

Loxahatchee (Lox) River Reasonable Assurance Plan (RAP) Workshop Summary

*Thursday, August 24, 2017 at 9:00 AM
Town of Jupiter Water Treatment Plant Training Room
17403 Central Boulevard, Jupiter, FL 33458*

Attendees

Albrey Arrington, Lox River District
Tom Behlmer, DEP
Karen Brandon, AECOM for SIRWCD
David Brown, Town of Jupiter
Tiffany Busby, Wildwood Consulting
Deborah Drum, Martin County
Rebecca Elliott, FDACS
Julie Espy, DEP
Cathy Foerster, Wildwood Consulting
Brian Gentry, Palm Beach County
Pattie Gertenbach, E Sciences
Kathleen Greenwood, FDACS
Chris Guth, Hazen and Sawyer
Rachel Harris, Lox River District
Bud Howard, Lox River District
Tom Howard, Jupiter Inlet District

Dianne Hughes, Martin County
Tony Janicki, Janicki Environmental
Harold Jenkins, Martin County BOCC
Chad Kennedy, DEP
Ivette Leiva, FDOT
Justin Nolte, SFWMD
Jon Perry, Janicki Environmental
Jonathan Ricketts, NPBCID
Gary Ritter, Florida Farm Bureau
David Rotar, Town of Jupiter
Ray Scott, FDACS
Patrick Shearer, E Sciences
Trish Weaver for Hal Valeche, Palm Beach
County BOCC
Alan Wertepny, Mock Roos
Rebecca Wilder, Town of Jupiter

Welcome

At 9:05 AM, Tom Howard, chairperson of the Lox River Management Coordinating Council (LRMCC), welcomed everyone to the Florida Department of Environmental Protection (DEP) workshop on the Lox River RAP. He provided a brief recap of the RAP process to date and the LRMCC's role as sponsor of the RAP.

Introduction

Tiffany Busby introduced herself and Julie Espy, Program Administrator with the DEP Water Quality Assessment Program. Tiffany thanked the Town of Jupiter for providing the meeting location and refreshments. Tiffany reviewed the agenda with attendees and advised that today's workshop will be interactive with timed sessions. She expects collegial discussions and reminded attendees that the RAP is a voluntary initiative by the LRMCC and that DEP is providing assistance to the LRMCC and local stakeholders; DEP does not have a set goal other than providing assistance. Tiffany then requested that each person introduce them self. During introductions, Dianne Hughes mentioned that Martin County submitted written comments to DEP on Wednesday, August 23, 2017.

Ground Rules

Tiffany reviewed the ground rules slide with attendees and advised that this is a publicly noticed workshop in which notes will be taken by Cathy Foerster. She stated that at the end of the workshop, she and Julie will measure consensus on the path forward so that Julie can inform the LRMCC at the September 25, 2017, on the preferred path forward.

General Elements of a Restoration Plan

Julie reviewed the DEP-provided handout with attendees. On one side are the general elements of restoration pathways, which are applicable to the different types of RAPs as well as basin management

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action plans (BMAPs). The other side contains the various RAP options that are assigned the euphemistic names of Goldfish, Peacock, Rabbit, and Hedgehog. Julie stated that the handout will be reviewed in detail later in the workshop, but attendees are to use the code names during discussion, rather than using acronyms and statutory lingo. Julie emphasized that regardless of plan type, each must contain the following elements: water quality targets; model/analysis; determination of pollutant loading; management options/projects; monitoring and reporting; progress documentation; and stakeholder commitment to plan implantation.

