

CLIMATE LEADERSHIP ACADEMY ON URBAN ADAPTATION

MANAGING THE SOCIAL, POLITICAL, ENVIRONMENTAL,
AND FINANCIAL RISKS OF URBAN INFRASTRUCTURE

Fort Lauderdale's Climate Adaptation Evolution
Lee Feldman, City Manager



CityLinks

ICMA
Leaders at the Core of Better Communities



I.C.L.E.I.
Local
Governments
for Sustainability

Fort Lauderdale, Florida “The Venice of America”

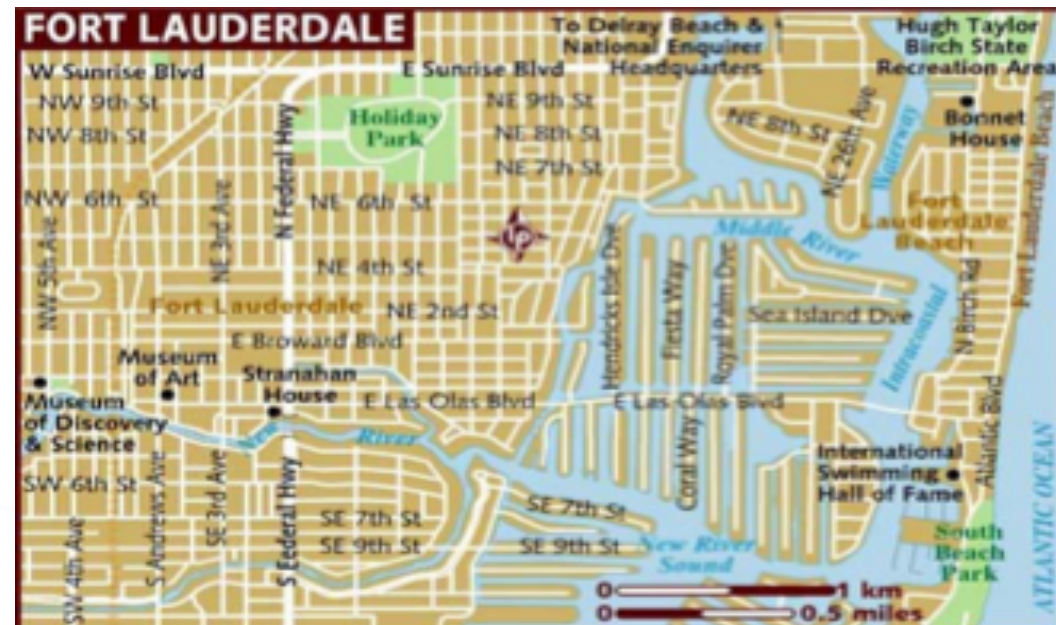


Tuesday, August 13, 13



About Fort Lauderdale

- Encompasses nearly 36 square
- Population of 168,615
- Largest of Broward County's 31 municipalities
- 7 miles of public beach and 165 miles of canals and waterways



Why is Climate Change Important to Southeast Florida?

- Flooding
- Extreme weather events
- Saltwater intrusion and water supply
- Sea level rise
- Beach erosion
- Impact to coral reefs
- Impact to the Everglades



