Broward MPO
Metropolitan Planning Organization

TRANSPORTATION RESILIENCY FRAMEWORK STUDY

Technical Working Group Meeting #2

June 29, 2021

BrowardMPO.org

Agenda

1. **Welcome and introductions**
2. **Overview of the framework**
3. **Presentation on Task 2:**
   Data collection and background review
4. **What's next**

What is this study?

Study will …

- Develop a programmatic framework to address vulnerabilities in the transportation network
- Create a repeatable process that takes a larger and more holistic approach to resiliency
- Establish a general purpose and need statement for future studies

Study will NOT …

- Solve the climate crisis

Study Process Map

TASK 2.0 **DATA COLLECTION** AND BACKGROUND REVIEW

TASK 3.0 **METHODS** OF ANALYSIS

TASK 4.0 **STAKEHOLDER** OUTREACH

TASK 5.0 **COST ASSESSMENT** AND PLANS

TASK 6.0 **FINAL** REPORT

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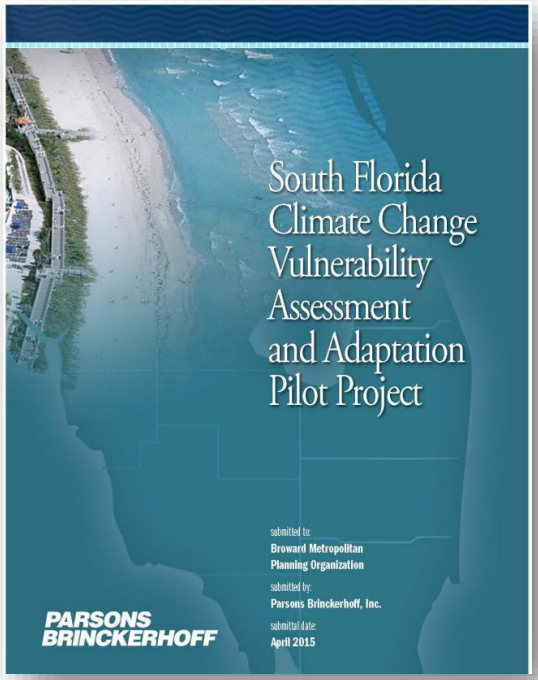
Study Process Map

