SARASOTA COUNTY
*"Dedicated to Quality Service"*

November 29, 2005

Ms. Sibyl Cole
Standards, Monitoring, and TMDL Branch
Water Management Division
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

Subject: TMDL for Nutrients, Dissolved Oxygen, and Coliforms in Sarasota Bay / Charlotte Harbor Basin Groups

Dear Ms. Cole:

The U.S. Environmental Protection Agency (EPA) recently published TMDLs recommending pollutant load reductions for nutrients, biochemical oxygen demanding substances, and coliform bacteria for 10 basins. The recommended load reductions were almost one-half of the total load (on average) and all load reductions were allocated to stormwater runoff. Load reductions were estimated using the Lemon Bay Watershed Model with targets based on natural conditions before anthropogenic influences affected the water bodies.

We have the following significant concerns about the proposed TMDLs:

- The assumption that the loads present during pre-developed conditions are equivalent to the assimilative capacity of a waterbody is not supported by empirical evidence. If impairment is defined by any load greater than natural without any corroborating evidence that a water quality or ecological problem exists the TMDL has no basis in fact.
- Impairment is defined by a very small number of samples (maximum of 28) and many were not taken recently, instead dating from the early 1990s.
- The sub-basin boundaries, identified by Water Body Identification Numbers (WBIDs), are mapped inconsistently with established watershed boundaries. These mapping discrepancies will create significant errors in modeled loads. The sample stations should be re-examined to determine if they are assigned to the correct waterbody.
- Dissolved oxygen is a troublesome parameter as a measure of impairment, unless the data is closely correlated with high BOD loads or other pollutant loads. Very low concentrations of DO have been measured in our healthiest waterbodies, including verdant seagrass beds, the Myakka River in the Myakka River State Park, and in Gottfried Creek. The DEP is currently conducting a comprehensive study of DO regimes to help resolve the difference between the existing DO standards and biological health of waterbodies.

Water Resources ♦ 1001 Sarasota Center Blvd., Sarasota, FL 34240
Tel (941) 861-0660 ♦ Fax (941) 861-0504

- Sarasota County has contracted with Mote Marine Laboratory to create a tidal creek index that will correlate biological health with water quality conditions, habitat values, and watershed qualities. Gottfried Creek has been found to be the most biologically healthy tidal creek in Sarasota County. County staff recently measured DO values in Gottfried Creek at less than 1 mg/l during midday in a sunny location at slack tide. DO does not appear to be a good indicator of impairment and more study is needed. It is unlikely that Gottfried Creek is impaired.
- Coliform bacteria are poor indicators of anthropogenic pollution. EPA should look closely at this part of the proposed TMDL because without the application of more sophisticated techniques the TMDL lacks the evidence needed to pursue remedial actions. Both EPA and DEP have conducted bacterial source tracking in the Myakka River Basin and other areas to determine if coliform bacteria are indicators of anthropogenic pollution, something the existing standard and the proposed TMDL are unable to do. For WBIDs listed as impaired for coliforms, conducting bacterial source tracking studies would be a sensible course of action.

Sarasota County would like to take this opportunity to set up a meeting with representatives from your office, the DEP, the Estuary Programs, and other interested parties either in person or via teleconference to discuss our concerns. We would like to discuss the use of an adaptive management methodology, under which the stakeholders intend to gather the supplemental data necessary to more accurately judge the alleged impairment and to identify appropriate loading goals. This adaptive management approach would seek a net environmental benefit that would otherwise be unobtainable under the current proposed TMDL. This cooperative approach will facilitate the accomplishment of our shared goal of protecting our precious waterbodies from deleterious pollutants.

Sincerely,

Theresa Connor, General Manager,
Sarasota County Water Resources

attachments

cc: Drew Bartlett, Chief, TMDL Branch, U.S. Environmental Protection Agency
Robert Dwyer, Florida Department of Transportation, District One
Richard Winters, City of Sarasota Engineering Department
Mark Alderson, Director, Sarasota Bay Estuary Program
Lisa Beever, Director, Charlotte Harbor National Estuary Program
Lizanne Garcia, SWIM Program Manager, SWFWMD
Richard Rollo, Administrator, Englewood Water District
Patrick Collins, City Engineer, City of North Port

Daniel Quick, Charlotte County Public Works
Nancy Woodley, City Engineer, City of Venice
Jan Mandrup-Poulsen, Florida Department of Environmental Protection
David Bullock, Deputy County Administrator
Robert Patten, Executive Director, Environmental Services
David Cash, General Manager, Utilities
Jack Merriam, Manager Water Resources
John Ryan, Environmental Specialist, Water Resources

TMDL for Nutrients, Dissolved Oxygen, and Coliforms in Sarasota Bay / Charlotte Harbor Basin Groups – Technical Review

Sarasota County has accurately mapped all of the watersheds involved in the TMDLs. Below are ten aerial views with watershed boundaries outlined and the WBID presented in color. Please note that none of the WBID boundaries are accurate. The most troubling is WBID 1975, which is incorrectly named Elligraw Bayou. The DEP has corrected this error on their maps. Since the TMDLs are derived from pollutant load models it fundamental that accurate watershed boundaries and land uses are put into the model. There is error in this TMDL related to inaccurate mapping.

