



Advisory Services  
Program



Southeast Florida/  
Caribbean

# Building a Resilient Fort Lauderdale: Developing Criteria for Road Elevation

**ADVISORY SERVICES PANEL**

FORT LAUDERDALE, FLORIDA

THURSDAY, MARCH 14, 2024

## THE MISSION OF THE URBAN LAND INSTITUTE

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Shape the future of the built environment for transformative impact in communities worldwide

### MISSION COMMITMENTS

**CONNECT** active, passionate, diverse members through the foremost global network of interdisciplinary professionals

**INSPIRE** best practices for equitable and sustainable land use through content, education, convening, mentoring, and knowledge sharing

**LEAD** in solving community and real estate challenges through applied collective global experience and philanthropic engagement





**For 75 years, ULI's Advisory Services Program (ASP) has matched the brightest minds in real estate with the toughest problems facing our cities.**



Pairing ULI's innovative developers, planners, economists, architects and designers with local leaders, the program tackles crises that cities face by bringing together a select team of experts in their fields.



It's the most tangible manifestation of the mission of the Urban Land Institute: to shape the future of the built environment for transformative impact in communities worldwide.

ASP panels are called upon to recommend infrastructure changes, develop rebuilding strategies and proactively identify opportunities for better, healthier life in cities around the world.

In partnership with over 2,000 ULI members over 75 years, ASP has:

- Solved land use and real estate issues for **more than 700 communities**
- Made recommendations that improved over **400 downtown areas**
- Made a transformative impact in **over 21 countries**
- Improved over **100,000 acres of parkland**

# Elements of a Tested Process

Each Advisory Services panel utilizes a robust process to lay the foundation for solving problems and fostering innovation.

## **Listening/Learning**

- Sponsor Briefing
- Site tour
- Stakeholder interviews

## **Developing Recommendations**

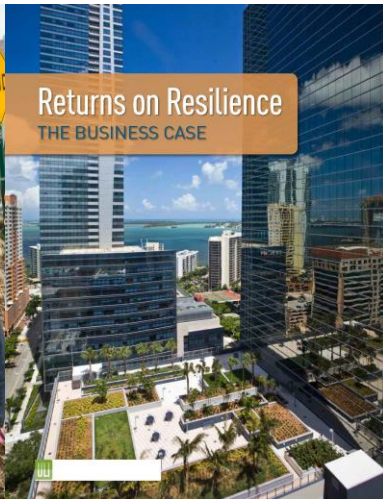
- Guided panelist deliberation
- Deliverable production

## **Offering Expert Solutions**

- Presentation of recommendations
- Final report/work product

# Urban Resilience at ULI

- Help buildings, communities, and cities be more resilient to the impacts of extreme weather
- Reduce vulnerability, while harnessing co-benefits to strengthen cities overall
- Research, convenings, technical assistance in partnership with ULI members and local ULI District Council network



# Resilience-Focused Technical Assistance

- Anchorage, Alaska
- Boston, Massachusetts
- Brooklyn, New York
- Cape Coral, Florida
- Chicago, Illinois
- Dallas, Texas
- Duluth, Minnesota
- El Paso, Texas
- Everett, Washington
- Evergreen, Colorado
- Fort Lauderdale, Florida
- Houston, Texas
- Jersey Shore, New Jersey
- Lafayette, Louisiana
- Los Angeles, California
- Miami-Dade County, Florida
- Nashville-Davidson County, Tennessee
- New Orleans, Louisiana
- New York, New York
- Norfolk, Virginia
- Northern Colorado, Colorado
- Philadelphia, Pennsylvania
- Portland, Maine
- San Diego, California
- Seattle, Washington
- St. Petersburg, Florida
- St. Tammany Parish, Louisiana
- Superior and Louisville, Colorado
- Tampa Bay, Florida
- Toa Baja, Puerto Rico



# THANK YOU TO OUR SPONSOR



**CITY OF FORT LAUDERDALE**



# THANK YOU, STAKEHOLDERS

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# Our Assignment

- Assess the impact of sea level rise on roadways
- Recommend criteria/policies to equitably guide selection of city roadways for elevation
- Guide how to balance road elevation requirements with investments in other city districts
- Discuss how the city can address roadway 'harmonization' and project funding

# ULI Panelists and Staff



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**ULI SE Florida/Caribbean:**  
**Julie Medley**  
*Executive Director*

**Mallory Barker**  
*Manager*

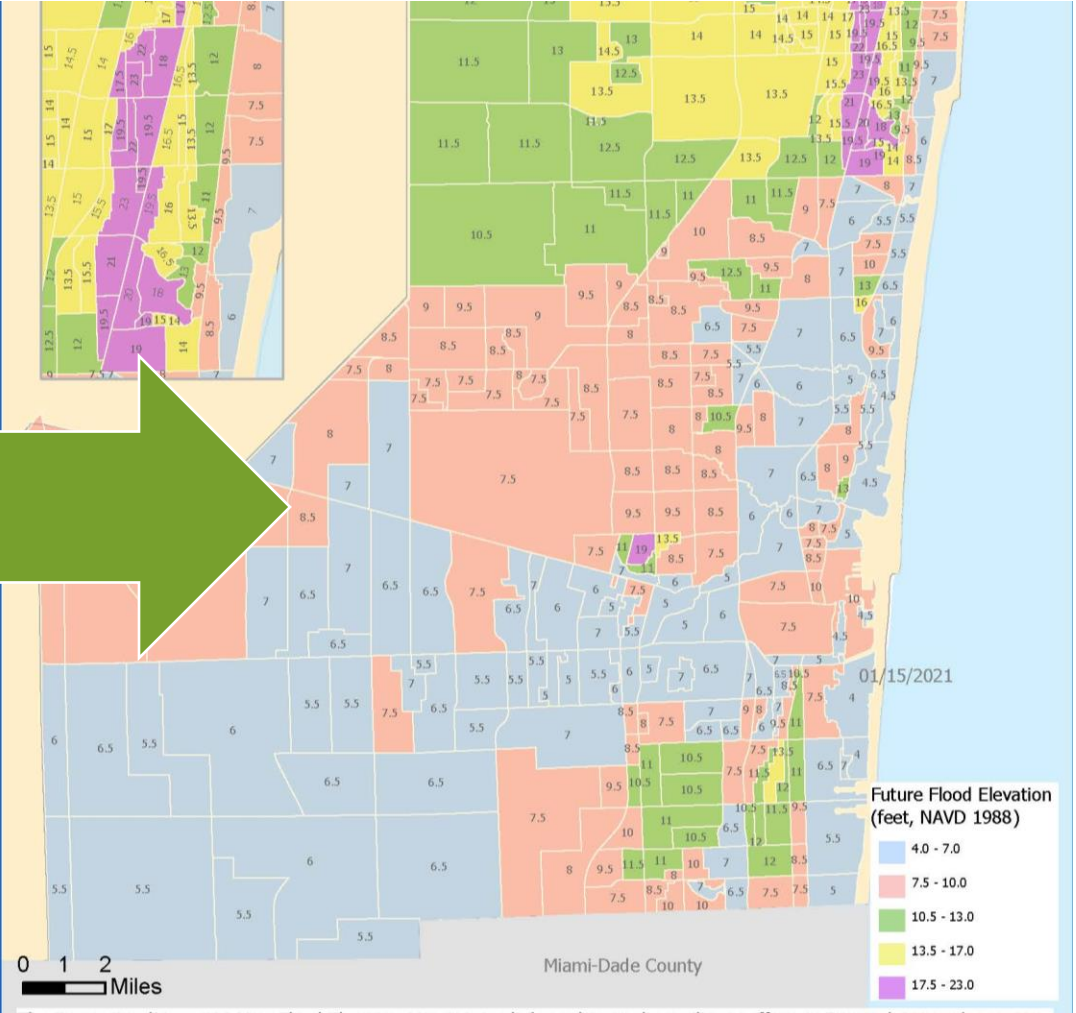
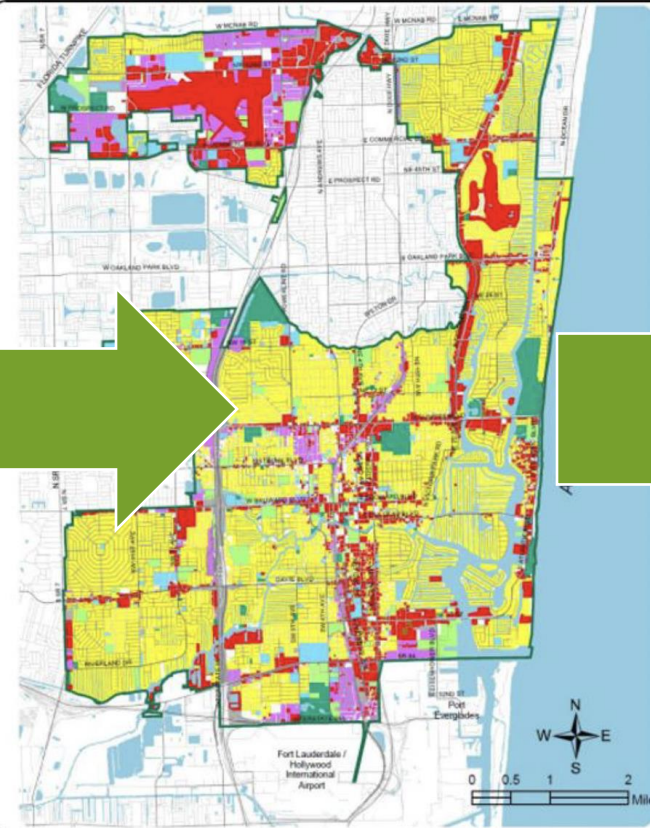
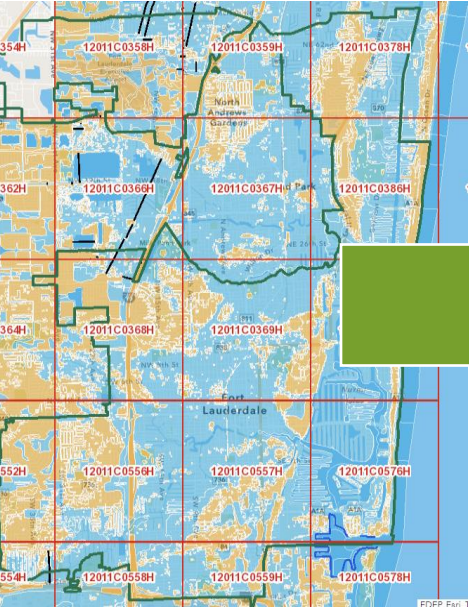
**ULI Panel Advisors:**  
**Thomas K. Ruppert**  
*Asst. Provost, Coastal Resilience and Dir., VA  
Coastal Resilience Collab. at William & Mary*