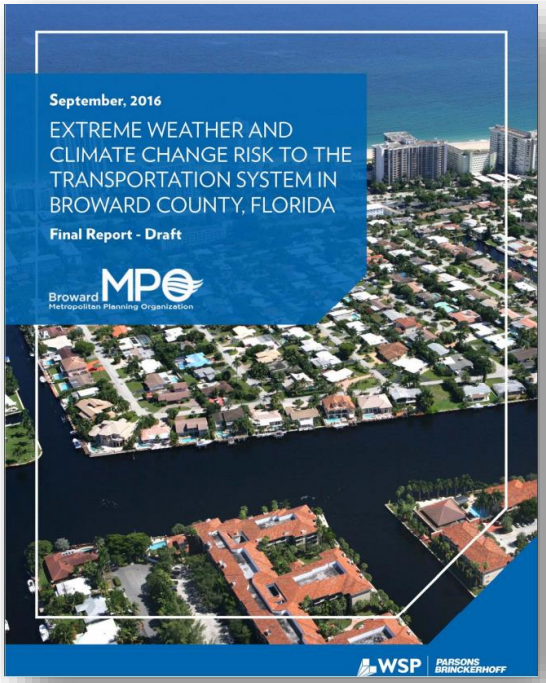
TASK 2.0

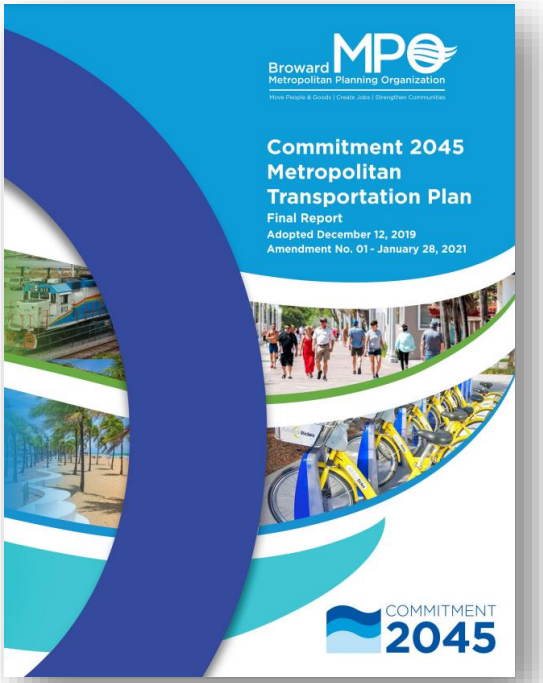
DATA COLLECTION AND BACKGROUND REVIEW

2.1 Review Existing Plans
2.2 Develop Resiliency Themes
2.3 Case Studies, Lessons Learned, Best Practices
2.4 Data Review and Existing Conditions
2.5 Regulatory, Permitting, and Coordination
2.6 Gap Analysis

Task 2.1 - Review Existing MPO Plans, Assessments, and GIS Models







South Florida Climate Change Vulnerability & Adaptation Pilot Project (2015)

PURPOSE

Conduct climate change and vulnerability assessments of transportation infrastructure in Broward, Monroe, Miami-Dade, and Palm Beach Counties.

SIGNIFICANCE

Identified high-level effects of climate change impacts to the transportation network (four-county region).

STRESSORS

- Sea Level Rise
- Storm Surge Flooding
- Precipitation Induced Flooding

METHODOLOGY

Application of the FHWA Climate Change and Extreme Weather Vulnerability Assessment Framework.

OUTCOME

Identified road and passenger rail segments considered most vulnerable to climate change.

EVALUATION

In order to highlight the importance of potential climate change risks, a more directed statement should be included in transportation plans.

Extreme Weather & Climate Change Risk to the Transportation System in Broward County (2016)

PURPOSE

Determine the long-term risks to transportation infrastructure from climate change in Broward County.

SIGNIFICANCE

Define at a finer level of detail, the long-term effects of climate change and what it means to the Transportation system in Broward County.

STRESSORS

- Temperature Change*
- Precipitation
- Sea Level Rise
- Storm Surge

METHODOLOGY

Apply available information towards an effort to refine the understanding of future risks to a level where decisions can be made on long term investments with an understanding of the risks.

OUTCOME

Recommendations for a risk-based framework to incorporate climate change into systemwide decision making.

