BOARD WORK SESSION AGENDA
March 3, 2020

President Bernice Bagnall  Treasurer Jim Duggan
Vice President Dick Schmidt  Secretary Todd Sanders
Acting Secretary Jim Doane

Assistive listening devices are available upon request 48 hours prior to the day of the meeting by calling (503) 848-3000. For additional questions or assistance, see the District Recorder seated near the windows.

For online meeting information, Commissioner bios and more, visit www.tvwd.org.

VISION
Delivering the best water • service • value

MISSION STATEMENT
To provide our community quality water and customer service

VALUES
Reliability • Integrity • Stewardship • Excellence • Safety
EXECUTIVE SESSION – 6:00 PM – MAIN CONFERENCE ROOM
An executive session of the Board is called under ORS 192.660(2)(f) to consider information or records that are exempt by law from public inspection and ORS 192.660(2)(h) to consult with counsel concerning the legal rights and duties of a public body with regard to current litigation or litigation likely to be filed.

WORK SESSION – FOLLOWING EXECUTIVE SESSION

CALL TO ORDER

ANNOUNCEMENTS

1. DISCUSSION ITEMS
   A. Willamette Water Supply System Commission Update. Staff Report – Dave Kraska
   B. Alternative Delivery Final Report: Findings for an Exemption from Competitive Bidding – Post Construction Report for the Grabhorn Reservoir Replacement Project. Staff Report – Andrew Barrett

ADJOURNMENT
To: Board of Commissioners
From: David Kraska, PE, Willamette Water Supply System Commission General Manager
Date: March 3, 2020
Subject: Willamette Water Supply System Commission Update

Key Concepts:
At each monthly work session, we will provide the TVWD Board with an update on the current activities of the Willamette Water Supply System (WWSS) Commission. Since the TVWD Board has one representative on the WWSS Commission Board, these reports provide a means of keeping the other TVWD Board members up-to-date on relevant information. The topics of this month’s update are:

- Review the March 2020 WWSS Commission Board meeting agenda
- Review the Approvals and Procurements Forecast
- Update on Willamette Water Supply Program (WWSP) activities

Background:
The next WWSS Commission Board meeting is scheduled for March 5, 2020. The agenda for that meeting is attached to this staff report. At the March meeting, the Board will consider approving budget for the next fiscal year and approving a design contract amendment for the PLM_5.3 project. There is one informational item: a discussion of the planned business agenda items for the April WWSS Commission Board meeting.

The Approvals and Procurements Forecast (Forecast) is a WWSP tool that provides a summary of recent decisions made and a look ahead to what decisions and approvals are coming up in the next few months. The Forecast is divided along the various types of approvals and procurements that occur on the WWSP and the different approval levels: Program Director, WWSS Committees and WWSS Board. This document is a companion to the Management Authority Matrix that was approved by the WWSS Commission Board at its September 5, 2019 meeting. At the March TVWD work session, we will present a review of the current Forecast.

Activity on the WWSP will continue to increase over the next several years as more of our projects enter the construction phase. To enable this, we are working to complete our planning, permitting and real estate activities, though some of these are likely to continue for the next couple years. Active final design work will also continue for the next few years. We currently have four projects in construction. At the March TVWD work session, we will update the Board on our project delivery progress and our current construction projects.

Budget Impact:
Informational item only. No budget impacts.
Willamette Water Supply System Commission Update

Staff Contact Information:
David Kraska, PE; WWSS Commission General Manager; 503-941-4561; david.kraska@tvwd.org

Attachments:
WWSS Commission March Board Meeting Agenda
WWSP Approvals and Procurements Forecast

Management Staff Initials:

<table>
<thead>
<tr>
<th>Position</th>
<th>Initials/Name</th>
<th>Position</th>
<th>Initials/Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive Officer</td>
<td></td>
<td>Chief Engineer</td>
<td>N/A</td>
</tr>
<tr>
<td>Customer Service Manager</td>
<td></td>
<td>IT Services Director</td>
<td>N/A</td>
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<tr>
<td>Chief Financial Officer</td>
<td></td>
<td>Human Resources Director</td>
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</tr>
<tr>
<td>General Counsel</td>
<td></td>
<td>Water Supply Program Director</td>
<td></td>
</tr>
</tbody>
</table>
Willamette Water Supply System
Board Meeting Agenda
Thursday, March 5, 2020 | 12:00 – 2:00 PM
Room 113B/C
Hillsboro Civic Center, 150 E Main Street, Hillsboro, OR

To prepare to address the Willamette Water Supply System Board, please fill out the Public Comment Form located on the table near the main door to the meeting room. **Assistive Listening Devices (ALD) are available upon request 48 hours prior to the day of the meeting by calling (503) 941-4580.**  

All testimony is electronically recorded.

