TAYLOR ENGINEERING, INC.

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

Date: January 3, 2022

Time: 2:30 PM – 3:30 PM

Subject: Bi-Weekly Meeting Agenda

Invited Attendees:

- 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 ? , **SFWMD**
- Vijay Mishra, **SFWMD**
- Michael DelCharco, **Taylor Engineering**
- Angela Schedel, **Taylor Engineering**
- Pat Lawson, **Taylor Engineering**
- Joseph Wilder, **Taylor Engineering**
- Stephanie Massey, **Taylor Engineering**
- Lynette Cardoch, **Moffatt & Nichol**
- Laura Vogel, **Nova Consulting**
- Peter Sahwell, **Nova Consulting**
- John Loper, **Anclote Consulting**
- David Key, **ESP – Florida**
- Nathan Slaughter, **ESP - Florida**

Notes:

1. **Meeting Kickoff** – Michael
    a. Roll call
    b. Summary of Agenda
2. **Task 1 Workshops** –
    a. Task 1 Memo Completed
    b. Team would like to send status memo to attendees of workshop.
        i. Maybe upload the Task 1 report and send status email. Nicole can send it – Lynette and Angela can help generate some language.
        ii. Angela uploaded Task 1 Report to website.
3. **Task 2 H&H Evaluations** – Michael
    a. Model M2A & M2B
    b. Additional Pump Runs – scope was to look at some generic pump sizes
        i. Pump size runs – 100+ runs to determine pump size to get to current conditions, 12 pump sizes for S-28 and 12 for S-29
        ii. This is a pump size and operations issue- increasing pump size only goes so far

iii. The size of the pump is only part of the equation – we need the operation part as well. For these runs we were looking at many operational controls. There were no one-size-fits-all operations that we can apply.
iv. Hongying - There can only be one operational criterion. Joe – maybe with SLR 1 and SLR 2 we could have different rules. Those two SLR scenarios would be separated by 20 years…So, maybe that makes sense? Akin – yes, that could work.
v. Akin – think of operations like the adaptation process. There is space to figure out what it could be. But we have to use a single operations protocol.
vi. Joe, it is counter-intuitive, but it is harder to get back to existing conditions with the higher frequency events (5-, 10-yr) mainly because of the extreme storm surge events. Akin these higher frequency events should drive the decisions – especially if we can keep them from flooding.
    1. So, put in reasonable pumps and reasonable operations criteria. Then we can examine what might need to happen to mitigate the flooding.
vii. So, the pump exercise helps us know what will and won't work for each storm event. It bounded the possibilities for all the events.
    1. Hongying – did the model use multiple pumps? Joe tried both ways. But didn't see any impact doing it either way. Ultimately, they got to the same end – didn't seem to make any difference. Maybe the final versions would benefit from multiple pumps to allow more flexibility.
viii. What if we use the 5-yr operations plan with the 100-yr event? Will that allow us to look at more alternatives? Down the road, it may allow us to look at different operations.
ix. For M2A and M2B we are getting to where we need set the operations and run the regional mitigation projects. The BRIC grants helped focus that a bit.
x. Some of the large mitigation projects will require we look at different operations and pumps. Those won't be run until much further down the line.

c. How do we handle operation questions? If we run standard operations, we will not meet current conditions or improved LOS regardless of pump capacity.
    i. We cannot provide list of questions – we know how the system is operated. But that standard operation will not work.
        1. We have found that operations for each structure performed best when operations were customized for each event – to meet LOS.
        2. So we are modeling pump sizes – but that alone is not adequate to meet LOS. It has to be combined with operations.

d. M1 mitigation projects
    i. If we put in projects, we may not see impacts to model results.
        1. Pembroke Pines three basin interconnect at Century Village
        2. Injection Well construction
        3. SBDD B-1 / B-2 Pump Station upgrades
        4. SBDD Basin 3 / Basin 7 interconnects at Country Club Ranches
        5. Add operable structures (gates / pumps) to confluency of primary / secondary canals
        6. Storage addition to non-pumped drainage areas

ii. For 1 and 4 – they are basin connections. We can model these and put them into the model. May or may not see results in the model.
iii. Item # 2 – injection wells. We know the benefits but may not be useful in the model. Akin – it is simply removing the water from the model domain, right? If we can put it in there, let's do it.
iv. Item #3 – SBDD has some upgrades to their pumps. They don't operate the pumps already. It is on a tertiary system that is shut down when the secondary system has a high tailwater. They are manually operated. We'll have to make some assumptions on how they would operate it. Akin – think about what problem they are trying to solve. And see if we can solve it another way. So, if a pump downstream solves the problem, we need to be aware of that.
v. Michael brought up the point that that is a great approach – figure out how to solve their problem. But it opens the risk of spending a lot of time on each project and trying to make that project work. Akin said he understands completely. So, how do we look at it knowing we have to address the downstream issues first? We could ask Kevin what he thought would work with these pumps. Why did they propose upgrades if they are not actually used?
vi. Item 5 – we'll see if adding gates in strategic locations would help. Same idea with adding pumps.
vii. Item 6 – how much storage would we need to add to really see a difference? Conceptually it is hard. What if we added storage by increasing detention storage in some cells? It would show up in water budget for sure. But may not show up in peak discharges. Carolina, but this is a huge benefit to WQ – so it would behoove us to keep it in the mix. Akin – we do need to keep this in the mix. Hongying said this would be a very simple solution – not a weir storage process. Joe pointed out that the BRIC grant looked at the golf course and how it didn't really help. We need to document what we did for the BRIC grant – that may be enough. Joe – said maybe just having them as storage of the rainfall/runoff and reducing that flow is helpful.

e. Previous Action items for Discussion
    i. At this point, we do not feel we need a meeting with operations group.
    ii. How are we going to assess downstream flooding?
        1. BC changes & SLR/Surge assumptions
        2. Taylor team sill working on this concept and figuring out how to assess it
    iii. Planning for working group meetings
        1. Hongying asked if we would have materials ready to discuss with working group? Michael said not for next bi-weekly meeting. We will have some ideas in a month, perhaps. Is the objective to get info from the partners to include in the model or to show them results of what we have modeled?

4. Schedule Discussion
a. Task 2.1 Draft Memo 2 under District review.
b. Tasks 2.2 due 3/25
c. Task 2.3 due 4/29