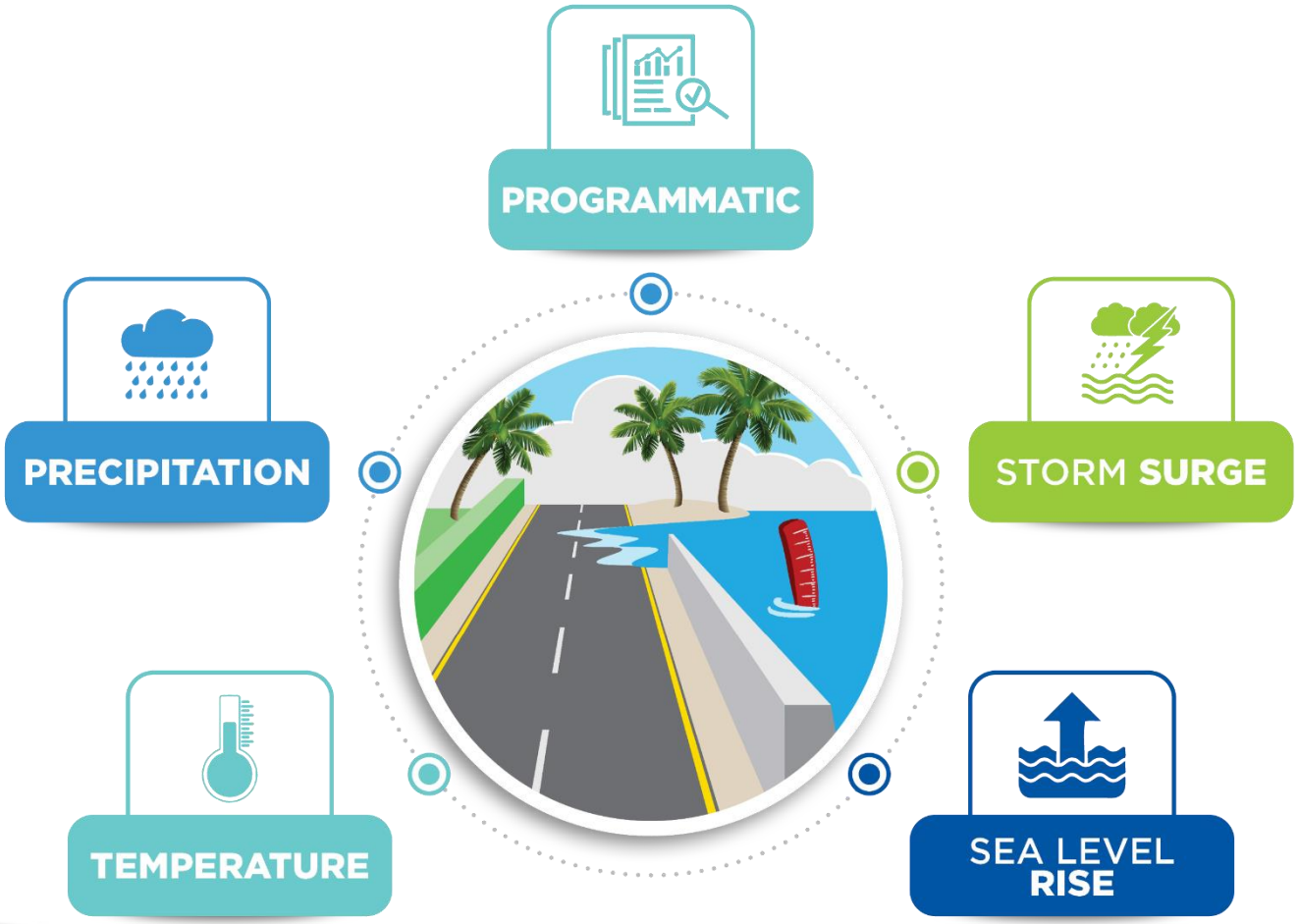
EVALUATION

This method is a powerful tool to help guide decisions for facility design.

1. E Las Olas Blvd from US-1/SR-5 to SR-A1A
2. US-1/SR-5 from E Las Olas Blvd to SR-736/Davie Blvd
3. US-1/SR-5 from SR-842/Broward Blvd to E Las Olas Blvd
4. Johnson St from US-1/SR-5 to N 14th Ave
5. SR-820/Hollywood Blvd from US-1/SR-5 to SR-A1A
6. SR-858/Hallandale Beach Blvd from US-1/SR-5 to SR-A1A
7. SR-A1A from S of Arizona St to SR-858/Hallandale Beach Blvd
8. US-1/SR-5 from SR-824/Pembroke Rd to SR-858/Hallandale Beach Blvd

2045 MTP

2.2 - Resiliency Themes (Stressors)