Our City in Action

City level

- *Sustainability Plan*
- *Capital Improvement Plan*
- *Vision 2035*

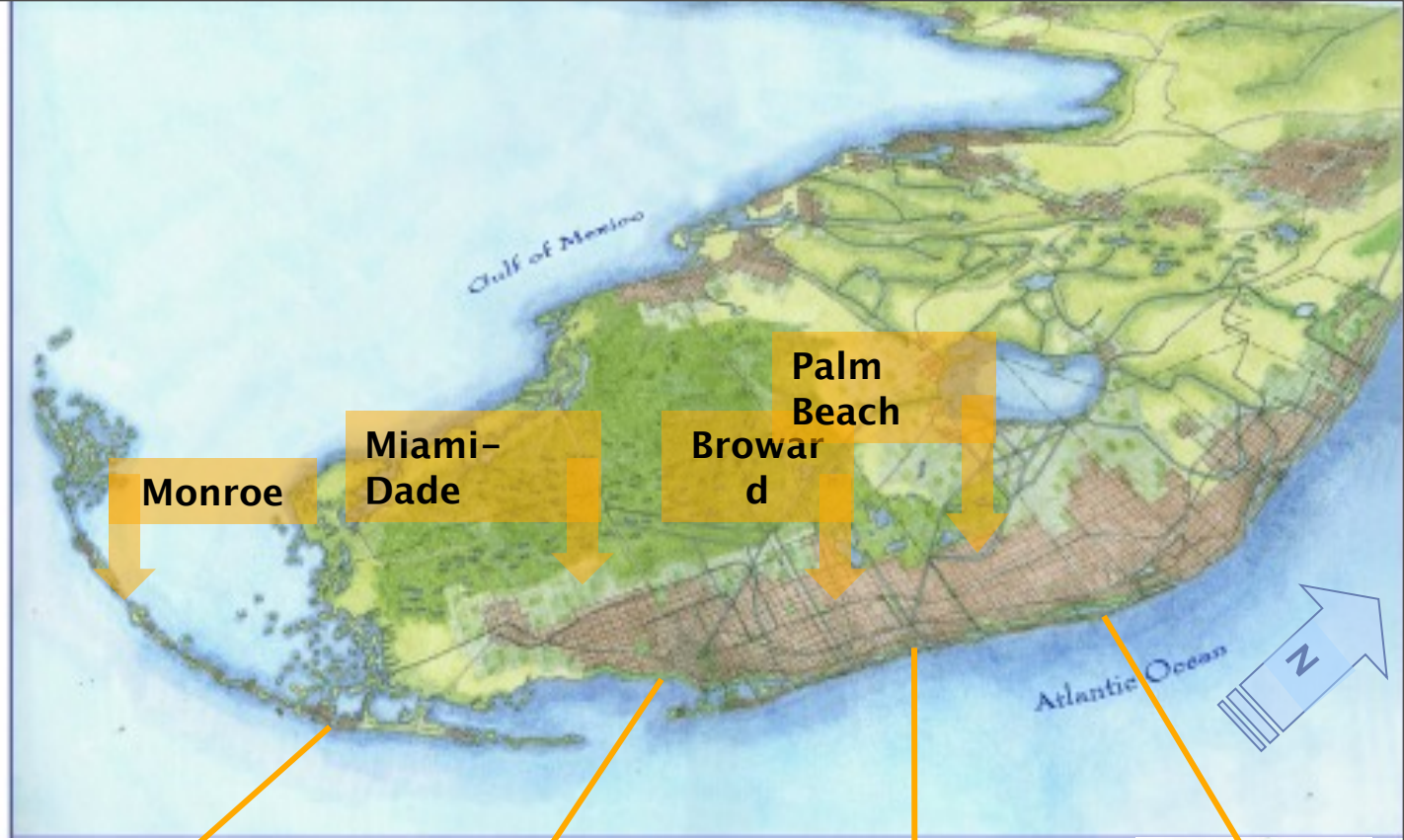


**Polycymaking
for Resilience &
Regional Coordination**

Our City in Action



**Policymaking
for Resilience &
Regional Coordination**



**SOUTHEAST FLORIDA
REGIONAL COMPACT
CLIMATE
CHANGE**





seven **50**
 counties years
 SE Florida Prosperity Plan



Our City In Acti



- Participation in regional efforts (Compact and RCAP)
- Sustainability Action Plan (SAP)
- Sustainability Advisory Board (SAB)
- Office of Sustainability
- Neighbor Survey
- Fast Forward Fort Lauderdale: Our City, Our Vision 2035
- Tidal Valves Neighborhood Projects: Riviera Isles, Hendricks Isle & Victoria Park
- River Oaks Stormwater Park
- Stormwater Planning

Sustainability Action Plan

- Created in 2010
- Updated in 2011
- Progress report December 2013
- 8 Focus Areas:



Provide community sustainability by protecting, preserving and restoring the natural environment through reducing the City's contribution of greenhouse gas emissions to the environment.
2011.07.28 - 2011.07.28

LEADERSHIP

GOAL 4: Prepare for Climate Change Impacts.

Objective 4.1: Plan for climate adaptation and mitigation.

Action 4.1.1: Include adaptation/mitigation strategies into the City's plans.

Action 4.1.2: Enhance communication about climate change adaptation in coordination with other agencies and municipalities.

Action 4.1.3: Partner with local, regional and state agencies or educational institutions to increase preparedness and mitigate risk.

Sustainability Advisory Board

- Originally began in 2009 as Citizens Sustainability 'Green' Committee, then became the Sustainability Advisory Board (SAB) on December 21, 2010
- Consists of eleven members appointed by the City Commission who are residents of, own property in, or **advise** the city commission regarding environmental sustainability;
- **advise** the city commission regarding environmental sustainability; **provide recommendations** to the city commission on incentives for residents, businesses, developers, and organizations to practice environmental conservation and sustainable building practices and actions, policies, public outreach and educational programs to support and promote energy and resource conservation;
- **research financial resources** to offset costs;
- **develop and provide recommendations** to the city commission regarding outcome measures for sustainability programs and initiatives;

Office of Sustainability

- Housed in Public Works
- Created by bringing together existing staff with a common purpose
- Citywide influence
- Includes:
 - Climate change adaptation planning
 - Climate mitigation (energy, fleet, fuel)
 - Natural Systems
 - Waste & Recycling
 - Stormwater Policy Management



Resilient Communities for America Agreement

We, the mayors and local leaders of America, will lead the creation of more resilient cities, towns, and counties, built to overcome our nation's **EXTREME WEATHER, ENERGY, and ECONOMIC** challenges.



A CALL TO ACTION

Communities across the country are on the front lines of three related challenges: record-breaking extreme weather fueled by climate change, unreliable and costly energy, and ongoing economic uncertainty. As the pace of change quickens, city and county governments must work to make communities more “resilient”: able to bounce back from disruptions in a sustainable way and maintain a good quality of life for all. As local elected officials:

1. We urge state and federal leaders to support our local resilience initiatives and to take meaningful steps to build resilience and security throughout the nation.
2. We commit to building community resilience through our own local actions, such as the paths to resilience described below.
3. We commit to sharing our solutions, success stories, and annual progress with other local governments through the Resilient Communities for America online platform.

