RESILIENCY SUBJECT BRIEF

FLORIDA DEPARTMENT OF TRANSPORTATION

What is Resiliency?

Resiliency is the ability of the transportation system to adapt to changing conditions and prepare for, withstand, and recover from disruptions. Disruptions are events and conditions that are often characterized as shocks and stresses.

Why is Planning for Resiliency Important?

Natural hazards, cyberattacks, and other events can have significant and unexpected impacts on Florida. Simultaneously, trends such as sea level rise and global economic shifts can lead to progressive challenges. These events and trends can result in unanticipated transportation system disruptions and increasing constraints on infrastructure, impeding access to reliable mobility. The impacts of these events and trends on the lives of residents and visitors and the flow of business and trade can be extensive.

What are Shocks and Stresses?

Shocks are unexpected disruptions or short-term deviations from long-term trends that can have a range of substantial negative effects. These include events like hurricanes, wildfires, cyber or terror attacks, and health-related crises like the COVID-19 pandemic.

Stresses are sustained trends or pressures that undermine the stability of a system and increase vulnerability. Examples include sea level rise, changing climate patterns, and long-term economic shifts.

For transportation, shocks and stresses can have significant impacts on safety, system reliability, and infrastructure integrity.

What is FDOT's Role in Resiliency?

- **Set policy direction** for resiliency of the state's transportation infrastructure. FDOT's Resiliency Policy provides the foundation for this direction.
- **Identify risks,** particularly related to sea level rise, flooding, and storm events, to assess potential impacts and employ strategies to avoid, mitigate, or eliminate these impacts.
- **Collaborate** with the appropriate agencies and organizations for information sharing and alignment of resiliency strategies.
- **Implement resiliency in transportation** through long-range and modal plans; the work program; asset management plans; research efforts; and internal manuals, tools, guidelines, procedures, and related documents.

Trends to Consider

FLORIDA CAN EXPECT BETWEEN
2.2 TO 2.5
INCHES OF SEA LEVEL RISE
*between 2020 and 2030**

*Depending on location; NOAA Low Projection (2022)

Source: NOAA

THE AMOUNT OF **PRECIPITATION DURING HEAVY RAINSTORMS HAS INCREASED BY**
27% IN THE SOUTHEAST OVER THE LAST **60 YEARS**

Source: Environmental Protection Agency

WEATHER-RELATED DAMAGES
FOR FLORIDA IN 2020 WERE
$451M

Source: NOAA.

FLORIDA IS AMONG THE
TOP 10 STATES MOST IMPACTED BY
WILDFIRES

Source: Insurance Information Institute

BETWEEN JUNE 2020 AND JUNE 2021, THE
TRANSPORTATION INDUSTRY EXPERIENCED A
186% INCREASE
IN WEEKLY RANSOMWARE ATTACKS

Source: CheckPoint Research

3 MAJOR FLORIDA AIRPORTS HAVE A LEAST ONE RUNWAY THAT IS VULNERABLE TO
MODERATE TO HIGH STORM SURGE

Source: National Climate Assessment

What is FDOT Doing to Advance Resiliency?

- **Incorporating resiliency** in statewide planning efforts including the Florida Transportation Plan, Strategic Intermodal System (SIS) Policy Plan, Freight Mobility and Trade Plan, and Transportation Asset Management Plan.
- **Providing resources** such as the Planning Emphasis Area Notable Practices Quick Guide for incorporating resiliency into MPO long range plans and the Resilience Primer that establishes a process framework, documents industry best practices, and provides a resiliency toolbox.
- **Developing a resilience action plan** for the State Highway System based on current conditions and forecasted future events.
- **Developing and coordinating training** for the Sea Level Scenario Sketch Planning Tool to aid the assessment of potential long-range sea level rise impacts on transportation infrastructure.
- **Designing for rising sea levels and tidal issues** by analyzing projected sea levels and tides in the design of bridge replacement projects and incorporating closed drainage system upgrades and backflow devices into coastal projects.
- **Supporting research activities** that provide a better understanding of the impacts and potential responses to sea level rise, tidal flooding, and other shocks and stressors.
- **Managing infrastructure assets** like roadway pavements through analysis and implementation of methods that address environmental conditions such as extreme heat.
- **Safeguarding information technology** through an agencywide team established to ensure the protection of critical data and network resources from cyberattacks and other threats.
- **Supporting conservation projects** that preserve interconnected systems of open space that sustain healthy communities.
- **Investing in hazard reduction measures** in advance of floods and hurricanes to provide better outcomes for communities.

What are the Requirements for Resiliency?

There are certain provisions in law related to transportation resiliency. For example, Federal Regulation 23 CFR 450.306(b) (9) requires MPOs, in cooperation with the state and public transportation operators, to "improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation" in the long range transportation planning process. As a result, Florida's MPOs consider resiliency as a planning factor when assessing projects, strategies, and services during the development of Long Range Transportation Plans.

The Infrastructure Investment and Jobs Act (IIJA) created the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) program providing $7.4 billion nationally to make surface transportation infrastructure more resilient to the effects of extreme weather and natural disasters. Federal funding incentives encourage the development of resilience implementation plans.

Additionally, the IIJA creates a Carbon Reduction Program requiring FDOT, in consultation with MPOs, to develop a carbon reduction strategy.

Finally, Section 339.157, Florida Statutes requires FDOT to develop a resilience action plan by June 30, 2023, that will facilitate cost-effective improvements to address existing and future State Highway System infrastructure vulnerabilities associated with flooding and sea level rise.

Where Can I Learn More?

FEDERAL

Federal Highway Administration
Provides guidance and framework to support resilience from environmental conditions that threaten transportation infrastructure.

National Oceanic and Atmospheric Administration
Provides information on NOAA's resilience implementation and technical assistance programs.

U.S. Army Corps of Engineers
Provides information on community resilience, natural h azards, and others.

U.S. Economic Development Administration
Provides examples of economic resilience initiatives and guidance to develop plans such locally-based, regionally driven Comprehensive Economic Development Strategies.

STATE

Florida Department of Economic Opportunity
Provides information on how communities can use adaptation planning to prepare for coastal flooding and sea level rise.

Florida Department of Environmental Protection
Provides information on grants and other resiliency tools, with focus on coastal communities.

Florida Department of Transportation: Florida Transportation Plan
Provides information and resource links on resilience and transportation.

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