NATURAL RESOURCES' COMMITTEE
SARASOTA COUNTY LEAGUE OF WOMEN VOTERS
REPORT
SURFACE WATER POLLUTION IN SARASOTA COUNTY

SIESTA WATERWAY – SOUTH VENICE 2011

SARASOTA 2011
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SPECIAL THANKS TO ALL THE PARTIES WHO PARTICIPATED IN THIS STUDY.
EXECUTIVE SUMMARY

• The Sarasota League Natural Resources’ Committee (Committee) began its study of surface water pollution in Sarasota County June 2013 after toxic blue green algae blooms and beach closings in Sarasota County (see previous photos).

• Nitrogen and phosphorous cause blue green algae blooms. The sources of nitrogen and phosphorous are fertilizers (storm water runoff), leaking/old sewer systems, septic tanks and animal feedlots. Other sources that have been identified are bird and dog feces.

• Toxic algae can cause mild to serious health effects, even death.

• The fish in the entire Myakka river are listed as impaired because of mercury levels in the fish flesh.

• The Committee sent a questionnaire to:
  - Sarasota City (City)
  - Sarasota County (County) Sarasota County did collaborate with Sarasota Health Department.
  - Venice
  - North Port (N.P.)
  - City of Longboat Key (Longboat), answers provided by Juan Florensa, Longboat Key Public Works and Utility Director
  - Sarasota Bay National Estuary Program (SBNEP)
  - Sarasota Health Department (Health)
  - Southwest Florida Water Management District (SWFWMD).

Not all the questions were applicable to identified entities.

The Committee makes the following recommendations based on the facts learned from the study:

1. Slow down water runoff to allow percolation into the surficial aquifer
2. More swales should be installed in the county/cities.
3. Appropriate equipment for lift stations should be at hand, in stock.
4. Continue improving seagrass beds.
5. Sarasota County continue to test for water quality at the beaches monthly and increase testing if warranted.
6. **Prevention is less expensive than restoration/cleanup.**
7. **Wetlands filter nutrients. Land development can greatly impact pollution filtration.**
8. Corporations should be made responsible for the cost of cleanup.
9. Corporations should find new ways of producing their products to limit pollution.
10. All fertilizing should be organic, slow release and long lasting. Enforcement must be a priority.
11. Restoration of oyster beds. Scientific research has proven oysters to be very effect in removing pollution from water bodies.
12. Mangrove cutting must be monitored. Fines for cutting mangroves must be increased.
14. Better public outreach/education on projects to deter pollution from entering waterbodies.
15. Florida Department of Environmental Protection (FDEP) and water management districts need to be diligent in their oversight of efforts in cleaning up Sarasota’s waterways.
INTRODUCTION

The Sarasota League Natural Resources’ Committee (Committee) began its study of surface water pollution in Sarasota County June 2013 after toxic blue green algae blooms and beach closings in Sarasota County (see previous photos).

Nitrogen and phosphorous cause blue green algae blooms. The sources of nitrogen and phosphorous are fertilizers (storm water runoff), leaking/old sewer systems, septic tanks and animal feedlots. Other sources that have been identified are bird and dog feces.

EFFECTS OF NUTRIENT POLLUTION ON HUMAN HEALTH.

Toxic algae can cause rashes, sores, eye and ear irritation, breathing problems, gastrointestinal upset, and even death. Some algae are known tumor promotors, producing toxins which attack the nerves and liver.

Beach closings are generally closed because of unacceptable levels of bacteria that are found in water samples.

The Committee sent a questionnaire to:

- Sarasota City (City)
- Sarasota County (County) Sarasota County did collaborate with Sarasota Health Department.
- Venice
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- City of Longboat Key (Longboat), answers provided by Juan Florensa, Longboat Key Public Works and Utility Director
- Sarasota Bay National Estuary Program (SBNEP)
- Sarasota Health Department (Health)
- Southwest Florida Water Management District (SWFWMD).

Not all the questions were applicable to identified entities.