BOARD LUNCH – 11:30 AM

REGULAR SESSION – 12:00 PM

CALL TO ORDER

1. GENERAL MANAGER’S REPORT – Dave Kraska
   (Brief presentation on current activities relative to the WWSS Commission)

2. PUBLIC COMMENT
   (This time is set aside for persons wishing to address the Board on items on the Consent Agenda, as well as matters not on the agenda. Additional public comment will be invited on agenda items as they are presented. Each person is limited to five minutes, unless an extension is granted by the Board. Should three or more people testify on the same topic, each person will be limited to three minutes.)

3. CONSENT AGENDA
   (The entire Consent Agenda is normally considered in a single motion. Any Commissioner may request that an item be removed for separate consideration.)
   A. Approve the February 6, 2020 meeting minutes.

4. BUSINESS AGENDA
   A. Adopt FY 2021 Annual Work Plan and Budget – Dave Kraska
   B. Approve PLM_5.3 Design Contract Amendment – Mike Britch

5. INFORMATION ITEMS
   A. Planned April Business Agenda items – Joelle Bennett
   B. The next Board meeting is scheduled on April 2, 2020, at Hillsboro Civic Center – Room 113B/C.

6. COMMUNICATIONS AND NON-AGENDA ITEMS
   A. None scheduled.

ADJOURNMENT
Approvals and Procurement Forecast: February 2020 through April 2020

This report provides a three-month projection of (1) forthcoming actions under the WWSS Management Authority Matrix and (2) ongoing and forthcoming procurements.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Projected Action</th>
<th>Program Director</th>
<th>WWSS Committees</th>
<th>WWSS Board</th>
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<tbody>
<tr>
<td>Program Baseline or Related Plans</td>
<td>1. WWSP Annual Rebaseline Schedule and Budget</td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 2/20/2020 t</td>
<td>3/5/2020 t</td>
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<tr>
<td></td>
<td></td>
<td>Execute</td>
<td>N/A</td>
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<td>Real Estate</td>
<td>2. PLW_1.3 Resolution of Need</td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 1/23/2020 a</td>
<td>2/6/2020</td>
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<tr>
<td></td>
<td>3. MPE_1.0 Resolution of Need</td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 3/19/2020 t</td>
<td>4/2/2020 t</td>
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<tr>
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<td>4. PLM_4.3 Resolution of Need</td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 4/23/2020 t</td>
<td>5/7/2020 t</td>
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<tr>
<td>IGAs, MOUs, Permit Commitments, &amp; Similar Agreements</td>
<td>5. MPE_1.0 City of Beaverton (COB_1.0) Project Agreement (design only)</td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 1/7/2020 a</td>
<td>1/9/2020 a</td>
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<td>1/23/2020 a</td>
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<td>6. PLW_1.3 Hagg Lane (Butternut Creek) Agreement Amendment</td>
<td>Approve</td>
<td>N/A</td>
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<td>Execute</td>
<td>2/28/2020 t</td>
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<td>7. PLM_4.1 WCLUT Design IGA Amendment 2</td>
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<td>N/A</td>
<td>MC: 10/16/2019 a</td>
<td>12/5/2019 a</td>
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<td>8. PLM_4.2 WCLUT Design IGA Amendment 1</td>
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<td>MC: 10/16/2019 a</td>
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<td>2/3/2020 a</td>
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<td>9. PLW_1.2 WCLUT Design IGA Amendment 1</td>
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<td>10. PLM_5.2 Metropolitan Land Group Developer Agreement</td>
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<td></td>
<td>Execute</td>
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<td>N/A</td>
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<td>Contracts</td>
<td>11. RES_1.0 Design, Bidding, and Services During Construction</td>
<td>Approve</td>
<td>N/A</td>
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<td>2/6/2020 a</td>
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<td>Execute</td>
<td>2/7/2020 a</td>
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<td>N/A</td>
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<td>Program Director</td>
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<td>WWSS Commission Board</td>
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<td><strong>Contracts continued</strong></td>
<td>12. PLW_1.3 Construction Contract</td>
<td>Approve</td>
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<td>5/7/2020 t</td>
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<td>• Goal: Construction Contractor for waterline construction from Farmington to Kinnaman</td>
<td>Execute</td>
<td>5/8/2020 t</td>
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<td>• Approximate value: TBD</td>
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<tr>
<td></td>
<td>• Contractor: TBD</td>
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<td>• Publish Request for Proposals: 2/21/2020 t</td>
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<td>• Notice to Proceed: 7/8/2020 t</td>
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<td></td>
<td><strong>Contract Amendments and Change Orders (above Program Director’s Authority)</strong></td>
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<td></td>
<td>13. MPE_1.0 Design Amendment for City of Beaverton Pipeline (COB_1.0) Addition</td>
<td>Approve</td>
<td>N/A</td>
<td>N/A</td>
<td>8/21/2019 a</td>
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<td>• Goal: Amend contract for final design and services during construction to add COB_1.0 project in accordance with project agreement</td>
<td>Execute</td>
<td>2/3/2020 a</td>
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<td>• Value: $1,558,884.40</td>
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<td></td>
<td>• Engineer: Brown and Caldwell</td>
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<td>14. PLM_1.2 Construction Contract Change Order to add Day Road Crossing (Wilsonville Contract)</td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 3/24/2020 t</td>
<td>4/2/2020 t</td>
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<td>• Goal: Change order to Construction contract to add Day Road Crossing</td>
<td>Execute</td>
<td>4/3/2020 t</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>• Contractor: Moore Excavation</td>
<td></td>
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<td><strong>15. PLM_5.3 Design Amendment for Implementing Selected Alternative Alignment</strong></td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 2/20/2020 t</td>
<td>3/5/2020 t</td>
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<tr>
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<td>• Goal: Amend contract for final design and services related to additional engineering services</td>
<td>Execute</td>
<td>3/6/2020 t</td>
<td>N/A</td>
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<td></td>
<td>• Value: $1.3M</td>
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<td></td>
<td>• Engineer: Jacobs</td>
<td></td>
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<td>16. WTP_1.0 Design Amendment for Scope Modifications</td>
<td>Approve</td>
<td>N/A</td>
<td>MC: 3/19/2020 t</td>
<td>4/2/2020 t</td>
</tr>
<tr>
<td></td>
<td>• Goal: Amend contract for design services related to additional engineering services</td>
<td>Execute</td>
<td>4/3/2020 t</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Value: TBD</td>
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<tr>
<td></td>
<td>• Engineer: CDM Smith</td>
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To: Board of Commissioners  
Acting as the Local Contract Review Board  

