

*Stronger Better Broward*

# Infrastructure Hardening Plan

IHHCC – April 2, 2025

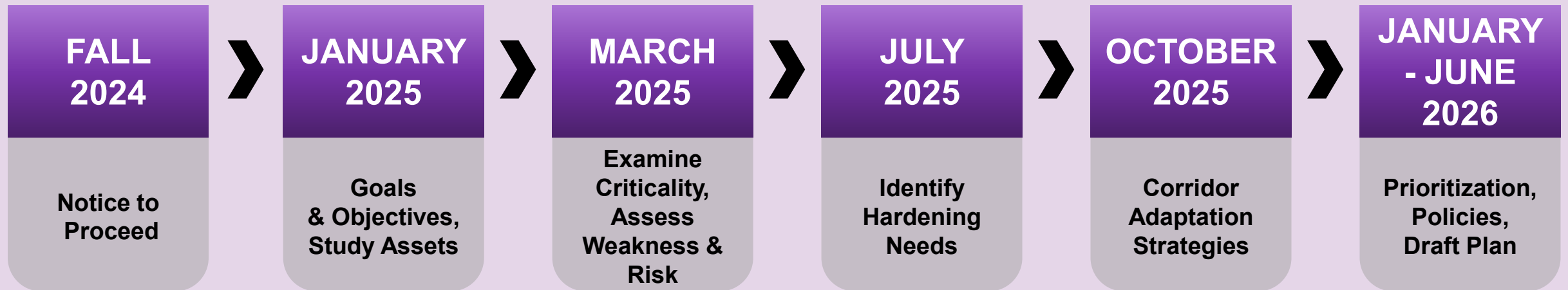
# Overview

- **What is Infrastructure Hardening?**
- **Project Schedule for Major Tasks**
- **Infrastructure Hardening Roadmap**
- **Proposed Goals and Objectives**
- **Stakeholder Engagement**
- **Study Overview**
  - **Critical Transportation Assets**
  - **High Priority Hazards**
- **Proposed Criticality Indicators to Assess**
  - **Functional Importance**
  - **Economic Significance**
  - **Community Consideration**








# Project Schedule for Major Tasks



# Infrastructure Hardening Plan Stakeholders

## Engagement Opportunities:

-  **BMPO Executive Team**
  - BMPO Leadership
  - Planning and Programming
-  **BMPO Technical Groups**
  - MTP Team brought in as the IHP Working Group
  - Infrastructure Hardening and Housing Committee
-  **External Stakeholders and the Public**
  - Florida Department of Transportation
  - Florida Department of Environmental Protection
  - South Florida Water Management District
  - Broward County
  - Municipal Partners (TAC)
  - South Florida Regional Transportation Authority

