DATE: August 3, 2022  
TO: FDEP Biscayne Bay Commission, c/o Noah Valenstein, Chair  
FROM: Everglades Law Center and Miami Waterkeeper  

Subject: Comments for record pursuant to the Biscayne Bay Commission's  
July 27, 2022, public meeting.

This memorandum memorializes comments by the undersigned organizations for public  
record. Our comments pertain to the Commission's July 27, 2022, presentation on the  
proposed Miami-Dade County Reasonable Assurance Plan (RAP).

We are pleased to support the County and the Florida Department of Environmental  
Protection (FDEP) in the creation of a RAP that would address nutrient pollution in the  
Bay. The undersigned organizations understand the aggressive proposal timelines. We  
seek to work collaboratively with the County and FDEP on water quality improvement  
projects and management regimes that would improve the health of the Bay. Our  
comments are as follows:

Geographic Scope:

We believe that the scope of the initial RAP should, at a minimum, cover an entire drainage  
basin, such as the C-7 or C-8 basins, so that the scope of the RAP would fully capture and  
address pollutants entering Biscayne Bay from the entirety of a drainage basin.

The currently proposed scope of the initial RAP is aimed at addressing water quality issues  
only at the tail end of the drainage system where water quality has already been degraded  
from sources further upstream. Since the intent of the RAP is to provide “reasonable  
assurance” that the selected Water Body Identification number (WBID) will achieve water  
quality standards, we are concerned that focusing water quality efforts and projects only  
at the system terminus—where significant amounts of pollutants are already in the water—  
will not be sufficient to ensure that the water bodies meet water quality standards.

Structuring the scope of the RAP in this manner is essentially requiring municipalities at  
the east end of the system to not only improve the quality of water being discharged from  
their own municipalities but also to compensate for the pollutants being discharged by  
municipalities further upstream. Not only does this inequitably distribute the responsibility  
to reduce pollutant discharge, but it would also be incredibly difficult to achieve given the
pollutant load that often exists in the C-7 and C-8 waters at the time those waters enter the municipalities currently included in the RAP.

Pollutant Load Allocation Study

A complete and science-based pollutant load allocation study should be studied and quantified across the geographic scope and land uses of the entire County. This scientific undergirding should not be limited to just the geographic scope that is currently proposed.

Phasing

While we understand from the July 27th presentation that the scope of the RAP will expand geographically, we are still left wondering whether and how the scope will expand in terms of approaches to address water quality impairment. It appears to us that the proposed RAP focuses on construction projects, which we acknowledge are key, but should not be the sole approach in achieving water quality standards in the region.

We believe that future RAP phases should include and not be limited to: education and outreach and managerial or design changes to address nutrient loads from different sources, including cleaning and maintaining existing stormwater systems.

Our organizations do understand from the July 27 meeting that, with additional measurements and feedback, the RAP may be adapted (to reiterate, we understand that the geographic scope will eventually cover the county).

We request that the initial RAP include language assuring that the technical scope will contemplate expansion in future phases – as additional measurements and analysis occur and in the spirit of iterative improvement.

Establishing Numeric Nutrient Criteria (NNC)

FDEP has recently announced the initiation of a numeric nutrient criteria study to develop NNC in streams. As of right now, there is no intention to establish NNC in canal or man-made streams. FDEP representatives have mentioned in public presentations mentioned that stakeholders are encouraged to define them locally within a RAP.

Canal numeric nutrient criteria are vital in the Biscayne Bay watershed and will be of particular interest in the defined WBID for this initial phase of the RAP due to the Little River, which discharges water into Biscayne Bay. A significant portion of the nonpoint source nutrient loading in Biscayne Bay is facilitated by canal discharge and run-off from land-based sources of nutrients (Caccia and Boyer, 2007).

We are aware that due to time constraints, the likelihood of incorporating NNC in this phase of the RAP is unlikely. However, as discussed in more detail below, it is critical that
this RAP incorporate a schedule for future phases or refinements to ensure that the NNC within the Little River canal (C-7) and the adjacent canals (C-100, C-6, C-8, C-9), as well as specific loading targets developed to ensure compliance with the NNC, are integrated into the RAP in the near future so that they can provide an enforceable metric with which to define success criteria.

