

**Old Tampa Bay Meeting Notes from TBEP TAC Meeting of 1/20/12**  
**Final Notes 01/27/12**

Old Tampa Bay Modeling: Management Actions – Presentation by Tony Janicki

General Discussion:

- Hydrologic alternations in the watershed may include landuse changes. Structural alterations are considered as changes to structures in Old Tampa Bay proper. Improvements to the Channels A and G control structures are examples of watershed alterations.
- Include nutrient flux (both magnitude and direction) in the Key Ecological Attributes for sediment.
- In discussion of the rationale for selecting management actions and potential scenario runs for the integrated model before development of the model construct, it was noted that the integrated model construct must be able to address the questions being asked. Existing watershed and water body model constructs, or a model construct developed without specific knowledge of the need for spatial and temporal resolution specific to the management actions, would not likely be able to provide sufficient information to effectively inform the decision making process.
- This project is not evaluating impacts of Lake Tarpon Outfall Canal diversion on the sink and Anclote River. The District may evaluate potential effects in the future, if this management action appears promising as a result of findings from the Old Tampa Bay project.
- The District has raised the question of the possibility of utilizing the Outfall Canal as a treatment area.
- The current management action prioritization is based on the projects that are the most important to the District and TBEP, with costs and permitability to be accounted for later in the project.
- Seagrass near Safety Harbor is very responsive to local water quality. Consideration of the potential effects of export of nitrogen from north of the Courtney Campbell to the southern portion of Old Tampa Bay, and the potential effects, will be evaluated by the model.
- The eastern tide gate in the Courtney Campbell Causeway near Rocky Point is always open.
- Concerning removal of the Clearwater East discharge, there may be a breakpoint in the cost/benefit relationship which will guide the potential volume of the removal. Consideration of wet weather storage will play a big part in if this is feasible. There may be additional opportunities to share reuse with other governments.
- For evaluation of the potential effects of watershed load reduction, the model will be used to evaluate first a relatively large reduction in loads (25% or so, with a commensurate reduction in volume) and the associated in-bay response in both time and space prior to determining what the exact evaluation scenario should be.
- Concerning watershed load reduction, alum treatment as a load reduction method is a problem given the karst geology within this region. Pinellas Co. has only done one alum treatment project and is unlikely to do another.

- The county's waste-to-energy facility is also a site for potential load reductions related to atmospheric emissions.
- Kris Kaufman and Dave Tomasko will get together on evaluation of the potential for using aerial photos to look at muck buildup/locations in Safety Harbor.

#### Discussion of Management Actions:

- The plan on running the management actions is to pick the highest priority actions (the four Priority A actions), run these first, and then look at the results to lead us toward how to focus on the remaining combinations of scenarios.
- Input on Management Actions
  - 1) Redirection of Lake Tarpon discharge (Priority A):
    - The effects of this management action need to be determined so that the District can decide if this is a viable option. Running this action will provide initial answers but will not address to where the discharge will be re-routed.
    - As part of the Task 2 empirical data analysis, an evaluation of the optimal discharge from the Canal will be included, including effects of varying flows on residence time if possible.
    - After the initial run of discharge removal, further evaluations as a separate model scenario can be done to evaluate effects of discharge treatment prior to entering Safety Harbor.
    - Remember there are likely combined effects due to changes in nutrient loads and residence time resulting from removal of the discharge.
    - A potential scenario may be to remove the discharge and provide larger opening(s) in the Courtney Campbell Causeway.
    - Lessons learned from the accidental opening of S-551 that caused acidic groundwater influx and an algal bloom in Lake Tarpon should be considered as a potential unintended consequence of this management action.
  - 2) Opening Courtney Campbell Causeway (Priority A):
    - Task 2 will include empirical analyses to evaluate important drivers of seagrass in Feather Sound. Changes to other areas with seagrass in Old Tampa Bay should be considered in the evaluation of this management actions, as well. Recently, seagrasses have increased in Feather Sound, under existing conditions. Public outreach to interested parties (including the Courtney Campbell Causeway Scenic Highway Advisory Committee) is necessary.
  - 3) Redirect all Clearwater East discharge to reuse (Priority A):
    - After evaluation of the initial general load reduction management action (below), perhaps this should be considered as one of the watershed load reduction options, so that watershed load reductions including rerouting discharge from Clearwater and Bridgeway Acres all to reuse is evaluated to see if there are any local benefits.

- Model can be used for particle tracking, to see if there are advantages to putting discharge in over a diffuse area instead of at one location.
  - The Integrated Model System will allow us to evaluate groundwater loading responses to actions as well. We'll have to ensure that the INTB reasonably simulates groundwater inflow to the bay as part of the model development in Task 4.
  - Analyses of seagrass response points to importance of more regional-scale nonpoint source loads, not to local point sources.
- 4) Watershed Load Reductions (Priority A):
- Watershed load reductions on order of 25% (with a commensurate, appropriate volume reduction) will be run through the existing empirical model as well to evaluate the potential effects.
  - Initial model testing will be performed with load reductions during only a portion of the time period.
  - Model testing may also limit load reductions to only a portion of the bay (Upper Old Tampa Bay) to evaluate degree of response.
  - Based on the Numeric Nutrient Criteria, we don't need load reductions to meet water quality goals in Old Tampa Bay.
  - It may be sufficient to run some management actions as hydrodynamic scenarios only.
- 5) Removal/Modification of Structures in Channels A, G, and 5: (Priority B):
- This action includes consideration of the Lake Pretty project.
  - FDEP has supported the existing TBEP effort evaluating effects of structure removal and believes it is permissible.
- 6) Dredging and Removal of Safety Harbor Muck: (Priority B):
- Integrated Model System will aid us in determining how quickly the muck would return given existing conditions, and what the likely improvements in the benthic community habitat would be. Any resultant changes to the system would have to be evaluated based on size of the area affected, and a cost/benefit analysis.
- 7) Modifications to three bridges: (Priority C):
- Model testing can be used to evaluate potential changes in residence time, perhaps combined changes in circulation would offset potential problems in Feather Sound.
- 8) Move Clearwater East discharge to Safety Harbor area (Priority C):
- Only of interest if this would make an improvement in water quality conditions compared to current Lake Tarpon discharge or some revised Lake discharge schedule.

- 9) Regional Stormwater Facility (Priority C):
  - See discussion above for watershed load reduction management action.
  
- 10) Implement Lake Tarpon Management Schedule (Priority C):
  - Some empirical evaluation of the effects of modifying lake discharges, per the schedule, can be accomplished as well as utilizing the modeling system.
  
- 11) Oyster Reef: (Priority C):
  - Utilize empirical evaluation of this management action if possible, not necessary to use integrated model system to evaluate.

Action Items:

- Provide comments to TBEP by Jan. 31<sup>st</sup>.
- Janicki Environmental will meet with TBEP and District to finalize document.