



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

Date: March 28, 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 Owasina, **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:

1. Meeting Kickoff

- a. Roll Call

2. Presentation: M2A Preliminary Results

- Lake Ojus (Miami Dade GIS calls this West Lake/East Lake) stage analysis/comparison with and without the project.
 - Intent was to reduce peak stages in the canal by using storage in the lake. Joe tried 10 or so different configurations of weirs and gates in controlling the flow.
 - After a bunch of runs, they looked into the 1-D model with pump, lake, etc. Then into 2-D with the 1-D connection.
 - In refining the model – by adding the lake – the water surface dropped with respect to the original model setup. Adding back in the weirs and gates with the new setup showed minimal improvement. Looked at 8-10 different configurations and runs.



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- This is a disappointment in that we do not think it will provide much benefit. So, in the end, we will probably remove this project from consideration.
- Carolina – it is like the golf course mitigation. A bit of a disappointing result.
- Carolina – what impact did the surge have?
 - Good question and we had the same thought. So, we ran the 25-yr rainfall with 5-yr surge to examine the impact of the surge boundary condition. We did not see much change in the model results with the change in boundary condition.
- Akin - Should we update model with this project as a baseline condition?
 - We have it as a 2-D representation. Adding it as a 1-D made the difference – we'd have to re-run all the baseline conditions. Should we? Well, we will be consistent! We will leave it out of the baseline – it was a max 0.2 ft difference at any rate. Not significant.
 - We need to write this up and make sure it is captured.
- Pamela Sweeney – this lake in the C9 basin has a long canal right of way. What if the District looked at using the ROW to increase capacity? Could a stream restoration approach – widening and deepening it – work?
 - We did look at it for C8. We didn't for C9 because the head loss with the pump wasn't great. It was a pretty mild slope so increased conveyance didn't do a bunch. Joe anticipated the results because of what is happening with the C9 impoundment.
 - PS -- beyond the capacity – could it help you with future SLR conditions? If the issue isn't conveyance right now, would it be possible to hold water back for now?
 - HZ – the canal is mainly for conveyance, not for storage.
 - Carolina – what if you raised the bank?
 - AO – if Pamala is thinking about stream restoration, perhaps you can store it upstream? But, as HZ, there just isn't enough storage. And it would impact some of the secondary canals. And eventually it needs to be pumped out. But, is there enough space to gain a little bit? A restoration that could make room for storage?
 - Pamela – yes, just always trying to get towards reducing the flow to the bay.
 - Joe – that may come into play in a future scenarios. It isn't ruled out yet.
- Western mine pits scenario with or without a seepage cutoff wall
 - Originally, we tried several combinations of flow into the pits. We looked at reducing the seepage/leakage.
 - There were increases and decreases in the water levels around the area.
 - So, we looked at future conditions with just putting in canals, open connections. No pumps, just connecting the mine-pits. And then tried with pumps.
 - Looking at difference maps. See very small differences – hundredths of a foot.
 - Carolina and Hongying sent reports with additional information. We have not had a chance to dig into those.
 - The tests we did were without any seepage control or slurry walls.
 - RA – these are 25-yr? Yes.
 - HZ – Alberto sent a file to HZ and she just forwarded it to us.



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- Alberto – storage in the NW mine pits was a Yellow Book concept. They are screening this alternative out of BBSEER due to the deep lakes being excavated beyond the confining layer. The USACE Draft Alternative 11 includes Kendall Rock Mine and Northwest Chain of Wetlands.
- AO – so, this is a dilemma. We’d be interested in these alternatives.
- HZ – yes, so the seepage walls may not be an alternative. What Taylor found is consistent with what Alberto is discussing.
- Carolina – they do have some features to move water south. AO – it would be great to get water moving south and west, as opposed to east. We should talk further about this and see if there is indeed ways to move water south for C8 and C9 canals, not just the C7. They want to move water in the dry season, not just the wet season.
- So, the mines don’t seem to help much. AO – can they just reduce the peak much? Joe showed hydrographs – and it looks like about 0.2 ft reduction. There is about 10 miles of canal from the pits to the east that it may help a bit. But, if you look at PM1, that is not an area that is overtopping the levees.
- What other projects do we have?
 - Really nothing. There was distributed storage in the basin at areas that we thought could be connected. So, we had proposed that.
 - AO – didn’t Miami-Dade say they had some ideas with injection wells?
 - Yes, we need to run that down. We think we sent an email asking about it? Need to follow up.
 - Joe has guessed at distributed storage at about 500-ac ft. This is based on loosely available land that could be used as storage or as locations for injection wells. We will use them as M1 scenarios.
 - Joe said, without Lake Ojus and without mine pits – we need to increase the pump size at the downstream control structure.
- AO – back to Pamela’s point, what is the storage we could get in right-of way?
 - We can look at the cross sections of the canal at the right of way. We see that space on Google Maps and it looks like the open space/bank goes from about 2 ft at water edge to about 8 ft at top of bank. So, about 6 ft of canal bank.
 - That would help conveyance, for sure.
- M2A model is getting setup now. We should be able to move forward now.
- Sashi – the C9 impoundments are included?
 - Yes, it is in baseline.
 - Joe pointed out that we assume 50% capacity. We are probably using 25% of the storage.
 - What if we looked at a change in the management of that system? HZ – This assumption is consistent with the current condition simulation. The net impact may remain the same by changing assumptions. We can continue to discuss this, but leave it as is for now.
- M2A – maintenance of the system is expected. The team is looking at that for the canal conveyance capacity program.
- We can run M2A runs and discuss M2B.
- Discussion:



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- Rajendra asked about initial conditions and their affect. Joe checked and it had negligible effect. AO – it really is the initial fill issue.

3. Scenario M2B Discussion

- a. Goal is 25-yr SLR2 – so M2A, plus raising levees after reviewing results. Looking at internal drainage issues, tackling bank exceedances
- b. We'll have to assess secondary impacts. That drainage will be challenging to address with this model scale.

~~4. Task 3 – Overview of Approach (Not discussed.)~~

5. Additional action Items from Previous Meeting

- a. Lake Ojus & the mine pits. Completed.

6. Schedule for Task 2 and Task 3

- a. Taylor will resubmit a revised project schedule to Hongying

7. Any comments from other?

- a. None, everyone engaged and learning about the system.

