RECLAMATION
Managing Water in the West

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Contact: Wendy Christensen, 509-575-5848, ext. 203 **Tom Tebb, 509-575-3989**

Agenda

Yakima River Basin Water Enhancement Project Workgroup

March 8, 2017, 9:30 AM to 12:30 PM at Kittitas County Event Center, Armory Conference Room, 901 E 7th Ave, Ellensburg WA

Time

9:30 – 9:40 Welcome/Introductions and Agenda Overview/Public Comment[1]
Ben Floyd, Anchor QEA

9:40 – 9:50 Implementation Committee Update
Tom Tebb, Ecology and Committee Members

9:50 – 10:25 Rural Water Supply Update Related to IP Conservation and Market Reallocation Goals
Tom Tebb and Sage Park, Ecology; Phil Rigdon, Yakama Nation; Chad Stuart, Reclamation; Paul Jewell, Kittitas County; Mike Leita, Yakima County; Jerrod MacPherson, Benton County

10:25 – 10:50 2015 Drought Impacts
Jaclyn Hancock, Washington Department of Agriculture

10:50 – 11:05 Public Comment

11:05 – 11:20 **Break**

11:20 – 12:15 Technical Work Update
- Bumping Geologic Investigations/Geophysical Surveys: *Wendy Christensen, Douglas Bennett, Geologist, and Richard Markiewicz, Geophysicist, Reclamation*
- Teanaway Community Forest: *Mike Livingston, WDFW and Rick Roeder, DNR; Deborah Essman, Kittitas County Field & Stream Club; Kitty Craig, Wilderness Society; Martha Wyckoff, Teanaway resident and Trust for Public Land; and Dr. Jim Huckabay, JLH and Associates*
- Regional Conservation Partnership Program Grant Update: *Anna Lael, Kittitas County Conservation District and Tom Elliott, Yakama Nation*

12:15 – 12:30 Workgroup – Roundtable Discussion
Ben Floyd, Anchor QEA

2017 Meetings: June 21 (Union Gap), Sep. 20 (Prosser), Dec. 14 (Union Gap)

For additional information, see the reports and documents available at this link:
http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html

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[1] In addition to the public comment time on the agenda, opportunities will be provided to the public for questions or to make brief observations for each agenda item after Welcome/Introductions and before the Workgroup Roundtable discussion. Those wanting to provide public comment need to sign up for comment and each commenter will be limited to 2 – 3 minutes for comments (depending upon how many want to provide comments) to maintain meeting schedule. Additional written material can be submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.

Contact: Wendy Christensen, Columbia-Cascades Area Office, (509) 575-5848, ext. 203
Tom Tebb, Washington State Department of Ecology, (509) 575-3989

Meeting Notes
Yakima River Basin Water Enhancement Project Workgroup

March 8, 2017
Kittitas County Events Center, Ellensburg, WA

Welcome, Introductions, and Agenda Overview

Ben Floyd, Anchor QEA, welcomed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup members and other attendees, led introductions, and provided an overview of the agenda. These notes summarize the YRBWEP Workgroup presentations and the public comments. For details, please see the full presentations available on the project website: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html.

Ben introduced Jerrod MacPherson, Benton County Planning Manager, who is the alternate YRBWEP Workgroup representative for Commissioner Jerome Delvin.

Implementation Committee Update

Tom Tebb, Washington State Department of Ecology (Ecology), Office of Columbia River (OCR), provided the update. With the new U.S. Congress now in place, the Implementation Committee is renewing its effort to gain Congressional approval for Integrated Plan legislation. The State Legislature is also in session and considering funding in the 2017-2019 biennial budget. Committee members have met with legislators in Olympia. They are planning another trip to Washington DC and preparing to meet with regional managers of Federal agencies. With the new presidential administration, the Implementation Committee will also focus on providing involved agencies with current information on the Integrated Plan.

Public input on this agenda item: None

Rural Water Supply Update

Ecology, the Yakama Nation, and counties in the Yakima River basin have been working on ways mitigate adverse impacts on surface water from rural development and associated water uses. Solutions are being developed on a county-specific basis in Kittitas, Yakima, and Benton counties, respectively. Representatives from Ecology, the Yakama Nation, and Reclamation spoke briefly about the discussions held so far and the value of solutions being developed. The Washington State Supreme Court ruled in the recent Hirst decision (*Whatcom County vs. Hirst, Futurewise, et al.*) that water is not legally available if a new well would have an impact on a protected river, stream, or existing senior water right. The process in the Yakima River basin is ahead of the curve in addressing this issue.

Commissioner Paul Jewell (Kittitas County), Commissioner Mike Leita (Yakima County) and Planning Manager Jerrod MacPherson (Benton County) presented solutions being developed in their respective

counties, which generally aim at providing landowners an efficient means to mitigate their impacts. Kittitas County has adopted ordinances enacting its program. Yakima and Benton counties are in the process of developing programs. The Integrated Plan has provided working relationships that have been critical to developing solutions.

Workgroup Discussion:

Ron Van Gundy, Roza Irrigation District: This is an important contribution, and compliments the counties on their work. Will the Yakima County water bank be large enough to offset all domestic wells, whether new or existing? What will mitigation of one well cost in the Yakima and Kittitas counties programs?

- The first priority is to provide mitigation for new wells, but the eventual goal is to have sufficient water banked so that existing well owners could also choose to participate.

- In Yakima County, the program is still being developed, so the exact cost has not been determined but it will be affordable. In Kittitas County, the cost is $3,080 for homes that use minimal water outdoors and $3,995 for homes that use more. There may be permit processing and recording fees depending on circumstances.

Sid Morrison, Yakima Basin Storage Alliance (YBSA): YBSA has an interest in ensuring there is enough water for all uses in the basin. How much water is needed for fish?

- The first objective should be to avoid doing further harm to instream resources. These county programs prevent degradation as new rural development occurs. This integrates land use decision-making with fish protection objectives.

- There is not a simple number for how much water fish need in the basin, because their habitat requirements differ across the seasons and from one place to another, and because the Yakima River system has too much water in some reaches at certain times of year, while having too little water at others. Hydrologic modeling shows that the Integrated Plan projects will improve stream flow conditions in many reaches that are important for fish during various times of the year. In addition, the many on-the-ground habitat projects are improving conditions for fish from the mouth of the river to the headwaters.

Public input on this agenda item: None.

2015 Drought Impacts

Jaclyn Hancock, Washington State Department of Agriculture (Agriculture), summarized work done to quantify effects of the 2015 drought on gross value of agricultural products in Washington State. Agriculture recently issued a report presenting this study. Jaclyn presented methods, limitations, and results of the study. Effects were geographically widespread and involved many different crops. Total statewide impact was estimated to range from $633 million to $773 million. Focus areas included three irrigation districts/projects in the Yakima River basin, where gross value was reduced by $11.4 million in Kittitas Reclamation District, $32.7 million in Wapato Irrigation Project, and $74.4 million (plus

another $1.0 million spent on emergency wells) in Roza Irrigation District. Effects on subsequent growing seasons were not estimated.

The Washington State Academy of Sciences reviewed the report and provided recommendations for future work. These include basing the analysis on an economic model, using randomized statistical sampling, and performing a companion analysis on water rights.

This was the first study of its kind in Washington. Agriculture would like to carry out a similar study each time a drought occurs in order to develop effective comparisons from one drought to another.

Workgroup Discussion:

Sid Morrison, YBSA: 2015 was a 1-year drought. If a 2-year drought occurs, then losses will be far higher because orchard trees and vines will be lost.

Scott Revell, Roza Irrigation District: Uncertainty has a big effect. In 2015, the Total Water Supply Available (TWSA) rose slightly at the end of the irrigation season, which reduced Roza Irrigation District's losses. If TWSA, instead, had gone down by the same amount, losses would have been significantly greater.

Paul Jewell, Kittitas County: Is there a formula to estimate costs to end consumers, socioeconomic effects, and effects on food processors? Is the impact understated because those were not estimated?

- In the future, use of an economic model as recommended by the state Academy of Sciences may enable those aspects to be estimated. The National Agricultural Statistical Service excludes 20 percent of the State's farmland, and that includes some high-value crops. This suggests the report understates the effect of the drought.

Public input on this agenda item:

David Ortman, Sierra Club: (1) The Agriculture report says there is a need for more information on water rights. After all these years of studies, it is surprising that the Workgroup has not developed this information. (2) The Academy of Sciences report asks an excellent question: how do you reconcile that net farm income in 2015 was higher than in prior years? (3) Did they estimate impacts on Sunnyside Valley Irrigation District (SVID)?

- The statement about information on water rights is directed at the State as a whole, not the Yakima River basin.

- Agriculture chose to focus on gross income rather than net income. The Academy of Sciences noted that this choice depends on the goals of the study. Agriculture can reconsider this aspect of the analytical method the next time a drought occurs.

- Agriculture focused on areas where drought effects were most severe, and decided not to include SVID. Agriculture may use a randomized approach to select areas for estimating losses the next time a drought occurs.

General Public Comment:

Bill Campbell, Lake Kachess Homeowners Association: The presentation at the December Workgroup meeting on RiverWare modeling was useful. The Workgroup should use science and data to guide decision-making. Jay Schwartz and others have been looking at RiverWare information for the upper basin and have provided a written review. Bill would like that review to be discussed at a future Workgroup meeting and asks for time to provide a presentation on this topic. RiverWare shows the Keechelus to Kachess Conveyance (KKC) project falls short.

- Reclamation and Ecology are reviewing the information provided. The request for time at an upcoming meeting will be considered.

David Ortman, Sierra Club: Dave provided Ben Floyd with a report that reviews the Ecology OCR activity over the past ten years. Ecology OCR has reported 450,000 acre-feet of new water supply that in fact has not been developed yet. They are spending money studying dams that are not economical. The report recommends that no further funding be provided to Ecology OCR until a performance audit is done.

David said that notes from the September 2016 meeting regarding the YRBWEP Economic Subcommittee's selection of ECONorthwest need to be corrected; he will provide correction to Ben Floyd.

- General notes are prepared to capture Workgroup meeting content and discussion, and to provide responses to public comment. They are not intended to capture each meeting element in detail. The comment from David will be attached to the notes from the September meeting.

David said notes from the December 2016 meeting regarding Peter Dykstra's summary of how the legislation failed to pass at the end of 2016 should mention that the legislation was considered an earmark.

- General notes are prepared to capture Workgroup meeting content and discussion, and to provide responses to public comment. They are not intended to capture each meeting element in detail. The comment from David will be attached to the notes from the December meeting.

Ann Lewis, Yakima Basin Coalition: The hydrologic analysis that Bill Campbell mentioned contains vital information that this Workgroup should consider. It shows that the Kachess Drought Relief Pumping Plant project would supply only 50 percent of the water that has been stated.
Ann believes the Potter LLC study of land values at Kachess Reservoir is false, and should be removed from Ecology's website.

- Each agency uses its internal decision processes for posting materials to their web sites. In Ecology's judgment this material is relevant and should be available to the public.

