MIAMI BEACH
BASIC DEMOGRAPHICS

Land area is 7 square miles

Permanent population ~ 88,000
Average daily population ~ 182,000
Annual beach patrons 16 million

Highly urban
Housing units per sq. mile 9,300

Taxable property value $23 billion
TOPOGRAPHIC DATA

- Low and relatively flat terrain
  - Coastal dune
  - Mangrove swamp
  - Manmade islands

- High imperviousness
  - Existing Development
  - New Construction

- Tidal constraints

- High groundwater table

- Aging infrastructure in corrosive conditions
STORMWATER MANAGEMENT MASTER PLAN
STORMWATER BASICS

Storm water flows to catch basins
Through large pipes
Outfalls into Biscayne Bay

When the sea level rises:
Water flows more slowly or even
flows from the Bay to the streets
The previous City Stormwater Management Master Plan was developed in 1997.

Old Plan determined needs by:
- water quality
- flooding potential
- citizen complaints
- City staff ranking

New Plan determined needs by:
- City-wide model analysis
- water quality
- incorporates sea-level rise projections
6 inch rainfall event flooding with tidal elevation of 0.5 ft NAVD up from -0.9 ft NAVD normal tide condition
TWO SEA LEVEL RELATED QUESTIONS

What is the present sea level?

How fast is it rising?
STORMWATER MANAGEMENT MASTER PLAN

Projected Mean Higher High Water Levels at Virginia Key


Recommended Seawall Height - (3.2 ft NAVD)
GOING FORWARD

Add flexibility to stormwater system
- backflow preventers at outfalls
- stormwater pump stations
- future storage
- raise seawalls

Monitor change in sea level and refine future adaptation strategies

Re-prioritize infrastructure requirements, as needed

Gain community acceptance

Develop long-term financing
MIAMI BEACH IN 20 YEARS AND BEYOND

After over $200 million in stormwater infrastructure investment

- Improved drainage system
- Adaptable system
- City more resilient

Future policy considerations

- Seawalls
- Surge protection
- City climate action plan