



# OCEAN OUTFALL UPDATE

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Focus on Change | 2024



# AGENDA

- Background on legislation and statute [section 403.086(10), Florida Statutes (F.S.)].
- Review of the ocean outfall requirements.
  - Eliminating discharges through the ocean outfalls.
  - 60% reuse requirement.
  - Advanced waste treatment management (AWTM) requirements.
- Facilities.
- Challenges.
- Questions.

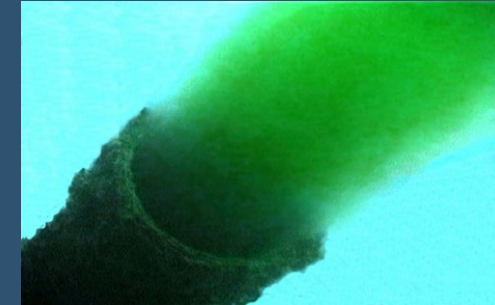
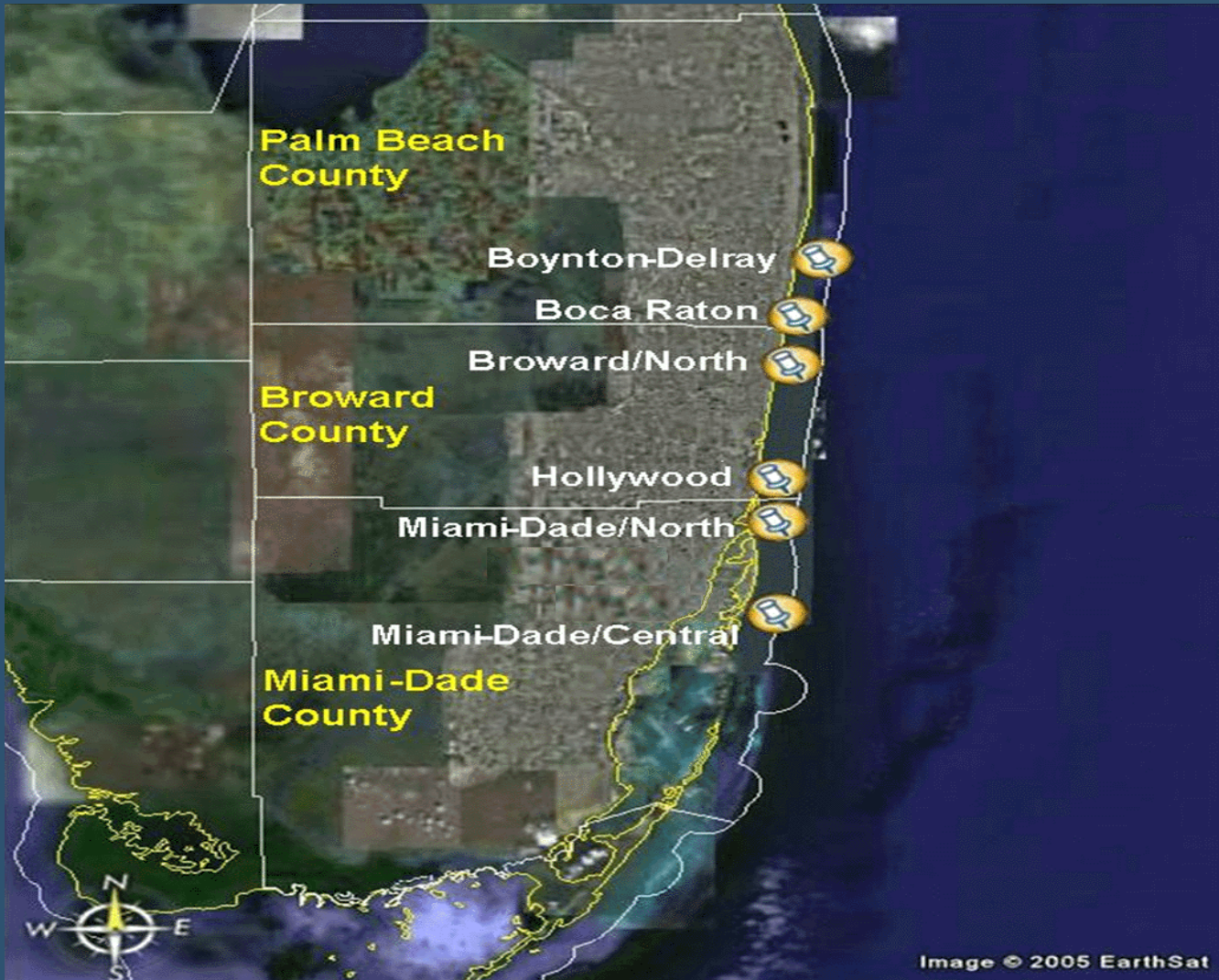


