# Miami-Dade County Flood Protection

## US Army Corps of Engineers Biscayne Bay Southeastern Everglades Restoration (BBSEER) Public Engagement Workshop

By:

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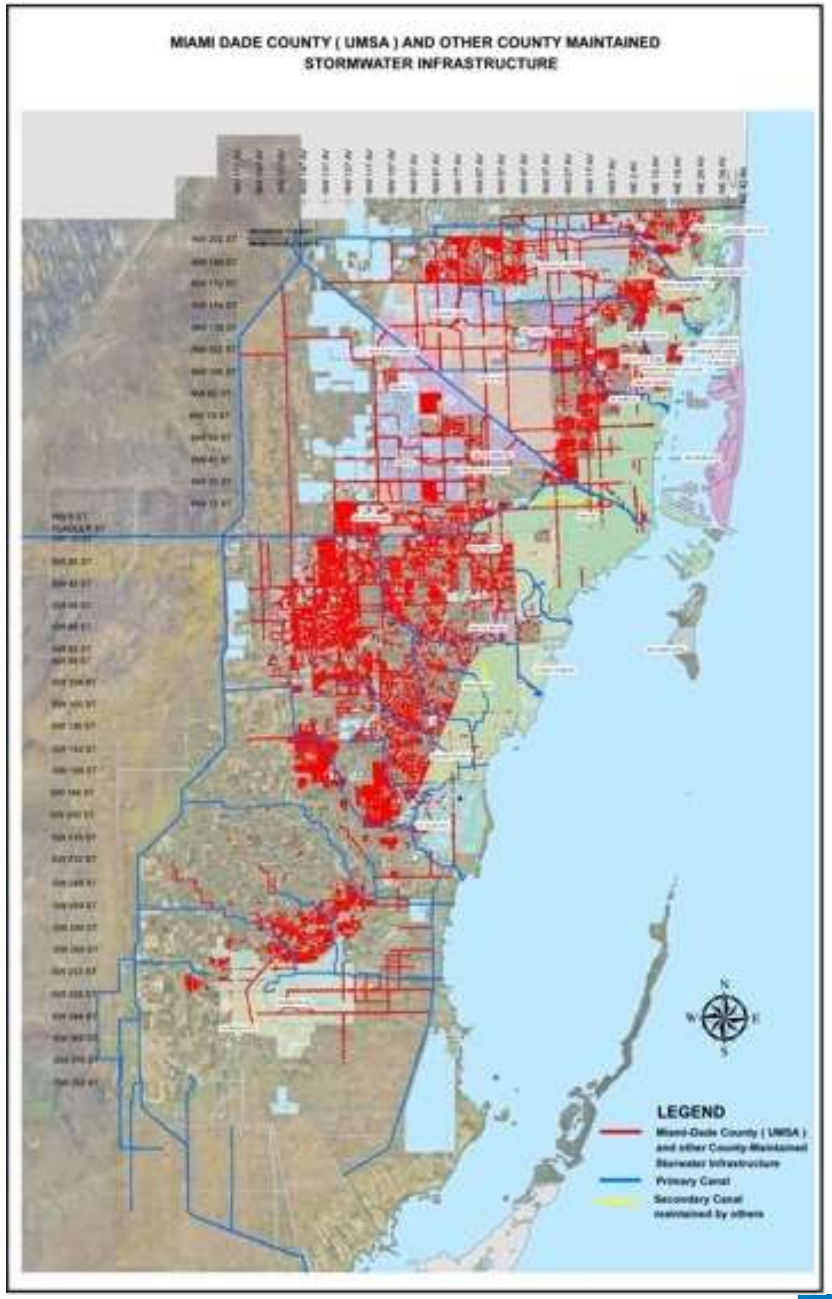
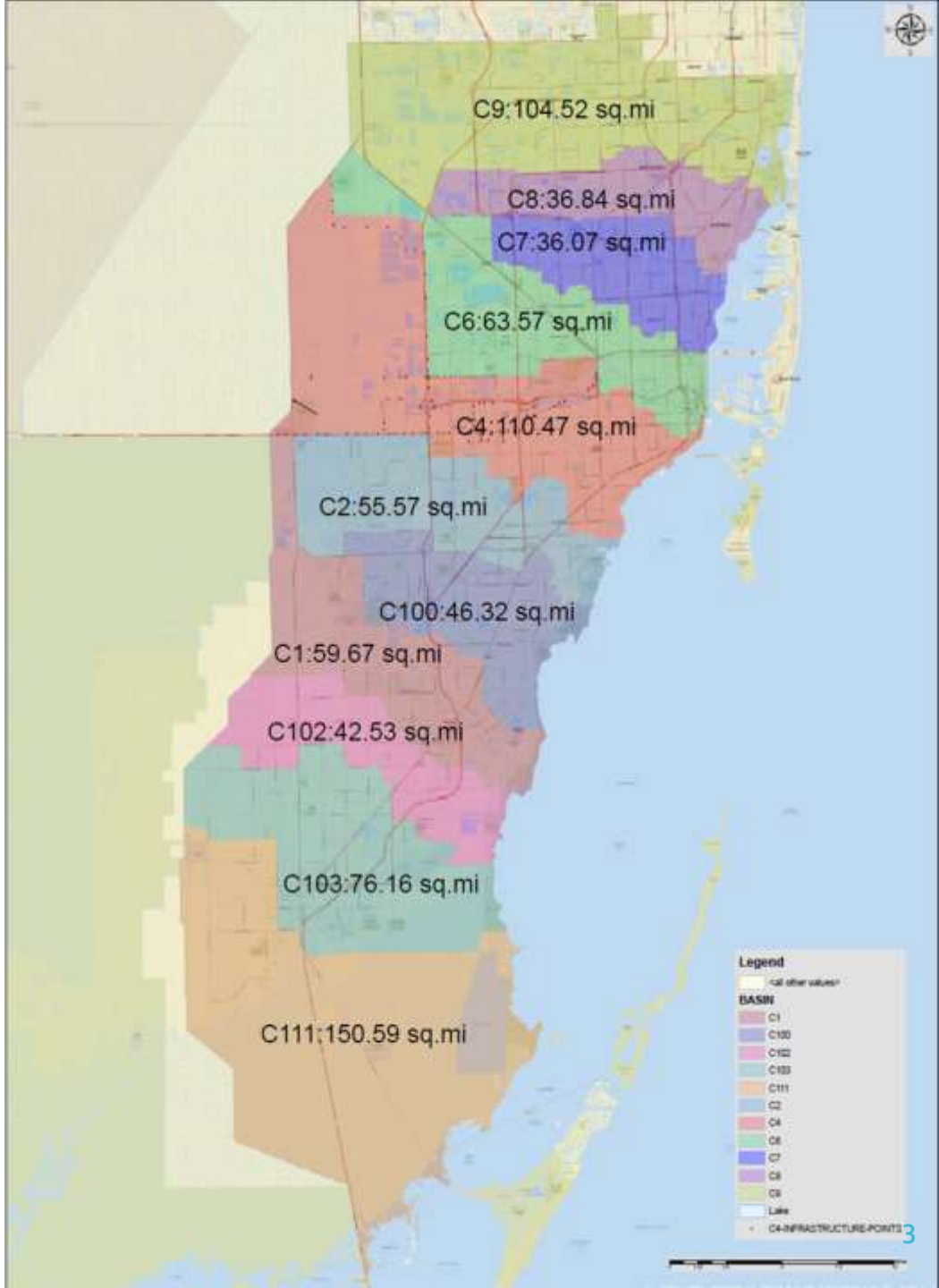
# Flood Protection

