

Building Resilience through Risk Management of Climate-Related Coastal Hazards

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NEMAC+FernLeaf



U.S. Climate
Resilience
Toolkit

Steps to Resilience Case Studies Tools Expertise Regions Topics

Meet the Challenges of a Changing Climate

Find information and tools to help you understand and address your climate risks.

LEARN HOW TO BUILD
RESILIENCE >

SEE WHAT OTHERS ARE
DOING >

USE THE CLIMATE
EXPLORER >

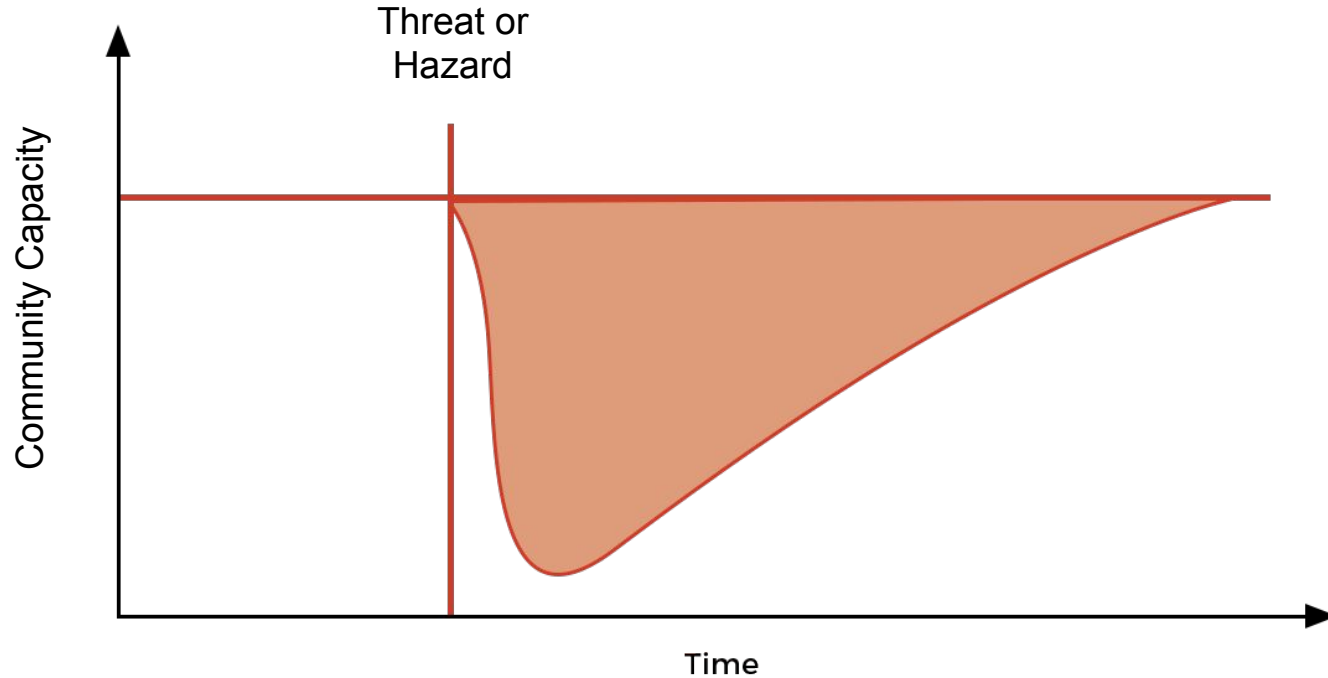
TOUR THE TOOLKIT >

STEPS TO RESILIENCE

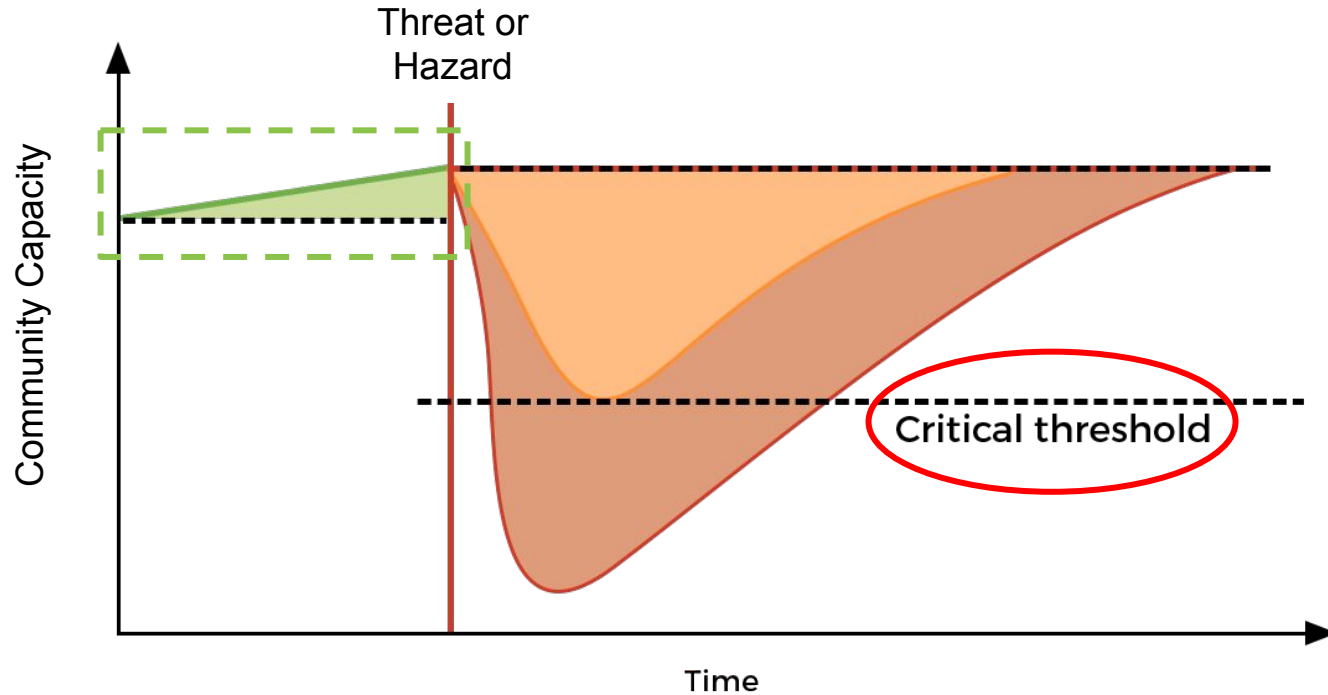
- 1 Explore Climate Threats
- 2 Assess Vulnerability & Risks
- 3 Investigate Options
- 4 Prioritize Actions
- 5 Take Action

NEMAC+FernLeaf... partners with NOAA on the U.S. Climate Resilience Toolkit (toolkit.climate.gov) that establishes a five-step **RISK FRAMEWORK** that communities can use to become more resilient to climate hazards and use to discover solutions for their climate risks.

Threats impact our community capacities



Resilience is investing now for a better present and future



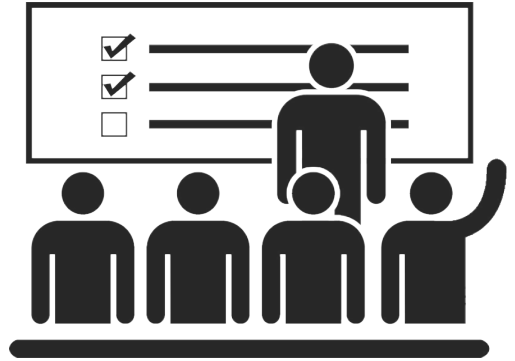
How do you assess and build resilience?