**Anthony M. Graziano, MAI, CRE**  
*CEO, Integra Realty Resources*

A photograph of a city skyline, likely Miami, viewed from across a body of water. The skyline features several tall, modern skyscrapers with glass facades. In the foreground, there are palm trees and a marina with several boats, including a large white yacht on the right. The sky is blue with scattered white clouds. The text "What is the Problem?" is overlaid in white, centered in the image.

# What is the Problem?

# Taking a Bigger View



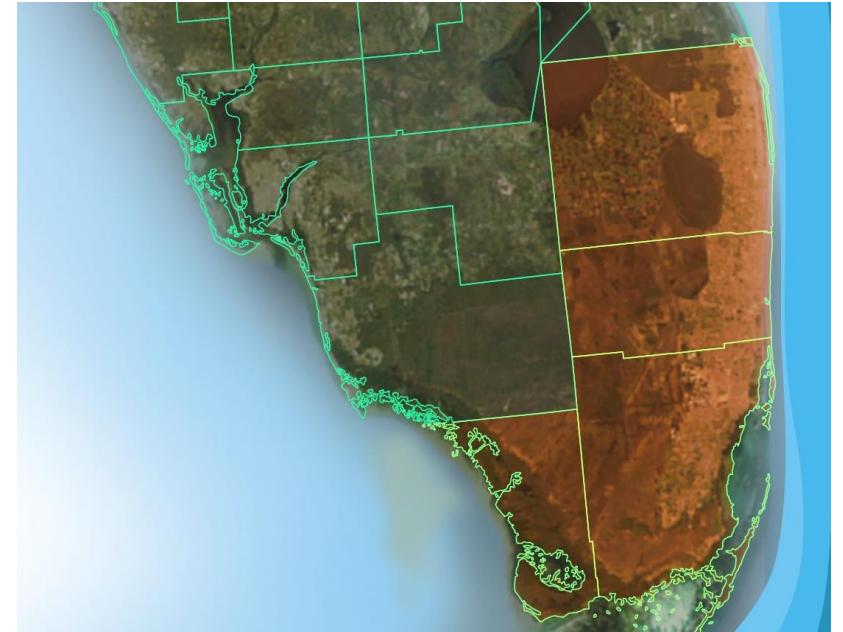
# Challenges to Be Addressed

- 'Just' elevating roads will not create an enduring solution
- The cost of today's solutions are greatly increased by the need to address yesterday's infrastructure
- Potential for liability exists due to lack of full transparency in property transactions
- The city could experience a market reset due to uncontrollable events generating controllable impacts



# Opportunities for Successful Outcomes

- Strong regional collaboration and cooperation
- Community recognition that the problem is here to stay
- Residents desire for a holistic solution
- Some of the most affected individuals are willing to be part of the solution
- A robust real estate market could provide one part of the toolbox
- Funding and programs – local, state, and federal – are increasing with recognition of increased risks



# Elevating Resilience – Panel Recommendations

1. Before You Start
2. The Road of Choice
3. Funding the Solution(s)
4. Getting it Done



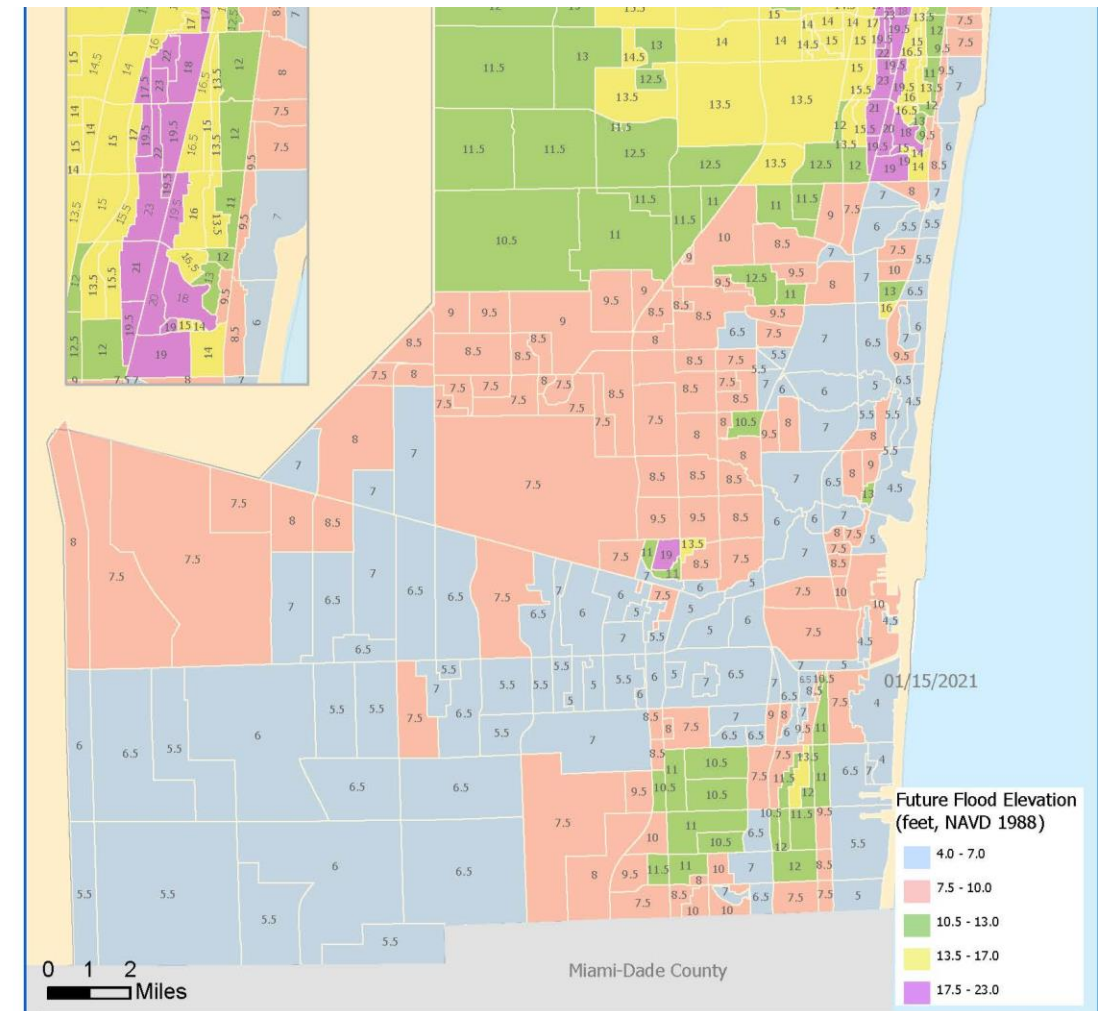
A panoramic view of a city skyline, likely Miami, featuring several modern high-rise buildings. In the foreground, there's a waterfront area with palm trees, a large white yacht, and other smaller boats. The sky is blue with scattered white clouds. The text "Before You Start" is overlaid in the center in a white, sans-serif font.

