NWHA 2018 ANNUAL CONFERENCE
THE CREATIVE WORLD OF O & M FINANCING
YAKIMA-TIETON IRRIGATION DISTRICT

WATER DELIVERY AND MANAGEMENT SINCE 1910

RICK DIEKER - MANAGER
Rehabilitation and Betterment Project 1982-87

- Complete piping of Delivery system (Except 12 mile long Main Canal)
- $78 Million Dollars construction cost
- 220 miles of new pipe
- 2000 plus turnouts
- New Reservoir at French Canyon
- 6 pump stations
- 2 in-line hydropower plants
YTID DIVERSSION DAM AND HEADWORKS
YTID MAIN CANAL - circa 1910
OUR INFRASTRUCTURE SIMPLIFIED

- Main Canal, 107 years in use (*main artery*)
- Pressurized Delivery System 30 years in use (*30 year old body*)
- EXISTING DEBT SERVICE ($$) ENDS IN 2019

- USE 2018 ASSESSMENT TO START ADDRESSING FACILITY NEEDS AND PLANNING FOR THE FUTURE
2018 BUDGET

- $4.5 million annual budget
- 28,000 acres, 31,440 shares, $118/share or $132/acre
- $1.32 million available for infrastructure improvement, future planning and O&M increases
- $660,000 for infrastructure and O&M
  - Hydro’s $220K, Pump stations $150K. Pipelines and Turnouts $125K, Office and Business upgrades $75K, Other O&M increases $90K
- $660,000 for Main Canal
  - $310K Main Canal and strategic planning, $50K for Increased Maintenance, Reserve fund $300 K
What’s at Stake if the Canal Fails?

- $600 million per year crop value
- 3-5 years lost production
- Catastrophic business enterprise, environmental, and social impacts
Dozens of concepts and project configurations


Task Order No. 9 (2017)

NEPA and Stakeholder Engagement

Design & Permitting

12 Alternatives

2-3 Alternatives

1 Selected Project

Construction
Alternatives Development and Evaluation

The District has studied dozens of project concepts with various combinations of Tieton Canal, Wapatox, and North Fork Cowiche Reservoir.

All alternatives were compared and evaluated using common criteria:

- Constructability
- Institutional and Regulatory Compliance
- YTID Operations & Maintenance
- Reliability
- Stakeholder Acceptance and Potential to Attract Regional Partners
- Implementation Flexibility
- Initial Construction Cost
- Operations and Maintenance Costs
Current Project Status

- Two preferred alternatives have emerged:
  1. Replace Tieton Canal (gravity)
     a. Entire Canal
     b. Lower half now, upper half later
     c. Baseline
  2. Construct Wapatox (with or without NFCCR)

- Path forward depends on stakeholder support, environmental investigations, and funding
Tieton Canal Replacement

Upper 6-miles: Replace existing flume with new box culvert

Lower 6-miles: Abandon existing flume. Install new pipeline near river
Tieton Canal Replacement

Upper 6-mile segment:
- Replace canal in its current location
- Construct new box culvert
- Provide light vehicle access above box
Tieton Canal Replacement

Lower 6-mile segment:
• Move canal off hillside to river
• Construct large-diameter pressure pipeline
• Provide access road near pipe
Tieton Canal Replacement

- **Opportunities**
  - Achieves goals of reliability, flexibility
  - Improves O&M access to aqueduct
  - Low O&M cost (gravity operation)
  - Suitable for “pay-as-you-go” implementation

- **Constraints/Drawbacks**
  - Difficult and risky working conditions (winter construction)
  - Extensive environmental impacts
  - Land acquisition
  - High construction cost (> $200M)
North Fork Cowiche Creek Reservoir

NFCCR Dam
- 240-feet high
- 2,640 feet long
- Impounds up to 35,000 ac-ft
- 25,000 HP pump station
- 96-inch bi-directional pipeline
## Wapatox Pump Station and North Fork Cowiche Creek Reservoir

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Drawbacks</th>
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<tbody>
<tr>
<td>Mitigates Impacts of Climate Change:</td>
<td>High pumping cost requires regional partnership and regional funding</td>
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<tr>
<td>• Increases TWSA (Total Water Supply Available)</td>
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<tr>
<td>• Improves operational flexibility</td>
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<tr>
<td>Environmental Benefits:</td>
<td></td>
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<tr>
<td>• Increases flows in Lower Tieton River</td>
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<tr>
<td>• Improves fish habitat and fish passage</td>
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<tr>
<td>• Few known impacts</td>
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<td>Provides full water supply redundancy when operated with existing canal</td>
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<td>Reservoir storage offers opportunity to resize (optimize) canal and pump station size</td>
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The Path Forward

- Finish Strategic Planning Process to set Priorities
- The District prefers a gravity canal. However, environmental impacts and mitigation are unknown and may be significant
- Wapatox and NFCCR offer numerous water management and environmental benefits to Yakima Basin stakeholders, but will require external support and funding
- Continue the NEPA/SEPA process and Stakeholder engagement to determine real impacts and benefits of the Alternatives
- Costs for alternatives to fully Replace the canal will exceed $200 million ¿¿¿¿¿. What changes could reduce construction costs?
- YTID water users can only afford $100 million if we stand alone??
- Funding sources and programs used in the past by YTID are either not available or not funded. Are P3 options available?
STUFF HAPPENS
THANK YOU