



FLORIDA DEPARTMENT OF Environmental Protection

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September 23, 2022

Rashid Z. Istambouli, P.E., Interim Director
Division of Environmental Resources Management (DERM)
Miami-Dade County Department of Regulatory and Economic Resources (RER)
701 NW 1st Court – 4th Floor
Miami, Florida 33136

Dear Mr. Istambouli,

The Florida Department of Environmental Protection (DEP) supports and encourages local stakeholder-driven restoration processes such as Reasonable Assurance Plans (RAPs) and pollutant reduction plans. DEP believes that these plans offer an effective and often faster pathway to water quality restoration than the state driven total maximum daily load (TMDL) process. DEP commends Miami-Dade and other local stakeholders' efforts to restore Biscayne Bay through the RAP process. You should be commended for making progress in a short period of time. DEP supports the continued efforts to develop a RAP for Biscayne Bay.

While we acknowledge this progress, DEP must evaluate the draft RAP through the lens of the law, state rules, and the federal Clean Water Act. Specifically, subsection 62-303.100(5), Florida Administrative Code (F.A.C.) states that *pursuant to Section 403.067, F.S., impaired waters shall not be listed on the Verified List if reasonable assurance is provided that, as a result of existing or proposed technology-based effluent limitations and other pollution control programs under local, state, or federal authority, they will attain water quality standards in the future and reasonable progress towards attainment of water quality standards will be made by the time the next section 303(d) list for the basin is scheduled to be submitted to EPA*. This requirement is further clarified in subsection 62-303.600(2), F.A.C., that states the department's decision to not list a waterbody on the Verified List *shall be based on a plan that provides reasonable assurance that any proposed pollution control mechanisms and expected improvements in water quality in the water segment will attain applicable water quality standards*. Thus, DEP must first conclude that a proposed RAP provides reasonable assurance that water quality standards will be attained within the agreed upon time before approving a RAP and placing a waterbody in category 4b (Impaired for one or more designated uses but does not require TMDL development because the water will attain water quality standards due to existing or proposed measures).

As explained in our comments below, DEP concludes that the September 2022 draft of the Northern Biscayne Bay Phase 1 Reasonable Assurance Plan does not provide the required reasonable assurance. The lack of reasonable assurance is made clear when Tables 4-10 and 4-11 are compared to Table 4-12. The required load reductions for Phase 1 (112,890 lbs TN/yr and

2,976 lbs TP/yr) from the RAP study area to meet NNC targets are substantially greater than the anticipated project load reductions (9,914.1 lbs TN/yr and 1,723.2 lbs TP/yr). DEP must evaluate the Phase 1 RAP on its own merits. The promise of expanding the RAP in future phases cannot be used to provide reasonable assurance for the current phase. DEP remains committed to working with stakeholders on the RAP and hopes that our comments do not discourage the refinement and expansion of the RAP. We understand that the county wants to submit a revised Phase 1 RAP by September 30, 2022; however, we are concerned that there is insufficient time to address DEP's comments. DEP suggests that the stakeholders reevaluate the overall schedule and consider developing Phases 1 and 2 as one combined phase.

DEP would like to reiterate that RAPs must meet the requirements outlined in EPA's nine elements of a Watershed Restoration Plan guidance. Comments are provided in this letter and are noted through comments using the track changes feature included in the Word document sections provided for DEP's review. DEP reviewed some of the TN and TP reductions for the proposed projects, but because of time not all the project calculations were reviewed. The absence of comments on some projects does not indicate that DEP has accepted all submitted reduction amounts.