# Before You Start

# Take a Comprehensive, Long-term Approach to Adaptation

- Address compounding risks
- Enable system-wide linkages
- Plan for both near-term and long-term needs
- **Mix and match different solutions** — which include infrastructure, policy, programmatic approaches — to meet the varied risks across the city

Future Conditions 100-Year Flood Elevation Map



# Establish Resilience as the Priority for the City, Facilitating Connection Amongst Work Underway in Greater Fort Lauderdale

- Use the county Risk Assessment & Resilience Plan as a guiding comprehensive framework
- Tie current city efforts together, enabling improved government coordination, public communication, and stakeholder engagement

County Resilience Plan

City Stormwater Plan

Sea Wall Ordinance

Fortify Lauderdale

Neighborhood  
Plan

Neighborhood  
Plan

Neighborhood  
Plan

Neighborhood  
Plan

# How Should the City Balance Needs Across the City?

Prioritize protecting people and addressing the greatest risk

Inland areas are at risk to surface flooding from rain events and are already experiencing these impacts.

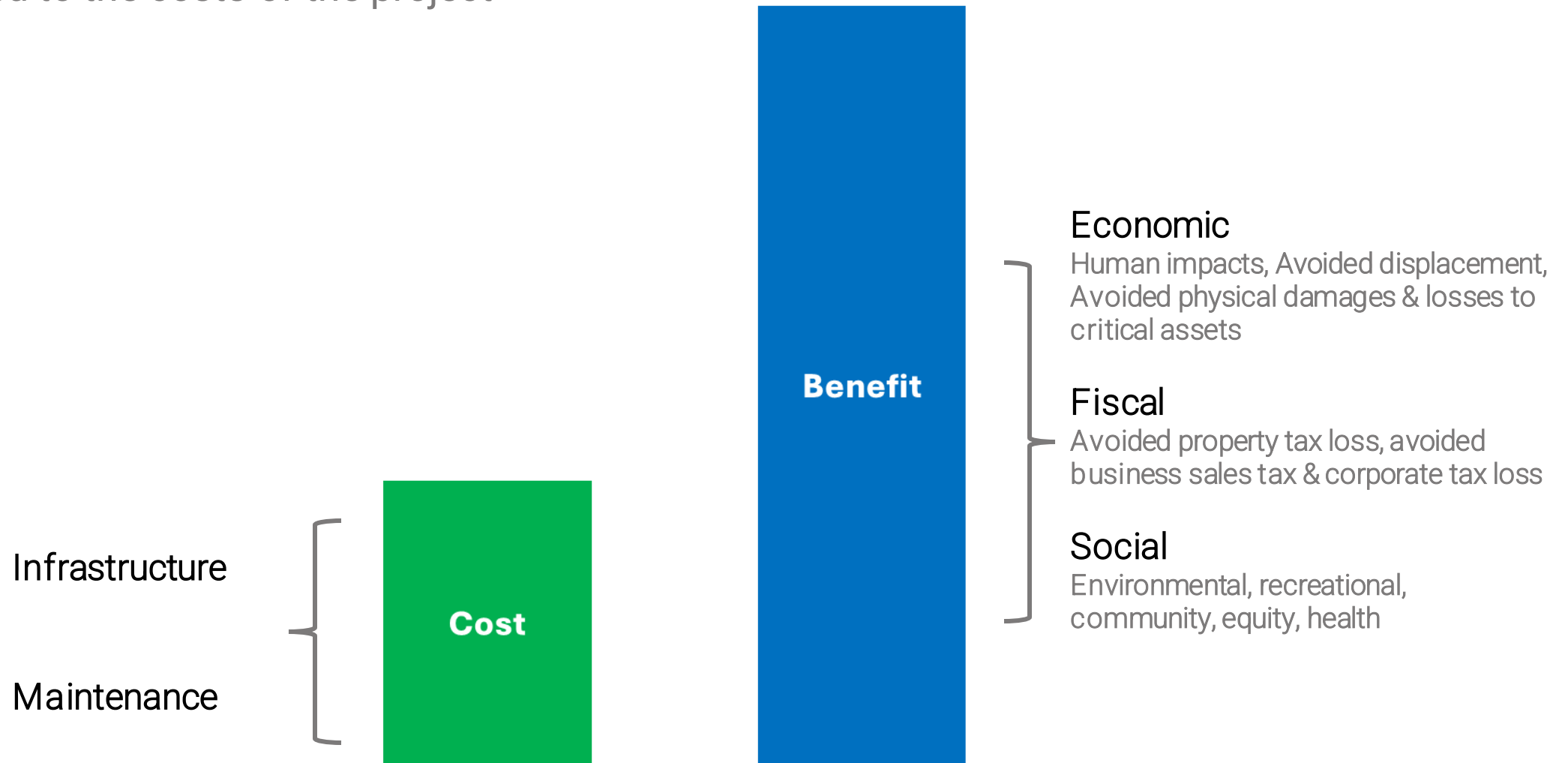


279+

homes experienced major  
damages  
in the Edgewood  
neighborhood during the April 2023  
flooding event

# To Balance Citywide Needs, Project Benefits Should Outweigh the Costs

This determines the value of future flood risk reduction measures of a hazard mitigation project compared to the costs of the project



# Exhaust Other Options

- Elevating roads is expensive
- May push flood waters to other locations
- Other investments should come first
  - Consistent with city's ongoing successes
    - Tidal valves
    - Sea wall elevation
    - Pumps
    - Stormwater infrastructure
  - Other items in the toolbox