RISK ANALYSIS
FRAMEWORK



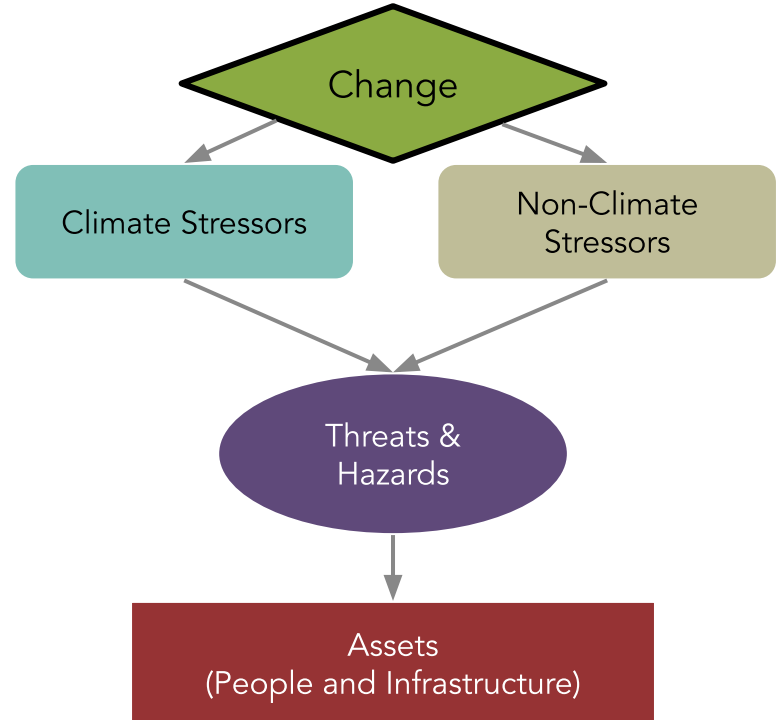
QUANTIFIED
ASSESSMENT



IMPLEMENTABLE OPTIONS

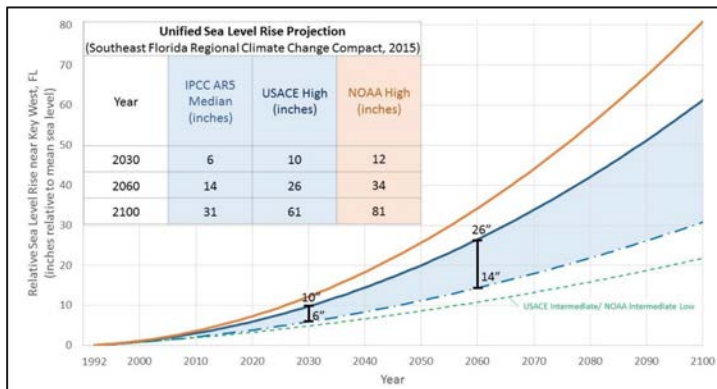
Resilience Conceptual Model

- Decisions are driven by **values** attached to **assets**
- How stressors have **changed** and are projected to **change** is a very important topic to include in the assessment
- Risk is increasing due to these changes. But the question is, “By how much and how soon?”



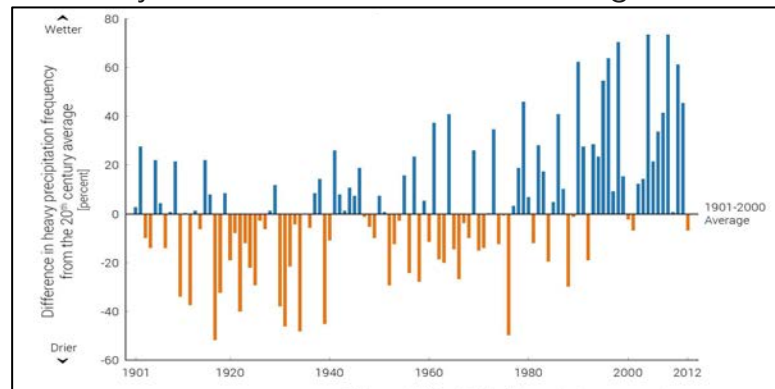
West Palm Beach Changing Realities

Sea Level Rise of 2 feet



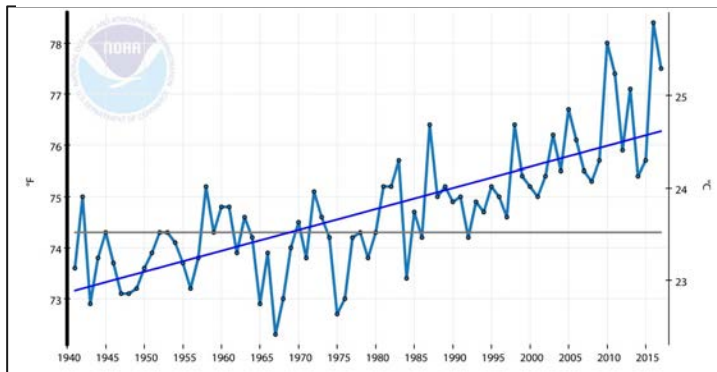
Southeast Florida Regional Climate Change Compact

