

NHMA and CCAP

Adaptation, Emergency Management, and Hazard Mitigation in Southeast Florida Webinar

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March 28, 2013

Topics

- MDWASD Overview
- Development of Integrated Master Plan
- Assumptions on Climate Change and Considerations
- Tools to Assess Climate Change Impacts
- Existing Mitigation and Adaptation Measures
- Previous Experience with Natural Disasters

MDWASD Overview

Largest water and sewer utility in Florida, serving more than 2.2 million residents

Water System:

- 3 large regional and 5 small water treatment plants
- Supplying an average of 305 million gallons per day (MGD)
- 90% of the County's public water supply
- Per capita water use 132 gpcd
- 14 wholesale customers
- 424,764 retail customers
- 100 water supply wells
- 7,918 miles of pipes
- 38,204 fire hydrants
- 126,000 valves



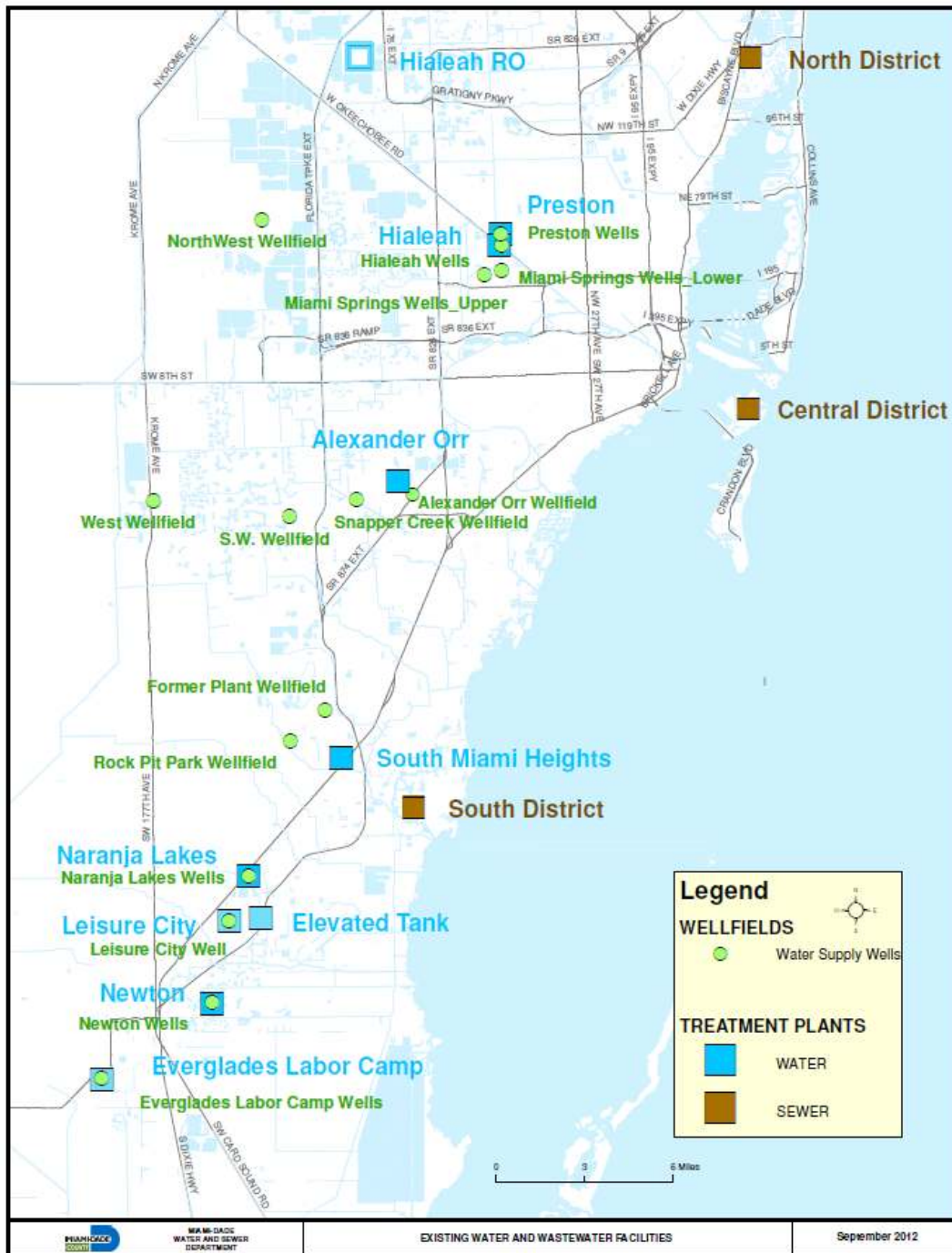
MDWASD Overview (continued)

Wastewater System:

- 3 wastewater treatment plants
- 2 ocean outfalls and 21 deep injection wells
- Collecting, treating, and disposing 325 MGD
- 342,539 retail customers
- 13 wholesale customers
- 6,277 miles of mains and laterals
- 1,042 sewer pumps stations
- Reusing 10.2 MGD



