



Water Policy Round Table Discussion Summary

Prepared by: Jim Fletcher
October 23, 2008

Tropical Storm Fay (T.S. Fay) impacted Brevard from August 18 through August 20, 2008. According to the St. Johns River Water Management District (SJRWMD), Doppler radar recorded between 12-18 inches of rain over much of Brevard County with certain areas in the county receiving in excess of 20 inches. It was determined that this was between a 25 and 100-year storm event basin-wide. Along with previous rain events over the past 10 years, this event exposed the need to discuss operational strategies that would lessen the flooding impacts on agricultural lands south of US 192 and areas within Seminole and Volusia counties.

The St. Johns River, which flows north, is the slowest moving river in the United States. It starts at an elevation of 26 feet above sea level in Indian River County. There is a 20 foot drop in elevation of the river from the southern Brevard County line to the northern Brevard County line. There are many creeks west of the river valley floodplain that have a major flow input to the river. SJRWMD's Upper St. Johns River Basin Project located south of US 192 covers 247 square miles, but receives drainage from much larger land areas adjacent to the immediate project area. As the river flows northward from Indian River County into Brevard, several large impoundments or surface reservoirs upstream from the Fellsmere Grade act as a vast storage area. These areas include the Blue Cypress Water Management Area (BCWMA) and the St. Johns Water Management Area (SJWMA). As the river continues moving north there are more retention areas to store flood waters including the C-54 Retention Area, the St. Johns Marsh Conservation Area (SJMCA) and the Three Forks Marsh Conservation Area (TFMCA), the latter of which is presently under construction and not yet operational. Spillways situated in the flood control levees convey water into and out of these storage areas once water levels have reached a certain elevation. The Upper St. Johns River Basin Project had approximately 181,000 acre-feet of storage capacity immediately prior to T. S. Fay. In addition, a large reservoir will be constructed near Fellsmere to be known as the Fellsmere Water Management Area (FWMA). Upon completion the FWMA will provide an additional 10,000 acre reservoir for storage and provide additional relief to the C-54 canal drainage into the Indian River.

The C-54 canal moves water eastward to the Indian River Lagoon and out Sebastian Inlet during major flood events. This canal was constructed by the US Army Corps of Engineers for major flood events and there are two gates that control the release of water from the SJWMA into C-54 and three gates that control the release of water from C-54 into the Sebastian River and the

Indian River Lagoon. SJRWMD uses calibrated hydrologic models to predict post-storm surface water levels and to make water control decisions. Stage (water level) regulation schedules exist for each major impoundment in the Upper St. Johns River Basin Project area. Discharges from each impoundment are made based on water level conditions relative to the regulation schedule for that given reservoir. Current policies have the gate opening when water level reaches 25.5 feet above sea level in SJWMA. Additional considerations to opening the gate include environmental impacts to Sebastian River and Indian River Lagoon as well as potential flooding impacts to homeowners in these areas. It should be noted that the amount of water flowing through the C-54 canal when opened during T.S. Fay represented less than 10% of the total flow into Indian River Lagoon and had marginal impact on lagoon-wide environmental or flooding issues; however, localized impacts owing to major flood flows from C-54 in the aftermath of T.S. Fay in the Sebastian River area were more pronounced.

The Brevard Agriculture community was concerned over how the Upper St. Johns system performed during T.S. Fay. There were thousands of acres of Brevard County agriculture lands that remained inundated for 2-3 days following T.S. Fay. Currently, it is impossible to determine the extent of the damage done and will be for some time. At issue is if the decision to open the C-54 canal gate could have been made earlier to relieve flooding on lands in Brevard County northwest of C-54 canal. In addition, could alternatives such as “pulse discharges” or incremental discharges from C-54 canal be made over a prolonged period of time during a major storm event to decrease flood impacts on agriculture lands in Brevard.

Indian River producers questioned whether the system as designed was adequate to handle major flood events. A case in point was where water levels at SR 60 overwhelmed the St. Johns Improvement District’s (SJID) ability to discharge water from the SJID’s reservoir upstream from SR 60 into SJRWMD’s project. SJRWMD believes its project did function as designed, but that the network of private agriculture pumps in Indian River and Brevard counties were overwhelmed by the amount of rainfall from T.S. Fay such that the pumps could not pump water fast enough to dewater citrus groves and cattle pastures without sustaining temporary localized flooding. SJRWMD staff acknowledged that no agricultural pumping system in the upper St. Johns Marsh was designed for an event of T.S. Fay’s magnitude. Agriculturalists believe that it may prove beneficial to create different flood models for a variety of event magnitudes to determine effects and impacts on the current system.

Another area of concern is the Melbourne-Tillman canal. It provides flooding relief for parts of Melbourne, West Melbourne, Palm Bay and the Platt ranch by moving water into the Indian River. Current operating policies have the gate opening when water levels reach 8 feet, National Geodetic Vertical Datum (NGVD). SJRWMD has plans to modify current operating protocols to allow water levels within the MTWCD to rise to 10 feet, NGVD before the gate is opened. The interim planning phase for the C-1 within the Melbourne-Tillman Water Control District in Brevard County is almost complete. The final plan involves the modification of MTWCD’s MS-1 water control structure, the installation of two (2) pump stations adjacent to the Platt ranch and improvements in the C-1 Retention Area so the C-1RA can store more water.

The final area of concern was flooding in North Merritt Island. It was noted that the system in place is a gravity flow system. There are no gates to open to release water. Possibilities for the future would include enhancing canal capacities and installing pumping facilities.

Recommendations:

1. Improve Communication during storm events. Consider having a SJRWMD representative at the EOC during emergency situations.
2. Set up meetings with local agriculture producers to keep them informed on the Melbourne-Tillman Canal project.
3. SJRWMD and the Corps of Engineers will continue exploring drainage issues with an eye toward identifying any conveyance restrictions.
4. Evaluate the option of making “pulse discharges” from C-54 during future storm events.
5. Brevard County Agriculture and Extension Services Department will work with local agriculture producers to identify critical issues related to T.S. Fay and provide feedback to SJRWMD.
6. Brevard County Natural Resources Department will work with other county departments to identify critical issues related to T.S. Fay and provide feedback to SJRWMD.