Heavy Rainfall Events are Increasing



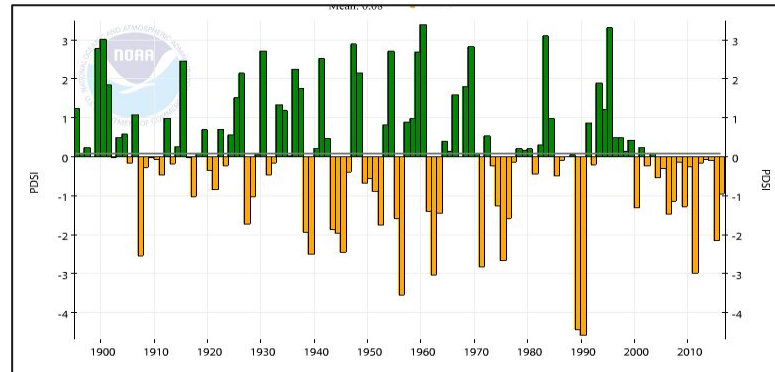
US National Climate Assessment

Night Time Temperature is Increasing



NOAA's Climate at a Glance

Drought Frequency and Severity is Increasing



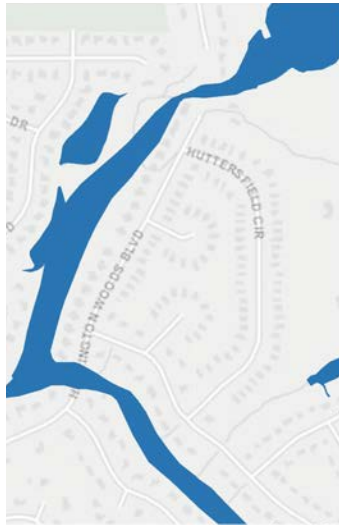
NOAA's Climate at a Glance

Start with exposure to the hazard

Residential Property



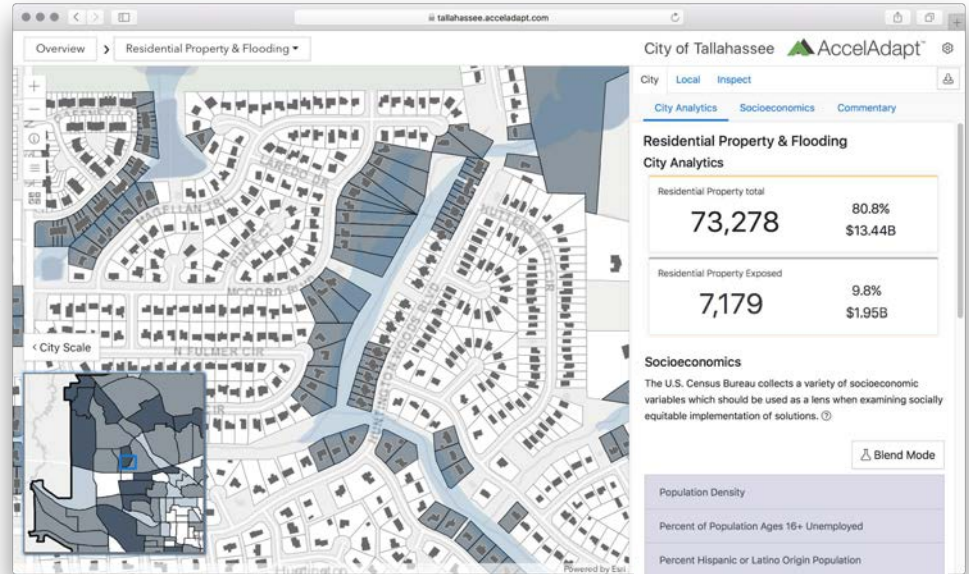
Flooding



+



Residential property exposed to flooding



Analyze Project Sites

Include a Buffer to Understand Nearby Impacts




Draw Area on Map



Upload Shapefile

Overview

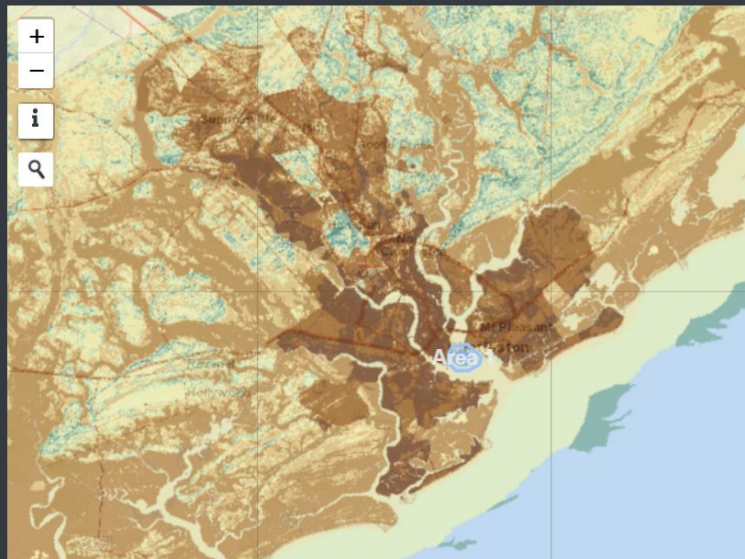
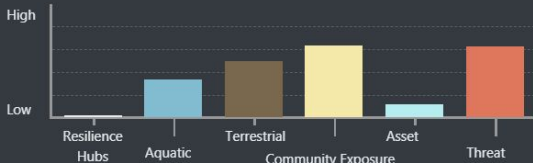
 Remove All Areas

 Download

 Refresh



 Get Details for Area 1



Map Layers

Base Map

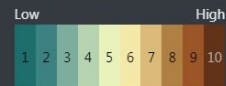
Streets

Resilience Hubs

Resilience Hubs

Community Exposure Index

Community Exposure Index



Community Asset and Threat Indices

Community Asset Index

Threat Index

Aquatic and Terrestrial Indices

Aquatic Index

Terrestrial Index

NEMAC...

partners with the National Fish and Wildlife Foundation to develop a tool to explore the resilience of coastal communities in the U.S.