From: Andrew Barrett, PE, Senior Project Engineer  

Date: March 3, 2020  

Subject: Alternative Delivery Final Report: Findings for an Exemption from Competitive Bidding – Post Construction Report for the Grabhorn Reservoir Replacement Project  

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Key Concepts:  
- Per ORS 279C.355, a number of matters must be filed with the Local Contract Review Board following completion of an alternative delivery contract for the Grabhorn Reservoir Replacement Project.  
- The report, which includes the original findings and final assessment, is provided as Exhibit 1.  

Background:  
The original Grabhorn Reservoir was a concrete circular reservoir with five million gallons (MG) of capacity and was constructed in 1971. The reservoir needed replacement due to structural failures and overall age of the structure. Planning for the replacement of this reservoir began in late 2016.  

In December 2016, the Local Contract Review Board approved an exemption to allow the Grabhorn Reservoir Replacement Project to be delivered through an alternative delivery process, specifically Progressive Design-Build. Shortly after the approval of the exemption, a Design-Build team was hired to design and construct the new reservoir.  

The new Grabhorn Reservoir is a 5 MG circular prestressed concrete structure (AWWA D-110 Type Tank) which includes a valve house, connections to the existing aquifer storage and recovery (ASR) facility and offsite piping improvements. The new reservoir was brought online in May 2019, with construction completed in late 2019 and final payment made in February 2020.  

Budget Impact:  
The project is complete and has no remaining budget impacts. The final cost assessment, including the original project budget, the amended project budget and results of the alternative delivery contract and amount paid to the Design-Builder is included in Exhibit 1. The total cost of the project is approximately $13,930,000, which includes all portions of design, construction, permit fees, subconsultant fees, inspection fees, staff time and materials used on the project.  

Staff Contact Information:  
Andrew Barrett, PE; Senior Project Engineer; 503-848-3091; andrew.barrett@tvwd.org  
Nick Augustus, PE; Engineering Division Manager; 971-327-6292; nick.augustus@tvwd.org
March 3, 2020
Alternative Delivery Final Report: Grabhorn Reservoir Replacement Project

**Attachments:**
Exhibit 1 – Findings for An Exemption from Competitive Bidding – Post Construction Report for the Grabhorn Reservoir Replacement Project

**Management Staff Initials:**

<table>
<thead>
<tr>
<th>Role</th>
<th>Initials</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive Officer</td>
<td>🟢</td>
<td>N/A</td>
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<tr>
<td>Chief Engineer</td>
<td>🟢</td>
<td>N/A</td>
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<tr>
<td>Chief Financial Officer</td>
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<td>General Counsel</td>
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<td>N/A</td>
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<tr>
<td>Customer Service Manager</td>
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<td>IT Services Director</td>
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<td>Water Supply Program Director</td>
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</table>
EXHIBIT 1
FINDINGS FOR AN EXEMPTION FROM COMPETITIVE BIDDING – POST CONSTRUCTION REPORT
FOR GRABHORN RESERVOIR REPLACEMENT PROJECT

The District completed its first progressive-design delivery project in October 2019. The project began in 2016 when the District chose to utilize an alternative delivery method, Progressive Design-Build, to design and construct a replacement 5 million-gallon (MG) reservoir, a new valve house, and other piping and appurtenances as needed. The report that follows directed to the District board of commissioners, serving as the local contract review board, presents the findings as required by Oregon Revised Statutes (ORS) 279C.