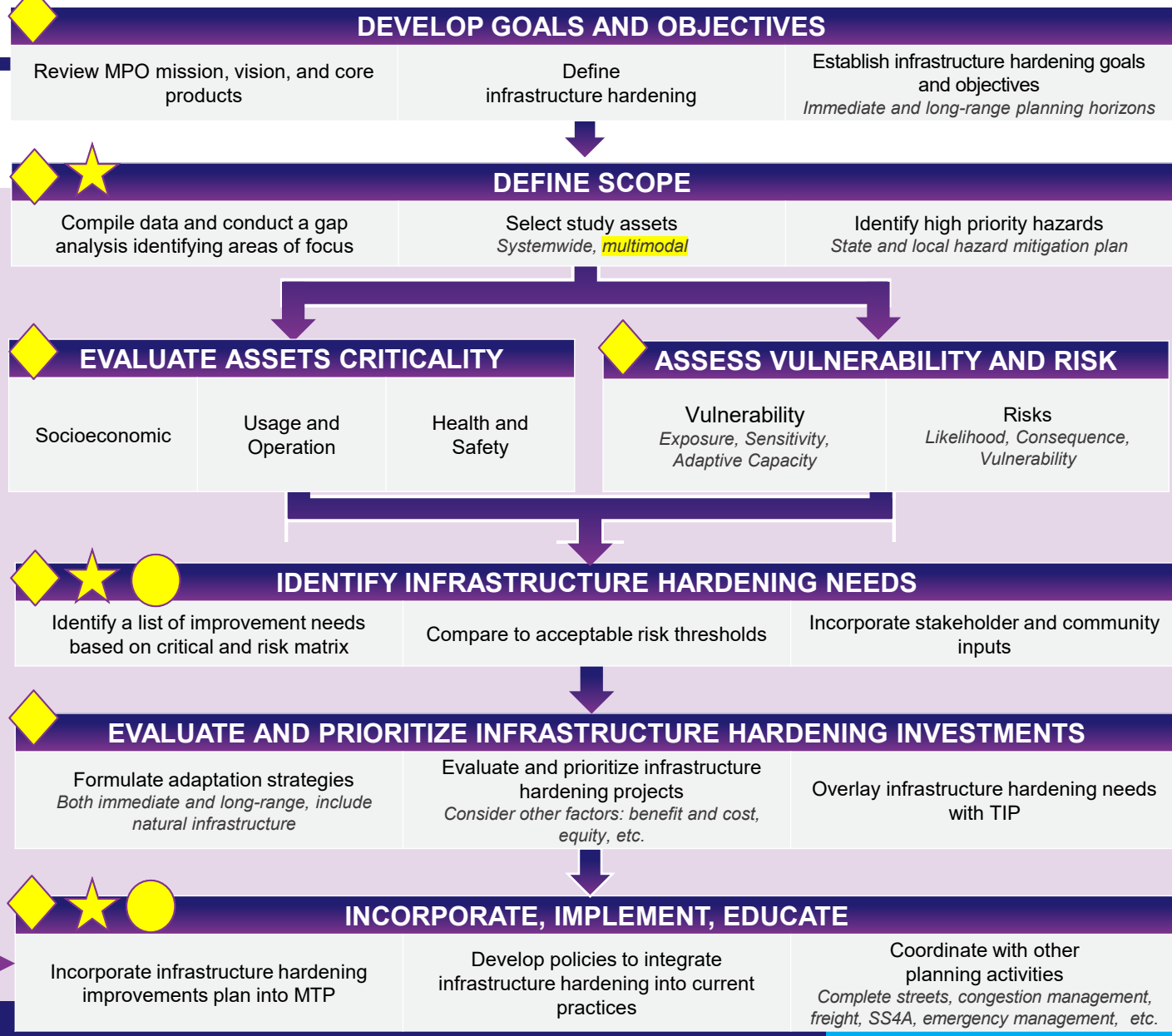
# Infrastructure Hardening Plan Roadmap

## Engagement:

-  **BMPO Executive Team**
-  **BMPO Technical Groups**
-  **External Stakeholders and the Public**

STAKEHOLDER ENGAGEMENT AND COMMUNICATION

MONITOR, EVALUATE, AND ADJUST



# Proposed Goals and Objectives

**IHP Goal 1: Maintain a Robust and Reliable Transportation Network that Allows Safe and Efficient Movement of People and Goods.**

## Objectives

- |     |   |
|-----|---|
| 1.1 | Assess the Weaknesses of and Identify the At-Risk Assets of the Transportation Infrastructure |
| 1.2 | Strengthen Weather Adaptation Strategies to Mitigate Disruption to the Transportation Network |
| 1.3 | Retrofit and Upgrade Transportation Infrastructure  |
| 1.4 | Promote Infrastructure Hardening in Critical Transportation Corridors                         |

**Does everyone agree with Goal 1?  
Any discussion or comments?**

# Proposed Goals and Objectives

**IHP Goal 2: Provide Safe and Lasting Transportation Connections and Choices to Support Economic Growth and Workforce Development.**

## Objectives

2.1	Promote Economic Efficiency and Job Creation
2.2	Raise Public Awareness on Infrastructure Hardening Plan
2.3	Reduce Disruptions to Commuting Patterns from Weather Events
2.4	Develop and Incorporate Economic Performance Metrics in Infrastructure Hardening

**Does everyone agree with Goal 2?  
Any discussion or comments?**

# Proposed Goals and Objectives

## IHP Goal 3: Build Strong Communities for Families

### Objectives

3.1	Encourage Regional Collaboration and Partnerships
3.2	Prioritize Infrastructure Hardening in Transportation Corridors
3.3	Strengthen Weather Adaptation Strategies for Transportation
3.4	Incorporate Livability Metrics in Infrastructure Hardening
3.5	Monitor and Adapt Infrastructure Hardening Plans over Time

**Does everyone agree with Goal 3?**

**Any discussion or comments?**

# Stakeholder Engagement

## Engagement will occur throughout IHP development:

1. Leverage existing data sources for IHP development
2. Capitalize on the existing BMPO MTP Team as the IHP Working Group
3. Utilize the Infrastructure Hardening and Housing Committee (IHHC) as the IHP Steering Committee
4. BMPO Technical Advisory Committee (TAC) will inform municipal partners of IHP progress



### Presentation to the Broward MPO Board

Final recommendations are presented for approval and decision-making.



### Executive Staff Discussion

Executive team refines recommendations and aligns them our plan goals.



### Staff Working Group, TAC, and IHHC Review

Present summarized feedback to the IHP Working Group, TAC, and IHHC for expert evaluations and recommendations.



### Data Compilation and Analysis

Organize and analyze stakeholder input for key themes and priorities.



### Stakeholder Engagement and Feedback Collection

Gather feedback from community stakeholders and experts.

# Stakeholder Engagement

## Engagement Tactics and Integration



### Development IHP Look and Stronger Better Broward

Create brand and name recognition for the community



### Summarize Feedback in section of Final IHP

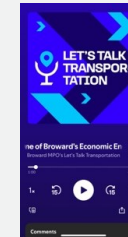
Survey results, comments, etc.