The Health Department worked in tandem with Sarasota County on responses. The City of Sarasota works in concert with Sarasota County and the Health Department on infrastructure needs.

Myakka River

After all the questionnaires were returned, the Committee received this information and thought it was important to include in the report:

Kathy Meauxix, Sarasota County Public Utilities, Stormwater made the presentation on the water quality of the Myakka River:

- The data supports the fecal coliform impairment status in the upper basin.
- The source is likely birds, wildlife, cattle, horses, and other farm animals.
- Bacteria levels increase significantly after rainfall, but quickly go back down after periods of dry weather.
• About 50% of the time DO (Dissolved Oxygen) was below 5 mg/L. But, historical data indicate that DO concentrations throughout the basin are generally below 5 mg/L due to topographic features, hydrology, and natural processes (tannins from decaying organic matter) and not due to human activities.
• Most of the nitrogen levels are below the standard. However, higher nitrogen levels when present are most likely from fertilizers and other soil amendments such as manure, sewage sludge, etc.
• The higher phosphorus levels are from soils naturally higher in phosphorus for the region.
• The chlorophyll levels are consistently lower than the 20 mg/m³ standard. The higher levels in MYA-B (Myakka River) within the park indicate more algae blooms from nutrient transport from upstream.

Ms. Meauix stated that mercury had been found in fish flesh from the tributaries to the Myakka River. After further investigation, Ms. Meauix said the entire River from the head to the estuary is listed impaired for mercury in fish flesh.

To learn more on mercury pollution standards, causes of mercury pollution and most important the health effects, go to: http://www.dep.state.fl.us/water/tmdl/docs/tmdls/mercury/Mercury-TMDL.pdf

LIST OF QUESTIONS: (NA is not applicable and NR is no response)
1. How many beach closures were there in the last 12, 24, 36 and 48 months?
   City: NR
   County: The beaches are not closed by an entity. Rather, no-swim advisories are issued by the Florida Department of Health in Sarasota County when bacteria levels exceed certain thresholds as determined by the U.S. EPA.
   2013: 0 advisories (as of 9/17/2013)
   2012: 6 advisories
   2011: 4 advisories
   2010: 2 advisories
   2009: 2 advisories

Venice: NR
N.P.: NA, North Port doesn’t have any beaches
Longboat: None
SBNP: The beaches through Sarasota County are routinely monitored by Sarasota County Health Department.
Health: See County response. The Health Department collaborated with Sarasota County on some responses.
SWFWMD: SWFWMD refer to FDEP
2. Identify the reason for closure.
   City: NR
   County: No-swim advisories are posted due to elevated levels of enterococcus*. In Sarasota County, routine water samples are taken weekly on Monday mornings (or Tuesday if Monday falls on a holiday). If the initial weekly sample yields a poor result of 105 CFU/100mL or greater of enterococci (EPA standard for recreational water) then a confirmation resample is taken. A poor resample results in a no-swim advisory being posted. The advisory remains in effect until further resampling confirms bacteria levels have decreased to acceptable EPA levels.
   No-swim advisories remain in effect until resampling results indicate enterococci levels have decreased to lower the 105 CFU/100mL.
   
   Venice: NR
   N.P.: NA/ no beaches
   Longboat: NA
   SBNEP: NA
   Health:
   SWFWMD: SWFWMD Referred to FDEP web site

3. How long were the beaches closed?
   City: NR
   County: 3 to 22 days
   
   2009 Advisories
   Ringling Causeway 9/16-18 3 days
   Ringling Causeway 9/21-10/12 22 days
   2010 Advisories
   Ringling Causeway 9/1-9 9 days
   Ringling Causeway 9/20-22 3 days
   2011 Advisories
   Turtle Beach 2/23-28 6 days
   Venice Beach 2/23-4/4 21 days
   3/31-4/4 5 days
   3/16-23 8 days
   2012 Advisories
   Venice Beach 1/26-31 6 days
   Lido Casino 7/18-20 3 days
   North Jetty 8/1-3 3 days
   Turtle Beach 7/18-20 3 days
   
