



Capitalizing on Resilience

A Public/Private Sector Dialogue

Fall Meeting 2017

Speakers



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Why Resilience?

Resilience is the capacity to **survive, adapt, and thrive** in the face of chronic stresses and acute shocks, and even transform when conditions require it.

Los Angeles



Florida



North Bay



Mexico City



Puerto Rico



Texas



Las Vegas

Risk is the interdependent consequences of **acute shocks** and **chronic stresses**.

SHOCK



STRESS



EXPOSURE



VULNERABILITY



HAZARD

CONSEQUENCE

Address risks at every scale.



PEOPLE



PLACES




SYSTEMS

Risk can **exacerbate existing inequalities** in a community.

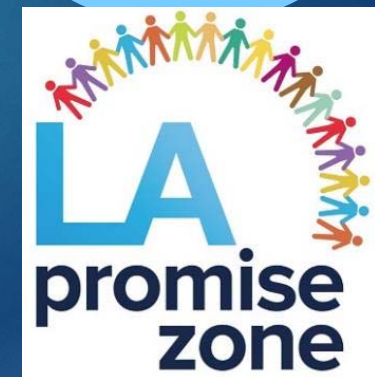
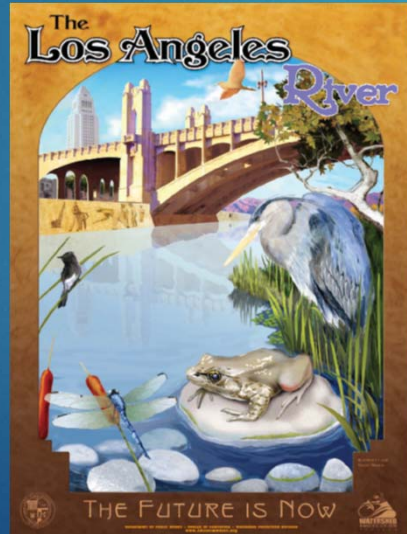
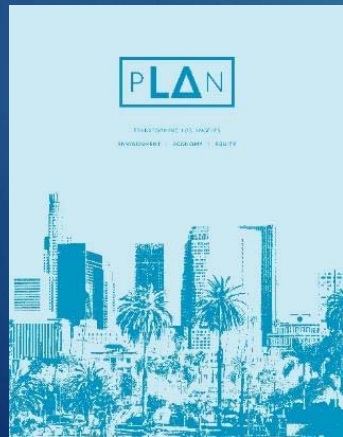
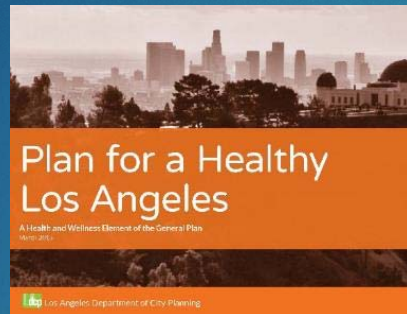
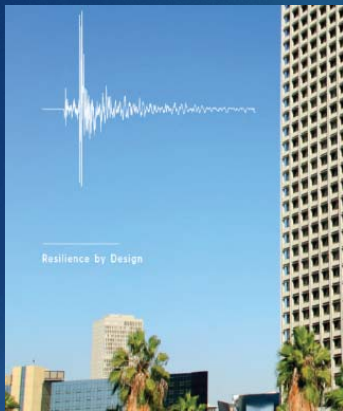


Prioritize our most vulnerable.



Keep people in their homes.
Keep people in their neighborhoods,
Keep people in our city.

