



AGENDA MEMORANDUM

Public Works Department

City Council Regular Meeting Date: October 7, 2025

To: City Council
From: Oisín Dolley, City Engineer
Alfred J. Mittl, P.E., Public Works Director
Date: September 26, 2025

SUBJECT: Accepting and Adopting the Post Hurricane Ian Surface Water Management Master Plan Update.

BACKGROUND: In 1989 the City of Sanibel adopted the first Surface Water Management Master Plan (the plan). The last comprehensive update to the plan was completed in 1992. Johnson Engineering did work on a 2018 update but it never received final approval from City Council. After the effects of Hurricane Ian, City Council has directed staff to complete an update of the plan to evaluate changes to Sanibel's hydrologic system and topography, which will be used to guide the City's stormwater improvements, modifications, and operational changes in the future. The update to the plan includes a full damage assessment of the stormwater system and design of repairs to the system to resolve any issues caused by Hurricane Ian.

The draft of the plan update was presented at the August 30th City Council meeting. Council provided comments to staff to incorporate into the update before approval. The main focus on comments was in regard to the analysis of the weir control policy and what capacity there was to adjust levels lower. Council expressed an interest in understanding the details about how lower freshwater levels affect the flora and fauna of the island. In addition to Council comments about the weir policy, there was also public comment about the draft 2018 Master Plan Update recommendations and ensuring that the recommendations from that draft plan were looked at with this update.

Partners Meeting (August 18th)

Following the City Council meeting, City staff held a partner meeting with the environmental and public safety partners to discuss weir management on August 18th. This included representatives from SCCF, Sanibel Fire, US Fish and Wildlife Service, Lee County Mosquito Control and City staff. At that meeting discussion was held about how potential changes to the weir control policy would affect the overall wetland environment of Sanibel. Partners agreed that the goal of maintaining a freshwater environment on Sanibel is a critically important part of Sanibel's surface water management. There are many benefits to this including minimizing wildfire risk, preventing saltwater intrusion, mosquito control, water quality impacts, and creating a suitable habitat for native flora and fauna. The partners agreed as Johnson Engineering states in the plan update that there is not capacity in the freshwater system to lower the target levels of the policy overall as it would threaten the survival of the freshwater lens during the dry season. The freshwater lens is the surface water aquifer of the island, often referenced

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as the water table. Maintaining a freshwater water table through the dry season is crucial to maintaining Sanibel's freshwater environment. Although the group could not recommend changes to policy itself without additional data collection, the group did recognize that there is some potential flexibility that could be allowed during the early to middle wet season to keep levels slightly lower than the full 2.0/1.6 NAVD levels in the policy. This allows for some additional capacity to handle high rainfall events without causing harm to the freshwater lens as it's only through the earlier portions of the wet season. Before the wet season ends it will be necessary to resume normal full basin operations to ensure that there are no issues with maintaining freshwater levels throughout the dry season. The partners agreed that the City Manager could make these seasonal adjustments as an extension of condition #4 of the Weir Control Policy but that it is crucially important that there is coordination with the partners to ensure seasonal changes do not cause harm to person, property, or the environment. The City Manager has been working with the partners and City staff to use this seasonal flexibility this year, and all partners agreed to monitor environmental and public safety conditions so the effects can be studied for future decision-making discussions. This is an ongoing collaborative effort among the partners to understand the effects in the future. It was agreed that the effects would need to be studied over multiple years before any modified operations were put into a permanent policy change.

Surface Water Management Masterplan Update

Since the presentation of the draft master plan update at the August 30th meeting, the following updates to sections have been made to incorporate public and council comments into the master plan update. Below is a brief summary of those updates.

Executive Summary: Added additional information on native flora/fauna along with additional salinity data to show up-to-date values.

Section 2.3 Weir Policy Review: Additional information added including revisions to table 5 as well as more information about seasonal Mean Sea Level (MSL) and seasonal minimum water levels.

Section 5- Conclusion And Recommendations: Reformatted with below subsections.

- 5.1 Riverine Flood Mitigation
- 5.2 Storm Surge
- 5.3 Hydrology and Water Budget
- 5.4 Wet Season Water Table
- 5.5 Weir Policy **(Additional Information Added)**
- 5.6 Surface Water Management Resiliency
- 5.7 Assessment of Stormwater Ponds
- 5.8 Future Surface Water Management Plan Review
- 5.9 Public Education

Section 5.1 Weir Policy Review: Included additional information relating to the analysis for potential changing of weir policy. Discussion at partners meeting found that the policy may have some seasonal flexibility but there is not enough capacity to lower the overall target levels of the current policy. It's recognized that there are no stormwater issues as a result of the system being maintained at a full 2.0/1.6 NAVD levels but there may be some flexibility in early/mid wet season to keep levels lower than full to help with capacity for high intensity rain events. This decision can be made by the City Manager under condition #4 but it's essential that the City Manager coordinate with environmental and public safety partners. It is recognized that the basins should be at a full level of 2.0/1.6 NAVD at the end of the wet season to ensure no ramifications to the freshwater lens. The City and the

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community partners are monitoring the effects of these seasonal management changes, and this evaluation should extend for at least three years before any official changes to the weir policy are made by City Council.

Section 6.1 2018 Master Plan Update Recommendations: Additional information about the flood prone areas as shown in the 2018 Master Plan Update along with updates on how recommendations were incorporated into this update. While never officially approved the 2018 Master Plan Update has been used as a resource by City staff for prioritizing stormwater projects and maintenance work.

Appendix A Water Levels of Freshwater Basin: Data updated through August 2025

FUNDING SOURCE: This work was funded by the Sanibel Stormwater Repairs Grant HA017 as part of the Hurricane Ian Stormwater and Wastewater Assistance Program.

Grant Funding	Total Cost	FDEP Grant HA017	FY25 Operating
Post Hurricane Ian Surface Water Management Plan Update	\$532,048	\$381,024	\$151,024

RECOMMENDED ACTION: Staff recommends that City Council accept approve the Post Hurricane Ian Surface Water Management Master Plan Update via approval of Resolution 25-060 (see next agenda item).