

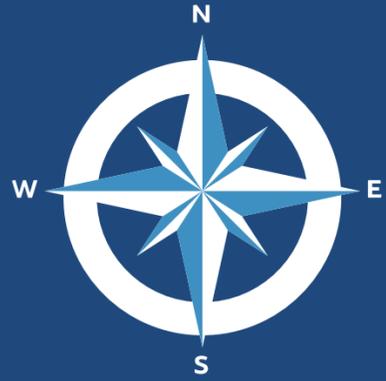
Resilience Strategies

IN MIAMI-DADE COUNTY

Presented By

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Miami-Dade Water & Sewer Department





Agenda

- 1 WASD at a Glance
- 2 Resilience Alignment and Roles
- 3 Innovative Resilience Strategies
- 4 Resilience as a Strategic Driver

WASD at a Glance

2.8

Million Population
Served

300+

MGD of Water and
Wastewater Treatment

6,200

Miles of Water Transmission
& Distribution Lines

47,000

Miles of Collection and
Transmission Mains

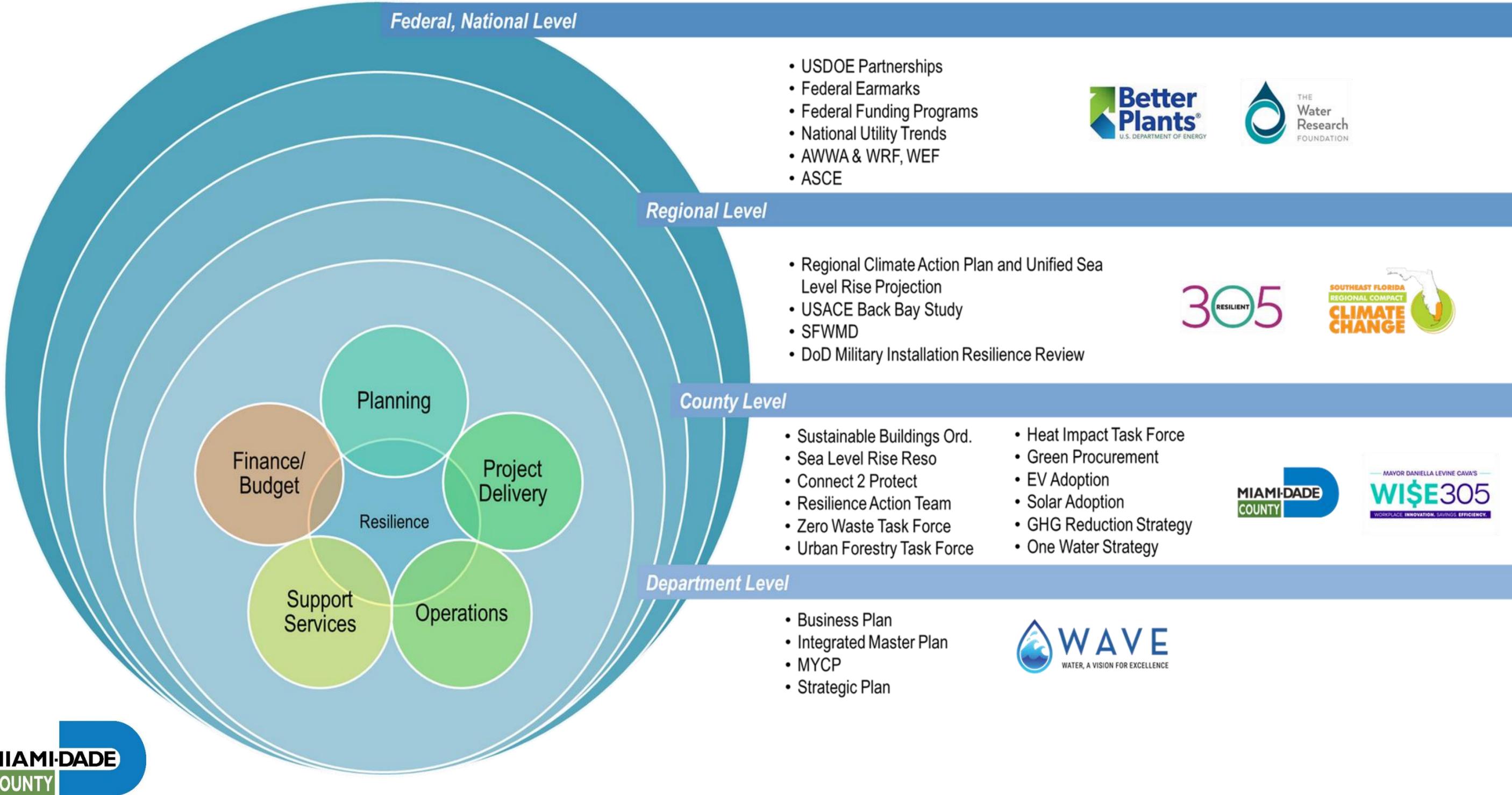
#WATERISLIFE



2

Resilience Alignment and Roles

Resilience and Sustainability Alignment



Resilience Division Support



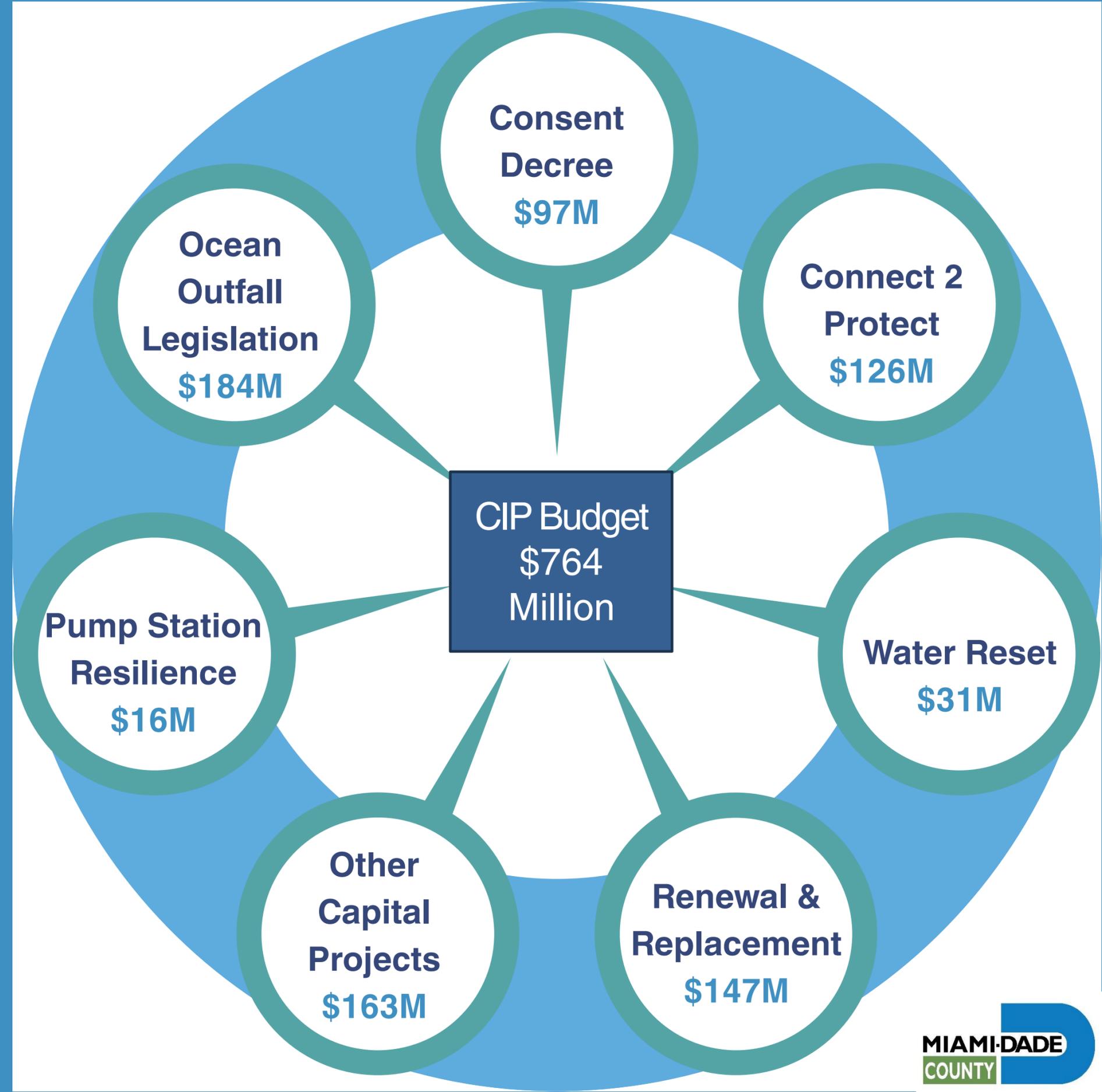
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Innovative Resilience Strategies

Resilience Investment Policies

County Resolutions & Ordinances require all phases of infrastructure projects:

- Consider sea level rise for 50 years or the life of the asset
- Apply LEED or Envision Sustainability Rating Systems



Innovation in Facility Hardening

- ✓ Elevating and hardening structures for flood protection
Increasing energy efficiency at facilities
- ✓ Providing back-up and diverse power sources at facilities
- ✓ Minimizing the corrosive effects by using inert and non-metallic pipe materials
- ✓ Improving community safety and reducing operational hazards
- ✓ Integrating sustainable practices



