Indian River Lagoon (IRL) Basin Management Action Plan (BMAP)
Webinar Summary
Tuesday, August 25, 2020
1:30 pm – 4:13 pm

Participants (~134)

Holly Abeels, UF
Susan Adams, Indian River County
Carolina Alvarez, Brevard County
Crystal Anderson, Florida Senate
Jennifer Artiles, E Sciences Inc.
Christian Avila, Citizen
Lisa Bally, E Sciences Inc.
Virginia Barker, Brevard County
Venetia Barnes, City of Fort Pierce
Connie Becker, DEP
Elizabeth Belk, EPA
Mark Bondy, Citizen
Laura Bosworth, Florida Forestry Association
Del Bottcher, Soil and Water Engineering Technology Inc.
Katie Bowes, Martin County
Jessica Bruso, City of Cocoa Beach
Stacy Burke, Volusia County
Vincent Burke, Indian River County
Tammy Bursick, City of Vero Beach
Tiffany Busby, Wildwood Consulting
Lauren Campbell, DEP
Tom Carey, Volusia County
Jean Catchpole, Citizen
Stacy Cecil, DEP
Eric Charest, Indian River County
Carolin Ciarlariello, DEP
Kloee Ciuperger, Martin County
Susan Cocking, Citizen
Bryan Corrigan, Florida Association of Mitigation Bankers
Randy Coslow, City of Edgewater
Anne Cox, Citizen
Graham Cox, Citizen
Kevin Coyne, DEP
Allison Crow, FDOT
Chantal Cudre, Citizen
Sara Davis, DEP
Greg DeAngelo, DEP
Brenda Dewees, City of Edgewater
Jacob Dimond, Florida Senate
Mark Dixon, United States Air Force
Doug Durham, NASA
Jim Elmore, City of Rockledge
Yesenia Escribano, FDACS
Julie Espy, DEP
Paul Fafeita, Citizen
Chris Fagerstrom, Environmental Consulting & Technology Inc.
Laurie Fisher, United States Air Force
Marcy Frick, Tetra Tech
Jessica Frost, SFWMD
Nathan Gavin, SFWMD
Patricia Gertenbach, E Sciences Inc.
Jim Glass, Citizen
Tim Glover, Friends of St. Sebastian River
Erin Grall, Florida House of Representatives
Tim Grigsby, Citizen
Rebecca Grohall, MBV Engineering Inc./St. Lucie Economic Development Council
Sarah Grosmaire, FDACS
Karla Guerrero, United States Air Force
Kimberly Haigler, City of Sebastian
Lauren Hall, SJRWMD
Hugh Harling, East Central Florida Regional Planning Council
Madeline Hart, FDACS
Kenny Hayman, DEP
Janet Hearn, Applied Technology & Management Inc.
Eugene Henry, Citizen
Tyna Hilton, City of Edgewater
Marion Hopkins, EPA
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Jodie Hutchins, SFWMD
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John Konkus, AECOM
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Dan Lamson, Citizen
Julianne LaRock, SFWMD
Margaret Lasi, SJRWMD
Roy Laughlin, Citizen
Zachary Leibowitz, Applied Ecology Inc.
Ivette Leiva, FDOT
Paige Lester, Indian River County
Cindy Lieberman, Brevard County
Claudia Listopad, Applied Ecology Inc.
Arthur Litowitz, Citizen
Art Lorenz, United States Air Force
Jennifer Mathia, Citizen
Michael Mccabe, Melbourne-Tillman Water Control District
Keith McCully, Indian River County
Bryan McDonald, Water & Air Research Inc.
Kelli McGee, Riverside Conservancy
Sarah Menz, DEP
Alexis Miller, City of Satellite Beach
Jan Miller, SJRWMD
Keith Mills, City of West Melbourne
Abigail Morgan, City of Cocoa
Lori Morris, SJRWMD
Angela Morrison, Earth & Water Law
Tony Norris, Citizen
Edward Northey, FDOT
Stacey Ollis, SFWMD
Christina Omran, DEP
Judy Orcutt, Citizen
Ximena Pernett, NorthStar
Sara Phelps, Environmental Consulting & Technology Inc.
Nicolas Pisarello, ATM
Robert Potts, E Sciences Inc.
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Jeff Ratliff, City of Cape Canaveral
Sandra Reller, City of Titusville
Scott Reynolds, Indian River County
Serina Rocco, FDACS
Nicolas Rojas, City of Fellsmere
Will Rice, Indian River County
Frank Sakuma, Special District Services Inc.
Ted Saltos, DEP
Portia Sapp, FDACS
Todd Scaldo, City of Indian Harbour Beach
John Schrader, DEP
Matthew Scripter, Ecological Associates Inc.
Patrick Shearer, E Sciences Inc
Kevin Shropshire, City of Rockledge
Sharon Simington, Mead & Hunt
Mailin Sotolongo Lopez, DEP
Robbyn Spratt, Brevard County
Don Stanton, Citizen
Sharon Stewart, Florida House of Representatives/Rep. Erin Grall
Brian Sullivan, Indian River County
Richard Szpyrka, Indian River County
Patrick Tara, INTERA
Rachel Vitek, E Sciences Inc.
Kaylene Wheeler, IRL NEP
Chris Williams, DEP
Katie Britt Williams, Hydro Solutions Consulting LLC
Gregory Wilson, Citizen
Richard Winger, Citizen
Louiza Wise, Citizen
Skip Wood, Citizen
Mark Yanno, Citizen
Kelly Young, Volusia County
Wayne Young, Citizen

