



## Water Supply, Management & Infrastructure

**WS-1** Ensure all water resource policy, planning and management decisions in the region are consistent with the latest Southeast Florida unified sea level rise projection, achieve uniformity in the use of regional climate scenarios for planning (e.g., storm surge, design storm events) and coordinate to align the hydrologic models used in adaptation planning from local to regional scales.

**WS-2** Convene the ad hoc sea level rise working group to review and update the Southeast Florida unified sea level rise projection in accordance with the latest peer-reviewed science and at a minimum of every five years.

**WS-3** Integrate future climate conditions, sea level rise scenarios and potential impacts to water quality in regional water management models used to support the Lower East Coast Planning process, environmental resource permitting and consumptive use permitting.

**WS-4** Coordinate saltwater intrusion mapping by using a uniform methodology and a common schedule across the region and among agencies to maintain and update the regional saltwater intrusion baseline at a minimum of every five years. Utilize saltwater intrusion models to identify wellfields and underground infrastructure at risk of contamination or infiltration by saltwater from rising sea levels.

**WS-5** Continue to develop and maintain local and regional inventories of existing potable water supply delivery and collection systems, vulnerable wellfields, wastewater collection and/or treatment infrastructure and septic tanks/drain fields; assess the potential climate change impacts on each component and develop different climate change scenarios and adaptation strategies for high-risk utilities and/or infrastructure that may require replacement, reinforcement or relocation to ensure the long-term viability of the system (e.g., modified site, depth, elevation, materials or connection requirements).

**WS-6** Develop a regionally-coordinated spatial tool/database to illustrate and catalog local and regional resiliency projects, planning tools and infrastructure investments, and to provide support with a formal data management strategy.

**WS-7** Continue to foster the development and exchange of new information, methods, technical capabilities, performance and trends to address key questions of concern related to climate variability and sea level rise in order to support management decisions and reduce duplication of efforts:

- Assess the impacts of observed and predicted climate variability and sea level rise on the frequency, duration and intensity of flooding connected to extreme tidal excursions, storm surge and 100-year storm events, and determine where impacts are likely to be greatest.
- Examine the effects of climate change and sea level rise on water availability and groundwater vulnerability and the predicted changes in precipitation and evapotranspiration patterns and rates.



- Establish a venue for a periodic exchange of ideas between resource managers, policy makers and researchers.

**WS-8** Modernize permitting, planning and design standards informing development and infrastructure improvements to include updates to groundwater table maps, flood elevation maps and tidal elevations, with a focus on project compatibility, infrastructure connectivity and preservation of the level of service under future climate conditions.

**WS-9** Coordinate with the South Florida Water Management District and local public officials to request a comprehensive assessment of the Central and South Florida Flood Control System by the U.S. Army Corps of Engineers to determine the system's performance under future climate conditions and to develop a resiliency strategy that will ensure existing levels of service are maintained or improved under future conditions.

**WS-10** Pursue an update of the Florida Department of Environmental Protection's Stormwater Management Rule, "Environmental Resource Permit Applicant's Handbook – Volume II," to ensure the integration of future climate conditions and stormwater harvesting initiatives in permitting criteria at all levels and to include wet season average groundwater tables, unified sea level rise projections and Intensity, Duration and Frequency curves.

**WS-11** Continue to utilize inundation maps and stormwater models to identify areas and infrastructure at increased risk of flooding and to evaluate the impacts of changes in groundwater levels on wastewater and stormwater systems (including septic tanks, wastewater collection and conveyance and storage systems), with consideration of water quality and quantity, as the basis for site planning and regulation and identifying and prioritizing adaptation needs and strategies.

**WS-12** Continue to develop and apply appropriate hydrologic and hydraulic models to further evaluate the efficacy of existing water management systems and flood control/drainage infrastructure under variable climate conditions. Quantify the capacity and interconnectivity of the surface water control network and develop feasible adaptation strategies. Develop common data standards and database protocol for maintaining water management system components.

**WS-13** Continue to develop Integrated Water Management Plans and/or convene forums to promote a joint assessment and planning strategy involving local water utilities, wastewater service providers, water managers and partners to the Southeast Florida Regional Climate Change Compact for coordinated consideration of stormwater use and disposal, traditional and alternative water supplies, wastewater disposal, reuse and water conservation measures and amendments to applicable codes and regulations.

**WS-14** Continue to encourage, foster and support collaborative investigative work and scientific research, including the partnership with the Florida Climate Institute, to improve the understanding and communication of local and regional climate change impacts specific to Southeast Florida, including:

- Improved down-scaling of global climate models to represent precipitation at the regional and local scale and to develop standardized precipitation scenarios for the region.
- Identification and targeting of gaps in monitoring (such as Light Detection and Ranging, environmental data or data supporting regional climate indicators) to improve the quantification of the hydrologic system and its response to climate change (e.g., evapotranspiration, surface and groundwater levels, water quality, precipitation and local sea level) through local program efforts, agency collaborations and advocacy for additional state and/or federal resources, as needed.
- Partnerships and technology exchanges with public, private, academic, domestic and international partners to bring additional experience and innovation to resiliency planning, projects and decision-

- Development of integrated risk-based decision support tools and processes for application in analysis and selection of infrastructure design, water resource management, natural systems management and hazard mitigation alternatives. Tools should provide for consideration of the potential economic costs of comparative planning scenarios, management decisions and infrastructure investments and the evaluation of potential tradeoffs.

**WS-15** Continue to cultivate partnerships with federal and state agencies and professional associations with expertise in integrated water resource planning (e.g., U.S. Army Corps of Engineers Institute for Water Resources, the United States Geological Survey, the United States Environmental Protection Agency, the National Oceanic and Atmospheric Administration and Water Foundations) as sources of important research.

**WS-16** Identify, incorporate and prioritize preferred climate adaptation improvement projects in capital improvement plans. Develop projects, pursue funding options, including independent funding mechanisms, and implement projects.

**WS-17** Coordinate the actual implementation of innovative technologies to spread investments across multiple jurisdictions, thus maximizing knowledge gained while fairly distributing costs and benefits to multiple beneficiaries.

**WS-18** Recognize existing underperforming infrastructure and implement adaptable infrastructure strategies that facilitate targeted investments, allow managed performance and achieve greater flexibility in system operations.

**WS-19** Continue to support the implementation and funding of the Comprehensive Everglades Restoration Plan and its updated versions as fundamental to Everglades restoration, which includes an increase in freshwater flows to the Everglades system, thereby improving water quality, maximizing regional freshwater storage and aquifer recharge and creating the potential to abate saltwater intrusion, an increasingly important effort under variable climate conditions and in the face of sea level rise.

**WS-20** Combine existing and develop new land acquisition priorities in a regional setting to protect, preserve and enhance water storage. Develop regional and distributed surface water storage (e.g., C-51 reservoir, interconnected urban systems) to increase the potential for stormwater capture and reuse for water supply, flood management and environmental benefits.