Responses to Questions Asked During 10/1/19 Coastal Advisory Sub Committee Meeting

1. **How to develop uniformity of sampling frequency, parameters, sampling SOPs?**  Note: There are no regulatory requirements for ambient water quality sampling because all areas of Collier County have a Phase II NPDES permits which do not require water quality monitoring. Rookery Bay, on the other hand, must sample to maintain its National Estuarine Research Reserve status. Other water quality sampling may be required for specific permits, but the ambient programs are not required by law.
   a. Surface water sampling is typically done on a quarterly or monthly basis. Quarterly is the minimum requirement of FDEP for the data to be included in an Impaired Waters Rule (IWR) assessment. No known program is sampling less frequently than quarterly so there is uniformity with a minimum of quarterly sampling.
   b. Parameters are typically chosen based on location, type of waterbody, what the agency wants to know, and available budget. Uniformity can be addressed with a minimum recommended parameter suite which is discussed below, however, please note various entities are not inclined to test for parameters that there is a very low likelihood of finding.
   c. FDEP has uniform sampling SOPs that are required to be followed if data will be used for an IWR assessment. Laboratories are required to be NELAC certified which requires SOPs. For example, please see the attached Pollution Control’s standard operating procedures for water quality sampling (Field Sampling Quality Manual) and laboratory analyses [the Quality Assurance In Lab (QUAIL)] manual.

2. **Is the water sampled in the exact same physical spot each time?**  Yes, using GIS. Additionally, every Pollution Control sampling project has a document with each site in that project that includes a photograph of the sampling site. Pollution Control’s project document for Marco Island sampling sites can be shown during the meeting. Location is part of sampling staff training.

3. **Why aren’t the FIU sites being used/why were the existing sites chosen?**  The “FIU sites” were part of the Coastal Water Quality Monitoring Network which was established in 1991 to characterize status and trends in water quality of Florida Bay and then it expanded to cover much of the South Florida region, including Biscayne Bay, Whitewater Bay, Ten Thousand Islands, and the west coast of South Florida. That project was funded by the South Florida Water Management District and was finished in 2008. In our area, there are 15 FIU sampling sites which are only located only along the coastline in the Rookery Bay, Marco Island, and 10,000 Islands areas. This, therefore limits this question to sampling sites in those three coastal areas. Those 15 sites can be viewed here and are identified as “ROOK” or “TTI.” The sites in those three coastal areas were chosen by Marco Island and Rookery Bay/SFWMD/FDEP for various reasons detailed below, along with additional sampling site information for the other agencies.
   a. Marco Island-There is one FIU site east of the Jolly Bridge and it is currently not being sampled. Historically, Marco Island chose 12 sites to monitor the success of the septic to sewer conversion project. Marco has recently changed 1 site due to lack of access and added 2 sites to better represent the conditions on Marco Island. City of Marco
staff was contacted about adding the FIU site and agrees it can be part of the annual Strategic Monitoring Plan Meeting discussion. The City Council must approve final sampling sites.

b. Rookery Bay—There are 3 sampling programs within Rookery Bay.
   1. FDEP DEAR takes quarterly samples for nutrients and turbidity at 9 sites and the data goes into WIN for assessment purposes. 4 sites are former FIU sites. These samples are taken by Rookery Bay staff and sent to FDEP lab.
   2. SFWMD samples monthly for nutrients and chlorophyll at three of the original FIU sites. Chlorophyll was recently added at Pollution Control’s request. This data goes into WIN. All the FIU sites in this area are not being monitored because, to be cost effective, SFWMD chose 3 FIU sites to be representative of the area.
   3. Rookery Bay samples 5 sites monthly for nutrients and chlorophyll to maintain their NERR designation. This data goes to NOAA and does not go into WIN. The 5 sites were chosen by Rookery Bay because their placement addresses priority resource management issues that were identified in the Rookery Bay NERR’s management plan. Specifically, the data from these stations provide valuable information concerning the effects of land-use activities on the quantity, quality and timing of freshwater inflow into the Reserve. Each bay studied demonstrates a different pattern of altered freshwater inflow. One of these 5 sites is not the same site as the FDEP DEAR samples.

c. Coastal Zone chose their sites to be representative of the water quality in the estuary while capturing areas of input from upland sources that may have localized impacts. Sites are fixed and can be used for long-term trend analysis. Coastal Zone staff has reviewed and chosen not to change sites at this time but is part of the annual Strategic Monitoring Plan Meeting.

d. City of Naples chose their sites to serve as long-term monitoring stations that are representative of ambient bay water quality, with additional stations positioned at or just beyond the City boundaries to capture the water quality coming into the City. City of Naples underwent a comprehensive external review of their sampling sites in 2015. City of Naples staff has reviewed and chosen not to change sites at this time but is part of the annual Strategic Monitoring Plan Meeting.

e. Pollution Control chose sites to represent ambient conditions of non-tidal unincorporated Collier County. Over the years, Pollution Control has modified, added, and removed sites for reasons including: safety (Miller at I-75), sites were no longer representative due to lack of flow (Corkscrew), another entity had more representative sites in the area (Big Cypress), impairments-added tributaries, etc.

Each year, a Strategic Monitoring Plan Meeting is held during which each of the sampling entities in the Everglades West Coast basin reviews their sites and coordinates any changes. Marco staff indicated adding FIU sites would be discussed at the annual Strategic Monitoring Plan Meeting.

4. **Why is some data not in WIN?** Pollution Control has worked with multiple entities such as the City of Marco and Coastal Zone Management to get their data in WIN. Both of those now contract with Pollution Control to perform that service. The only organization known to not
enter data into WIN is Rookery Bay, however, only one of the three sampling programs occurring in Rookery Bay is not putting data into WIN. That program’s data (NERR) is housed through NOAA’s Centralized Data Management Office at NERRSDATA.org and is publicly available.

5. **Is it important for to have all three of the Rookery Bay sampling programs data in WIN?** Data that is not in WIN is not assessed by FDEP for impairments. When areas don’t have water quality data, FDEP comes in and does a minimum amount of sampling to represent the WBID. This resulted in the sampling program that is done by FDEP DEAR in Rookery Bay which is then entered into WIN. In some cases, the minimum amount of sampling is not the best representation of the WBID.

6. **What is done with the data?** The data in WIN is assessed by FDEP and used for the TMDL process. Please see the 10/1/19 read ahead for additional information on the TMDL process.

7. **Are there parameters that everyone should be testing for?** This is complicated because all waterbodies are different. For example, in salt water when testing for bacteria, it should be analyzed for enterococcus. In freshwater it should be analyzed for E.coli. Additionally, there are certain areas where you wouldn’t expect to find certain parameters such as metals, due to their remote nature or make up of water received. A monitoring program should be based off of what the goal of the program is, and what questions you are trying to answer. For those reasons, staff does not feel that recommending a particular suite of parameters is appropriate given that different conditions for each waterbody represent different program goals.

If the subcommittee still wants a minimum suite recommendation, below are two options:

a. Pollution Control uses the following parameters in the Collier County ambient surface water quality monitoring program:
   1) Field-dissolved oxygen, temperature, pH, specific conductance, salinity, and secchi depth 
   2) Lab-ammonia, biological oxygen demand, chlorophyll-a, color, E.coli/enterococcus, nitrate, nitrite, orthophosphate, phaeophytin, total kjeldahl nitrogen, total organic carbon, total phosphorus, total suspended solids, turbidity, arsenic, cadmium, calcium, chloride, chromium, copper, hardness, iron, lead, magnesium, sulfate, and zinc.

b. FDEP uses this list as a minimum suite for marine sampling:
   1) Field-dissolved oxygen, pH, salinity, sample depth, secchi depth, specific conductivity, temperature, total depth,
   2) Lab-enterococci (membrane filtration for class 2), fecal coliform, total alkalinity, chlorophyll-a corrected, chlorophyll-a uncorrected, phaeophytin-a, turbidity, bromide, fluoride, ammonia-n, no2no3-n, o-phosphate-p, total-p, kjeldahl nitrogen, organic carbon, TSS, iron, manganese, zinc, aluminum, antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and thallium.

8. **What are staff’s recommendations for testing sites?**
a. Keep as many long-term trend sites as possible but adapt as needed to be representative of ambient conditions.

b. Continue to attend annual Strategic Monitoring Plan meetings for sampling site coordination. Discuss the addition of FIU sites to programs in Rookery Bay and Marco Island.

c. The Pollution Control and Prevention Ordinance (No. 2019-17) passed in July 2019 which now allows for pollutant source tracking and requires implementation of best management practices to stop pollution. Recommendations include:
   1) Add sampling sites to address waterbodies with impairments and total maximum daily loads. The number and location of sampling sites for source tracking will vary depending on the waterbody, the number of inputs, the impairment, etc. An outline of what this would look like is being developed, however, this program is not feasible without additional resources including staff. Note, these will be shorter term sampling programs based on site specific conditions such as pollutants found.
   2) Sampling sites are currently being added on an as needed basis to address pollution events. For example, to build a case against a known polluter in the Pine Ridge industrial park, sampling events have already commenced.

d. Add sampling sites or parameters for emerging contaminants of concern such as PFAS/PHOS and glyphosate.

e. Add sampling sites for before/after capital projects to demonstrate water quality improvements such as for septic to sewer conversion projects. This will aid in winning grant funds.

f. Add algae sampling sites.

g. Add saltwater intrusion sampling sites.

h. Add county owned stormwater pond sampling sites.

As a note, additional sites and/or parameters such as those in c-h will require additional resources. A presentation of required resources can be given upon request.