Chuck Klarich, YBSA: YBSA was founded in 2004 in response to concerns of insufficient water for fish and irrigation in the valley. Since then, the YBSA provided input and information on projects that

could improve water supply. Their website has monthly reports and a wealth of information. He encourages people to visit YBSA.org.

Technical Work Updates

1 - Bumping Geologic Investigations and Geophysical Surveys

Douglas Bennett, Reclamation Geologist, and Richard Markiewicz, Reclamation Geophysicist, presented investigations of subsurface conditions along two potential alignments of the proposed new dam for the Bumping Reservoir enlargement project. Either alignment would enlarge capacity of Bumping Reservoir by approximately 160,000 acre-feet, using a dam 165 feet high. Alignment A is closer to the existing dam, and Alignment B is slightly further downstream from the existing dam. The work included review of prior studies of the dam site from the 1940s and 1950s. The work included new boreholes along each alignment and seismic refraction surveys to improve understanding of depth-to-bedrock and the types of sedimentary materials present between the ground surface and bedrock. Alignment B appears more favorable because the buried bedrock valley appears to be narrower and shallower at that location, and there is less fine-grained sediment. The volcanic bedrock includes andesite and dacite along Alignment A, and dacite only along Alignment B. Evidence of whether any geologic faults are present in the vicinity is inconclusive. There is no clear evidence of faults, but there are some data (presence of linear features and the dacite/andesite contact) that could be either indicative of ancient or inactive faults, or of other conditions that would not be problematic at a dam site. Both researchers recommend further data collection to improve understanding of site conditions relative to dam design.

Workgroup Discussion:

Mike Leita, Yakima County: Are the alluvial materials at the site suitable for dam construction?

- Yes, much of the alluvial material would be useable.

Public input on this agenda item:

Chuck Klarich, YBSA: What is the planned pool elevation associated with these alignments, and how would it affect the U.S. Forest Service road to Bumping Reservoir?

- Pool elevation would be approximately 3,500 feet above mean sea level. The U.S. Forest Service road would need to be relocated at least 75 feet higher in elevation than its current location.

Naydene Maykut, Friends of Bumping Lake: Which dam alignment matches with the analysis in the Programmatic Environmental Impact Statement (PEIS) on the Integrated Plan?

- The PEIS discussed Alignment A.

2 - Teanaway Community Forest

Mike Livingston, Washington Department of Fish and Wildlife, introduced members of the Teanaway Community Forest (TCF) Advisory Committee's Goal 5 Group. This group focuses on the community involvement goal established in the 2013 TCF legislation. Members who presented were Deborah Essman, Kittitas County Field and Stream Club; Martha Wyckoff, Teanaway basin resident and Trust for Public Land; and Darcy Batura, The Nature Conservancy. They summarized the group's activities to build a strong community partnership. Activities include campground restoration using volunteers, a community survey of recreational opportunities, exploration of establishing a trailhead at Roslyn that could connect to the TCF, and development of a communication strategy. Volunteer activities totaled 800 hours in 2016. The group also led a horseback tour of the TCF for legislators in October 2016 and has traveled to Olympia to advocate for ongoing funding of TCF restoration and stewardship.

Dr. Jim Huckabay, JLH and Associates, summarized the process used in 2016 to develop a sustainable grazing program for the TCF. A group of 18 people met 10 times during an 8-month period. Ten stakeholders also participated. They discussed a wide variety of needs and solutions, and developed an adaptive framework for riparian restoration and using fencing to protect sensitive areas.

Workgroup Discussion:

Jeff Tayer, Washington Department of Fish and Wildlife: Jeff thanked the entire Advisory Committee for its work on the TCF.

Sid Morrison, YBSA: Can a community forest this size be self-sustaining?

- Potentially yes, but it will take time and needs upfront investments. It was heavily harvested by the former landowner. It will take a long period before commercially viable timber harvests will be feasible. Grazing can be done now. The Nature Conservancy is studying models of community forests across the United States and may be able to put some of those ideas to work. In the meantime, this is a valuable recreational resource. Recreation activity doubled last year.

- **Paul Jewell, Kittitas County:** The TCF landscape is woven into the fabric of local people's lives. Paul is excited to see the progress being made. It is generating a lot of attention statewide and nationally. Also, grazing was a challenging issue. The group achieved a good result that is consistent with key objectives for the TCF.

Public input on this agenda item:

David Ortman, Sierra Club: David asked three questions: (1) What is the status of recreation planning in terms of off-road vehicles and snowmobiles? (2) Will grazing increase, decrease, or stay the same? (3) Will timber harvest increase, decrease, or stay the same?

- The Advisory Committee is currently working on a recreation plan, and this will take approximately 18 months to complete. In the interim, there is no change in recreational access from what the prior landowner allowed.

- The number of animal units permitted for grazing will stay the same for now. It may change in the future, under the adaptive management framework.

- Commercial harvesting of timber will not occur for a long time. The current priority is to restore forest health. There may be localized treatments to remove small amounts of timber in support of forest health and fire risk management.

3 - Regional Conservation Partnership Program Grant Update

Tom Elliott, Yakama Nation, and Anna Lael, Kittitas County Conservation District, described a 5-year grant awarded by the Natural Resources Conservation Service (NRCS). It provides matching funds to local landowners and operators for actions that support water quality, water supply, and fish habitat in tributaries in the upper basin of the Yakima River and on the Yakama Nation Reservation. NRCS will provide $7.5 million. About 12 public and private partners have agreed to provide matching contributions totaling an additional $7.6 million. Anna thanked the Yakama Nation for their willingness to partner in seeking this funding.

Workgroup Roundtable

Wendy Christensen, Reclamation: Reclamation will issue a contract for the secant pile installation for Cle Elum Dam fish passage in spring 2017, and a contract for work on U.S. Forest Service land associated with the Cle Elum Reservoir Pool Raise project in fall 2017.

Sid Morrison, YBSA: Sid would like to see a quantity of water identified for instream flow needs. Sid is glad to see work on storage facilities, represented by today's presentation on the proposed Bumping Reservoir enlargement. Sid would like to see a year identified for storage to be developed.

- The Cle Elum Reservoir Pool Raise project is partially complete, and scheduled to become operational within approximately five years. It will provide additional water for instream flows. Flow targets have been established as part of developing the Integrated Plan, and meeting these targets will be an objective for future water management as Integrated Plan projects are implemented.

- The most recent schedule for the Initial Development Phase of the Integrated Plan estimated completion of Kachess Drought Relief Pumping Plant (KDRPP) by the end of 2019. The schedule will be revised because the project depends on completion of environmental review, Congressional authorization, funding by Roza Irrigation District and its partners, and permitting activities. Additional storage projects are identified in each subsequent 10-year phase (Intermediate and Final) of the Integrated Plan.

Jason Kuiken, U.S. Forest Service: The Joint Chiefs are providing funding via NRCS and the U.S. Forest Service budgets. This includes analysis of conditions in the Manastash and Taneum creeks area, in conjunction with the Tapash Sustainable Forest Collaborative, and projects on wildfire risks and instream conditions.

Mike Leita, Yakima County: Mike sees a lot of work happening around the storage element of the Integrated Plan. If any one element fails, all of them will fail. We will all succeed by continuing to work together.

Urban Eberhart, Kittitas Reclamation District (KRD): Reclamation is forecasting prorationing of water supplies in 2017. KRD plans to renew its tributary supplementation program for the third year in a row.

Scott Revell, Roza Irrigation District: Funding from the Integrated Plan has been instrumental in achieving water conservation. Roza Irrigation District crews have been working since the fall shutoff on piping laterals and sealing concrete canals.

Upcoming Meetings

The next Workgroup meeting will be on June 21, 2017 at the Ecology office in Union Gap, Washington (1250 Alder Street).

Attendance

Workgroup Members:

Wendy Christensen, Bureau of Reclamation - Columbia-Cascades Area Office
Dave Brown, City of Yakima
Rick Dieker, Yakima-Tieton Irrigation District
Urban Eberhart, Kittitas Reclamation District
Jaclyn Hancock, Washington State Department of Agriculture
Paul Jewell, Kittitas County
Jason Kuiken, Okanogan-Wenatchee National Forest
Mike Leita, Yakima County
Mike Livingston, Washington State Department of Fish and Wildlife
Bill Lover, City of Yakima
Wendy McDermott, American Rivers
Jason McShane, Chair, YRBWEP Lower River Subgroup, Kennewick Irrigation District
Sid Morrison, Yakima Basin Storage Alliance
Scott Revell, Roza Irrigation District and Chair, YRBWEP Water Use Subcommittee
Phil Rigdon, Yakama Nation
Rick Roeder, Washington State Department of Natural Resources
Jeff Tayer, Chair, YRBWEP Habitat Subcommittee (Washington Department of Fish and Wildlife)
Tom Tebb, Washington State Department of Ecology - Office of Columbia River
Jeff Thomas, U.S. Fish & Wildlife Service, Mid-Columbia River Fishery Office
Ron Van Gundy, Roza Irrigation District

Other Attendees:

Darcy Batura, The Nature Conservancy
Douglas Bennett, Reclamation
Bill Campbell, Lake Kachess Homeowners Association
Stuart Crane, Yakama Nation
Jane Creech, Washington State Department of Ecology
Todd Damion, Citizen

Jeanne Demorest, Bureau of Reclamation - Columbia-Cascades Area Office
Karen Dera, Bureau of Reclamation - Columbia-Cascades Area Office
Jeff Deugel, Washington State Department of Fish and Wildlife
Sherrill Doran, CH2M-Hill
Deborah Essman, Kittitas County Field & Stream Club
John Easterbrooks, Washington State Department of Fish and Wildlife
Jack and Beneitta Eaton, Landowners
Tom Elliott, Yakama Nation
Kevin Eslinger, Kittitas Reclamation District
Deborah Essman, Kittitas County Field and Stream Club
Ben Floyd, Anchor QEA
Joel Freudenthal, Yakima County
Don Gatchalian, Yakima County
Andrew Graham, HDR Engineering, Inc.
Sean Gross, National Oceanic and Atmospheric Administration (NOAA) Fisheries
Tim Hill, Washington State Department of Ecology
Elayne Hovde, Reclamation
Joel Hubble, Bureau of Reclamation – Yakima Field Office
Jim Huckabay, JHL and Associates
Todd Huntziger, CH2M-Hill
Trevor Hutton, Washington State Department of Ecology – Central Regional Office
Brady Kent, Yakama Nation
Chuck Klarich, Yakima Basin Storage Alliance
Anna Lael, Kittitas County Conservation District
Walter Larrick, Citizen
Ann Lewis, Yakima Basin Coalition
Jerrod MacPherson, Benton County
Steve Malloch, Western Water Futures LLC (alternate for American Rivers)
Richard Markiewicz, Bureau of Reclamation
Naydene Maykut, Friends of Bumping Lake
Teresa Merriman, Bureau of Reclamation - Columbia-Cascades Area Office
Jim Milton, Yakima-Tieton Irrigation District
Bryan Myre, Yakama Reservation Irrigation District
Scott Nagel, U.S. Forest Service Naches Ranger District
Scott Nicolai, Yakima-Klickitat Fisheries Project
David Ortman, Sierra Club
Sage Park, Washington State Department of Ecology
Nicole Pasi, American Rivers and the Yakima Basin Integrated Plan
Colleen Rauert, Washington State Department of Ecology
David Reeploeg, Office of Senator Maria Cantwell
Tom Ring, Yakama Nation

Jill Scheffer, Fonterra
Danielle Squeochs, Ecology – Office of Columbia River
Chad Stuart, Bureau of Reclamation – Yakima Field Office
Arden Thomas, Washington Water Trust
Gary Torretta, U.S. Forest Service –Naches Ranger District
Richard Visser, Bureau of Reclamation - Columbia-Cascades Area Office
Rebecca Wassell, Mid-Columbia Fisheries Enhancement Group
Greg Wendt, Benton County
Chris Wright, Bureau of Reclamation
Martha Wyckoff, Trust for Public Land
Laine Young, Washington State Department of Ecology

Where to Find Workgroup Information

Meeting materials, notes, presentations, and materials submitted during public comment for each Workgroup meeting will be posted on Reclamation's project website: (http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html). A list of information sources, many available online, is also posted on the website.
If you need help finding an information source, contact those listed at the top of page 1 of these notes or Ben Floyd at Anchor QEA, Kennewick office, (509) 491-3151 or bfloyd@anchorqea.com.