## Examples of BMPO Outreach Platforms



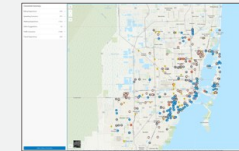
### Survey to Advisory Committee and Distribution through BMPO Mobility Monday

Can serve as a touchpoint during key project milestones



### Let's Talk Transportation Episode on IHP

Provides an opportunity to introduce a subject matter expert and provide local context



Category	Item	Status	Response
Survey	Survey results	Completed	Summary report
Comments	Comments received	In Progress	Response log
Podcast	Podcast episode	Published	Feedback received
Map	Map data	Updated	Engagement metrics

### Data Tracking & Response Log

Documented stakeholder engagement for the IHP and for any projects carrying into the 2055 MTP

# Stakeholder Engagement

Use the **2026 Safe Streets Summit** as an opportunity to showcase the draft IHP



# Transportation Assets

1

**Conduct Risk Assessments**



**Roads**



**Bridges**



**Rail\***

\*Limited FEC data available

2

**Leverage Risk Assessments of Roads and Bridges to Identify Infrastructure Hardening Needs**



**Sidewalks & Trails**



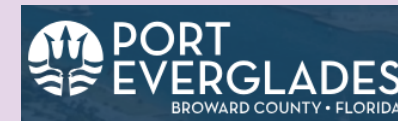
**Bike Lanes**



**Bus Routes**

3

**Reference Assessments Findings from Broward County's Resilience Plan and Port Everglades Master Plan**



**Seaport**



**Airports**



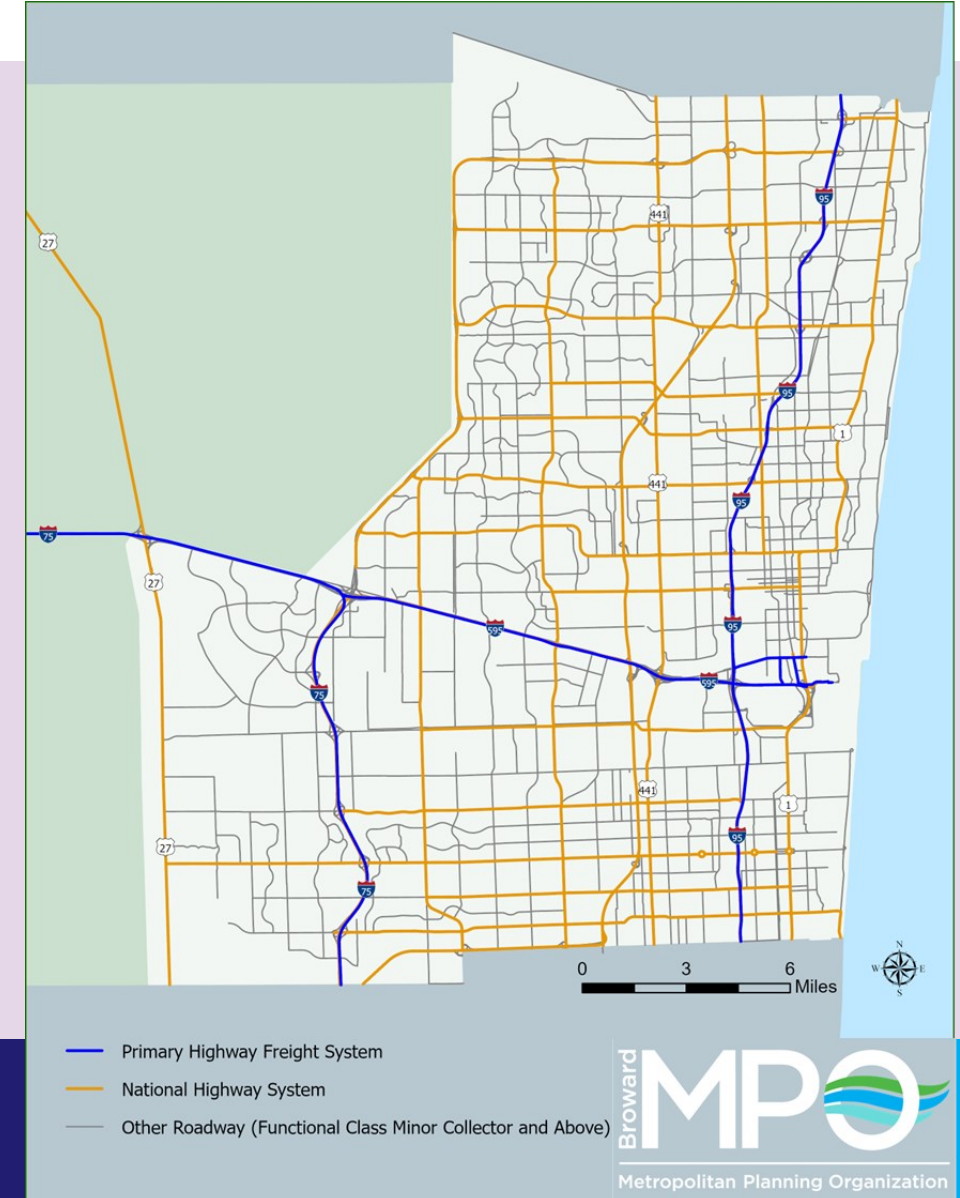
# Transportation Assets: Roadways

## Roadway

Analyze roadways with functional classification equal to or above minor collector

The network covers:

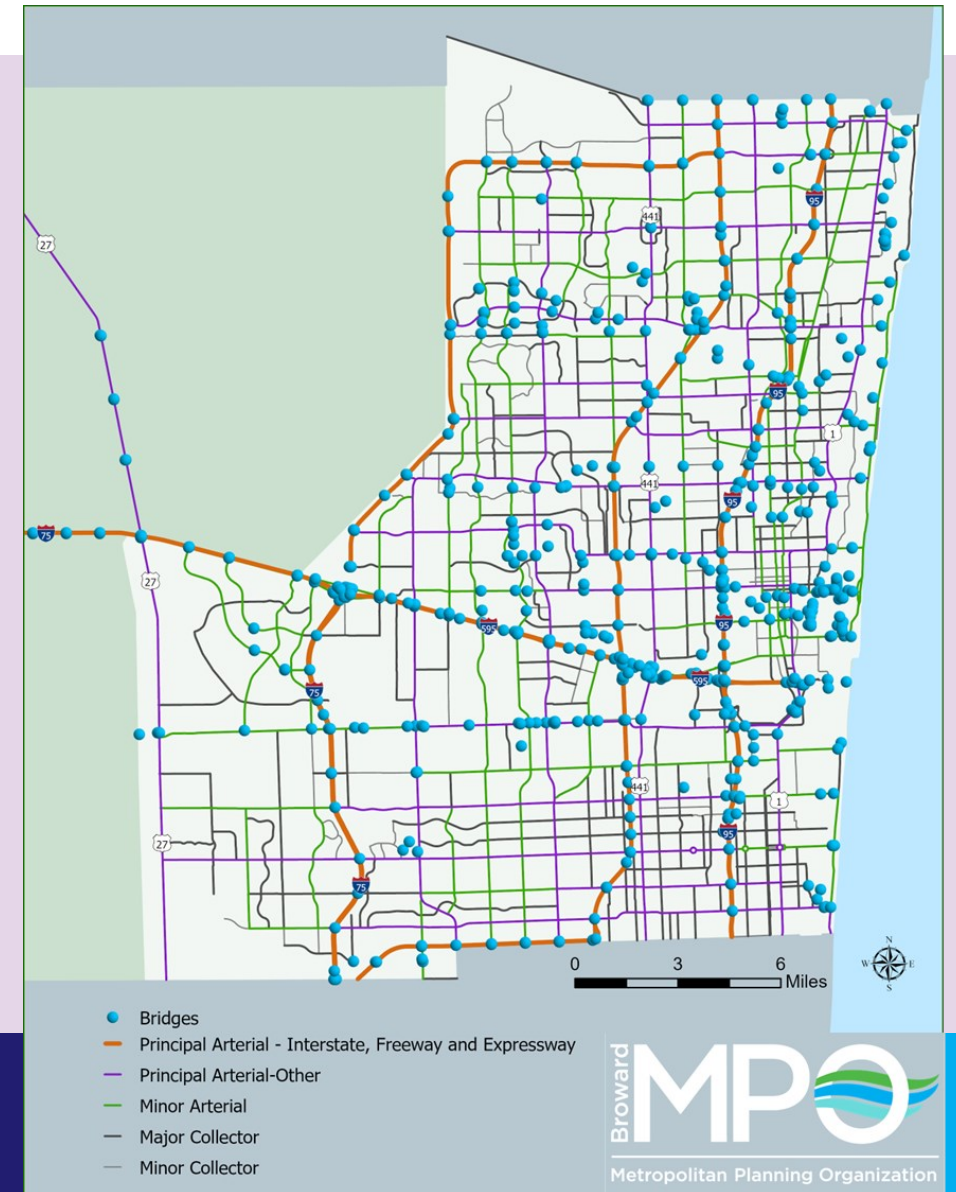
- National Highway System Roads
- Strategic Highway Network (STRAHNET)
- Primary Highway Freight System Roads
- Roads designated as Critical and Regionally Significant Assets by Florida Statutes.
- Evacuation Routes
- Broward MTP Resilience Assessment
- Local Roads



# Transportation Assets: Bridges

## Bridges

National Bridge Inventory (686)