Pump Station 301 in Sunny Isles



Infrastructure Hardening

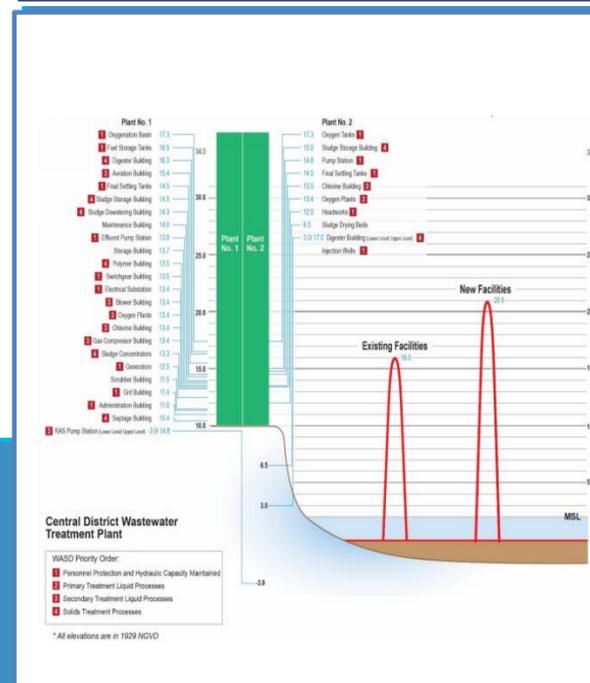
-Process-specific approach for applying hardening guidelines

Define Level of Service Priority

Risk-based framework:

1. Personnel protection
2. Recovery after storm event
3. Hydraulic capacity maintained
4. Primary treatment liquid processes
5. Secondary treatment liquid processes
6. Tertiary treatment liquid processes
7. Solids treatment processes

Define Actual and design Elevations and Define Complexity



Define Hardening Approach and Alternatives

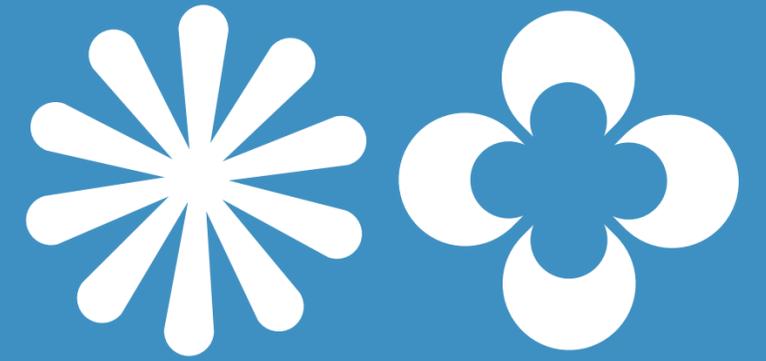
Adaptation Strategy	Resiliency/Effectiveness	Cost
Elevate Equipment On pads or platforms, to a higher floor, to the roof, or to a new elevated building.	Medium	\$\$\$\$
Flood-Proof Equipment By replacing pumps with submersible pumps and installing watertight boxes around electrical equipment.	Medium	\$\$\$
Install Static Barrier Across critical flood pathways or around critical areas.	Medium	\$\$\$
Seal Building With water-tight doors and windows, elevating vents and secondary entrances for access during a flood event.	Medium	\$\$
Sandbag Temporarily Around doorways, vents, and windows before a surge event.	Low	\$
Install Backup Power Via generators nearby or a plug for a portable generator.	Low	\$\$\$

Figure 4. Facility Hardening Approaches. (Source: NYCDEP, 2013)

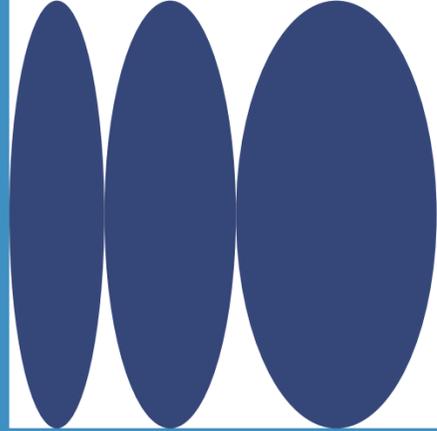
Validation and Documentation

- Conceptual Functional Analysis
- Impact to Operations & Maintenance
- Cost Impact
- Meet with WASD and OOL PM for alignment
- Document Approach to Continue Design

Infrastructure Hardening Examples



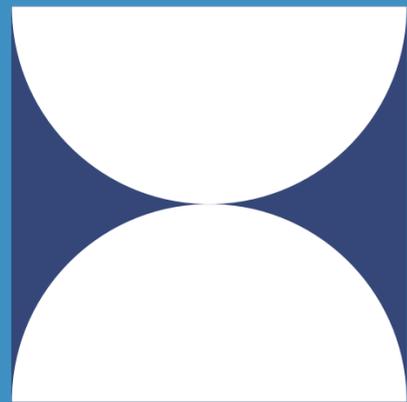
Next Gen Operations Centers



SDWWTP Future Operations Center

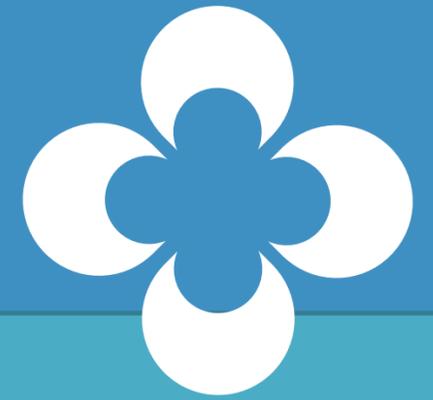
OVERHAUL OF OUR FACILITIES FOR EMERGENCY RESPONSE