# BACKGROUND

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# OCEAN OUTFALLS





# OCEAN OUTFALL BACKGROUND

- Six outfalls, seven permittees and eight facilities on Florida's Southeastern coast.
- In 2008, approximately 300 million gallons per day (mgd) discharged.
- Coral reefs declining; algae blooms becoming more severe.
- Ocean outfall discharges were one of several sources of nutrients (only secondary treatment with basic disinfection).



# OCEAN OUTFALL LEGISLATION

- Chapter 2008-232, Laws of Florida and Chapter 2013-031, Laws of Florida.
  - Discharge of domestic wastewater through ocean outfalls wastes valuable water supplies that should be reclaimed for beneficial purposes.
  - More stringent treatment and management requirements and the timely elimination of ocean outfalls as the primary means of domestic wastewater discharge are in the public interest.



# SECTION 403.086(10), F.S.

## PROVISIONS

- Prohibits construction of new ocean outfalls and the expansion of existing ocean outfalls.
- Requires discharges to meet AWTM requirements by Dec. 31, 2018.
- Requires utilities to implement a reuse system for 60% of a facility's "baseline flow" for beneficial purposes by Dec. 31, 2025.
- Prohibits discharges of domestic wastewater through ocean outfalls after Dec. 31, 2025, except as a backup discharge during periods of reduced reclaimed water demands, such as periods of wet weather, or as a result of peak flows from other wastewater management systems.



# SECTION 403.086(10), F.S.

## PROVISIONS (2)

- Requires utilities to submit progress reports to the Florida Department of Environmental Protection (DEP) every five years beginning Dec. 31, 2009, summarizing actions accomplished and actions remaining to meet section 403.086(10), F.S., (Dec. 31, 2024, is the next due date for progress reports).
- Required utilities to submit detailed plans by July 1, 2013, and updated plans by July 1, 2016, (all received).
- Requires DEP to submit a progress report to the Governor and Florida Legislature every five years beginning July 1, 2010, including increased amount of reclaimed water provided and potable water offsets achieved, and to identify any obstacles to continued progress, including all instances of substantial noncompliance, (next progress report due July 1, 2025).





# REVIEW OF OCEAN OUTFALL REQUIREMENTS

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# ELIMINATING DISCHARGES

- Deadline – Dec. 31, 2025.
- Discharges allowed after Dec. 31, 2025.
  - Backup discharges allowed during periods of reduced reclaimed water demands, such as periods of wet weather, or as a result of peak flows from other wastewater management systems (peak flow discharges limited to 5% of baseline flow, measured as a five-year rolling average).
  - Industrial wastewater (IW) discharges.
- Plans to meet this requirement primarily include the following.
  - Implementation of reuse.
  - Use of deep injection wells.



# AWTM REQUIREMENT

- Deadline – Dec. 31, 2018, (one option defaults to Dec. 31, 2025).
- Four options.
  - Provide advanced waste treatment (AWT) by Dec. 31, 2018, (i.e., meet AWT limits).
  - Reduce total nitrogen (TN) and total phosphorus (TP) loading discharges to equivalent of AWT for baseline flow.
  - Reduce cumulative TN and TP from 2008 to 2025 in an amount equivalent as if AWT implemented in 2018 (most popular option chosen by facilities and achieved by diverting flow to deep injection wells, reuse).
  - Provide 100% reuse (100% of the baseline flow).



