

June 5, 2014

Storm Water Drainage Task Force – Short Term and Immediate Action Steps for the City Council’s Consideration Pending Long Term Plan Development

Members of the City Council;

At its June 3 meeting, the third of the meetings held to date, your task force discussed and adopted the following immediate action steps that it recommends you implement. In no way does this list of improvements to the city’s storm water system indicate our committee has completed its work. We indeed have much more deliberations and ultimately recommendations to be considered. However, due to the tropical storm season upon us and the already saturated conditions of the city’s infrastructure, we feel any short term improvements that can be done without extensive permitting, yet addresses immediate problem areas, should be undertaken as emergency work orders. These recommendations are listed in no particular priority and are divided into 3 geographical areas as used by the task force for sub-committee purposes.

East Area

- A. Plantation Hill – contingent upon the Plantation Hill Homeowners approval of improvements to the privately owned existing storm water holding ponds
 1. Develop plans to enlarge the existing central holding pond in available area adjoining the existing pond. Capacity gain may be 1/3 or greater from the existing area.
 2. Install a direct connect of the lower pond (bordering James River Rd.) to the hospital retention pond. This will entail obtaining easements and approvals from Baptist Healthcare.
 - Note – The culvert channeling overflow from the main holding pond that flows via culverts and underground pipe to the James River pond is sized too small to overcome a 200 year event. Assessment should begin to determine the feasibility of enlarging this pipe from its current 14” to a larger diameter. We suspect this project will be long term and expensive, but the initial assessment should be done. Emphasis in the short term should concentrate on enlarging the main pond, with overflow pipe upgrades considered later.
- B. McClure/Shirley area
 1. Following enlarging the Plantation Hill pond system, connect a discharge from the existing storm water collection system into the Plantation Hill system. The current system without a discharge pipe will serve this area well IF the existing groundwater filtering pipe is discharged continually. The discharge planning may have to include the installation of a lift station, but existing groundwater filtering pipe already in the ground can be effectively utilized.
 2. Contingency – in the unlikely circumstance Plantation homeowners elect to maintain the status quo of the current facilities and refuse access to the private facilities for the McClure/Shirley area, an alternative engineering plan to discharge the McClure system should be prepared. An alternative for review is to pump southward into the discharge systems that serve Highway 98.

C. Baycliffs

1. Obtain an easement to immediately discharge the existing Baycliff collection system to the storm pipe running parallel to the subdivision. Ground water elevations will improve and storm event capacity increased.
2. Begin an immediate plan to swale/berm/ditch the property bordering Baycliffs and the Live Oaks reservation to prevent sheet runoff of water from the Live Oaks reservation now flooding Baycliffs. Videos of the runoff from the Live Oaks area have verified the severity of this problem.
3. With the discharge of groundwater collected in the existing Baycliff underground system going to the outfall line coming from the hospital, AND a berm/swale structure being constructed to impede the runoff from the Naval Live Oaks, the Baycliff area will see appreciable improvement in the event of another major downpour.
4. Modify the invert and overflow of the hospital pond. By maintaining the pond level more efficiently, capacity is better utilized. Permission from the hospital will need to be obtained.

Central Area

A. Dracena / Silverthorn

1. Improve upon the existing contract for the storm water contract now underway by engineering additional catch basins for the right of way. The already designed system poised for construction must have homeowner cooperation for easement to the pumping station on Russ Drive.
2. Utilize the existing easement bordering the school property to install added collection of groundwater for discharge into the Russ station. Meetings with school district representatives have already begun and cooperation has been positive.
3. Verify and ensure, pumping capacity of the Russ station is sized at 40hp (2@20 each) or more.

B. Loruna / Poinciana

1. Immediately create a gravity collection point at Loruna and Poinciana, taking the water flow southward to the retention pond existing in Shoreline Park (northern area near Poinciana).
2. Enlarge and lower the pond level in Shoreline Park so its level is lower, creating more capacity and lowering adjoining groundwater levels. City staff has already begun this task.
3. Install an 18" or greater perf pipe in an area within the Frisbee golf range to act as a groundwater control. Direct flow to the existing pipe that connects to the Community Center lift station. This improvement can be easily constructed on existing city owned property and into existing drainage infrastructure.
4. Begin engineering and design of added underground drains for tie in to the Loruna catch basin that will drain areas north of Poinciana.

C. Bear Drive

1. At approximately 113 Bear Dr, the right of way needs a better contour of the existing topography to allow greater flow into existing basins.

2. Thoroughly test the recent repairs on the Bear Drive system to assure the line problem has been fixed.

West Area

- A. Washington St
 1. Expand upon the currently engineered plan (soon to be constructed) by adding piping from Navarre St via Norwich that will serve to increase the drainage of Gilmore and San Carlos as well as the south end of Navarre. A design should be drawn that will enable adjoining areas near Gilmore, San Carlos, Norwich, York, or Surrey to have a discharge via Washington. The contracted new storm water project will include a 12" discharge force main line under Shoreline that ultimately will discharge in Regina/Zamara canal. This high capacity line should be utilized to its full capacity without adding other discharge lines that may be unnecessary.
 2. Ensure the planned Washington lift station is sized at 40hp (2@20 each) or better.
- B. Dolphin / Camelia
 1. Upgrade the Camelia/Dolphin catch drains into the existing lift stations adding more from the areas on Dolphin east of the stations. Increase the capacity of the lift stations for greater discharge. Raise the elevation of the electrical panels and replace as needed for higher capacity pump upgrades. This recommendation is already a part of the planned storm water project.

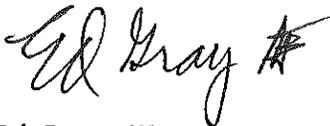
All the existing system

A thorough cleaning and general maintenance of the current systems should be conducted in a manner that documents who, when, and where systems have been checked for maximum operating efficiency. No component of the current system should be assumed to be operating properly until inspections are completed.

Additional Information

Superintendent Tim Wyrosdick and Facilities Asst. Superintendent Joey Harrell of the school district met with me to coordinate a joint mitigation project that will dramatically assist in the planned storm water management of both Dracena and Russ Dr. It also will benefit the flooding mitigation for the high school. By the time the Council meets Wednesday, I am hopeful we will have a formal approval by the school board to grant easements to start engineering of this plan.

The above recommendations are submitted by unanimous vote of the task force. Transmitted on behalf of the task force by,



**Ed Gray, III
Chair**