The full webinar recording and supporting materials are posted to the Florida Department of Environmental Protection (DEP) file transfer protocol (FTP) site at http://publicfiles.dep.state.fl.us/DEAR/BMAP/IndianRiverLagoon/Meetings/Lagoon-wide/2020_08_Update/.

Questions and Answers

Part I

Question: Do any of the panelists think any subsegment shows any significant seagrass recovery in the Segment B portion of the North Indian River?
Answer: The seagrass analysis for 2020 is still an ongoing process. Once the results of the analysis are released in December, DEP can determine any significant seagrass recovery or need for improvement. There will be more information pertaining to this analysis at another public meeting tentatively scheduled in the next few months. Also, the water management districts' 2019 seagrass maps showed the lagoon reaching 42 % of the maximum seagrass extent recorded in 2007.

Question: How does the "muck" distribution throughout the IRL affect the seagrass expansion?
Answer: Muck is an important contributor for the inability of seagrass regrowth. DEP has a specific policy to credit the removal of muck from the Indian River Lagoon. There have already been efforts made to remove muck from the bottom of the lagoon. Muck inhibits habitat expansion as well as contributes nutrients to the water column through a process called fluxing. DEP is looking at muck as a potential source of significant nutrient loading. However, removing muck is only a temporary fix for some areas since there is a continuous supply of muck coming from the watershed. A goal would be to have significant watershed efforts to prevent new muck and future issues. DEP credits muck removal on a provisional basis in its credit guidance policy developed for IRL BMAPs. Some items that need to be present for muck removal to be credited include control measures that already exist to prevent excessive muck accumulation. An entity may lose credits if muck continues to accumulate.

Question: Regarding the basinwide sources - will there be a percent contribution determined for each source in the Central IRL (CIRL) – B?
Answer:
The recently passed Senate Bill 712 (2020) contains a provision related to identifying basins with at least a 20 % percent contribution of loading from wastewater sources, so there is an effort related to that. Outside of this, there are no specific efforts being made to look at the percent contribution from each source category. However, the allocation process does implicitly address the contribution from difference sources, such as agriculture.

Question: Do the use of gasoline equipped boats/vessels impact seagrass health?
Answer: When a mechanical vessel propels through a seagrass bed, this can potentially disturb or destroy seagrasses creating less viable seagrasses to measure. However, the number of destructive events caused by vessels to seagrass beds cannot be determined accurately or related to nutrient loading and total maximum daily loads (TMDLs).
Additional note: *there are not a lot of data available on how trace hydrocarbons, like gasoline or oil from motorized engines, impact seagrass health. It may be a good research topic to suggest to one of the academic institutions in the area to help build that body of understanding.*

Question: Will seagrass information be available for smaller geographical areas such as the City of Vero Beach in Indian River County?

Answer: The water management districts produces seagrass data in one of two forms. The first form is a map showing seagrass locations and regrowth in a polygon shape. These maps can be zoomed into by a geographic information system (GIS) program to exhibit seagrass health on a local scale. The other form is transect maps that are made twice a year in summer and winter. These can also be zoomed into on a local scale. However, these maps can only show data collected 100 meters perpendicular to shore in scale.

Question: Is the most effective source reduction strategy for municipalities a composite with stormwater, septic, and wastewater treatment?
Answer: Yes. In fact, the BMAP and allocation process addresses as many sources as possible. Given the size of the IRL basin and its tributaries, no single source can be reduced and held to the expectation that TMDLs and seagrass regrowth measures will be met.

Question: Have there been any improvements in water quality in the IRL since BMAP implementation?
Answer: The second part of the meeting today will show the results of water quality data collected and analyzed by the (St. Johns River) water management district. The beginning of 2020 has been relatively dry up until the start of the rainy season. The district noted some improvements in water quality in that dry period. Although for the Indian River Lagoon, it is too early to tell if there is a correlation between nutrient loading varying from year to year due to precipitation.

