

Resiliency Initiatives of Boynton Beach

City of Boynton Beach Utilities Department
Office of Sustainability & Resiliency

Florida Water and Climate
Alliance (FWCA) Workshop
June 20, 2025

Overview

- ▶ Introduction to City of Boynton Beach's Utilities Department
- ▶ Key Challenges
- ▶ Strategic Approach: What We Have Done So Far
- ▶ Current Solutions: Infrastructure, Nature-Based, and Policies, Partnerships, and Programs
- ▶ Future Plans
- ▶ Key Takeaways



Introduction to City of Boynton Beach's Utilities Department

- ▶ Boynton Beach Utilities provides drinking water and wastewater services
 - ▶ Approximately 112,000 customers across Boynton Beach, neighboring municipalities, and unincorporated Palm Beach County
- ▶ The City operates two water treatment plants
 - ▶ East Water Treatment Plant
 - ▶ West Water Treatment Plant
- ▶ Water is pumped from the East Coast Surficial Aquifer
 - ▶ Wells with depths from 50 to 250 feet
 - ▶ In the dry season, the City relies on:
 - ▶ Water from the City's western wellfield
 - ▶ Treated water stored in two Aquifer Storage and Recovery wells
- ▶ Shared wastewater treatment plant with the City of Delray Beach



Introduction to City of Boynton Beach's Utilities Department

- ▶ East Water Treatment Plant
 - ▶ 24 million gallons per day (MGD) capacity
 - ▶ Uses traditional lime softening/sand filtration process
- ▶ West Water Treatment Plant
 - ▶ 12-million MGD capacity
 - ▶ Uses nanofiltration membranes to filter contaminants in the western wellfield water
- ▶ South Central Regional Wastewater Treatment and Disposal Facility
 - ▶ Special District created in 1974 to treat wastewater within Boynton Beach and Delray Beach service areas
 - ▶ Treats about 17 million gallons per day of wastewater from the two cities
 - ▶ The city operates/maintains approximately 170 wastewater lift stations