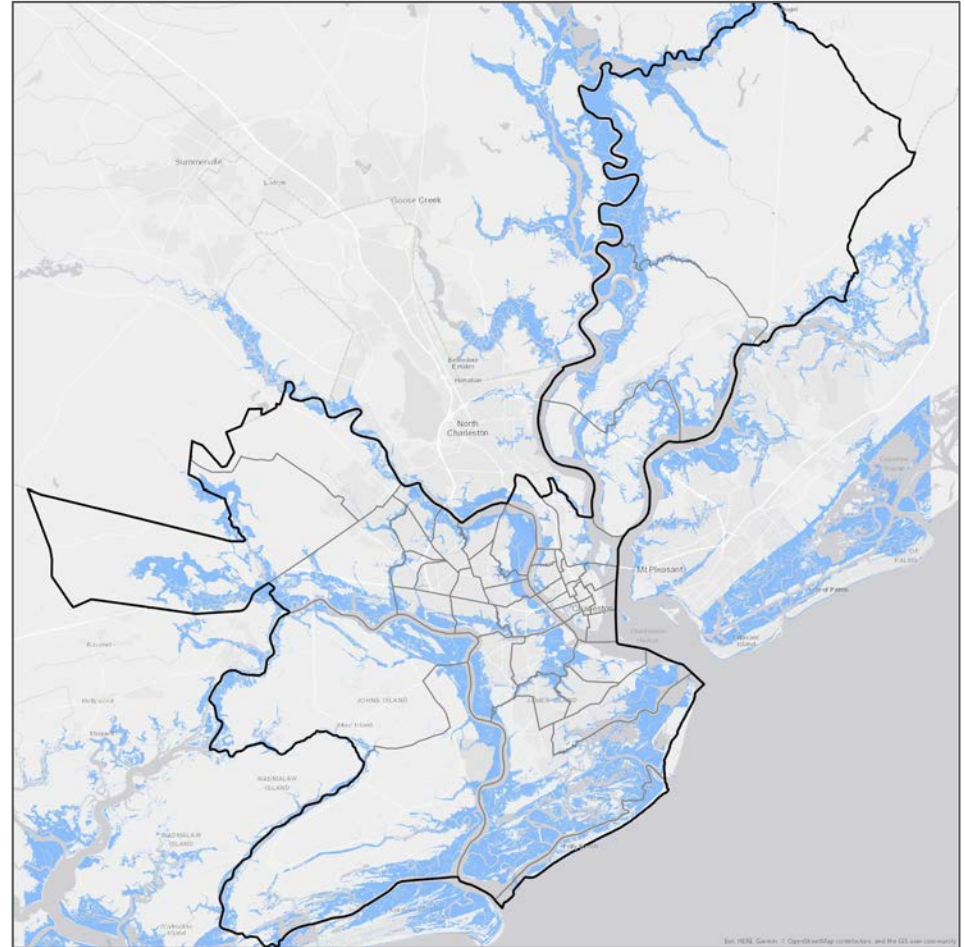
Same exposure, different vulnerability



Benjamin Lowy for The New York Times

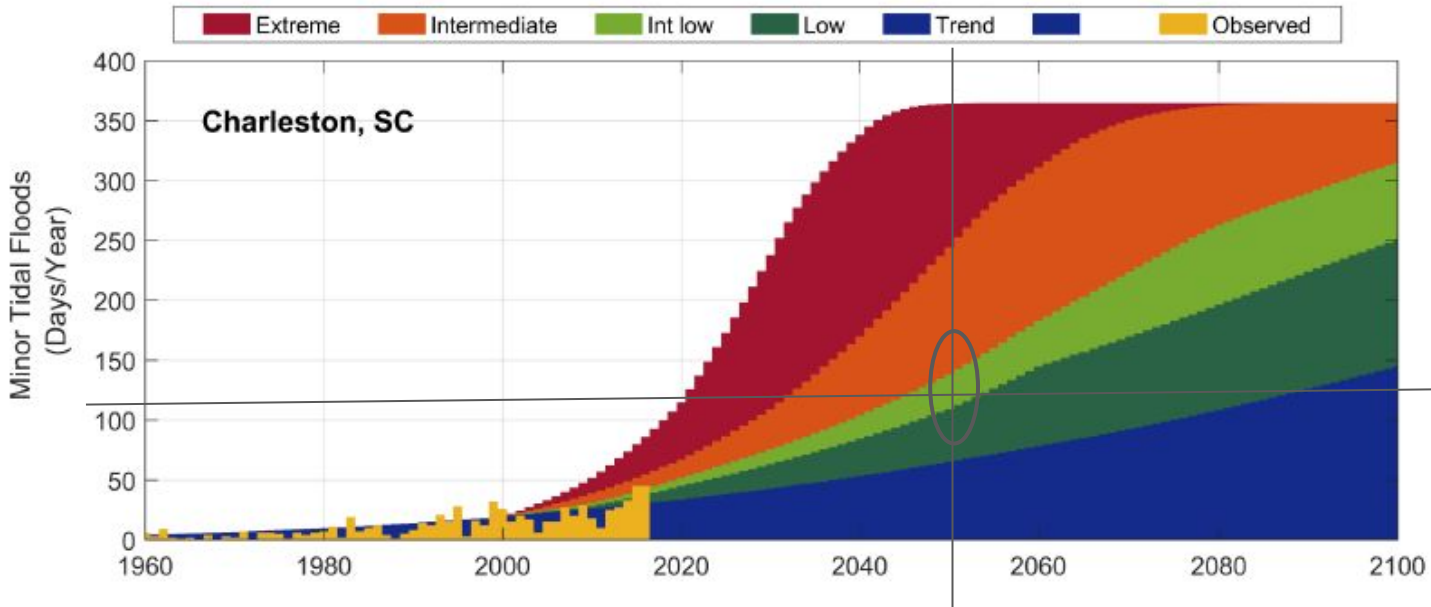
Charleston, SC

Threat: Tidal Flooding



Source: NOAA Office for Coastal Management Sea Level Rise Data:
Coastal Flood Threshold Inundation Extent (2016), Charleston
County GIS, Berkeley County GIS, City of Charleston GIS

