



SFWMD C-8 AND C-9 WATERSHEDS FLOOD PROTECTION LEVEL OF SERVICE ADAPTATION PLANNING AND MITIGATION PROJECTS STUDY

Date: March 14, 2022

Time: 10:30 AM – 12:00 PM

Subject: Bi-Weekly Meeting

Attendees Highlighted:

- Hongying Zhao, SFWMD
- Ana Carolina Maran, SFWMD
- Nicole Cortez, SFWMD
- Akin Owosina, SFWMD
- Ann Springston, SFWMD
- Lichun Zhang, SFWMD
- Matahel Ansar, SFWMD
- Larry Brion, SFWMD
- Carol Ballard, SFWMD
- Ruben Arteaga, SFWMD
- Sashi Nair, SFWMD
- Francisco Pena Guerra, SFWMD
- Shahana Mona, SFWMD
- Vijay Mishra, SFWMD
- Irela Bague, Miami Dade
- Marina Blanco-Pape, Miami Dade
- Alberto Pisani, Miami Dade
- Gregory Mount, Broward
- Kevin Hart, SBDD
- Susan Bodmann, Broward
- Jennifer Jurado, Broward
- Rajendra Sishodia, Broward
- Virginia Walsh, WASD
- Omar Abdelrahman, RER
- Pamala Sweeney, RER
- Katherine Hageman, RER
- Valentina Caccia, RER
- Michael Zygnerski, Broward Co
- Karina Cordero, RER
- Michael DelCharco, Taylor Engineering
- Angela Schedel, Taylor Engineering
- Pat Lawson, Taylor Engineering
- Joseph Wilder, Taylor Engineering
- Stephanie Massey, Taylor Engineering
- Lynette Cardoch, Moffatt & Nichol
- Peter Sahwell, Nova Consulting
- John Loper, Anclote Consulting
- David Key, ESP – Florida
- Nathan Slaughter, ESP - Florida

Notes:

- Meeting Kickoff
 - Roll Call
- Update Presentation
 - Update on M2A/M2B project list
 - What level of mitigation can the proposed list achieve?
 - M2A- What is the goal? What is acceptable?

M2A		
SLR1	SLR2	SLR3
5-Yr SLR1 (M2A)	5-Yr SLR2 (M2A)	5-Yr SLR3 (M2A)
10-Yr SLR1 (M2A)	10-Yr SLR2 (M2A)	10-Yr SLR3 (M2A)
25-Yr SLR1 (M2A)	25-Yr SLR2 (M2A)	25-Yr SLR3 (M2A)
100-Yr SLR1 (M2A)	100-Yr SLR2 (M2A)	100-Yr SLR3 (M2A)



SFWMD C-8 AND C-9 WATERSHEDS FLOOD PROTECTION LEVEL OF SERVICE ADAPTATION PLANNING AND MITIGATION PROJECTS STUDY

- JW - So, we know that achieving a 25-yr SLR 1 (M2A) then we will probably achieve the 10- and 5-yr SLR1 events as well. And, we might also get the 5- and 10-yr for SLR2, and maybe 5-Yr SLR3. Helps us understand what the goal.
 - a. HZ – is the team okay with that?
 - b. JW – so maybe for M2A we achieve the 25-yr and for M2B we try and get 25-yr SLR2?
(The team is in agreement with this goal for scenario M2A.)
 - c. AO – let’s remember that SLR 1, 2 and 3 have been tied in to future conditions and see what the state requirement is for Resiliency. SB 1954 will be met if we follow those SLR scenarios.
 - d. Alberto – is M2A and M2B phased? Are these either or scenarios of progression? More like progressions. Alberto said that sounds like it would synch with Miami Dade’s work. Their secondary canals they want to have 25 -yr with 2 ft of SLR for FPLOS. That is what they are aiming for.
 - e. HZ – and your (MD) would be added in the M1 plans.
 - f. Pamela – why did we determine that we needed a 1,000 cfs pump? Based on what? HZ – we looked at 500 cfs and it didn’t get us the results we needed. It is also based on the over 100 testing runs conducted for pump sizing. M2B will test other pump capacity.
 - g. Vijay – Alberto you said you were looking at 25-yr for SLR1. Joe, have you run that? Not yet – we will be running that. So, Vijay thinks maybe that is our minimum?
 - h. Joe – so, once we decide on the M2A then we run all the models. There will be no modifying the M2A runs. HZ, we can add different scenarios later. AO and we can set these runs as the start and review as we move along. Some of these runs will help with future conversations about scenarios and model runs.

ii. M2B- What is the goal? What is acceptable?

