry? FDOT staff added that the SIS staff is developing a freight bottleneck study.

John P. mentioned that resilience and sustainability are interconnected and that a resilient transportation system may also help achieve a sustainable system. He suggested collaboration between state agencies is key in supporting capital resilience efforts.

Lois Bush emphasized the importance of coordinated and informed use of data.

Dennis Smith mentioned that FDOT may want to consider how climate impacts may affect tourism and trade at ports and to be mindful of economic dynamics. He posed the following questions: Will industry

transition? What assets do we need to plan for? Steven Craig James added that FDOT should consider connectivity between transportation hubs, especially airports and seaports.

Jim Murley suggested that FDOT may want to consider developing a broader definition for resilience that accounts for economic factors. He suggested Miami-Dade County, part of 100 Resilient Cities, as an example community that has analyzed broader resilience factors.

Phil Compton stated that FDOT may want to consider electric vehicles when planning for hurricane evacuation and how to factor electric fuel sources into planning for resilience. April Combs added that the Department of Agriculture and Consumer Services is developing an electric vehicle roadmap that will show electric charging stations across the state. The Department of Agriculture and Consumer Services is working with the Florida Division of Emergency Management, utility companies, and other partners to complete modeling as part of the project. April will share information as it becomes finalized.

Poll Results

Jennifer closed the group discussion asking meeting participants to respond to two questions which are summarized below. FDOT will use responses to these questions to inform the discussion topics for the second Resilience Subcommittee meeting in September (web conference).

What do you hope to achieve as part of the Resilience Subcommittee?

- Embrace planning for uncertainty
- Cost efficiency
- Ensure vulnerable communities are considered equitably
- Execute a strategic plan for evacuation
- Help our planning process become more adaptive
- Consider regional differences and needs
- Remember the most vulnerable communities
- Development of resilient adaptation strategies that will serve to avoid or minimize disruption to our transportation network during a disaster
- Policy calling for changes in the Design Manual to recognize future need to raise road elevations
- Consistent practices
- Identify ways to collaborate for better resilience
- Keeping the focus on long range planning rather than short term operations
- Design rest areas
- Encourage better planning in development to achieve resiliency
- Impact on the future plans
- Providing input as well as getting direction to help local governments understand how transportation infrastructure will be planning for resilience, flooding and sea level rise (i.e. curves and years, raising elevations. Better planning for communities to allow for better resilience around and using more multimodal options for sustainability; green infrastructure
- Identify implementable resilience policies
- Develop redundancies for quicker recovery
- SIS investment guidance
- Ideas to be more successful
- Expanded awareness of stakeholders, simultaneous planning efforts, and information sources
- Help implement resiliency strategies
- Ensure that freight is considered as an integral conduit for supplies and recovery efforts in natural disasters, and that planning

efforts are undertaken to ensure that the state is storm-hardened, ready to respond to the needs of their communities

- Keep the issues of causes (mitigation) and consequences (adaptation) on the table for discussion throughout the FTP
- As a friend of the subcommittee, I hope to bring awareness to climate adaptation issues internally to our agency and hopefully align future capital planning efforts to benefit everyone in the State
- Include inland resilience strategies
- Ensure that adequate tools are being used
- Guidance for MPOs on resiliency

- Faster recovery from hurricanes
- Align local EV charging infrastructure strategies
- The goal of providing meaningful input to planning for a resilient transportation network throughout Florida.
- Better mobility
- SIS strategies
- Ensure sea level rise projections and design criteria are integrated in planning, budgeting and design process
- Identify ways to make our transportation system more adaptive

What information do we need for the FTP?

- How the plan will be used to guide decision making
- All 67 counties plans on this issue
- Involve the new state Chief Resilience Officer
- Projected funding -- federal, state and local - for transportation over the course of the plan
- Identify which agencies we can interrelate our goals with
- Budget estimates of SLR/flood vulnerability retrofits for SIS
- Demographic projections
- Consolidated future capital improvements data base / map and timeline from all LRTPs
- Statewide Asset Vulnerability Assessment - this type of analysis has been done in specific locations/regions in Florida, but no comprehensive vulnerability assessment of FDOT's assets has yet occurred
- Insight into direction being provided by Director on sea level rise adaptation
- Best practices
- More information on other dimensions of resilience: economic, operational, etc.
- Understanding of current plans
- Yes, unified SLR projections
- Up to date roadway characteristics data (service volume, LOS)
- How are transportation facilities being designed to adapt to storm surge and sea level rise
- Best practices from other State FTPs
- Vulnerability data; SLR projection curves/years for the FDOT to use; green infrastructure adaptation strategies;
- Federal funding
- Examples from other countries and states
- Establish Resilience FTP Measures
- Inventory of what has been accomplished to date.
- Employment center locations
- Southeast Florida Unified Sea Level Rise Projection
- Combine resources & plans that already exist
- Brochures that explain the process -- in an easy to read and understand format
- A summary of all the current ongoing plans
- There are tons of potential resilience topics. Which ones are the most critical/important?
- Budget

Next Steps

The next Resilience Subcommittee meeting will be a teleconference in September 2019, followed by an in-person meeting in October 2019.