2.3 - Case Study, Lessons Learned, and Best Practices

Selection Criteria

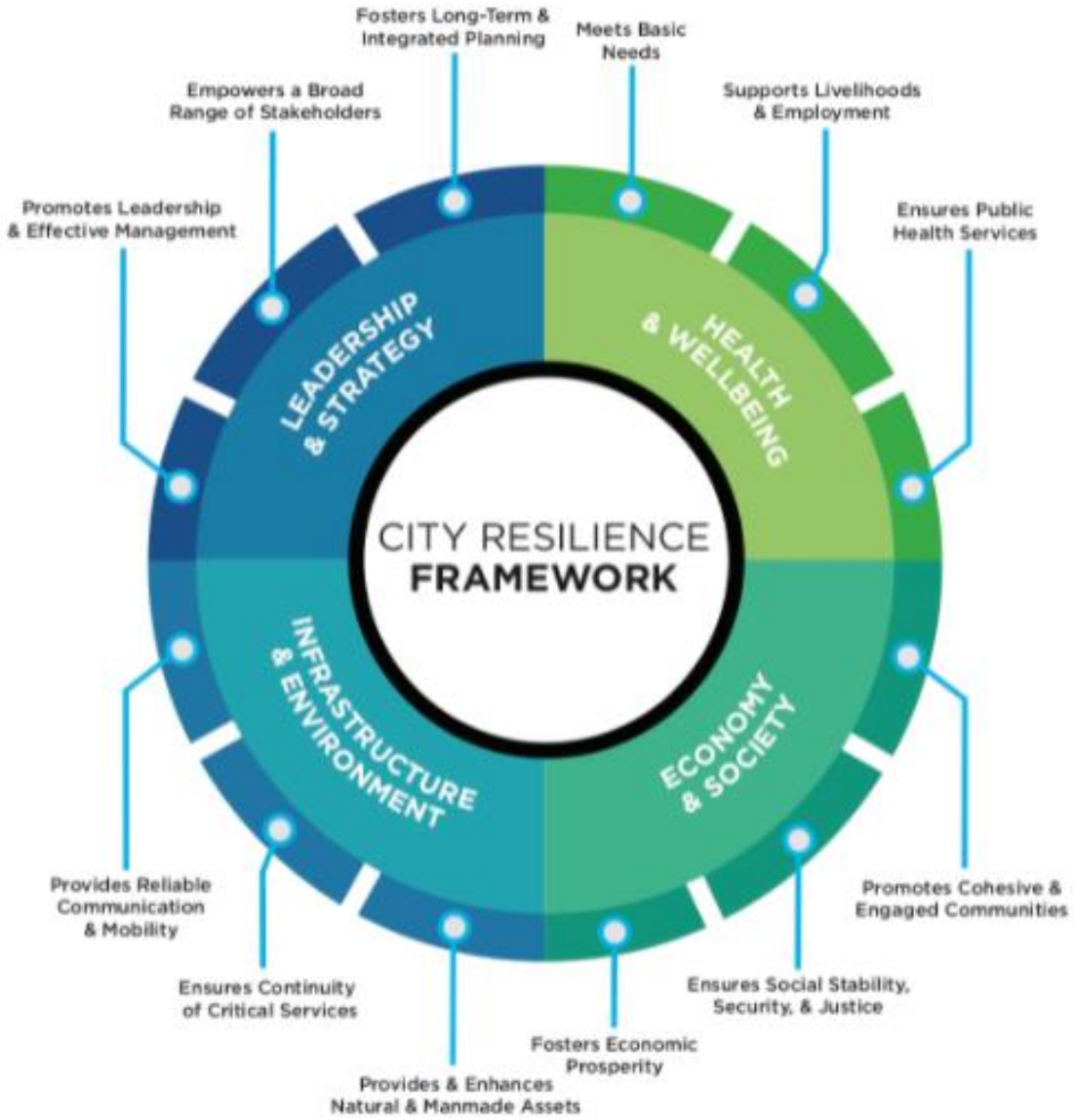
- Waterfront/ Water Dependent
- Similar System Shocks/Stressors
- Demonstrated Will to Address the Issues

New Orleans, LA

Houston-Galveston, TX

Norfolk, VA

Case Study Summary: 100 Resilient City Framework



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New Orleans, LA

https://www.enterprisecommunity.org/blog/new-orleans-resilience-partnerships

MAIN STREET RESILIENCE PLAN

- Develop a shared definition
- Create a measurable and actionable methodology
- Apply methodology to 6 corridors in the city
- Develop how-to guides

Case Study Summary: New Orleans

PURPOSE

Target public and private investment for long-term economic and physical recovery in the event of natural or man-made adversity.

SIGNIFICANCE

Identifies recommendations for improving resilience by developing a shared definition, create a measurable and actionable methodology, applying the methodology, and developing "How-to guides"

STRESSORS

Shocks - short and high in intensity

- Floods, Hurricanes, Extreme Heat/Cold

Stressors - longer in duration and a lower intensity.