# 60% REUSE REQUIREMENT

- Deadline – Dec. 31, 2025.
- Utility must install, or cause to be installed, a functioning reuse system providing 60% of “baseline flow” (i.e., annual average discharge flow through ocean outfall between 2003 – 2007).
  - A “functioning reuse system” means an environmentally, economically and technically feasible system.
  - Diverting to a facility with 100% reuse counts as reuse.
  - Can contract with another utility to provide reuse.
  - After Dec. 31, 2025, backup discharges from a reuse system are allowed out the ocean outfall during periods of reduced demand, such as wet weather.



# FACILITIES

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# SOUTH CENTRAL REGIONAL

- 24 mgd facility for the City of Boynton Beach and City of Delray Beach.
- AWTM – has reduced loadings of TN and TP by using deep injection wells for almost all flow.
- Elimination of outfall – using deep injection wells.
- 60% reuse.
  - 7.7 mgd required; added to existing 5.6 mgd results in a total of 13.3 mgd required.
  - Can treat entire flow to reuse standards.
  - Progressing on adding distribution systems and users.
  - Needs to add about 6 mgd of reuse users.



# CITY OF BOCA RATON

- 17 mgd facility for the City of Boca Raton.
- AWTM – 100% reuse has been met (100% of baseline flow).
- Elimination of outfall – 100% reuse will be met (will be ongoing as facility flows increase).
  - Currently has routine discharges out the ocean outfall during reduced demand (e.g., 3-6 mgd), peak flows, and industrial wastewater discharges (reverse osmosis [RO] concentrate from wastewater treatment).
- 60% reuse – 100% reuse met.
  - 6.2 mgd required; added to existing 5.6 mgd results in a total of 11.8 mgd required.
  - 12.96 mgd of user agreements; users don't always use all.
  - Can treat entire 17.5 mgd flow to reuse standards.



# BROWARD COUNTY NORTH REGIONAL

- 95 mgd facility for Broward County.
- AWTM – on schedule to reduce the equivalent TN and TP from 2008-2025 as if AWT implemented in 2018.
- Elimination of outfall – combination of reuse and deep injection wells (installed two new IW wells, six existing wells).
- 60% reuse – likely to be met.
  - 21.45 mgd required; added to existing 4.5 mgd results in a total of 25.95 mgd required.
  - Have identified 23.51 mgd of reuse; progressing towards reaching this amount; Interlocal Agreement with Palm Beach County for 15.0 mgd for large users.





# HOLLYWOOD SOUTHERN REGIONAL

- 55.5 mgd facility for the City of Hollywood.
- AWTM – on schedule to reduce the equivalent TN and TP from 2008-2025 as if AWT implemented in 2018.
- Elimination of outfall – primarily deep injection wells with notable reuse quantities.
- 60% reuse.
  - 20.4 mgd required; added to existing 2.3 mgd results in a total of 22.7 mgd required.
  - January 2016 DEP letter acknowledging only 10 mgd of the 20.4 mgd is feasible because of high chloride levels.
  - Working on maximizing in-plant reuse, current reuse, contracted with Miramar for 2.0 mgd of reuse.



# COOPER CITY

- 3.1 mgd facility for the City of Cooper City – some effluent is sent to Hollywood for reuse but may end up disposed through Hollywood’s ocean outfall.
- AWTM – reduction in loadings of TN and TP by using deep injection wells for almost all flow.
- Elimination of outfall – using deep injection wells; by agreement they will continue to send 1.7 mgd of effluent to Hollywood.
- 60% reuse – will be met when Miramar implements contracted reuse.
  - 0.9 mgd required; no current reuse to add.
  - Contract with Miramar to credit Cooper City with 1.0 mgd of Miramar reuse project (paid \$3.5 million).



