

To: Portland Utility Board (PUB)
From: Melissa Merrell, PUB Analyst
Re: Update on Requested Items from the Water Bureau
On: July 22, 2017

Following last week's meeting, I requested an update from the Water Bureau on the following items mentioned at the meeting:

1. More information on the life cycle costs of the UV first; filtration later (also known as UV Plus or the hybrid option);

The bureau will not be able to provide more information on this request as there are too many variables such as how much money the Council would authorize to be set aside each year for savings towards filtration or when a filtration plant would be built. If the board would like to articulate some parameters, the bureau could try to do some analysis.

2. The differences between the types of filtration facilities that the city could build within the \$350 million to \$500 million estimate provided by the bureau.

From the bureau:

The reason there is a range of costs regarding a filtration plant is that there is no recent planning completed for a filtration option. However, we can look to other cities. These options have not been evaluated for the Portland system to understand their benefits or the cost implications.

The most recent work on estimates in Portland's system was done in the early 2000's. Estimates at the Planning level, particularly without a planning study, can be +/- 50%, so a range of costs must be considered.

The drivers for cost for filtration will be the size of the treatment plant, the treatment processes utilized and the timing of the construction. As an example, I will run through a scenario to try to provide some context for the impact of each of these elements, this is an example only.

If the Water Bureau was asked to plan, design and construct a filtration plant starting today, it would be about 10-12 years before that facility would come online. A \$350M-\$400M filtration facility would allow the Water Bureau to meet the LT2 Rule and provide some additional benefits (turbidity protection, organics removal, DBP reduction, etc.). The facility would be sized to meet today's current demands (not potentially larger future demands or the full capacity of the conduits) by gravity flow.

With a \$400-\$500M filtration facility, the bureau would have more choices in regards to size and treatment technology. There may be benefit to sizing the facility to match the capacity of the

conduits. This would likely require a pump station to meet demand at certain times of the year. There would be consideration to pre-treatment systems like alkalinity adjustment or ozone that would substantially improve the performance of the filters. There could be consideration of alternate filtration medias such as membranes or activated carbon. There could be consideration given to more advanced solids handling to make disposal more efficient (spreading versus mechanical drying). The amount that you spend between \$400M and \$500M would be determined based on prioritization of these types of options.

Finally, timing plays into this. If we wait 20 years to start the planning and design of these facilities the cost of any filtration facility will likely cost more.

3. When the risk profile would be available for PUB members to review.

The bureau is still working on it but as of Friday, it was unlikely to be available before your meeting on Tuesday.

4. Does the rate impact that the bureau presented to PUB include assumptions of decreased water purchase by Tualatin Valley Water District?

Yes, assumptions about reduction in demand from wholesalers, as we understand them today, have been factored into the rate model.