

**Water Treatment**

1. *As this is a staffing need for a limited time can any of the staffing needs be addressed with contracting services (as some of this work is currently being addressed with contract support?)*

These positions will be needed for a minimum of ten years and the operating positions will be permanent. A key function of bureau staff is to lead, direct, monitor, organize, check, and review the work of the contracted support. The operating positions will be hired to operate the pilot facilities, will move into development of operational sequences, and then into commissioning and full operations. These are functions best suited to bureau employees.

The Engineering Associate (EA) position is also needed in the Supply and Treatment programs for work that are not being met beyond the additional demands of corrosion/filtration. Currently, there is a lack of capacity to address all of the issues in those programs. This situation will worsen as corrosion/filtration move forward and staff time is further confined to this effort. Once the filtration plant is on-line, there will be a continuing need for EA level work in this Operations division.

2. *Can you explain what the two new operators would do as part of this initial work on the overall project? If it is input in design and planning is this not something that current staff can support? Is current operation and maintenance being impacted with this first phase of the project? What work would be impacted if these positions weren't approved until next budget cycle?*

The two new operators will be instrumental in the piloting phases of the corrosion and filtration treatment studies. The operators will start with operating the pilot plant. To meet the adopted filtration schedule, the pilot plant will need to be up and running in the summer of 2019. These operators will need to be hired and on staff before the operation begins. Current staff will be supporting the planning and development of project definitions and the new operators will be performing a different function. If these positions were not approved until next budget cycle, then the bureau would need to contract this function out at a much higher cost, and the benefit of the experience operating the facility would be lost. Such experience is a missed opportunity in terms of developing key skill sets, such as jar testing, etc. The operators would use these skills on an ongoing basis in both the interim corrosion control facility and in the future filtration facility. Experience during the piloting phase would also allow credit toward required higher level certifications. Having additional operators on board would allow the opportunity to review designs and give feedback during the design phase of the project. The intent is to hire operators with existing corrosion and filtration experience.

It is also anticipated that staff will be needed at a higher level at the far more complex interim corrosion facility. Currently, the Lusted Hill plant has day operations only.

3. *Regarding the increase in procurements, reporting, and invoicing, can the bureau briefly describe the increase in this work they are seeing that relates to filtration? How will this need fluctuate over the life of the program?*

The contracting related to the filtration program will be significant. There will be three major contracts for the filtration plant; the program management (planning), the design, and the construction. These contracts will be larger than any other contracts that the bureau has ever done. In addition, there will be additional contracts for ancillary facilities such as pipelines. The first three years will focus on the procurement of these contracts and following years will involve managing and tracking the billings and payments.

### **Unidirectional Flushing**

4. *The Interim Lead Reduction Plan letter to OHA from December 2016 refers to PWB “working with Seattle Public Utilities and the Water Research Foundation to develop unidirectional flushing guidance for the water industry.” What was learned from this and what warrants the increase in staffing? How would a less than full system UDF prior to corrosion control coming online impact the program?*

The Water Research Foundation (WRF) study (which included Seattle Public Utility (SPU) as a cohort with Portland Water Bureau (PWB)) evaluated water quality before, during, and after UniDirectional Flushing (UDF) to demonstrate the value of UDF methods on a variety of parameters, including turbidity, bacteria, iron, manganese, pH, and chlorine residual. Optimization of the distribution system water quality through routine, systematic UDF and other operations that maintain chlorine residual, optimum pH, and reduce biofilm growth are important to ensuring optimized corrosion control and the reduction or elimination of nitrification in the distribution system. We currently have one dedicated UDF flusher. Based on communications with Tualatin Valley Water District (TVWD), Tacoma and other large utilities, we estimate six flushers are needed to UDF the entire system on a 10-year cycle. Our intent is to prioritize flushing areas of the system with higher water age and associated lower chlorine and pH levels during the next five years to align with the corrosion control improvements. The remaining areas will be flushed prior to bringing filtration online.

The combination of robust criteria and use of hydraulic modeling to plan flush routes reduces the risk of releasing discolored water outside of the flush area. The recent NE Portland fire resulted in short term increased turbidity and discolored water complaints in areas stretching miles from the fire. A systematic, routine flushing program would remove the sediment accumulating in our pipes and reduce the potential for such water issues when emergencies, such as fires, water main breaks or even tank truck fills, result in high velocities in water mains.