- Primary canals – approximately 320 miles – US Army Corps of Engineers (USACE) and South Florida Water Management District (SFWMD)
- Secondary canals – approximately 200 miles, 5 canal control structures, over 2,200 outfalls – Miami-Dade County
- Tertiary/local drainage system – canals and other local drainage features – Miami-Dade County and municipalities
- Miami-Dade County drainage infrastructure includes 18 pump stations, over 300 miles of drainage piping, over 400 pollution control structures, over 50,000 catch basins
- Miami-Dade County detention includes 90 lakes and 3,100 miles of swales



# Miami-Dade Stormwater Model

- Hydrodynamic model (XPSWMM)
- Refined sub-basin delineations
- Most current LiDAR topography
- Updated stormwater infrastructure, land cover, percent imperviousness, control structure operations, etc.
- Updated boundary conditions
- SLR using USACE high curve for 2040 and 2060 model runs
- SLR using NOAA high curve for 2100 model runs
- Identification of current and future levels of service, identification of infrastructure deficiencies, updates to the Water Control Map and County Flood Criteria

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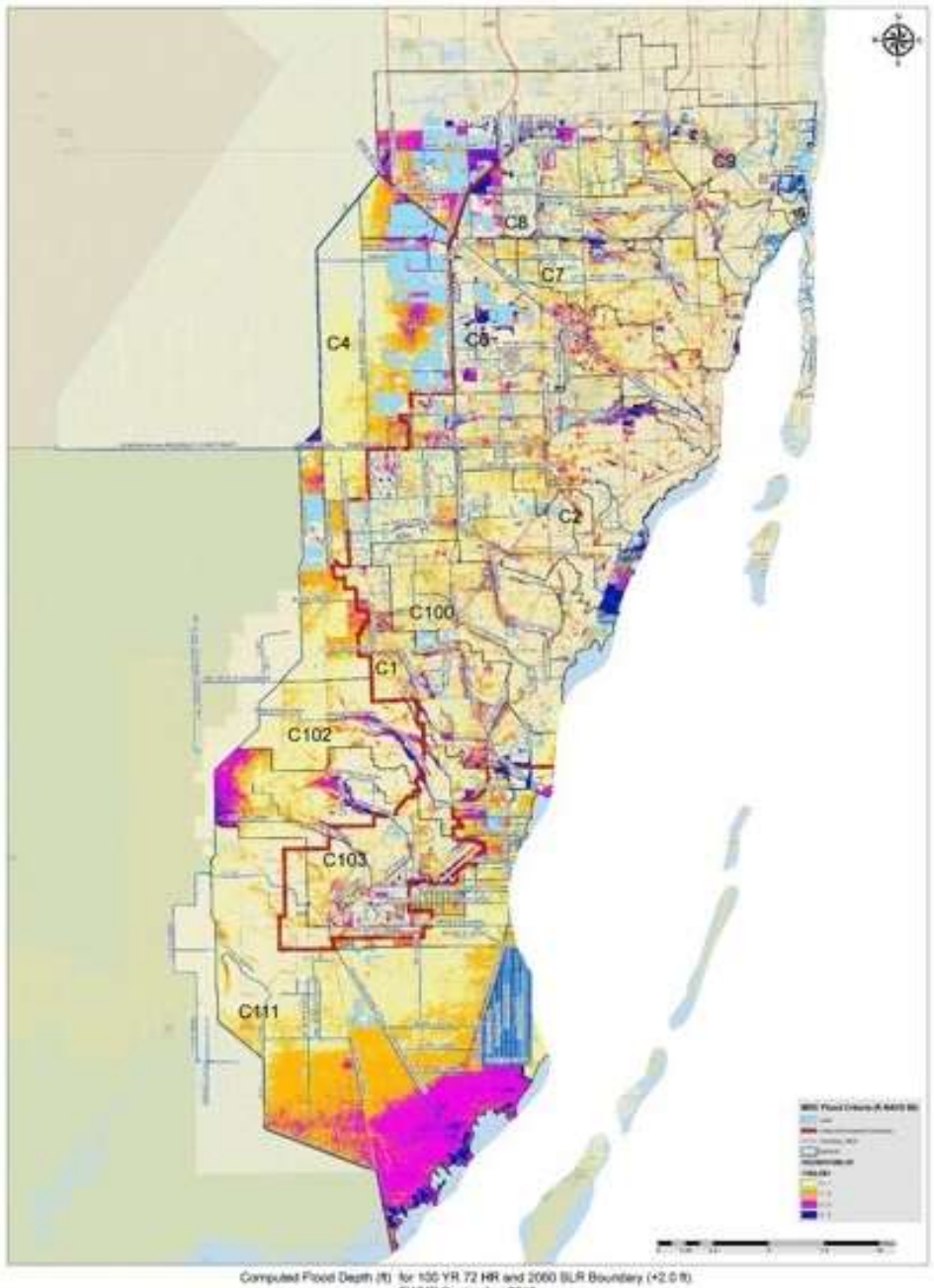
# Miami-Dade Stormwater Model