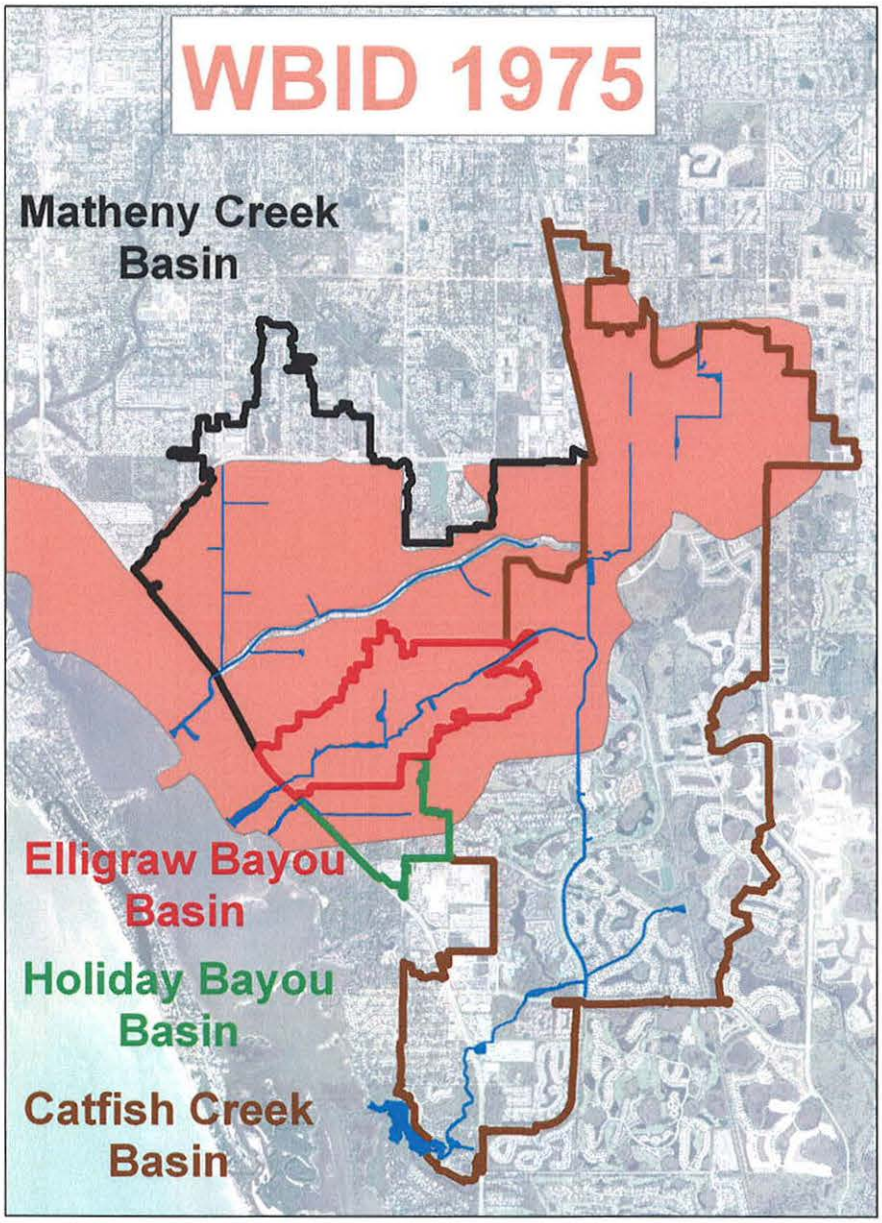


Figure 1. Comparison between WBID 1975 and coastal basins.