5. *How will the increase to full UDF staffing be addressed once corrosion control comes online? Would it be better to augment some of the existing or new FTEs with limited term positions?*

Frequency of UDF is system-specific with most programs targeting a 5-year cycle. Our short-term goal is to build a program to include 6 permanent full-time field positions to flush the complete system in 10 years prior to bringing filtration online. The program will be reviewed annually and additional limited term or seasonal field positions may be recommended to target a more frequent cycle in the future.

6. *The PWB staff request - if filled - would result in three two-person flushing teams, which could flush the whole system in ten years. But the bureau proposes flushing the whole system in five years, prior to the changes in corrosion control. How and when will the remaining flushing team positions be filled? The bureau plans to use seasonal staffing to augment the three two-person flushing teams to complete system flushing prior to implementing corrosion control improvements. How many more positions will be needed? The bureau will determine the additional positions needed after putting the three 2-person flushing teams in place and evaluating how much work could be accomplished. Please explain why PWB's system flushing frequency is considered outside the industry standard range, yet acceptable.*

The bureau plans to use seasonal staffing to augment the three 2-person flushing teams to complete system flushing prior to implementing corrosion control improvements. The bureau will determine the additional positions needed after putting the three 2-person flushing teams in place and evaluating how much work could be accomplished.

While it is not a regulatory requirement, industry guidance, such as AWWA standards recommend routine, systematic flushing at a frequency appropriate for the system depending on size, resources, and water supplies. We currently do not have a routine, systematic flushing program. The requested field positions will be adequate to target a 10-year systemwide flushing frequency. The bureau will utilize best management practices in system-wide water quality monitoring and control to create the most efficient use of these flushing resources [targeted water quality problem areas flushed more often for example].

7. *Does the unidirectional flushing expansion plan include a mechanism to capture and report water use for this activity which could complement the bureau's water loss reporting and improve its estimates of water loss?*

Yes, the bureau plans to capture and report on the water use through unidirectional flushing. The Water Loss Audit states the validity of the use of water in this way is likely well captured; however, these positions would dramatically increase this use and the bureau should ensure the current method of capture would still be reliable. This information is currently recorded by field staff in a database which is used for annual reporting. Field staff are provided with pressure and flow instruments to log water usage.

8. *The cost savings argument for the positions don't seem to be supported. First, it's uncertain if flushing would result in a need for less chemical treatment. Second, if the long-term staffing need for the system is three teams, the staff costs outweigh the potential savings from less chemicals. Fewer chemicals would likely be viewed as a positive outcome for most Portlanders, regardless of whether savings are realized. Does the bureau have additional evidence that the potential savings from less chemicals would offset the full cost of the added staff? Are there any other savings that could be realized?*

Unidirectional flushing is not only important for using less chemical treatment, but also to improve the overall water quality through the distribution system. Routine flushing is an important tool in optimizing water quality in the distribution system as accumulation of sediments and biofilm result in loss of chlorine and reduction in pH after treatment and decreased risk of nitrification. Systems that do not routinely flush the system may need to compensate by treating water to a higher chlorine and pH before water is distributed. As the bureau brings filtration on-line and optimizes flushing frequency, the goal is to reduce

overall chlorine doses and alkalinity needed to maintain an effective chlorine residual and pH throughout the system. For example, Tacoma Water has long had a UDF program and ramped up to a 5-year UDF cycle prior to bringing filtration online. Following filtration, chlorine was maintained better in the distribution system and lead levels decreased.

### **Workforce Management**

9. *Data we have received suggests the contract hours are volatile and general inspector contracted hours would not have warranted an additional FTE based on the last 5 years. Why does PWB believe there is a need to add a full time general inspector?*

The Capital Improvement Plan includes increasing capital projects that would require more inspector hours.

10. *What is the cost of per hour of contracted Inspectors (General and Specialty), and Public Works Inspectors (including wage driven benefits) that are city employees?*

The cost of contracted general inspectors is \$70.26 per hour. Contracted specialty inspectors range from \$130.82 to \$135.93 per hour. The FY 2018-19 cost per hour (including wage driven benefits) of Public Works Inspectors as city employees ranges from \$68.29 to \$76.37 per hour.