1. The rules that are cited in section 2.1 regarding the water quality criteria should be updated to include Rules 62-302.532 and 62-302.533, F.A.C.
2. "RAP Phase 1" and "RAP Study Area" are used interchangeably throughout the document to reference the same area. DEP recommends using consistent terminology throughout the document to avoid confusion.
3. There appears to be discrepancies in the years used for reference/analysis for different considerations (e.g., 2018-2020 is the timeframe referenced for the report card, 2015-2021 the Millete et al. period, chlorophyll *a* concentrations are reported for 1995-2014, and the analysis in 2.5.3 is for 2015-2021). Suggest either explaining the discrepancies and how they work together or using the same period for reference and analysis.
4. Please update the headers for table 1-1 to "EPA Integrated Report Assessment Categories." If needed, a full table of assessment categories is available on [DEP's website](#).
5. In section 2.2, please include the cycle number of the assessment when the bay was initially listed as verified impaired (Group 4, Cycle 3). Additionally, in the same section please include an explanation that the WBID boundaries have been revised from WBID 3226H to 3226H5 and 3226H6.
6. DEP agrees that as mentioned in the draft report, comprehensive calibrated models will be needed in future phases that consider all external and internal loading sources within a complex system of Biscayne Bay with ground water inputs and tidal influences.
7. Page 2-24. Please provide the basis for 1,500 feet and discuss the potential error associated with the fact that OSTDS locations in the database are based on the property centroid and not the actual location of the OSTDS. The number of OTSDSs that are potentially overlooked given the locational uncertainty is unclear.

8. Page 3-1, Table. 3-1. There are two sets of numbers provided in the table. Please clarify whether one set is for the C-7 and the other for the C-8. It may be helpful to break the time periods out based on the pre- versus post- NNC reference period (1996 to 2008) or show concentrations for the reference period. There is an assumption that the loads entering the bay during the reference period are inherently protective. Please address whether concentrations have increased since the reference period.
9. Page 3-2, Table 3-2. The long-term geometric mean is not a component of the NNC. It was just used to calculate the NNC.
10. Page 3-7. The document states that a sudden die-off of seagrass (a loss of 1,300 acres or 77%) in this area was observed from 2013-2016 as shown in Figure 3-6. A review of historical data for two water quality stations in the basin showed peaks in phosphorus in 2014 and 2015, and the highest average of chlorophyll *a* was also documented in 2014. Please summarize the nutrient and chlorophyll *a* concentrations during and before this period and how they compare to the NNC. Additionally, please address if there was a trend in TP and chlorophyll *a* leading up to the die-off. The RAP assumes that the NNC are protective of the seagrass; however, evidence is provided that suggests seagrass declines began in the period shortly after the NNC reference period. This scenario leads to the question of whether the NNC are protective? An analysis of nutrient levels before and during the die-off is needed to address this question.
11. Page 3-8. The RAP needs to clearly state the restoration targets (seagrass goals and targets). It also needs to provide empirical relationships between nutrients and chlorophyll *a* and seagrass. DEP cannot determine whether the RAP will restore the designated uses of the bay without reviewing and understanding the targets, seagrass in this case. Additionally, we can not determine whether the NNC are sufficient to protect the targets.
12. Page 3-10, Table 3.3. Explain why the WASP model chlorophyll *a* targets are higher than the NNC. The years in the table should overlap the period (2013-2016) of seagrass die-off to help demonstrate the protectiveness of the chlorophyll *a* targets.
13. Pages 2-6 and 5-6. Please provide additional documentation on the derivation and ecological basis for the report card metrics. "Limited function" sounds like impairment of designated use. Note: DEP classifies Biscayne Bay as a Class III waterbody, which has designated uses of Fish Consumption; and Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife. This contrasts with Class III-Limited with designated uses of Fish Consumption; Recreation or Limited Recreation; and/or Propagation and Maintenance of a Limited Population of Fish and Wildlife. Please consider including a clarification of what is meant by "limited" and how it may relate to designated uses.
14. Page 5-8, Table 5.5. Please include the specific values for the 25th percentile, long-term limit, and upper limit.
15. Page 5-8, Table 5.6. Please list the baseline turbidity value.