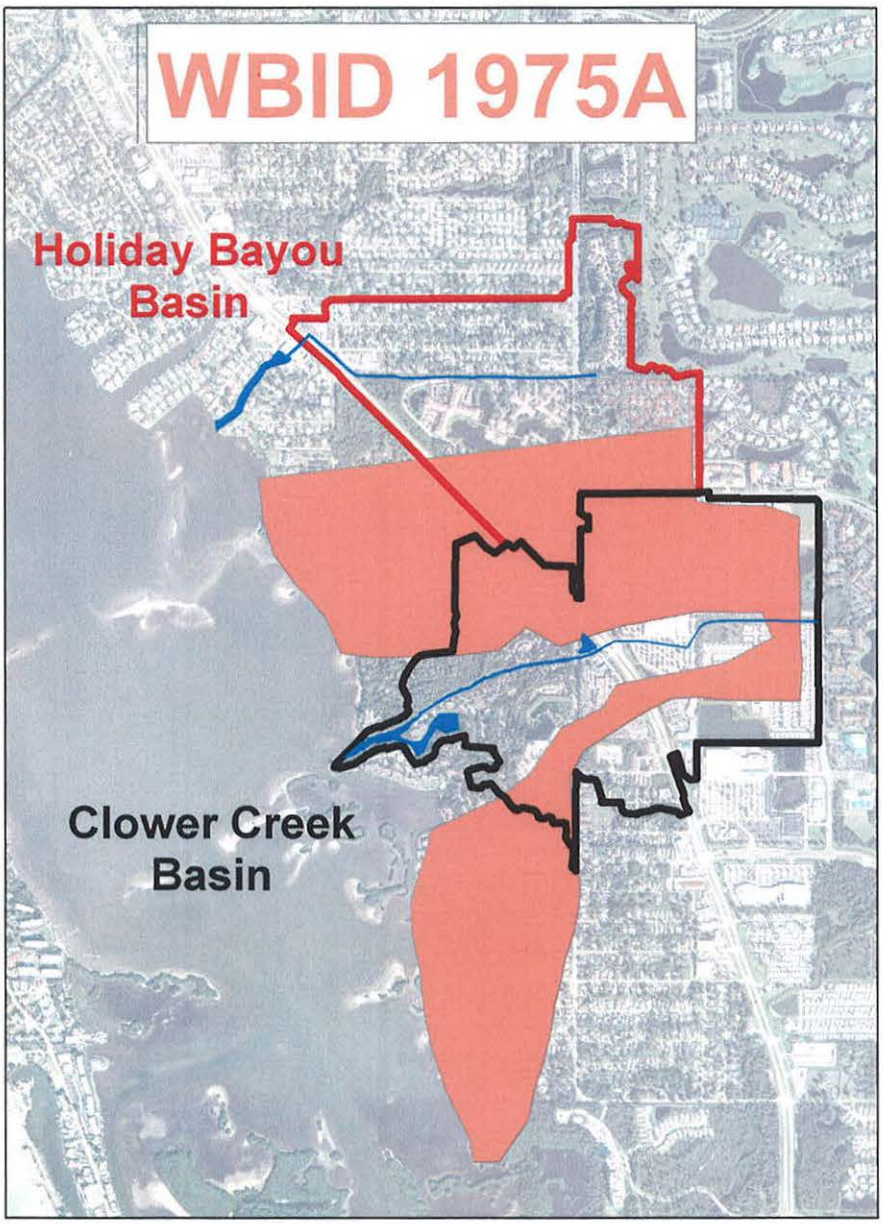


Figure 2. Comparison between WBID 1975A and coastal basins.

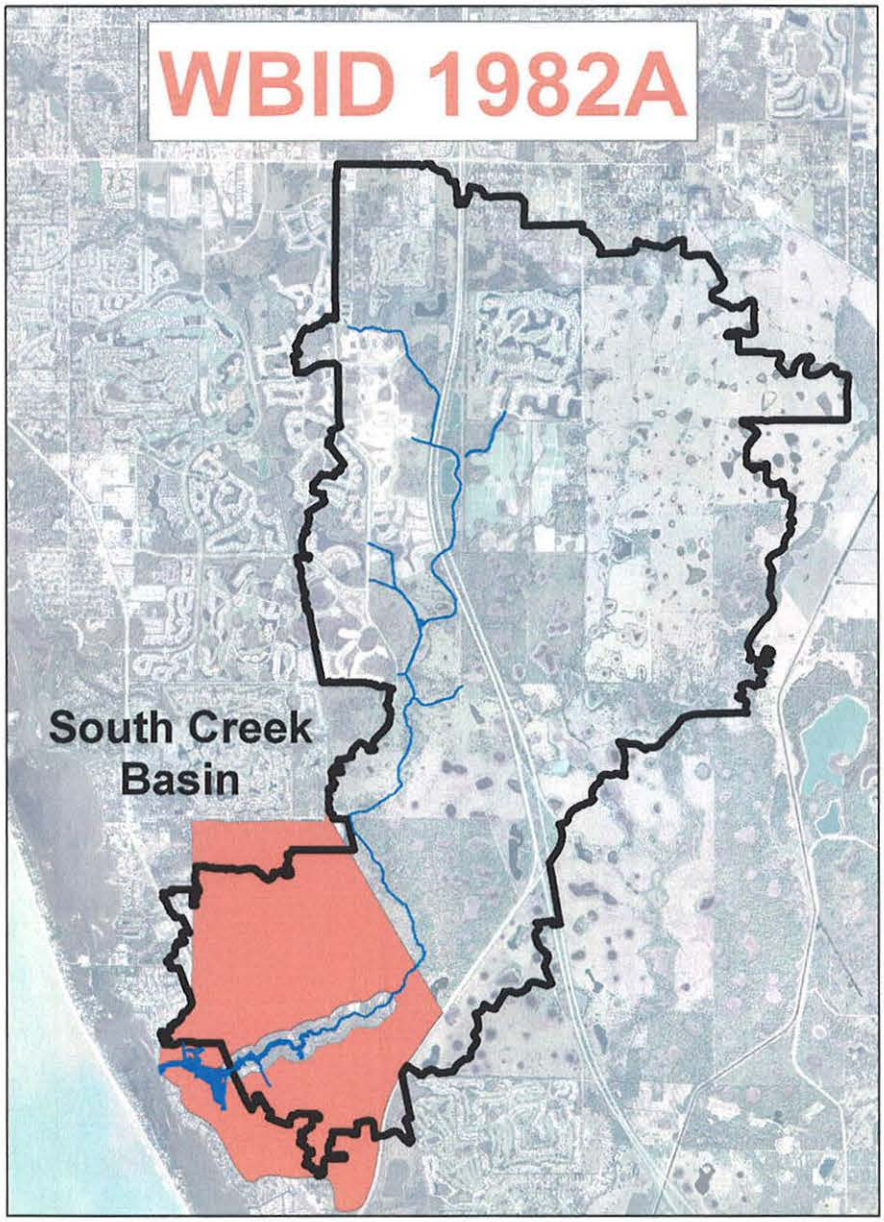


Figure 3. Comparison between WBID 1982A and South Creek basin.