BENTON COUNTY
Rural Water Supply and the Integrated Plan

- EXCITED ABOUT THE PROGRESS BEING MADE ON THE INTEGRATED PLAN
- REMAIN COMMITTED TO AND ENGAGED IN THE PROCESS
- BEGINNING TO WORK ON RURAL SUPPLY ISSUE – LOOKING TO STATE, FEDERAL, TRIBAL AND LOCAL PARTNERS TO HELP ADDRESS RURAL WATER SUPPLY CHALLENGES
- MOVING FORWARD, WILL LOOK TO THE EXPERIENCE AND LESSONS LEARNED FROM KITTITAS AND YAKIMA
- BALANCING THE FLOWS OF THE LOWER YAKIMA RIVER WITH RURAL GROWTH DEMANDS
- WORK CLOSELY WITH THE IRRIGATION DISTRICTS ON PROJECTS PURSUED UNDER THE IP FOR THE BENEFIT OF ALL OF BENTON COUNTY

UNITED STATES BUREAU OF RECLAMATION, YAKAMA NATION, AND DEPARTMENT OF ECOLOGY

Working Together in the Yakima Basin

Chad Stuart, United States Bureau of Reclamation
Tom Ring/Phil Rigdon, Yakima Nation
Sage Park, WA State Department of Ecology

RECENT WATER RESOURCE MANAGEMENT IN YAKIMA BASIN

- Water supplies in the Yakima Basin have been at risk for years.
- Yakima River Basin Surface Water Adjudication is entering its 40th year and moving towards completion.
- The Adjudication and other state and federal Court decisions have determined that water supply in the Yakima River Basin is over appropriated.
- Ecology settled with USBR and Yakama Nation in the late 1990's over proposed GW permits in the Blackrock area and Rattlesnake Ridge.
- In September 2011, the United State Geological Survey released the final report of a 12-year, multi-million dollar study confirming that groundwater and surface water are directly connected.

ECOLOGY'S CORE VALUES IN WATER RESOURCE MANAGEMENT IN THE YAKIMA BASIN

- Groundwater management will protect senior water rights, flows for fish and economic development.
- Ecology will seek solutions that address uncertainty and exposure faced by existing post 1905 groundwater users (most everyone).
- Ecology shall build upon the broad based support for the Yakima Basin Integrated Water Management Plan.

WHATCOM COUNTY VS. HIRST, FUTUREWISE, ET AL DECISION

- Recent Supreme Court Decision Impacting Counties across the State of Washington
- The Washington State Supreme Court said that water is not legally available if a new well would impact a protected river or stream, or an existing senior water right.
- Counties in the Yakima Basin are ahead of the curve because of the work already being done.

Yakima County Water Resource System (YCWRS)

A Countywide Utility to Serve Rural Domestic Use

Background

- 2009 - Looming need to address issue of exempt wells vs. impairment of existing rights
- 2010 – Worked with Ecology, Kittitas and Benton Counties on overall Basin Solution
- 2010 – Yakima County officially endorses YBIP
- 2013 – Passed Resolution directing formation of YCWRS
- 2014 – Anticipated Deadline of GMA Comp. Plan due date – June 2017 – to have a means of Compliance in Place

Administrative Policy Objectives

- 1) Reduce the high administrative load to all parties of a permit by permit approach
- 2) Serve as much of the existing rural lots of record in Yakima County as possible.
- 3) Maintain greater oversight of exempt wells and Senior Water Rights

Technical Policy Objectives

- 1) Recognize the relationship between ground and surface water, protect existing senior surface water rights.
  - Consistent with USGS Groundwater Model and Reports, and Kittitas Co. vs GMHB/Hirst
  - Analysis of sub-surface conditions, looks at groundwater "domains" as opposed to surface water watersheds.

Technical Basis

Assessment of the Availability of Groundwater for Residential Development in the Rural Parts of Yakima County, Washington

January 2016

John Vaccaro,
Vaccaro G.W. Consulting, LLC
(Under Contract by Yakima County)
For Technical Analysis and Assessment of Groundwater Mitigation Strategies

Yakima County Water Resource System

Design and Implementation Steps and Status

- 2015-16

Action	Status
Apply for Ecology grant to acquire senior water rights to support YCWRS	Grant Awarded $500,000
Hire Consultant to determine rural water availability and rural water availability	Complete
Develop map to show where water rights will be needed based on historical growth	Complete
Get concurrence from Ecology, Yakama Nation, BOR on study	Partially Complete
Develop MOU between Yakima County and Ecology	Complete
Seek to purchase water rights with cooperation and assistance from Ecology	In Progress,
Perform inventory of existing County water rights and determine where water rights are needed	Partially Complete

Yakima County Water Resource System

Design and Implementation Steps and Status

- 2017

Action	Status
Obtain Board approval proceed with further development of YCWRS, including the purchase of senior water rights.	Target Mid-March 2017
Submit SEPA application	Target Mid-March 2017,
Acquire pre-1905 water rights for initial no-risk inventory with Ecology's assistance (purchase the initial 5-year need), Prove up and convert purpose of use from irrigation to municipal right and change place of use.	In Process Preliminary minimum target of 60 acre feet for 5 years.
Participate in Comprehensive Plan process to delineate final proposed service area and demand, along with public outreach elements for YCWRS	Target March – June 2017
Develop standards for well approval (locations, types, depths, etc.) when approved in context of building permit	Draft Can be completed after partner review.
Propose to the Board necessary amendments to Yakima County Plans, and/or implementing ordinances, and or administrative changes that may are needed. Including but not limited to Title 19, Building Code, Funding and accounting framework.	Target After Comprehensive Plan Completion along with other Comp Plan Implementing Ordinances.
Continue to implement all items where needed as described by BOCC Resolution 399-2013	Ongoing
Store opens (Managing Future Exempt Wells in Yakima County)	Target Sept-Oct 2017.

Yakima County Water Resource System

Design and Implementation Steps and Status

Final Objective:

Hold water budget neutral rights in each Domain,
based on County-owned senior water rights.

Kittitas County

Kittitas County's Rural Water Program

Five Components:

1. Regulations requiring mitigation for all new uses of ground water in the Yakima River Basin.
2. Water banks.
3. Over-the-counter program.
4. Metering program.
5. Current user mitigation (back mitigation).

County Regulations

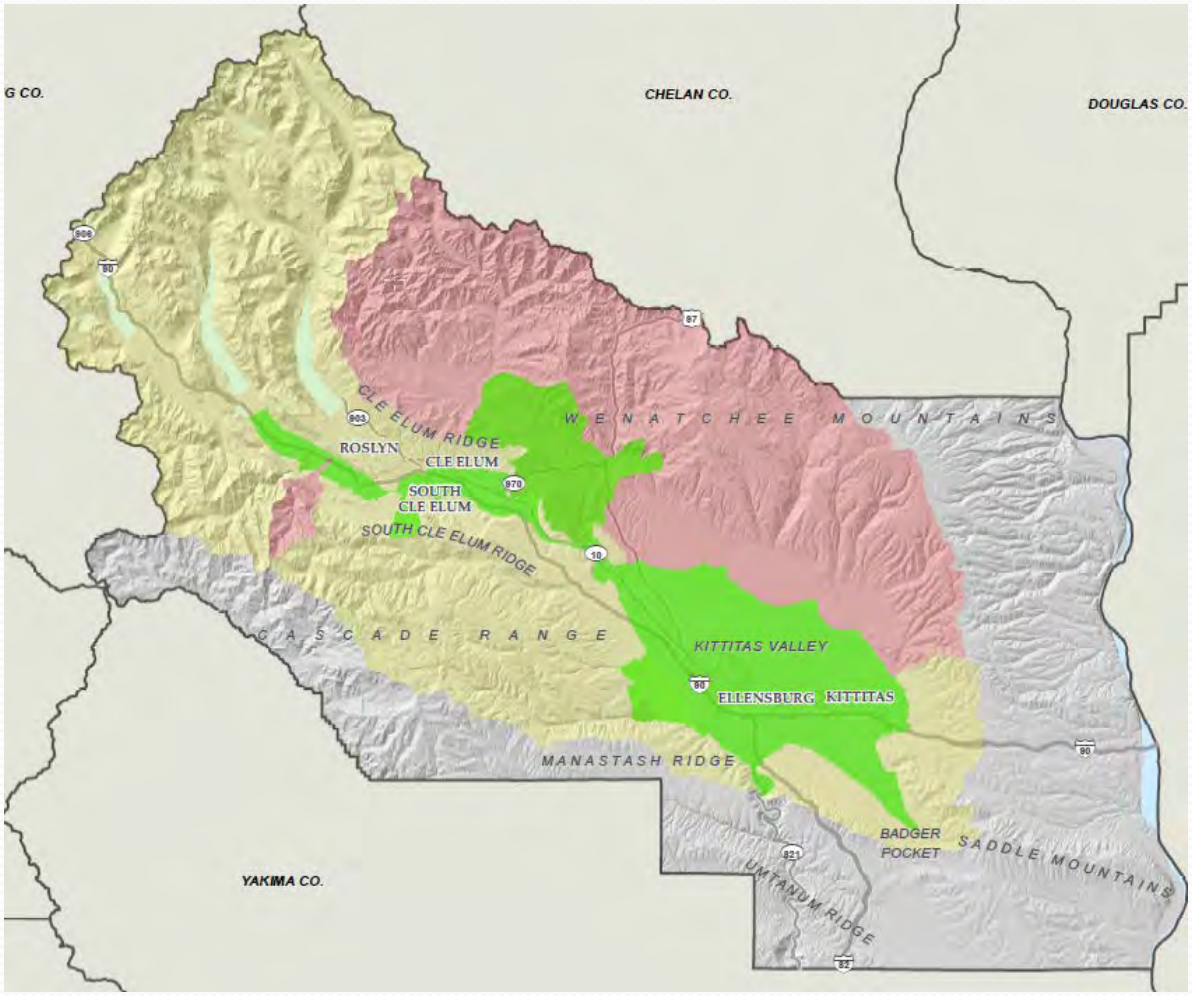
Two Steps:

1. Interim Measures - KCC 13.35.025
2. Permanent Measures - KCC 13.35.027

Water Banks

Two Types:

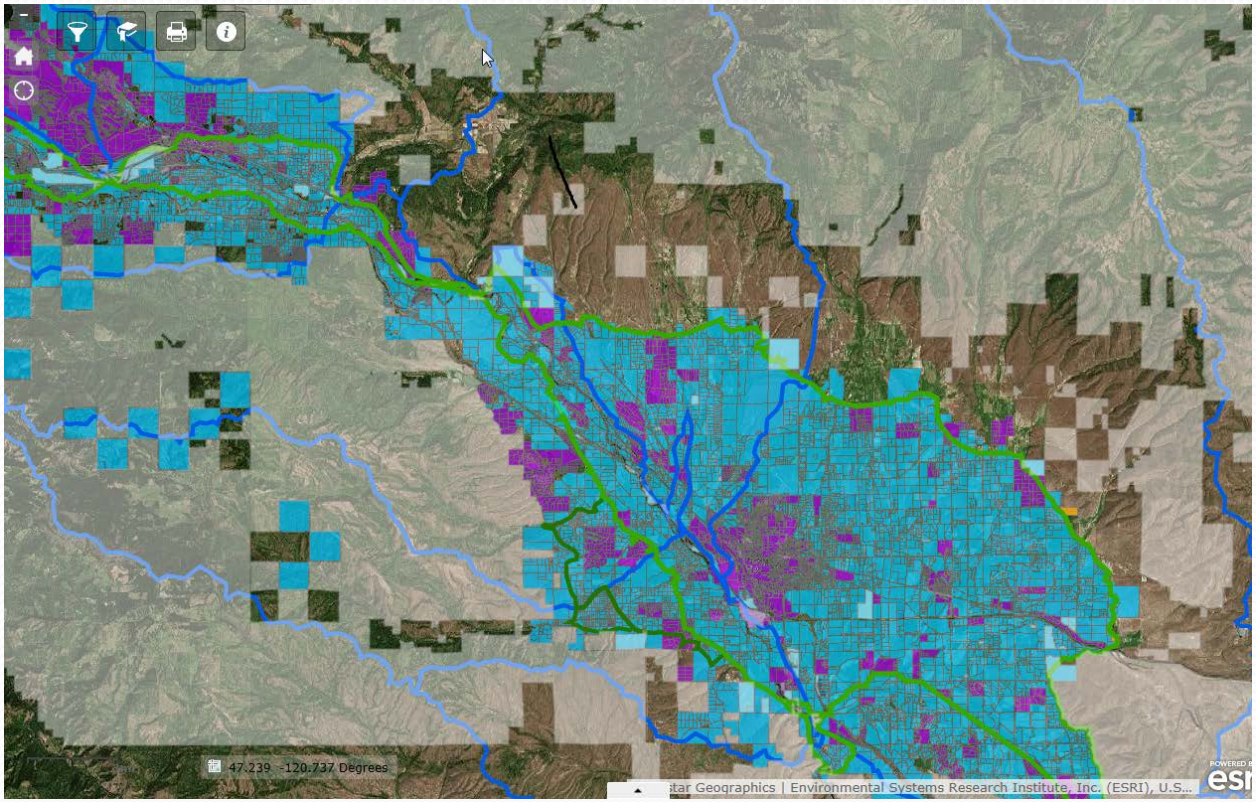
1. Private
2. County-owned



Over-the-Counter Program

Two Types of Approvals:

1. Water-budget neutral (WBN) certificates
2. Water Right Permits



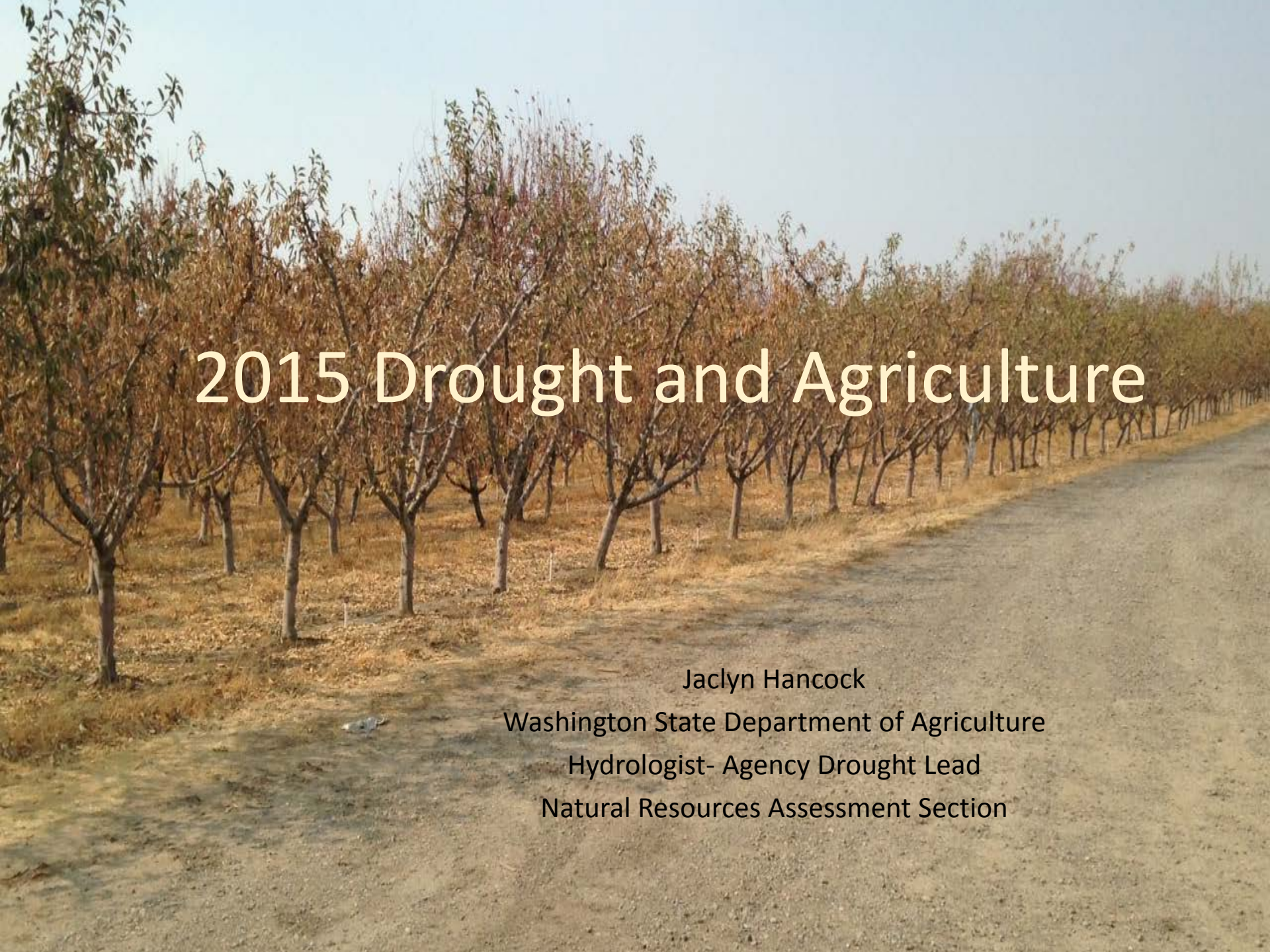
Metering Program

KCC 13.40.030 – Participants in the Kittitas County Water Bank will be required to meter their mitigated water usage and pay an annual fee.

Current-User Mitigation Program

YBIP Goals

- Enhanced Water Conservation
- Market Reallocation
- Habitat/Watershed Protection & Enhancement



2015 Drought and Agriculture

Jaclyn Hancock
Washington State Department of Agriculture
Hydrologist- Agency Drought Lead
Natural Resources Assessment Section

Economic Impact Assessment

- Agreement with Ecology (11/10/15)
- Agricultural Land Use Mapping of Affected Areas (Fall 2015)
- Initial Qualitative and Quantitative Assessment (December 2015)
- Washington Academy of Sciences Review (December 2016)
- Final Qualitative and Quantitative Assessment (February 2017)
- All with the assistance of our agricultural partners

Data Collection

- Meetings with commodity groups
  - Blueberries, Red raspberries
- Focus Areas
  - Kittitas Reclamation District (mapping and meetings)
  - Roza Irrigation District
  - Wapato Irrigation Project
  - Skagit County

Data Collection

- NASS Data
  - Value Lost in Yield
  - Value Lost in Quality
  - Value Lost in Acreage not Harvested/Planted
- Online Survey for Cattle/Dairy
  - Additional Feed Purchases
  - Reduction in Milk Production

Limitations

- Difficult to gather data on the state's entire agricultural economy (300 different crops)
- Detailed analysis only done on select areas
- Relying on self-reported data (grower interviews)
- NASS data accounts for 77.5% of cultivated acreage
- Small acreage farmers not well represented in statewide datasets