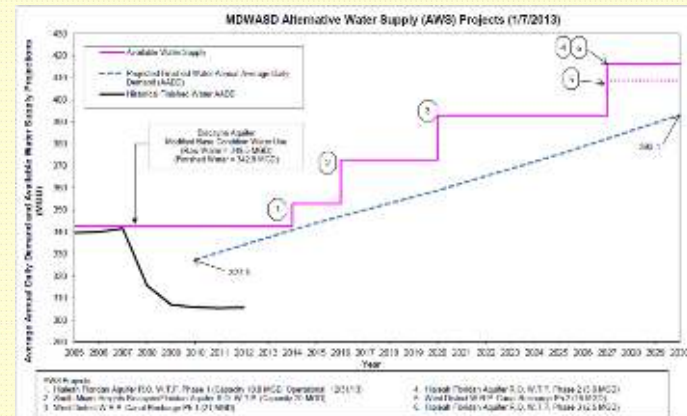
Water & Wastewater Treatment Facilities



Integrated Master Plan

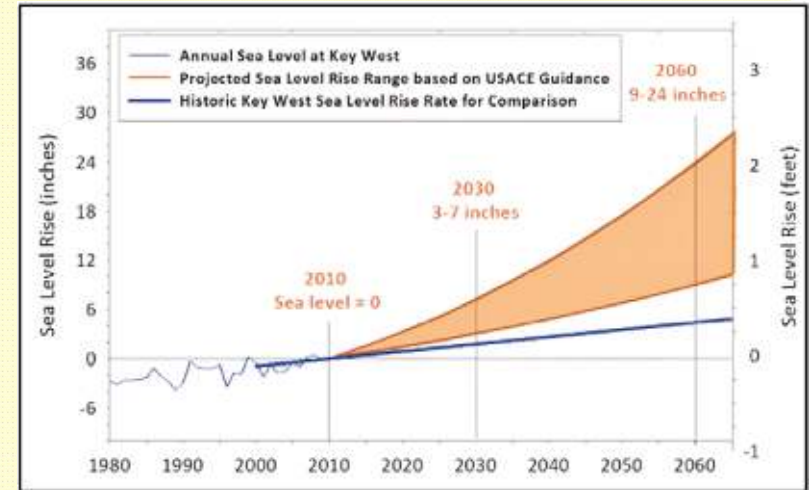
(Water, Wastewater, & Reclaimed Water)

- Updated demand projections to 2035
- Alternative water supply (including reclaimed water)
- Plan to address State 2008 Ocean Outfall Legislation (no ocean discharge after 2025)
- New wastewater treatment plant in the West
- Infrastructure improvements
- Redundancy analysis
- Climate Change impacts
- Energy savings projects



Assumptions on Climate Change Impacts

- 3 ft SLR by 2075
- Saltwater intrusion in water supply wellfields
- Increased flooding and infiltration and inflow
- Impacts from storm surges on coastal facilities
- Drought conditions



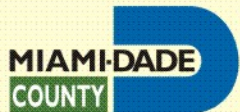
Tools to Assess Climate Change Impacts

- Integrated surface/groundwater model for Biscayne aquifer:
 - changes in precipitation
 - land use (ET & recharge)
 - SLR
 - canal operations
- Groundwater model of Florida aquifer:
 - changes in salinity
- Storm surge assessment for coastal facilities



Guidance Documents

- Miami-Dade County GreenPrint:
 - Miami-Dade County Climate Change Advisory Task Force
 - The Mayor's Sustainability Advisory Board
- Southeast Florida Regional Climate Action Plan
- EPA's Climate Ready Water Utilities



Adaptive Response Framework for
Drinking Water and Wastewater Utilities



A Region Responds to a
Changing Climate

Southeast Florida Regional Climate
Change Compact Counties

Regional Climate Action Plan

October 2012



Existing Adaptation and Mitigation Measures

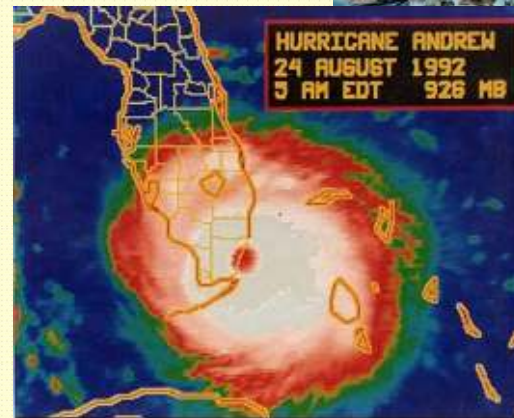
- Water conservation
- Emergency backup power
- Standby pumps in all pump stations
- SCADA at all major plants, pump stations w/malfunction alarms
- 24/7 Emergency Call Center
- Parallel trains at all wastewater treatment plants
- Large inventory of portable power generators, piping, valves, and fittings
- Contracts with construction firms for emergency repairs



Previous Experience with Natural Disaster

Hurricane Andrew, August 1992:

- Category 4
- 16 ft. storm surge
- 140 mph winds
- Back in service in approximately 30 days
- New design approaches, like enclosing emergency generators



Miami-Dade Water and Sewer Department:
<http://www.miamidade.gov/water>

Water Conservation Program:
<http://www.miamidade.gov/waterconservation>

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