   Venice: NR
   N.P.: NA/ no beaches
   Longboat: NA
   SBNEP: NA
   Health:
   SWFWMD: Referred to district SWIM plan for Sarasota Bay

4. What was the origin of the contaminant?
   City: NR
   County: According to the US EPA, enterococci are bacteria commonly found in the feces of birds and other warm-blooded animals, including humans. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens.
5. How often is water quality tested at beaches? Specify for each site?
City: NR
County: Beaches are sampled at least once of week in Sarasota County. The sites sampled include:
1. Longboat Key
2. Ringling Causeway
3. North Lido
4. Lido Casino
5. South Lido
6. Siesta Key
7. Turtle Beach
8. Nokomis Beach
9. North Jetty
10. Venice Beach
11. Service Club Park
12. Venice fishing Pier
13. Brohard Park
14. Casperson Beach
15. Manasota key
16. Blind Pass Beach

6. Are other bodies in your jurisdiction tested for water quality?
City: NR
County: Yes, in addition to sampling beaches, Sarasota County also samples the bays, creeks, Gulf of Mexico and Myakka River for water quality. Sampling is conducted to measure our performance with managing pollution sources like wastewater and stormwater (emphasis added).

5. (Continued)
In general, analytical parameters include nitrogen, phosphorus, salinity, color, transparency, chlorophyll, ammonia, nitrate, turbidity, oxygen demand, temperature, dissolved oxygen, and pH. Creeks are also sampled for bacteria.

Venice: NR
N.P.: Similar to Sarasota County (monthly) 11/27/14  Ambient Water Quality Monitoring Plan
Longboat: NA
SBNEP: The Bay is sampled monthly based on a random stratified design. The focus is on nutrients, light and light related parameters. Light available in the water column maximizes the extent of seagrass coverage in the Bay. Seagrass is monitored every other year to assess potential problems. Streams are tested periodically by FDEP. Relevant data is used to assess “impairment” every 5 years by the FDEP and US EPA. Numeric Nutrient Criteria prepared by the Southwest Florida NEPs to protect the bay(s) were adopted by EPA in 2012. The Bay has been monitored since 1990.
Mote Marine began the contractor in 1998.

Health:
SWFWMD:

8. What parameters are regulatory and by which agency?

City: NR
County: The sampling described above is for ambient conditions, meaning they are intended to characterize the overall health of the waterbodies. This monitoring is part of the monitoring for the stormwater permit, which specifically called a National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit. The NPDES MS4 permit is administered by the Florida Department of Environmental Protection (FDEP) and is subject to review and approval by the United States environmental Protection Agency (EPA). There may be other sampling associated with specific permits, but the NPDES MS4 sampling is the largest and most comprehensive sampling program.

Venice: NR
N.P.: Ambient Water Quality Monitoring Plan 1 Attachment 11/27/14
Longboat: NA
SBNEP: The Florida Yards and Neighborhoods Program (FYN) provide homeowners with information on appropriate yard and waste maintenance. Fertilizer ordinances have been enacted in all jurisdictions prohibiting nitrogen and phosphorous application during the summer and wet season. The jurisdictions are Manatee County, Sarasota County, City of Sarasota, and Longboat Key. The local governments enforce the ordinances.

Health:
SWFWMD:

9. What programs are in place to prevent pollution from entering into water bodies?

City: NR
County: The Florida Healthy Beaches program in Sarasota County collects samples for microbiological analysis at 16 different coastal beach locations on a routine (weekly) basis. The authority for this Comes from the State Healthy Beaches Program which was enacted through state legislation in August of 2000 and includes all 34 of Florida’s coastal counties. A portion of funding for the program comes from the Federal Government via a grant to the Florida Department of Health which distributes funds to each of the coastal county health departments. Remaining funding must be provided by local health department of local government.
Sarasota County instituted a multi-jurisdictional, proactive Beach Action Plan about two years ago to prevent bacterial contamination of beaches. Teams were assembled to map and identify potential sources of bacteria. Rapid Response Teams use established protocols to investigate when there is potential for a no-swim beach advisory.