Limitations

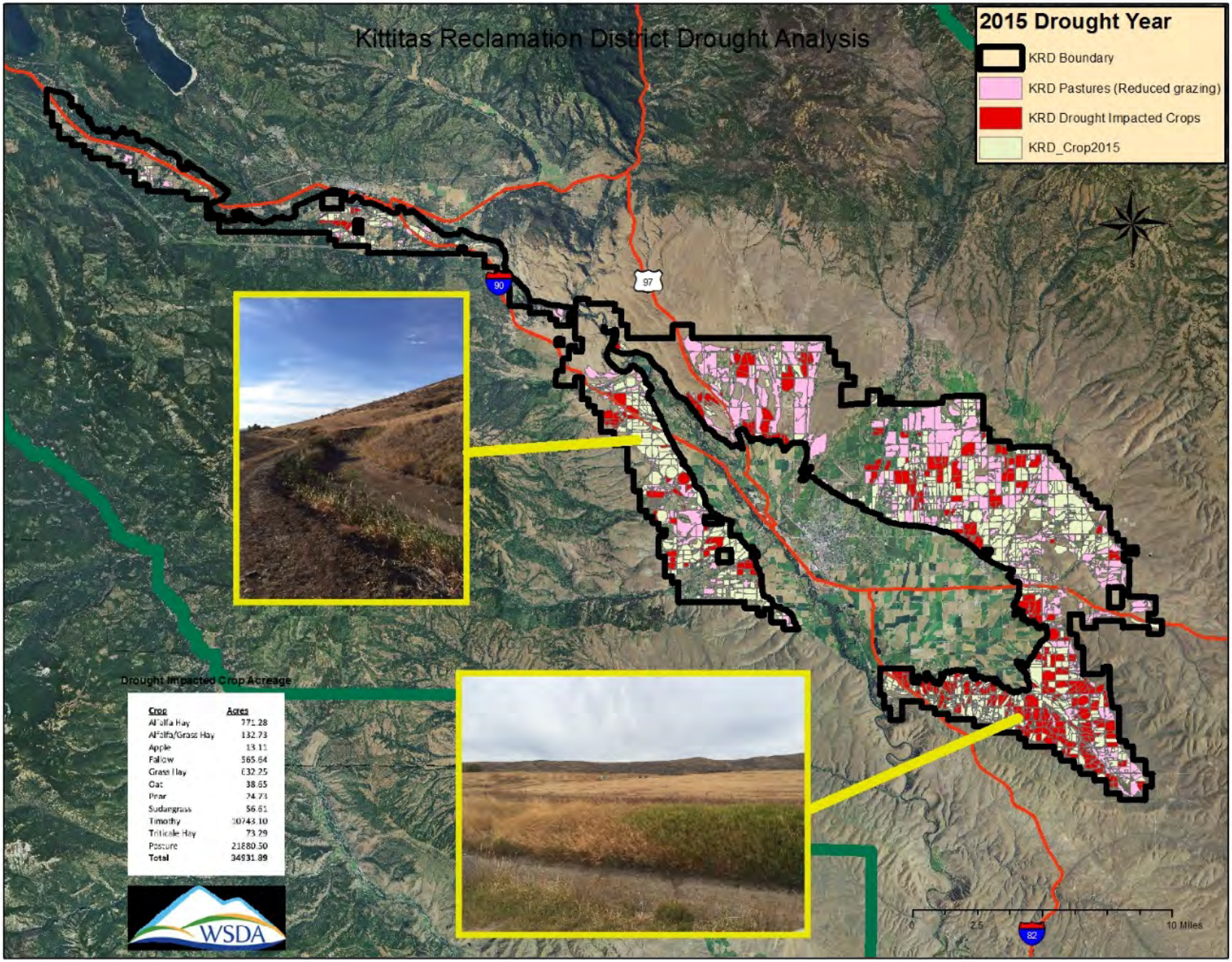
- Animal agriculture data limited to dairy and cattle operations (no data on layers and fryers)
- Effects on the labor industry (migrant worker communities)
- Socioeconomic factors not analyzed (small vs large farms, etc)
- Effects on consumers
- General lack of available data

Results: Meetings

- Blueberries
  - Washington Blueberry Commission
  - 8 million pound loss
  - $0.97/lb price (NASS 5 year price average processed berries)
  - $7.76 million loss
- Red Raspberries
  - Washington Red Raspberry Commission
  - 26% crop loss (based on 2014 yield)
  - $0.735/lb price (NASS 5 year price average)
  - $13.9 million loss

Results: KRD Mapping

Impacted Crop	Acres Lost	Value/acre ($)	Correction factor	Impact ($)
Alfalfa Hay	771.28	$996.40	0.50	$384,252
Alfalfa/Grass Hay	132.73	$632.60	0.50	$41,982
Apple	13.11	$13,320.80		$174,636
Fallow	565.64	$0.00		$0
Grass Hay	632.25	$632.60		$399,961
Oat	38.65	$216.80		$8,379
Pear	24.73	$9,390.00		$232,215
Sudangrass	56.61	$632.60		$35,811
Timothy Hay	10,743.10	$1,200.00	0.625	$8,057,325
Triticale Hay	73.29	$632.60		$46,363
Pasture	20,201.90	$100.00		$2,020,190
Total	33,253.29			$11,401,115



Crop	Acres
Alfalfa Hay	771.28
Alfalfa/Grass Hay	132.73
Apple	13.11
Fallow	565.64
Grass Hay	632.25
Oat	38.65
Pear	74.73
Sudangrass	56.61
Timothy	10743.10
Triticale Hay	73.29
Pasture	21880.50
Total	34931.89

Results: Roza Mapping

Crop Losses from Mapping Survey

Crop	Acres	Value/Acre	Loss in $
Apricot	16.28	$6,650.00	$108,262
Fallow	349.60	$0.00	$0
Nectarine/Peach	7.06	$3,968.00	$28,014
Pear	16.56	$9,390.00	$155,498
Triticale	107.70	$632.60	$68,131
Wheat	32.41	$441.40	$14,306
Total	529.61		$374,211

Results: Roza Interviews

Roza Acreage Covered in Grower Interviews

	Roza Acreage	Interview Acreage	% Acreage Included in Interview
Apples	20076.95	1791	8.92
Cherries	4179.7	551	13.18
Hops	6822.7	925	13.56
Blueberries	1190.5	560	47.04
Wine Grapes	11006.7	1690	15.35
Juice Grapes	7179.3	350	4.88*
Field Corn	3439.2	880	25.59
Alfalfa	4200	535	12.74

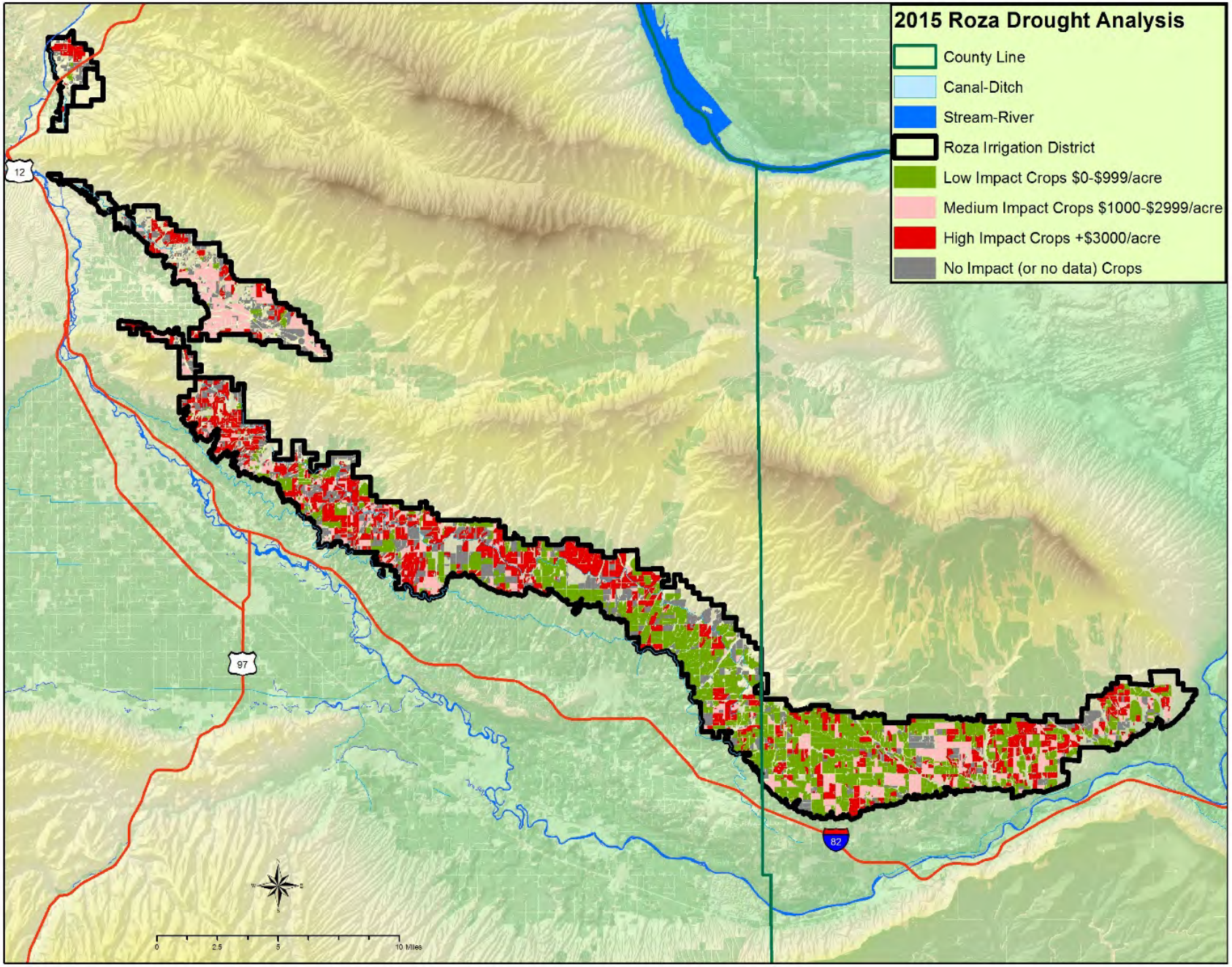
Average Impact on Roza Commodities

Commodity	Roza Acreage	Average Loss/Acre
Apples	20076.95	$3,437.00
Cherries	4179.7	$1,333.00
Hops	6822.7	$1,150.00
Blueberries	1190.5	$3,500.00
Wine Grapes	11006.7	$818.00
Juice Grapes	7179.3	$187.50
Field Corn	3439.2	$260.00
Alfalfa	4200	$337.50

Results: Roza Interviews

Estimated losses based on 75% of acreage affected

Commodity	Roza Acreage	Average Loss/Acre	75% Roza Affected
Apples	20076.95	$3,437.00	$51,753,358
Cherries	4179.7	$1,333.00	$4,178,655
Hops	6822.7	$1,150.00	$5,884,579
Blueberries	1190.5	$3,500.00	$3,125,063
Wine Grapes	11006.7	$818.00	$6,752,610
Juice Grapes	7179.3	$187.50	$1,009,589
Field Corn	3439.2	$260.00	$670,644
Alfalfa	4200	$337.50	$1,063,125
Total Loss			$74,437,623


2015 Roza Drought Analysis
County Line
Canal-Ditch
Stream-River
Roza Irrigation District
Low Impact Crops $0-$999/acre
Medium Impact Crops $1000-$2999/acre
High Impact Crops +$3000/acre
No Impact (or no data) Crops
12
97
82
0
2.5
5
10 Miles

Results: Roza Drought wells

- Interviews covered about 29% of wells in Roza. Information was extrapolated over all 45 wells permitted
- Total Cost of Maintenance= $13,800/well * 45 total wells= $621,000
- Total Cost of Operating Wells= $7,800/well * 45 total wells= $351,000
- The total estimated cost of maintaining and operating drought wells in 2015 is **$972,000**

Results: WIP Interviews

WIP Acreage Covered in Grower Interviews

	Wapato Acreage	Interview Acreage	% Acreage Included in Interview
Timothy	1555	1555	100.00
Alfalfa	14198.04	1341	9.44
Mint	9068.99	722.74	7.97
Carrot Seed	156	156	100.00
Wheat	9567.05	1398.23	14.62
Apples	9191.37	820	8.92
Cherries	732.97	70	9.55
Potatoes	636.05	155.39	24.43