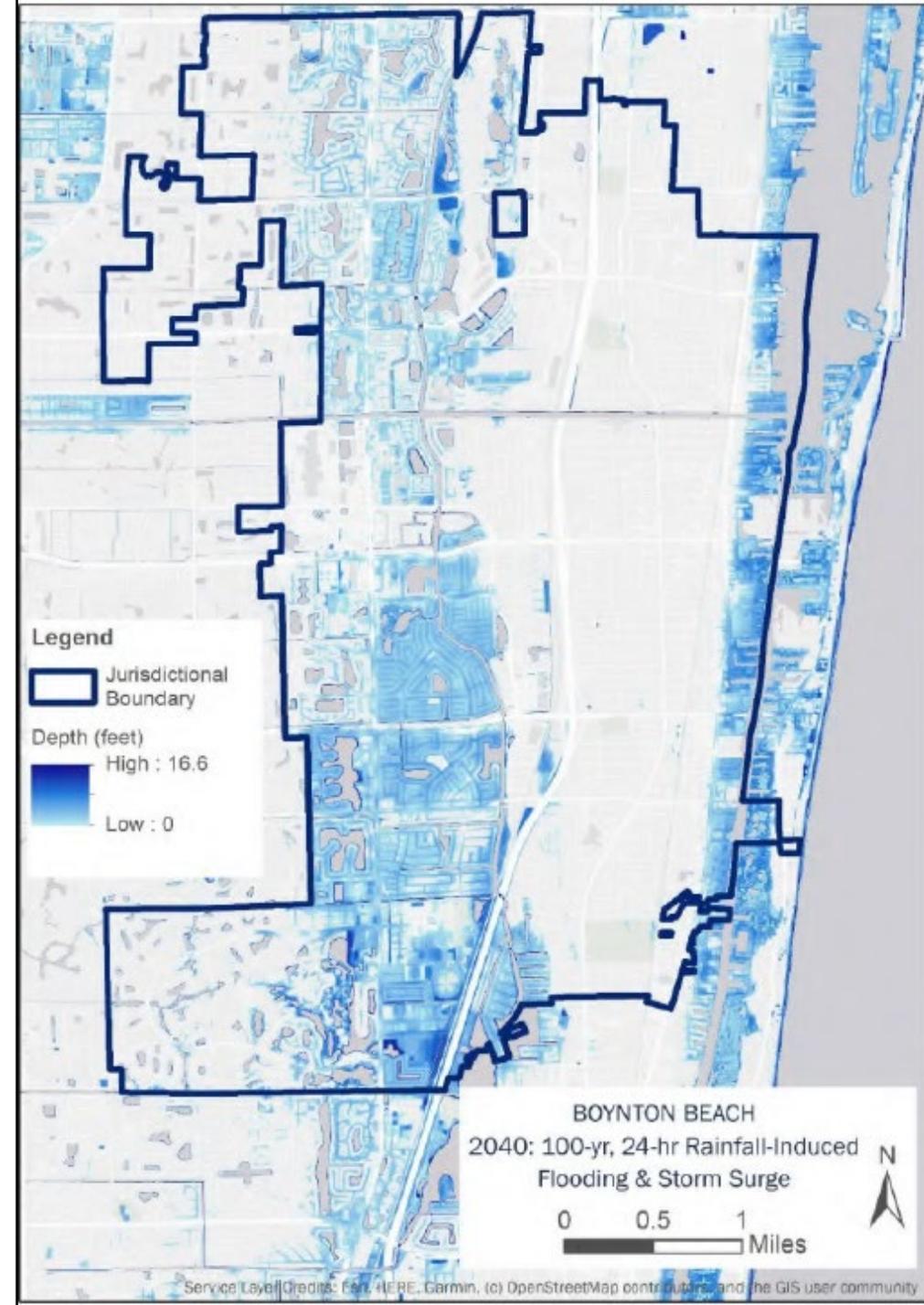


MISSION

The City's mission is to provide high-quality drinking water to all customers and to collect, treat, and dispose of wastewater in an environmentally sound and cost-effective manner

Key Challenges

- ▶ Coastal community facing saltwater intrusion, flooding, and sea level rise
- ▶ Rapid population growth
 - ▶ ~20% increase between 2010 and 2020
 - ▶ ~20-25% anticipated in next 10-20 years
- ▶ Aging infrastructure and energy reliability
- ▶ Highest priority concerns for Boynton Beach Utilities include flooding (tidal, rainfall, groundwater inundation), extreme heat and drought, severe and extreme weather events, and saltwater intrusion



Strategic Approach: What We Have Done So Far

- ▶ Climate Action Plan
- ▶ Climate Vulnerability Assessments
- ▶ Urban Tree Canopy Assessment
- ▶ Capital Improvement Projects
- ▶ Plant enhancements and upgrades
- ▶ Sustainable Development Standards
- ▶ FPL SolarTogether
- ▶ Focus areas: infrastructure upgrades, nature-based solutions, energy resilience, regional collaboration

Climate Change Vulnerability Assessment
Top Threat Identification

| | | | |
|---|--|---|---|
|  High Winds |  Rainfall-Induced Flooding |  Harmful Algal Blooms |  Pest & Disease Outbreaks |
|  Extreme Heat |  Drought |  Wildfire |  Shoreline Recession |
|  Tidal Flooding |  Storm Surge |  Groundwater Inundation |  Saltwater Intrusion |

RESOLUTION NO. R25-012

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF BOYNTON BEACH, FLORIDA, AUTHORIZING THE CITY OF BOYNTON BEACH TO PARTICIPATE IN THE FPL SOLARTOGETHER PROGRAM BY SUBSCRIBING TO 2.6 MEGAWATTS OF ANNUAL SOLAR ENERGY CONSUMPTION, WITH AN EFFECTIVE DATE OF FEBRUARY 1, 2025; AUTHORIZING THE MAYOR, IF AWARDED, TO EXECUTE ALL FUTURE DOCUMENTS ASSOCIATED WITH THE PROGRAM, SUBJECT TO THE APPROVAL OF THE CITY ATTORNEY; AND FOR ALL OTHER PURPOSES.

City of Boynton Beach 2020 Climate Action Plan



Local Actions and Policies to Reduce Boynton Beach's Greenhouse Gas Emissions

Approved by the Boynton Beach City Commission

March 3, 2020

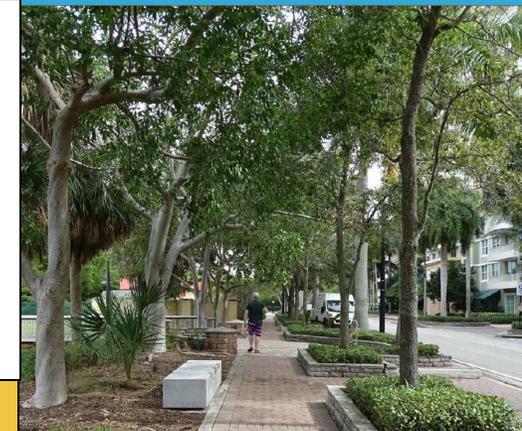
Resolution No. R20-021

Prepared by Rebecca Harvey,
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Through partnership with ICLEI – Local
Governments for Sustainability
GoGreenBoynton.com