The FDEP, in addition to issuing permits for stormwater (described above), also issues permits for wastewater treatment facilities. These facilities are required to sample the final product of the treatment process for a variety of parameters such as pH, nitrate, total suspended solids, biochemical oxygen demand, and bacteria.

Programs to minimize pollution include the fertilizer ordinance, pet waste education, Neighborhood Environmental stewardship Team (Nest), rain barrel program, the Be Floridian program, citizen response program, construction and industrial facility inspections, street sweeping, household hazardous waste program, Green business Partnership, and the Florida Friendly Landscaping program.

The Natural Resources Air and Water quality Program oversees the compliance of permitted facilities, clean up of pollutant discharges, investigates illicit discharges and community complaints.

Venice: NR
N.P.: referenced the Evaluation of the Effectiveness of the Surface Water Management Program (SWMP) provided by SWFWMD.
Longboat: Adheres to the "Florida Yards and Neighborhoods" Program
SBNEP: Under federal law, nutrients (nitrogen and phosphorous) are considered primary pollutants of concern for estuaries. Sarasota Bay is a nitrogen limited system. With exception of lead in Hudson Bayou, the area is relatively clean with regard to toxic substances.

Health:
SWFWMD:
10. What are considered pollutants?
City: NR
County: Bacteria are a very important pollutant because it threatens public health. Nitrogen is another of the most important pollutants because nitrogen causes algae blooms and low oxygen concentrations that inhibit healthy aquatic ecosystems. Other pollutants include oil and grease, sediments, litter, vegetative waste, pesticides and toxins.

Venice: NR
N.P.: NR
Longboat: As defined in Florida Statutes
SBNEP: The SBNEP is not regulatory, but has been strongly supported by regulatory partners participating in the Program. The State of the Bay 2010 provides an update.

Health:
SWFWMD:
11. Which programs are regulatory and what is their success rate?
City: NR
County: Wastewater and stormwater permits are regulatory programs. Significant success has been achieved in reducing the negative effects of both of these pollution sources. Sarasota has fewer wastewater discharges than most places in Florida and compares favorably to many places around the world. Florida is also a leader in having well-established standards for stormwater treatment that have not only reduced flooding but have improved water quality too. There is always room for improvement though. Like all infrastructures, wastewater pipes are subject to breaking and it is a constant effort to prevent and repair such incidents. Some parts of the county, predominantly in coastal locations were developed before stormwater rules were in place. An effort is underway to improve areas without stormwater treatment systems.
Venice: NR
N.P.: Do programs referred to Public Outreach Chart Attachment 6
11/27/14
Longboat: National Pollution Discharge Elimination System (NPDES)
SBNEP: Voluntary water conservation programs implemented in concert with
FYN program appear to have been successful lowering water consumption to 80 gallons per person
per day. Does not know if the water use data was provided by Sarasota county Water Resources
Department.

Health:
SWFWMD:
12. Which programs are voluntary and what is their success rate?
City: NR
County: Communities that have mandatory pollutant load reductions under the
Total Maximum Daily Load (TMDL) program can get pollution removal credits from the FDEP
for having a fertilizer ordinance in concert with other educational programs. The credits are
based on the belief that pollution prevention is cost effective compared to expensive construction
projects. Although not mandated by a TMDL, Sarasota’s ordinance and programs are probably
effective.

The NEST program could be expected to have pollutant removal value such as when
neighborhoods plant littoral shelves. Education programs are more difficult to estimate. The
Florida Friendly Landscape program has documented results for water conservation. It would
make sense that water conservation relates to pollutant removals especially when communities
adopt Florida friendly plants that don’t need fertilization. The Follow the flock program on
Facebook has documented interest from web statistics. The Household Hazardous Waste
Program also allows for the proper disposal of potential pollutants at the county’s
chemical collection centers. Overall, this is a good question that county staff is
investigating because educational programs should be validated from surveys or another
measuring technique.