The study to define NNC for the Biscayne Bay canals should be comprehensive and incorporate the following considerations:

1. **Bottom-Associated Water Sampling for Phosphorus**

   The parameters of total phosphorus, dissolved oxygen, and chlorophyll-a, need to be collected closer to the bottom of the canals, especially during the wet season for future canal sampling.

   Within this watershed, the rapid uptake of phosphates by phytoplankton in oxidized water reduces the accuracy of the parameter so the full extent of its distribution is not understood. Phosphorus levels are detected at higher concentrations in upstream waters collected near the bottom of the water column, where it is often associated with hypoxic or anoxic conditions (Jones and Lee, 1982, Conely et al., 1995). This can be attributed to nonpoint source nutrient contributions from upstream sources, both natural and anthropogenically-derived, where organic phosphorus is stored in the sediment. The salinity control structures prevent continuous flow of the water, and instead retain the nutrient-rich, upstream water, allowing organic material to settle in the sediments and inducing anoxic conditions. The legacy organic phosphorus can be leached from these sediments in anoxic conditions. The subsequent pulse flow releases from the salinity control structures then flush the soluble phosphorus-rich water through the rest of the downstream system, particularly after rainfall events (Sharpley et al., 2013).

2. **Legacy Phosphorus Concentration Sampling in the Canal Sediment**

   Sediment sampling should be done throughout the canals, especially upstream near the salinity control structures, in order to characterize for legacy phosphorus concentrations. Legacy nutrients stored in the sediment can be remobilized continuously for years, or even decades, after initial introduction into the watershed (Sharpley et al., 2013). In certain urbanized estuaries, such as the Chesapeake Bay estuary, the dominant form of phosphorus was Particulate Phosphorus, which accounted for 23-90% of the total phosphorus concentration and was highest upstream (Conley et al., 1995). Portions of the particle-bound phosphorus inputs from land-based sources are accumulated in the sediment along the transport pathways from upstream to downstream (Sharpley et al., 2013).
Sediment sampling upstream, especially in the retention basins of each salinity control structure, for legacy nutrients would provide information on the locations of the phosphorus loading hotspots.

3. Time-Series Analyses for Improving Best Management Practices (BMP)

To ensure the efficacy of the RAP and associated nutrient reduction projects, lag time between parameters should be considered at both a seasonal scale and a long-term scale, especially when implementing new Best Management Practices (BMP) for restoring water quality. Water quality restoration projects in systems with nonpoint source nutrient loading often fail or are hindered by temporal delays that are caused by lag time between implementation of BMPs and detectable improvements (Liu et al., 2017, Dong et al., 2018, Meals and Dressing, 2010). The lag time is influenced by multiple factors, including parameter, scale and environmental conditions.

Using historical data, time-series analyses should be conducted to understand the lag times between dependent parameters, like dissolved oxygen-total phosphorus or total phosphorus-chlorophyll-a, to assess background variability and potential influences on the metrics, and to ensure representative synthesis of data for the purpose of establishing new NNC or success criteria.

Goals and Metrics

Goals should be clearly articulated (e.g., ecological recovery). Measurable success criteria should be clearly related to the goals (e.g., if the goal is ecological recovery, then metrics may be “at least x% seagrass coverage for y consecutive years”).

Considerations for lag time associated with water restoration projects, as reported in the literature, should be taken to prevent diminishing support from stakeholders while waiting for detectable improvements (Meals and Dressing, 2010).

Pollutant Load Reductions

The RAP should clearly explain the process and methodology used to determine the relative pollutant reduction contribution of each project included in the RAP.