# TOWN OF DAVIE 76<sup>TH</sup> AVENUE

- 5 mgd facility for the Town of Davie – like Cooper City, sends some effluent to Hollywood for reuse, but may be disposed out Hollywood’s ocean outfall.
- AWTM – built a second facility (3.5 mgd) and is diverting sufficient flow to this facility. On schedule to reduce the equivalent TN and TP from 2008-2025 as if AWT implemented in 2018.
- Elimination of outfall – evaluating more diversion to new facility or installing new deep injection wells.
- 60% reuse.
  - 1.1 mgd required; no existing reuse.
  - New facility has 2.0 mgd reuse capability.
  - Still progressing on adding reuse users for 1.1 mgd.



# MIAMI-DADE WATER AND SEWER DISTRICT (MDWASD) NORTH DISTRICT

- 120 mgd facility for Miami-Dade.
- AWTM – has a projected schedule to reduce the equivalent TN and TP from 2008-2025 as if AWT implemented in 2018.
  - Relies on discharge of centrate from biosolids dewatering through IW well at Central District and new deep injection wells to be constructed at both MDWASD facilities.
- Elimination of outfall – constructing five new deep injection wells to add to existing four wells [underground injection control (UIC) permits issued].
  - New wells will be on undeveloped wetlands, multiple permits required.
  - Noted fluid movement into non-underground sources of drinking water (USDW) to install high-level disinfection.
- 60% reuse – will not be met by 2025.
  - 48.6 mgd required; added to existing 3.0 mgd for a total of 51.6 mgd.
  - Primary reuse project for Florida Power and Light (FPL) canceled; have a new FPL project at a lower volume. Full reuse claimed not feasible by MDWASD.



# MDWASD CENTRAL DISTRICT

- 143 mgd facility for Miami-Dade.
- AWTM – projected schedule to reduce the equivalent TN and TP from 2008-2025 as if AWT implemented in 2018.
  - Relies on discharge of centrate from biosolids dewatering through IW well at Central District and new deep injection wells to be constructed at both MDWASD facilities.
- Elimination of outfall – constructing nine new deep injection wells.
  - Has requested an aquifer exemption to avoid providing high-level disinfection.
- 60% reuse – will not be met by 2025.
  - 68.9 mgd required; added to existing 5.9 mgd for a total of 74.8 mgd.
  - Primary reuse project for FPL canceled; have a new FPL project at a lower volume. Full reuse claimed not feasible by MDWASD.



# CHALLENGES

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# CURRENT CHALLENGES

- Reuse.
  - Miami-Dade and Hollywood claim full amounts of reuse are unfeasible.
    - Miami-Dade lost 90 mgd reuse project to provide cooling water for new nuclear reactors at Turkey Point (canceled) and added a 15 mgd project with FPL.
    - Hollywood has high chloride levels in effluent making traditional reuse unfeasible; DEP acknowledged only 10 mgd of the 20.4 mgd required was currently feasible.
  - Other facilities are still in the process of adding reuse customers.
  - Pursuit of reuse after Dec. 31, 2025, deadline will be required.
- Elimination and AWTM.
  - Miami-Dade has a tight construction schedule for UIC wells.



# CHALLENGES AFTER 2025

- How to monitor discharges for compliance?
  - There will still be discharges, some significant, out of the ocean outfalls for backup discharges for reuse systems, backup discharges for peak flows and industrial wastewater (Boca Raton RO concentrate).
  - Reuse is typically dependent on demand; Boca Raton sometimes discharges significant volumes of reclaimed water through the outfall (e.g., 3-6 mgd) when not used (i.e., reduced demand).
  - Peak flow 5% of baseline allowance is a five-year rolling average that would start in 2026.
- What if facilities don't meet ATWM by 2026? Some options are invalid after 2026.
- If facilities don't meet 60% reuse by 2026, they will still have to pursue 60% reuse.





# THANK YOU

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