M2B		
SLR1	SLR2	SLR3
5-Yr SLR1 (M2B)	5-Yr SLR2 (M2B)	5-Yr SLR3 (M2B)
10-Yr SLR1 (M2B)	10-Yr SLR2 (M2B)	10-Yr SLR3 (M2B)
25-Yr SLR1 (M2B)	25-Yr SLR2 (M2B)	25-Yr SLR3 (M2B)
100-Yr SLR1 (M2B)	100-Yr SLR2 (M2B)	100-Yr SLR3 (M2B)

c. Moving forward with model simulations

- i. JW – so, looks like M2A will include: pump to move water to tide, storage in the western mine-pits, and storage at Lake Ojus.
 - The mine pits in the west are extremely conductive. Pumping water in leaks out very quickly. Is it possible to pump some in to shift the timing of peak flows? Initial runs showed no storage because it was so permeable. We put in a seepage wall, but it was still very leaky and caused raised elevations in other nearby mines.



SFWMD C-8 AND C-9 WATERSHEDS FLOOD PROTECTION LEVEL OF SERVICE ADAPTATION PLANNING AND MITIGATION PROJECTS STUDY

- a. JL – it is not clear that controlling seepage is possible. Some early writings indicated there was a need to do some pilot projects to see if it is feasible. So, 10 years ago the economic and technical approach was not well defined. Does anyone have newer information?
 - b. HZ – looks like it would be expensive to put in the cut off wall and we may not see benefits with lower pumping? Still unknown
 - c. JW – we might put no seepage wall (they are expensive) but just a 200 cfs pump. How much impact will that have? Can we modify the timing of a flood peak? So, maybe it is still in the mix – but probably won't have a large area that we can use for storage.
 - d. AO – Likes the idea of lowering the peak, even if just a bit. Perhaps you could have a pre-storm draw down? Anyone else on the call have input?
- West Lake (Lake Ojus) is currently part of the canal with no separation. If you berm it off and added pipes or v-notch or weir you could use it as storage during an event. So, you could reduce the burden on the pump/gate downstream. Maybe that would lessen impact to downstream. The key element is that this is just storing flow – same high and low water elevations.
 - a. HZ – would like to see a sensitivity run to see how it helps and what the impacts or benefits could be. Joe – we have a model run with a pump putting storage into this basin. That reduced stage in the canal for several thousand feet, up to 0.3 ft. There is a plan to conduct sensitivity runs.
 - b. AO – when you combine this have you included other projects? Seems like you might see benefits upstream. Did you see that? JW – we do know that improving the stage in the canal certainly helps the secondary and tertiary canals. You may see that you can discharge those other systems to the canal and would use up the benefit?
 - c. Omar Abdelrahman – that lake has a history of combined sewer overflows. Any “normal” flooding? Not that he remembers. There was a time that it did have issues, but seems like the infrastructure was upgraded.
 - d. Would we look at current and future conditions for stages? Yes, we'll be looking at that.
 - e. Vijay remembers that the banks are pretty high, but they did have bank stabilization issues. It would be good to talk with County about that.
 - We are including 500- ac/ft of water “storage” as well, distributed across 17 locations. That is done simply by removing it from the model – doing that before, during, and after the peak. This is a conceptual level – if we can find that kind of storage distributed around the basin. That could be detention, local deep well storage, a pond, etc...
 - Remember the gated structure at downstream will be modified to handle peak storm surge – SLR3 with storm surge. So, basically 9 ft.

3. Discussion

- a. The team agreed on the goals of 25 yr-3day 1 ft SLR for M2A and 25 yr -3 day/2ft SLR for M2B. Additional scenarios runs may be needed.



SFWMD C-8 AND C-9 WATERSHEDS FLOOD PROTECTION LEVEL OF SERVICE ADAPTATION PLANNING AND MITIGATION PROJECTS STUDY

- b. Kevin – will you look at the current and existing LOS for, like, the 3-day? Yes, that will be part of the analysis.
- c. Raj – looks interesting and looking forward to the results. He is interested in the SLR comparisons that Hongying will send out.

4. Action Items

- a. Hongying will share some literature on Sea Level Rise (SLR) assumptions used for the FPLOS project of 1ft, 2ft, 3ft and how it compares with other applications of SLR and how it fits in with SB1954 (attached to this meeting minutes)
- b. The team is in agreement with the goal for scenario M2A.
- c. **M2A** – This combination of mitigation activities will consider:
 - i. 1,000 cfs pump at downstream control (subject to increase if changes to other regional projects arise)
 - ii. The team will examine Lake Ojus (Miami Dade GIS calls this West Lake/East Lake) stage analysis/comparison with and without the project.
 - In the past, this area has had issues with sanitary overflows. Omar noted that we should consult with the County to see where that issue currently stands.
 - iii. The team will look at the western mine pits and see how they could work with or without a seepage cutoff wall.
 - iv. The team will conduct sensitivity runs for the Lake Ojus project.
 - v. The modification of the downstream structures will include raising the structure and tie-back levees to block overtopping by storm surge.

