

Completed Projects: 2009

Sylvan Drive Stormwater Treatment Unit:

- The installation project that went by with the least amount of notice was installing a Nutrient Separating Baffle Box under the sidewalk on Sylvan Drive next to Lake Gertrude.
- In a previous project a concrete box had been installed under the sidewalk to act as a baffle box. However it did not function efficiently and much of the material captured simply got washed into the lake at the next rain event.
- Using a great deal of ingenuity, the designers were able to create all the parts of the separating baffles and basket to fit down through the manhole. On site the parts were assembled inside the existing box and function as though they were part of a regular treatment unit.
- Although it is smaller than the other units that have been installed, it still collects leaves and sand like its bigger cousins.



Parts of the NSBB Installed Under Sidewalk at Lake Gertrude



NSBB Installed Inside Existing Box Under Sidewalk

Gilbert Park North Stormwater Pipe Re-Lining:

- An old metal stormwater pipe that runs under the north end of park had rusted and collapsed creating a hazardous situation.
- Half of the pipe was removed.
- Then a process known as “Slip Lining” was used to insert a smaller diameter pipe into the remaining pipe up to the manhole. The pipe continued out into the lake.
- Once inserted the gap between the old and new pipes was filled with concrete to seal it.
- The new pipe is a heavy HDPE material that will not decompose and has no joints or gaps for tree roots to grow through and clog the drain.
- The pipe was buried and the area landscaped.



Slip-Lining a New Pipe at Gilbert Park by Marina

Fifth Ave Retention Pond Restoration:

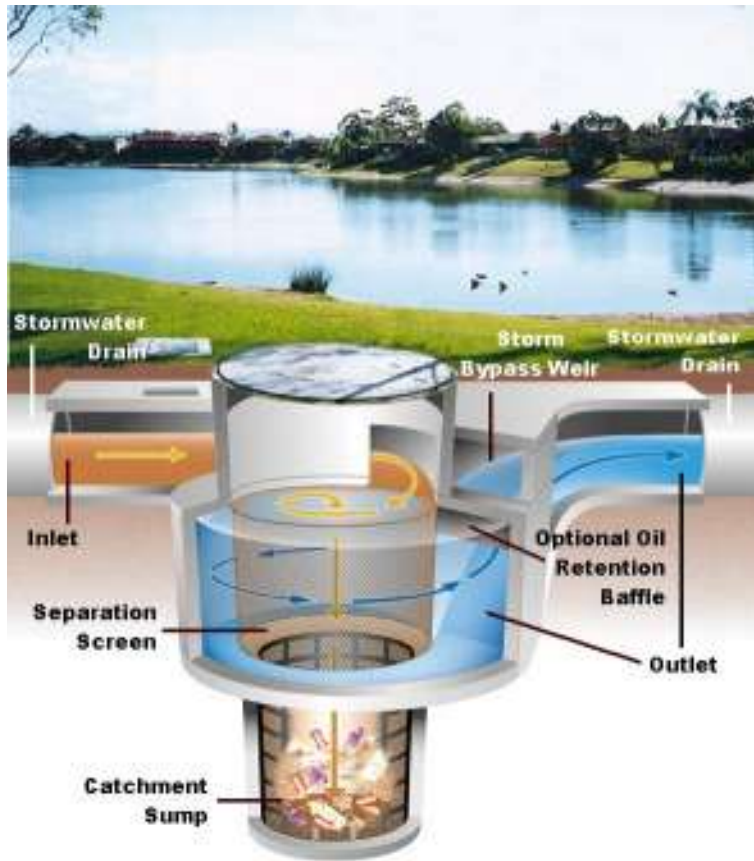
- The retention pond at the corner of Fifth Avenue and Old Highway 441 collects stormwater from much of the area north of Sixth Avenue east to Grandview Street.
- The pond was excavated down to its original depth removing the years of accumulated leaves and sediment that was preventing the water from infiltrating into the ground as it as designed to do.
- The fence along the north side of the pond was cleared of old brush that had grown over it.
- A new drain was installed from the driveways of the properties north of the pond down to the bottom of the pond. This will prevent the erosion of the pond banks that was a constant problem in the past.
- Once completed the site was seeded using a process known as “Hydro-Seeding” which sprays a mix of several grass seed types, fertilizer and an emollient that holds it all together until the grass can become established and hold the soil in place.