Questions/comments by attendees:

1. Albrey Arrington: Is bacteria being ignored in the RAP? Julie: Language will be included in the plan regarding bacteria, but there will not be defined targets. Tiffany: Since bacteria targets are hard to define numerically, reasonable assurance cannot be provided in the plan that bacteria targets will be met. However, the plan can include projects and management actions to address bacteria impairments, just not quantitatively.
2. Albrey: Is the concept that the plans address chlorophyll *a* targets only? The high total nitrogen (TN) and total phosphorus (TP) loadings lead to elevated chlorophyll *a* concentrations that must be resolved? Julie: That is correct.
3. Pattie Gertenbach: Is there a total maximum daily load (TMDL) for bacteria in this basin? How does that fit into this process? Julie: There is a bacteria TMDL for one of the WBIDs. The TMDL will continue to exist and be addressed through municipal separate storm sewer system (MS4) permits if it's prioritized, but the RAP can include projects that will also address bacteria. Tiffany: The RAP can include a bacteria management approach.
4. Dianne: The Peacock option will require local funding to evaluate the numeric nutrient criteria (NNC) and develop new water quality targets? What is the anticipated cost? Julie: Yes, local funding will be required for the Peacock option. The cost is dependent on the type of model used and scope of work. I am unsure as to what the total cost might be.
5. Bud Howard: It is my understanding that the chlorophyll *a* targets are in line with other parts of the state. Are there instances in which adopted chlorophyll *a* criteria have been changed? What was the cost for such change and what was achieved in terms of changed targets? Julie: Yes, they are in line with other chlorophyll *a* targets in estuaries around the state. Up to this point, I am not aware of a successful change in an adopted chlorophyll *a* target. The concept is currently being explored in the Mosquito Lagoon RAP that is under development. The targets will likely not change that much if they are sought to be changed.
6. Tony Janicki: Rather than change the targets, take the time to understand how the existing targets were determined. There needs to be a confidence level in the original determination.
7. Albrey: As a group, we need to understand the systematic variability of the model used in the RAP. We need to understand how the predicted loads in the Pollutant Load Screening Model (PLSM) drive the predicted chlorophyll *a* concentrations.
8. Pattie: Does DEP have a preference between the Goldfish and Rabbit options? Julie: DEP will support the community's planning decision. The Goldfish option negates the need for development of a TMDL. The Rabbit option delays the restoration process and DEP must develop a TMDL.
9. Tom Howard: Didn't the LRMCC decide to proceed with the Goldfish option? Julie: DEP received numerous inquiries on the PLSM and RAP options and sensed apprehension by stakeholders regarding the RAP process. The purpose today is to obtain consensus on a path forward from the participants and report that to the LRMCC on September 25, 2017 for a decision on how to proceed.

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10. Alan Wertepny: The Peacock option places responsibility on the local governments for modeling and revised targets.
11. Deborah Drum: Do you have a cost for implementation of the Peacock option (revising model and targets)? Julie: The cost depends on the magnitude of the scope of work—you may decide to develop a separate model; review the existing targets; proposed revised targets; or some combination of these.

Review of Water Quality Targets and Options

Julie presented slides on the current water quality targets and stated that the targets are equivalent to NNC. If the targets are to be changed, then NNC will need to be revised which requires demonstration that the new criteria are protective of the designated use; DEP rulemaking to revise the criteria; and U.S. Environmental Protection Agency (EPA) approval of the revised criteria (as changes to water quality standards). Julie stated that it is unknown if EPA will buy in to changes. Tiffany elaborated that there is no example of a successful recent change in water quality standards in Florida. Also, there is not a known timetable for EPA to make a finding. To go through the process of changing criteria will remove some control of the timing by the stakeholders.

Questions/comments by attendees:

1. Deborah: Waiting for EPA will not affect us that much. We have momentum with our projects that will not change while waiting for EPA's decision.
2. Dianne: How many stakeholders want to change the NNC and fund the effort?
3. Albrey: Who realistically thinks the chlorophyll *a* targets are accurate and definitive? If we thought so, we would not have written strenuous letters during the NNC development process. Do not let funding be the concern. Either we spend money now on the modeling or money later on projects.
4. Rebecca Wilder: If we want different targets, but do not like the Peacock option, then what is our option? Julie: DEP can develop a TMDL that could change the targets, similar to the Peacock option.
5. Rebecca: A TMDL effectively changes the NNC? Julie: Yes, a TMDL can either implement the NNC or revise the NNC and create new water quality criteria.
6. Tom Howard: Can the Goldfish plan be modified if circumstances change, such as targets? Julie: The Goldfish plan can be modified based on adaptive management measures associated with the projects or monitoring network, but the targets must be the adopted targets at the time. A narrative description could be included in the plan to state that targets may be amended at a later date, but reasonable assurance is provided to meet the existing targets. Once new targets are adopted, the reasonable assurance could be modified to meet the new targets.
7. Tom Howard: The Peacock option says that we are not okay with existing targets.
8. Deborah: Is the Goldfish option tied to the PLSM? Julie: A model other than the PLSM can be used in the Goldfish option. Keep in mind that the Goldfish option will be reviewed favorably for grant money.
9. Gary Ritter: Is the Peacock option eligible for grant funding too? Is the Mosquito Lagoon RAP a Peacock? Julie: The Peacock is also eligible for grant funding. The Mosquito Lagoon RAP started out as a Goldfish plan. It took at least a year for all stakeholders to execute agreements to move forward with the RAP. Then there was an RFP process to select a consulting team before the RAP process began in earnest.
10. Deborah: The Loxahatchee River Preservation Initiative (LRPI) is an option to secure funding for a revised model.

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11. Patrick Shearer: A concern is effective monitoring and determination of how we are meeting the targets.
12. Tony: Do not entirely ignore TP and TN, which also have standards in place.

Use of the PLSM or Other Models

Julie walked the attendees through the PLSM (spreadsheet model) Excel workbook. She stated that DEP uses this model in other basins; the Lox River stakeholders are not obligated to use it; it is a very simple model that is driven by the average annual rainfall and land use (2008 South Florida Water Management District [SFWMD] coverage); chlorophyll *a* is plugged in as an annual average; and event mean concentrations (EMCs) are based on literature values. Julie stated that she received clarification from her team that water quality data (TN and TP data that were converted to chlorophyll *a* estimates) were obtained from all data stations within the three waterbody identifications (WBIDs), not just from three stations, as previously conveyed. DEP ran the regressions and the PLSM loading for all three WBIDs together, rather than WBID by WBID. Julie stated that the model does not currently consider septic loads and cannot be used for bacteria.

Julie will post the PLSM workbook to the DEP public access site so that stakeholders can input their own data to run their own scenarios. Click on the "read me" tab first; note that the "land use" tab is based on the agreed upon RA boundary.

Julie solicited input from the attendees on tweaks that can be made to the PLSM by DEP to refine results, such as using local EMC information in place of literature values, using more than one rainfall gage, etc. Julie stated that DEP has a contractor that can refine the PLSM and ideally, Julie can present amended results at the September meeting. Tony stated that the PLSM does not predict chlorophyll *a* concentrations; rather it predicts TN and TP loading and through regression analyses, chlorophyll *a* concentrations are estimated. Tony suggested that regressions be performed with annual geometric means (AGMs), not annual arithmetic means (AAMs). Bud said there is a disconnect between the water quality station locations that are used and the WBIDs themselves. The stations may not be representative of the WBID water quality.

Recommended Tweaks

1. Run the PLSM WBID by WBID and focus on hot spots within each WBID.
2. Include BMPs (actual versus literature).
3. Use local EMCs rather than literature values.
4. Use rainfall data from a more localized station.
5. Use updated land use and GIS coverages.
6. Improve confidence level in model predicted flow versus actual flow (Albrey suggested using the S-46 gage; after the meeting, Alan suggested that more of the watershed drains through the gage at Lainhart Dam).
7. Review runoff coefficients and associated soil types (see written comments from Martin County).

Concerns

1. Chlorophyll *a* targets are not definitive or accurate.
2. How to monitor chlorophyll *a* to measure progress.
3. Even after the PLSM is tweaked, is it still an ideal model for the RAP?
4. Water quality stations that are currently sampled may not be representative of each WBID's water quality; consider that there is a disconnect between the stations and WBIDs.