-  **CONNECTIVITY ASSESMENT**
-  **CAT 5 BUILDINGS FOR OPERATORS**
-  **STATE-OF-THE-ART CONTROL ROOMS**
-  **NEW MATERIALS/ STORAGE BUILDINGS**



Innovation in Operations

-Smart Covers, Flow Meters, and AMI



240 Flow Meters

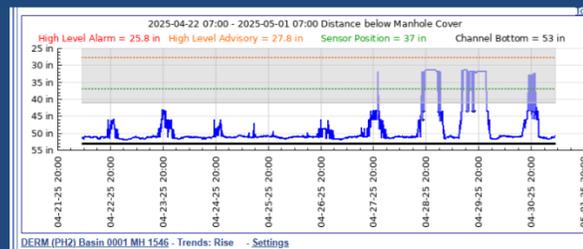
- Installed at strategic pump stations
- Monitor flow levels to prevent overflows and optimize pump operations
- Alert staff to anomalies or equipment failures

483 Smart Manhole Covers

- Real time monitoring at sewer manholes
- Senses water levels, flow, and conditions

Significant reduction in SSOs

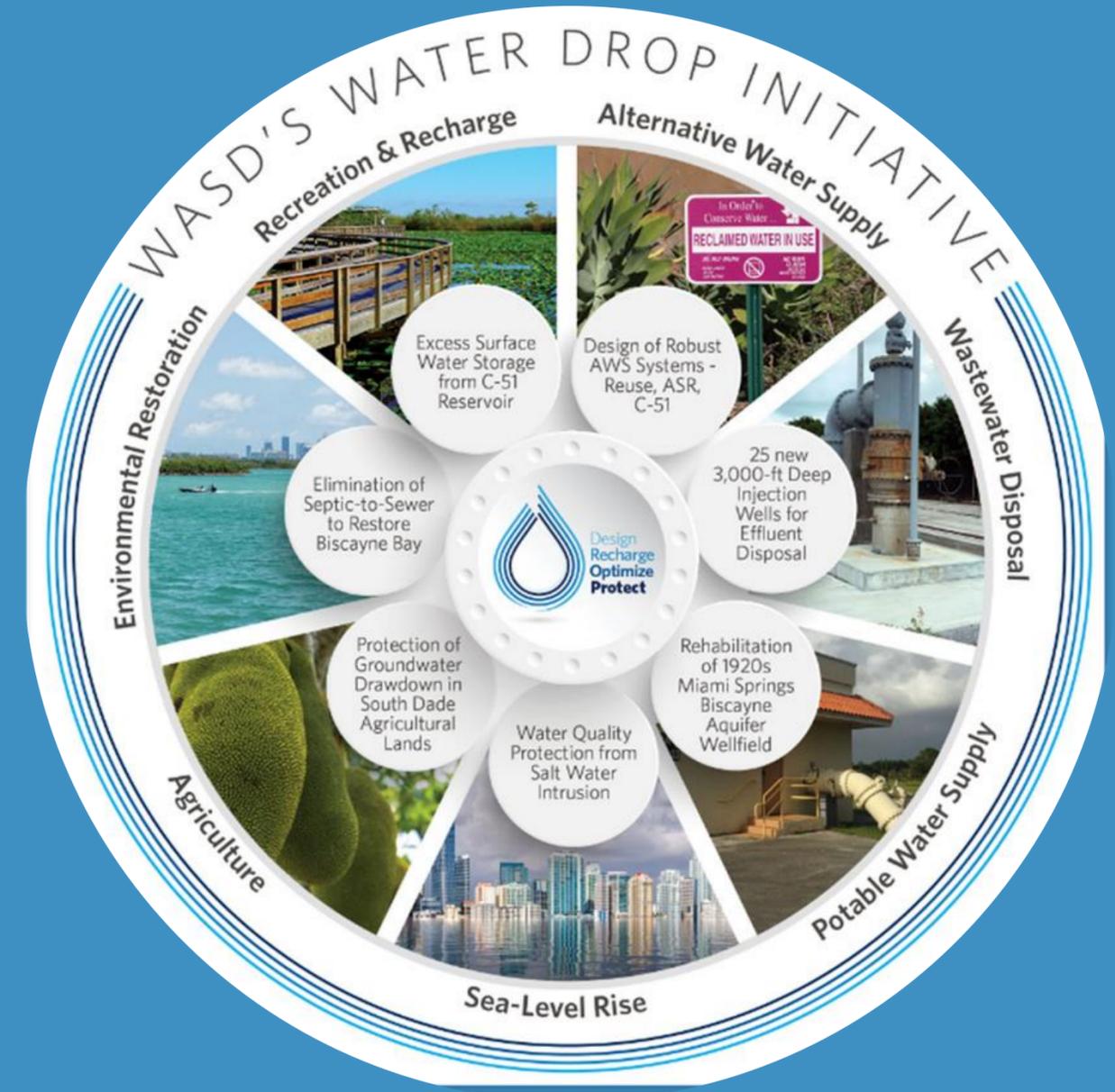
Responded to over 900 alerts since 2024



Innovation in Water Supply Management



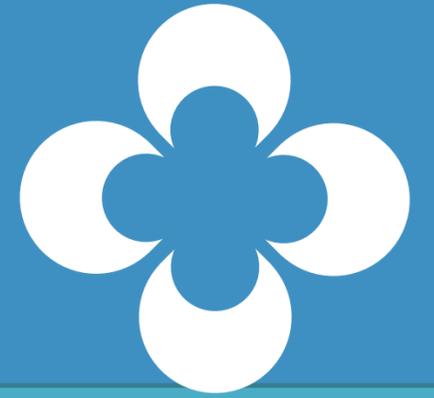
Design
Recharge
Optimize
Protect



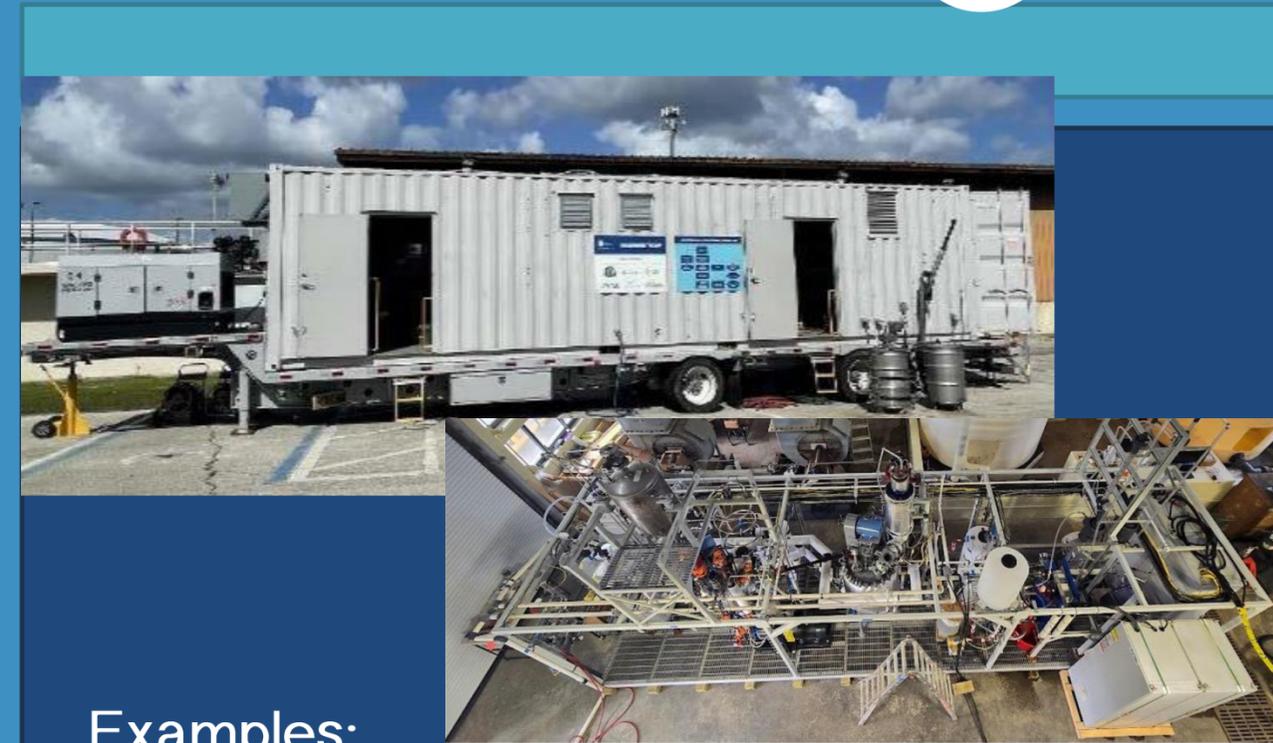
Exploring cutting-edge methods to adapt our water systems.

Innovative Technologies

-Pilot Framework to address greatest challenges



- ✓ Pilot Ordinance that allows for 12-month, no-cost demonstrations
- ✓ Agreement template to facilitate administrative process
- ✓ Intake and evaluation roles and workflow
- ✓ Engage SME's and leadership at appropriate times
- ✓ Document evaluation to determine go, no-go to pilot
- ✓ Cross-department team sets performance measures
- ✓ FIU resource for third party evaluation



Examples:

Biosolids Reduction & Energy Production

- Bromination & Electrolysis → hydrogen
- Hydrothermal liquefaction → crude oil

Biogas Harvesting from Headworks

PFAS Treatment Technologies

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Resilience as a Strategic Driver