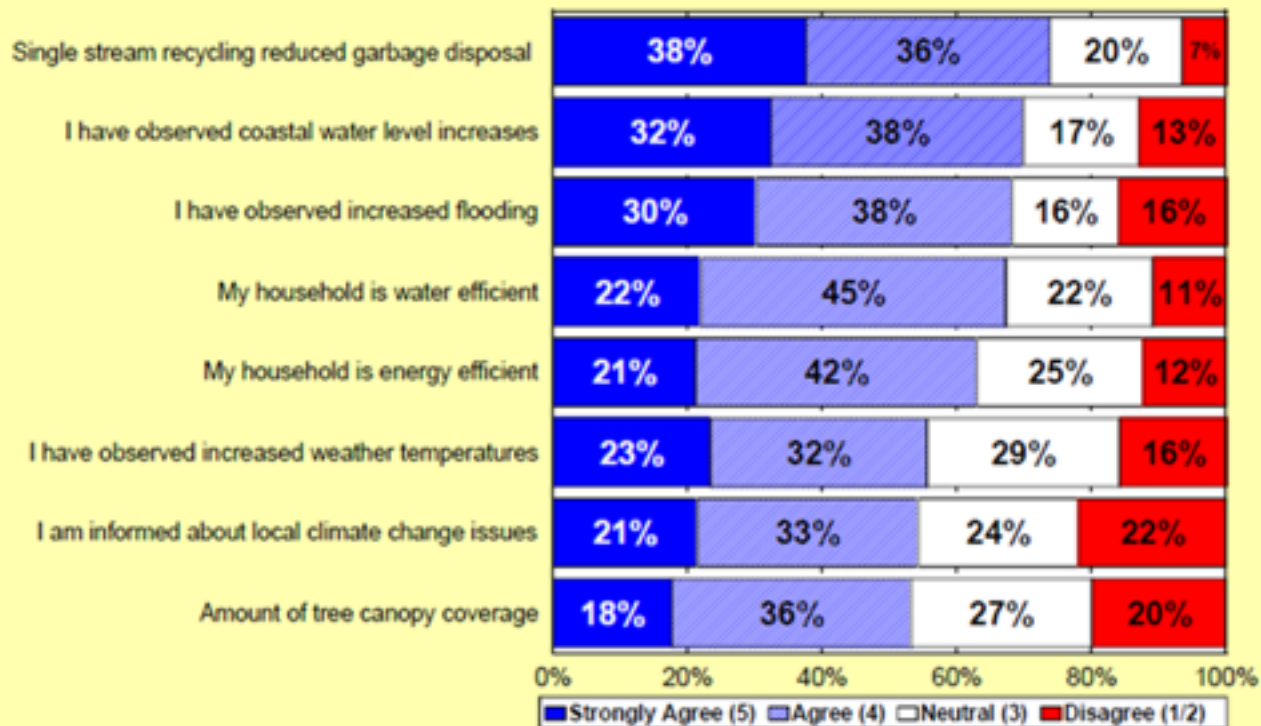


Fort Lauderdale Neighbor Satisfaction Survey



Q18. Level of Agreement with Various Aspects of Sustainability

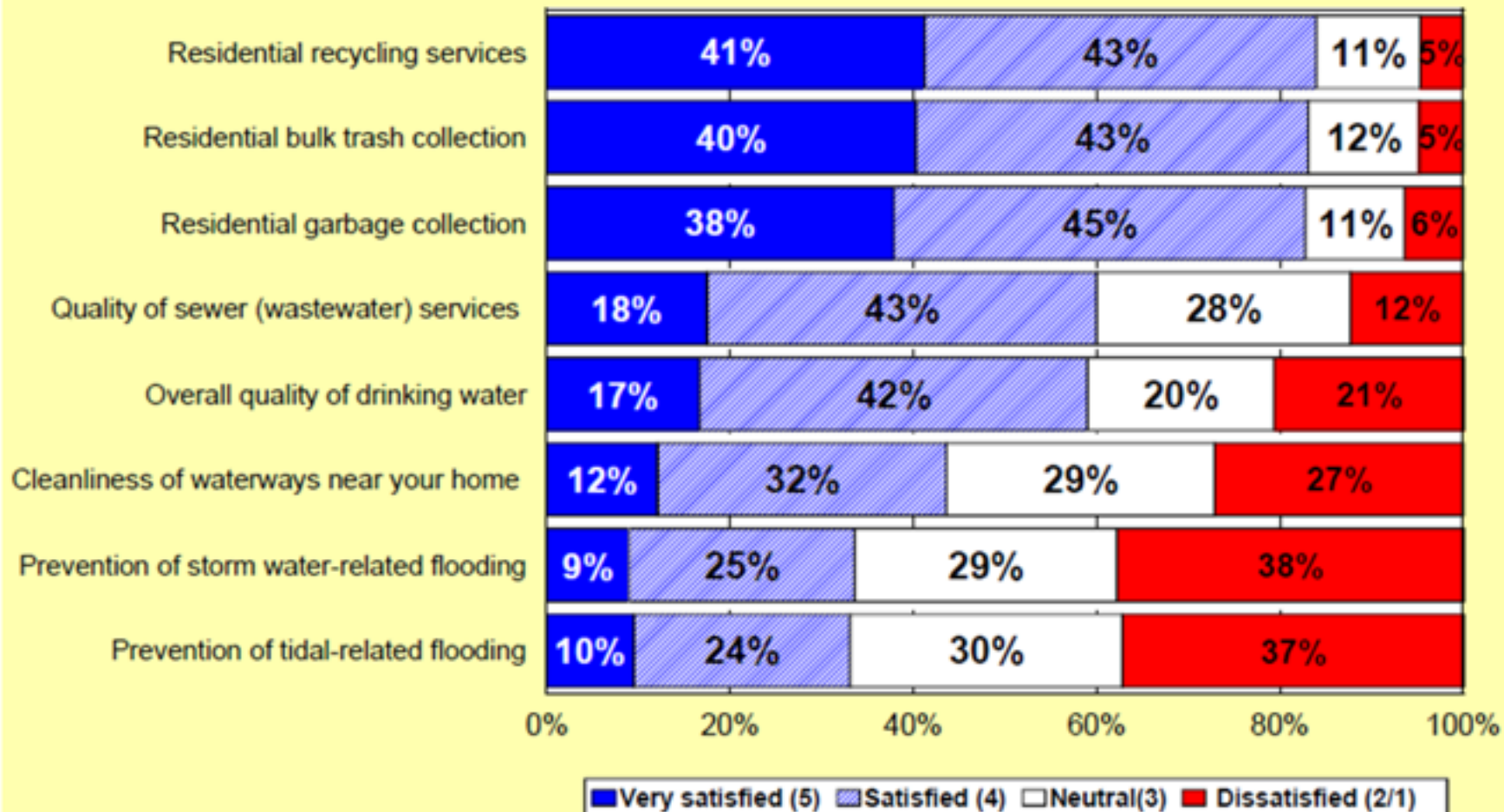
by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