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5. Not accounting for groundwater load (base flow and sandy soils). For example, in the Indian River Lagoon, groundwater load is 20-30 % of the total load.
6. Internal nutrient loads or legacy loads from muck are not accounted for.
7. Do not entirely ignore TP and TN, which also have standards in place.

Process Recommendations

Tiffany explained each plan option in detail: Goldfish, Peacock, Rabbit, and Hedgehog. She then measured consensus on each option by having attendees advise whether they agree, disagree, or are neutral on each option. Attendees provided input on each option (rather than "voting" for only one option). The tabulation of responses is below. Not all attendees participated in this exercise. Tiffany stated that the responses are not binding, rather the responses will help inform DEP as to the preferred planning option that can be discussed with the LRMCC in September.

Plan Option	Agree	Neutral	Disagree
Hedgehog	0	5	16
Rabbit	0	3	15
Peacock	7	12	0
Goldfish	10	10	0
--If Goldfish, include a plan to review and refine targets and model	19	3	0
Prefer Peacock to Goldfish	5	10	1
Prefer Goldfish to Peacock	5	15	0

Further comments by attendees:

1. Stakeholders need to see the results of the PLSM tweaks to determine if comfortable moving forward with it.
2. Regressions need to be scientifically defensible.

Project Collection

Cathy provided a status on project collection efforts. She stated that project requests were emailed on April 17, 2017; a master project list was prepared based on responses and projects funded via LRPI over the past 20 years. She emailed this list on June 23, 2017, and received feedback from only one stakeholder, Town of Jupiter. The current master project list contains 101 projects, 33 of which are classified as restoration projects; 18 as stormwater system upgrades; and 16 septic to sewer conversions involving thousands of septic systems. She stated that input is still needed from several stakeholders (e.g., Palm Beach County, Jupiter Inlet District, Tequesta, and Northern Palm Beach County Improvement District [NPBCID]). She will add the projects recently provided by the Florida Department of Transportation (FDOT) and route the list again to all stakeholders for review. She requested that the stakeholders provide missing information, such as estimated reduction credits, if available.

Recap

Tiffany recapped the list of concerns, PLSM tweaks, and questions (below).

Questions

1. How to calculate septic loads and project benefits?
2. How much would it cost to revise the chlorophyll *a* target?
3. How do the predicted loads in the PLSM drive the predicted chlorophyll *a* concentrations?
4. Can you run the model for each WBID?
5. PLSM questions

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- a. WBID-specific analysis (not PLSM, but related).
- b. No groundwater-baseflow specified.
 - i. Review USGS publications on groundwater inputs, which would provide a sense of the magnitude/importance of groundwater-base flows (Albrey offered to provide references).
- c. Soils—residual/legacy loads an issue?
- d. Are internal nutrient loads from muck an issue (potential project)?
- e. Must be scientifically defensible.
- f. Consider running regressions with AGMs, not AAMs (not PLSM, but related).

Next Meeting

The next meeting will occur on Monday, September 25, 2017, at The River Center in Jupiter, Florida.

Adjournment

The workshop concluded at 12:15 PM.

Action Items

The workshop resulted in the below list of action items.

1. Julie/Cathy: Post the final PowerPoint presentation, DEP handout, Martin County written comments, and meeting summary on the DEP public access site.
2. Julie: Post the PLSM workbook on the DEP public access site.
3. Julie: Coordinate completion of tweaks to PLSM.
4. Julie: Post regression analyses with explanation.
5. Tiffany: Obtain U.S. Geologic Survey (USGS) publication on groundwater/base flows from Albrey.
6. Cathy: Update master project list and send out for stakeholder review. Send along the RAP boundary map, BMP efficiency handout, and any other information that will inform the stakeholders on how to provide missing project information.
7. Tiffany: Coordinate with Kathy LaMartina for placement on the September 25, 2017, LRMCC agenda.
8. Julie: Determine if DEP will conduct a public meeting in Jupiter on October 30, 2017.