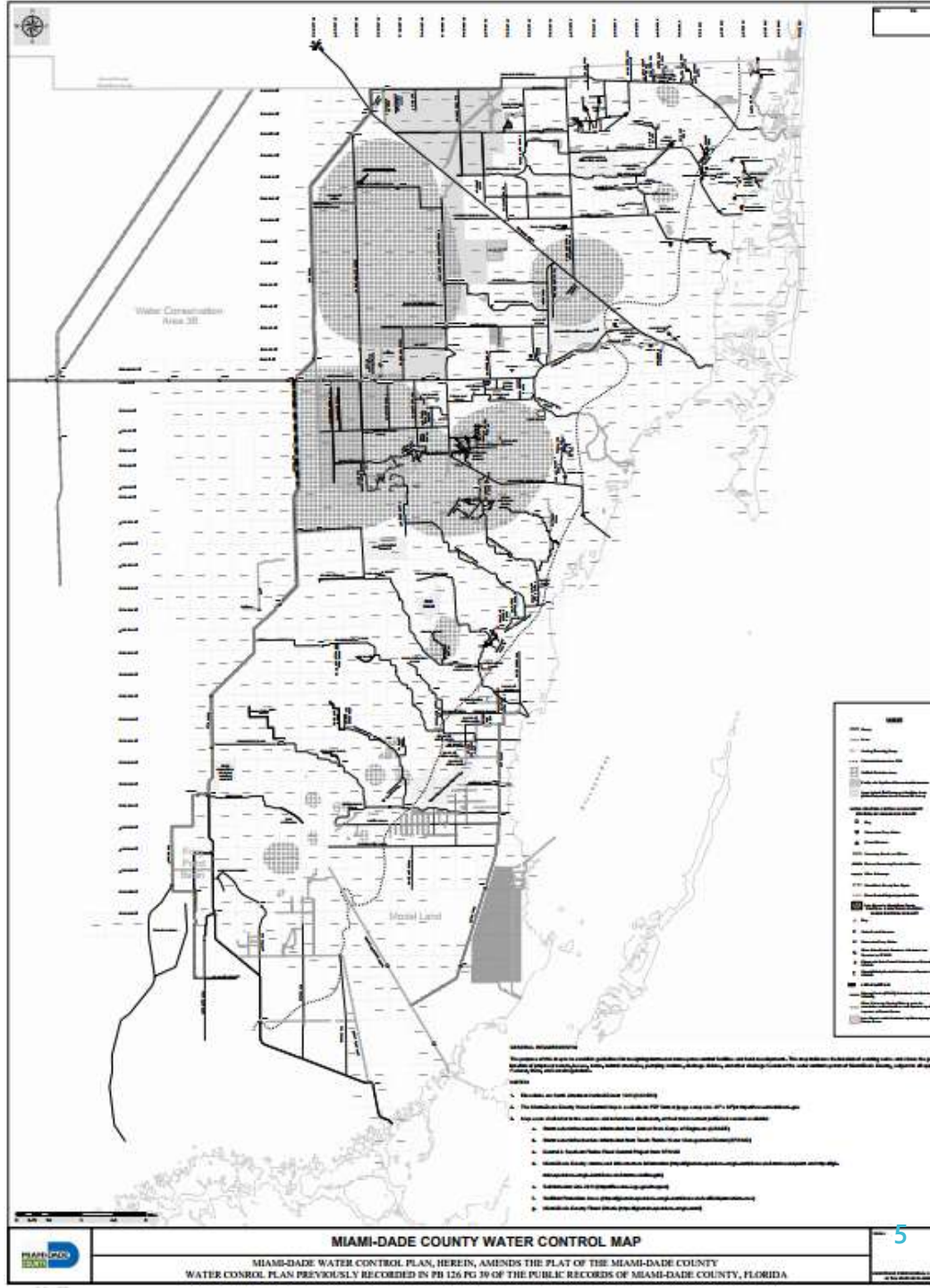
- Nine simulation were completed and used to develop flood maps:
  - 24 HR: 5 YR, 10 YR, and 25 YR
  - 72 HR: 10 YR, 25 YR, 50 YR, 100 YR, 500 YR, and 1000 YR




Computed Flood Depth (ft) for 100 YR 72 HR and 2060 SLR Boundary (+2.0 ft)
SWMP September 2019

