Yakima River Basin
Integrated Water Resource Management Plan
Cle Elum Reservoir Projects

Columbia River Policy Advisory Group
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Presented by:
Wendy Christensen, Reclamation
Yakima River Basin Overview

- 6,155 sq. miles w/464,000 irrigated acres
- 5 reservoirs w/ 1M AF capacity, irrigation deliveries 2.3M AF
- Reduced Fisheries
- $3.5 Billion agriculture economy
Yakima River Basin Water Enhancement Project Timeline

1977 Adjudication

1979 YRBWEP Feasibility Study Authorization

YRBWEP Phase I: Fish Screens & Ladders

YRBWEP Phase II: Conservation & Instream Flows

YRBWEP Phase III: Yakima Integrated Plan

Initial Development Phase

• Yakima River Basin Integrated Plan Goals:
  • Provide opportunities for ecological restoration and enhancement, including fish passage
  • Improve water supply during drought years (70% proratable supply)
  • Provide for efficient and adaptable water supply management
  • Contribute to sustainable economy and environment
Yakima Basin Integrated Water Resources Management Plan

Initial Development Projects

Fish Passage
1. Cle Elum Dam
2. Tieton (Rimrock) Dam

1. Kennewick Irrigation District (KID) Division IV Lining
2. Wapato Irrigation Project (WIP) Piping Lateral 4-414C
3. Wapato Irrigation Project Piping Satus East Lateral E73
4. Manastash Creek, Anderson Diversion Irrigation Water Acquisition
5. Manastash Creek Sprinkler Conversions
6. Yakima-Tieton Irrigation District (YTID) Feasibility Study – Tieton to Ahtanum Exchange
7. Manastash – Consolidated Pipeline & Manastash Water Ditch Association (MiWDA) Pipeline Construction

Structural and Operational Changes
1. Cle Elum Pool Raise
2. Keechelus to Kachess Conveyance

Surface Water Storage
1. Kachess Drought Relief Pumping Plant

Water Bank/Exchange Programs
Basin Wide

Groundwater Storage
1. Upper Kittitas Aquifer Storage and Recovery
2. Yakima City Aquifer Storage and Recovery

Habitat Enhancement (2013-2015)
1. Teanaway Acquisition
2. Toppenish Flat
3. Bateman Island Causeway Modification Conceptual Design
4. Bull Trout Habitat Improvements
5. Gold Creek Habitat Assessment and Conceptual Design
6. Reed Diversion design Barrier Removal
7. Little Rattlesnake Road Decommissioning
8. Cle Elum River Side Channel Restoration Project, Phase 2
9. Gap-to-Gap Property Acquisitions
10. Upper Wapato Riparian Restoration
11. Ellensburg Water Company / Coleman Creek Restoration
12. Reed Diversion Barrier Removal
13. Trout Meadows Acquisition / Enhancement
14. Manastash/Little Naches Land Acquisition
15. Gap-to-Gap Outfall Relocation

YAKIMA BASIN
BUILDING A FUTURE FOR WATER, WILDLIFE & WORKING LANDS
Cle Elum Pool
Raise
Cle Elum Pool Raise

- Modify radial gates
- Shoreline protection
- Land acquisition
Cle Elum Pool Raise

• Final EIS; Record of Decision signed June 2015
• Radial Gate Modification
  – Awarded contract in September 2015
  – Construction completion March 2017
• Shoreline Protection
  – Dikes raised and update completed September 2016
  – Preparing bid packages
  – Continued coordination with USFS and landowners
  – Award contract 2017 for USFS facilities
Cle Elum Pool Raise Construction

Old Gate Configuration

New Gate Configuration
Cle Elum Dam Pool Raise Construction

Working on north side arm, bay 4

Modification of Radial Gates – under construction

Fork lift picking top for gate 4
Cle Elum Dam Pool Raise Construction
Cle Elum Pool Raise - Dikes
Cle Elum Pool Raise

Shoreline Protection
Cle Elum Pool Raise – Shoreline Protection

DRAFT
Cle Elum Pool Raise – Adaptive Shoreline Protection Concepts

Existing

Proposed Graded Berm
(Perched Beach)
Cle Elum Pool Raise – Rock Embankment Shoreline Protection Concepts

Existing

Proposed Rock Embankment

- Proposed Reservoir HW 2243'
- Reservoir Grading 2:1 Slope (TYP)
- Top Grading 2246'
- Driftwood Zone (TYP)
Cle Elum Reservoir Existing Shoreline

Speelyi Beach
Cle Elum Reservoir Existing Shoreline

Speelyi Boat Ramp
Cle Elum Reservoir Existing Shoreline

Wish-Poosh
Cle Elum Reservoir Existing Shoreline

Wish-Poosh Access Road
Cle Elum Reservoir Existing Shoreline

Cle Elum River Campground
Cle Elum Reservoir Existing Shoreline
Cle Elum Reservoir Existing Shoreline