Building on Existing L.A. Efforts



Resilience By Design

- ▶ Released December 8, 2014.
- ▶ Collaboration with Science Advisor and USGS Seismologist, Dr. Lucy Jones.
- ▶ 17 Recommendations



Buildings

- ▶ Mandatory Soft Story And Concrete Retrofits
- ▶ Strengthen Systems for Fire Following Earthquake



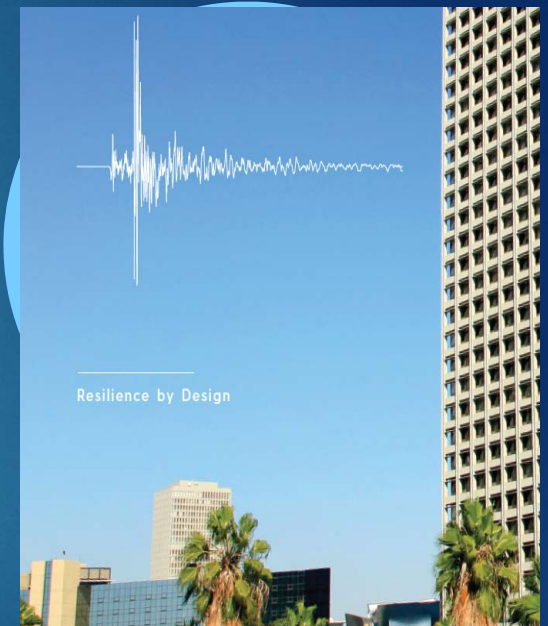
Water

- ▶ Seismic Resilient Pipe Network
- ▶ Fortify Aqueducts



Telecom

- ▶ Maintain Internet Access After Earthquakes
- ▶ Advancement of Earthquake Early Warning



<http://www.lamayor.org/resilience-design-building-stronger-los-angeles>

Sustainable City pLAn

- ▶ Released April 8, 2015, First Annual Report April 22, 2016.
- ▶ Roadmap to achieve short-term results while setting the path to transform LA in decades to come.
- ▶ Targets in 14 categories that will advance LA's environment, economy and equity.



Heat Islands

- ▶ Add additional street trees and cool roofs, prioritizing neighborhoods with the most severe heat island effect



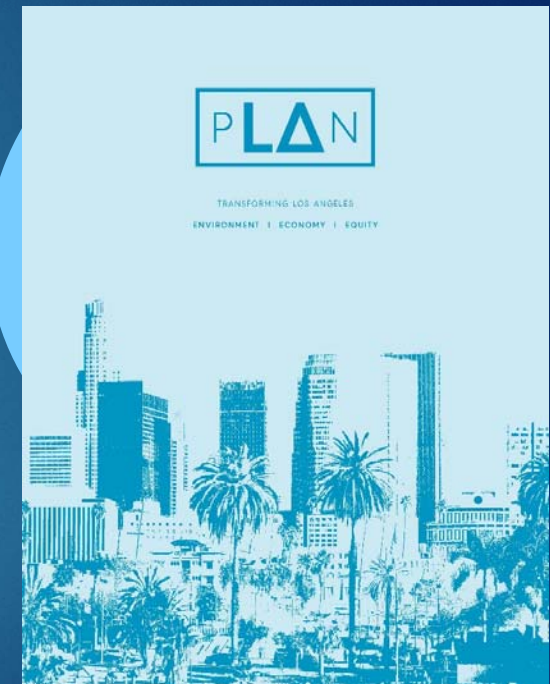
Water Storage

- ▶ Encourage residential water storage (e.g., rain barrels and small cisterns)



Preparedness

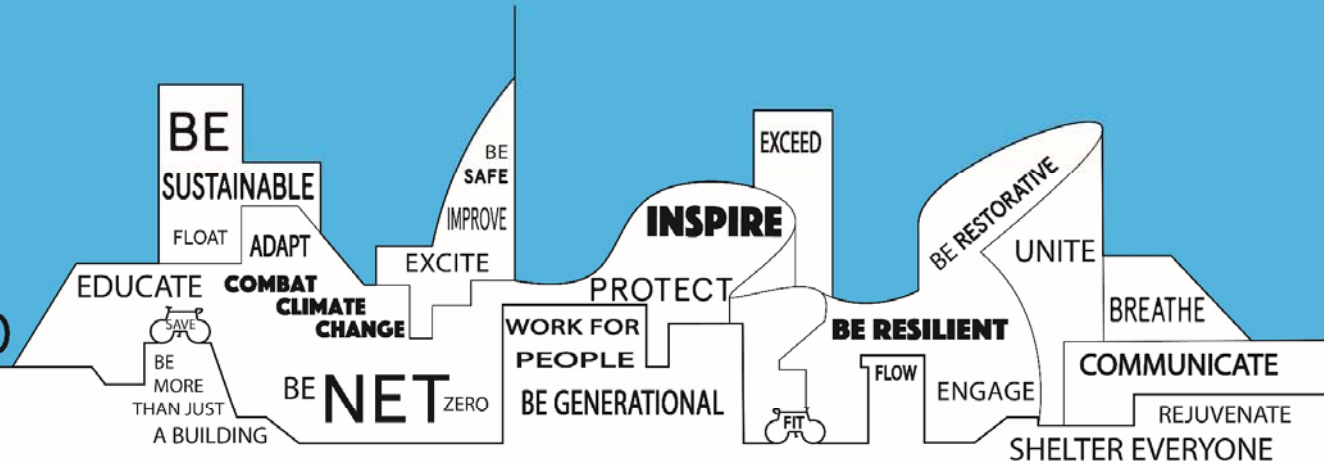
- ▶ Implement enhanced "Reverse 911" system to incorporate mobile phones and alerts