Future Change for Tidal Flooding



Current Tidal Flooding

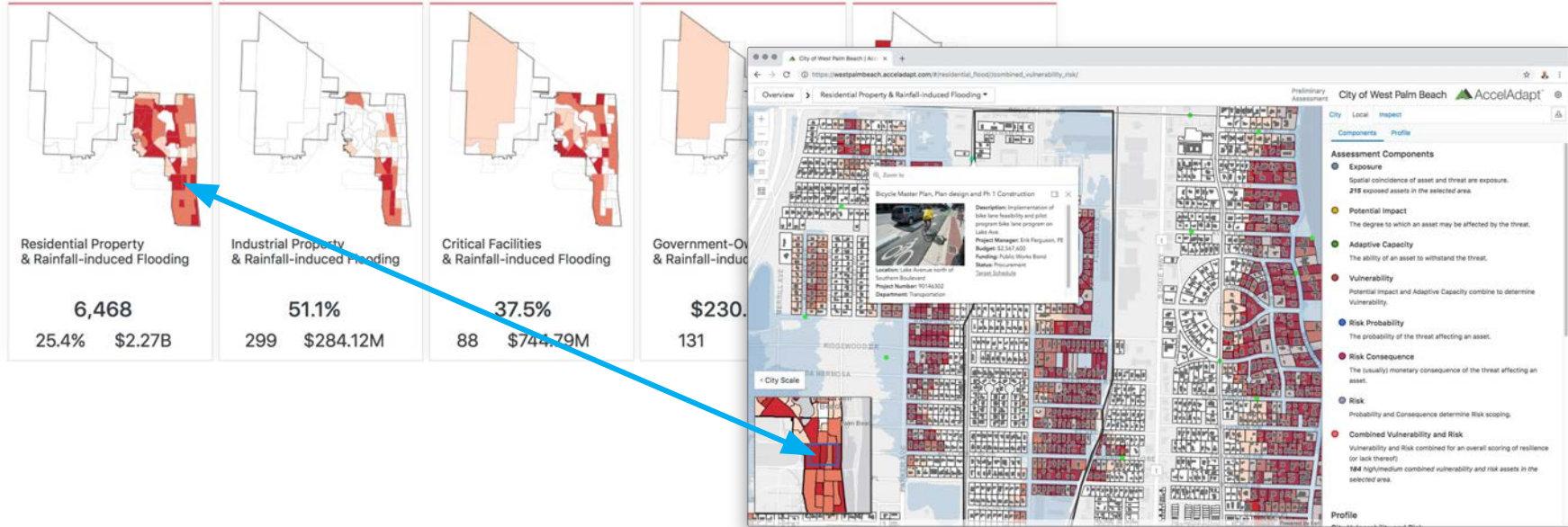


