



City Manager's Office
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Memo

To: Honorable Mayor and City Council

From: Saeed Kazemi, P.E., City Manager

Date: April 16, 2108

Re: The History of Billy Creek and the City's Maintenance, Evaluation, and Financial Investment

Copies: Grant W. Alley, City Attorney
Terry Cramer, Assistant City Attorney
Richard Moulton, MBA, Public Works Director
Richard Thompson, P.E., Stormwater Resource Manager
Stephanie Schaffer, Public Relations Coordinator

This overview gives a history the City's investments in protecting Billy Creek – including the construction of the Billy Creek Filter Marsh and the Ford Street Preserve – and details the maintenance, testing, and monitoring of Billy Creek, performed by City personnel.

- Maintaining the health of Billy Creek is an ongoing priority for the City of Fort Myers. The City commits more than \$100,000 annually to testing, maintenance, and upkeep of the creek, preserve, and filter marshes.

City investment in Billy Creek Filter Marsh and Ford Street Preserve

In FY 2008-09, the City invested nearly \$2 million to establish the Billy Creek Preserve Filter Marsh, a three-phase treatment system including a settling pond and two filter marsh areas. The initiative was a part of the City's Stormwater Master Plan nearly a decade ago and was a project launched in cooperation with the South Florida Water Management District and Lee County.

- Test results conducted in 2010 (after the filter marsh was completed) indicated significant reductions in turbidity, total suspended solids, fecal coliform, nitrate-nitrite, ortho phosphate, total phosphorous, and total kjeldahl nitrogen.

- Subsequent water testing confirms consistent reductions in pollutants after water undergoes treatment through the filter marsh.

In FY 2014-15, the City invested nearly \$1.3 million in construction of the Ford Street Preserve. The Ford Street Preserve intercepts seasonal runoff and diverts it to a constructed wetland treatment system that removes pollutants from the Ford Street Canal. The Ford Street Canal previously discharged to Billy Creek with no treatment. The project also serves as an educational opportunity for the public.

City monitoring and evaluation of Billy Creek

The City monitors monthly bacteria levels in Billy Creek outflows in accordance with its NPDES MS4 (National Pollutant Discharge Elimination System/Separate Storm Sewer System) permit requirements and performs all testing required by the Florida Department of Environmental Protection. In addition, the City partners with all other municipalities and counties within the Caloosahatchee Watershed, to collectively address pollution threats and sources.

Currently, there is concern about enterococci (bacteria) in the creek. City staff have been investigating the bacteria levels. Common known sources of this bacteria are humans and animals, including birds, fish, and reptiles. All water bodies have a certain level of bacteria as a part of the natural ecosystem. Decomposition of plants, trees, and other vegetation, along with bacteria from humans and animals, combine and make it difficult to isolate the source of pollution.

- The City has started a new study, in partnership with Lee County Natural Resources, in an attempt to identify specific sources of the bacteria. City testing exceeds FDEP requirements.
- Staff took weekly samples of Ford Street Canal at several locations in October 2017 for fecal bacteria to determine if a source could be located. The results of the sampling were inconclusive. A walk of the WBID (Water Basin Identification) inspection did not reveal any sources that could account for the high readings seen in the sample collection. Lee County added two additional samples upstream of Oritz and will not take action until they have collected enough samples to make a determination.
- The City is conducting additional sampling, the week of April 16, 2018, including a DNA test of the four sample locations entering Billy Creek. These samples will be repeated in August or September 2018. The DNA testing will include testing for human, dog, bird, and ruminants. It is anticipated that the results will help determine the source of the bacteria.

- One potential source of the bacteria is the legacy bacteria in the sediments of the creek itself. Dredging will remove a significant amount of that source and may result in lower bacteria readings in the creek.

Hurricane Irma contributed to increased bacteria levels. Prolonged periods of power outages caused lift stations to fail, creating stormwater overflows. Untreated water overwhelmed existing systems and entered the creek.

- Bacteria levels have not returned to pre-Irma levels and are unlikely to stabilize until after the rainy season this year.
- The City asked the Florida Legislature for \$1 million towards dredging the creek, lobbied for the appropriation, and with the help of our area's legislative delegation, will receive \$775,000 in state funds for creek restoration projects in the FY 2018-19 budget. The City made a similar request last year that was vetoed due to lack of funding.
- The City will dredge Billy Creek after the rainy season.