# Consider the breadth of adaptation tools available

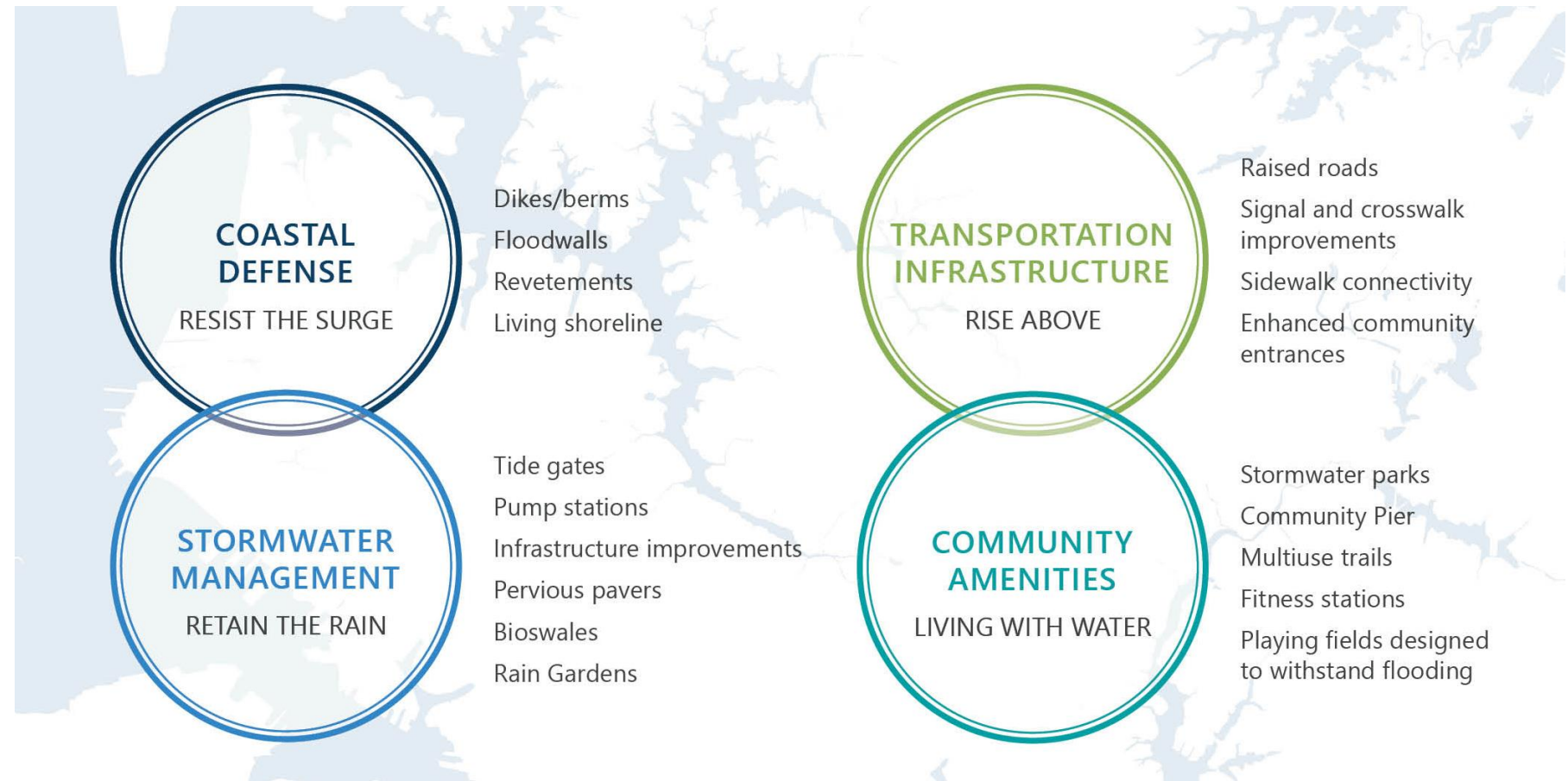
## Adaptation toolbox

One tool on its own will not solve or address the city's flood risk challenges

SOLUTION	RISK ADDRESSED			COST	
	Storm Surge	Tidal Inundation	Groundwater	Surface Flooding	
			Rise	from Rain	
Tide valves	High	High	Low	High	High
Pumps	High	High	Low	High	High
Subsurface storage	Low	Medium	High	High	High
Roadside swales	Low	Low	Medium	Low	Low
Alternate means of access	Low	Medium	Low	Medium	Low
Roadway elevation	High	High	High	High	High
Roadway inversion	Low	Medium	Low	High	High

# Toolbox Options and Scales

- Site/building level
- Street level
- Neighborhood level
- City level



Toolbox example: City of Norfolk, Virginia



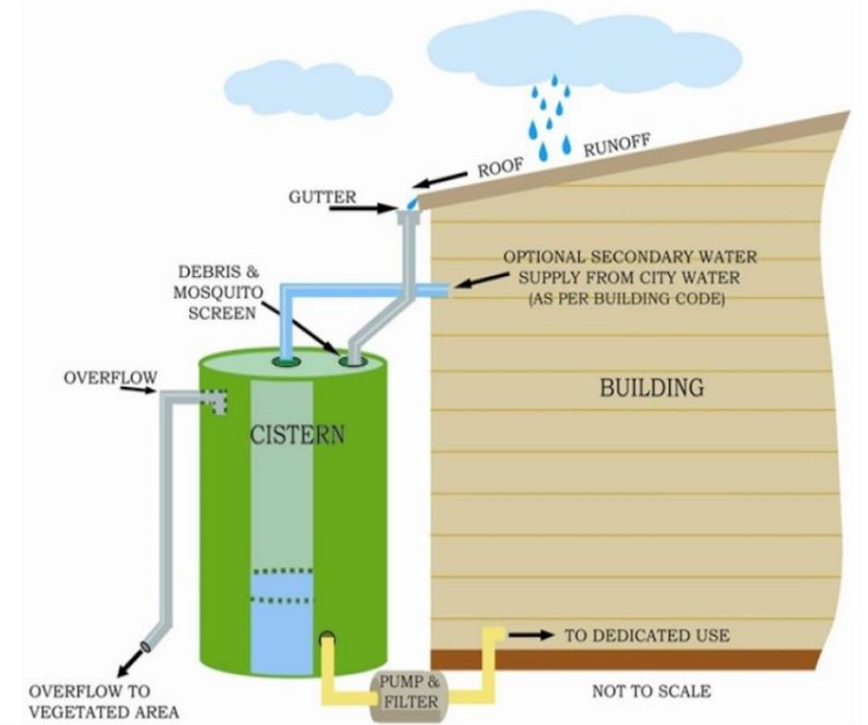
# Building/Site Level Improvements

Undertaken by individual property owners in conjunction with city efforts

- Sea walls
- Home elevation
- HVAC/electrical elevation
- Stormwater improvements
- Building or site “hardening”



Figure 1. Example RWH System (NCSU-BAE)



Stormwater cistern example

# Street Level Improvements

Implemented at the street level as cooperative efforts between the city and residential neighborhoods

- Tide valves
- Pumps
- Subsurface storage
- Roadside swales
- Alternate access
- Roadway elevation
- Roadway inversion



Photo source: Minnesota Stormwater Manual  
**Roadway inversion example**



Photo source: City of Ft. Lauderdale  
**Roadside swale example**

# Neighborhood Level Improvements

Undertaken at the neighborhood or district level and would require cooperation among the city, HOAs, and individual owners

- Green infrastructure/nature-based solutions
- Stormwater infrastructure upgrades
- Private utility upgrades
- Neighborhood resilience parks

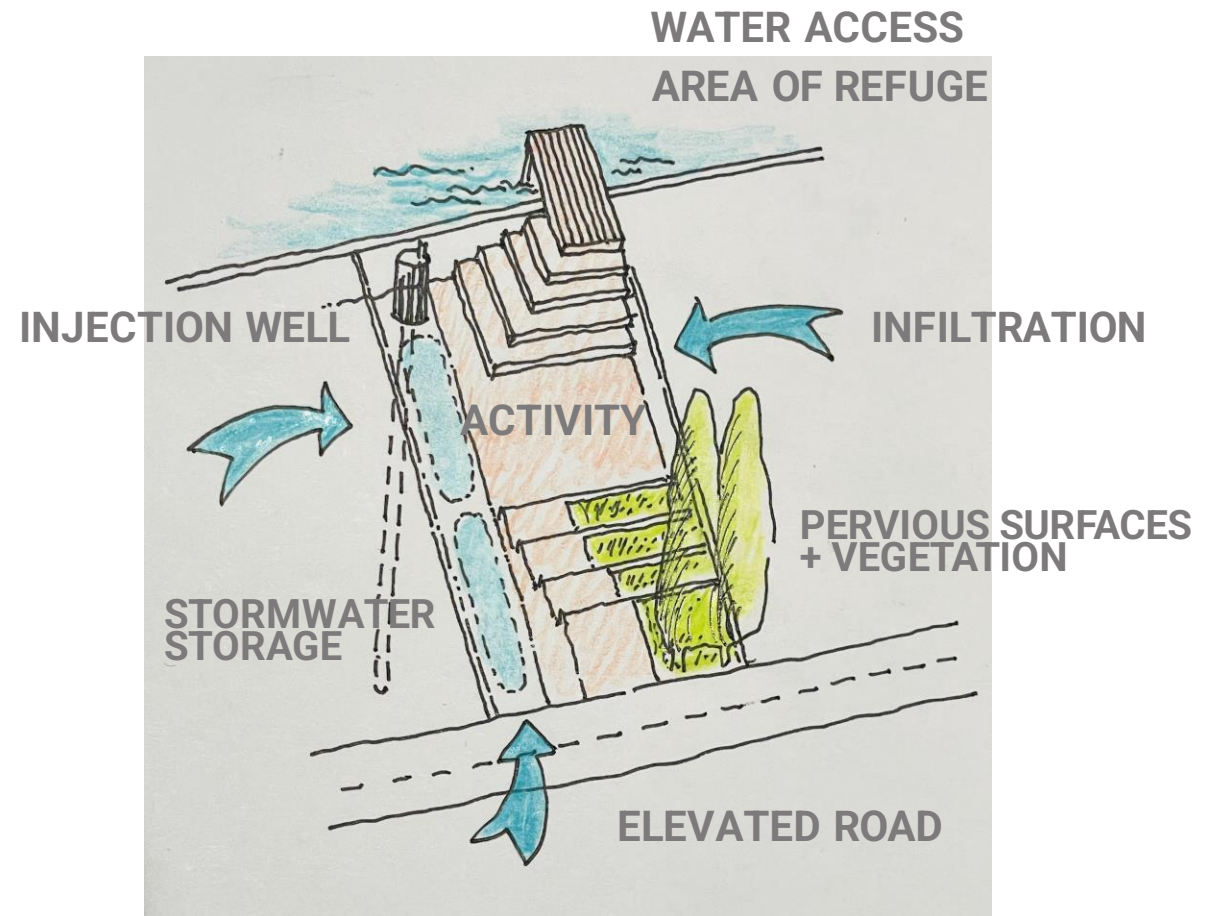


Rain garden example

# Neighborhood Resilience Parks

Could provide flood resilience benefit and local amenity

- Infiltration swales
- Open space and landscaping
- Injection wells
- Subsurface or above-ground storage
- Paths and overlooks