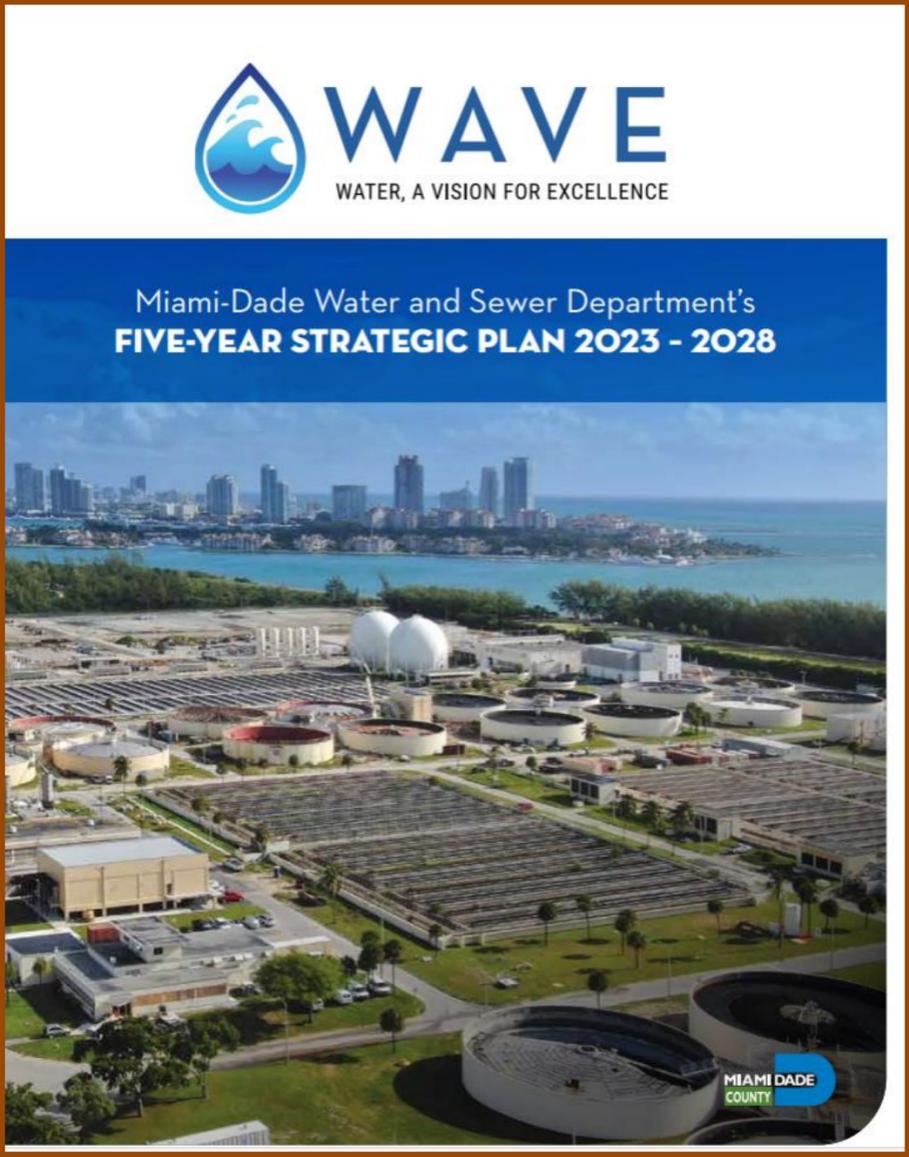


Resilience as a Strategic Driver



MISSION:
We deliver high-quality, safe, and reliable drinking water and wastewater services in Miami-Dade County where customers know the value of every drop, employees take pride in their contribution, and the pursuit for efficiency and community resilience drives every business decision.

VISION:
A model utility of excellence in reliability, resilience, and environmental stewardship, recognized as an essential partner in the protection of public health and an employer of choice in Miami-Dade County.



Built through Collaboration

- 6,500 PARTICIPANTS

DISCOVER

Stakeholders shared their perspectives and needs to help define the Department's priorities.

<p>Key Stakeholder Interviews</p> <p>37 Stakeholders Interviewed</p>	<p>Plan Alignment</p> <p>4 Plans Evaluated</p>
<p>Field Visits</p> <p>150 Employees Participated</p>	<p>Employee Engagement Survey</p> <p>451 Employees Participated</p>
<p>Retail Customer Survey</p> <p>5,606 Customers Participated</p>	