<http://www.plan.lamayor.org>

IN THE FUTURE, I WANT BUILDINGS TO

Building Forward LA

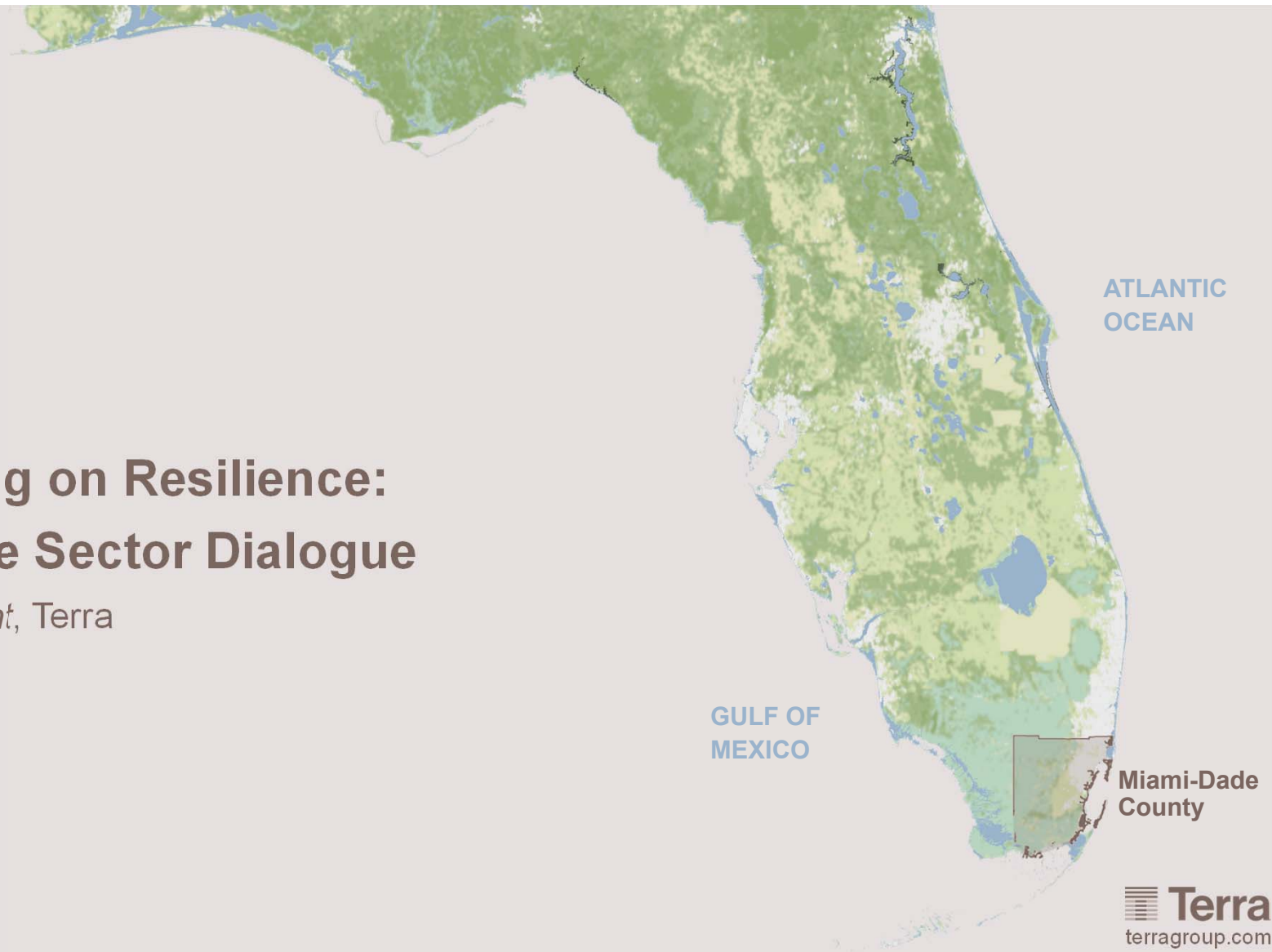


Building Forward LA is an initiative in partnership with local and national organizations to further the City's efforts to achieve our vision of a truly