11. *Contract inspectors are currently used during peak times. What work would an FTE do during the off-peak times in the year?*

The interagency relocation work in support of BES and PBOT Capital Improvements is expected to continue to increase such that the bureau does not forecast off-peak times for the foreseeable future. In addition, large institutional developments (OHSU, Tri-Met, PPS, Port of Portland and others) are forecast to have \$1.7 to \$2.0 billion of work over the next 3-5 years. Some of this work will have significant water system and right of way impacts, in addition to the interagency impacts, and will require Public Works Inspectors.

### **Asset Management**

12. *CBO indicated that the Water Audit identified investments that can move forward regardless of the Water Loss Program Manager position being filled. Are those investments/recommendations being enacted?*

CBO indicated in the FY 2017-18 budget review that the plan makes a number of recommendations to begin work which can be done with existing staff and resources. CBO cited two examples 1) more small meter and wholesale meter testing and field validation of suspected data and billing issues and 2) conducting more proactive leakage detection and to standardize leak reporting.

As a result of the bureau's Water Audit and Strategic Water Loss Plan, the bureau has begun implementing key recommendations. The meter shop now tests 300+ small meters each year and the leak survey team has purchased newer leak detection equipment to improve the accuracy of its work. These changes are important, and with a dedicated position to coordinate and track the results, the bureau will be positioned to maximize those efforts.

*How would this new position impact/assist those?*

The new position will provide focused, cross-sectional focus on water loss to help the bureau plan for and prioritize work efforts and to organize and use data collected from current surveys and meter testing for use in future water loss efforts. For example, the new staff position would be able to help catalogue survey efforts to date and help point out priority areas to address next and/or document and help work on meter performance data over time.

13. *If not, what is preventing PWB from implementing the recommendations that don't require new staff?*

The challenge the bureau currently faces is that activities to address water loss are the responsibility of and are performed by several sections across Engineering, Operations, Finance, Customer Service, Resource Protection and Planning, and Maintenance and Construction in multiple locations and within several programs. The request for a staff person to focus and coordinate the bureau's efforts is made in recognition of the importance of addressing this diffuse problem through the use of good data and prioritizing the most cost-effective activities through collaboration and planning.

14. *Which type of water loss is a higher priority for PWB?*

Apparent losses, particularly water losses for which the bureau could be receiving revenue, i.e. unauthorized consumption, as well as loss or leakage that could undermine the water system or other proximate infrastructure.

15. *What investment, either staff or equipment, would provide the best value for PWB customers?*

The bureau believes a dedicated staff person to coordinate and assist in directing water loss efforts is the best investment now.

### **Communications**

16. *If the bureau was able to shift the previous technical writer to higher priority assignments and continue to perform the required work with other staff is there enough work to justify a FTE?*

For the timeframe in which the former technical writer was assigned to the role, there was never a year in which the annual workload was less than the staff time available. What is lost in the current situation, in which there is no designated technical writer, is the level of quality and consistency in writing products throughout the bureau, as well as some availability of technical staff to conduct work other than document preparation.

The bureau is not capable of adequately meeting the document preparation needs it currently has, and these demands will be dramatically increasing with the several capital and planning projects that will be occurring over the next half decade. The bureau plans to examine and reflect on the CBO's suggestions in its analysis and use contract resources to meet some portion of its technical writing needs in the short term.

### **Financial Assistance Program**

17. *What is the tradeoff if current vacancies in the Customer Services group are reallocated for this work? Could this provide an opportunity to evaluate changing workflow with existing staff as low-income customers are redirected to the Low-Income Service Team?*

There are no vacancies that exist within the Customer Services group that are not vital to the everyday operation of the group. All vacant positions are at varying stages of recruitments already in process. The two positions requested would not create a change in current workflow, rather they would allow the group to provide a greater level of assistance that is not currently provided.

18. *Such a realignment could impact some existing service levels. For example, if the bureau used one of the existing or the next open customer service representative or call center account specialist, that could negatively impact customer service performance metrics. Is the trade-off of possibly longer hold times if using a call center person to better target low income services a reasonable trade-off?*

The Customer Services group does not have any vacancies that are not already in the recruitment process. The group is looking for a different skillset than that of the existing Customer Account Specialist (CASI) job description for the Financial Assistance team. If Customer Services were to wait for the next vacancy, the position would have to be reclassified. Furthermore, if the two CASI positions currently assisting customers in the Call Center were reassigned to the Finance Assistance team, there would be an impact to a service level that is already a struggle to meet.