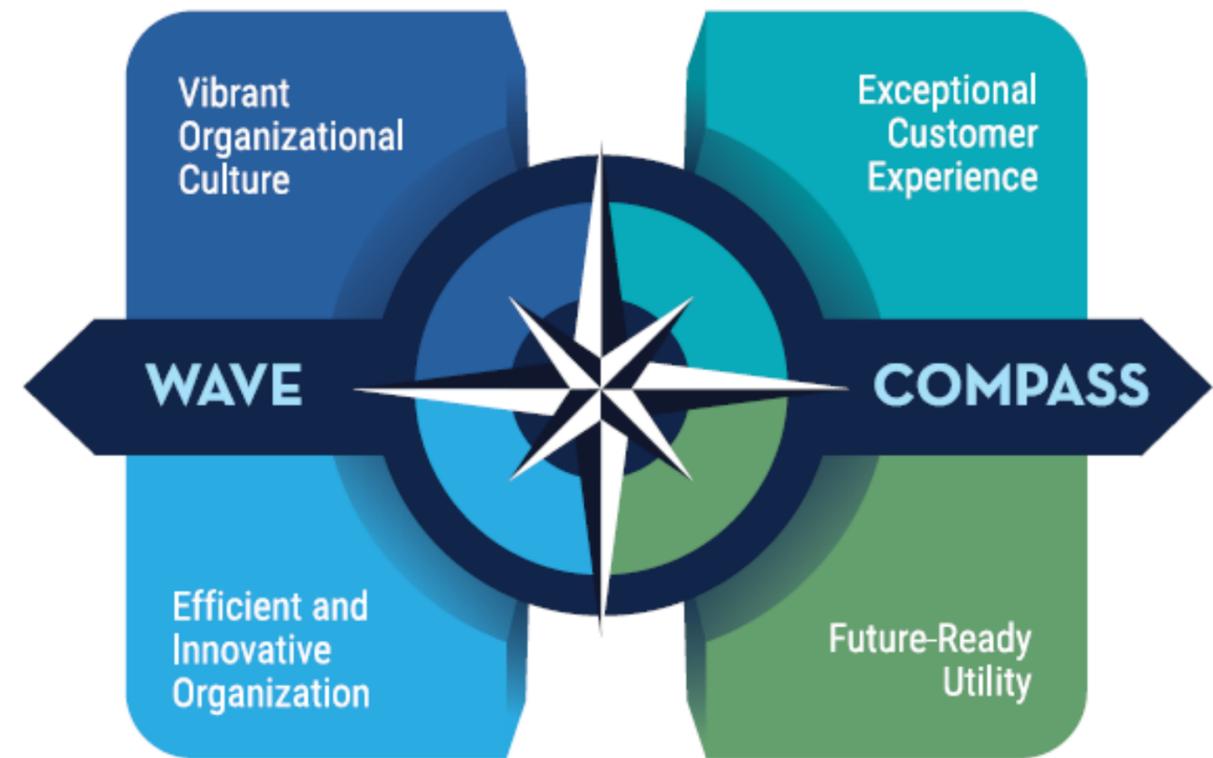
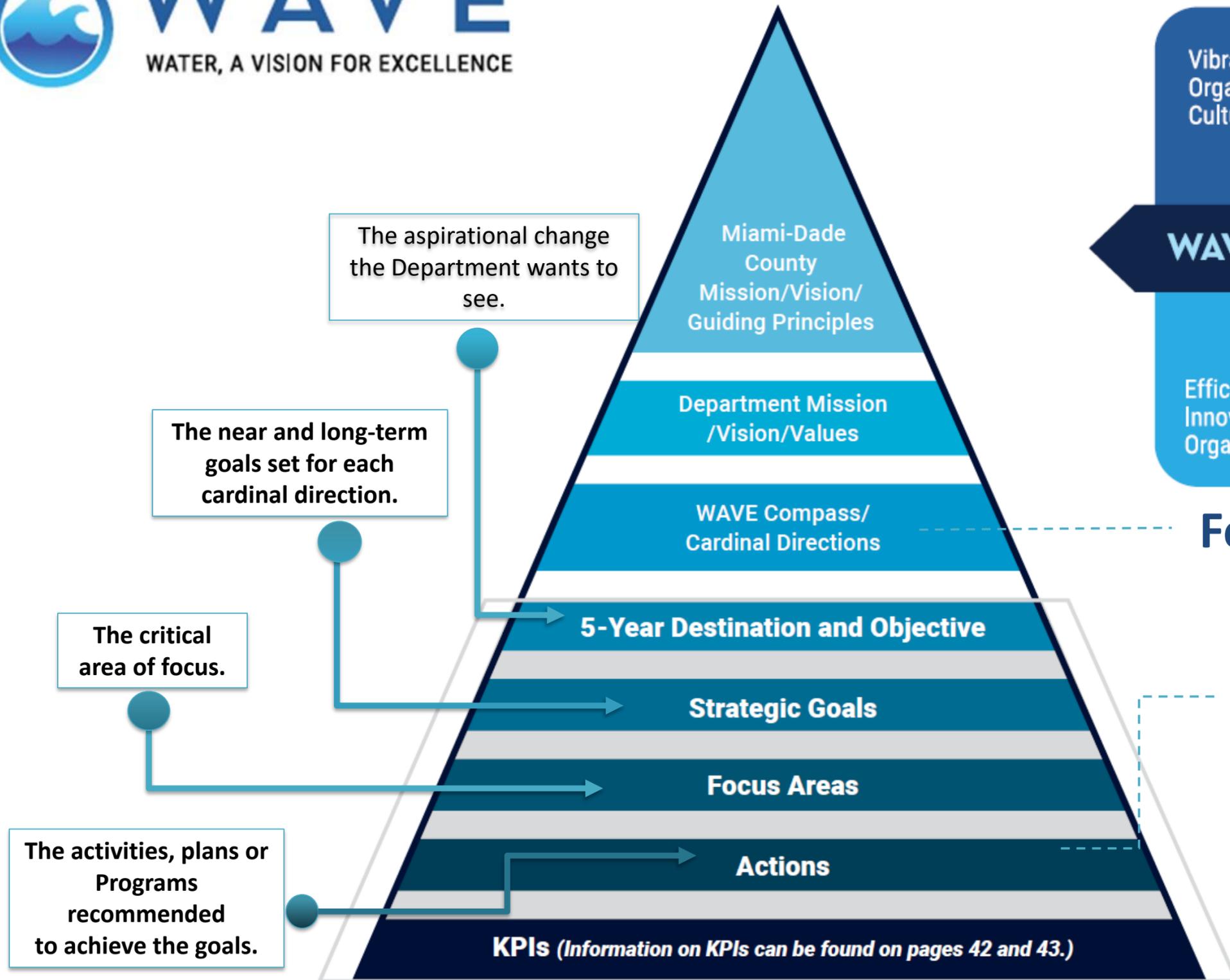


