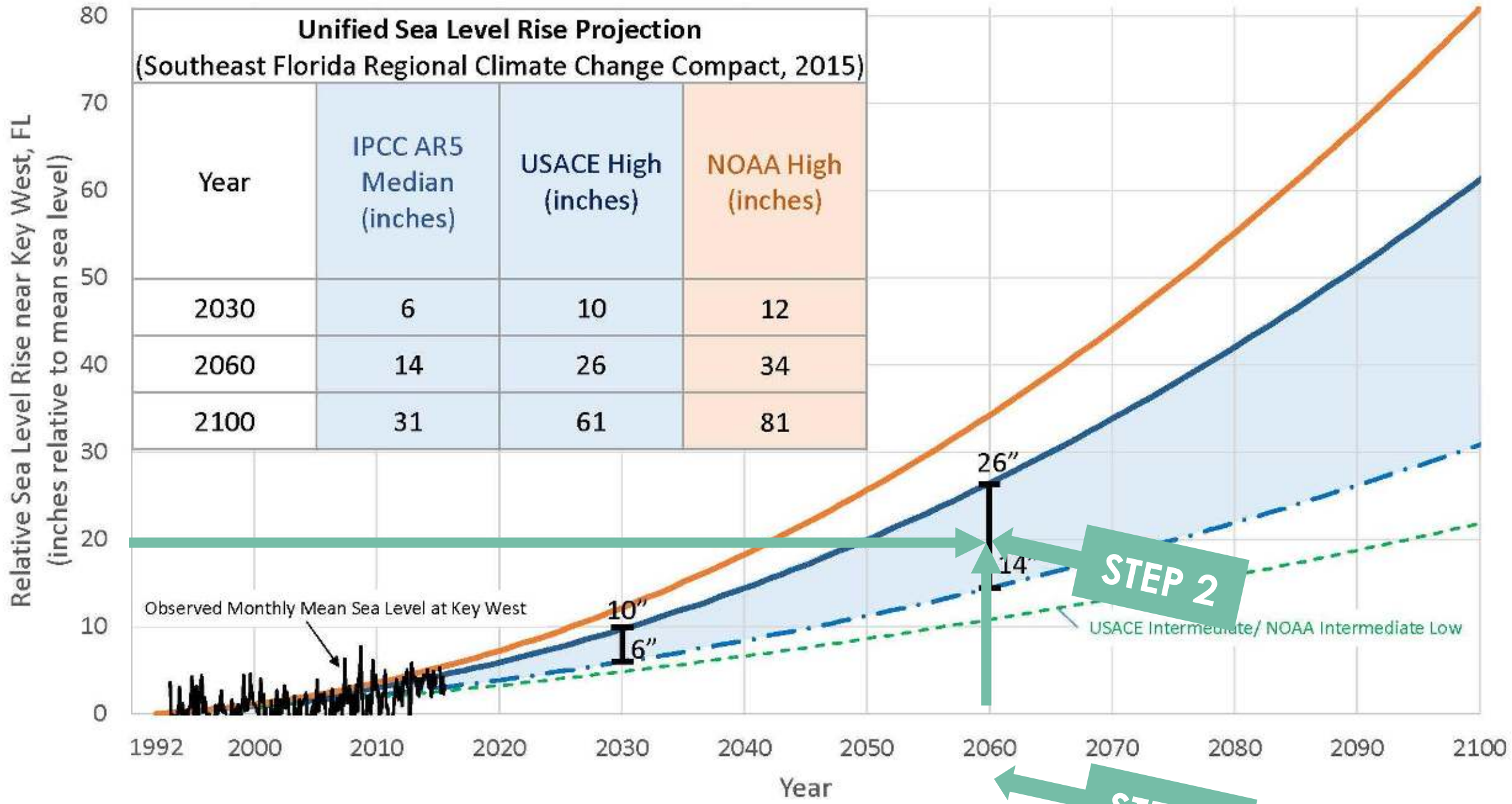




SLR IN BROWARD PROCUREMENT

Broward County Environmental Planning and Community Resilience Division

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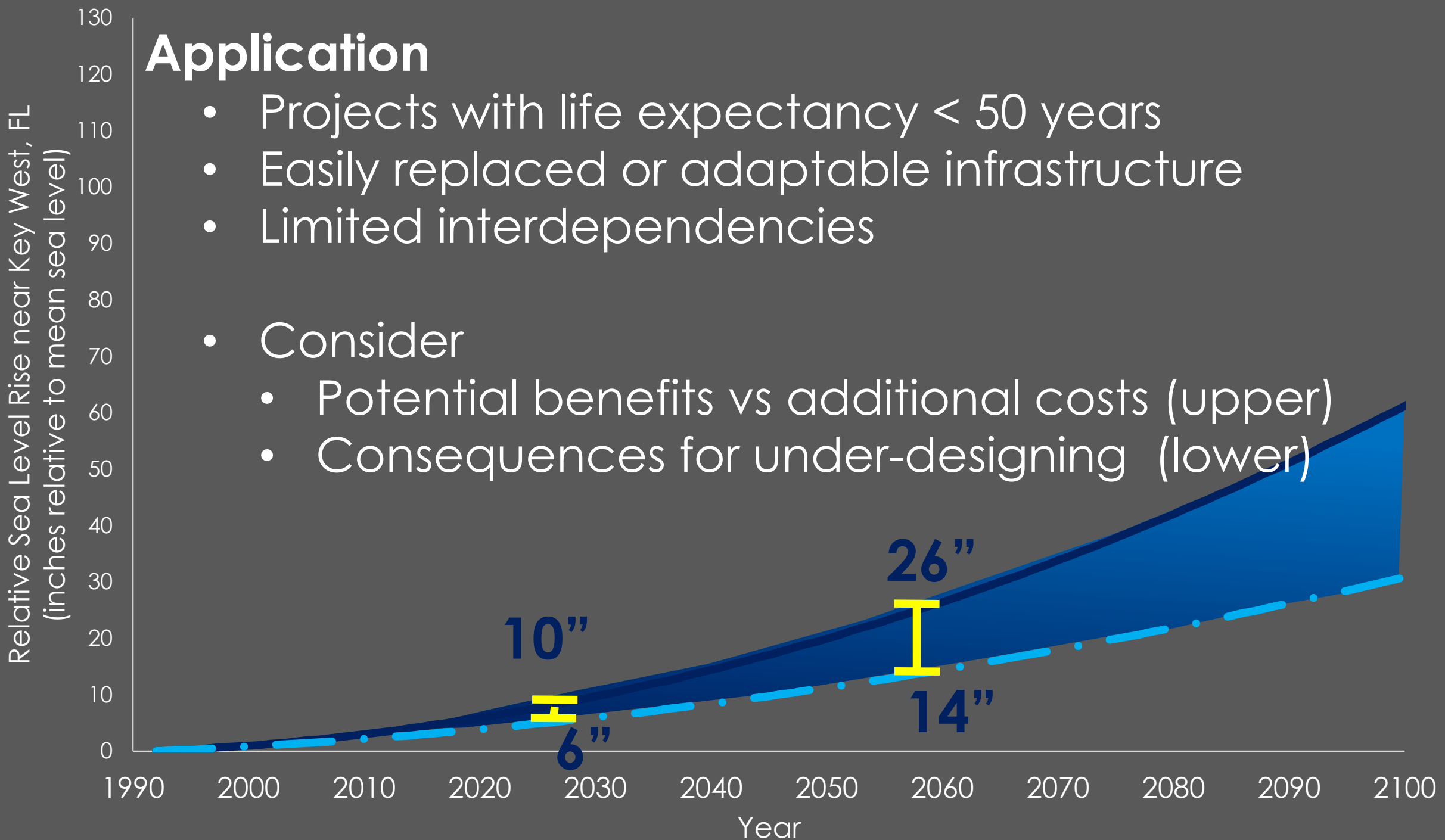
STEP 2

STEP 1

Application

- Projects with life expectancy < 50 years
- Easily replaced or adaptable infrastructure
- Limited interdependencies

- Consider
 - Potential benefits vs additional costs (upper)
 - Consequences for under-designing (lower)



NOAA High (Orange solid line)