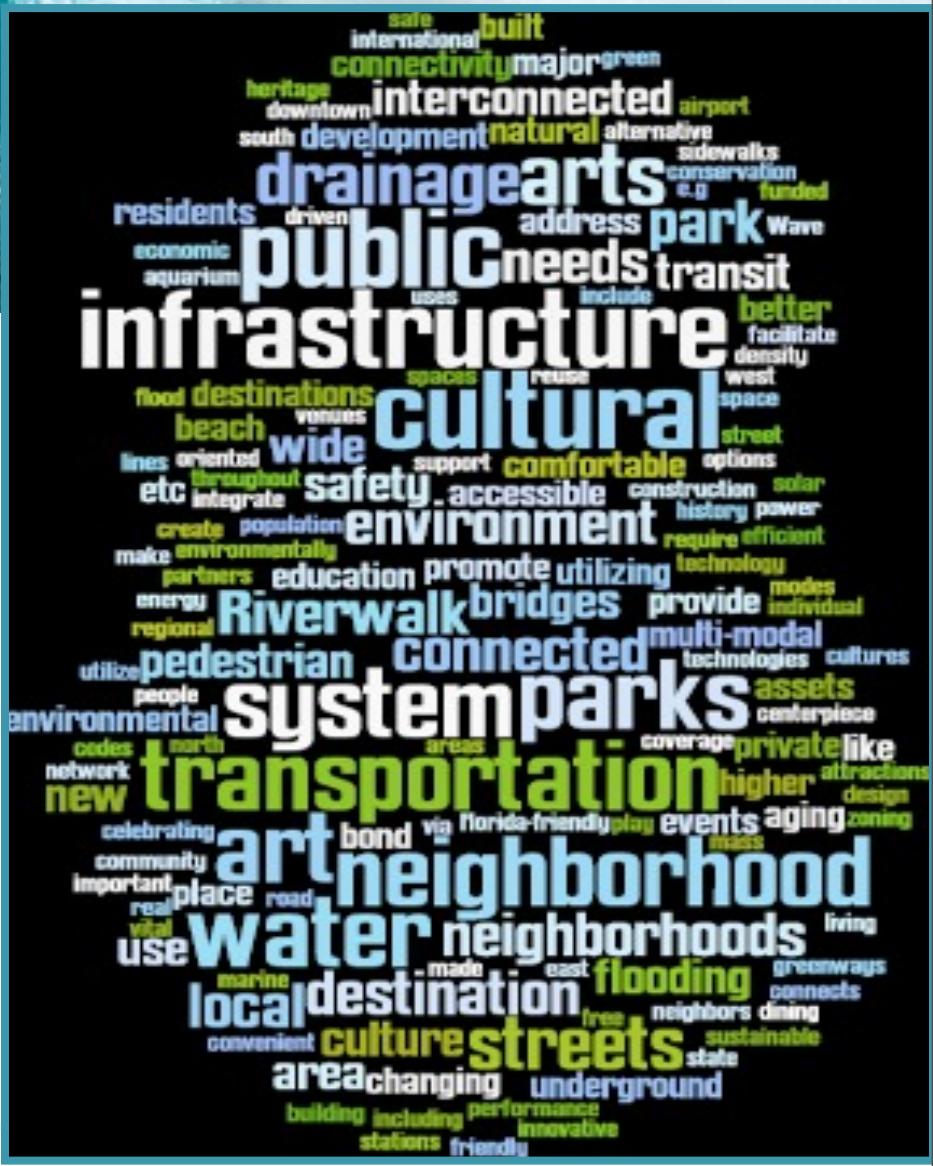
Source: ETC Institute DirectionFinder (2012 -Fort Lauderdale, FL Survey)

Q16. Please rate your satisfaction with Water, Wastewater, Waterways, Flooding, Sanitation

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



Source: ETC Institute DirectionFinder (2012 -Fort Lauderdale, FL Survey)





"Where will sea levels be in 20-30 years? What do we do to prepare?" - Open House, 2011

"Build a sustainable infrastructure; underground wiring and purple (reclaimed) water piping; encourage ecotourism celebrating our reefs and water life." - OurVisionFTL.com, 2012

"By 2035, our beaches are sustainable (self-sustaining) and protected through sand dunes that are vegetated and aesthetic, through mitigation, through benchmarking." - Neighbor Summit, 2012



VISION STATEMENT



<http://www.fortlauderdale.gov/vision>

VISION STATEMENT



WE ARE CONNECTED.

We move seamlessly and easily through a safe transportation system where the pedestrian is first.



WE ARE READY.

We are a resilient and safe coastal community.



WE ARE COMMUNITY.

We are a neighborhood of neighborhoods.



WE ARE HERE.

We are an urban center and a vacationland in the heart of South Florida.



WE ARE PROSPEROUS.

We are a subtropical City, an urban laboratory for education and business.



WE ARE UNITED.

We are a strong and vibrant kaleidoscope of multi-generational cultures, ethnicities, and community partners.



<http://www.fortlauderdale.gov/vision>



VISION STATEMENT

 **WE ARE READY**

We are a resilient and safe coastal community.



ADAPTATION **A**CTION **A**REAS

Pilot Community

Why the City of Fort Lauderdale

Extensive involvement in
the
Southeast Florida Regional
Climate Compact.



A Region Responds to a
Changing Climate

Southeast Florida Regional Climate
Change Compact Counties

Regional Climate Action Plan

October 2012



SOUTHEAST FLORIDA
REGIONAL COMPACT

CLIMATE
CHANGE



MAYORS' CLIMATE ACTION PLEDGE

Adaptation Action Area

As defined by the Florida State Community Planning Act, an optional comprehensive plan designation for areas that experience coastal flooding and that are vulnerable to the related impacts of rising sea levels for prioritizing funding for infrastructure and adaptation planning.

Adaptation Action Areas.

