

Developing Resilient Transportation by Mitigating and Modernizing Infrastructure and Expanding Mobility Options

Initiative Summary Statement:

Improve the resilience of transportation infrastructure through mitigation and modernization while expanding transportation options to improve livability.

Initiative Description:

Objective: The need to rebuild and further safeguard transportation infrastructure damaged by Hurricane Ian comes as the County is also experiencing an increase in population and community stress related to commuting. This initiative will advance projects promoting a regional transportation system that is able to withstand disaster and shock as well as accommodate a growing population, identifying key investments supporting social mobility options and reliable, protected infrastructure.

To move people throughout the region effectively, roadways, railways, road surfaces, street lighting, traffic signals, parking structures, curbs, and multi-use paths will need to be hardened, upgraded, and sometimes redesigned. Canal network and drainage improvements along with bridge rehabilitation, road surface repaving, traffic signal improvements, and additional resources for preventative maintenance will be key in hardening transportation infrastructure in the County.

In addition to projects expanding existing transportation infrastructure, this initiative will promote local stakeholders and planning experts exploring where social mobility options (e.g., vanpooling, e-bikes, park-and-ride) might be most appropriate and have the greatest impact, with consideration given to community differences. Increased options can help reduce the need for roadway expansions or new routes.

Need: Storm surge due to Hurricane Ian flooded large areas of the County and exposed transportation infrastructure to saltwater, hampering mobility and endangering some residents. As the region began to recover, many roads remained difficult to navigate for months due to the high number of downed traffic signs and damaged traffic signals.

The transportation system is also under stress from overuse. In the County, the average one-way commute time for all workers has increased from 21 minutes in 1990 to 28.6 minutes in 2021.

In addition, the needs of the local airports should be factored into efforts for the transportation sector as well as accounting for their role in economic and public safety interests of the region.

A resilient transportation system is able to withstand the impacts of disaster while also providing options that increase efficiency and alleviate stress on the system in a recovery environment.

Regional Approach:

Infrastructure

Across all areas of transportation infrastructure, Lee County and its municipalities will identify and prioritize key projects for the post-storm environment focusing on these key areas:

- Bridge rehabilitation or improvement and road surface repaving.
- Continued improvement of traffic infrastructure:
 - GIS locating, traffic sign hardening, signal mast arm hardening, signal detection hardening/loop replacement, and traffic signal cabinet security hardening are several ways to assist the entire region with hardening the existing infrastructure. Explore the possibility of amending Lee County standard specifications for sign installations to improve resilience.
- New drainage systems protecting residential areas for vulnerable populations.
- Better management of vegetation in key canals that impact drainage and contribute to roadway flooding.
- Coordinate a regional unified maintenance schedule for mitigation features that impact roadways that takes into account the varying standards and levels of maintenance required at the Federal, State, County, and Municipal levels.

Additionally, the Lee County Metropolitan Planning Organization, which conducts regional transportation planning that impacts State appropriations and actions, should develop a “resilience element,” that highlights and prioritizes projects that mitigate disaster risks.

Mobility Options

To incorporate alternative transportation modes into municipal transportation priorities will be identified across the Lee County area. An interjurisdictional approach to planning is essential and amendments to municipal Comprehensive Plans may be considered. The Lee County Metropolitan Planning Organization may be able to play a coordinating role in unifying varying interests.

The key elements to be addressed in the planning process include the following:

- Introduce a tiered street network structure (streets for vehicles, streets for people) based on urban, suburban, and rural characteristics that recognizes the tenets of complete streets as guiding principles.
- Continue to recognize the tenets of complete streets as guiding principles for transportation and capital expenditures decisions.
- Work with jurisdictions to prepare community-specific mobility plans to integrate all aspects of transportation form and function. Utilize regional case studies on mobility options to help jurisdictions determine pathways for desired options.

Impact: The repair of damaged infrastructure post-disaster creates an opportunity to rebuild a resilient transportation system that can withstand impacts due to coastal flooding, winds, and other hazards. To improve liability and access, the planning process should account for projected growth and include assessments of community transportation needs. The impact of providing safe and reliable transportation modalities and alternate methods of transportation would benefit the entire region before, during, and after catastrophic events.

Key Considerations:

- Consider completion of a holistic plan for transportation hardening, resilience, and strengthening of disaster related emergency road clearance.
- Consider study and assessment of future transportation needs with recommendations for resilient expansion.
- Consider lowering one-way commute times for workers. Providing additional transportation options may be a beneficial approach to commuting issues which has implications in both the housing and economic development sectors.
- Consider ways to incentivize increase in physical activity but also decrease bicycle, pedestrian, and vehicle fatalities.
- Consider ways to decrease vehicle miles traveled and increase driving affordability.
- Consider the Complete Streets model as an approach to plan, design, and build streets that enable safe access for all users.
- Continue to evaluate opportunities in emerging technology, like telemetry, which may mitigate impacts on current traffic control systems and could benefit the system for mobility. Should be weighed against cost, benefit, and risk analysis.

Co-Sponsoring Branches:

Infrastructure, Housing, Cultural Resources, Planning & Capacity, Economic Recovery, Education & Workforce, Health & Social Services

Stakeholders:

- County Departmental experts on parks, planning, transit, and transportation.
- Municipal departmental experts on public works, economic development, and transportation.
- Local port authority
- Florida Department of Transportation

Potential Funding Sources:

- United States Department of Energy
- Federal Highway Administration
- Federal Transit Administration
- National Center for Mobility Management
- United States Department of Transportation
- Florida Department of Transportation
- Florida Department of Environmental Protection
- Half Resilient Florida Grant Program
- Florida Sea Grant
- South Florida Rail Transit Authority