The following is an excerpt from ORS 279 regarding the alternative delivery process and report requirements: “279C.355 Evaluation of public improvement projects not contracted by competitive bidding. (1) Upon completion of and final payment for any public improvement contract, or class of public improvement contracts, in excess of $100,000 for which the contracting agency did not use the competitive bidding process, the contracting agency shall prepare and deliver to the Director of the Oregon Department of Administrative Services, the local contract review board or, for public improvement contracts described in ORS 279A.050 (3)(b), the Director of Transportation an evaluation of the public improvement contract or the class of public improvement contracts.

(2) The evaluation must include, but is not limited to the following matters:

(a) The actual project cost as compared with original project estimates;

(b) The amount of any guaranteed maximum price;

(c) The number of project change orders issued by the contracting agency;

(d) A narrative description of successes and failures during the design, engineering and construction of the project; and

(e) An objective assessment of the use of the alternative contracting process as compared to the findings required by ORS 279C.335

(3) The evaluations required by this section:

(a) Must be made available for public inspection; and

(b) Must be completed within 30 days of the date the contracting agency accepts:

(A) The public improvement project; or

(B) The last public improvement project if the project falls within a class of public improvement contracts.”
This evaluation responds to each of the required articles as follows:

(2)(a) The actual project cost as compared with original project estimates;

Assessment: In response to item 2a, Table 1 presents the original project estimate developed at the concept phase, the amended budget estimate, and the actual project costs, including both internal and external costs. During the design phase, there were several original design concepts which were modified based on constructability challenges which changed the project scope significantly. These included the following:

- Additional controls to allow remote operation of the Grabhorn ASR facility to allow the District to make changes to incoming supply from the Willamette Water Supply System (WWSS).
- Additional safety measures for operators to eliminate nearly all confined space access.
- Pipeline routing and access was changed to allow for proper draining and overflow protection of the reservoir.
- This project allowed for the elimination of a separate project to provide pressure relief in the 385-pressure zone which is also included in the final project costs.

In addition, the costs for the concrete reservoir construction were estimated low during pre-design, and a portion of the overall pipeline and civil work was not fully vetted with the pre-design cost estimate.

Table 1: Original compared to actual project estimates

<table>
<thead>
<tr>
<th>Original Cost Estimate</th>
<th>Amended Budget</th>
<th>Total Actual Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,550,000</td>
<td>$14,630,790</td>
<td>$13,930,000</td>
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(2)(b) The amount of any guaranteed maximum price;

Assessment: In response to item 2b, Table 2 presents the original cost of the Design-Build Contract, the actual cost paid to the Design-Builder, the guaranteed maximum price (GMP), and the final price paid to the Design-BUILDER inclusive of the cost share split paid to the Design-Builder based on final payments made in late January 2020. The design phase increase in costs was due to the addition of the valve house with its automated flow controls.

Table 2: Cost Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Original Contract Amount</th>
<th>Actual</th>
<th>Difference</th>
<th>GMP</th>
<th>Final Price Paid</th>
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<tr>
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<td>$1,073,273</td>
<td>+$192,173</td>
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<td>$1,073,273</td>
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<td>Phase 2 Construction Services</td>
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<td>$11,596,732</td>
<td>-$977,555</td>
<td>$12,574,287</td>
<td>$12,035,387</td>
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(c) The number of project change orders issued by the contracting agency;

Assessment: The number of change orders on this project was 6, including the final cost split and reduction in the overall GMP. Actual change order costs due to construction scope needs was $40,977 (0.3%). The Design-Builder completed its work $872,536 below the GMP, thus there was a cost savings split of $436,268.

(d) A narrative description of successes and failures during the design, engineering and construction of the project; and

Assessment:

During the design process, working with the Contractor generated many cost saving ideas, and allowed for proper risk allocation, innovation regarding the construction approach, and buy-in from the Contractor to the overall approach of the project. Realtime feedback was given to the Engineer regarding the design to avoid expensive redesigns while making the construction easier and much more economical for the Owner. A list of successes includes:

Cost Savings:
- $500,000 for shoring removal of ASR building by using the existing tank as shoring
- $400,000 by stockpiling material onsite
- $250,000 by converting valve vault to valve house
- $70,000 by using rocker pipe design vs manufactured pipeline joints
- $30,000 for crushing backfill onsite to support nearby buildings
- $10,000 for installing a portable crane rather than a gantry crane

Risk Allocation:
- Risk was allocated to the appropriate parties during the development of the GMP. The Owner assumed risk for rock excavation via a unit price in the GMP, and controlled that risk as an Owner-controlled contingency item. This reduced the price of the overall GMP as no rock excavation price and quantity was assumed in the Design-Builder’s GMP. Other items listed in the Owner-controlled contingency included potential lead-based paint removal of the existing reservoir as well as potential additional paving costs.