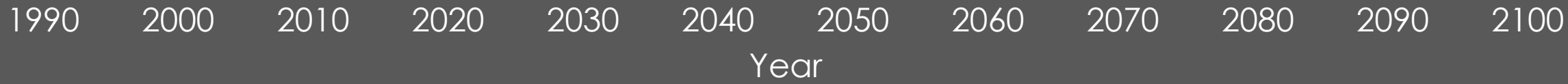
Relative Sea Level Rise near Key West, FL
(inches relative to mean sea level)

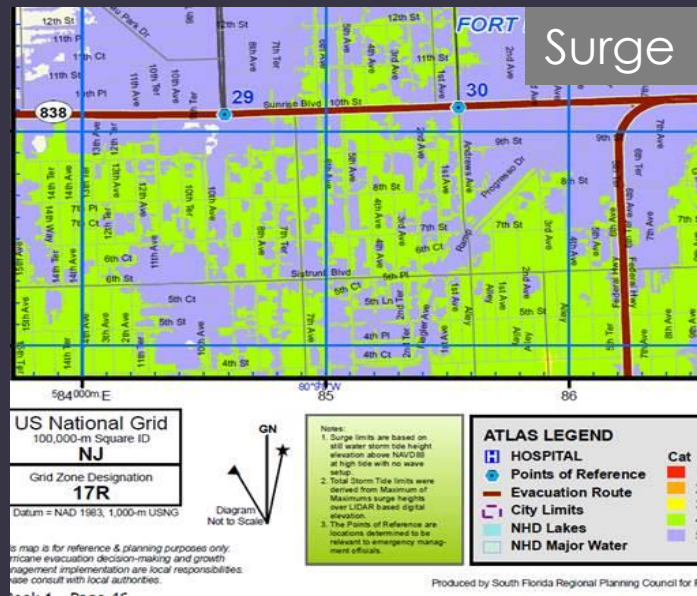
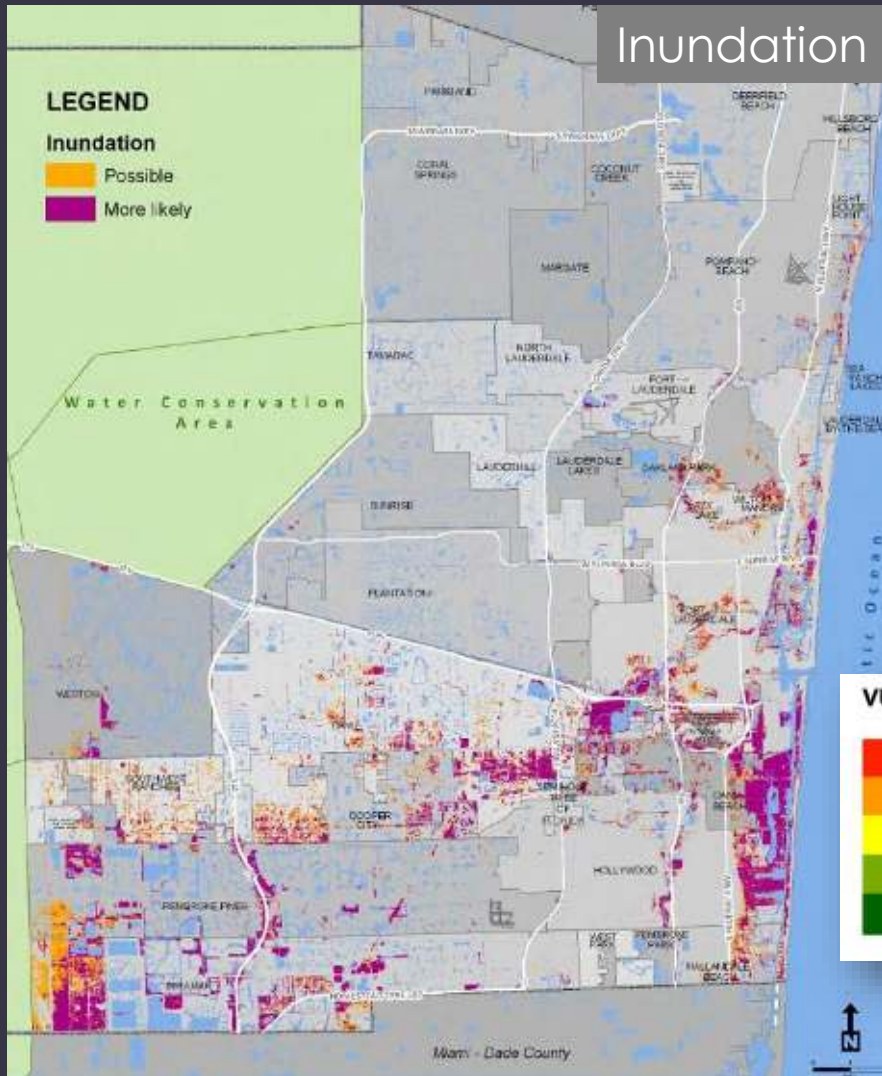
- WG acknowledged potential for rapid acceleration of sea level rise
- Application- **risk intolerant critical infrastructure**
 - Planning for projects constructed **after 2060**
 - Projects with design life **>50 years**
 - Not removable/ replaceable
 - Interdependent