resilient and sustainable Los Angeles. It supports refreshing and “futurizing” policies and processes that influence how we design and build our city’s buildings.

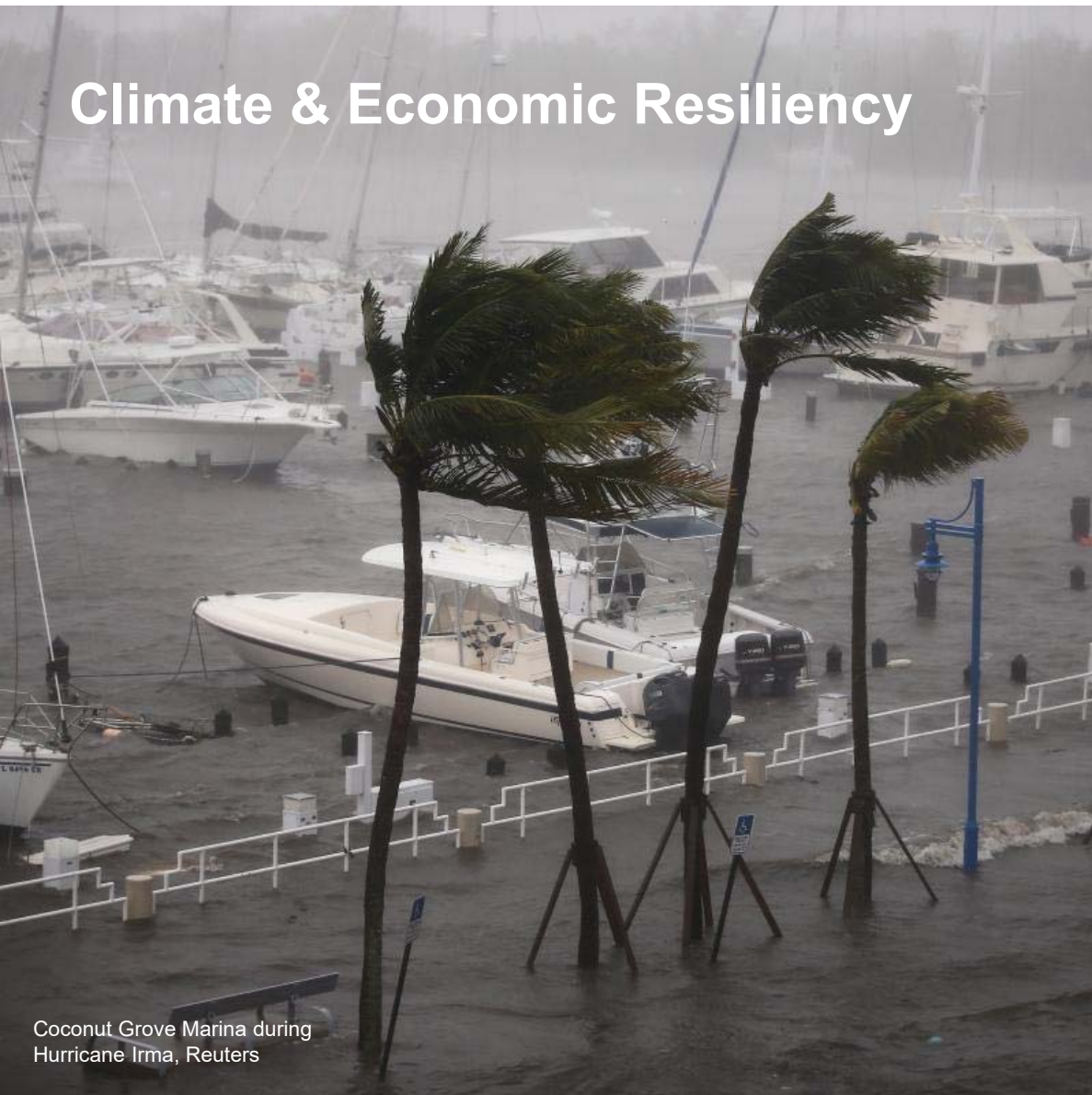
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David Martin, *President*, Terra

