

WQPP Management Committee Recommended Priority Topics for 2024 EPA Special Studies Funding

Repeat Topics from 2023 Recommended Priorities

1. Coastal Resiliency and Stormwater Mitigation: Monitor the efficacy of stormwater treatment systems associated with road elevation and other coastal resiliency and sea-level rise adaptation projects to ensure adequate protection of surface waters. Evaluate if a higher level of service is necessary for stormwater treatment systems and identify more efficient technologies, green infrastructure, or best management practices that may be employed, particularly in areas with restricted land availability, such as the Florida Keys and urban environments.

2. Canal Water Quality Improvements: Demonstrate “test or prove” activities to improve water quality in marine residential canals that may include canal master planning; canal restoration demonstration projects and design; pilot projects proving or testing feasibility or efficacy of innovative technologies; education and outreach program for canal homeowners and marinas; and monitoring to evaluate effectiveness of canal restoration techniques. Water quality results should be disseminated to the public as part of the outreach and education component. Innovative technologies or management practices identified must comply with all applicable regulations and water quality standards. Projects should not focus on methods previously tested in the “Water Quality Monitoring Project for Demonstration of Canal Remediation Methods: Florida Keys Final Report” (Briceno 2018).

3. Water Reuse: Investigate opportunities to improve wastewater systems beyond advanced treatment standards and repurpose purified wastewater for beneficial use in south Florida. This may include an updated review of innovative wastewater treatment technologies or processes such as reverse osmosis, omni-processing and/or nanofiltration, pilot projects to test or prove the effectiveness of innovative technologies for removing pharmaceuticals and other contaminants of emerging concern, feasibility studies on potable reuse of wastewater in south Florida, or outreach and education to increase public understanding and acceptance of reuse as a viable source of potable water.

4. Nutrient Loading Budget/Modeling:

- Conduct a nutrient loading analysis to assess the relative contribution of local anthropogenic sources of nitrogen and phosphorus (wastewater, stormwater, liveaboards, etc.) vs. natural sources of nutrients (upwelling, rainwater, sargassum) to nearshore waters of the Florida Keys; include analysis of changes in anthropogenic nutrient loading over time compared to former nutrient loading estimates conducted before wastewater upgrades and other corrective actions were implemented.
- Develop a nutrient loading model to demonstrate nutrient and contaminant loadings from regional sources (Florida Bay, the Gulf of Mexico, and southeastern Florida) into waters surrounding the Florida Keys.

New Recommended Topics

5. Legacy Nutrients from Septic Systems: Investigation into remaining leachate within septic drain fields associated with previously decommissioned septic systems. Identify what remains in areas previously hosting drainage fields and, if applicable, recommend potential mitigation options to remove legacy nutrients.

6. Continuous Water Quality Monitoring (WQM) Network: Support maintenance and expansion of a network of continuous WQM stations. This may include a needs assessment and recommended design for a continuous water quality monitoring network to address data gaps, calibration and maintenance of existing or new instrumentation, and/or compiling, centralizing and managing data from the currently deployed networks of continuous monitoring datasondes (e.g., FDEP's Continuous Water Quality Monitoring Program).

7. Shallow Injection Well Investigation: Continue investigation of research questions related to the use of shallow injection wells, including understanding the effects of injected saltwater on wastewater plumes and phosphate adsorption, phosphate adsorption saturation points, and the potential of phosphate mineralization as a permanent sink, among others.

8. Light Attenuation as a Stressor: Investigate the relationship between turbidity stress on corals and light that is being attenuated along Florida's Coral Reef. This should focus on determining the relationship between reduction in light attenuation and other factors related to coral stress seen with short-term increases in turbidity.

9. Emerging Issues and Emergency Response: Initiate emergency research and response activities to address any type of immediate and emerging threats to the south Florida marine ecosystem. Allowing flexibility to adapt research and management efforts to more immediately respond to novel ecological pressures will help to mitigate the impacts associated with those threats. This may include issues such as endangered species mortality events, algae blooms, marine heat waves, and epizootic disease outbreaks, among others.

Internal Recommendation (not for inclusion in the 2024 SFGI RFA)

1. WQPP Website Update: Update the WQPP website to improve communication with the public about ongoing WQPP efforts, successes, and priorities. Include summary information about funded projects and outcomes, links to reports and data, and actions and recommendations from the Steering Committee.