Average Impact on WIP Commodities

Commodity	WIP Acreage	Average Loss/Acre
Timothy	1555.00	$377.00
Alfalfa	14198.04	$350.00
Mint	9068.99	$504.25
Carrot Seed	156.00	$2810.00
Wheat	9567.05	$192.25
Apples	9191.37	$2500.00
Cherries	732.97	$500.00
Potatoes	636.05	$900.00

Results: WIP Interviews

- Estimated losses based on 90% of acreage affected

Commodity	WIP Acreage	Average Loss/Acre	90% WIP Affected
Timothy	1555	$377	$527,612
Alfalfa	14198.04	$350	$4,472,383
Mint	9068.99	$504.25	$4,115,734
Carrot Seed	156	$2810	$394,524
Wheat	9567.05	$192.25	$1,655,339
Apples	9191.37	$2500	$20,680,583
Cherries	732.97	$500	$329,837
Potatoes	636.05	$900	$515,201
Total Impacts			**$32,691,211**

Results: Skagit County

- Skagit County Extension investigation on 2015 drought impacts to agriculture
- 10% average economic loss on agricultural production
- 2012 NASS Agricultural Census- most recent county values
- $27,200,000 loss in 2015

Results: NASS data value lost in Yield

- Total losses = (2015 adjusted acreage x average price) x (average yield- 2015 yield)

Crop	2015 Acreage	Avg. Price	Avg. Yield	2015 Yield	Estimated Loss
Wheat	2,200,336	$6.92/bu	63.5 bu/acre	50.4 bu/acre	$199,464,859
Barley	97,218	$4.34/bu	69.8 bu/acre	48 bu/acre	$9,197,989
Dry Peas	102,000	$0.153/lb	2080 lb/acre	1400 lb/acre	$10,612,080
Lentils	59,000	$0.2922/lb	1280 lb/acre	750 lb/acre	$9,137,094
Apples	118,638	$0.33/lb	41760 lb/acre	40200 lb/acre	$61,074,678
Hops	25,335	$3.27/lb	2071 lb/acre	1849 lb/acre	$18,391,690
Mint	22,415	$19.77/lb	122.9 lb/acre	117 lb/acre	$2,614,553
Pears	19,476	$499.8/ton	19.46 tons/acre	18.3 tons/acre	$11,291,77

Results: NASS data value lost in Quality

- Total losses = (2015 adjusted acreage x average yield x average price) – (2015 adjusted acreage x 2015 yield x 2015 price)

Crop	2015 Adjusted Acreage	Avg. Yield (tons/acre)	2015 Yield (tons/acre)	Avg. Price ($/ton)	2015 Price ($/ton)	Estimated Loss
Cherries	30,087.33	5.942	6.36	$2,326	$1,970	$38,869,581

Results: NASS data value lost in Acreage not harvested/planted

- Total losses = (average acreage – 2015 acreage) x (average price x average yield)

Crop	Avg. Acreage	2015 Acreage	Average Price	Average Yield	Estimated Loss
Alfalfa	405,081	375,081	$198.60/ton	5.02 tons/acre	$29,909,160
Feed Corn	157,186	128,186	$5.84/bushel	215 bushels/acre	$36,412,400

Results: Large animal livestock survey

- Additional feed purchases
  - 50% of operators purchased additional feed in 2015 (Survey and Dairy Fed)
  - WSDA Dairy Nutrient Management Program data on how many dairies exist
  - Type and amount of feed purchased (survey)
  - Values of feed (NASS and Dairy Fed)
  - Total Cost of Feed Purchased to Support Dairies= **$27,467,334**

Results: Large animal livestock survey

- Reduction in milk production
  - Average reported loss 12.2 pounds/head-day (Survey)
  - Total milking cows from Dairy Nutrient Management Program at WSDA
  - 50% of dairy operations impacted (Survey and Dairy Fed)
  - Duration of reduction in production June 10- July 20 (Dairy Fed)
  - Extreme heat came in waves, duration divided in half
  - 5 year average price per pound of milk (NASS)
- Total Cost Associated with Reduction in Milk Production = **$5,812,230**

Conclusions

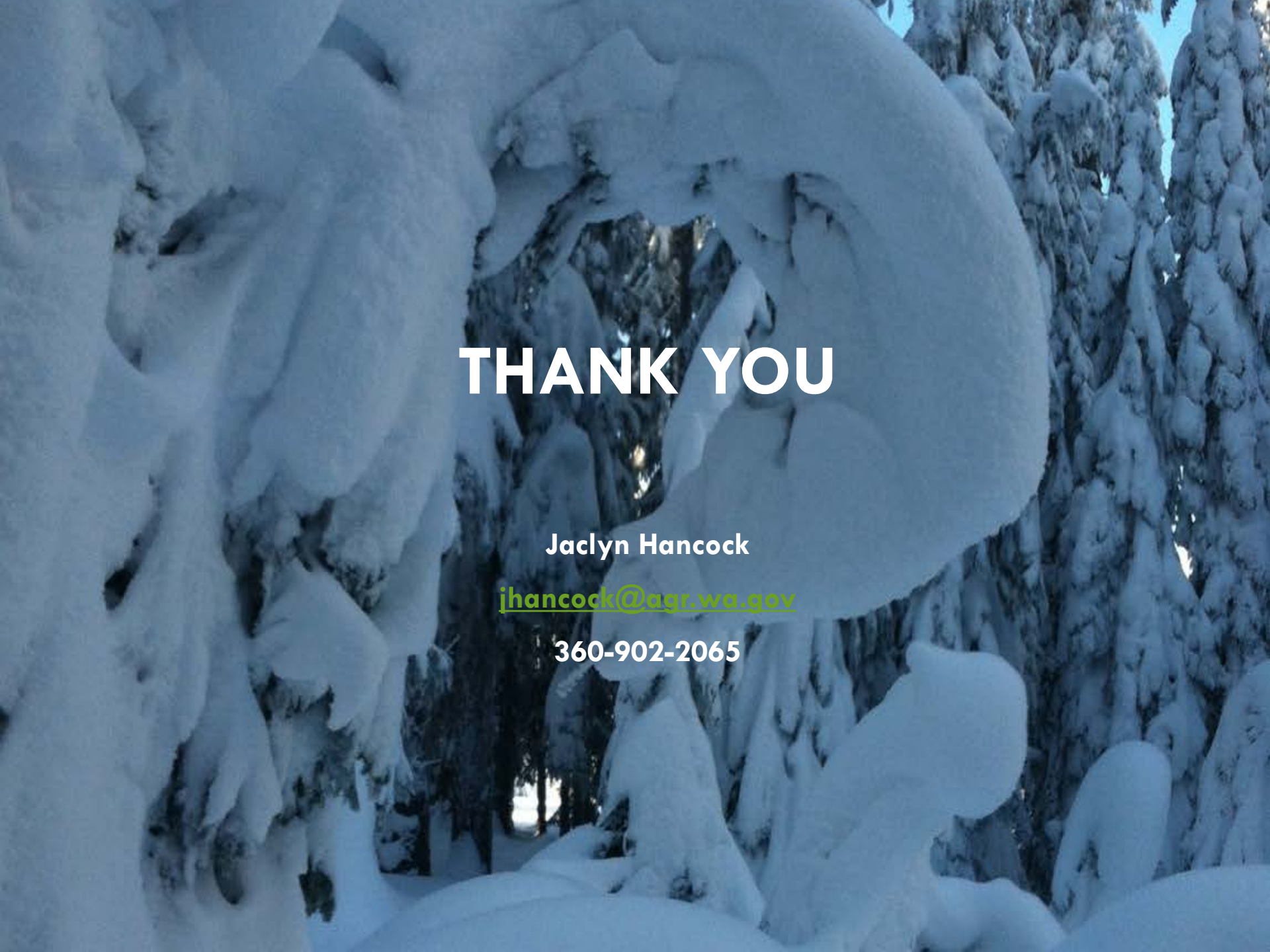
- **$633-$773 million** gross value losses to production
- Not feasible to collect information on every commodity at the farm scale
- Best available information used
- Not all economic impacts represented in report
- Impacts not limited to certain crops or regions

Next Steps: WSAS Recommendations

- Future Analysis based on economic model
- Statistical random sampling approach for statewide crop coverage
- Companion Report on Water Rights
  - Water rights and irrigated acres
  - Water rights typically curtailed in drought year
  - Analysis of revenue of irrigated vs non irrigated crops

Final thoughts

- Recommend gathering data on an ongoing basis
- Weaving meteorological and agricultural data would provide background data for making planting decisions and anticipated climate related changes
- Recommend developing a sound data network (resources needed) based on economic model



THANK YOU

Jaclyn Hancock

jhancock@agr.wa.gov

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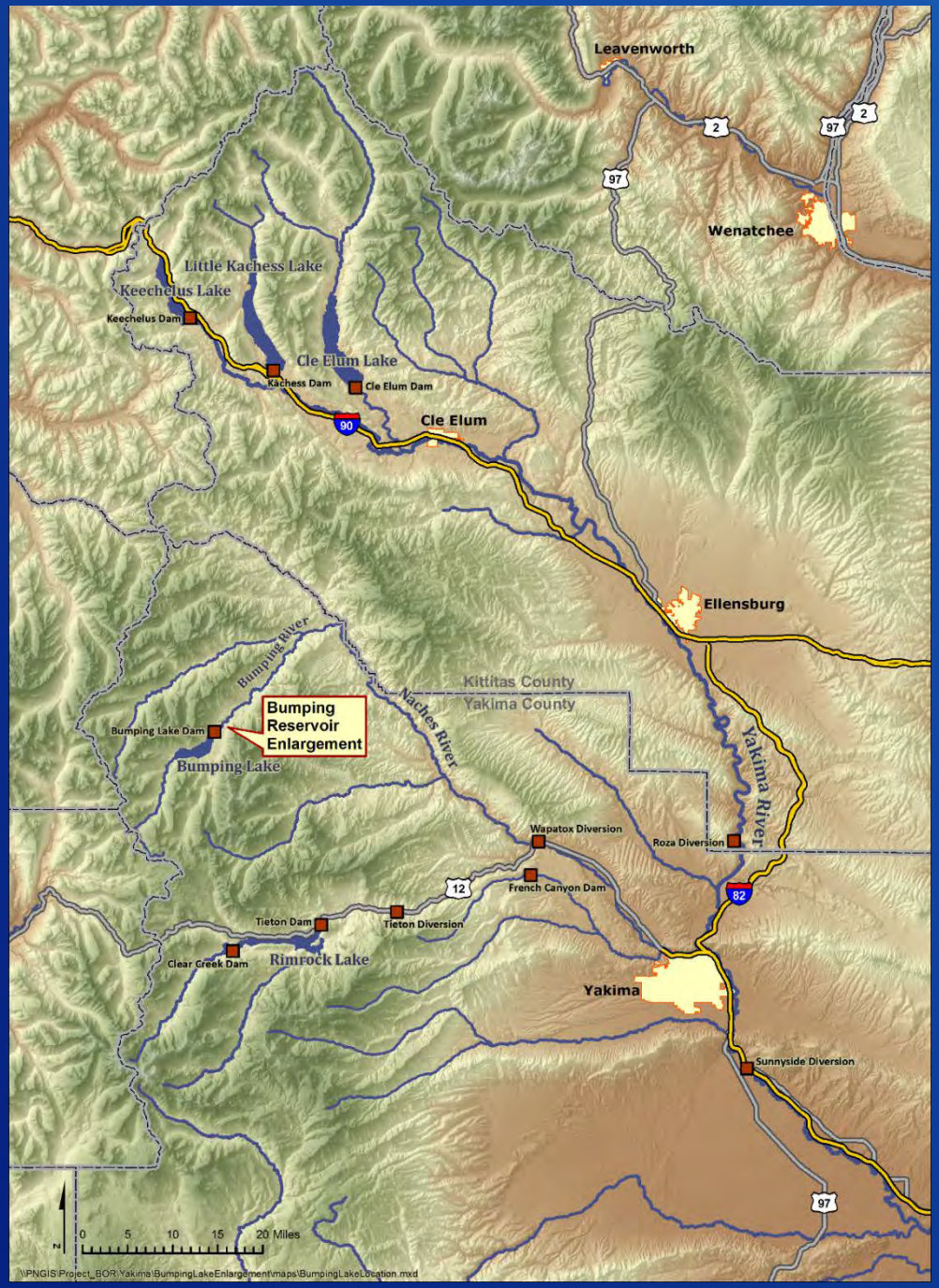