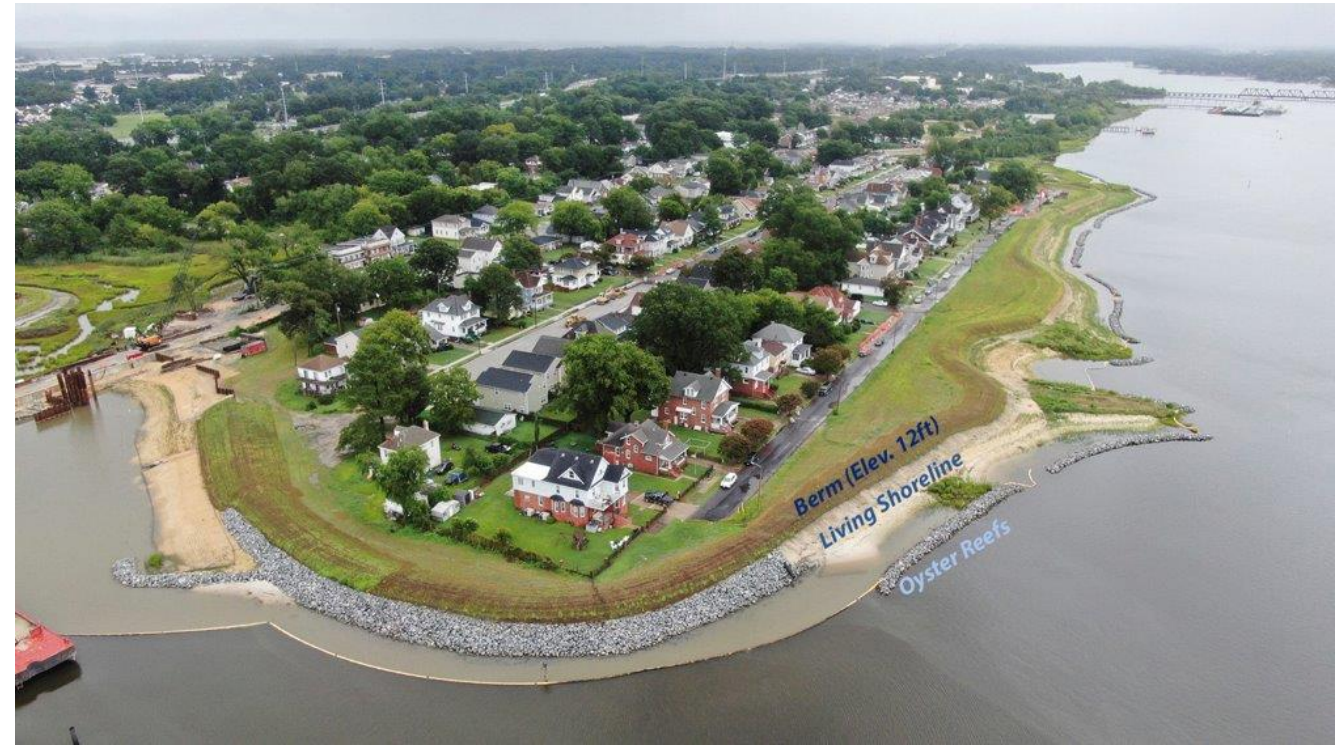


Resilience park concept

# City Level Improvements

Larger-scale, high-cost items would likely require city action, potentially in coordination with the region, state, and other agencies

- Sea wall
- Deployable gate/surge barrier
- Land reclamation/wetland restoration



Norfolk multiple solutions example

# Move Adaptation Measures Forward in Parallel

## Housing Mobility & Land Acquisition

- Create a foundational program now, supporting the city to be better prepared for future flood events
- When the market accounts for flood risks, households may be more inclined to participate, and the city will be better prepared to acquire land

*Example: Charlotte-Mecklenburg*

## Land Use & Zoning Code Standards

- Update codes to promote pervious cover and encourage development in less flood-prone areas
- Prevent adjustments and variances that limit harmonization options

*Example: NYC Resiliency Design Guidelines*

# Citywide Policy and Programmatic Interventions Can Create an Enabling Environment for Long-term Risk Reduction

- Maintenance and enforcement
- Loan program
- Accurate flood risk projections
- Education and outreach
- Community insurance purchase
- Street flooding disclosures (example: at time of sale, permit pulled)
- Flood warning systems



Open house engaging residents on flood risks facing their community.

Image Source: HR&A Advisors, Inc.

A panoramic view of a city skyline, likely Miami, featuring several modern high-rise buildings. In the foreground, there's a waterfront area with palm trees, a large white yacht, and other smaller boats. The sky is blue with scattered white clouds. The text 'The Road of Choice' is overlaid in the center in a white, sans-serif font.

# The Road of Choice



# Guiding Principles

If road elevation is a potential solution, the following principles guide criteria for road selection and prioritization:

- **Public safety is the top priority.** Emergency routes and critical connections to essential facilities are necessary to maintain access
- **Stormwater improvements are essential.** Drainage improvements maintain dry conditions on roadways, ensure regulatory compliance, environmental protection, and aesthetic benefits
- **Utilities should be protected.** Utilities provide continuity of service for water, sewer, power, and communications

# Roadway Types

Inventory all city-owned roadways and determine their classification:

- **Critical:** Evacuation Routes and Critical Roadways: Evacuation routes provide egress away from an area that contains an imminent threat or hazard. Critical roadways provide access to critical facilities (hospitals, fire/police) and remain accessible for post-flooding access to critical services. **High priority for road elevation if the road is at risk.**
- **Collector:** Commercial Corridors/Commuter Streets: Streets connecting multiple neighborhoods and supporting essential economic development activities. **Moderate priority for road elevation if the road is at risk.**
- **Local:** Neighborhood Residential Roadways: Roadways within neighborhoods, primarily providing access to residential properties.

# Criteria for Road Elevation – High Importance

- **Is the roadway an evacuation route, critical connector, or serve essential public facilities?**  
Public health, safety, and welfare are of paramount importance to community safety during hazard events and everyday emergencies. **High Importance.**
- **Is the road within the 100-year floodplain?**  
These areas are susceptible to higher flooding now and in the future. **High Importance.**

# Additional Criteria for Road Elevation

- **Have adjacent buildings been damaged by flooding?**  
This is a good predictor of whether flood damage will continue or accelerate if no action is taken
- **Does the road experience frequent or intense flooding from king tides?**  
These locations have a history of flooding and are likely points of future inundation
- **Are bridges along the roadway below the 100-year floodplain?**  
Many bridges are old, low, or compromised and should be included in the consideration of roadway elevation
- **Have other flood solutions been installed?**  
Road elevation is the solution of last resort. If these solutions have addressed flooding intensity or frequency, road elevation may not be a priority – if they have not yet been tried, they may be effective

# Additional Criteria for Road Elevation

- **Are a high number of people served by the roadway?**  
More people living, working, or using a roadway indicates these are higher priority for elevation
- **Does the roadway serve a disadvantaged community?**  
Vulnerable populations may have fewer resources to address temporary displacement, interruptions to work, or the ability to work remotely
- **Do the majority of adjacent property owners support road elevation?**  
Local acceptance of this solution is essential and local resources may contribute to funding the solutions
- **Can road elevation catalyze associated benefits?**  
A project may be able to leverage funding to provide bike lanes, beautification, sidewalks, or other benefits to residents

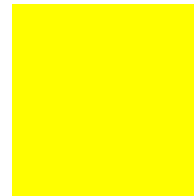
# Applying the Criteria

**Critical roads**  
have a **higher weight**.

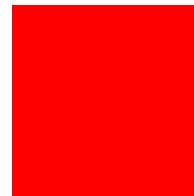
**High importance criteria**  
have a **higher weight**.



High Alignment



Partial Alignment



Limited Alignment

# Applying Criteria for Road Elevation

CRITERIA	CRITICAL	CRITICAL	COLLECTOR	COLLECTOR	LOCAL	LOCAL	LOCAL
Is the roadway an evacuation route, critical connector, or serve public safety facilities?	Green	Green	Red	Red	Red	Red	Red
Is the road within the 100-year floodplain?	Green	Yellow	Green	Green	Yellow	Green	Green
Have adjacent buildings been damaged by flooding?	Green	Yellow	Red	Green	Red	Green	Green
Does the road experience frequent flooding from king tides?	Green	Yellow	Green	Green	Red	Green	Green
Are bridge elevations along the roadway below the 100-year floodplain?	Yellow	Yellow	Red	Red	Yellow	Green	Green
Have other flood solutions (tidal valves, stormwater improvements) been installed?	Green	Yellow	Red	Green	Yellow	Green	Green
Are a high number of people (living, working, commercial uses) served by the roadway?	Green	Green	Green	Green	Yellow	Red	Red
Does the roadway serve a disadvantaged community? (See: <a href="https://www.energy.gov/justice/justice40-initiative">https://www.energy.gov/justice/justice40-initiative</a> )	Green	Green	Red	Green	Red	Red	Red
Do a majority of adjacent property owners want road elevation?	Yellow	Red	Yellow	Red	Green	Yellow	Green
Can the road elevation project be a catalyst for other benefits (alternative transportation, beautification)?	Yellow	Yellow	Red	Green	Red	Red	Green

# Establish Thresholds + Compare Projects:

## Illustrative criteria results

- **Project A: Critical Roadway - Score 85**  
Essential evacuation route with multiple segments subjected to flooding. Has installed many solutions with positive impact but the roadway is still at risk
- **Project B: Critical Roadway – Score 75**  
This critical roadway is subject to flooding but has a ROW which may preclude accessory benefits
- **Project C: Collector Street – Score 70**  
Within the floodplain, the commercial corridor serves a high number of residents, including disadvantaged residents, has installed many other solutions, and provides the opportunity for accessory benefits
- **Project D: Local Street – Score 70**  
This local roadway has tried multiple solutions to reduce flooding but still experiences frequent and intense flooding. The residents support roadway elevation and the project can catalyze other improvements

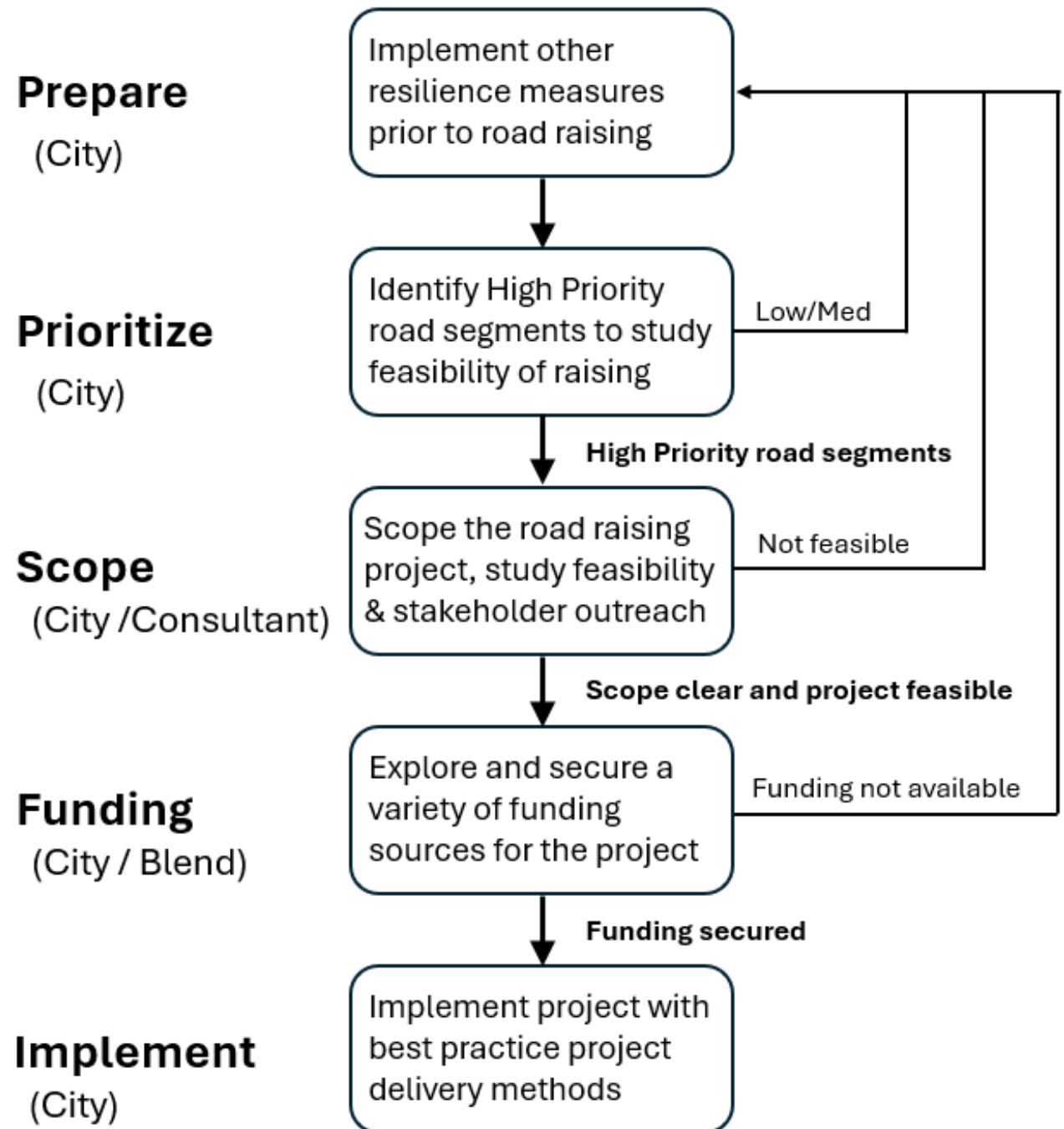
Note: even after elevation, roadways may continue to experience flooding during major storms or storm surge events



# Road Elevation Process

## Scoping and feasibility stage

- For road segments identified as 'High Priority' they should proceed through a scoping and feasibility stage
- Prior to seeking funding, develop a clear project scope and conduct a Feasibility Study which will produce a realistic budget
- With a feasible project and budget, the search for funding can proceed
- Implementation can begin after funding is secured for a feasible project





# Road Elevation Project Scoping

Goals, location, and project criteria

- Develop a short **Scope document** describing project
- Define Goals
  - Ensure accessibility of emergency services
  - Reduce the risk of flood damages during storm surge
  - Reduce the frequency of flooding during king tides
  - Prepare for long term impacts of sea level rise
  - Minimize impact to properties lower than new road elevation
- Define Boundaries
  - Initial Limits of Construction (public road right of way)
  - Boundary of all directly adjacent properties
  - List of all properties impacted by project
- Define Basis of Design
  - Design criteria, standards, codes, sustainability considerations

# Road Elevation Feasibility Study

## Components of feasibility

- Design considerations
  - Road elevation
  - Stormwater upgrades
  - Nature based solutions
- Engage stakeholders
  - Directly impacted properties
  - Private utilities
  - Public utility departments
- Harmonization options
- Project budgeting
- Approach for road raising implementation
- Preliminary funding approach

# Road Elevation Feasibility Study

## Design considerations – roadway elevation

- Critical Roads
  - Above 100-year flood elevation
    - Allows for evacuation roadways to be passable in a major storm event
  - **2024 FEMA 100-year Base Flood Elevation (BFE) + 1 foot**
  
- Collector Roads
  - Above King Tide + sea level rise 2070 + 20-year rain event
    - Reduce damage to businesses and homes during major rain events during high tide
  - **Around BFE**, but requires modelling
  
- Local Roads
  - Below floor level of recently raised roads
    - Recently raised homes finished floor levels are above the elevated road
  - **Around BFE – 1 foot**, but requires modelling

# Road Elevation Feasibility Study

## Design considerations – stormwater design

- Opportunity to expand stormwater capacity
- Oversized pipes
  - Provide storage during heavy rain
  - Allow for future increased rain events
  - Reduce requirement for fill
- Gravity injection wells
  - Find a location or acquire a parcel for resilience park and injection wells
  - Reduce pumping into neighboring waters
- Nature based solutions
  - Increase green space within right of way
  - Swales and infiltration where possible



# Road Elevation Feasibility Study

## Engage stakeholders

- Private utilities
  - Opportunity to upgrade electrical, communications, or gas lines that are past their useful life or deteriorated
  - Utilities can replace lines if capital plans allow
- Public utilities and city departments
  - Water, storm, and sanitary sewers will likely need to be replaced to accommodate higher elevations
- Residents and impacted stakeholders
  - Outreach and support from those directly and indirectly involved in the road elevation project

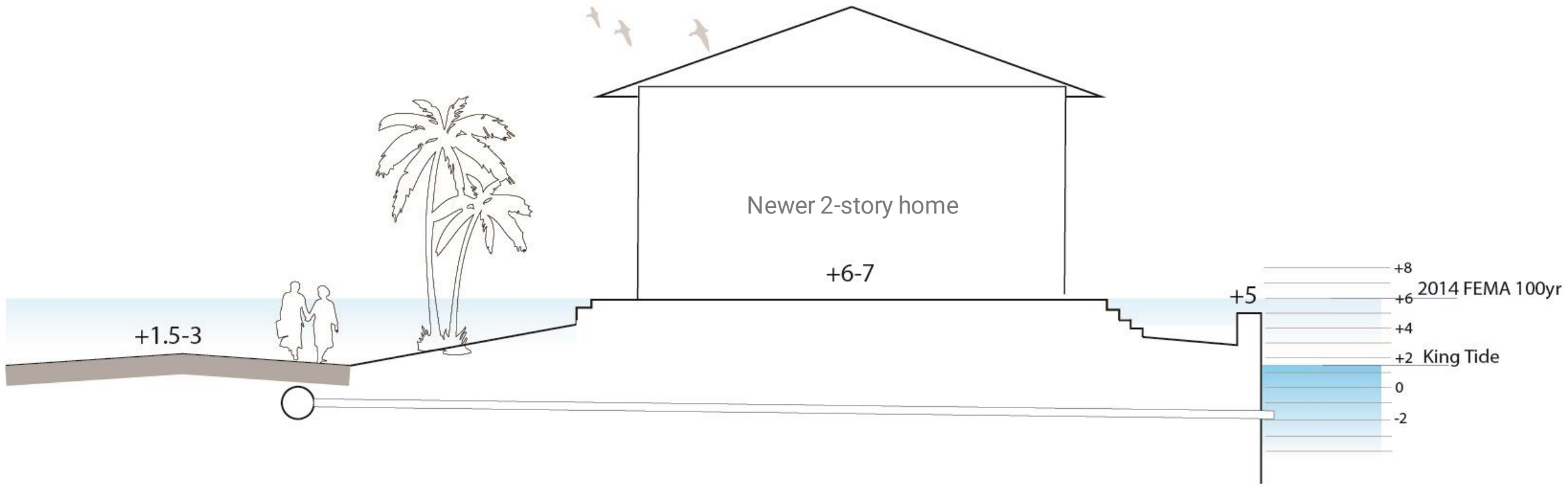
# Road Elevation Feasibility Study

Harmonization considerations – initial conditions in coastal flood-prone areas



# Road Elevation Feasibility Study

Harmonization considerations – recently raised homes

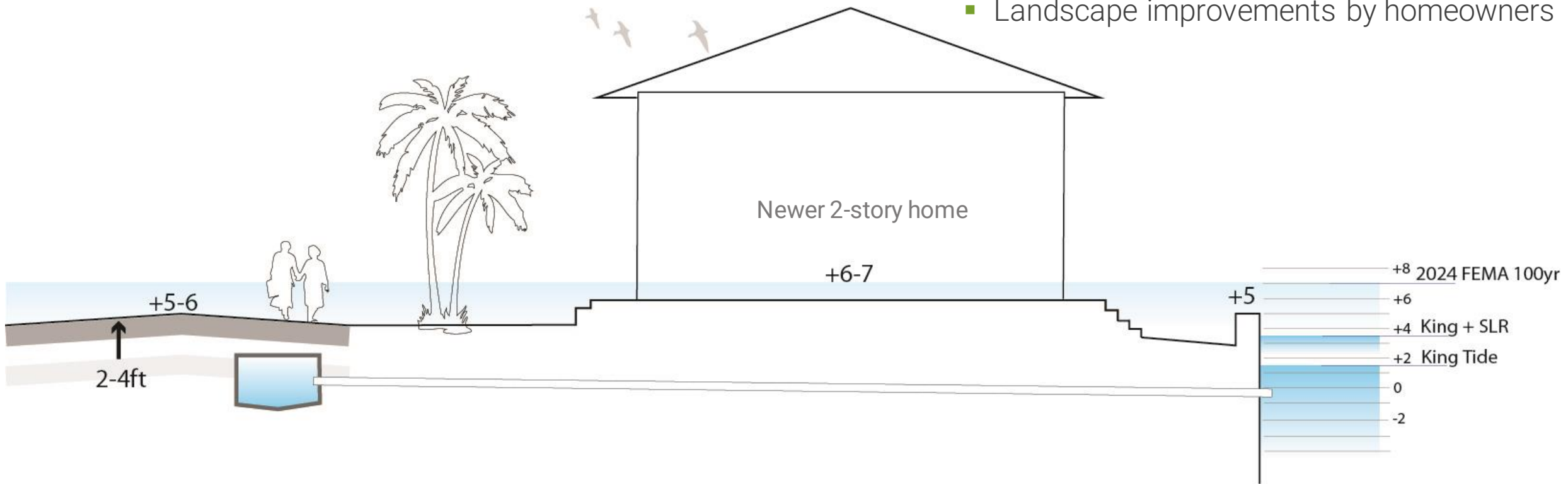




# Road Elevation Feasibility Study

Harmonization considerations – recently raised homes

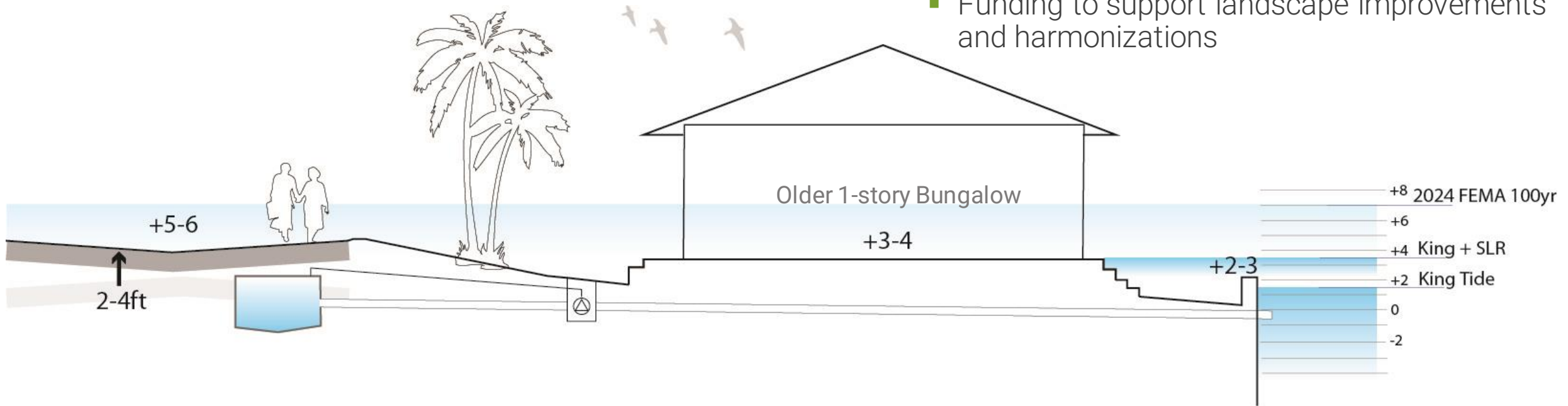
- Properties raised recently
  - Finished floor at BFE + 1 (+6-8feet)
  - Landscape improvements by homeowners



# Road Elevation Feasibility Study

Harmonization considerations – homes not yet raised

- Properties not yet raised after road raised
  - Inverted roadway to drain away from parcel
  - Stormwater pump to lift water up to new storm sewer
  - Funding to support landscape improvements and harmonizations



# Road Elevation Feasibility Study

## Project budgeting

- Road pavement and sub-base
  - Paving cost
  - Sub-base structure
- Private utilities
  - If required, budget by utility
- Public utilities
  - Stormwater
  - Drinking water
  - Wastewater
- Harmonization
  - Recently raised – by homeowner
  - Not yet raised – support homeowner

# Road Elevation Feasibility Study

## Preliminary implementation and funding approach

- Implementation
  - Ensure city has adequate management capacity
  - All stakeholders are ready and able to coordinate construction
- Funding
  - Ensure budgets have been approved by all public and private entities

# Determine Feasibility of Road Elevation Project

Should project go forward?

- ✓ Technical feasibility study
- ✓ Private utilities have a plan for existing lines
- ✓ Public utilities have a plan to upgrade
- ✓ Stakeholders support project
- ✓ Implementation and funding seem possible

→ Road elevation project is ready to actively seek and secure funding



# Funding the Solutions

# Big Picture: Key Points to Attract Funding

Key Point #1: Create a compelling message. Communicate the need



Key Point #2: Develop strategic partnerships to leverage needed funds



Key Point #3: Stick with it. It's a marathon, not a sprint!



# Lean Into the Issue and Create a Message that Attracts Funding

## *Problem Statement (The Message):*

City and region are at a tipping point with flood risk. Other coastal areas are as well, and even more will be in the future.

The degree and impact require significant resources to meet this challenge.

## *Opportunity Ahead:*

Those at the forefront of this challenge will set the stage for the rest of the country.

Broad group of local and regional stakeholders are willing to lead on this, but state and federal assistance is necessary in order to be effective.

Lean into the effort together.



