FY 2016-17 Water Bureau – Questions from Portland Utility Board (March 4, 2016)

Questions for Both Bureaus:

1. ***What KPIs/metrics are they using currently to track the CIP work, such as % of projects on time, on budget.***

- Complete CIP projects on schedule: Less than 10 construction projects in last 12 months completed later than planned.
- New CIP projects require one of the following analyses in the basis of design report: total life cycle cost, cost benefit ratio, or cost-risk reduction ratio.

There are a number of CIP related entries across the programs in the annual program results report: http://www.portlandoregon.gov/water/article/540943

2. ***Are those multi-year capital projects in the current budget submissions that may be over-budget or off scheduled called out in the budget submission?***

Each year the budget submission includes a section entitled "The Changes from Prior Year" in the CIP section of the requested budget document, and notable projects are reported upon there.

Questions for Water Bureau:

1. ***Given the size and cost of the Willamette Crossing and Washington Park, have the designs of these infrastructure improvements been peer reviewed? If so, by whom? Japanese engineers with extensive expertise in earthquake hazards might be helpful.***

Value engineering, peer reviews and independent technical reviews by outside experts are not new or unique. Most alternative procurement projects have some level of value engineering or peer review, and often these projects have multiple levels of reviews. Even large dollar traditional low bid projects have some level of value engineering done. Frequently these efforts are proposed to validate the project costs and approach and to look for cost savings measures. These can be formal or informal efforts. Below is a brief summary of what efforts have been done on Washington Park Reservoir Improvements and Willamette River Crossing.

Washington Park Reservoir Improvements Project

This project has had a number of formal and informal value engineering, peer review and independent technical reviews as well as ongoing design and CM/GC reviews to minimize costs and provide the City the best value for the money spent.

Value engineering (VE) is a process in which Project stakeholders compare the total Project cost to Project performance and evaluate the benefit-to-cost ratio. With a CM/GC method of procurement, constructability is continuously evaluated and final costs are determined early in the process (that is, prior to completion of the final design). The early and realistic

determination of costs allows PWB to adjust design and construction methods based on real costs. A formal VE session was completed at the 60% design milestone that involved the design team, outside consultant review, and construction contractor review. In addition, informal VE reviews and peer reviews have been done ongoing since the 60%. Independent technical reviews have been done at the 30%, 60%, 90% and 100% review levels.

Project is at 100% design and in contract negotiations with the construction contractor. Delaying the project while another level of review is done would not result in any cost savings and would not meet the compliance schedule with OHA. In addition while Japanese experts may know more about earthquakes, they know nothing about the landslide at Washington Park. The local experts do have extensive experience working with seismic design and the critical site specific experience and knowledge of how Washington Park is likely to respond.

Willamette River Crossing Project

The Willamette River Crossing project is under development. Planning Phase was completed in 2010 with the Basis for Design Report. The Planning report; 1) evaluated the need for a new crossing; 2) evaluated several alternative locations for a crossing; and 3) recommended a tunneled crossing and possible alignment.

A form of Value Engineering/Peer Review was provided as the project scope was better defined by the following;

1) A Construction Method Evaluation and Property Impact Assessment was completed by Jacobs Associates and Brown and Caldwell in 2012. The report; 1)reviewed the recommended corridor for the crossing alignment, 2)evaluated construction risks, 3)evaluated technical feasibility of tunneling methods, and 5) provided independent cost estimates, and
2) A Technical Memorandum was completed by Murray Smith and Associates in 2014. The memorandum reviewed the 2 technically feasible tunneling methods and evaluated them with criteria established by stakeholders. The work included evaluation of the construction risks, costs and other criteria by directional drilling and micro tunneling experts.

In addition, peer reviews and value engineering are expected to be done by the Owner's representative and the Design – Build contractor in the following activities;

1) The Owner's Representative will provide additional technical review and advice during design and construction. The proposers must have extensive experience in Design-Build (DB) procurement methods, horizontal directional drilling(HDD), potable water transmission/operations, seismic/structural, environmental permitting, geotechnical, community outreach, risk assessment and mitigation management, environmental site assessment, property acquisition, and Design-Build quality control and assurance; and
2) The Design Build project delivery method will provide value engineering during design. The DB contracting method will give the DB Team an opportunity to partner with PWB's Project Team, and PWB Operations in performing value engineering and constructability reviews during design. Value engineering is defined as a process by which multiple subject matter experts evaluate and propose the most cost effective ways to deliver a project without reducing project quality and functionality. Value engineering in the classic sense is not done in the DB contracting method. However, the DB contracting method allows for nearly constant value

engineering throughout the design as contractor input is part of every engineering assumption and decision.