Potential Future Tidal Flooding

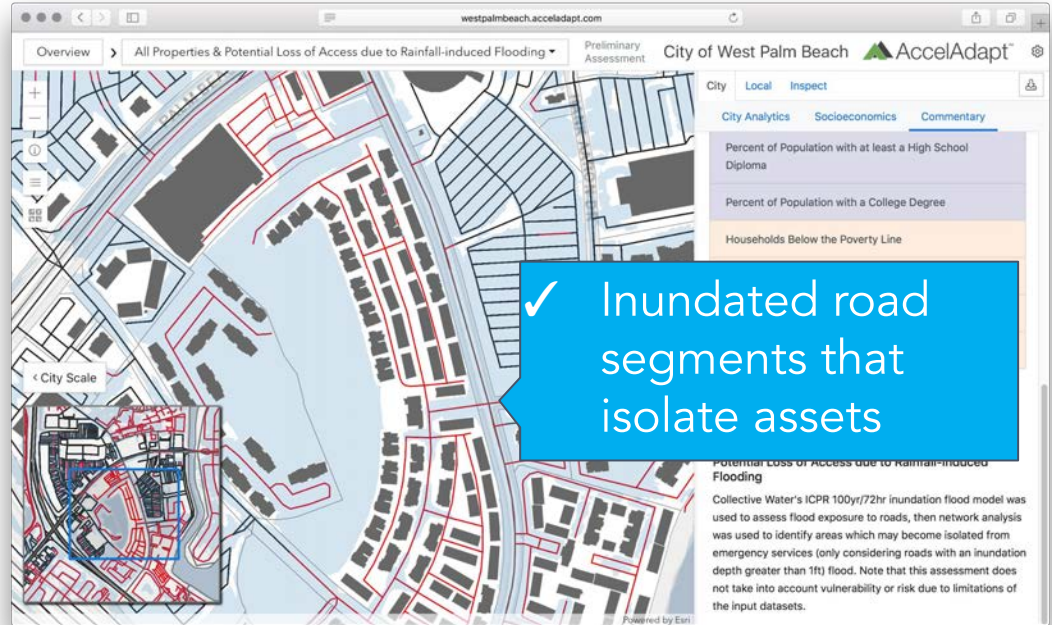
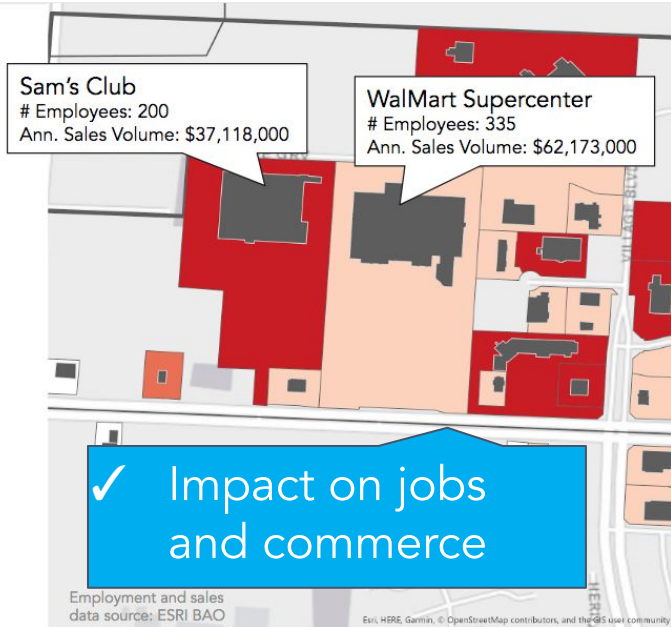