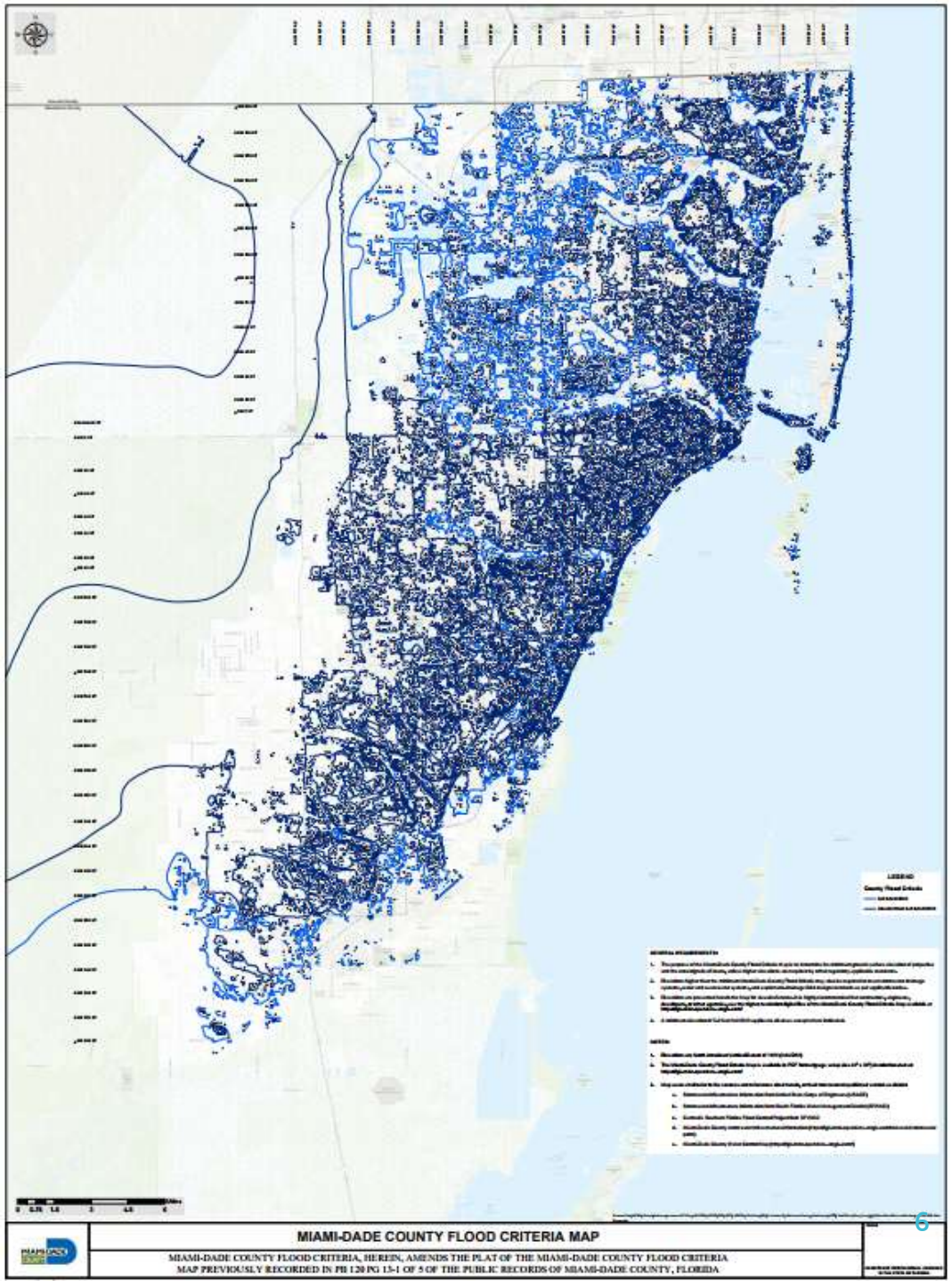
# Update of the Miami-Dade Water Control Map

- Current Water Control Map approved in 1985
- 2019 update does not vary substantially in footprint, adding less than 1% of Secondary Canals
- Establishes guidelines and requirements for designing water control facilities
- Uses the surface water levels from the 25 YR/72 HR 2060 future model with SLR for countywide storage and conveyance ratings (unless higher regulatory standards apply)
- Establishes elevation of secondary canal banks



# Update of the Miami-Dade County Flood Criteria

- Current County Flood Criteria approved in 1982
- Sets the minimum finished grade elevation of developed sites, secondary canal banks, and crown and/or grade of roadways (unless higher regulatory standards apply
- The Proposed County Flood Criteria was updated to reflect from the maximum value of the following surfaces:
  - Amended Plat of Flood – Curren Criteria Map (1982)
  - Surface water model projections using 10-yr, 3-day design storm event derived from the updated stormwater models using +2 FT Sea Level Rise
  - Topography based on LiDAR data (2018)



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# Control Measures

- Upgrades in capacity – Storage & Conveyance capacity for a 25 YR / 72 HR storm (2060)
- Interconnectivity improvements – drainage areas, secondary canals, and storage features
- Backflow prevention – at selected outfalls to eliminate flooding by high tides in canals and at coastal areas
- Additional storage – dry detention, such as parks, and low laying areas
- Exfiltration trenches and drainage wells – additional drainage in areas with elevation above 6 feet NAVD88
- Additional pumping to storage – Develop localized alternatives

# Questions?

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