Guiding Redevelopment

Decisions

- “Window of Opportunity” to rebuild stronger, sustainable, and more resilient in these vulnerable areas
- Could impact the full range of redevelopment priorities including future land uses, environmental considerations, infrastructure redevelopment, and economic redevelopment
- Decision makers and the public should understand the long-term implication of post-disaster restoration efforts

Implementation Opportunity

Plan recommendation

SP-6 **Incorporate** Adaptation Action Area designation into local comprehensive plans and regional planning documents to identify those natural areas deemed most vulnerable to climate change impacts



Project of Special Merit

- Implementing “Adaptation Action Area” Policies in Florida
- Partnership with City of Fort Lauderdale, Broward County, South Florida Regional Planning Council and Southeast Florida Regional Climate Compact.
- Address AAA in City of Fort Lauderdale’s Local Comprehensive Plan.
- Create guidance for statewide dissemination

Fort Lauderdale: Pilot Goals

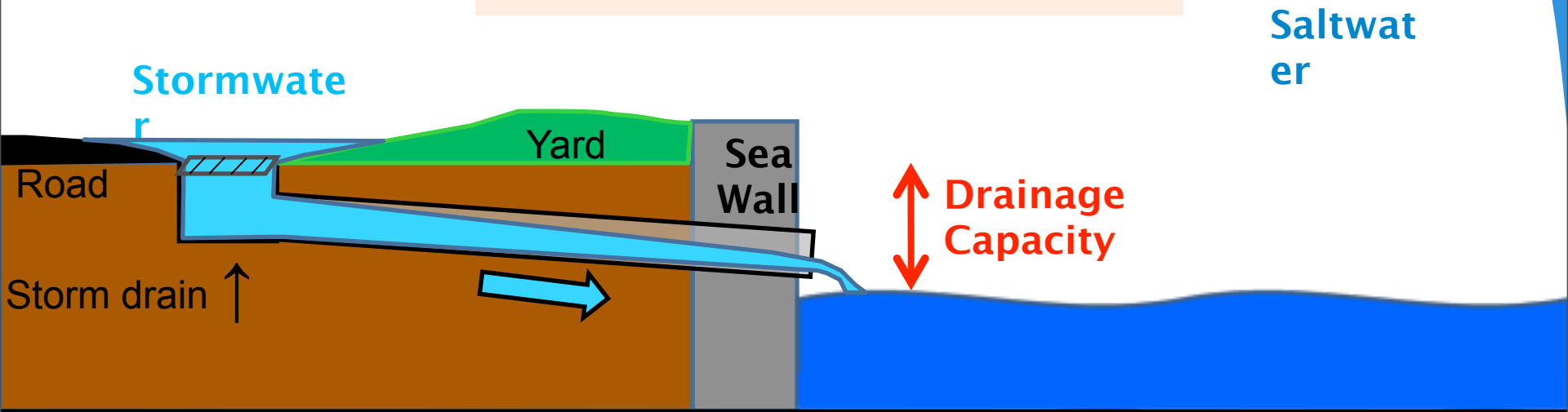
- City to prepare AAA's policy options for inclusion into its Comprehensive Plan.
- Link adaptation action policies to infrastructure capital planning and budgeting
- Play a significant role in the creation of a FDEO AAA guidebook.

Understanding the Impacts of Sea Level Rise

- The specific time horizon for sea level rise remains uncertain
- Level of the ocean could eventually affect the level of threat from hazards that a community already experiences such as hurricane storm surge, coastal erosion, land subsidence, and saltwater intrusion of
- Numerous collaborative efforts such as the Intergovernmental Panel on Climate Change and the Southeast Florida Regional Climate Change Compact continue to evaluate emerging data, scientific findings, and long-term trends.