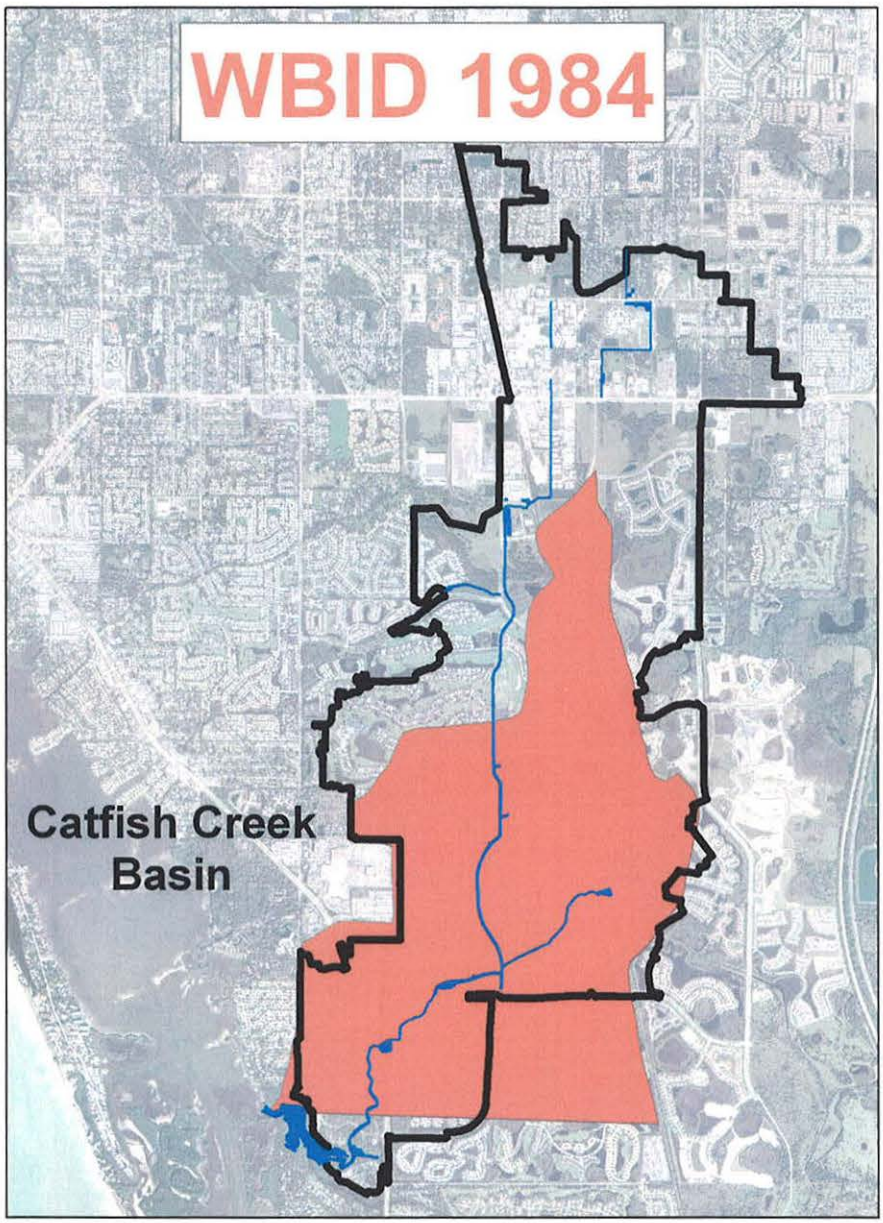


Figure 4. Comparison between WBID 1984 and Catfish Creek basin.