Urban Tree Canopy of Boynton Beach, FL

An Analysis of Forest Cover and Benefits



Current Infrastructure Solutions

- ▶ **MIEX Pretreatment System**
 - ▶ Combats saltwater intrusion, lowers chemical use
- ▶ **Facility upgrades: Filters, storage, pumps, automation, and energy efficiency**
- ▶ **Water Reclamation Program**
 - ▶ In partnership with the City of Delray Beach, treated wastewater is processed through a reclaimed water facility to be used for irrigation for large users within the service area
 - ▶ All City of Boynton Beach municipal buildings and parks use reclaimed water to provide a sustainable and cost effective water supply
- ▶ **Aquifer Storage and Recovery (ASR)**
 - ▶ Ensures water supply during dry season, addresses peak demand issues, and minimizes saltwater intrusion due to less pumping of source water (East Coast Surficial Aquifer)
- ▶ **Designed for scalability and long-term growth**



Current Nature-based Solutions

- ▶ Urban Tree Canopy Goal: 20% coverage by 2035, 3,000+ trees/year
 - ▶ Quarterly tree giveaways
 - ▶ Urban tree canopy reassessment
- ▶ Storm water & tidal valve retrofits to manage coastal flooding
- ▶ Rain Barrel Program
 - ▶ Residents within the Boynton Beach Utilities service area can request a free rain barrel
 - ▶ Reduces water consumption, storm water runoff, and mimics natural systems to address environmental challenges
- ▶ Habitat restoration: Galaxy Scrub



Current Policies, Partnerships, and Programs

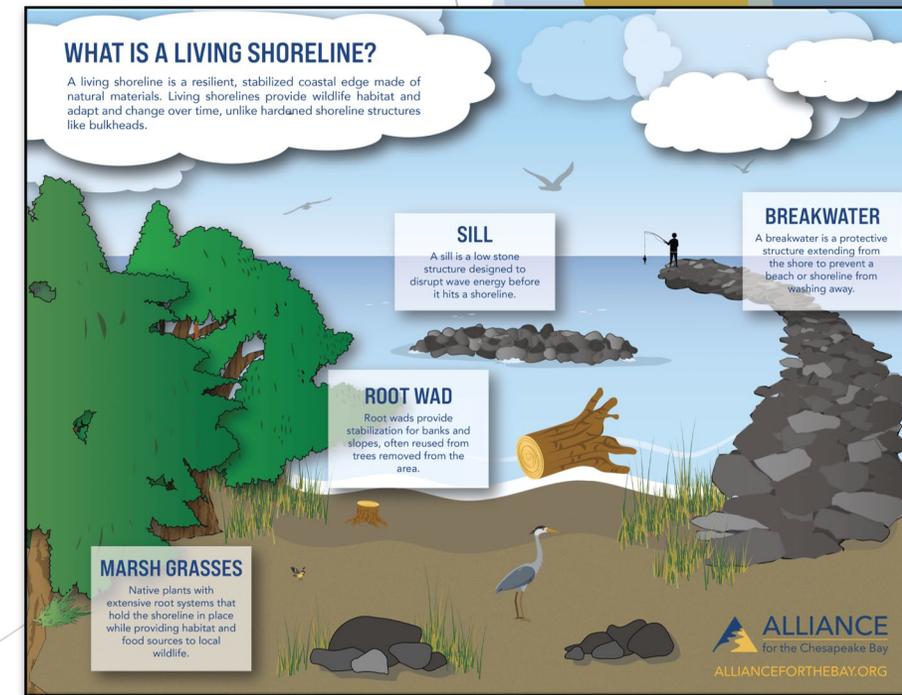
- ▶ Member of several organizations:
 - ▶ Southeast Florida Regional Climate Compact
 - ▶ Municipal Resilience Partnership of Palm Beach County
 - ▶ ICLEI USA, USDN, SSDN, FSDN
 - ▶ Green Infrastructure Leadership Exchange (GIEX)
 - ▶ American Flood Coalition
 - ▶ AWWA, FRWA, SEFLUC
- ▶ Grant support and technical assistance opportunities: Resilient Florida, FEMA, EPA, NREL, etc.
- ▶ Green Building Ordinance, Sustainable Development Standards, Reclaimed Water Policy
- ▶ Community engagement: Energy Edge Rebate Program, Rain Barrel Program, Water Conservation Education Program

Results: Shared knowledge, funding access, scalable solutions



Future Plans

- ▶ Living Shorelines
 - ▶ Plans to install living shorelines along three City parks to reduce impacts of king tide flooding, sea level rise, and storm surge
- ▶ Rain Garden and Bioswales
 - ▶ The City is looking at feasibility studies for the location of rain gardens and bioswales throughout the City
- ▶ Heat Resilience
- ▶ Energy Resilience
 - ▶ Energy audits of water utilities
 - ▶ Focus on backup power, system optimization, and cost savings
 - ▶ Aligns with citywide carbon reduction and reliability goals



Key Takeaways

- ▶ Boynton Beach faces several challenges, from rising sea levels to rapid population growth
- ▶ Resilience needs to be integrated early on in planning and budget for all projects
- ▶ Collaboration across departments and jurisdictions is imperative
- ▶ Incorporating green infrastructure into projects will help address flooding in highly impervious areas



Questions?

Thank you!

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