Innovation:
- The Contractor suggested we combine many of the pipe routes to allow smaller trenching areas and a smaller restoration footprint. The Contractor also provided valuable constructability feedback regarding the design of the reservoir drain and overflow piping and outfall. The concept design assumed the existing reservoir drain piping would be used, however, in order to
connect to that piping the excavation would have been very deep, adding
cost and safety risk to the project.
- The Contractor determined using part of the existing reservoir wall would
suffice as shoring for nearby buildings. In addition, the Contractor
discovered shallow rock near the existing building during the early
construction phase of the project which allowed for a modification of the
retaining wall approach. This not only saved cost, but also greatly reduced
the risk to the existing Aquifer Storage and Recovery facility.
- The Contractor elected to use part of the existing tanks as crushed backfill
to support the existing tank wall.

Collaboration:
- The Engineer, Owner, and Contractor worked in collaboration on the project
to help achieve the design and delivery of the project while avoiding a
combative relationship that can occur with other types of delivery methods.
The Owner’s Representative was involved to provide a third-party review to
ensure the design criteria were met and the prices provided were
reasonable.
- The Design-Build team worked together with the Owner weekly, generating
great trust which allowed the project to proceed rapidly both during design
and during construction.

Failures of the project include:
- The largest failure of the project dealt with permitting. Four months were
lost on the project schedule due to permit delays. The permits were
submitted in a timely manner but had some significant delays in the
approval process. This resulted in the substantial completion date being
delayed to the final completion date, and the final completion date moving
back nearly four months. The project goal of having the reservoir
operational before the peak water use season was still met, thus, although
the delay could be seen as a potential failure, the Progressive Design-Build
delivery method allowed the Owner some flexibility, and the Design-Builder
was able to accelerate some items during construction to meet the intent of
the schedule. By collaborating through this process, the project goals were
met, risk was reduced, and all parties involved maintained a good working
relationship.

(e) An objective assessment of the use of the alternative contracting process as compared to the
findings required by ORS 279C.335

Assessment:
The original findings pursuant to ORS 279C.335(2)(b)(A-N) including the final assessment as
required by ORS 279C.335(2)(e) are as follows:

A. How many persons are available to bid;
**Original findings:** TVWD will ensure maximum competition and fair opportunity for the project. A solicitation of interest letter will be sent to potential candidates for a role on the PDB project. TVWD will issue a Request for Qualification (RFQ) for the PDB team. The RFQ will be written in manner to attract a PDB team that has the specialized knowledge, capacity, and skills for the project within the State of Oregon, the Pacific Northwest and nationally. The RFQ will be published in the Daily Journal of Commerce and posted in the TVWD’s website to attempt to notify all potential respondents.

Potentially qualified firms that may respond to TVWD for the project or have expressed their interest are listed below. A PDB team can be a joint venture of designer and contractor, a designer-led team with a subcontracted contractor, a contractor-led team with a designer as a subconsultant, or a single firm that can perform both design and construction. Design engineering firms and contractors may team in different ways to respond to the RFP. Most of the anticipated design engineering firms also hold contractor licenses which would enable them to act as the General Contractor. A solicitation of interest letter has been sent to 15 potential respondents and Request for Letters of Interest (RLOI) for the Grabhorn Reservoir Replacement Project was also published in the Daily Journal of Commerce (DJC) on November 22, 2016 to attract firms that are unaware of the project. The following 20 firms responded and expressed interest in the project.

1. AECOM
2. Brown and Caldwell
3. Carollo Engineers
4. CDM Smith
5. Emery & Sons Construction Group
6. Gateway Pacific
7. HDR
8. Hoffman Corp.
9. Kennedy/Jenks Consultants
10. Kerr Contractors
11. KPFF
12. Murray, Smith & Associates
13. MWH/Stanatec
14. Ward-Henshaw
15. NW Geotech
16. OBEC
17. Shannon and Wilson
18. Skaar Construction
19. Slayden Construction Group
20. The Structural Group

**Assessment:** Four well-qualified Design-Builders proposed on the work. They included the following:

- Emery & Sons Construction Group
- Gateway Pacific
- Ward-Henshaw
- JW Fowler
B. The construction budget and the projected operating costs for the completed public improvement;

**Original Findings:** The estimated construction cost for the project is approximately $10 million. Operational costs for the project are estimated to be $10,000 annually. Implementation of the project will not increase the need for TVWD operations staff but has the potential to reduce routine costs because of improved reservoir conditions. Through the “fast-track” process, the PDB method can reduce overall project schedule, limit the reservoir down time and therefore reduce the capital cost by reducing time-related overhead charges.