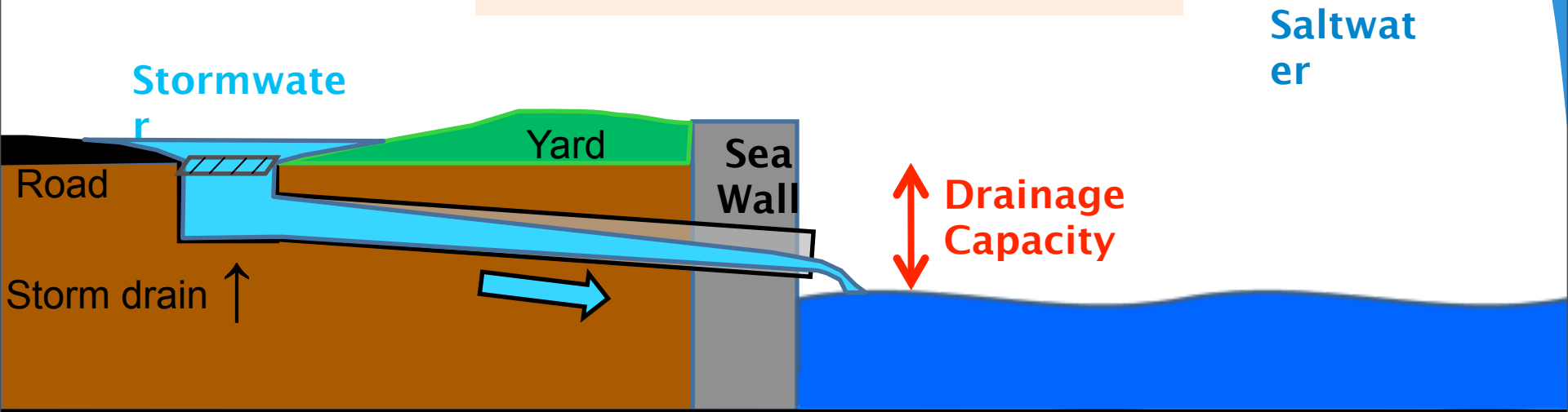
Drainage Challenge with Sea Level Rise

CURRENT AVERAGE TIDAL CONDITIONS

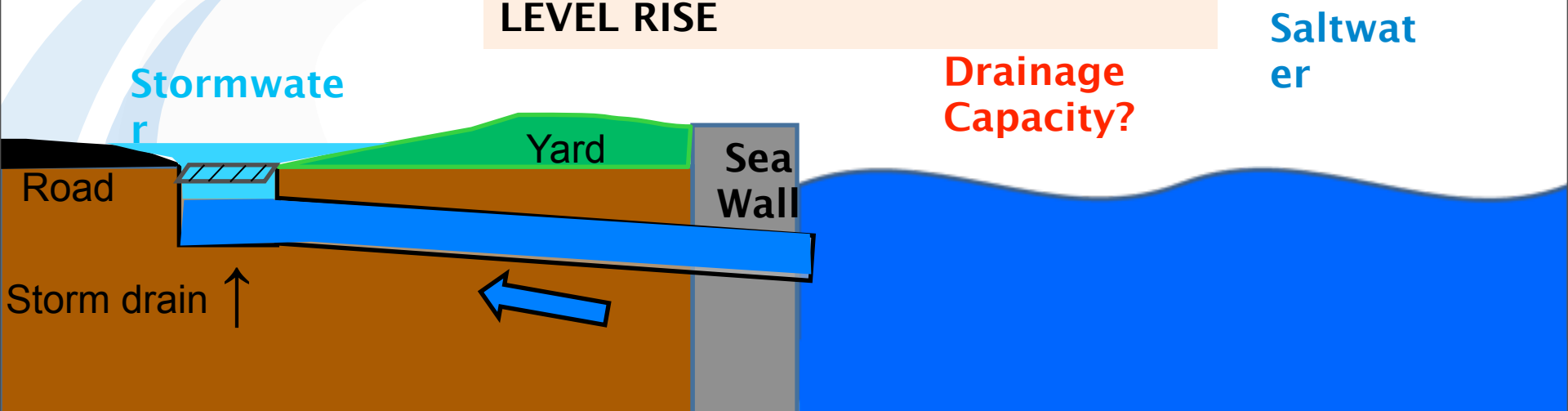


Drainage Challenge with Sea Level Rise

CURRENT AVERAGE TIDAL CONDITIONS

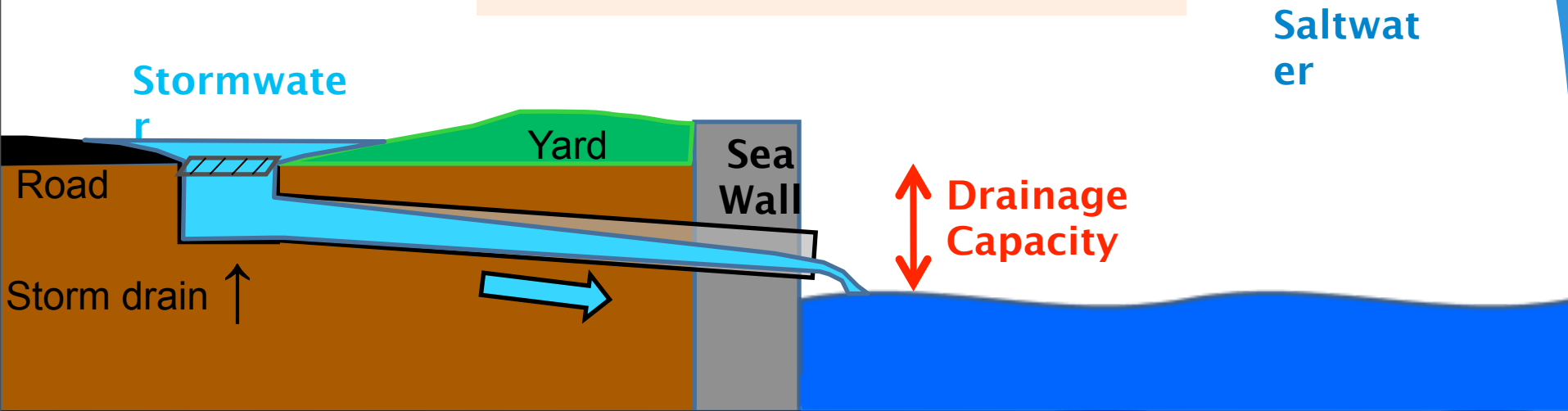


EXTREME HIGH TIDE OR SEA LEVEL RISE

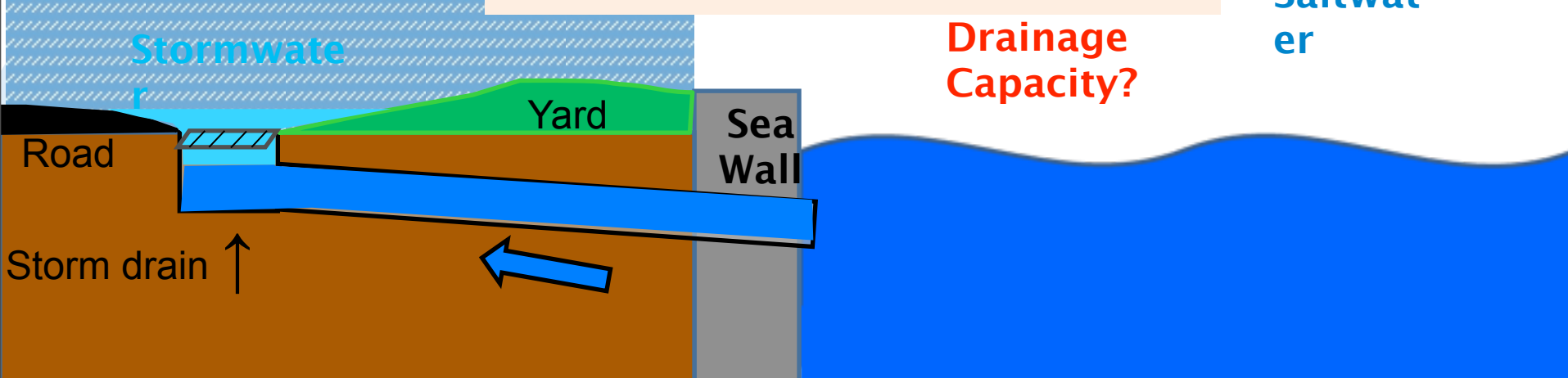


Drainage Challenge with Sea Level Rise

CURRENT AVERAGE TIDAL CONDITIONS

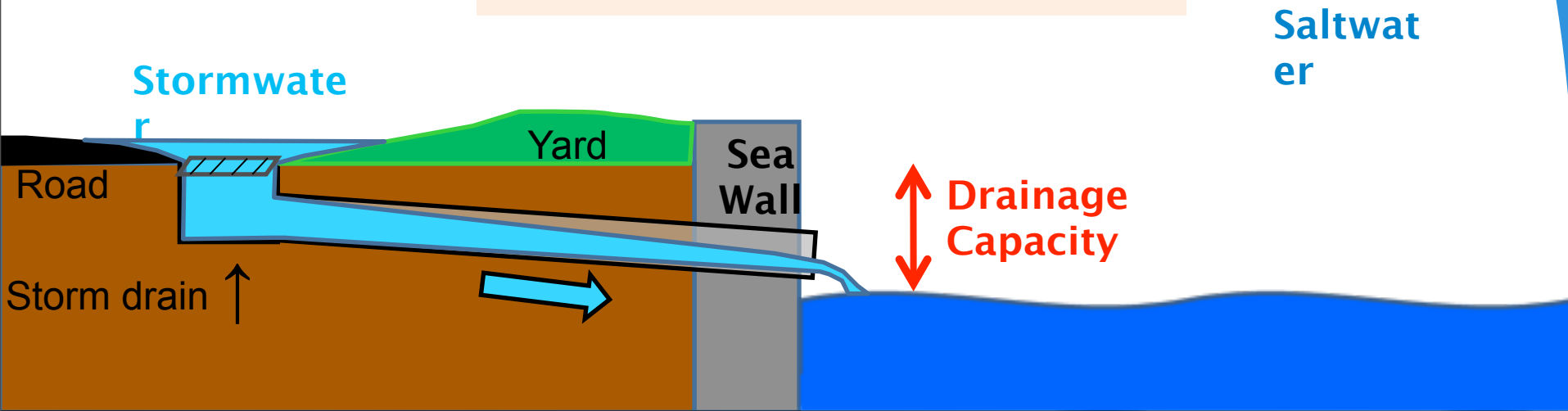


EXTREME HIGH TIDE OR SEA LEVEL RISE

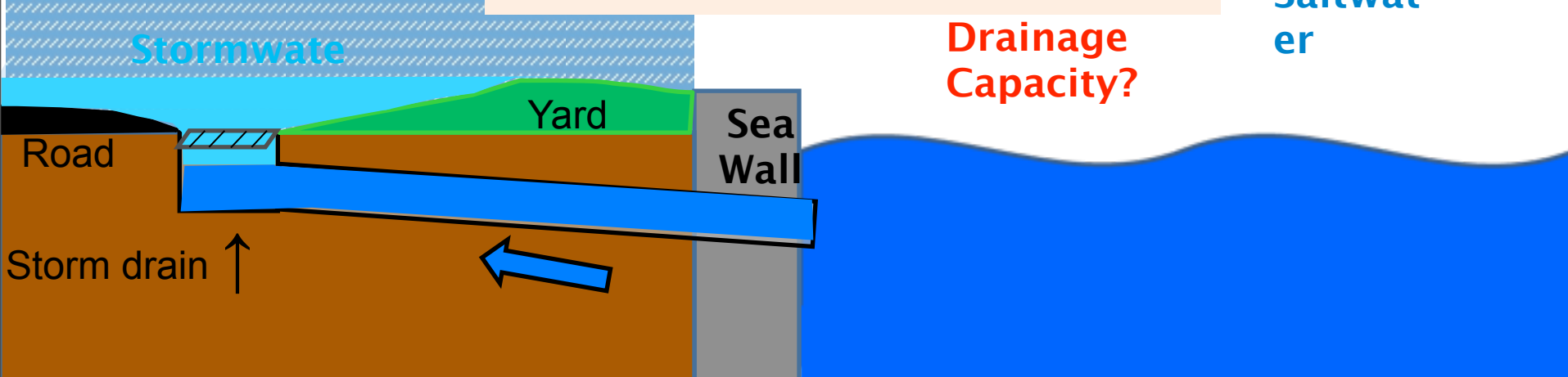


Drainage Challenge with Sea Level Rise

CURRENT AVERAGE TIDAL CONDITIONS

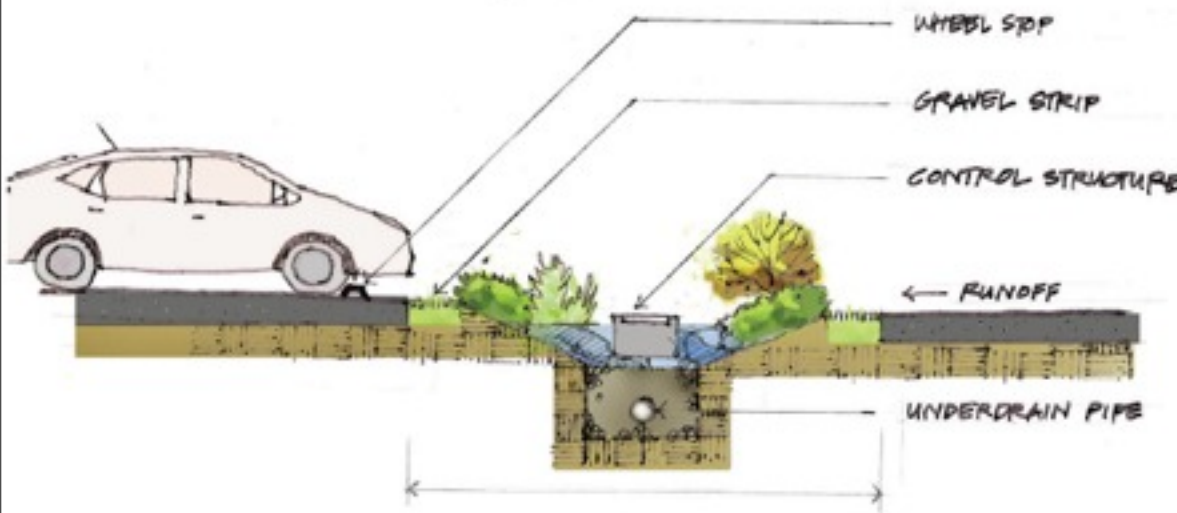


EXTREME HIGH TIDE OR SEA LEVEL RISE



Stormwater Management Strategy

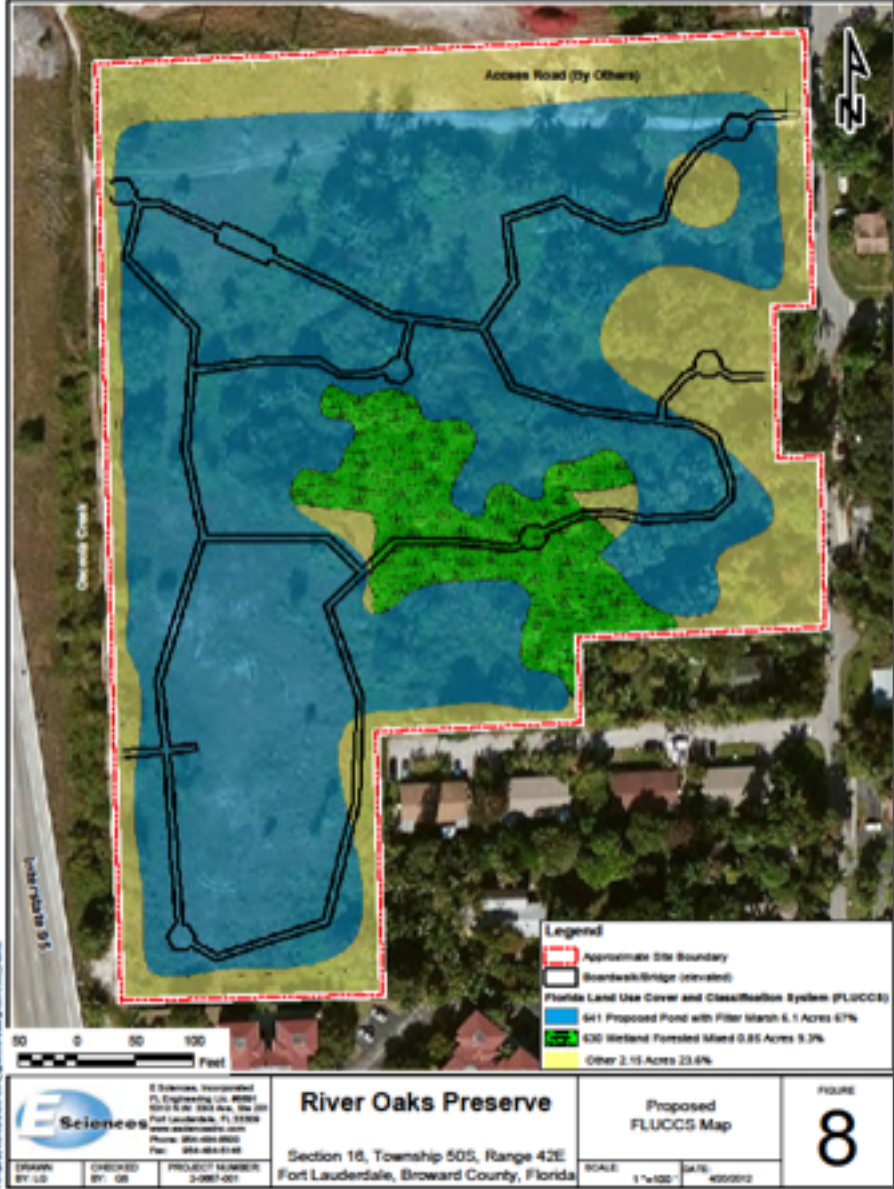
- New citywide approach
- Both green and grey infrastructure investment
 - Bio swales
 - Back flow preventers
 - New fee structure



River Oaks Stormwater



- One of Fort Lauderdale's oldest and flood-prone neighborhoods
- Along the South Fork of the New River
- 9.1 acre parcel
- Serves as a neighborhood natural filtering and storage stormwater system
- Elevated boardwalk/bridge
- Pond with Filter Marsh
- Forested Wetland Preserve



Communities' Projects