# Transportation Assets: Rail

## Rail

SIS Railway  
STRACNET

### Rail Track Owners:

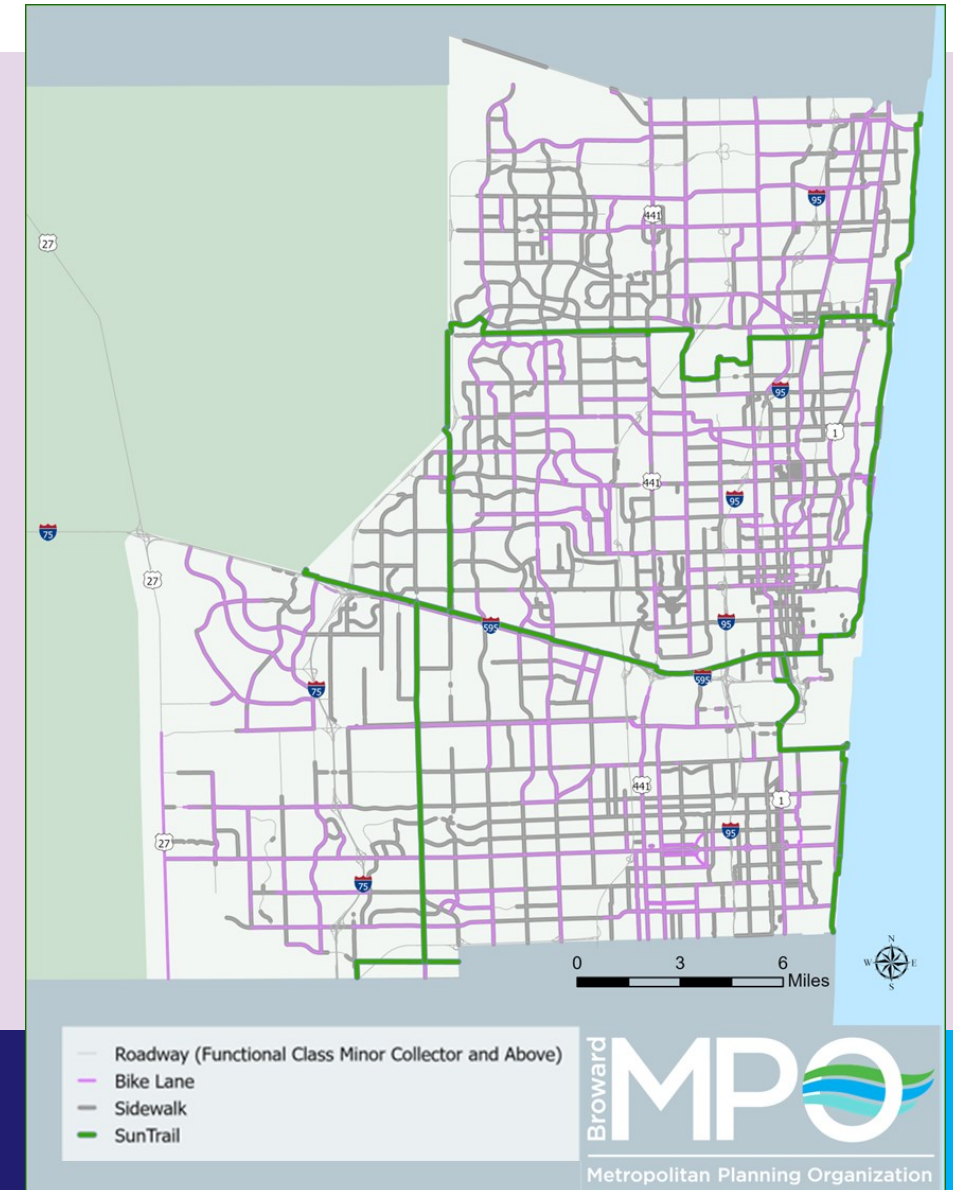
- CSX Transportation (CSXT)
- Florida East Coast Railways (FEC)
- South Florida Rail Corridor (SFRC)