19. *What is the basis for the original \$150 and proposed \$500 crisis voucher?*

Following a 1994 review of the utility bureaus' low-income services, the crisis voucher was originally proposed at \$30, but eventually implemented at \$75. In 2004, the value was doubled to \$150. The original rationale was tied to a proposal that would have required the customer to pay a third of a past-due bill to reconnect service. The \$30 represents the estimated average assistance (\$25-\$35) in this scenario. It should be noted that in 1994 the bureau's services and rate structure (as well as its customer profile) were significantly different than its current suite of services and rate structure.

20. *Has the bureau evaluated existing customer data to determine the amount of increase needed or the effectiveness of the crisis voucher in preventing shutoffs? Can it provide information on the amount of assistance provided (the voucher is for up to \$150) to customers? Do most receive the full \$150? What is the remaining balance on accounts that receive assistance? How many accounts that received a crisis voucher received a shut off notice within 6 months of receiving assistance? Within 12 months?*

Every customer that received a crisis voucher in FY 16-17 received the full amount available: \$150. This aligns with information shared by community partners, specifically that the \$150 does not cover the full cost of debt caused by individual crises. The bureau does not currently synthesize and analyze the data needed to cross-reference crisis voucher participation with shut-off data. The new Financial Assistance Services Team will be tasked with establishing the data collection systems to generate this kind of analysis.

21. *The CBO recommends \$200,000 of the \$582,000 PWB request and none of the \$400,000 request from BES for this. The CBO also does not recommend the 2 FTE specialized PWB customer service reps for low-income customers, and putting off the new multi-family low income crisis assistance until a more targeted approach can be developed (potentially using the new PHB rental registration system). How would not receiving these two positions and the new multi-family low-income crisis assistance impact the ability of the Bureaus to gauge the impact of its work to offer financial assistance to those in need? Can conditions be put on this funding to address some of the CBO concerns if granted?*

Not receiving the two positions would mean the Auditor's recommendations could not be implemented. The bureau currently does not have the capacity to i) implement and maintain new data collection systems; ii) analyze data to target customers in need; iii) provide specialized service. The bureau disagrees with CBO's position that the proposed multi-family model could be more targeted; this proposal includes a delivery mechanism that serves only customers that are at risk of losing their homes. The proposed Housing Bureau rental registration system would not provide a mechanism for distributing assistance, nor would it determine income levels to help distinguish a qualifying customer. Home Forward and its partners will provide both these services. Not implementing the multi-family utility crisis assistance would mean the bureau would not be able to reach low-income customers in multi-family units.

#### **Mt. Tabor**

22. *The CBO FY2018-19 PWB budget review reports that total preservation costs at Mt. Tabor could amount to \$12 million, well beyond the \$4 million that City Council has committed. Several unaccounted-for expenses are highlighted, including leak repair, ongoing maintenance, and development of interpretive signage. When will we have a better idea of these other unfunded elements? PWB have to address any of them?*

The total estimated maintenance, repair and preservation costs were updated from the estimated costs in the 2009 Historic Structures Report and represent a menu of options of work that could be selected. Some of the work, such as roofs on buildings still being used in support of the water system, would be programed and funded by the Bureau. Other work not related to water system operations are a Council policy decision regarding the mechanism for funding. The interpretive program was required as part of a Land Use Review for the reservoir disconnect project and is being funded by the Bureau. The budget for this work is \$400,000.

23. *Although Council has directed General Fund dollars to the historic preservation work at Mt Tabor, the work is being done is by PWB with existing staff and equipment resources. How does this commitment of PWB staff and equipment resources impact the ability of the Bureau to complete more essential capital improvement work? (such as the Willamette River Pipe crossing, repair/replacement/rehab of pump stations or mains, seismic upgrades, treatment program, etc.)*

The preservation work is being completed by contracted services, so there is little impact on existing staff. PWB is providing overall project management resources, typically the Project Manager spends between ¼ and ½ time on the project.