Venice: NR
N.P.: NA
Longboat: Unknown
SBNEP: NA

Health:
SWFWMD:
13. When were sewer lines installed?
City: NR
County: the date of sewer installation varies by area but, in general,
centralized sewer began to be installed in our county in the 1920’s. Installation occurred
in the more urbanized areas at first, and not necessarily near the beaches. The Passage of
the Clean Water Act in the 1970’s helped to spur the construction of centralized sewer
systems countywide.

Venice: NR
N.P.: The city is on septic tanks. sewers varies: began installation in
1950.
14. When and where were the last upgrades of these lines?
   City: Varies by area, type of pipe & age
   Venice: Varies see above
   County: The timeframe for sewer line upgrade vary by area and upgrades are a continuous process. Generally, most utilities repair or replace approximately 1% of their sewer systems each year, which equates to a 100-year replacement schedule. However, the total percentage can vary from year to year based on system’s needs. The county will repair over 12 miles of gravity sewer pipe in fiscal year 2014 in the Gulf Gate and Sorrento areas. The following areas have been rehabilitated over the past 10 years:
   - Colonial Gables
   - Portions of Sorrento/Osprey
   - Portions of the Gulf Gate Area
   - Beechwood Area
   - Baywood
   - Portions of Siesta Key
   - Portions of South Gate
   - Summerville
   - Larkridge
   - Beneva Woods
   - Beneva/Weber Area
   - Venice Isles –MHP
   - Sandlewood –Venice Area
   - Portions of Venice Gardens
   Venice: NR
   N.P.: NA
   Longboat: NA
   SBNEP: NA
   Health: NA
   SWFWMD: NA

15. How many lift stations serve the sewer system and how often are they repaired/replaced?
   City: NR
   County: Sarasota County maintains approximately 600 lift stations. This number does not include private lift stations or lift stations maintained by one of the four municipalities, Englewood Water District, or private utility companies. At minimum all lift stations go through an annual repair and replacement regiment. Most stations are checked and serviced on a more frequent basis roughly once every two weeks. These service calls include integrity checks and the repair or replacement of defective items. Some stations in the system are checked daily. In general, all of the key components in a lift station have a backup system.
All of the stations include an alarm signal to central reporting centers that are monitored 24 hours a day 7 days a week.

In addition to these basic service and repair strategies, the pumps and motors in the system all have our meters that are logged and tracked. The hour meter is used similar to how you use the odometer on your car. When a pump has been operated up to a certain hour limit, it is routinely pulled and rebuilt. This is analogous to changing your oil in your car every 5,000 miles. Furthermore each station contains a minimum of two pumps, of equal size, that when operated individually have the capacity to pump the expected flow from the collection area. The second pump is analogous to having a car with a second backup engine.

Finally, the county routinely goes through a list of priority projects for the major rebuild of existing stations. On average, a lift station goes through a major rebuild once every 10 or 20 years. The frequency and scope of a major rebuild can vary greatly from station to station. The information gathered during the annual repair and replacement process is quite often used in reevaluating the priorities and for forecasting when the next major rebuild maybe required. Also, pump runtime metrics and the duration of time when a backup pump is working in tandem with the primary pump is used to predict developing areas.

Venice: NR
N.P.: 100 lift stations: visually inspected 5 days/week & repaired/replaced as needed
Longboat: 47 lift stations. Ongoing upgrade program
SBNEP: NA
Health: NA
SWFWMD: NA

16. In the last four years, how many times have lift stations failed?
City: NR
County: One of the metrics we use to measure failure involves tracking the number of reportable events. These events are reported to the Florida Department of Environmental Protection and can include spills like sewer overflows from lift stations, a broken sewer forcemain or abnormal discharges of reclaimed water like the reclaimed water main break that happened in July on Clark Road as a result of construction. The size of discharge can vary greatly by event and not all events result in discharge to surface water.

2010 44 reportable events
2011 55 reportable events
2012 36 reportable events

Venice: NR
N.P.: 10 in 4 years
Longboat: None
SBNEP: NA
Health: NA
SWFWMD: NA
17. What was the cause for the failure?