Retention Pond at Old 441 Repaired and Hydroseeded

Lake Dora Dr (Boathouse Rd) Stormwater Treatment Unit Repair:

- A Continuous Deflective Separation (CDS) unit was installed under Lake Dora Drive to remove any sediment from the water discharging into Lake Dora.
- The unit uses the water's own power to spin it through a mesh that removes the heavier sediment particles which fall into a sump in the bottom of the unit.
- The unit was backing up during heavy rain events and pushing the covers off the manholes. A panel inside had broken preventing water from leaving the unit as designed and forcing it up through the street.
- The broken panel was removed and the entire unit cleaned.



Graphic of Continuous Deflective Separation Unit

Alexander Creek Upper Pond Restoration:

- The upper pond of Alexander Creek in Gilbert Park has become filled in with sediment and debris. Woody plants had begun to choke out the pond and make it unsightly.
- Using the City's Vac Truck, the sediment was removed from the pond. The rocks were washed free of sand and dirt that had covered them.
- Now the pond will function as a sediment trap as it was originally designed. This process will need to be repeated every few years to maintain the look of the pond and to allow it to continue to trap sediments that would otherwise flow into Lake Dora.
- Two steel manhole covers were replaced with fiberglass grates to allow surface runoff to flow into the storm drain reducing the erosion caused by the water running down the slope on the north side of the playground.



Jet and Dredging of Alexander Creek Upper Pond

Light House Point Dredging Project:

- The area of Lake Dora where the famous Light House Point is located originally did not have a point.
- A stormwater pipe that discharged into the lake next to the large Oak tree brought sand and sediment with it each time it rained. Over the years a delta formed in the lake. As more sand accumulated the point grew out into the lake.
- Grantham Point was created when concrete debris from a road construction project was piled on top of the delta then covered with soil forming the basis for the current point.
- This caused the incoming sediment from the storm pipe to move even further out into the lake. In later years the pipe was extended to about mid way out to the point. Again this moved the sediment further out.
- The dock on the south side of the boat ramp had become completely landlocked.
- A dredging project was undertaken to remove the years of accumulated sediment from the lake and the make the dock usable by boaters again.
- The wooden approach section of the dock was removed to allow a loader with a 60 foot boom to access the area. Working from the open water toward shore the operator dug out over 1800 cubic yards of material from the lake.
- Once the dredging was completed the dock was re-built using fiberglass posts and composite material decking which will last for many years without the need for maintenance.



Lighthouse Point & Dock Before Dredging



Lighthouse Point & Dock After Dredging



New Dock Approach at Boat Ramp

Grandview Street Pipe Sealing:

- The stormwater pipes that run from the retention pond on the east side of the Florida Central Railroad tracks at Grandview had become separated at the joints.
- During heavy rain events soil from around the pipes was being pulled into the pipes. This was causing sink holes to form under the rail road bed, in a private homeowner's yard and along the north edge of Gilbert Park near the playground.
- A contractor was brought in to clean and seal the pipe joints with a rubberized material that will allow the pipe to move without compromising the seal.
- Once the joints were sealed the void spaces around the pipes was filled in with fluid concrete.

Pond 255 in the Country Club of Mount Dora:

- Pond 250 in the Country Club of Mount Dora had filled to capacity and caused minor flooding in the adjacent properties.
- In order to reduce this problem a "weir" or cut in the discharge control structure was made to allow water to discharge from the pond at a lower level. The weir was fitted with a bracket and control boards to regulate the water level of the pond.
- If flooding is eminent, some or all of the boards can be removed to lower the water level of the pond. Once the threat of flooding has passed the boards are replaced to hold the water in the pond so natural processes can remove the nutrients in the water before it is released into Wolff Branch Creek.

Fifth Avenue Between Rhodes & Rossiter Pipe Re-Lining:

- A 15 inch diameter concrete stormwater pipe line had broken allowing water to pull soil out from around the pipe causing sink holes in several residential yards.
- A total of 290 ft of pipe were lined with a Cure-In-Place-Pipe similar to what the Sanitary Department uses. A flexible tube of epoxy resin is forced into the pipe using water pressure. Once the entire pipe is lined, hot water is pumped through the pipe to cure the epoxy.
- This creates a continuous pipe without gaps or joints to fail. The technology allows this work to be done without the need to excavate the streets and yards.