- Land Subsidence, Drought

METHODOLOGY

Identify a comprehensive set of shocks and stressors to develop a robust assessment specific to the selected corridors.

OUTCOME

The project identified 6 corridor specific plans, based on the shocks/stressor of each.

EVALUATION

This plan helps to link corridors to key plans, policies, and priorities by creating a pathway for resources as well as leverage economic and community development.

Case Study Summary: New Orleans

Maximum allowable building heights under current zoning regulations and corridor elevations
Source: City of New Orleans Comprehensive Zoning Ordinance, 2015; Building survey, 2015

Norfolk, VA

https://www.cbsnews.com/news/king-tides-using-an-app-to-measure-rising-sea-levels/

Norfolk Resiliency Strategy

- Design the coastal community of the future
- Create economic opportunity
- Advance initiatives to connect communities

Case Study Summary: Norfolk

PURPOSE

To make Norfolk more resilient to the physical, social, and economic challenges of the twenty-first century.

SIGNIFICANCE

The area is home to the largest naval station in the world, the third largest port on the East Coast, and NATO's Allied Command.

STRESSORS

- Sea level rise
- Subsidence
- More frequent storms
- Increasing flood risk
- Poverty

METHODOLOGY

The development of Norfolk's Resilience Strategy is based on eight core guiding
tenets or values

OUTCOME

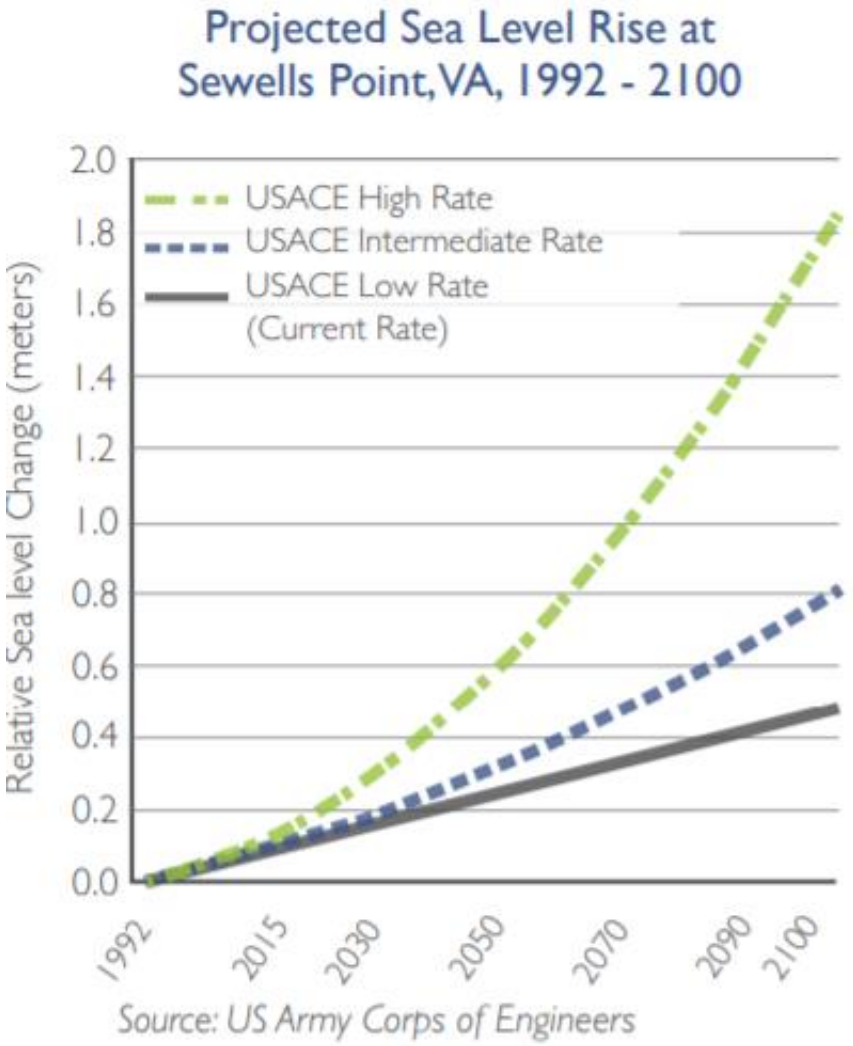
Design the coastal community of the future, Create economic opportunity Advance initiatives to connect communities, deconcentrate poverty, and strengthen neighborhoods.