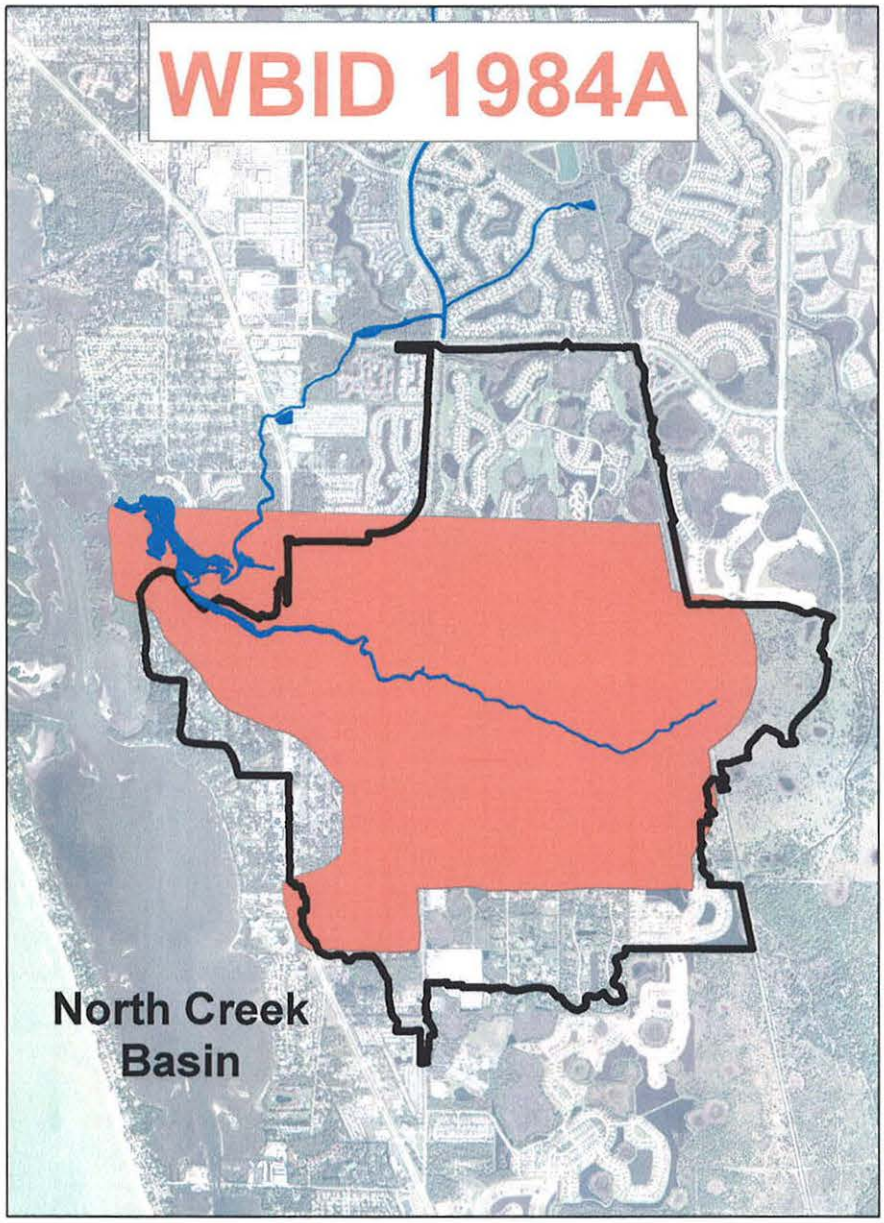


Figure 5. Comparison between WBID 1984A and North Creek basin.

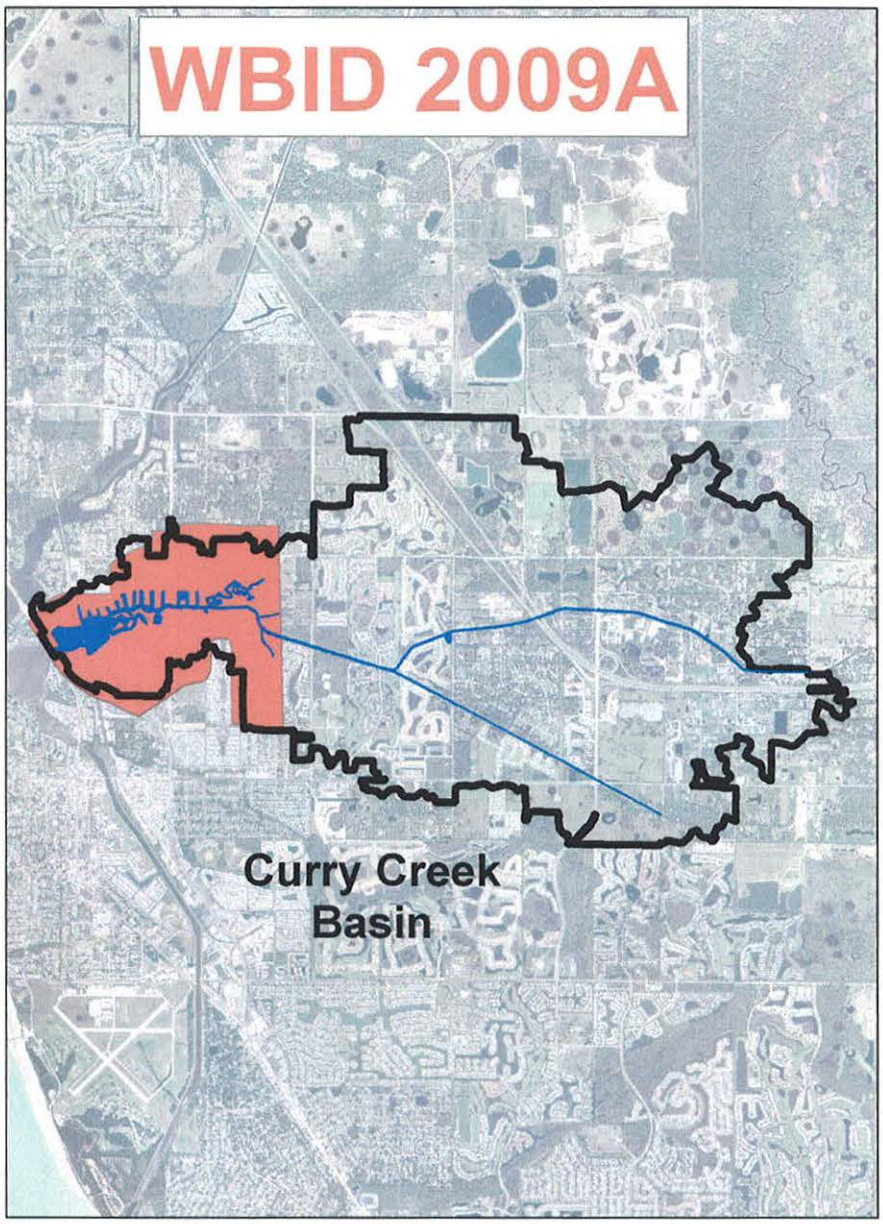


Figure 6. Comparison between WBID 2009A and Curry Creek basin.