2. ***Could a resolution and MOA regarding the management of the City's public fountains be implemented and accounted for in the budget?***

   Interagency agreements are used to provide services and payments between city bureaus. Across the US, utilities typically do not construct and operate municipal decorative fountains. Costs for the decorative fountains were the responsibility of the Parks Bureau until 1988, when City Council transferred the responsibility to the Water Bureau. Presently the issue is the subject of on-going litigation and it would be wise to leave as is until that litigation is resolved.

3. ***Has the City considered a peer review of the HCP (but specifically the implementation projects), to find ways to lower project costs while still providing regulatory compliance?***

   The City has not engaged in a formal peer review of its habitat conservation plan (HCP); however, it did benefit greatly from collaborations and information exchanges with other Pacific Northwest utilities regarding the regulatory nuances of salmonid-focused HCPs during the development of the plan in the mid 2000's. The handful of large engineering projects associated with the plan, like the Dam 2 Tower Improvements, go through extensive review and value engineering to help manage costs. The bureau is open to considering future peer reviews by entities with relevant experience in salmon and steelhead restoration within the Sandy River Basin.

   There are limited numbers of utilities that could be considered peers for the City to engage regarding its HCP. The Bull Run HCP is the only one issued by the National Marine Fisheries Service within the State of Oregon. Seattle and Tacoma do have HCPs and through collaborations with staff from those utilities, Portland learned critical lessons which informed its approach and negotiations when it developed the HCP. Ongoing interactions and sharing with those utilities regarding HCP implementation do occur but would not be considered formal peer reviews of projects.

   Many of the bureau's HCP projects would be difficult to compare since one of the principal virtues of an HCP approach is a tailored set of mitigations that are matched to the particular environment (the Sandy River Basin in the bureau's case) and species of concern (Lower Columbia River coho, steelhead and Fall and Spring Chinook). Elements in the Water Bureau's plan such as riparian conservation easements, land and water rights acquisitions, and specific dollar contributions to regional restoration efforts are either dependent on negotiations with private parties or fixed cost obligations for the utility.

   Overall bureau capital improvement program impacts associated with the HCP are approximately $9.1 million over the next 5 years or just under 2% of the bureau's planned capital expenditures over that time frame.

4. ***Has the City evaluated whether or not it could increase the pace and manage the cost of maintenance and repair of service connections working alongside qualified contractor(s) or have contractor support that complete certain tasks that are not core to the connection such as paving, sidewalk, landscape rehab?***

   The maintenance and repair of service connections is a function that our crews are set up to be more efficient in repairing and replacing services than would a contractor. Water Bureau crews are sized and geographically situated to perform an ongoing supply of proactive system maintenance work, while retaining the flexibility to respond quickly to main breaks, service leaks, and other system issues. Contractors and the public contracting process are more conducive to project-oriented work, rather than variable work related to services. Smaller, disparate jobs typically are difficult to contract for because there are many unknowns and variables that would be cumbersome to bid, and expensive and inefficient to inspect and contract manage, and there would be opportunity costs that result from limited flexibility for a contractor who may not have the resource availability to adapt to system issues, or to have appropriate work in between response events.

   Additionally, Water Bureau crews are trained and authorized to operate and conduct work on the live water system, and the Water Bureau does not allow private contractors to operate or work on the live water system as a safety and public health precaution. Over the past 3 years, we have replaced, installed, or repaired between 1,500 and 1,700 services each year in the system, which is a historically strong pace.

   The restoration work associated with service repairs is typically straightforward, and the utilization of one entity to follow a project to completion--particularly for smaller, routine maintenance work like services—ensures that the restoration work is completed in a timely manner, and that the responsibility for restoration is clear. Further, although not being required to complete restoration of work sites would save the crew who installed the service some time, that time will be accounted for by a contractor who also will need to mobilize separately to complete those tasks, eliminating efficiencies associated with a single entity seeing the project through and enveloping that work into the project plan.

   In reference to paving, the Water Bureau utilizes Portland Bureau of Transportation (PBOT) paving crews to complete the paving restoration. It is possible to hire a contractor to complete that work as well, however there is a similar impact to the efficiency by virtue of the flexibility that PBOT crews have for the variable flow of paving work compared to a contractor who may not be as flexible due to the smaller scale.

   In certain circumstances we do utilize contractors for specialized needs such as certain concrete products (quick-set concrete), masonry work, and private property restoration.