Gain insight across scales, transparently

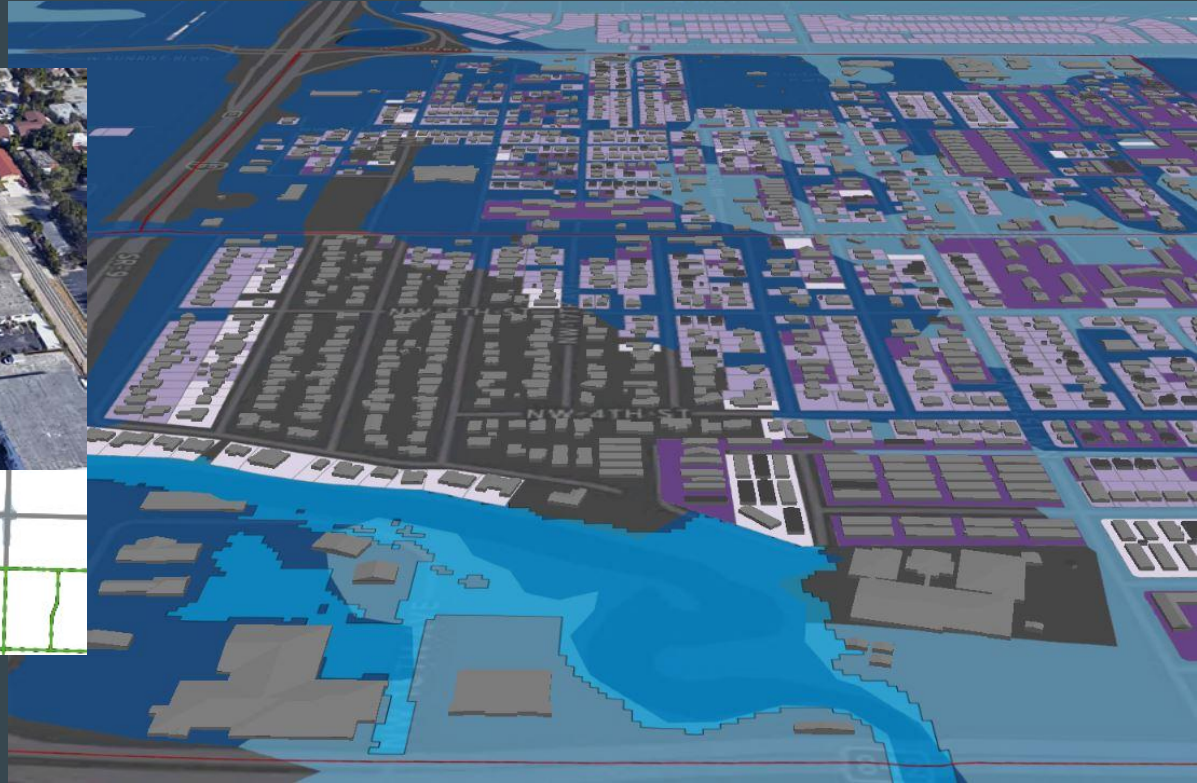
Most Affected Asset / Threat Pairs



Identify what's most vulnerable and at risk



Not only will the hospital flood, but can you get to it?



Thank you!

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