Tualatin Basin
Water Supply Project and
Tualatin Project Title Transfer

Tom VanderPlaat,
Tualatin Basin Water Supply Partners

Sustaining Our Economy, Watershed and Community
Presentation Review

- Cost & Schedule Update
- Dam Facility Assessment
- Hagg Lake Property Acquisition
- Joint Funding Agreement
- Title Transfer

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Tualatin Basin Water Supply Project
Cost & Schedule Evaluation
Scope of Work

- Updated project costs and schedule for:
  - Scoggins Dam raise
    - 25’ and 40’ raises
    - Single and multiple-level intakes
    - With and without title transfer
  - Raw water pipeline & pump-back system
  - JWC water treatment plant expansion
Cost and Schedule Evaluation
Study Scope and Objectives

- Provide independent cost and schedule opinion
  - Similar level of detail – Planning Level Estimates
    - 2006 USBR Appraisal Level Design for Dam raises
    - RWP based on pre-design report
    - Pump-back based on conceptual design information

- Use same approach as on the similar projects
  - Support “apples to apples” comparison

- Multi-disciplined cost estimating team
  - Engineers - Carollo, Black&Veatch, Otak, MSA, S&W
  - Estimators - Pinnell-Busch w/ Larson, David Place
  - Contractors - Kerr Constructors, Barnard Construction

- Title transfer opportunities and constraints
Dam Raise Cost Validation Results

- Cost estimates & schedules
- 4 alternative dam scenarios
  - 25 & 40 ft. raise options
  - Multi-Level and single level intake structures
- Roadway & recreation (40 ft. raise)
- Design and permits
- “Team estimate” & “team refinements”
- Schedules for each alternative
- Clarified title transfer opportunities & issues
Dam Alternatives Comparative Costs

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Tualatin Basin Water Supply Project
Comparative Cost Dam – 40 ft. w/Multi Level Intake

<table>
<thead>
<tr>
<th>Total Project Cost, Millions</th>
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<tbody>
<tr>
<td>$300.0</td>
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<tr>
<th></th>
<th>USBR Estimate</th>
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<tr>
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<td>$209.9</td>
<td>$230.9</td>
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Tualatin Basin Water Supply Project
Construction Cost Summary by Element 40 ft. w/Multi-Level Intake

- Embankment Estimate
- Spillway & Outlet Works Estimate
- Roadways Estimate
- Recreation Estimate
- Permits & Mitigation Estimate

Cost in Millions

- USBR Estimate Escalated
- Team Refinement

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Tualatin Basin Water Supply Project
Raw Water Pipeline Overview

35,000 lf 96” WSP

Hagg Lake

JWC WTP
Flow Control Structure

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Tualatin Basin
Water Supply Project
Pump-Back Facility Overview

300 cfs
Pump station

Flow control structure
Cost Summary Review

- **Dam Raise Option**
  - 40’ raise = $263.6 M
  - Raw Water Pipeline = $115.6 M
  - Pump Back = $49 M
  - **Total = $428.2 M**

- **Multiple Source Option**
  - 25’ raise = $237 M
  - Raw Water Pipeline = $90 M
  - Pump Back = $40 M
  - Willamette Pipeline = $285 M
  - **Total = $652 M**
Other Cost Summary Information

Cost Summary for other elements

- Title Transfer – $6 M - $11.3 M
- JWC Water Treatment Plant Expansion –
  - 120 MG - $104.5 M
  - Deferred Capital - $20.2 M
Overall Schedule

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Effects of Title Transfer on Construction Costs/Schedule

- Potential changes/opportunities to save money:
  - Intake location and design
  - Outlet design and crest elevation

- Potential issues related to ownership:
  - Project delivery
  - Maintenance requirements and strategies
  - Automation
  - Water Quality

- Permitting and environmental studies
Review of Title Transfer Findings

- **Benefits could include:**
  - Cost savings through design changes
  - Reduced schedule
    - quicker design phase
    - more control over schedule

- **Challenges could include:**
  - Greater risk and responsibility
  - Costs associated with ownership
Scoggins Dam Assessment

- Title Transfer and Water Supply Project
- Reclamation’s Comprehensive Facilities Review (CFR)
  - Safety is the top priority
  - Reclamation is a recognized leader for their Dam Safety Program
  - Review of existing dam based on updated earthquake information
  - New dam will require to meet updated data
Scoggins Dam Reviews

✓ Original Dam Constructed in 1974-76
✓ Ongoing Dam Safety Reviews
  • 1990’s Dam Safety Reviews
  • 1999 Review of 1994 Seismic analysis and new standards
  • 2003 Safety of Dams Recommendations
  • 2004 Updated Information from USGS
  • 2006 Dam Raise Design and new study
Conceptual Dam Design

Maximum Section – 40 foot raise

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Tualatin Basin Water Supply Project
Scoggins Dam Assessment

Next Steps

• Dam site investigation coordination
• Revised Dam Engineering Concepts
• Emergency preparedness review
• Update Draft Planning Report/EIS elements
• Ongoing coordination with Reclamation
Hagg Lake Property Acquisition

- One of the most impacted Property
  - Impacted by both 40 and 25 ft dam raises
  - Approached by landowner
  - Tanner Creek Area
  - 15 Acres with home and outbuildings
  - Property purchased by Partners
  - Relocation costs
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Tualatin Basin Water Supply Project

40 foot raise
Alternate 2

Tanner Creek
Joint Funding Agreement
4th Amendment

- Partnership Review
- Estimated Budget – $21.6M
- Scope of Work Elements
  - Final EIS, Permitting and Mitigation Plans ($3.6M)
  - Property Acquisition Process ($2M)
  - Interim and Long term Program Management ($750K)
  - Site Investigations and Pre-design ($11.1M)
  - Recreational Master Plan ($250K)
  - Title Transfer ($1M)
  - Other costs (Project Management, Legal, etc.) ($2.9M)
- Partners Construction Agreement
  - Commitment through the project
Joint Funding Agreement
4th Amendment

<table>
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<th>Partners Shares</th>
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<td>TVWD – $9.37 M (43.4%)</td>
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<td>CleanWater Services – $6.74 M</td>
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<td>(31.1%)</td>
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<td>City of Hillsboro – $4.69 M (21.7%)</td>
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<td>City of Beaverton – $815K (3.8%)</td>
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<td>(*Cities of Forest Grove and Tigard)</td>
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Title Transfer Update

- Reclamation MOA and Policy Review
- Approval of MOA on Governance by Partners
- Development of IGA for Partnership Organization
- Review of key contracts
  - Tualatin Valley Irrigation District
  - Washington County Facilities
  - Lake Oswego Corporation
Questions?

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