

## 2018-2023 SBP Action Plan Update

### Action Plan #4 – Expand Water Modeling

#### 1. Short summary of the project/program

- **Part 1: Summary of Project.** *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 customers’ needs.*
- **Part 2. Targeted Commitments & Actuals (2018-19).** *The 2017 metrics were as follows:  
“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*
  - *Calibration backlog: ratio of number of calibrations completed to the number of fire hydrant flow”*

*Since 2017, SPU has hired the additional position, a dedicated drinking water hydraulic modeler. Since the position was hired in late 2018, the new modeler has accomplished the following:*

- *Caught up with calibration backlog.*
- *Updating/integrating existing pressure zone models into a single computer hydraulic model and validating its accuracy.*
- *Performed as-needed modeling analyses:*
  - *Fire flow availability analyses in response to internal/external requests*
  - *Emergency/outage response analyses, including fire-fighting events, main breaks*
  - *Miscellaneous analyses, including watermain isolation, flow/pressure estimation, pipe capacity analysis, transmission system capacity modeling*
  - *Developed spreadsheet-based depressurization response tool for SPU staff that are not hydraulic modelers*
- *Geolocated all pressure sensors (used to help calibrate the model) and performed a preliminary gap analysis of pressure sensors*

- **Part 3. Financial Plan & Actuals for 2018-2019.**

	2018	2018 Actuals	2019	2019 Actuals	2020	2021	2022	2023
O&M (Non- Labor) Budget	122,269	45,470	125,203	162,313	128,333	131,542	134,830	138,201
Capital Budget								

*Note: the data for 2020-2023 is based on the projections developed in 2017. Revised projections are not ready at this time. However, the revised projections will generally follow the projections as shown, corrected for the modeler’s actual salary.*

#### 2. Have there been any significant changes in scope or assumptions since this action plan was approved in 2017? If so, please describe.

*The new modeler has accomplished the tasks anticipated, exceeding expectations about the pace of completing tasks. We can now set an estimated completion date for follow-up water system hydraulic analysis to be completed as follows:*

- *Complete the single integrated computer model by mid-2020 and verify its calibration through 2020.*
- *Use the integrated model to conduct systemwide analyses in 2020 and 2021:*
  - *Seismic outage response modeling and analysis of potential system improvements*

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- *Fire flow analysis and potential system improvements*
- *Operational analysis for real-time emergency response, as needed*

**3. Do we anticipate this investment continuing in the next strategic plan? Will funding and targets be above or below 2018-2023 levels? Why?**

*We anticipate this position as a continuing need. The table above shows that the modeler was hired in late 2018, with 2019 being his first full year of employment.*

*The actual salary for the modeler is higher than anticipated, based on his work experience being more comprehensive than anticipated – which in turn has led to him completing anticipated work faster than expected.*