**Assessment:** The original construction budget exceeded the construction price due to the complexity of the project and the basis of costs used to set the baseline price. Additionally, the scope changed dramatically through the design process. The original construction budget assumed a tank that was shorter and not buried in the ground, and prices were not properly escalated. This was discussed at length with the Owner’s Representative to ensure the costs provided by the Design-Builder as part of the GMP were not improperly inflated. Additionally, the Contractor and Engineer provided pricing for several recently installed reservoirs which were done as a low-bid contract to ensure the pricing was not unreasonable.

Operating costs have been reduced by allowing a mix of feedback from what Operations Staff needs to ensure the project works while balancing this with constructability.

Overhead costs were reduced slightly by fast-tracking the project through design and construction. Through this method, the design was completed in approximately 6 months, which was nearly 50% reduction in time. It also allowed the contractor to proceed with early work for the reservoir grading without an extended bid period and additional time required to advertise that portion of the work and hire it out separately.

C. Public benefits that may result from granting the exemption;

**Original Findings:** A qualification-based selection in an alternative delivery method enables competition among the most qualified contractors/engineers and results in a high-quality project to better meet the public and TVWD’s needs.

Potential cost savings from the PDB method is a benefit to TVWD rate payers. Public benefits can also be achieved from the short construction schedule. By utilizing the PDB method a new Grabhorn Reservoir can be delivered sooner to serve the area with a more reliable and resilient water supply. Along with a reduced construction
schedule and collaborative work approach the PDB provides the potential to minimize the construction impact on the local community.

**Assessment:** There were four well-qualified firms which proposed on the project. The District evaluated proposals from all four and selected the team that through the proposal and interview process appeared best qualified for this particular project. The results were a highly motivated and collaborative team that achieved many successes during the project.

Through this collaborative process, trust was developed, thus allowing for reduced staff time and overhead costs which can sometimes be attributed to poor working relationships. Solutions were presented and solved rather than disputed.

Minimal change orders were necessary for the project resulting in substantial cost savings to the public. These savings were achieved by having the Contractor involved during the design stage to provide input on the constructability feedback.

In addition, the Design-Builder was involved from the start, and was able to participate in public meetings early in the design phase to understand their needs. Innovative solutions were used to reduce the amount of truck traffic leaving the site, and thus, limited the impact to the travelling public. The Design-Builder also met their construction schedule once permits were received which reduced the overall impact to the public.

**D. Whether value engineering techniques may decrease the cost of the public improvement;**

**Original Findings:** The PDB method allows TVWD to utilize value engineering to potentially achieve cost savings during the design phase, before design decisions are finalized and before the Guaranteed Maximum Price (GMP) is established for construction. The value engineering is planned to be performed at the 30% design milestone. The review will be performed by the Owner’s Representative (West Yost), TVWD staff, and may potentially utilize additional independent reviewers external to the project team, along with PDB team participation. Through the collaborative process, the PDB team can come up with innovative solutions, constructability opinions, and realistic construction-pricing that allows opportunities for TVWD to make cost-benefit decisions and reduce the overall project cost. It is anticipated that the selected PDB firm will seek competition on various components of the work which may also assist in providing value and decreasing the overall cost of the project.

**Assessment:** Value engineering was used throughout the entire design and construction process, and not solely at the design milestones. The team that was hired held regular meetings and received real-time feedback from operators, engineers, and the contractor. With this real-time feedback, the team was able to
assess the constructability of various design ideas, and also helped with real-time evaluation of costs. Costs of various ideas were evaluated and approved or rejected prior to any drawings being produced. This resulted in significant cost savings in construction but also during the design process.

E. The cost and availability of specialized expertise that is necessary for the public improvement;

Original Findings: The project requires the specialized PDB team to have experience in design and construction of concrete circular reservoir and pipelines and have knowledge of all permitting requirements. In addition, the PDB team will understand the importance of coordinating the project construction work to meet TVWD operation needs and will be capable of addressing geotechnical and construction issues. TVWD’s overall project scope is to build an AWWA D-110 concrete reservoir. Major construction elements and equipment may be competitively bid with TVWD reviewing bids as part of the development of the GMP. This will ensure competitive costs for the project. The overall cost will be similar to or lower than a Design-Bid-Build project. All of the firms listed under Design Engineering Firms and Construction Contractors above possess the specialized expertise necessary for the project.

The cost and availability of specialized expertise won’t affect the PDB method. Procurement of the PDB team based on qualifications, technical approach, and initial costs (design and pre-construction costs) will enable TVWD to retain a well-qualified team and obtain competitive pricing.