- Valves installed successfully to keep back the rising seawater
- 36 one-way valves installed and/or planned

• **Riviera** **Hendricks** **Victoria**
Isles **Isle** **Park**



- 17 one-way valves installed

- 10 one-way valves planned

- 9 Tidal Valves to be installed in 2013

Super Storm Sandy

October 2012

- Super Storm Sandy brushes South Florida from off-shore in the Atlantic Ocean October 26th – 28th
- Large breaking waves, beach erosion and coastal flooding
- Weakened natural and built armory



October 2012



Photo by Steve Lange, Sun-Sentinel



Photo by Susan Stocker, Sun-Sentinel



Seasonal High Tides

November 2012

- Seasonal High Tides
- Low-pressure system brought strong winds, forceful swells and sustained high seas
- Roadway, seawall, sidewalk and signal mast arm destruction



Community Meeting: December 11, 2012



TODAY IS THE LAST DAY TO SHARE YOUR IDEAS TO RESTORE A1A

As the Florida Department of Transportation (FDOT) works to repair the section of A1A damaged by Hurricane Sandy and the Thanksgiving weekend storms, the City of Fort Lauderdale is looking for your ideas to renourish the beach and restore this vital section of roadway.



restorea1a.com by Friday, March 15, 2013. For more information and project details, visit fortdale.gov/a1a.

Thank you for the input that has been submitted to date, and we appreciate your neighbors for sharing their ideas with us.



January – April 2013



Reconstruction Along State Road A1A

Post Disaster Opportunity: New Design



Infrastructure Adaptation Decision-Making Triggers



- **Location within Adaptation Action Area/inundation risk area:** evaluate the critical facilities and vital infrastructure components
- **Post-disaster level of destruction:** evaluate destroyed and severely damaged facilities, structures, and infrastructure for adaptation measures
- **Lifespan of the infrastructure component:** will impact the planning timeline for incorporation of adaptation actions
- **Purpose and function:** impacts the priority level for post-disaster adaptation
- **Adaptation cost versus community benefit:** extending the lifespan of the critical infrastructure and facilities
- **External funding, community support and political will:**

**Join in us this fall
November 7 -8,
2013**

**in the beautiful
City of Fort
Lauderdale
for the
5th Annual
Southeast Florida
Regional Climate
Change**

**<http://southeastfloridaclimatecompact.org/>
Leadership**





Thank you!
lfeldman@fortlauderdale.gov



<http://www.fortlauderdale.gov/vision/>