Shoreline without treatment
Cle Elum Reservoir Existing Shoreline

Rootwad Shoreline Treatment
Cle Elum Reservoir Existing Shoreline

Rootwad Shoreline Treatment
**Cle Elum Pool Raise Timeline**

<table>
<thead>
<tr>
<th>Cle Elum Dam Pool Raise</th>
<th>Duration</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial Gates</td>
<td>2 to 3 years</td>
<td>In Progress</td>
</tr>
<tr>
<td>Cle Elum River Campground &amp; Speelyi Beach Day Use</td>
<td>1 year</td>
<td>Award - 2017</td>
</tr>
<tr>
<td>Wishpoosh &amp; Speelyi Beach</td>
<td>1 to 2 years</td>
<td>Award - 2018</td>
</tr>
<tr>
<td>Sandelin</td>
<td>1 to 2 years</td>
<td>Award - TBD</td>
</tr>
<tr>
<td>Domerie Bay</td>
<td>1 to 2 years</td>
<td>Award - TBD</td>
</tr>
<tr>
<td>Timber Cove</td>
<td>1 to 2 years</td>
<td>Award - TBD</td>
</tr>
<tr>
<td>Anna Bell</td>
<td>1 to 2 years</td>
<td>Award - TBD</td>
</tr>
<tr>
<td>Morgan Creek &amp; Night Sky Drive</td>
<td>1 to 2 years</td>
<td>Award - TBD</td>
</tr>
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</table>
Cle Elum Dam
Fish Passage
Facilities
Cle Elum Dam Fish Passage Construction - Schedule

• Final Design complete in 2015

• Road and bridge construction contract awarded July 2015 and completed in October 2016.

• Secant Pile contract awarded in July 2016.

• Mobilization scheduled for Spring 2017.
Cle Elum Dam Fish Passage Facilities
4th Inlet Structure Design

Weir Crest – similar to the interim flume
Cle Elum Dam Fish Passage Facilities
Helix Tower

Function – moves fish from the inlet structure into conduit bypass through the dam
Cle Elum Fish Passage
Secant Pile Example

Secant Pile Example
Cle Elum Fish Passage Secant Piles

Figure 5. Juvenile Facility Intake Structure, O&M Roads, and Cofferdam #2
Cle Elum Dam Fish Passage Construction

Trees being stacked

Timberking pushing over tree
Cle Elum Dam Fish Passage Construction

Northern Access Road

Northern Access Road Entrance
Cle Elum Dam Fish Passage Construction

Temporary Bridge In Place

Southern Access Road to Collection Facility
Cle Elum Dam Fish Passage Construction

Completed Bridge Looking West

Completed Bridge Looking East

Completed Bridge Looking West
Cle Elum Dam Fish Passage Construction

October 12, 2016 Ribbon Cutting Ceremony for new access road and bridge across spillway
Cle Elum Fish Passage - Adult Facilities
Whooshh Fish Transport System

• Moves fish through a flexible conduit, using pressure differentials to either push or pull the fish through the tube

• The Yakama Nation in cooperation with Reclamation, worked with Whooshh Innovations to test the technology for the Cle Elum Fish Passage Project at Roza Dam in June 2016, and at Prosser Dam October 2016, and will be tested at Cle Elum Dam July 2017

• Initial indications are that this technology is economical and fish friendly

• http://www.whooshh.com/fish-passage.html
Cle Elum Fish Passage- Adult Facilities
Whooshh Fish Transport System at Roza
Prosser Fish Passage Test
Whooshh Fish Transport System at Prosser
Cle Elum Fish Passage Test
Whooshh Fish Transport System, proposed
test location at Cle Elum Dam
## Cle Elum Fish Passage Timeline

<table>
<thead>
<tr>
<th>Cle Elum Dam Fish Passage Project</th>
<th>Duration</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads and Bridge</td>
<td>1 year 3 mo</td>
<td>Completed - 10/16</td>
</tr>
<tr>
<td>Secant Pile</td>
<td>3 to 4 years</td>
<td>In Progress</td>
</tr>
<tr>
<td>Tunnel</td>
<td>3 Years</td>
<td>Award - 2017</td>
</tr>
<tr>
<td>Intake Structure, Gate &amp; Helix</td>
<td>4 to 5 years</td>
<td>Award - TBD</td>
</tr>
<tr>
<td>Splitter Wall</td>
<td>Less than a year</td>
<td>Award - TBD</td>
</tr>
<tr>
<td>Adult Facility</td>
<td>3 to 4 years</td>
<td>Award - TBD</td>
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Questions?

For further information on the web:


http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html