City: NR
County: There are many reasons why lift stations fail and here are some of the more common types of failure:
- Blocked or damaged forcemain
- Clogging of pump impeller or blocked inlet
- High flow rates
- Pipe fitting failures or damage due to construction activity
- Loss of power
- Electrical equipment failure or lighting strike

Venice: NR
N.P.: Varies = pump failure, float failure, electrical failure, SCADA failure, etc.

Longboat: NA
SBNP: NA
Health:
SWFWMD:

18. What were the effects of the failure?

City: NR
County: Most spills are small, affect isolated areas and can be cleaned up within a few hours or a few days. Large spills can take longer to clean up. In case of large spills into water bodies, it can result in the depletion of oxygen and then corresponding fish kill.

The utility has standards operating procedures in place that go into effect when responding to a spill. The basic steps to spill response include:
- Remedial action (such as temporary flow diversion)
- Isolation of affected area and prevention of surface water entry
- Public and regulatory noticing
- Site cleanup and disinfection of the affected area
- Posting advisory or warning signs
- Water quality sampling, remediation and follow up testing until effected area returns to normal conditions
- Issuance of an all clear condition upon regulatory approval

Venice: NR
N.P.: NP cleaned up, equipment repaired: reported to FDEP
Longboat: NA
SBNP: NA
Health:
SWFWMD:

19. Please define point and nonpoint surface water contamination in each political jurisdiction?

City: NR
County: Nonpoint pollution comes from rain that falls on all property and flows as stormwater into receiving waterbodies. The NPDES MS4 permit is jointly held by Sarasota County, the Florida Department of Transportation, and the Cities of Sarasota, Venice, Longboat Key and North Port. Point source pollution comes from permitted discharge points. There are very few permitted wastewater discharges remaining in Sarasota County. The remaining discharges are advanced treated wastewater. Pollutant load modeling is a common way to create a comprehensive view of pollution in a county with multiple watersheds within it. Sarasota county is currently updating a pollutant loading model to improve its understanding of pollution sources and how to manage them.

Venice: NR
N.P.: NR
Longboat: Didn’t understand the question
SBNEP: NA
Health:
SWFWMD:

ADDITIONAL INFORMATION
Mark Alderson from SBNEP and Ross Martin and Tara Poulton from SWFWMD meet with the Committee to further discuss questions from the League.
Molly Williams Cow Pen Slough - Donna Bay Project.

In The Leaks Of Waste; Challenges Aplenty
For days after the Bayfront sewage spill in November, Skip steered his dingy past wads of toilet paper and clumps of excrement to get back and to shore. According to the city, 40,000 gallons of raw sewage float into the Bay, following a forced main break on Gulfstream last fall.
“40,000 sounds like a lot, and I understand that from the resident’s perspective, but we contained and transported more than a million gallons from that location, so it could have been much worse”, said Javier Vargas Director for Sarasota Utilities.
Besides November spill, one two years ago from the same forcemain - which shuttles 1.5 million gallons of sewage each day from Lido key and downtown - blasted 220,000 gallons into the open, including an estimated 20,000 into the bay.
Many other city, county and private utilities across the DEP’s 12 county southwest district see for more sewage escape their systems. Public utilities for Tampa and Hillsborough and Pasco County spill the most sewage in the last six years. The city utilities for Sarasota and Bradenton made the top ten and three times in six years. Sarasota County Utilities made the list four times, as did Aqua Utilities, a private utility that serves part of Sarasota County.
In the 12 counties, over six years, 42.4 million gallons of raw sewage of spewed from manhole covers, sewer lines are treatment plants.
Some is cleaned up before reaching sensitive waterways, though usually not before affecting people near the spill.

Raw sewage contains bacteria, viruses, protozoa and other pathogens that can sicken people. It also contains trace pharmaceuticals and chemicals, and other pollutants that can fuel algae blooms.

The spills are more heavily concentrated in coastal areas, posing a threat to the health of the region's Rivers, Bays and the Gulf of Mexico.