EVALUATION

The creation of Norfolk's formal resilience strategy has helped raise awareness around the Hampton Roads region of the overall practice and value of city resilience planning.

Case Study Summary: Norfolk

"The strategy developed for Norfolk combines rain gardens, cisterns, living shorelines, marshes, streams, and berms to create a system that works together to manage sea level rise and precipitation flooding in the city."



Houston, TX

https://projects.propublica.org/houston-cypress/

2020 Resilient Houston

- Integrate green stormwater infrastructure into Houston's' built environment
- Equitably enhance Complete Streets implementation
- Advance a more modern building code & standards

Case Study Summary: Houston

PURPOSE

Create a framework to help the people, places, and systems be safer and stronger in order to support the city.

SIGNIFICANCE

Integrate green stormwater infrastructure solutions and codify resilient building standards

STRESSORS

- Tropical Weather
- Flooding
- Increased heat
- Poor air quality

METHODOLOGY

Frames five key Visions for Houston's future and organizes Actions to achieve them at five scales.

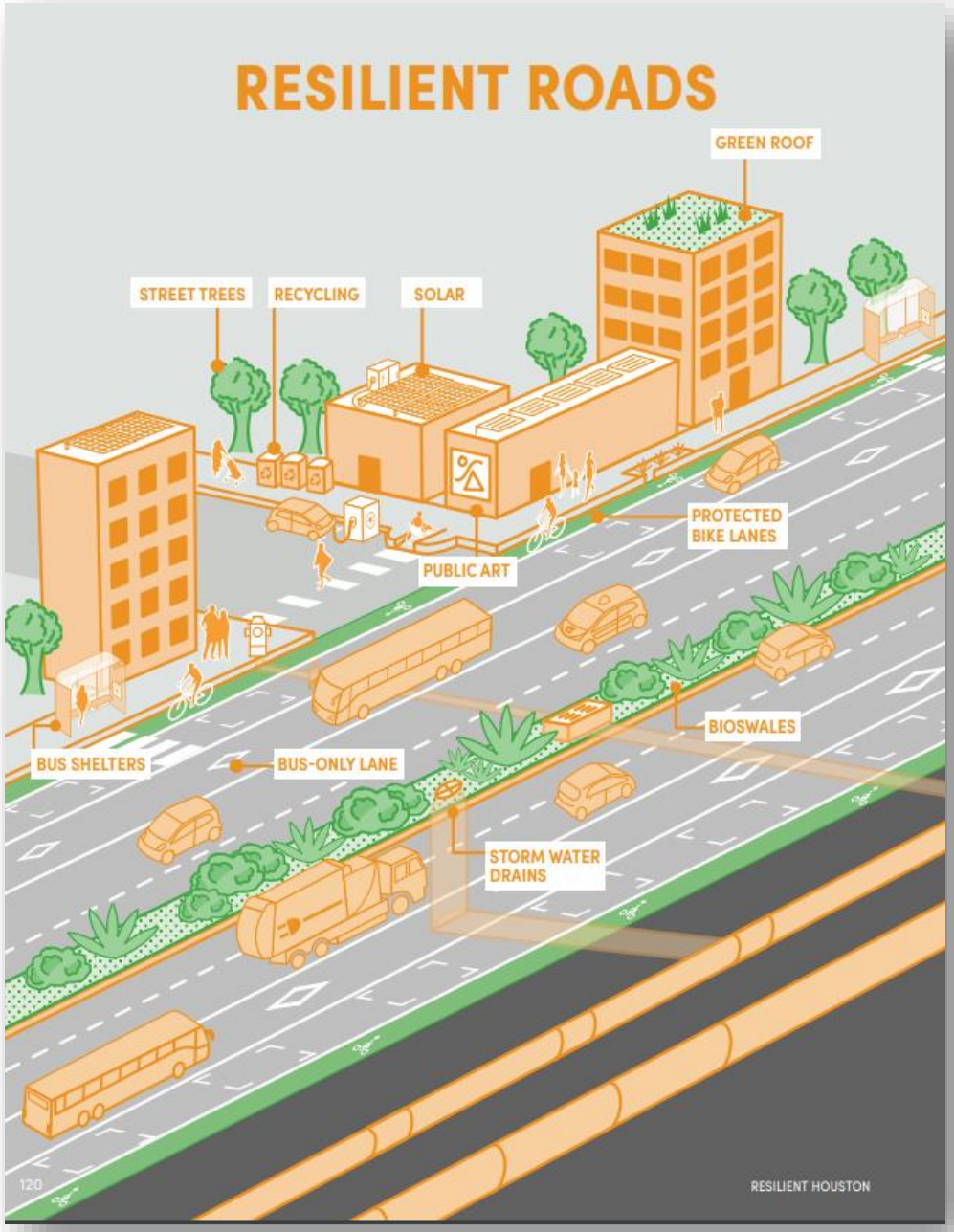
OUTCOME

Links existing efforts with new ones that will collectively work to protect Houston against future disasters

EVALUATION

After one year of implementation out of 62 Prioritized Actions, 56 Actions are in progress, 5 Actions are paused or haven't started and 1 Action is complete.

Case Study Summary: Houston



- Build resilient roads.
- Explore adding a “dig once” policy to existing street cut requirements.
- Coordinate complete streets investments with Complete Communities.

2.4 - Data Review and Existing Conditions