Bumping Reservoir Enlargement

Geologic Investigations

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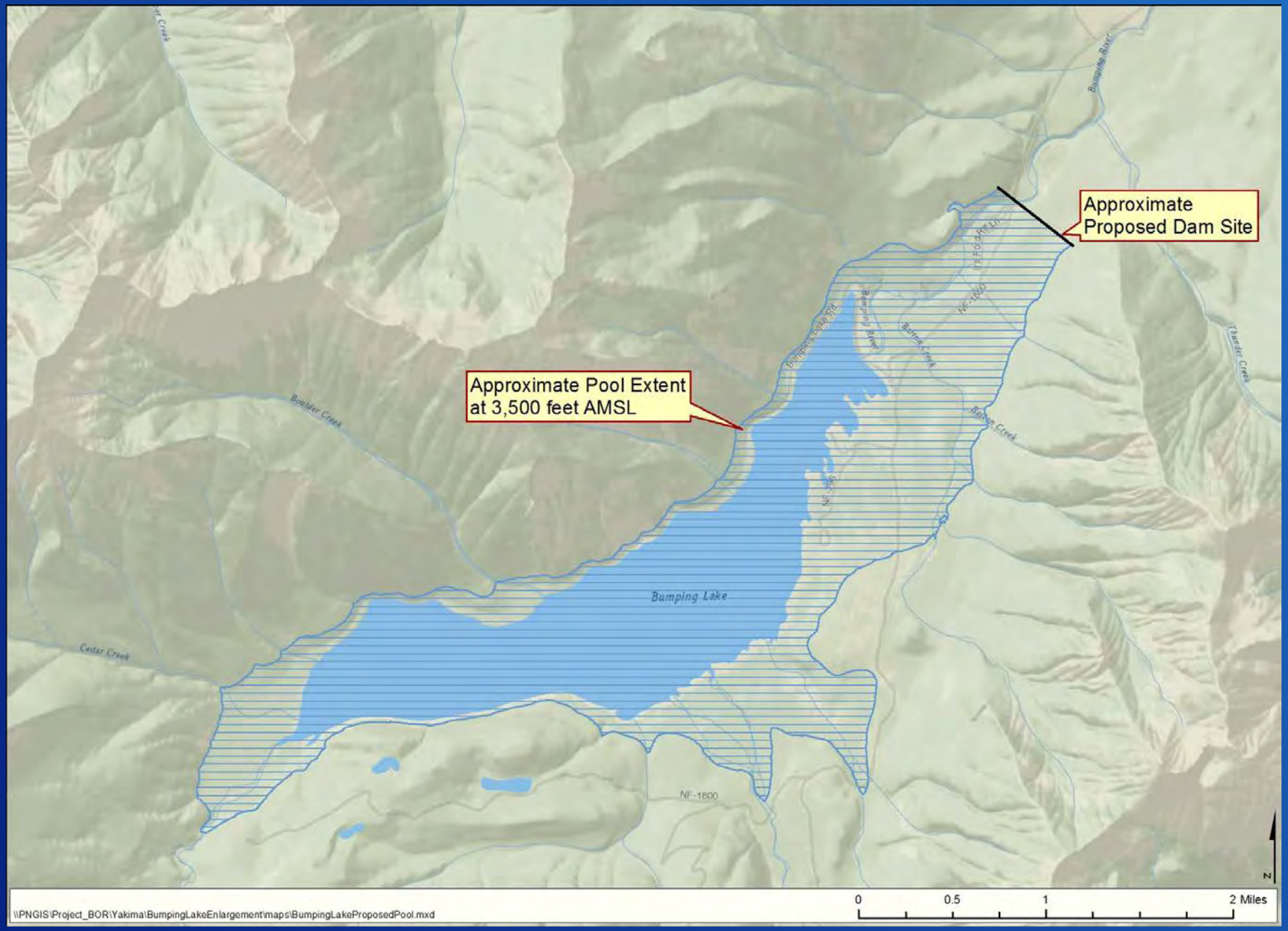
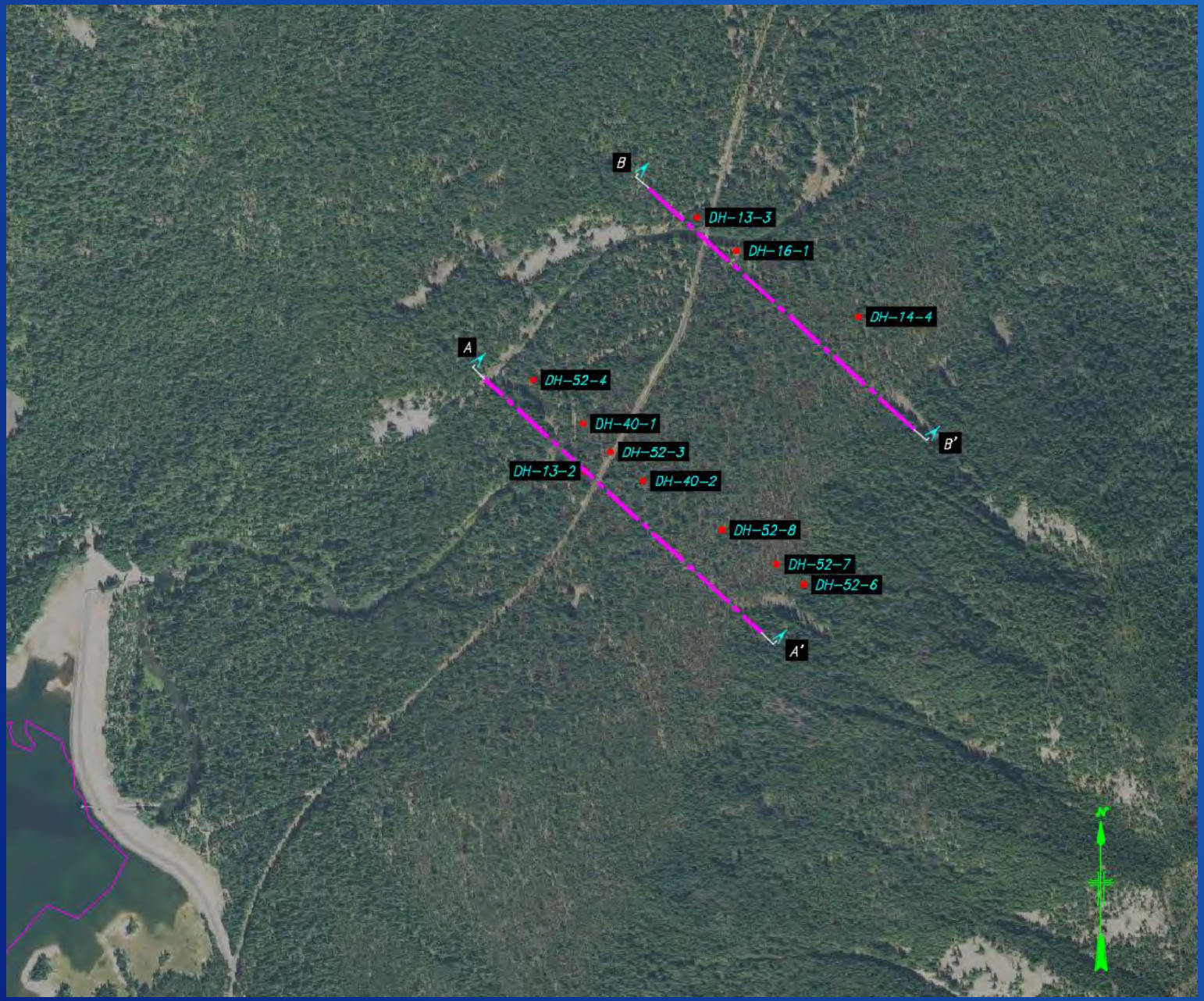