# Transportation Assets: Bike & Ped

## Bicycle and Pedestrian Facilities

Bike lanes  
Sidewalks  
SunTrail

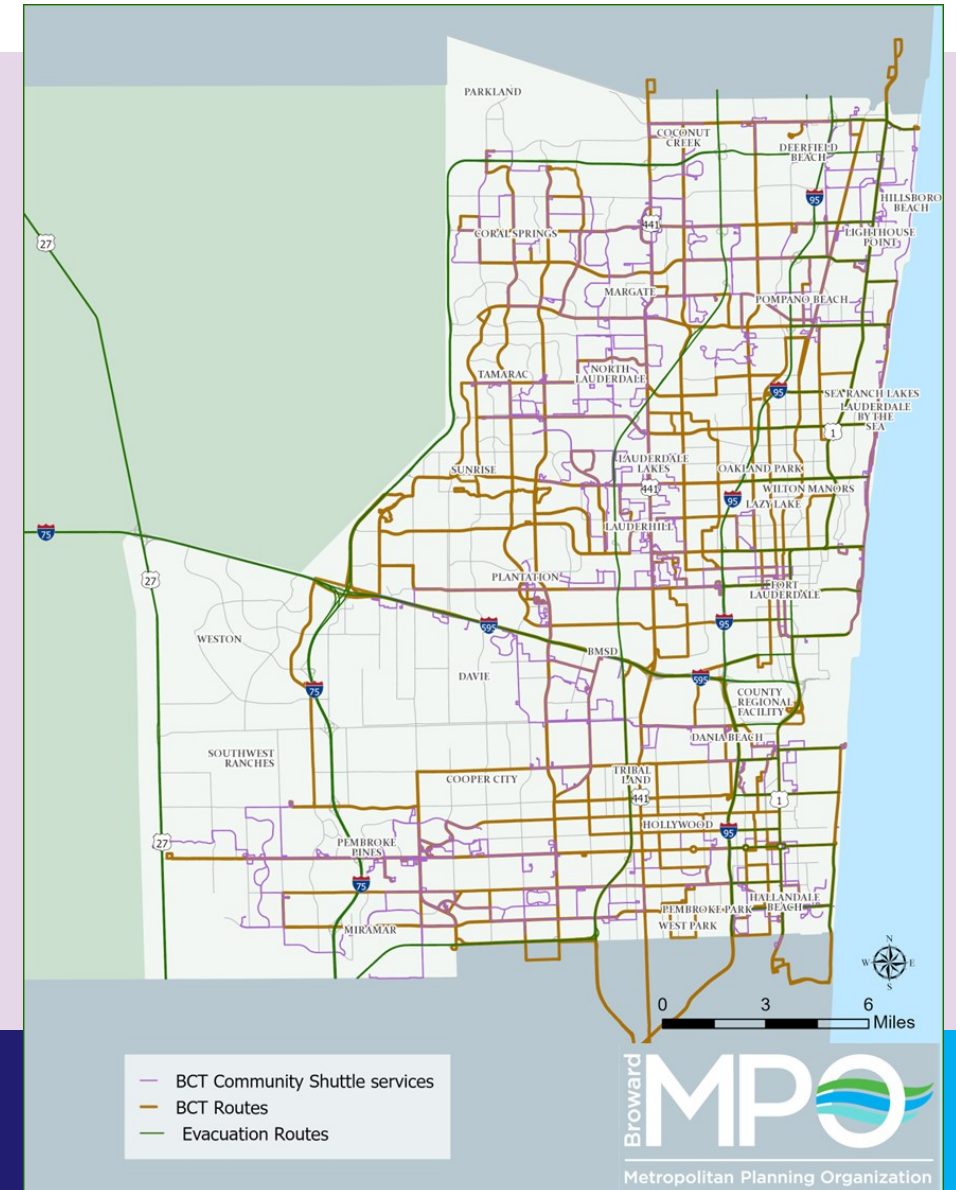


# Transportation Assets: Transit

## Transit

BCT Routes

BCT Community Shuttle Service



# Transportation Assets: Airports & Seaport

## Airports and Seaport

Fort Lauderdale-Hollywood International Airport

Fort Lauderdale Executive Airport

North Perry Airport

Pompano Airpark

Port Everglades



# Natural Hazards

*For Risk Assessment*

## Selection

The 2022 local mitigation plan identified high-risk hazards with a high likelihood of occurrence and a high impact on transportation assets.



Storm Surge



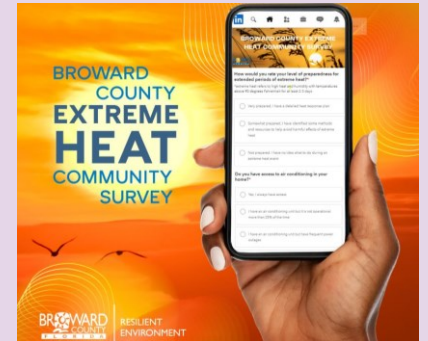
Flooding



Coastal Inundation



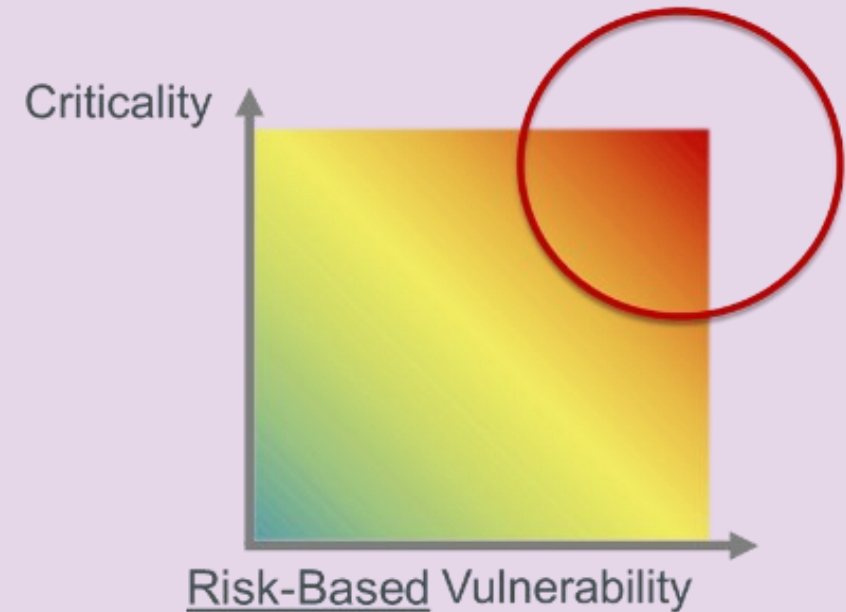
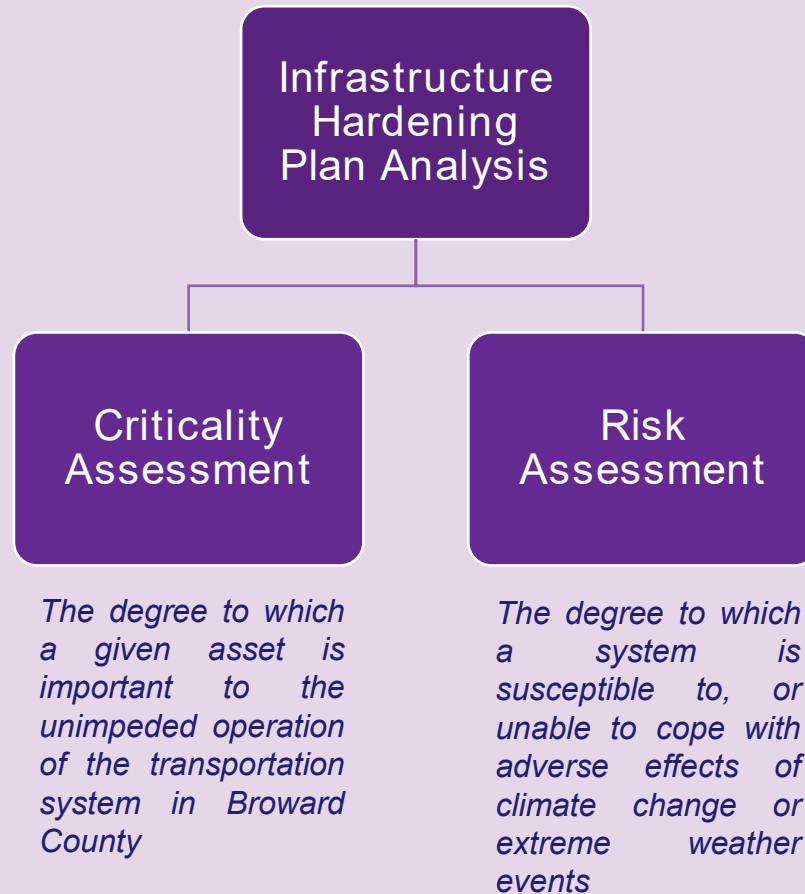
Future Groundwater  
Elevation