16. Page 5-8. There are two components of the FIB criteria: TPTV and monthly geometric mean. The TPTV should be evaluated as an exceedance frequency, while the geometric mean should be evaluated against a monthly geometric. Both parts must be assessed to determine bacteria impairment using the applicable statistic.
17. Page 5-9, Table 5-7. DEP seeks clarification on the scoring, including both parts of the criterion.
18. Page 5-11. Results of the Phase 1 RAP monitoring and assessment should be reported to DEP on an annual basis. The report should include an evaluation of the attainment of water quality criteria and not just the report card metrics.
19. Page 5-11. Please provide more information on the trend analyses, including statistical test that will be used. Additionally, trend analyses should be conducted on the bay segments as well to track progress on the RAP.
20. Page 4-20. Please identify the start or completion dates for the “eligible” projects, counted towards the load reductions. For completed projects, DEP cross checks that the projects are completed after the cutoff date. For planned and underway projects, DEP uses the completion date as the implementation schedule to track compliance.
21. Page 4-18. Near the end of Section 4.2.1.8.3, there is a typo in the Miami-Dade public education credits narrative—it should read “5.25%” (which is how the efforts add up and how the credits were calculated) and not “4.25%.”
22. Page 4-12. There is no summation of the unincorporated Miami-Dade starting loads from BMP Trains Baseline to cross check with the starting loads used for the public education credits.
23. Page 4-16. The Project Status “Ongoing” is not an eligible status for Exfiltration Trenches. Planned, Underway, or Completed should be used and a completion date provided.
24. The narrative in 4.1.2.1 notes that “The standard County exfiltration trench detail is used when design information was not available.” Usually, the project-specific information is provided; for projects that are conducted within the last 5 years, this information is usually available.
25. DEP reviewed some specific projects as an initial spot check but not all the project calculations were reviewed given the short review time and the delay in receiving modeling files (i.e., ArcNLET spreadsheets were transmitted to DEP on 9/16/22). The absence of comments on some projects does not indicate that DEP has accepted the credit amount. DEP will need additional time to review the project crediting.
26. Four of the 15 Miami-Dade septic-to-sewer projects (Table 4-7) were excluded from the reduction summary in Table 4-8 because, “The projects that are not included in Table 4-8 are too far (beyond 1,500 ft) from the water bodies to provide any significant nitrate load reduction.” However, even with those exclusions, four projects are listed with (very small) reductions that are also noted that they are more than 1,500 feet from surface water bodies

(projects with PCTS IDs with no footnote). The ArcNLET results should be carefully reviewed for these four projects.

27. Verification info was entered for 14 Miami-Dade exfiltration trenches. Method and calculations work but all reviewed trenches are same pipe span, pipe depth, trench width, trench depth. Trench length does vary. In many cases the DCIA and NDCIA curve numbers are the same with few exceptions. Please provide a justification for these numbers being the same.
28. Projects MDC-25 and -26 have the exact same treated acres. Please confirm that this is correct.
29. ArcNLET Question: More information is needed on the range of hydraulic conductivity and the units utilized. The range listed on Tab A of the checklist is 2,219 - 23,606 feet/day based on the USGS Urban Miami Dade Model. In the Loxahatchee, a range of 0.07776 to 18.144 was used, by comparison.
30. ArcNLET Question: More information on the uniform horizontal dispersivity (Tab D) of 1.97 is requested. By comparison, the Loxahatchee projects used 0.234.
31. There is mention of the MS4 Tool; however, it is unclear how credits for street sweeping and BMP cleanout were calculated. In BMAPs, reductions are based on a three to five-year average and only updated when there is a change in effort or equipment.
32. Miami-Dade has quantified three projects that are “pilot projects” for Stormwater – Biological/Bacteria Treatment. This is a provisional project type that requires a lot of supporting information to quantify credits. To date, DEP has not credited any projects of this type.
33. DEP calculations for public education credits for Miami-Dade are -1,080 lbs TN /yr and -214 lbs TP/yr of the listed amounts. DEP used the treated starting loads for the public education calculations. It is possible that the RAP used the untreated loads—that could explain the difference. But if the baseline loads are treated and lower, those loads should be used for the public education/ordinance credits.
34. Calculated load reductions based on eligible projects are far below the calculated required load reductions for the Phase I RAP study area. Please address how this difference will be addressed and reasonable assurance provided that this Phase 1 area will meet water quality standards.
35. Section 5.3, Since trends are being looked at and comparisons with historic timeframe data, please provide rules about handling changes in MDLs and monitoring sites/frequency.
36. A corrective actions process is not defined sufficiently in section 6.3. Steps for tracking progress are independent of required adaptive management (if necessary). The bullet points outlined in 5.3 describe how progress is going to be tracked should be included in this section. Also, reiterate that this process will be conducted on an annual basis. Need to define stakeholder actions.