October 25, 2017



Climate & Economic Resiliency



Coconut Grove Marina during Hurricane Irma, Reuters



Storm surge flooded Brickell during Hurricane Irma,, Reuters

Economic Resiliency: Grove Central T.O.D.



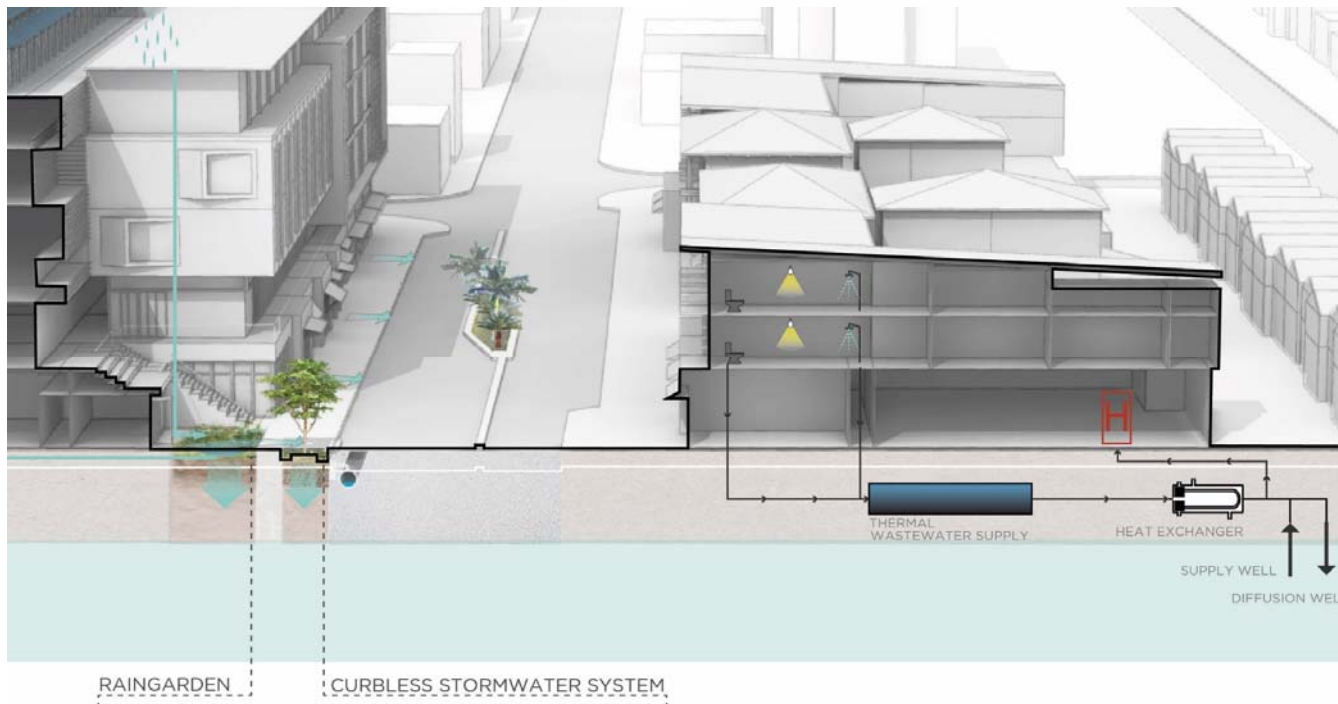
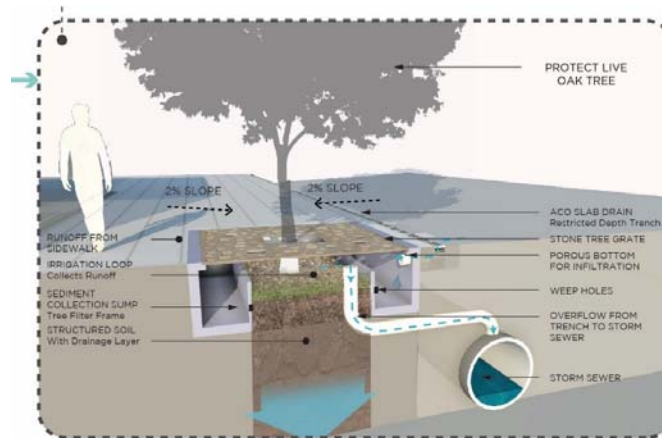
- 40% of companies that suffer disruption fail within two years.
(KPMG Risk & Advisory)
- County partnership with Next Era/FPL for 40mwh microgrid battery and 2mwh solar array.
- Proforma includes “Kilowatts” in addition to “Square Feet” (ROI at 10 years and 10.4% IRR).
- “Invisible luxury” brand value and risk reduction of an uninterrupted business address.