Assessment: A small portion of the work (tank wrapping) was highly specialized with only one sub-contractor available to do the work. This is the only portion of the work where specialized expertise was required. There were four highly qualified teams that proposed on this project. Through close evaluation of the costs, competitive pricing was received without additional bidding of project elements.

F. Any likely increases in public safety;

Original Findings: TVWD requires any engineering firms and construction contractors performing the work with TVWD to have successful performance records for safety and protection of the contractors, neighbors, the Owner and the public who will be affected by the project. In addition, clean and safe water supply from the existing Grabhorn facilities, which will need to remain in operation, to the customers and the public must be assured during the construction and when the new reservoir is being tested and placed in service.

The PDB method allows the TVWD to evaluate the PDB team’s safety record and to consider historical performance of the PDB teams in previous similar projects as a
selection criterion. One evaluation criterion would be the Experience Modification Ratio (EMR) for the PDB team and any key subcontractors. Using the PDB method, TVWD is able to work closely with the PDB team to ensure appropriate safety measures are embedded in the design and construction and all the TVWD and public safety concerns are addressed.

Assessment: The Design-Build teams were evaluated in several categories, including their safety records and their approaches to safety throughout the project phase. Safety and security of the existing system during construction was increased with the Contractor having a full understanding of the constraints of the site. The Contractor also proposed methods to allow for continuous operation of the existing ASR facility, which reduced truck traffic, allowing for not only reduced costs, but also safety for the travelling public.

As this project site is not open to the public, the ability to increase safety is limited to the Operations Staff who will be using the facility. With operator safety in mind, several improvements were made to the new facility. The safety components that were included in this project included an access bridge rather than a ladder to access the top of the reservoir, removal of confined spaces, and specific fall protection measures to ensure future worker safety.

G. Whether granting the exemption may reduce risks to the contracting agency, the state agency or the public that are related to the public improvement;

Original Findings: The PDB method will put TVWD in a better position to complete the project on schedule while minimizing the Owner’s risks, compared to the DBB method.

The PDB method allows the contractor’s input and collaboration of designer and contractor in the early design phase, which enables the contractor to understand the project from the beginning, to develop constructible solutions during the design, and to reduce the potential conflicts, issues and disputes during construction. It also mitigates the risk of project uncertainty when design translates into construction and the risk of service interruption when the reservoir is taken out of service.

The PDB method also allows TVWD to work closely with the PDB team to ensure public safety and reduce risks.

Assessment: Many risks were reduced to the Contracting Agency that were related to the project. They included:

- Reservoir site location with buy-in from contractor.
- Structural support of the existing ASR facility immediately adjacent to the reservoir.
- Excavation and backfill depth to rock, including a full understanding of rock excavation requirements.
• Working in suburban environment near residential neighbors
• Contractor understanding of the project and prices reflect actual work required.

This understanding of the risks, allowed the contractor to mitigate risk during the design phase, and also minimized change orders as the design included all components for work and the GMP cost reflected the actual work for installation.

(H) Whether granting the exemption will affect the sources of funding for the public improvement;

Original Findings: The project is funded from the TVWD capital improvement fund which is supported by revenue generated from water sales. Granting the exemption will not affect the sources of funding.

Assessment: This exemption did not affect the funding sources.

(I) Whether granting the exemption will better enable the contracting agency to control the impact that market conditions may have on the cost of and time necessary to complete the public improvement;

Original Findings: Granting the exemption will better enable TVWD to control the impact of market conditions on costs. The current construction market for public projects has been impacted by the significant increase in commercial construction. There has been a substantial rise of labor and material costs as part of the recovery from the Great Recession. Compared with the DBB method, the PDB method provides TVWD with the flexibility to reduce the impact of market conditions, especially in the current price-increasing market.

The PDB method allows the selected PDB team to secure some aspects of work (e.g., equipment, site civil) through competitive bids early in the project, which can eliminate price uncertainty and avoid price escalation during the construction period. The PDB method also permits TVWD to partner with the PDB team to award an early construction package prior to completion of the overall design. The PDB team tends to establish the GMP set before the completion of the final design and TVWD can negotiate the GMP contract to have the PDB team bear/share some risks of future price escalation. In addition, the PDB team can utilize the process and construction narratives instead of detailed specifications for construction if permitted by TVWD, which can reduce the project schedule and lessen the impact of price increases.