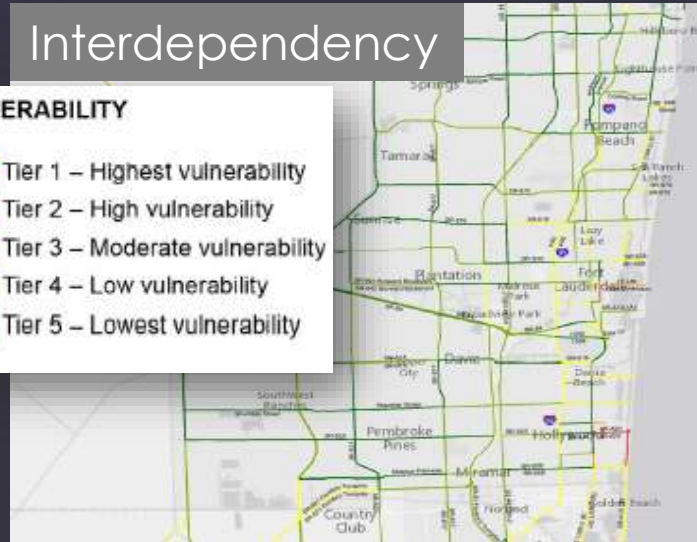
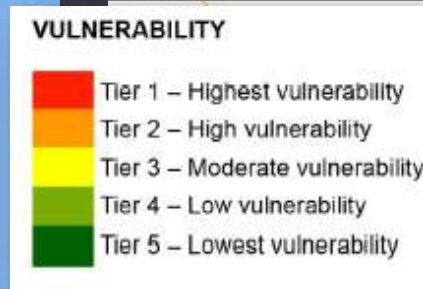
34"

81"





Interdependency



Project Evaluation Examples

- Risk to equipment
- Accessibility of roads and sites
- Critical infrastructure assessment
- Land Use
- Tools
 - Risk maps
 - FDOT SLR Sketch
 - NOAA

Elevations on NAVD88

Station: 8722956, South Port Everglades, FL

Status: Accepted (May 7 2018)