Energy Resiliency: Grove Central T.O.D.



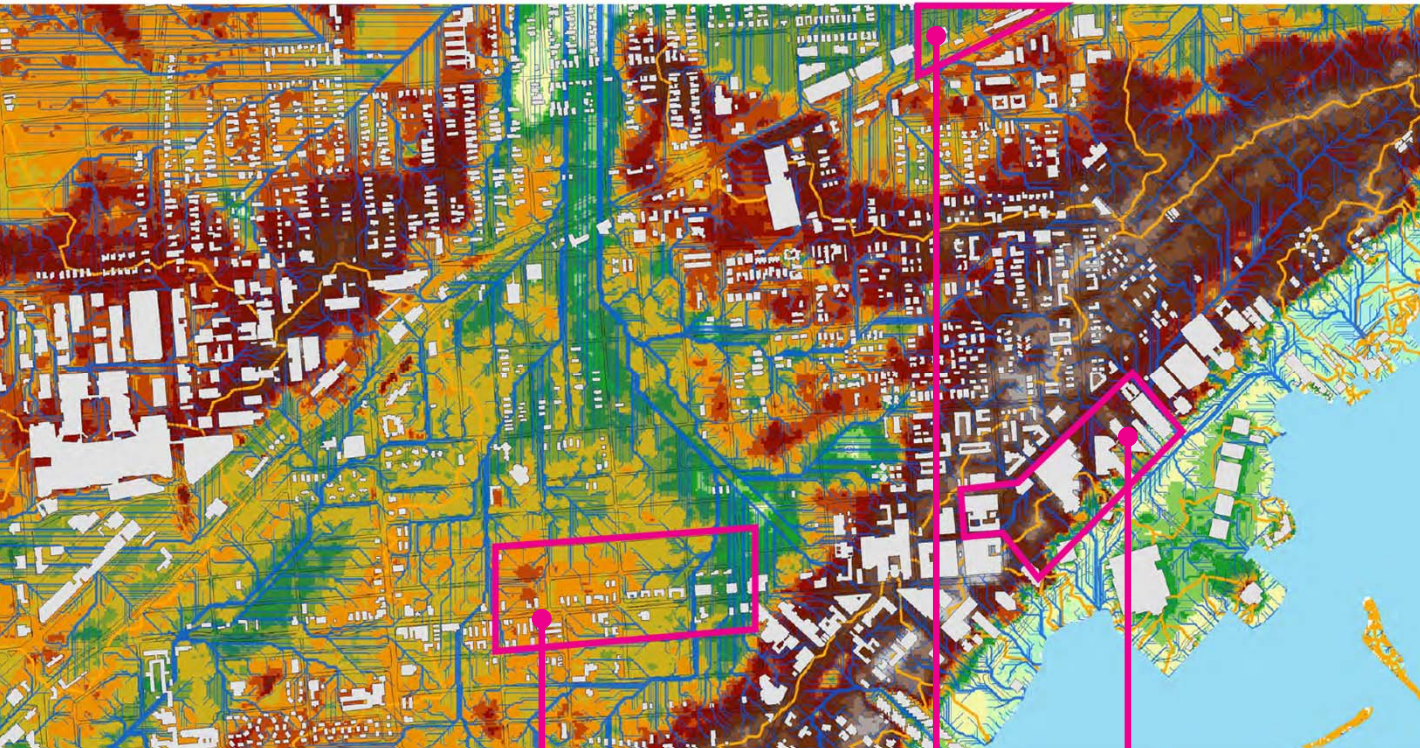
- Low maintenance renewables are the only uninterruptible power source.
- Eliminates high maintenance generators that run out of fuel, malfunction, and catch fire.
- Geothermal cooling wells increase efficiency and eliminate roof condensers, with double length 20-year warranty.
- Climate cloud sculptures that condition public plaza from the ground up, using captured rainwater.

