

2009 Annual Engineer's Report
San Carlos Estates Water Control District
September 22, 2009



Capital Improvement Program (CIP)

The construction of the major infrastructure of the Capital Improvement Program has been completed and the improvements appear to be operating as designed with a few exceptions which are currently being researched. The goal of the project was to comply with the environmental permit regulations, we were required to acquire property and build stormwater detention areas for removal of pollutants and slowly releasing runoff to the canal. We were also required to limit the pollutants in our runoff and protect interior and adjacent wetlands. The following was done in the CIP design to meet these requirements:

1. Complete the swale system along all roadways and install control structures
2. Install detention areas with control structures in the right-of-way that we own at the western end of Strike Lane.
3. Convert the perimeter roads to detention areas with control structures.
4. Install weirs in the perimeter canal and stabilize/plant the canal sides.
5. Stabilize the roadways to prevent turbidity.

Last year the District received several storms with rainfalls that have exceeded the design storm frequency. The system was designed for a 5 year event for the north/south streets, and the 25 year event for Strike and Stillwell. The recent storms were between the 25 year and 10 year events. The water elevation of Spring Creek, which is downstream of our system, exceeded the elevation of the discharge weirs, creating a situation of no head loss across the weirs. After receiving several drainage complaints a survey crew was sent onsite to check swale elevations as well as roadway elevations in these problem areas to determine if it could be a construction related issue.

After careful study of the surveyor's information, it was found that the roadway and swales were within construction tolerances and system should be operating properly. In my letter to the board dated February 17, 2009, the apparent cause of the drainage issues was discussed in detail. The conclusion of this research and system observation was that the project was built to the designed elevations, and an upstream constriction in the form of clogged driveway culverts caused most of the water backup. It was my recommendation to the board to implement a culvert cleaning policy or program.

CIP Warranty Repairs

As a result of improper construction on the Stillwell Parkway canal, parts of the roadway have experienced settling as well as erosion which has occurred at the slope/asphalt interface. In a geotechnical report by Universal Engineering Sciences dated March 18, 2009, the cause of this roadway failure was a direct result of an improperly constructed canal slope. The construction plans called for a 2:1 slope, and as the canal was constructed the average slope is approximately 1.5:1. A crew directed by AIM Engineering mobilized onsite and placed more material at the top of the slope/asphalt interface and compacted it with a backhoe bucket. This fix should only be considered temporary since the slopes of the canal were not corrected to the specified 2:1. The repair of the canal is an ongoing issue and repairs have been estimated to be approximately \$100,000.00

Most of the other warranty issues associated with the Capital Improvement Project have been resolved at this time.

Canal Stabilization Efforts

As part of the CIP project, an effort was made to stabilize the District's canal banks, which had the intention to reduce canal maintenance costs, and improve water quality. The plan entails clearing the canals of all exotics, repairing any damaged areas, planting appropriate native species, and maintaining exotics to ensure native survival.

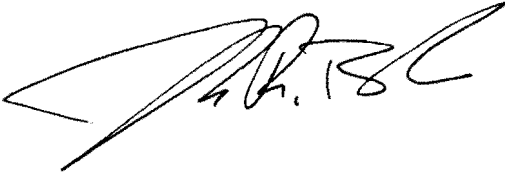
A planting project involving the planting of native species on the canal bank sideslopes has been completed and a survivability inspection should be completed in the near future. The canal banks appear to be stabilized and the objectives of the project have been met.

In an effort to ensure the survivability of the plantings in the detention areas on the western end of Strike Lane, a maintenance canal gate was permitted and installed in the southern detention pond which discharges into the canal. This gate will be operated by district staff or Brown Collins on an as needed basis to prevent prolonged inundation.

Permitting Issues

San Carlos Estates Water Control District is an NPDES co-permittee with Lee County and other local governments. The Municipal Separate Storm Sewer System (MS4) Annual Report has been submitted and is pending approval.

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A handwritten signature in black ink, appearing to read 'J. Barber', with a large, sweeping flourish extending to the left.

Joseph Barber, MS, EI, LEED AP
District Engineer