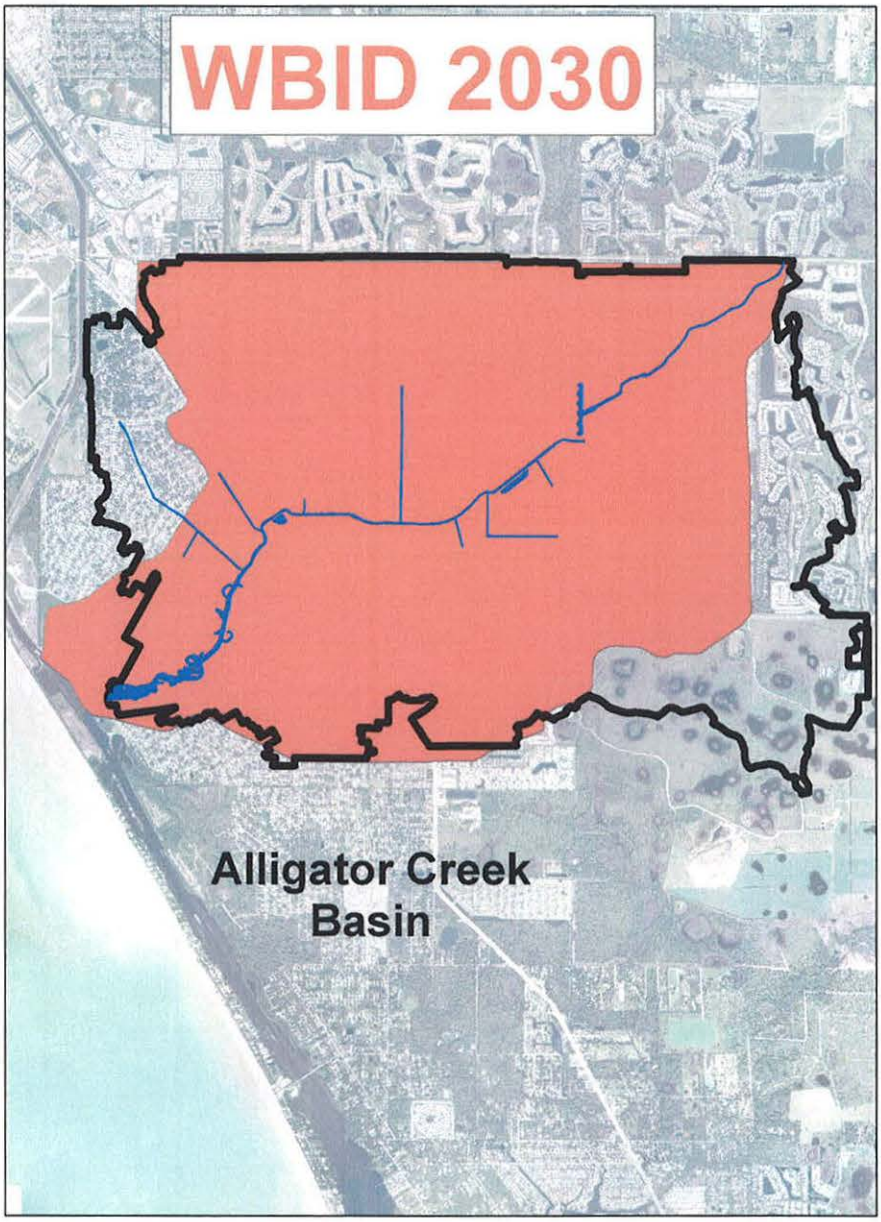


Figure 7. Comparison between WBID 2030 and Alligator Creek basin.