Built with the input of more than **6,500** stakeholders, including Department staff, customers, and key partners.

DESIGN

<p>SWOTT Workshops</p> <p>75 Employees Participated</p> <p>6 Workshops</p>	<p>Mission/Vision/Values Workshops</p> <p>38 Employees Participated</p> <p>3 Workshops</p>
<p>Partner and Wholesale Customer Interviews</p> <p>7 Partner Agencies Interviewed</p>	<p>Wave Content Workshops</p> <p>100 Employees Participated</p>





Four Cardinal Directions

Action Implementation Status: At the halfway point of FY2025, WASD has achieved meaningful momentum:

- 40 staff members and over 300 hours of analysis consolidated 137 actions into **70 coherent projects and programs**
- More than **80% of WAVE initiatives** are underway

From Plan to Culture



Division WAVE Huddles!



Cafecito on the Road!



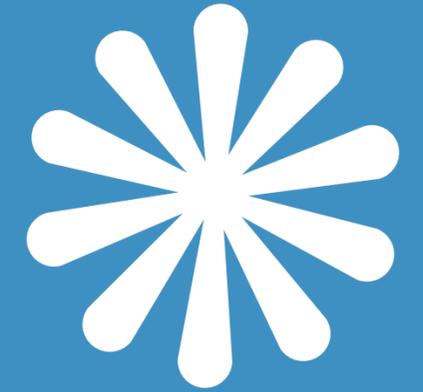
WASD COMMUNITY

Workforce Engagement Tactic	Audience	Tactic Description
	Chiefs, Assistant and Deputy Directors	Cafecito con Kinnick: Leadership That Inspires Cafecito con Kinnick fosters open dialogue, ensuring leadership actively shapes WASD's vision and culture. These Cafecitos create space for leaders to listen, connect, and inspire engagement. By modeling transparency and collaboration, Cafecitos strengthen teamwork and innovation across the Department. When leaders engage, their energy and commitment ripple throughout WASD. Because when leadership thrives, the whole organization succeeds!
	All WASD employees at site location	Cafecito on the Road: Bringing Leadership to You Cafecito on the Road takes leadership into the field, ensuring employees can connect with the Director and Deputy Directors where they work. These Cafecitos allow leadership to see firsthand the dedication and expertise that drive WASD's success. Meeting employees in their space reinforces that every role matters, every voice counts, and every contribution is valued. Because strong connections build stronger teams!
	All WASD Employees	Ripple Effect: Celebrating Every Contribution The Ripple Effect newsletter highlights how small actions create big change. Like a drop creating waves, every WASD employee shapes success. This newsletter celebrates achievements, division successes, and everyday contributions that support WASD's mission to provide safe, reliable water and wastewater services. Whether through innovation, teamwork, or behind-the-scenes efforts, the Ripple Effect ensures every role is valued and recognized. Because together, we make waves!
	All WASD Employees	WAVE Huddle: We Are Vital Employees The WAVE Huddle keeps employees informed, engaged, and connected. Monthly huddles bring key discussions to every office, plant, and field location. Integrated into regular staff meetings, these huddles ensure engagement is seamless. With a Playbook to guide discussions, managers foster collaboration, encourage feedback, and strengthen teamwork. The WAVE Huddle ensures every employee has a voice in shaping WASD's future—because when we engage, we thrive!
	All WASD Employees	Feedback Loop: Your Voice Matters The WAVE Feedback Loop ensures every WASD employee has a voice in shaping the Department's future. After engagement events, employees are provided a quick survey, making participation easy and accessible. This tool promotes engagement, measures communication reach, and identifies areas for improvement. By listening and adapting, the WAVE Feedback Loop ensures every voice is heard and valued. Because when we listen, we grow!

Key Takeaways

- Leadership and supporting policy are essential to success!
- Leverage partners and resources at all levels of government.
- Imbed sustainability and resilience strategies in guiding plans, policies, and processes.
- Offer support to operations and other teams – listen to their challenges.
- Vet technology innovations to address strategic priorities.
- Document decision-making process and cost/benefit component when possible.
- Establish measures of success and communicate them regularly.

Let's Connect for Further Discussion and Insights!



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