Part II

Question: Going back to last slide (slide 53) does red arrow indicate a trend down?
Answer: No. The red arrow indicates when the rains started in May and when the pumping increased because there was sufficient water to pump. Without rain, there isn't enough water in the canal for the pumps to operate sufficiently.

Question: What are the flow-weighted mean total phosphorus (TP) and total nitrogen (TN) concentrations of the water moved to the west?
Answer: I (Chuck Jacoby) am not sure of those calculations, but I can send the St. Johns River Water Management District (SJRWMD) data to you through one of the DEP staff on this webinar once available (send to Nenad Iricanin, South Florida Water Management District [SFWMD]).

Question: How much water was moved west to account for the nutrient reductions shown in the presentation?
Answer: This information is available from Chuck Jacoby at SJRWMD.

Question: Chuck, there has been a dense and persistent algae bloom off Cocoa and Rockledge. Was that shown in your slides? The water has been cloudy all summer, but this bloom is killing fish in some areas. I'm talking about a bloom in the past 2 weeks.
Answer: The Cocoa/Rockledge area shows up in the chlorophyll-a data for sure. That area has been one of the problematic areas. There were dips in dissolved oxygen in that area. The data that were shown on the charts were through August 20, 2020, so recent data were included.

Question: Is the diversion doing any reclamation?
Answer: I'm not quite sure what reclamation means there. The water does assist the St. Johns River in the sense that the river normally would have received that water. The diversion does two things—the diversion takes water out of the IRL and also puts it back in the St. Johns River where it belongs.

Question: Could you explain where the original starting load of 400,000 came from on the revised allocation slide?
Answer: This number comes from the Spatial Watershed Iterative Loading (SWIL) Model. It is the output number after the iterative loading goes through its paces. It considers precipitation, land use, soils, among other parameters to give the load per acre per year value of the 50-by-50-meter raster square that the model produces. The squares are then overlaid with the entity and segment boundaries that were provided by stakeholders during the individual allocation meetings with DEP staff. We recalculate the acreages as many of the 50 x 50-meter raster squares have been broken apart. We then multiply the SWIL value by each new acreage value, this results in the load per year (the acres cancel out). The sum of these loads from each piece can then be derived for each entity, segment group, project zone, or BMAP as a whole, depending on which level we are interested.

Question: Would you be able to provide all the formulas?
Answer: Yes, the spreadsheets are available on request. These will be posted on the FTP site in the next couple of days along with the recording of the webinar.

Question: The adjusted starting load for the Air Force dropped a huge amount in the revised. Why?
Answer: Hi, Mark. The loads are impacted by many things such as reassigning areas included in the starting loads, any boundary adjustments, or the diversion project that Stacy mentioned. We will provide all the files on the FTP site so the exact reasons can be better understood.

Question: Slide 72 shows the process to adjust the allocations. If the goal is to correct impairments/reduce nutrient pollution, shouldn't we keep the standard allocation and apply adjusted allocations once significant water quality improvements are documented (i.e., after a 3-5-year review)?
Answer: There are a lot of factors involved in processing these allocations. As was stated in Part 1 of this webinar, there is an adaptive management approach to all BMAPs. There are going to be some adaptations now during these updates, as well as in the future. For example, there are some new requirements coming to all BMAPs that are due by 2025 (from the revised Senate Bill 712 [2020]). Some of the adjustments that we're making are because of anticipated future adaptations. They're also done to help alleviate some of the questions and concerns that we got about how we're calculating things with the rule language that we're working with and the more recent model. We could have approached it either way, but since we know there is some adaptive management coming we're anticipating future changes to things.

Question: How do we access the allocation charts shown in the presentation today?
Answer: These charts will go on the PDF along with the recording of today's webinar on the FTP site for the DEP publicly accessible files. The breakdown of each individual stakeholder's

allocation and other calculation methodology will be on the FTP site as well within the recording of this webinar.

Question: What about the water improvement districts? Curious about Sebastian River Improvement District.
Answer: Currently within the allocation charts, the Sebastian River Improvement District is grouped with the other water control district allocations for CIRL Project Zone SEB and has qualitative allocations as well.

Question: What is the required timeline for municipal plans to address BMAP guidelines? Is this a dynamic process?
Answer: The original BMAP that was established in 2013 has a 2028 timeline, and we will be talking more about the timeline in the next couple of slides. Stacy asked for feedback through the poll available as a handout on whether a 2030 timeline achievable and what percentage of the reduction is achievable in the next 5 years.