Last year alone, utilities in Sarasota, Manatee, Hillsborough and Pinellas counties reported spilling more than 14.5 million gallons of raw sewage, nearly three times a previous spike of 3.2 million gallons in 2006.

Besides raw sewage, the region sees even more spills of partially treated sewage, sludge spills from trucks and accidental releases of reclaimed water. Accounting for all types of wastewater, utilities and southwest Florida counties spilled 97.3 million gallons in the past six years.

Treated and reclaimed water contains fewer pathogens than raw sewage, but still pollutes waterways and can threaten public health. Reclaimed water can be used to irrigate lawns, but its potential to contain harmful bacteria makes it unsafe for vegetable gardens.

The DEP Southwest district began keeping consistent spilled records in 2006. Other DEP districts do not keep electronic records in the same format with the same consistency, precluding a comparison.

**LITTLE IMPROVEMENT**

Little has changed since the 2008 report by the advocacy group Clean Water Network of Florida call the Gulf of Mexico “Florida’s Toilet”, criticizing the state’s failure to prevent routine wastewater spills.

Some improvements have resulted from consolidating poor performing plants into larger systems, treating wastewater to higher standards in using highly treated wastewater for lawn irrigation, rather than discharging it into rivers.

For two decades, Sarasota County’s public utility has made consolidation of small sewage plants the top mission. As a result, releases of treated wastewater to the county waterways have declined 13% said Theresa Connor, the county’s executive director of environmental services.

But while the upgrades have reduced pollution overall, raw sewage spills have continued. Of all the number of county sewage spills have declined almost yearly since 2006, the volumes spilled has increased. In 2006, 44 spills released a total of 143,000 gallons of sewage. In 2011 utility had 29 spills that released a total of 731,500 gallons, according to DEP figures. The pattern is similar in other areas.

Left unabated, chronic sewage spills could reverse or neutralize water quality improvements made over decades in southwest Florida.

“If there are annual or regular assaults, yeah, they can eventually mount up and become a problem as certainly if there was not the will to correct the situation”, said Richard Boland, an environmental scientist with the Environmental Protection Commission For Hillsborough County.
TOO LITTLE MONEY

Utility managers of Southwest Florida say they are trying to improve and are investing millions in infrastructure upgrades.

Since 2008, the city of Sarasota made $33.6 million in improvements and borrowed an additional $30 million to pay for more.

In the last five years, Sarasota County has invested $80 million in sewer system upgrade and annual maintenance.

All utilities are racing to update aging plants aging pipes in treatment plants. In Sarasota pipelines date back more than 40 years.

The challenge is to replace pipes at the right time, utility managers said.

"Replacing everything old would be cost prohibitive", Vargas said.

"There is no community that can afford to do that", he said. If you replace your infrastructure too soon you’re wasting money if you replace it too late and it’s not good.

The pipe that failed along the Sarasota Bay was 43 years old and corroded by southwest Florida’s wet, salty environment, a common problem. It was on the list for replacement.

"There were pipes that should have been replaced in the past, but have not, but that’s typical of any utility", said Vargas. The American infrastructure is running behind.

But Glenn Compton, president of the local environmental Manasota 88, said there’s no excuse.

"It’s been known for quite some time that infrastructure is aging and it needs to be repaired or retrofit", Compton said. "There’s just not enough money or investment for that to be adequately addressed.

CLEAN WATER IN THE LAW

All wastewater spills, raw or treated, that reach public waterways violate the Federal Clean Water Act.

But there are no federal policies to regulate maintenance of wastewater treatment plants and no requirement to notify the public when sewage gushes into places where people fish and swim.

Regulators and EPA say no sewage overflows are acceptable, but enforcement of the law is subjective.

"We do recognize that even well operated systems are going to have sanitary sewer overflows", said Kevin Weiss, an engineer with the sanitary sewer overflow program at the EPA.

