

2018-2023 SBP Update
Gap Action Plan Template

Action Plan Title: Expand Water Modeling (#4)	Action Plan Owner: Alex Chen
Focus Area: Operational Excellence	Action Plan Sponsor: Rick Scott

1. Short summary of the project/program (suitable for using with Customer Review Panel and other members of the public, plus additional specifics required for clarity of action).

This action plan adds one position for water system hydraulic network modeling. There is currently only one person performing this work for the entire water system, and the work load cannot be sustained since that person has been tasked with other critical responsibilities. Water Modeling uses computers to simulate the flows and pressures throughout the water system. It is important because it gives an analysis of how much flow and pressure there is to meet customer's needs.

2. What outcome will this action achieve? What problem does it solve? What are the benefits?

SPU's existing hydraulic modeler is fully work loaded and is limited on the amount of fire flow analysis he can perform to support water main capital projects and system fire flow improvements. SPU is also constrained in carrying out regular updating of our hydraulic network models. In the past, this shortfall has been partially addressed through the annual hiring and training of college student interns. This practice has proven ineffective, as many hours are invested training an intern just to lose them after graduation.

The new water system hydraulic modeling position will enable the Water Planning Program Management Division to provide more consistent support to capital projects, perform fire flow deficiency analyses, and complete a comprehensive water system hydraulic analysis (which has not been done since 2004). The new position will also support more frequent updating and calibration of hydraulic network models, providing more accurate results for external and internal customers. The new position will also provide for important continuity of water system knowledge and hydraulic modeling expertise.

In addition, SPU is in the process of revamping its distribution water main replacement program to more adequately address the anticipated increase in water main replacement rate that will come about as more of our aging water infrastructure begins to approach the end of its useful life. Adding this position will allow for SPU to incorporate hydraulic modeling into our water main replacement decision making, something that is a standard practice for most large utilities. SPU has not been able to fully incorporate this modeling in the past due to our limited hydraulic modeling resources.

If SPU does not model our water systems, we risk not meeting regulatory requirements. From a customer perspective, the lack of modeling capability translates to SPU not being able to accurately assess if we can meet current and future customer's needs for water.

3. Short description of activities already in the baseline, incremental work.

The baseline provides for annual updating of hydraulic models and very limited support to distribution system capital projects and system fire flow deficiency analysis. It does not provide full support of capital projects, completion of a comprehensive hydraulic analysis and as SPU continues to proactively replace aging pipes, water modeling is a key component of assessing pipe replacement needs.

4. Implementation plan and timeline.

This position will begin as soon as possible in 2018.

5. Implications for budget and FTE (if any)

Changes (relative to baseline)

	2018	2019	2020	2021	2022	2023
O&M (Non- Labor) Budget Change	122,269	125,203	128,333	131,542	134,830	138,201
CIP Budget Change						
FTE Change	1	1	1	1	1	1

6. Alternatives considered for varying options/levels of effort.

There are no existing staff resources available to complete a comprehensive water system hydraulic analysis. A consultant could be hired for this effort at significantly higher cost but would not provide long-term in-house continuity of water system knowledge and hydraulic network modeling expertise.

As mentioned previously, we have tried to address our shortfall in hydraulic modeling partially through the annual hiring and training of college student interns. This practice has proven ineffective, as many hours are invested training an intern just to see the intern depart for permanent employment after graduation.

7. Is there lower-priority work underway whose resources could be directed to this effort? Please describe.

No, there is no other lower-priority work that could be redirected to this effort. All staff in the division are fully loaded with high-priority projects and programs.

SPU’s one hydraulic modeler also leads the Water Line of Business’s effort on Move Seattle project and steel storage planning. These efforts cannot be delayed to increase the level of effort on hydraulic network modeling.

8. Identify and describe any significant external constraints affecting this action plan.

None.

9. Identify possible race and social justice implications for implementation of this plan. How will it impact service equity and how will you resolve this impact?

Updating the comprehensive water system hydraulic analysis will provide for better identification and resolution of water pressure and fire flow deficiencies in historically underserved neighborhoods.

10. Describe your plan for evaluating success or progress of this plan. Include any metrics you have.

After the new position is filled, a budget and schedule can be established for completion of a comprehensive water system hydraulic analysis.

- Calibration backlog: the number of years that model calibration is behind schedule. Target = 0
- Claibration backlog: ratio of number of calibrations completed to the number of fire hydrant flow tests. Target = 100%