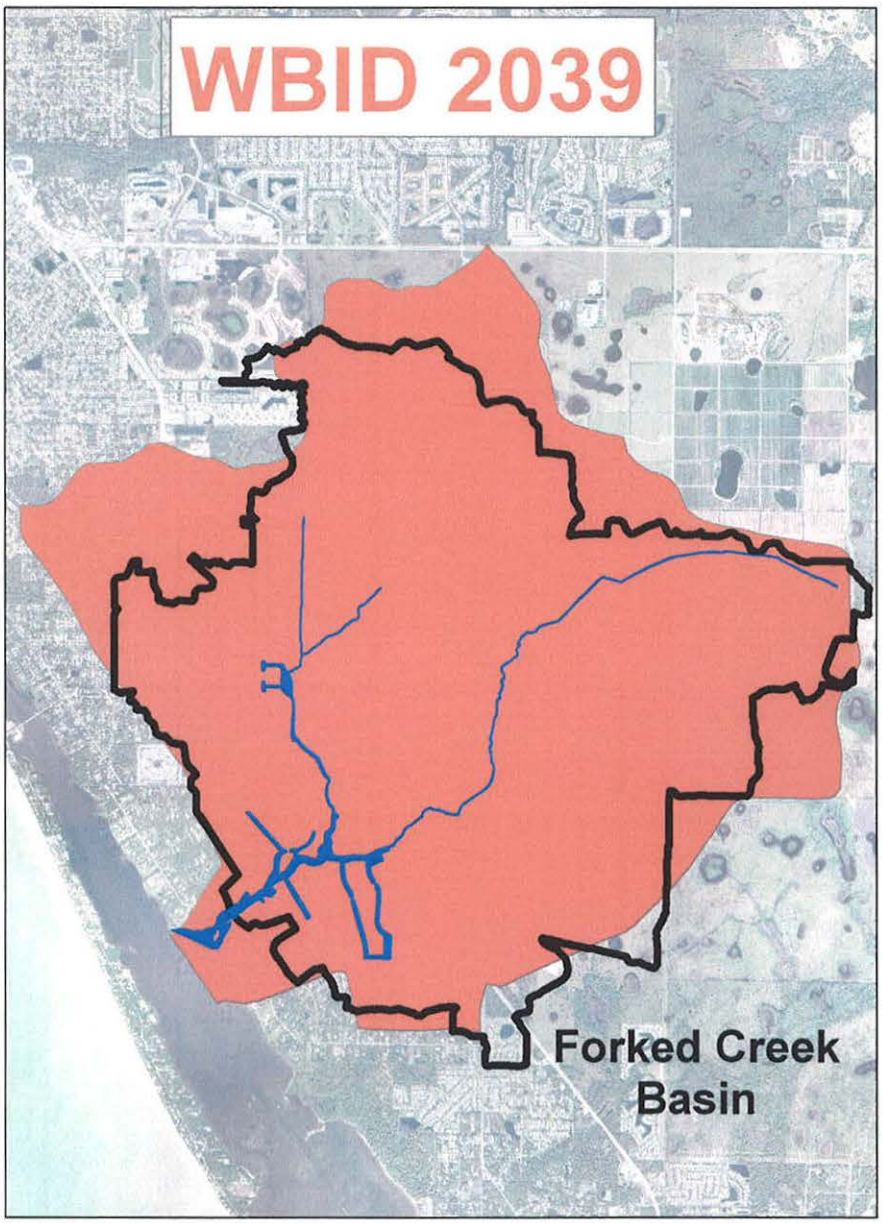


Figure 8. Comparison between WBID 2039 and Forked Creek basin.

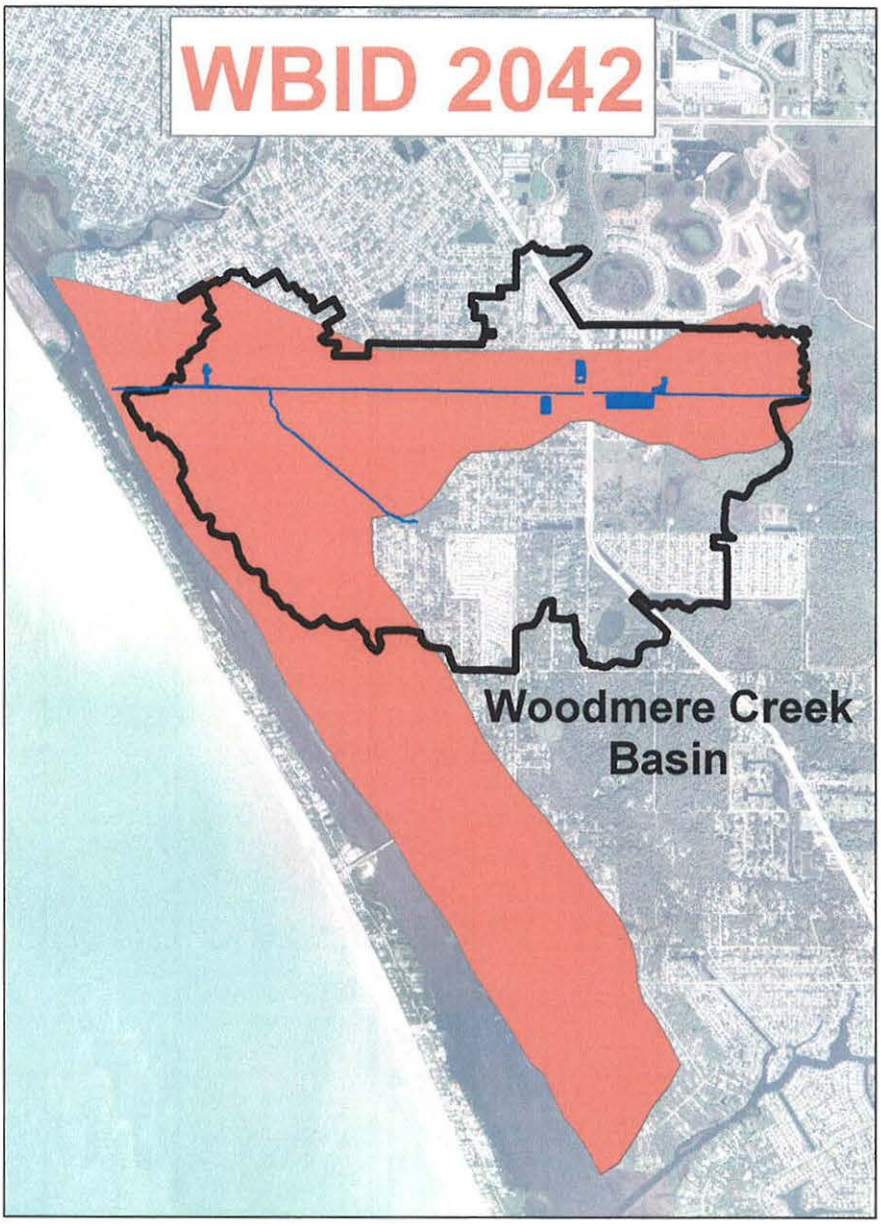


Figure 9. Comparison between WBID 2042 and Woodmere Creek basin.