Weiss said the agency works with states to identify the problem utilities. Then they work with the local utilities to ensure they have enough capacity in operating and maintaining their systems adequate. In response to complaints from utilities themselves, the EPA is trying to develop Federal policies aimed at reducing sewage spills nationwide.
Dona Bay Project Update

Background

- The area contributing runoff to the Dona Bay was altered in the 1960s by the construction of the Cow Pen Slough. A portion of the Myakka watershed was diverted to Dona Bay by the man-made Cow Pen Slough (CPS) canal, increasing the watershed size from 15 to 75 square miles.
- The increase in volume of fresh water runoff draining to the Dona Bay modified the conditions in the estuary system.
- The Dona Bay Watershed Management Plan was completed in 2007 and recommended a phased implementation to achieve five objectives:
  1) Provide a more natural freshwater/saltwater regime in the tidal portions of Dona Bay;
  2) Provide an opportunity for alternative water supply development;
  3) Provide flood protection;
  4) Provide pollutant load removal; and
  5) Provide rehydration of wetlands.
- The Dona Bay Conveyance System project is the first step to addressing the objectives of the watershed plan.

Dona Bay Conveyance System

The project design is complete and will advertise for construction on September 12, 2014. The anticipated construction start is early spring 2015.

The project is identified as a project of regional importance. County staff has worked closely with the Southwest Florida Water Management District (SWFWMD) during the design of the project and secured $3.15 million funding from SWFWMD during the FY14 grant cycle. Additional funding of $3.1 million will be applied for in the FY16 grant cycle.

In addition to SWFWMD funding, the Dona Bay Project has received $650,000 grant funding from the Florida Department of Environmental Protection. The estimate construction cost of the project will be $12.5 - $15 million with nearly $7 million from grant funding.
These were our recommendations:
16. Slow down water runoff to allow percolation into the surficial aquifer
17. More swales should be installed in the county/cities.
18. Appropriate equipment for lift stations should be at hand, in stock.
19. Continue improving seagrass beds.
20. Sarasota County continue to test for water quality at the beaches monthly and increase testing if warranted.

21. Prevention is less expensive than restoration/cleanup.
22. Wetlands filter nutrients. Land development can greatly impact pollution filtration.
23. Corporations should be made responsible for the cost of cleanup.
24. Corporations should find new ways of producing their products to limit pollution.
25. All fertilizing should be organic, slow release and long lasting. Enforcement must be a priority.
26. Restoration of oyster beds. Scientific research has proven oysters to be very effective in removing pollution from water bodies.
27. The fines for cutting down mangroves should be drastically increased.
28. Greater setbacks for coastal development.
29. Better public outreach/education on projects to deter pollution from entering water bodies.
30. Florida Department of Environmental Protection (FDEP) and water management districts need to be diligent in their oversight of efforts in cleaning up Sarasota’s waterways.

*Enterococcus. In bodies of water, the acceptable level of contamination is very low; for example in the state of Hawaii, and most of the United States, the limit for water off its beaches is a five-week geometric mean of 35 colony-forming units per 100 ml of water, above which the state may post warnings to stay out of the ocean. In 2004, Enterococcus spp. took the place of fecal coliform as the new USA federal standard for water quality at public salt water beaches and E. coli at fresh water beaches. It is believed to provide a higher correlation than fecal coliform with many of the human pathogens often found in city sewage.
References


For the freshwater stations, Station 1 is located at the nearest bridge above WCS-101 on the Myakkahatchee at Appomattox Drive, and Station 2 is upstream of the Cocoplum WCS-106. Stations 3 through 6 are located in the upper and middle portions of the estuarine creek, while Stations 7 and 8 are the most downstream and at the confluence with the Myakka River. Stations 9 and 10 are upstream and downstream of the confluence in the Myakka River.

All physical and water quality data from 2004 through 2011 are in electronic Appendices E-A and E-B. Appendices A through I illustrate these data as distributions by year, season, relationships with salinity and flow, and important selected parameter inter-relationships. Smooths illustrated on some scatter plots are LOWESS fits (LOcally WEighted Scatterplot Smooths) for visualization and do not necessarily indicate statistical significance.
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<th>Brochure Type</th>
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<th>Amount of Flyers Distributed</th>
<th>No. in Participation</th>
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