City maintained signs

No Swimming signs are posted at the Billy Creek Preserve and at the Ford Street Preserve/Shady Oaks (recently replaced after sign was damaged in Hurricane Irma). The City also posts "use of cast nets prohibited" signs along with "caution/beware of snakes/please do not feed wildlife" warnings.

City involvement in creek and filter marsh cleanups

The City's commitment doesn't end there. City staff coordinates cleanups, routinely working with groups such as Keep Lee Beautiful, Friends of Billy Creek, Adopt a Canal (Wright Construction/four cleanups per year), and FGCU/FSW student volunteers. City staff and volunteers perform 8-10 cleanups per year. The following cleanups have taken place so far in 2018 and have resulted in 5 cubic yards of debris removed:

- 3/19/18 Billy Creek Filter Marsh cleanup with FGCU/FSW students
- 3/30/18 Billy Creek cleanup with Wright Construction/Adopt A Canal program

The City's Sanitation Division provides all garbage bags and gloves and collects any trash and debris resulting from the cleanup. The City's Stormwater Division coordinates the volunteers and supplies trash grabbers, nets, safety vests, and

other equipment as needed. The Stormwater Division also mows the canal rights of way and creek banks in preparation for scheduled cleanups.

Conclusion

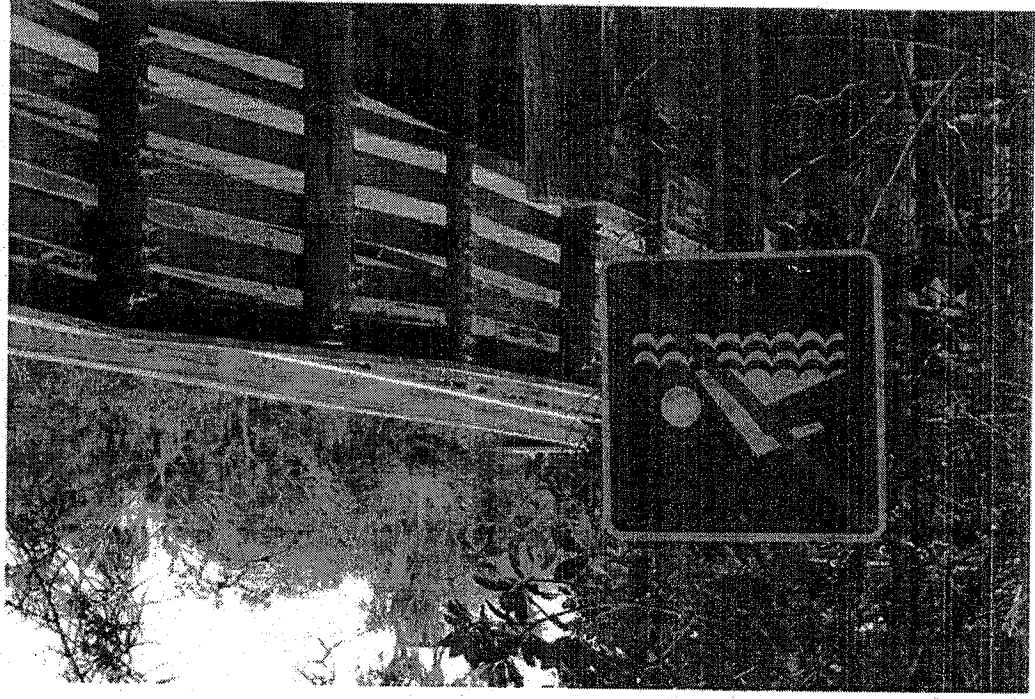
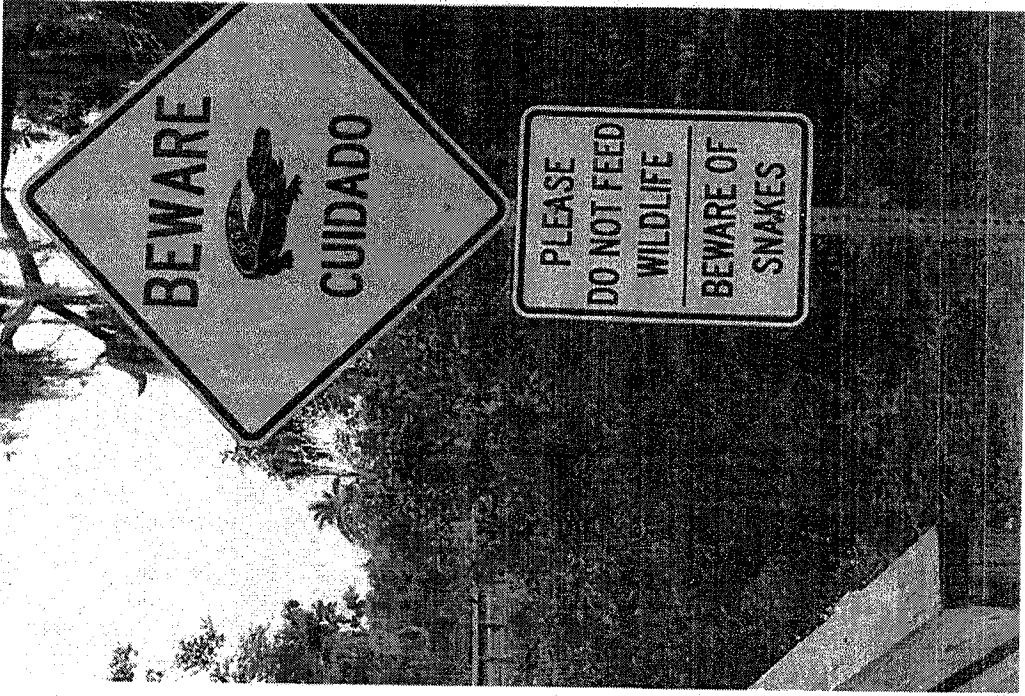
Environmental stewardship takes vision, long-range planning, and significant allocation of resources. The City has repeatedly demonstrated its commitment to the care and maintenance of Billy Creek and will continue to be a champion of this important natural resource.