Water Resiliency: Grand Avenue



- Rain intensity is increasing 5%-10% per decade.
(NOAA, James Kossin)
- Elevated groundwater compromises underground piping (trench drains), exacerbated by SLR.
- High cost maintenance of pumps concentrate risk when they fail.
- Green infrastructure provides supplemental surface drainage and decentralized risk reduction.
- Elevating roads and districts coordinated with private owners, and federal insurance policy.

Political Economy of Climate Justice



Hydrology Map of Miami

Grand
Avenue

Grove
Central

BIG, OMA Residences;
Mary Street by Touzet

- Miami has worse inequality than Rio (Gini Index).
- Low AMI and high ground are the most vulnerable neighborhoods.
- A diversified economy is a healthy one, starter homes are critical.
- Legislation for climate gentrification stabilization (Philadelphia precedent).
- Affordable housing that does not require credit score qualification.
- Density bonuses for inclusionary housing, community land trusts, and cooperatives.

Miami Climate Leadership



Giralda Avenue & Miracle Mile are Miami's first built adaptation to changing weather and sea level rise, where trees, porous paving, and line drains all work in concert to manage catastrophic flooding.

- Miami's response to Hurricane Andrew in 1992 created the world's most strict wind codes.
- The International Building Code (IBC) adopted Miami's wind resiliency.
- Networked green infrastructure (NGI) being built in the Miami neighborhood of Coral Gables is designed for some of the most intense urban rains on the planet, at 7 inches per hour.
- Miami's next gift to planetary resiliency will come in the next few years with work underway that will define new standards for water and energy resiliency.

Thank you!

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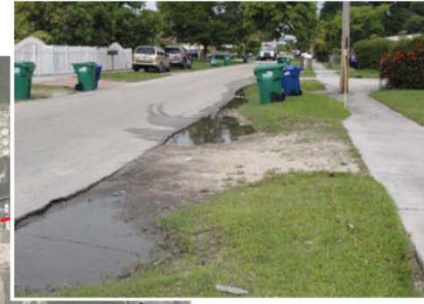
SOUTHEAST FLORIDA
REGIONAL COMPACT
CLIMATE
CHANGE



OFFICE OF RESILIENCE

A ULI Advisory Services Panel Report

Arch Creek Basin
Miami-Dade County, Florida
May 22-27, 2016



MIAMI-DADE COUNTY

Focus area 3: Arch Creek Estates, a community that has experienced regular flooding, where some residents have resorted to applying for FEMA buyouts.



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Focus area 1: The site for a future commuter-rail station in North Miami, which will present an opportunity for transit-oriented development.