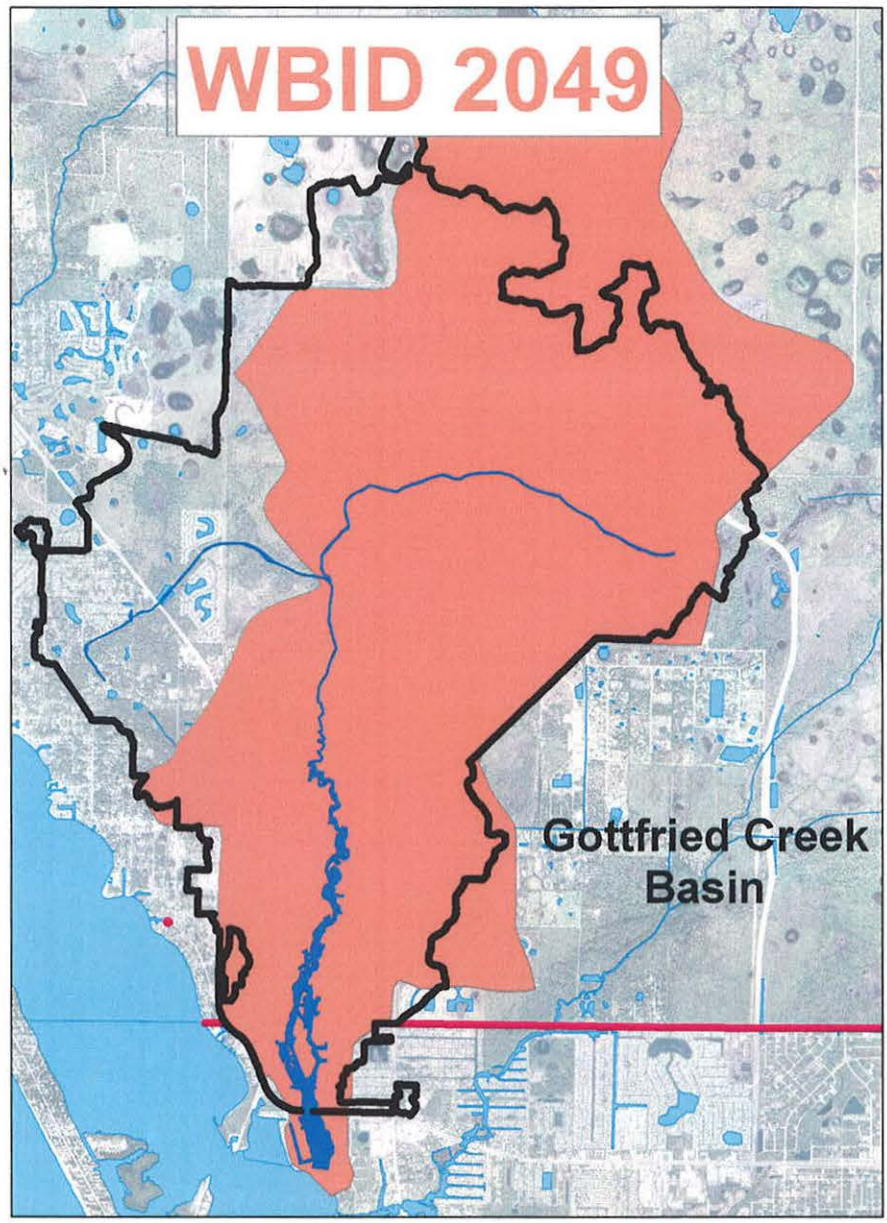


Figure 10. Comparison between WBID 2049 and Gottfried Creek basin.

The TMDL fails to establish the assimilative capacity of the water bodies and instead "assumes target loads to be those that existed under natural conditions prior to anthropogenic influences". This assumption presumes that any receiving water body naturally exists at the very threshold of impairment, and that any additional load thrusts the waterbody into water quality driven ecological failure. The assimilative capacity concept presumes that any waterbody can assimilate some amount of a pollutant until the load exceeds the tolerance of the natural system. This TMDL is in conflict with the concept of assimilative capacity. In addition, suggesting that a developed community must achieve stormwater pollution loads equal to pre-development conditions is unrealistic without substantial documentation of a problem, which is absent.

There is considerable doubt about whether the 10 WBIDs are impaired. The TMDL Report acknowledges "insufficient monitoring data" and "lack of a long-term record of bacteria samples". The maximum number of samples used to define impairment of a WBID for one parameter is 28; not enough for basic statistical significance. The DEP has established a rule for the minimum amount of samples that must be taken for impairment to be verified. Waterbodies with a less than a statistically significant number of samples should be investigated further before a TMDL is implemented. Using a very small sample set is inconsistent with standard scientific practices.

The estimate of septic systems is an overestimate because "the data does not reflect septic tanks removed from service".

# MEMORANDUM

JONES EDMUNDS

**FROM:** Brett Cunningham, P.E.

**DATE:** November 28, 2005

**TO:** John Ryan

**XC:**

**RE:** Review of Sarasota Bay/Charlotte Harbor Basin Groups (WBIDs 1982A, 1984, 1984A, 2009A, 1975A, 1975, 2049, 2039, 2042, and 2030)

I believe that you have already identified the major sources of concern with these TMDLs. The points below are provided for you additional consideration:

- As a part of the modeling that we did for the NPDES permit renewal, we had a number of questions about the Lemon Bay Model (baseflow, septics, dryfall/wetall, BMP handling, calibration, etc.). In many of the cases, the work that they did on the Lemon Bay Model may be fine, but the documentation does not always allow the reader to make that determination. EPA relied heavily on the Lemon Bay Model to determine some of these TMDLs (page V), so a comfort level with the Lemon Bay Model needs to go along with the acceptance of the TMDLs.

- The South Creek nutrient TMDL discussed on page 16 seems questionable: Chlorophyll values are low, but it is listed for nutrients anyway. In essence, they seem to be requiring a nutrient reduction to address a perceived DO problem.

- The determination of target loads is, as the report states, very conservative. Setting the target load to predevelopment conditions (which is probably not correct to begin with because it appears to only consider direct runoff as the source) is an unachievable goal.