RAP Schedule

There needs to be a clear schedule explicitly set out in the RAP for the identification and quantification of municipality-specific and/or sector and polluter-specific load allocations that, if complied with, would result in water quality standards being met.
The schedule in the RAP needs to include a schedule for additional work:

- to identify total allowable loads of each pollutant of concern (and precisely what pollutants are of concern will need to be identified in some cases if the water quality violation is for chlorophyll) in each WBID;
- to identify specific allocations of each total load for individual municipalities, individual polluters, general permit sectors, and/or nonpoint source categories of pollution; and
- to develop a process by which these individualized loads will be implemented, either by incorporation into permits for point source pollution (including municipal separate storm sewer system (MS4) permits) or by way of BMPs and/or other approaches for nonpoint source pollution. The process should include interim implementation strategies while specific allocations of pollutant loads are being developed.

Comments on County Work Order (No.: RAP-01-2022) / Task Authorization

Task 3.3: Proposed Actions

This section describes the development of an accurate list of proposed BMP and associated pollutant load reductions. This is important. Additionally, the RAP must also do the work of correlating pollutant loads to water quality impairment: that is, determining what total pollutant load for each pollutant of concern will allow for the relevant waters to meet their water quality standards.

Presumably to that end, this section also includes the task of determining the initial “baseline” load and seems to indicate that it will be done in a way that distinguishes “stormwater” (land-use) and wastewater (septic) loads – presumably determining an overall “load” for each of those two categories, though this is not entirely clear. It suggests that storm sewer overflows could also be calculated as a separate initial load category. It acknowledges that chlorophyll-a may be the violated water quality standard and determining a pollutant loading requires an analysis of the relationship between nutrient loads and responsive chlorophyll-a levels.

We emphasize that the consultant’s work should ensure the following key issues are either addressed as part of this phase of the RAP or that a schedule for the development of solutions to these issues is spelled out for future phases of the RAP:

- The RAP should distinguish among different categories of stormwater loading (either different municipalities and/or different categories of stormwater, such as construction, different industries, and municipal). Distinguishing “stormwater” and “wastewater” is not sufficient.
- The RAP should account for, and provide plans to ameliorate, septic leakage. Septic effluent can make its way into MS4 systems where it is combined with stormwater
discharges. We believe tracer studies should be conducted to assess loading of septic tank effluent migrating into stormwater systems and into the Bay and waterways tributary to it.

- The work plan indicates the consultant will “consider correlations among nutrients and chlorophyll to estimate the effects of the BMPs.” The RAP should also translate the chlorophyll standard into a total allowable pollutant load, or combination of loads of different nutrients; this work is implied in the Consultant’s Scope but is not explicit.

Task 3.4: Supporting Projects

This section suggests that load calculations from projects outside the scope (and presumably control) of the RAP will also be calculated.

- How would these potential/projected load reductions be considered, given that they are outside the scope and control of the RAP? We suggest this be clarified in CDM Smith’s work product.

Public Engagement

We have heard multiple presentations from State and County officials regarding the RAP in which the stakeholder-driven nature was emphasized. We agree that stakeholder engagement is critical to this project’s success. We anticipate that the public engagement aspect will be thoroughly clarified in the draft RAP due in August. Specifically, the Plan should denote the opportunities for public comment period along plan implementation waypoints. Materials related to the RAP should be posted on a publicly accessible website for the public to access at any time. The draft RAP anticipated in August should be posted for public comment.

Enforceability

The draft RAP should clearly cite legal mechanisms for enforcing the RAP and the plan for associated increases in regulatory capacity. Moreover, the FDEP should incorporate nutrient reduction load targets specified by the RAP into local NPDES permits.
In closing, we thank you for the opportunity to comment. We understand that this is not an easy process and wish to support you on the creation and implementation of a long-term, multi-phased Plan. Members from our organizations directly interface with the Bay and its stakeholders on a daily basis. Community members of all backgrounds are concerned about the health of Miami's aquatic treasure and thus contact us regularly for updates/information on what can be done to save the Bay. We would like to tell them that there is certain and sustained progress. We invite the Commission, the County, and FDEP to leverage the capabilities from the advocacy community, whose members include scientists, attorneys, and former environmental agency staff. We look forward to the FDEP and County in providing a thoroughly transparent, stakeholder-driven process to foster broad-based community support and ultimately usher in a game-changer for the Bay. Thank you for your leadership on this important endeavor.

Sincerely,

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References:


