

Sunshine Lake/Sunrise Waterway

Atkins Tasks

Atkins staff is performing the following tasks related to the Sunshine Lake/Sunrise Waterway Study:

November 17 – November 21:

- Monitoring equipment demobilization
- QA/QC of all data
- Compilation, analysis and interpretation of monitoring results
- Preparation of waterway and watershed management plan

November 10-November 14:

- Removal of Stormwater and surficial aquifer monitoring equipment
- QA/QC of all data
- Compilation, analysis and interpretation of monitoring results
- Preparation of waterway and watershed management plan

November 3 – November 7:

- QA/QC of October monitoring results and stormwater results
- Compilation, analysis and interpretation of Monitoring results
- Preparation of waterway and watershed management plan
- Monitoring effort concluded on October 31, 2014

October 20 – October 24:

- Storm water sample collection as needed
- QA/QC of storm water runoff and monthly water quality results
- Weekly site visit to evaluate monitoring equipment
- October monthly water quality sampling (scheduled for Tuesday, October 21st)
- Demobilization of all seepage meters and the stormwater sampling site at the County Park
- Presentation of preliminary results to the Board of County Commissioners on October 21st

October 13 – October 17:

- Storm water sample collection as needed
- QA/QC of storm water runoff and monthly water quality results
- Weekly site visit to evaluate monitoring equipment

October 6 – October 10:

- Storm water sample collection as needed
- QA/QC of storm water runoff and monthly water quality results
- Weekly site visit to evaluate monitoring equipment
- Quantification of groundwater seepage volume and replacement of sampling bags

September 29 to October 3:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- QA/QC of storm water runoff and monthly water quality results
- Ten sampling events have been collected at STWR-2 (located at the northeast corner of the lake). The automated stormwater sampler has been re-programmed to not collect additional samples.

September 15 – September 19:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- The September water quality sampling effort was performed on September 11th
- Stormwater runoff event captured on September 9th at all three locations
- QA/QC of storm water runoff and monthly water quality results.

September 8 – September 12:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- Monthly water quality sampling scheduled for September 11th

September 1 – September 5:

- Storm water sample collection as needed

- Weekly site visit to evaluate monitoring equipment

August 25 – August 29:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- Seepage samples were collected Wednesday, August 20th from sites with previous equipment damage

August 18 – August 22:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment.
- QA/QC of storm water runoff results
- Collection of monthly seepage water quality samples at two locations. Damage to sampling equipment occurred prior to last week's sampling event. Equipment/sampling bags were redeployed on August 13th and samples will be collected Wednesday, August 20th.

August 11 – August 15

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment.
- QA/QC of storm water runoff results
- Storm water samples collected August 4 at all three locations were sent to Source Molecular for Microbial Source Tracking analysis. Results will be reviewed upon receipt.
- Collection of monthly water quality samples.

August 4 - August 8:

- Stormwater sampling equipment maintenance.
- Weekly site visit to evaluate monitoring equipment. Seepage meter replacement at SEEP-2 (replaced on July 29th) due to damaged equipment.
- Water quality sample at SEEP-2.
- QA/QC of monthly water quality and storm water runoff results
- MST sample collection (occurred on August 3rd corresponding with storm water samples)
- Stormwater sample collection as needed (Samples collected at all three sites from August 3rd rain event).

July 28 – August 1:

- Collection of monthly water quality samples
- Stormwater sampling equipment maintenance
- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- QA/QC of monthly water quality and storm water runoff results

July 21 – July 25:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- Review and QA/QC of Storm water runoff and Microbial Source Tracking results upon receipt from laboratories

July 14 – July 19:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment, County Park Storm water sampler sampling tubing repaired on Friday, July 11
- Storm water samples collected July 7 at all three locations were sent to Source Molecular for Microbial Source Tracking analysis. Results will be reviewed upon receipt.

July 7 – July 11:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- QA/QC of monthly water quality and storm water runoff results
- Microbial Source Tracking analysis contingent on storm water sample collection and required laboratory hold times

June 30 – July 4:

- Storm water sample collection as needed
- Weekly site visit to evaluate monitoring equipment
- QA/QC of monthly water quality and storm water runoff results
- Microbial Source Tracking analysis contingent on storm water sample collection and required laboratory hold times

June 23 – June 30:

- Storm water sample collection as needed

- Weekly site visit to evaluate monitoring equipment

June 16 – June 20:

- QA/QC of water quality data from first sampling event
- Collection of stormwater runoff samples from at least two sites

June 9 – June 13:

- Storm water sample collection as necessary
- Weekly site visit to evaluate monitoring equipment

June 2 – June 6:

- Storm water sample collection as necessary
- Weekly site visit to evaluate monitoring equipment

May 26 – May 30:

- Collect monthly water samples from lake, monitoring wells and seepage meters
- Download monitoring well data
- Weekly site visit to evaluate monitoring equipment

May 19 – May 23:

- Installation of Monitoring Wells
- Survey of Wells and Staff Gages
- Weekly site visit to evaluate monitoring equipment

May 12 – May 16:

- Installation of seepage meters
- Installation of staff gauges
- Installation of automated stormwater samplers
- Permit application for monitoring wells

May 5 – May 9:

- Submit Sampling Plan to the County
- Identify groundwater monitoring well sites
- Mobilize for automated stormwater sampler installation
- Construction of seepage meters

Early History

- Spring 2009 Public Works Director and Stormwater Manager met w/Ms. Mulvaney, on-site, at the Sunshine Waterway to inspect existing conditions.
- Algae was witnessed at that time. It was noted that this condition has existed for a number of years.
- Staff frequently inspected the canal during the remainder of 2010 and through spring 2011.
- Staff recognized an increase in algae during the summer of 2011—therefore, funding was requested and obtained from the Mid-County Stormwater Unit August 2011 to conduct a study to find the cause of the algae.
- A study commenced fall 2011 to review topical surrounding area, type of algae and a possible cause.
- Charlotte County Engineering obtained a consultant to design and permit the removal of the algae and the placement of recharge wells in the Sunshine Lake/Sunrise Waterway System.

Information Gathered

- A direct cause was not found as a result of the Atkins study in fall 2011.
- The Atkins Report reference (pg. 25) to unintended discharges from the wastewater collection system to the magnitude of 100-150 million gallons loading into the lake to produce these high algae levels is NOT a statement of a real incident or fact. It is only an illustrative statement with respect to a hypothetical situation.
- Analytical Test Report in June 2012 for Fecal Coliform at 3 sites on Lake indicated negligible amounts of contaminant in waterway. The Florida Department of Environmental Protection tested for Sucralose (which is a good indicator of human waste) on at least two occasions (June and November 2012) and found no traces within the waterway system.
- The Atkins Report recommends monitoring wells to be installed in the vicinity of the canal to intercept groundwater inflow into the canal system for further testing to pinpoint the nutrient source.

- CCU conducted a “smoke test” for leakages in early May 2012 on its sewer collection system, and results were negative.

Health Department Tests

- The Florida Department of Environmental Protection took the last samples on January 3, 2013. Again, the type of algae detected was Aphanothece Conglomerata. The FDEP has determined that this type of algae is non-toxic.
- Charlotte County completed testing in the lake and waterway system for fecal on August 22, 2013. The fecal levels fell with the tolerable limits for the waterway.

Next Steps

- Algae removal is currently underway. The contractor has requested extra time due to the amount of debris that they are removing from the waterway system. The algae removal is taking longer than had been anticipated as well. A change order was approved by the BCC on January 28, 2014 to add \$1,121,470 and 154 days to the contract for additional algae. As of this change order the completion date is June 1, 2014.
- Engineering staff has hired and is negotiating a contract with Atkins to do a management plan for the waterway system. This plan will consist of the consultant reviewing what has been completed and do a nutrient source evaluation. Charlotte County has received cooperative agreement funding from SWFWMD to pay for half of the evaluation. The consultant will also look at what the County has planned for the future in the waterway and make recommendations as to whether the current plan is the best course or a new plan is suggested based on what they find in the nutrient source evaluation study. The first Public Meeting was held on April 22, 2014 to go over the overall plan and to discuss locations of the groundwater and stormwater monitoring devices. The sampling is scheduled to start at the end of May.
- The county has design plans and bid specs for installation of a recharge well at the north end of Sunshine Lake and a recharge well to be located adjacent to McGuire Park. This project is being funded by the Mid-County Stormwater Unit MSBU and will be scheduled once Atkins has a chance to review everything and make their recommendations.
- Engineering staff has designed and permitted a weir structure to be located at the downstream end of the lake/canal system. This project should be started once the algae removal project is completed. This project is being funded by the Mid-County Stormwater Unit MSBU.

Little Blue Heron Nests

- On March 31, 2014 the contractor was reviewing acre 12 for the trees to be trimmed and removed. On April 2, the contractor returned and discovered multiple Little Blue Heron nests located within the Sunrise Waterway between Gertrude and US41. For more information on Little Blue Herons please go to: www.allaboutbirds.org/guide/little_blue_heron/id. These nests, eggs, and birds fall under the Migratory Bird Treaty Act of 1918 www.law.cornell.edu/uscode/text/16/chapter-7/subchapter-II.
- **Requirements:** The contractor has been trimming and or removing trees along the project to ensure that the dredge equipment can get all of the surface area of the waterway and remove all of the algae. The nests are in the trees that need to be trimmed or removed. The federal recommendations are to stay 300 feet from the nests to ensure the safety of the eggs and birds. Therefore the project is on hold until the birds have hatched, left the nests, and the nests are removed. It takes approximately 22-24 days for the eggs to hatch and then approximately one month for the birds to fledge. A nest removal permit is required to remove the nests before construction can begin again. Charlotte County staff is working on obtaining a nest removal permit now so that the nests can be removed and construction can begin as soon as possible.
- Charlotte County staff worked with the contractor and a change order was approved by the BCC on April 22, 2014 to ensure that they will be ready and willing to complete the work as soon as the nests have been removed. The contract will begin again as soon as the nests can be removed. A new completion date will be determined as soon as construction is able to commence.
- Due to additional bird nests found within the project limits, a change order was approved by the BCC on July 22, 2014 to ensure that the contractor will be ready and willing to complete the work as soon as the nests have been removed. All trees that were required to be removed for the project that are outside of the 300 foot buffer have been removed to try and prevent future nesting within the project. A new completion date will be determined as soon as construction is able to commence.
- All of the Blue Herons have left the nest and the project can resume. Prolime began working on the vegetation

removal on August 12, 2014. The dredge operation is scheduled to begin sometime mid to late next week. With the time granted in the last change order, the new completion date will be January 13, 2015 to substantial completion. The contractor will then have an additional 30 days to remove their equipment and do restoration on their worksite.