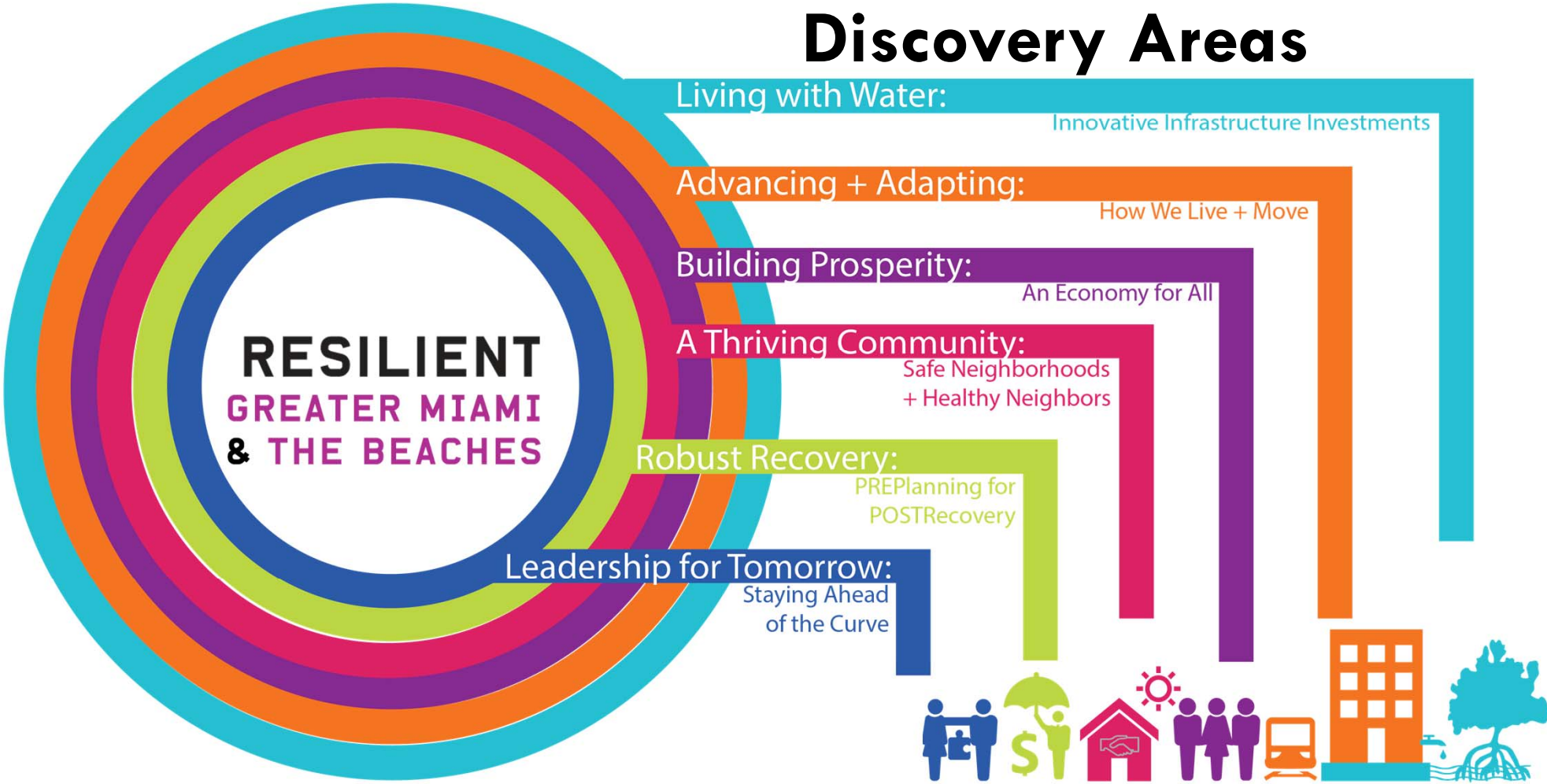


MIAMI-DADE COUNTY

Focus area 2: Aerial view of the Sans Souci Estates, single-family homes along residential canals developed with cut-and-fill techniques.

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Discovery Areas





Living with Water

Innovative Infrastructure

SITUATION: Southeast Florida is vulnerable to sea level rise due to its **low elevation**, **unique geology**, and the **density of coastal development**. However, there are many **opportunities for innovative adaptation** with mangroves, dunes and parks, and innovative building materials and designs.

INTENT: This discovery area will focus on **investing in natural and man-made infrastructure** to rise above and learn to live with water to create a more resilient community in the face of storms and sea level rise.





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