37. Septic system removal projects appear to have overestimated load reductions. The setup of ArcNLET did not use the default values, and the values that were used resulted in higher nutrient inputs and lower attenuation than the model defaults, resulting in unrealistic model behavior. Please provide supporting documentation for the ArcNLET assumptions and how the results reflect the measured concentrations.
38. The draft report stated that the starting concentration of 20 mg/L was obtained from the nutrient loading study in Brevard County where the model has been calibrated; however, nitrate concentrations in the nitrate plume shown in Figure 2-18 show more than 20 mg/L (some 51 to 75 mg/L) in some areas of the plume. The ArcNLET will likely need to be calibrated to the watershed in order to generate a reliable loading estimate.
39. The WASP model does not have appropriate gridding, timestep, or mixing mechanics. Therefore, no demonstration can be made that the projects or the reduction goals identified in the plan will support healthy water quality in the bay. For a RAP to be approved, it must demonstrate that the projects identified are sufficient to restore water quality in the receiving water. Without a more comprehensive model set, the RAP cannot make this demonstration.
40. The BMPTrains model was set up with a one-year rainfall (58 inches) for Biscayne Bay RAP. In general, multi-year hydrology simulation capturing dry and wet years may be needed to represent a worst-case scenario for the bay. With the current setup, hydrology and water quality simulation for the C-7 and C-8 watersheds were not performed to calibrate the model with any observed data at this time of review. Please provide supporting documentation to demonstrate that the modeled loads reasonably reflect the measured data.
41. The C-7 and C-8 canals are believed to be the most significant major transport pathway for nutrients to the RAP study area. However, other important sources of loading were not input into the models including direct atmospheric nutrient deposition to the bay, internal loading within the canal and bay, and direct groundwater inputs from the Biscayne Aquifer to the bay remain unknown during this phase of RAP. Excluding these potential sources of nutrients raises the possibility that the overall nutrient budget may not be complete.
42. TN and TP loads delivered to the C-7, C-8, and Biscayne Bay were estimated by BMPTrains after BMP removal to be 136,251 lbs/yr and 20,653 lbs/yr, respectively, and these estimated loadings were considered as a baseline for RAP. These TN and TP loads were not used for WASP water quality simulation for a baseline condition of the bay. Instead of inputting the BMPTrains results to WASP, the observed gauge flow and concentrations were used for WASP boundary to the bay. This means that there is no connectivity between BMPTrains and WASP, and as a result, any responses to the updates on BMPTrains for the watershed will not be able to be seen in the bay using WASP.
43. No boundary for DO was established for the WASP model. The DO in the bay needs to be simulated since DO is a primary response variable. The proposed DO result from WASP for RAP was a DO level of 3.1 mg/L for the reduction condition as shown below, which means that the DO level under the reduction condition is lower than a baseline condition, resulting in the creation of a DO impairment in the bay.

44. The model applications during Phase 1 appear to be preliminary screening models used only to establish the required reductions for septic systems and stormwater runoff loadings to meet the model screening chlorophyll *a* goal. As mentioned in the draft report, comprehensive calibrated models will be needed in future phases that consider all external and internal loading sources within a complex Biscayne Bay system with groundwater inputs and tidal influences. DEP encourages the applicants to setup this complex model set with a finer timestep to increase the accuracy of the model predictions. In addition, modeling more of the watershed would make the overall simulation more accurate. The current model set would be more appropriate to support a 4e plan at this time. There would need to be additional model complexity to support a RAP (4b) approach.

DEP believes that supporting water quality improvement activities in cooperation with our local partners can enhance our ability to protect Florida's water resources. Stakeholder participation is a fundamental component in making natural resource management decisions. It leads to better outcomes and decision-making for the continued improvement of our water resources.

We thank the stakeholders for diligently working to develop the draft Phase I Biscayne Bay RAP and continuing your commitment to help protect Florida's natural resources. DEP will continue to assist the stakeholders in the development of the RAP with the expectation that with more modeling and more local projects, reasonable assurance will be provided that water quality standards can be met.

If you have questions regarding our review of the Draft Northern Biscayne Bay Phase I RAP, please contact me by phone at (850) 245-8469 or by email at Kevin.ODonnell@floridadep.gov.

Sincerely,

A handwritten signature in black ink that reads "Kevin J. O'Donnell". The signature is written in a cursive, flowing style.

Kevin O'Donnell, Program Administrator
Water Quality Evaluation and TMDL Program

cc: Kim Shugar
Ken Weaver
Adam Blalock