Extreme Heat

- **Consistent with the 2050 MTP**
- **Any additional suggestions?**

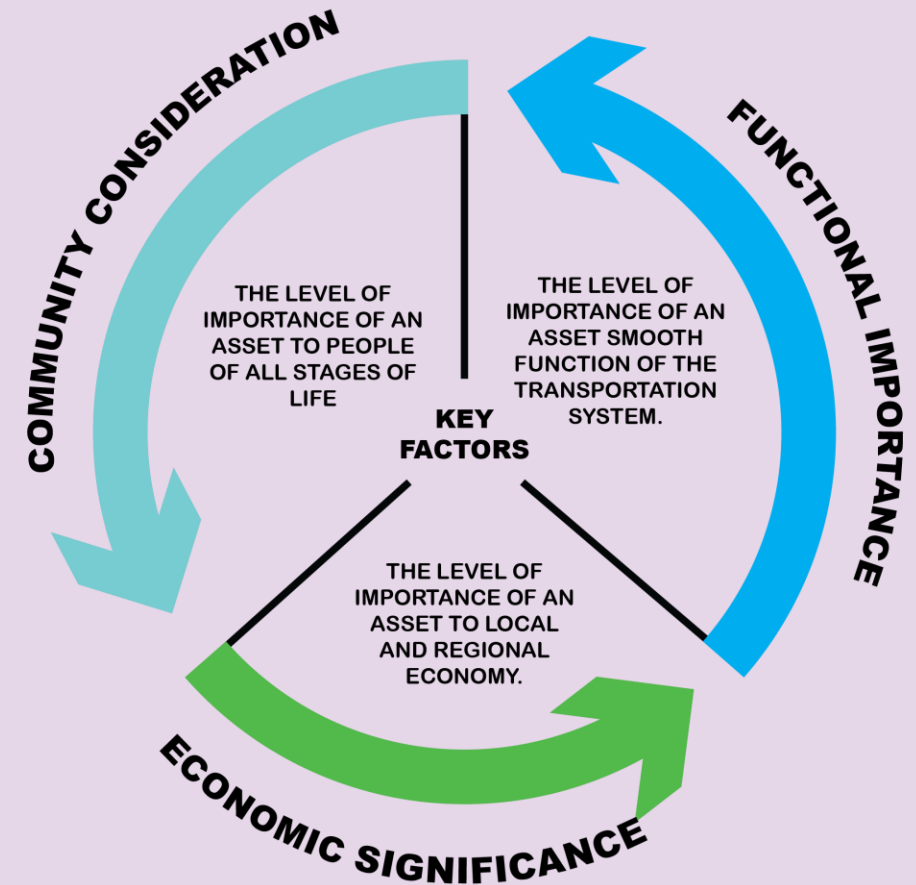
# Infrastructure Hardening Plan Analysis



# Proposed Criticality Indicators to Assess

**Criticality** is defined as the importance of an asset to the continued/seamless operation of the transportation system supporting people and communities to grow and thrive.

A **Criticality Assessment** is a systematic process for evaluating and prioritizing transportation assets based on their relative importance to ensure that investments are directed toward places where they are most urgently needed to maintain a resilient, efficient, and economically sustainable transportation network.



# Proposed Criticality Indicators to Assess

**The following components were considered in the criticality analysis:**

- **Functional Importance:** Essential transportation systems in the overall functioning of daily operations.
- **Economic Significance:** Regional economic activity.
- **Community Consideration:** Level of access and service required by local communities.