Units: Feet

Control Station: 8722670 Lake Worth Pier,
Atlantic Ocean, FL

T.M.: 0

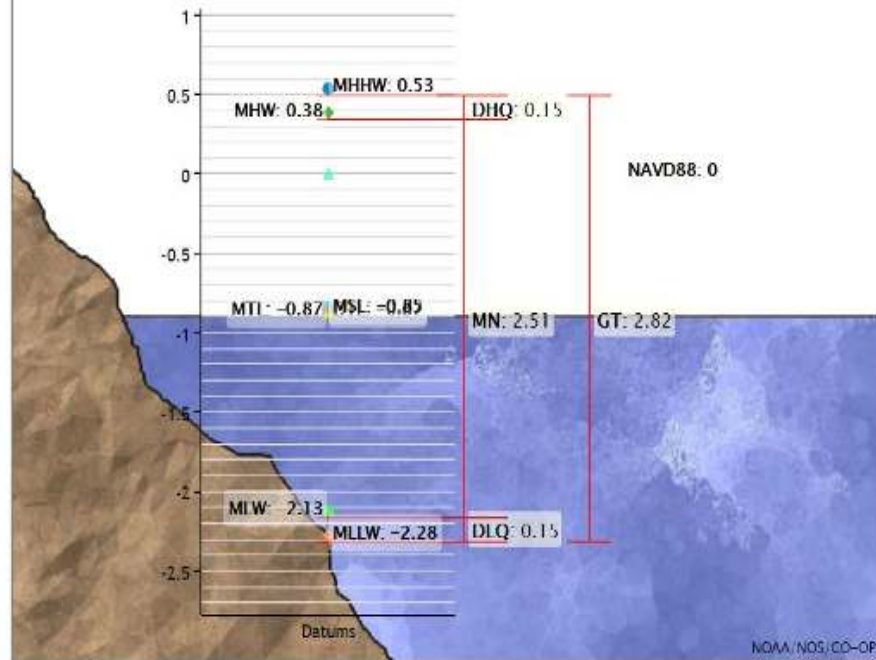
Epoch: 1983-2001

Datum: NAVD88

Datum	Value	Description
MHHW	0.53	Mean Higher-High Water
MHW	0.38	Mean High Water
MTL	-0.87	Mean Tide Level
MSL	-0.85	Mean Sea Level
DTL	-0.87	Mean Diurnal Tide Level
MLW	-2.13	Mean Low Water
MLLW	-2.28	Mean Lower-Low Water
NAVD88	0.00	North American Vertical Datum of 1988
STND	-26.35	Station Datum
GT	2.82	Great Diurnal Range
MN	2.51	Mean Range of Tide
DHQ	0.15	Mean Diurnal High Water Inequality
DLQ	0.15	Mean Diurnal Low Water Inequality
HWI	0.84	Greenwich High Water Interval (in hours)
LWI	6.91	Greenwich Low Water Interval (in hours)
Max Tide		Highest Observed Tide
Max Tide Date & Time		Highest Observed Tide Date & Time
Min Tide		Lowest Observed Tide
Min Tide Date & Time		Lowest Observed Tide Date & Time
HAT	1.63	Highest Astronomical Tide
HAT Date & Time	10/16/1993 13:24	HAT Date and Time
LAT	-3.18	Lowest Astronomical Tide
LAT Date & Time	02/08/1997 07:12	LAT Date and Time

Datums for 8722956, South Port Everglades, FL

All figures in feet relative to NAVD88



Showing datums for

8722956 South Port Everglad...

Datum

NAVD88

Data Units Feet
 Meters

Epoch Present (1983-2001)
 Superseded (1960-1978)

Submit

Datums

Consistency!!