		BRIDGE DATA	DRAINAGE	ECONOMIC IMPACT	ENVIRONMENTAL JUSTICE	EXISTING NAVD	FUTURE CONDITIONS ELEVEATION MAP	LAND USE AND ZONING	LIDAR	NEIGHBORHOODS	NATURAL RESOURCES	RIGHT-OF-WAY	SEAWALL	STORMWATER	UTILITIES	WETLAND
CITY PARTNERS	Fort Lauderdale		X					X	X	X	X			X	X	
	Hollywood		X					X		X	X			X	X	X
	Hallandale Beach		X											X	X	
AGENCY PARTNERS	Broward County						X									
	FDOT	X	X									X				
	SFWMD															
	FIU															
MPO	Broward MPO	X		X	X		X	X				X				

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2.5 - Regulatory, Approvals, and Coordination

FDOT –

No local approvals required

Coordinate with local entities (Electronic Review Comment System)
Multimodal Scoping Review

County –

May need FDOT approval (based on roadway ownership)

No local approvals required
Coordinate with local entities

Municipality –

Requires County and FDOT approval (based on ownership)

2.6 - Gap Analysis

DATA

POLICY

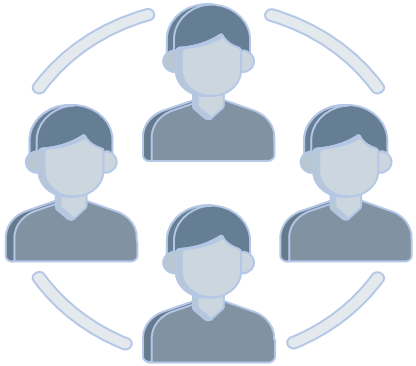
Anything missing on a programmatic level?

Next Steps

TASK 2.0 **DATA COLLECTION AND BACKGROUND REVIEW**

TASK 3.0 **METHODS OF ANALYSIS**

TWG 3



Resiliency and Attainable Housing Committee

Draft Vision

***Review policies, procedures, ordinances, and land development regulations and recommend actions or incentives to encourage or facilitate attainable housing and transportation, and improve Broward region's resilience*.**

The Committee may:

- Propose policy recommendations.
- Seek advice from public & private subject matter experts.
- Encourage public participation.
- Consider recent work & recommendations of the MPO, Broward County, FDOT, Municipal Partners, and other partners to the MPO.

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Discussion

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