

St Lucie West Services District  
Basin 6B Control Structure Relocation Project  
SFWMD Application 180706-2

St Lucie West Services District was issued a Conceptual Permit Modification under Application 090513-2 in 2009. The purpose of that modification was related to a capital improvement project to install operable stormwater gates along the perimeter of the St Lucie West project site where stormwater exited the project to either the Turnpike (Basins 1E, 2C, 3B, 4E and 5), or the City of Port St Lucie C-108 Canal and the Monterey Canal (Basins) N1/7A, 7B-2 and 6B).

Modelling data received from the City of Port St Lucie for the C-108 Canal indicated that the peak stage in the C-108 in the vicinity of the Basin 6B control structure would not exceed 18.54 NGVD in the 25 YR, 3 Day design storm. This information was used in the development of the SLWSD model and it has become apparent from actual stage elevations inside Basin 6B as well as recovery time that results reflected in the model are not accurate.

Over the past several years SLWSD staff gauge readings from gauges installed in the C-108 and telemetry readings from the stormwater gate SCADA system have shown that, with the Basin 6B control structure fully closed, water elevations in the C-108 can reach elevations that are higher than those inside the project. Under these elevated conditions, stormwater is being diverted into the St Lucie West System from the C-108 until levels within the canal recede rather than allowing stormwater to pass out of the system.

SLWSD has constantly monitored performance of its system since construction and has made numerous capital improvements to provide additional storage in some areas while constructing more efficient hydraulic connections in others once a problem area has been identified.

The goal of the 6B Control Structure Relocation project is to gain relief from higher than expected stages in the C-108 canal by abandoning the existing 6B outfall to the C-108 and constructing a new identical control structure discharging to the C-108 approximately 3300 feet east. Stage elevations in the canal at the proposed location have been measured to be a minimum of 2 feet lower than those experienced at the existing 6B control structure location. This lower tailwater location will allow the system to better reflect the conditions predicted in the model.

Since the existing gate/weir will be relocated, only the amount of flow reflected in the model will be discharged offsite and no impacts to the downstream system will occur. The City of Port St Lucie and I have had a joint meeting with residents living on the north side of the C-108 canal in the vicinity of the new outfall and they did not express any concerns with the plan.

The cost of this project is approximately \$525,000 and includes the installation of the new control structure and 60" outfall pipe to the C-108, relocation of the existing gate and all its associated telemetry and electronics, as well as the construction of and additional 60" interconnect pipe between Basins 6B and 5 to facilitate internal movement of stormwater in the system. A new stilling well and water level transmitter are being installed in an alternate location within Basin 6B and will be tied into the SCADA system.

Basin 5 and Basin 4E were recently improved by the construction of the 4E-5 Canal and Lake Harvey projects that provided for a more efficient hydraulic connection between Basins as well as addition storage in the combined Basin. Performance of the new improvements was monitored during the rainfall event in May of this year and it was found that the newly combined Basin was one of the best performing Basins in the system with stages being lower and recovery time greatly improved.

Therefore, it is anticipated that increasing the size of the hydraulic connection between Basins 6B and 5 will not impact the system.