If you have any questions, please let me know.

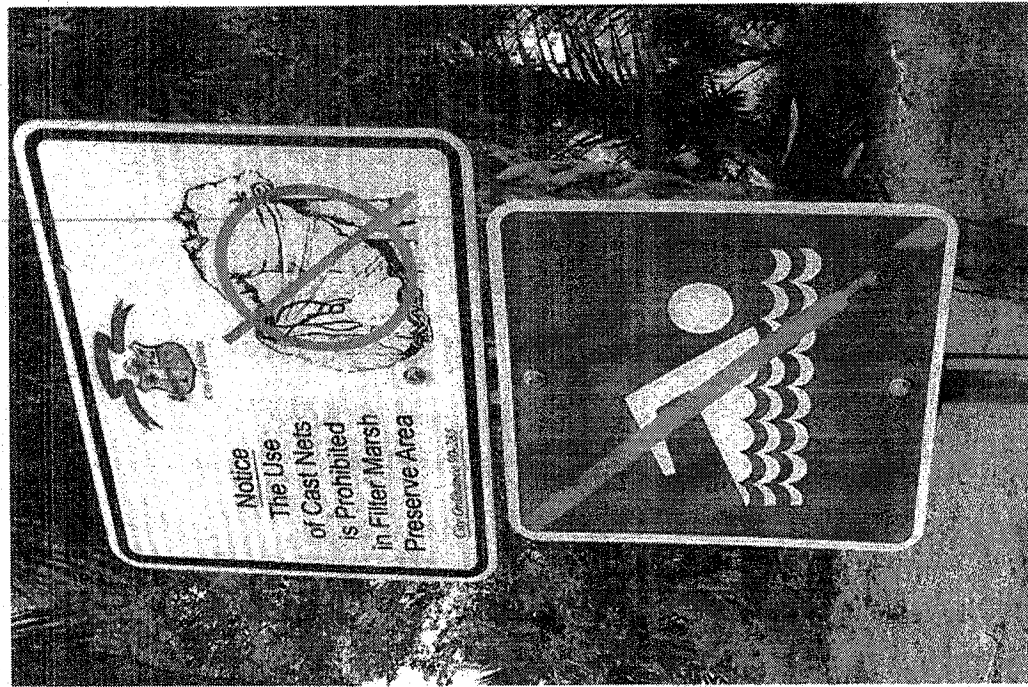


Saeed Kazemi, P.E., City Manager

SK: RT: sb
Attachments



Ford Street Preserve / Shady Oaks



Billy Creek Preserve