Assessment: The market conditions were changing rapidly during the design process and as costs were developing. During this time prices of materials were escalating. The contractor was able to secure piping for the project at a much better rate due to early quotes for the project as the GMP was being developed. Additionally, haul-off fees were quoted early in the design stage and secured early for much better pricing for the duration of the project.
(J) Whether granting the exemption will better enable the contracting agency to address the size and technical complexity of the public improvement;

**Original Findings:** PDB can address the size and technical complexity of the project more effectively than the DBB method because of the qualification-based selection of the PDB team and better collaboration between the designer and contractor within the team. The technical complexity of the project is due primarily to geotechnical site conditions and the criticality of the Grabhorn Reservoir in the water distribution system. It requires the PDB team to be capable of managing the complicated geotechnical issues, replacing the reservoir without interfering with the water supply, and performing successful reservoir testing and commissioning. The PDB method will allow TVWD to retain a highly qualified PDB team with sufficient experience and knowledge to manage, supervise and perform the work to meet the project’s needs.

**Assessment:** Technical complexity and limited or constrained site area for the type of construction helped drive the decision for this project to go alternative delivery. By granting the exemption, the District was able to utilize different methods to deliver the project such as an early grading package. Prior to the wet winter rains, the contractor was able to construct the access and haul road and was able to be nimble in its approach to addressing the complex site constraints. Having the Engineer and Contractor as part of a team allowed both aspects of the project to be delivered practically and efficiently.

(K) Whether the public improvement involves new construction or renovates or remodels an existing structure;

**Original Findings:** The project includes demolition of the existing reservoir and construction of a new reservoir and ancillary facilities.

**Assessment:** This project involved new construction only, with very minor construction inside an existing building. The construction included protection of the existing Aquifer Storage and Recovery (ASR) Well.

(L) Whether the public improvement will be occupied or unoccupied during construction;

**Original Findings:** The reservoir site is currently unoccupied and will be unoccupied during construction. TVWD will operate the Aquifer Storage and Recovery (ASR) pump station located on the site intermittently during winter recharge and summer withdrawal. The PDB team will need to coordinate with TVWD for site access and safety of all onsite staff.

**Assessment:** The site was partially occupied during construction. An existing ASR building was in operation that needed to retain access and ability to discharge water to an onsite pond. Through the design process, it was determined that the pond could be used for stockpiling material rather than a retaining pond. This would allow for cost savings, and more importantly, neighbor impacts could be reduced by
stockpiling material on site. The pond function was replaced by the Contractor during construction with a series of storage tanks. Through renting the tanks for the duration of the project, $400,000 was saved.

(M) Whether the public improvement will require a single phase of construction work or multiple phases of construction work to address specific project conditions; and

Original Findings: Construction of this project may be completed in a single phase or in several small phases. An advantage of PDB is the ability to bid multiple packages if it is beneficial to do so. TVWD has a proposed schedule of taking the existing reservoir out of service and placing the new reservoir in service. The PDB method allows the PDB team to layout the project roadmap and develop the schedule early on to ensure that construction is being performed within TVWD’s desired time frame.

Assessment: Two phases of construction were used as a part of this project. This entailed early work and the final construction. The early work was intended to set-up the work for the rest of the construction of the project after permits were acquired. This worked out well for starting construction, however, the intention was to have the permits in-hand for the work to transition from the early grading work directly to demolition and the remainder of the construction without delay. Longer than normal permitting delays required a pause in construction. As soon as the permits were received, the work immediately restarted. If this had been a different contracting method, the permitting delays could have cost the District additional overhead and mobilization, instead it was a seamless transition.

(N) Whether the contracting agency or state agency has, or has retained under contract, and will use contracting agency or state agency personnel, consultants and legal counsel that have necessary expertise and substantial experience in alternative contracting methods to assist in developing the alternative contracting method that the contracting agency or state agency will use to award the public improvement contract and to help negotiate, administer and enforce the terms of the public improvement contract.

Original Findings: The TVWD staff have limited experience using the PDB method to deliver prior projects. TVWD has retained West Yost to provide the Owner’s representative and project management services. West Yost has served many municipalities and public agencies as the Owner’s representative or program manager on alternative project deliveries for over a decade. West Yost is a licensed engineering firm in Oregon and California. West Yost has 5 years of experience in assisting municipalities and public agencies in delivering Design-Build projects. Legal assistance may be provided by TWVD in house counsel or by an independent legal firm with the appropriate expertise.

Assessment: The Owner hired an Owner’s Representative (West Yost) to aid with developing the contract, reviewing the design, and aiding with negotiation of the
GMP. The Owner’s Representative worked very well to help ensure costs were within reason and the construction approach seemed valid. The Owner’s Representative also provided valuable feedback during both design and construction as a third-party reviewer and assisted the District through its progressive-design delivery project.

279C.355 (3)(a)

(a) Must be made available for public inspection; and

Assessment: This document will be posted on the District website for comments.

279C.355 (3)(b)

(b) Must be completed within 30 days of the date the contracting agency accepts:

(1) The public improvement project; or

(2) The last public improvement project if the project lands within a class of public improvement contracts.

Assessment: TVWD believes this document fulfills the requirements of 279C.355, and the project is complete.