# Sample Funding Programs

## LOCAL

- Special assessments
- Real estate transfer taxes
- Incentive programs & rebates
- Development impact fees
- Stormwater fees
- Sales tax (ie – tourism)
- Stormwater bonds

## STATE

- Florida Department of Transportation – Target Zero, Locally-Administered Grants
- Florida Department of Environmental Protection - Resilient Florida grant program
- South Florida Water Management District - Grant programs and technical support

## FEDERAL

- USDOT - Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program (PROTECT)
- USEPA - Wetland Program Development Grants
- HUD – Community Development Block Grants (CDBG)
- FEMA - Community Lifeline, Building Resilient Infrastructure and Communities (BRIC), Flood Mitigation Assistance Program (FMA)
- NOAA - Sea Grants
- Congressionally directed spending

# Explore and Form Public-Private Partnerships to Leverage Funds

- Special Purpose Districts
  - 30 statutes currently enabling 1,900 districts to provide limited special purpose government on a local level (*per Florida Association of Special Districts*)
  - Stewardship Districts
  - Business Improvement Districts (BIDs)
  - Community Development Districts (CDDs)
- Tax Increment Financing (TIF) / Tax Allocation Districts (TADs)
- Public authorities



# Strategically Position for Funds

(Example – Federal discretionary grants)

## 1. Identify **scope**

- Bundle up projects (example: critical, collector, local roads) to achieve enough impact



## 2. Gather **data**

- Economic/fiscal impacts, cost-benefit, socio-economic, environmental, workforce, etc.

## 3. Build **coalitions**

- Multi-jurisdictional (city, county, authorities, etc.) + private (business, non-profit, neighborhood)



## 4. Identify **capital stack**

- Local Match requirements spread among partners

## 5. Tell the **story**

- Show the need and the “But For” (ie - climate resilience, economic mobility, equity, etc)
- Make it scalable to other coastal communities to help pilot federal investments



A wide-angle photograph of a city skyline, likely Miami, viewed from across a body of water. In the foreground, a large white yacht is docked on the right side. The water is dark blue with some ripples. The middle ground is filled with a dense line of palm trees. Behind the trees, several high-rise buildings are visible, including one with a prominent construction crane on top. The sky is a deep blue with scattered white clouds. The text "Getting it Done" is overlaid in the center of the image in a white, sans-serif font.

# Getting it Done

# Roads are Integral for Flood Management

- Significant long-term investment
- Sometimes used to convey water
- Relate closely with other utilities and investments
- Every member of the community interacts with the roadway every day
- Changing roadways requires lots of coordination



# Managing Flood Risk is Worth It

- Essential for life and safety
- Planning and program (to include the capital planning)
- Significant vulnerabilities
- Managing financial risks
- Maintaining quality of life
- Respecting history, culture, place, and community values



# Flood Resilience Policy

## Example

*Fort Lauderdale will be South Florida's most resilient city. We will consistently provide a high quality of life for residents and visitors who enjoy our coastal resources and amenities.*

*Our communities will adapt to recurrent and new weather and flooding conditions in a way that prioritized preservation of life and property.*

*Our Capital Improvement Program and other public services will consider flood resilience in our planning, design, and development.*

*Every business, every resident, and every visitor will recognize and understand the important role of our natural environment, our social fabric, and our economic vitality.*

*We will continue to grow and adapt in a manner that allows future generations full enjoyment of all that the city has to offer.*

# Implementing Policy

## City of Fort Lauderdale

- Legislative action
- Planning Commission
- Planning Department
- Public Works
- Boards and commissions
- Parks and Recreation
- Code Enforcement
- Police and Fire

## Other Partners

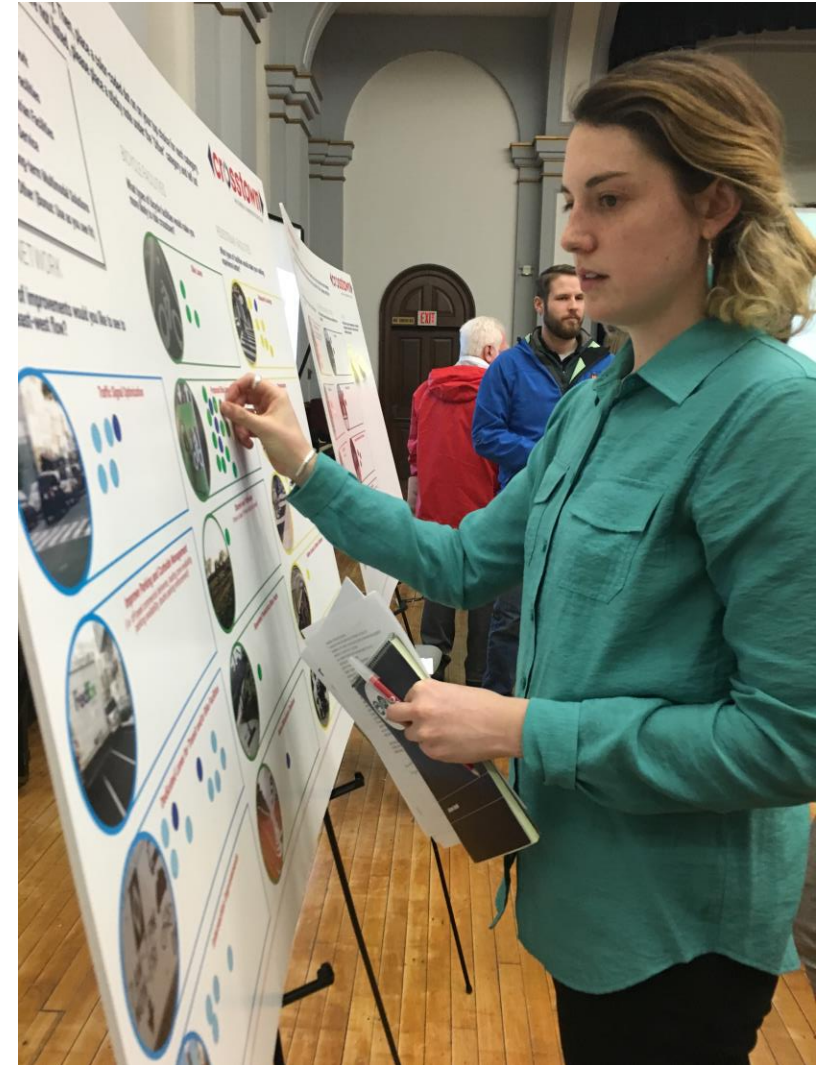
- Other levels of government
- Healthcare and educational institutions
- HOAs, homeowners, community organizations
- School District
- Philanthropic organizations
- Chambers of Commerce
- Developers
- Businesses



# Implementing Policy

## Legislative action example

- Develop and adopt a flood resilience policy
- Direct planning activities
- Request plan for a Roadway elevation plan
- Authorize funding and procurements
- Create a Stormwater Management Task Force
- Pursue Stormwater Management Authority (to be enacted by the State with MPO support)



# Implementing Policy

## Emergency services example

- Establish parameters flood access and egress
- Pursue grants for emergency preparedness and response equipment
- Pursue funds for grassroots emergency management and preparedness campaign
- Pursue funds for emergency preparedness outreach and research



# Implementing Policy

## Example: Habitat for Humanity Disaster Resilient Building Program

- Open to prospective and existing homeowners
- Means tested
- Requires homeowner education
- Application process
- Limited municipal requirement
- Roadway harmonization



# Communications and Engagement

## For flood resilience policy and programs

- Transparency and good government
  - Standing agenda item
  - Ongoing outreach (planning and development, project-based outreach)
  - Community education, maps and resources
  - Media and messaging
  - Level-set expectations
  - Communicate progress
- Emergency management messaging
  - Vulnerable to roadway flooding
  - Socially vulnerable communities
  - Life supporting facilities and services
- Campaigns
  - Celebrate successes
  - Initiatives for funding, enforcement, and development
  - Consistent messaging and language
  - Dedicated resources for communications



# Everyone has a **Role**. Everyone has a **Voice**

## Flooding affects everyone

- New ideas and vantage points are welcome
- Every life, every home, and every experience matters
- Advocacy is important for accountability
- Future focus
  - The flood problem is persistent
  - Time flies (50- to 70-year infrastructure design life)
  - Innovative strategies must be considered
  - Circumstances and players change
- Embrace opportunities to address the issue





What's Next?

# Next Steps

- Review the panel's criteria and establish your process and timeline to make it your own
- Elevate a policy framework for resilience to a critical action
- Review panel recommendations for resilience tools that can be implemented immediately
- Engage, integrate and leverage the county's resilience plan efforts
- Identify available staff resources and public/private partners to seek funding
- Inventory, integrate, and communicate all current efforts



Q&A

Thank You!