North American
Vertical Datum
Scope, data,
conversion error

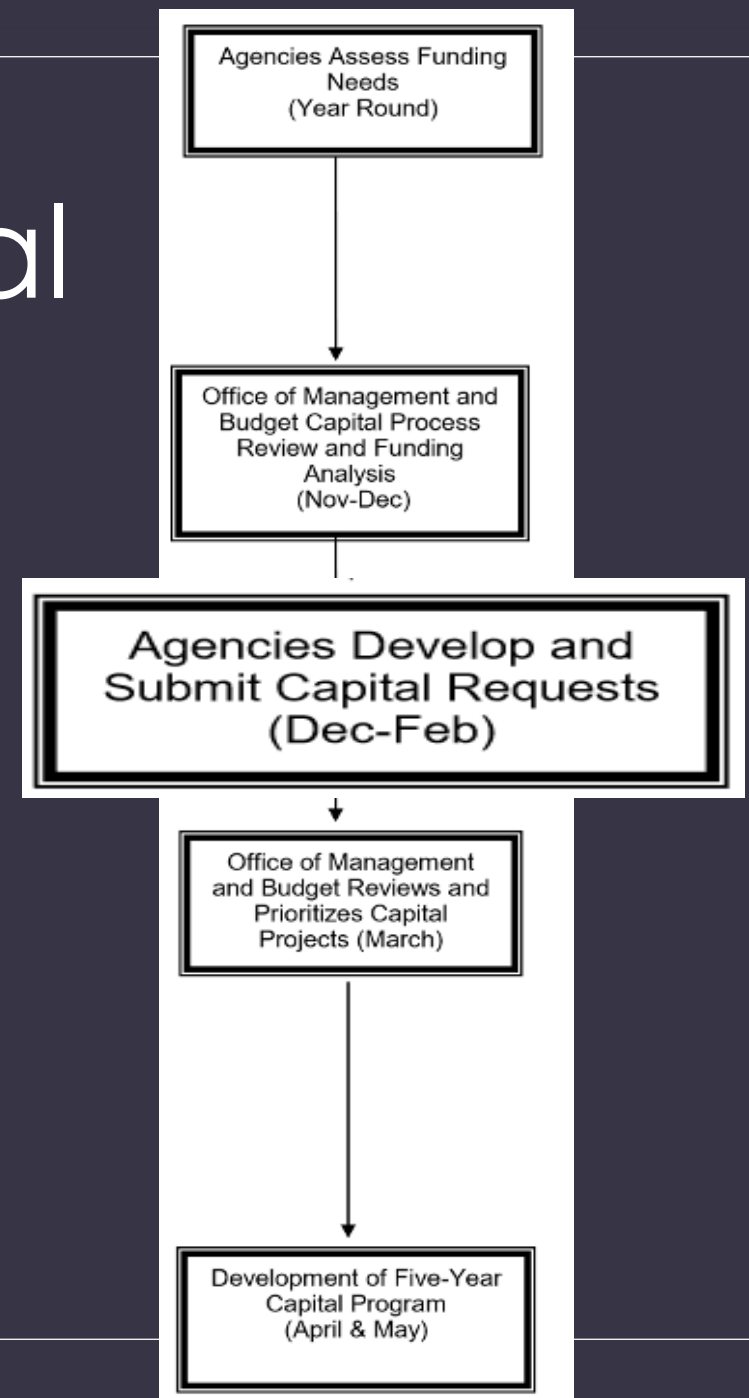
NOAA Benchmarks

Lake Worth Pier
Port Everglades
South
Miami Beach
Virginia Key
Key West

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Capital Budget Proposal

- Explain how resilient to sea level rise
- Link to interactive maps
- Line item in expense spreadsheet for adaptation **contingency**



Procurement Process

- Procurement Checklist
 - All required steps and documents including sea level rise pre-analysis
- Tech specs from agency
- Board review (bidders and contract)
- Permit conditions
- Request for Services or Qualifications
 - Highly qualified and recognizes professional with experience with climate adaptation
 - Refer to future conditions ordinance and unified sea level rise projection

Selection Committee Meeting

- Questions to ask
 - Describe how you have you applied the unified sea level rise projection in other projects
 - What factor of safety would you apply in design to account for updates in projection?
 - What other sea level rise impacts would this project be subject to?
 - How would you expect sea level rise to compound effects of surge or flooding on this project?
 - What materials or methods may be considered to counteract effects of sea level rise?
 - What are the credentials of the team member that will be converting datums and interpreting projections?

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Procurement Policy

Deforestation-Free Procurement Act (AB-572)

- **Require state contractors to have policies** ensuring that the beef, soy, palm oil and other commodities they import to California aren't contributing to tropical deforestation.
- Tropical deforestation is an urgent problem that affects all Californians by accelerating climate change, which causes fires, drought, sea-level rise, and a melting snowpack. So the California legislature is to be commended for recognizing this global issue.

Life Cycle

California Executive Order B-30-15

- State agencies shall take climate change into account in their planning and investment decisions, and employ **full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives.** The state's Five-Year Infrastructure Plan will take current and future climate change impacts into account in all infrastructure projects

Federal Flood Risk Standard

- ensure that agencies address current and future flood risk and ensure that projects funded with taxpayer dollars **last as long as intended.**

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Federal Project Example

- Project co-op agreements require eligibility for flood insurance program
- SLR protection criteria results in higher appropriation ranking
- Fed funding prohibits using locally preferred (SLR) expert
 - Contract separately
- Beach project life cycle ~10 yrs
 - Redesign in 5th year
 - procurement in 6th year
 - Consider contingencies, horizon



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1. At what other procurement steps should sea level rise be referenced?
2. What % of staff involved in procurement process would feel comfortable incorporating sea level rise? Why not?
3. Who would you consult with to verify sea level rise information?