Question: When will these data be available for review?
Answer: The data and supporting information will be posted on the FTP site.

Question: Can the FDEP explain how natural lands outside a corporate boundary can be assigned to that municipality?
Answer: Natural lands are not specifically assigned to any municipality or entity. The percent reductions specified by the TMDL rule language for each segment apply to <u>all</u> lands within the segment. Since entities are not directly responsible to reduce loading from natural lands, those necessary reductions are made up within the anthropogenic lands.

Question: The comments you are requesting by September 9th, is this in addition to the Stormwater Rule comments Tracy Woods is requesting by October 1st?
Answer: Hi, Robbyn. Yes, these comments are specific to the questions on the survey in the handout. There are other programs at DEP seeking feedback on other efforts.

Question: How will compliance be achieved for TMDL's?
Answer: The compliance for the IRL BMAPs is based on seagrass evaluation results done every two years. DEP is using the two-step evaluation process as mentioned in the beginning of this webinar. To meet seagrass regrowth requirements, required reductions are included in the TMDL rule language to get to the necessary water quality conditions for restoring historic seagrass depth limits within each BMAP. Compliance is met through meeting those conditions and results.

Question: Can the DEP clarify if reduction targets are being assigned on a date certain? When would a plan to address reductions be due to DEP?
Answer: More feedback from stakeholders has been requested since the timeline and information needed in the IRL 2020 BMAPs are expected to change since the original 2013 BMAPs. Some entities are planning long-term for their bigger load reduction projects. The handout survey presented in today's webinar will help DEP understand the timeline for entities, since some of them are planning big, capital projects that cannot be completed and operational within five years. Entities are required to meet their reductions, and DEP wants to ensure that the

BMAPs are working towards those goals but not expecting things that are not feasible. Please use the handout in this webinar or contact DEP staff if you have questions.

Question: What response has been received already from the entities? Are the drafts expected to be implemented in the current form? Is the draft timeline now appearing to be practical on the basis of work to date?
Answer: Although DEP has not received a lot of feedback yet from entities on their project draft timeline to meet their reductions, we have received supplemental project information as of the August 21st deadline.

Question: What if we all achieve our required reductions, but the seagrass does not come back?
Answer: This question is asked a lot since we are estimating project and load reduction benefits to the environment. A lot of the numbers are not exact because we use estimates. In the monitoring section of the BMAP, we include a lot of research priorities—on which we recently asked for feedback—so that we focus state resources on the right kind of work and we have information to better understand why seagrasses occur in the IRL the way that they do. If we see a lot of nutrient reductions but without seagrass recovery, we can adapt based on the research results. It is a matter of continuing to work and learn about how seagrass responds. On top of that, things change with weather and climate too and we have to consider those changes as well. There is a lot of work by the SJRWMD and other folks on the dynamics of the IRL; it is a complex system. Overall, the research priorities and the adaptive management process are how we handle unexpected responses of seagrass.

Question: What happens if the TMDL allocations are not met for seagrass health?
Answer: The BMAPs will continue until the TMDLs are met. The adaptive management process plays into that, and the state will continue to focus efforts (staff resources, funding, research, etc.) to address the underlying reasons why the seagrass is not recovering. This is one reason why the BMAP monitoring sections include research priorities, and these are intended to feed adaptive management for this complex system so that we're spending resources wisely.

Question: Based on slide 44, could you please clarify if projects outside the SWIL are still applicable for nutrient reduction credit?
Answer: The proposed new BMAP boundaries are on the FTP site. We plan to include projects within those areas.

Question: There is an algae covering areas that once was covered with seagrass. Will this algae prevent seagrass growth?
Answer: This question was inadvertently missed during the live webinar, and DEP is contacting the attendee directly to provide further information.

Question: Chuck, how do you determine the sea grass recovery, by aerial photography? If so, how do you differentiate between area covered by algae (which looks like sea grass) vs. actual sea grass?
Answer: The differentiation is through ground truthing and quality control sampling. Basically, if there are questions or uncertainties, the SJRWMD goes out and checks.

Question: Based on various muck studies, the major component of muck are aluminosilicates? I was part of the original muck study group out of the Florida Institute of Technology (FIT), so I am very familiar.
Answer: Most of the seagrass studies for the lagoon are led by the SJRWMD. For anyone who is interested in these types of details, we can help setup discussions with the SJRWMD, as needed.

Question: What are the uncertainties inherent in the SWIL model? Are those uncertainties accounted for in these calculations?
Answer: For anyone interested in the SWIL, there are several files for supporting information on our ftp in the folder,
http://publicfiles.dep.state.fl.us/DEAR/BMAP/IndianRiverLagoon/Models/SWIL/.