# Functional Importance

## Proposed Criticality Indicators to Assess

ASSET	DESCRIPTION
Airports	1-mile buffer zone to location of airports
Ports	1-mile buffer zone to location of marinas
Bus Stops	1-mile buffer zone to location of fixed route bus stops.
Evacuation Routes	1: Evacuation Routes, 0: No Evacuation Routes
Public Schools	1-mile buffer zone to location of public schools
Hospitals	1-mile buffer zone to location of major health facilities
Fire Stations	1-mile buffer zone to location of fire stations
Police Stations	1-mile buffer zone to location of police stations
Emergency Operations Center	1-mile buffer zone to location of EOCs
Pump Stations	1-mile buffer zone to location of Pump Stations
Average Annual Daily Traffic	<28500 28501 – 118000 >118001
Functional Classifications	Local, Major and Minor Collector Principal Arterial, Minor Arterial Interstate, Expressway+

# Functional Importance

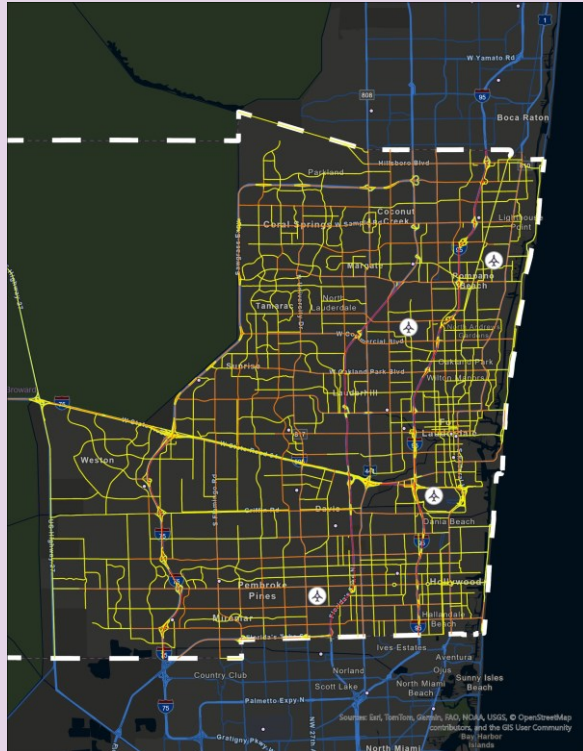
Proposed Criticality Indicators to Assess

- **Are there additional indicators that we should consider for functional importance?**

# Proposed Criticality Indicators to Assess: Examples

## AVERAGE ANNUAL DAILY TRAFFIC

INDICATOR: <28500  
 28501 – 118000  
 >118001



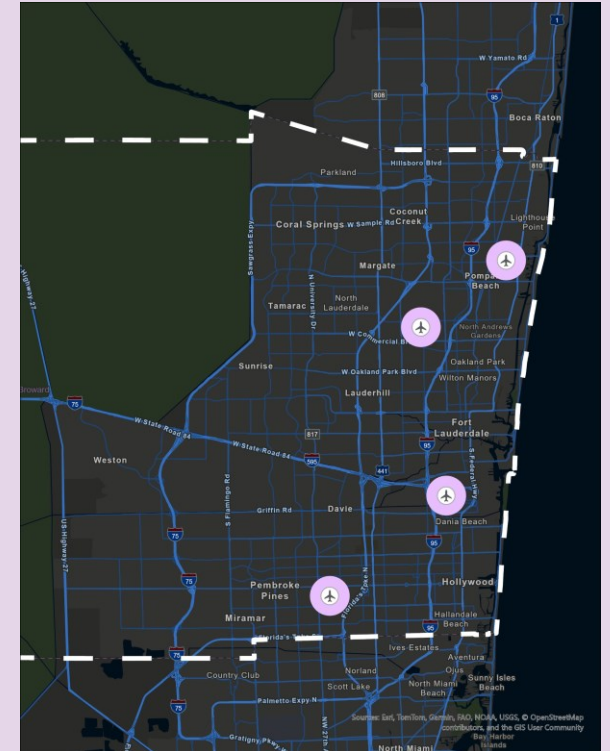
## Evacuation Routes

1: Evacuation Routes,  
 0: Not Evacuation Routes



## Airports

1 Mile Buffer



# Economic Significance

## Proposed Criticality Indicators to Assess

ASSET	DESCRIPTION
Tourism	Tourism-related jobs per census block group
Activity Centers	Number of jobs per census block group

# Economic Significance

## Proposed Criticality Indicators to Assess

- **Are there additional indicators that we should consider for economic significance?**

# Community Consideration

## Proposed Criticality Indicators to Assess

ASSET	DESCRIPTION
POPULATION DENSITY	Tract wise indicator of the population dispersion around the county.
AGE	Age under 18 years and over 65 years to Total Population Percentage
Household Housing Costs	Households with high-cost burdens for housing.
Household Transportation Costs	Households with high-cost burden for transportation and access to jobs.

# Community Consideration

## Proposed Criticality Indicators to Assess

- **Are there additional indicators that we should consider for community consideration?**

# Additional Consideration

- Are there any additional indicators that need to be considered outside of FUNCTIONAL, ECONOMIC, and COMMUNITY?
- Is there anything you feel needs to be included that you have not seen?