RECLAMATION

Drilling 2013-2016

RECLAMATION



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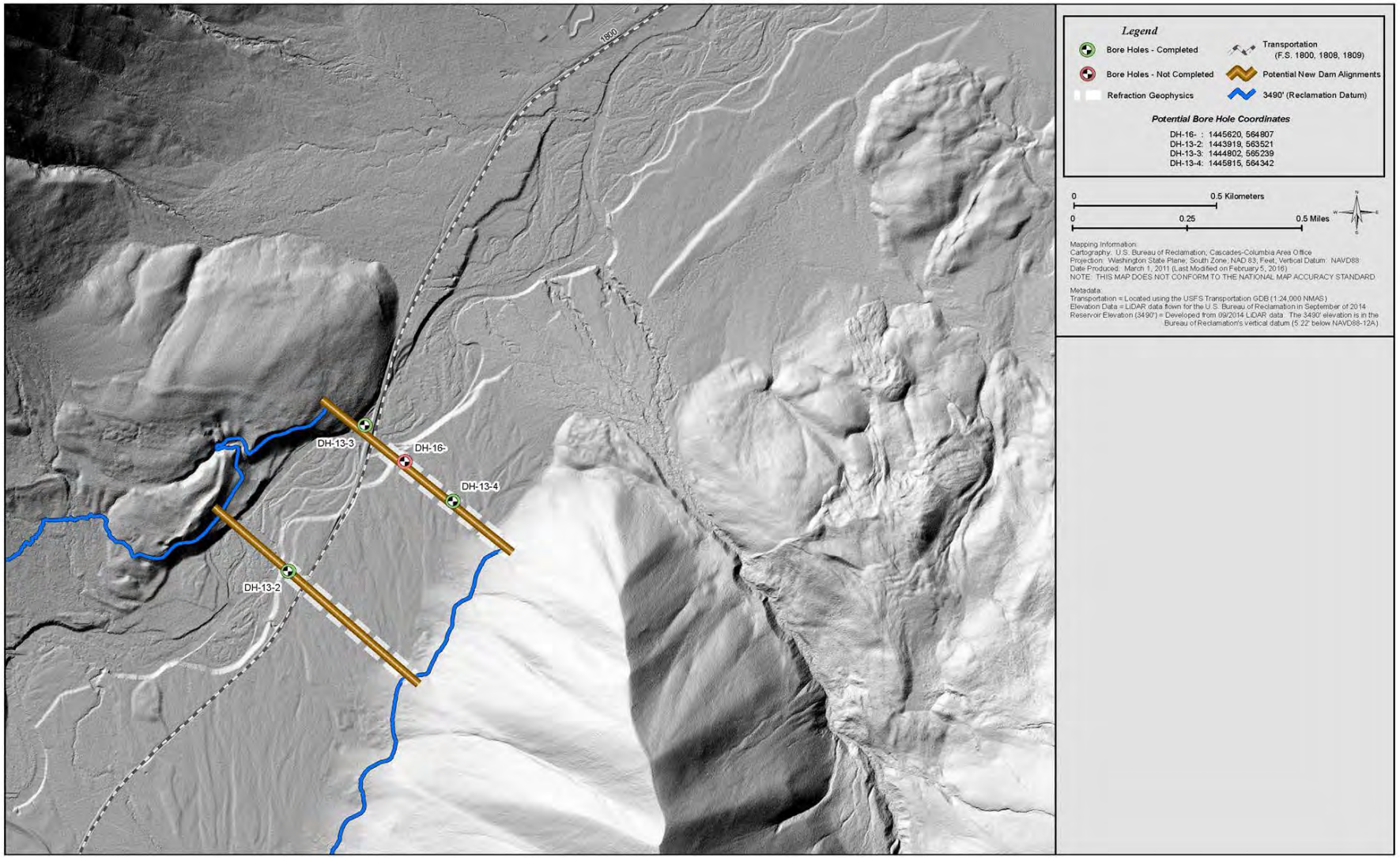
Bare Earth Map –proposed dam locations



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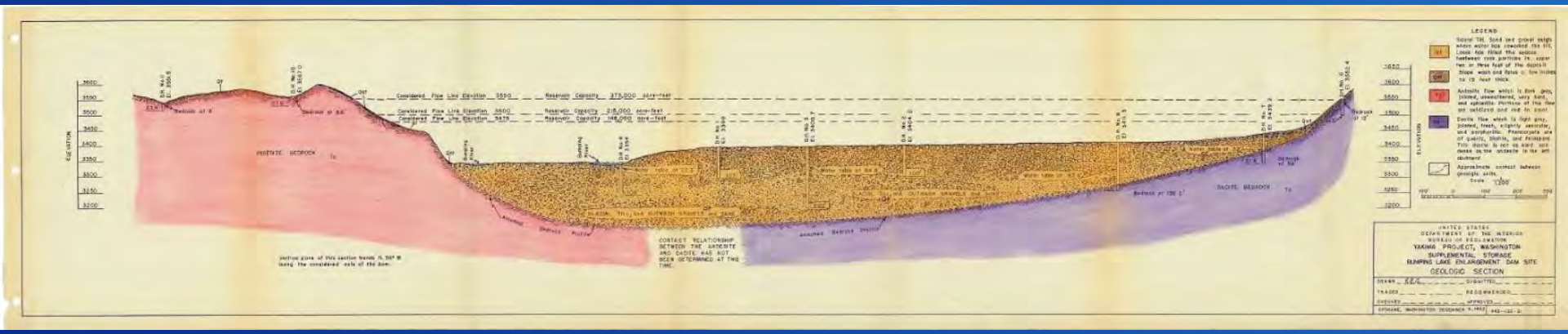
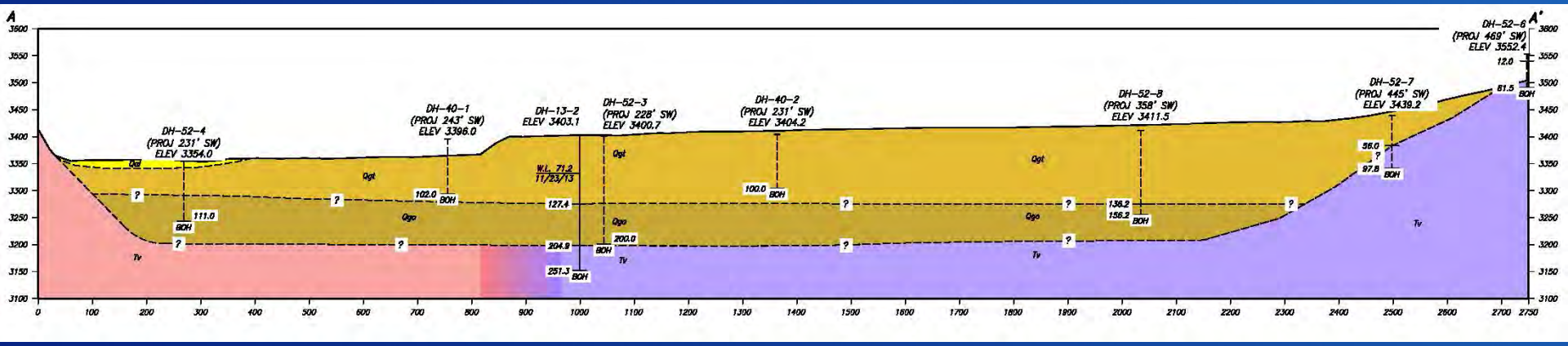
Alignment A

RECLAMATION

Alignment A - 2800 ft length





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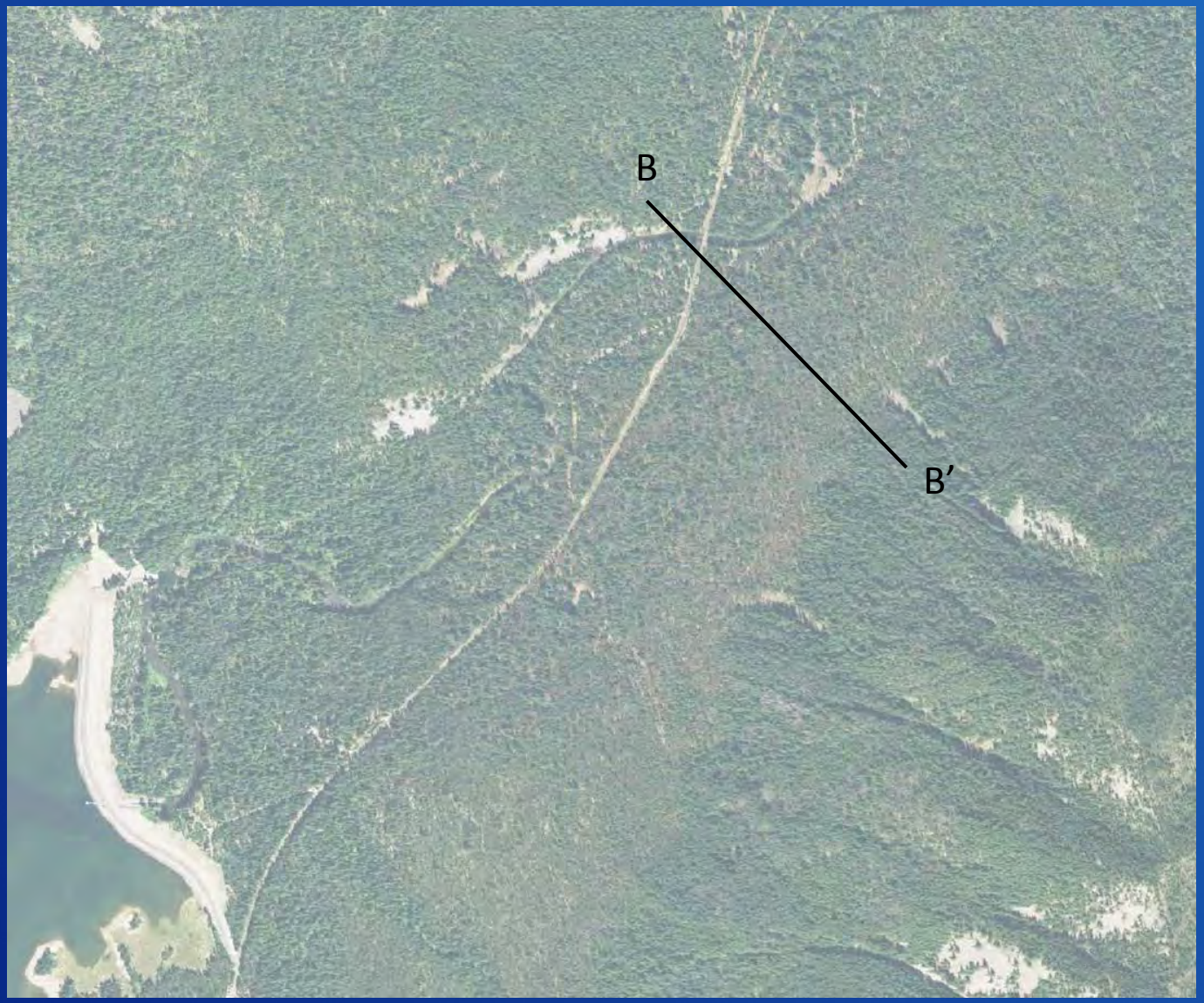
Alignment B



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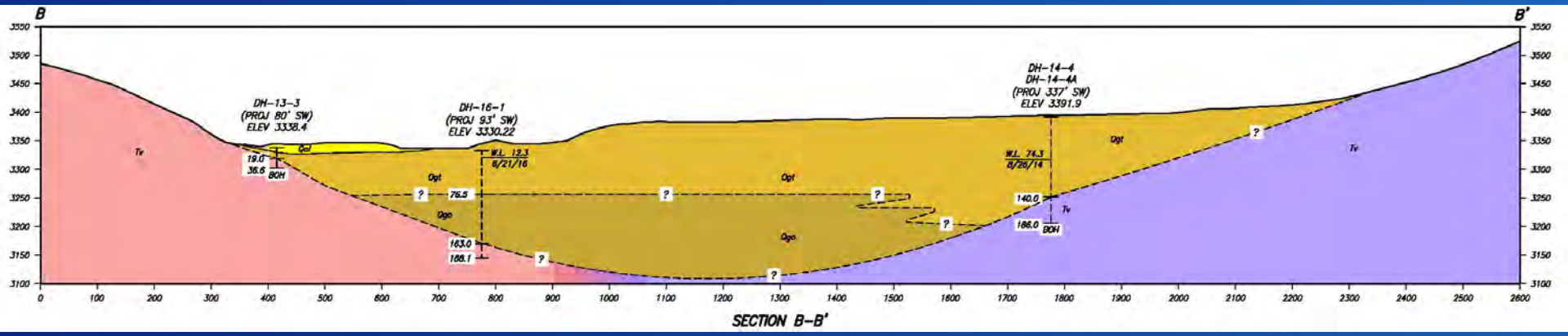
Alignment B - 2400 ft length



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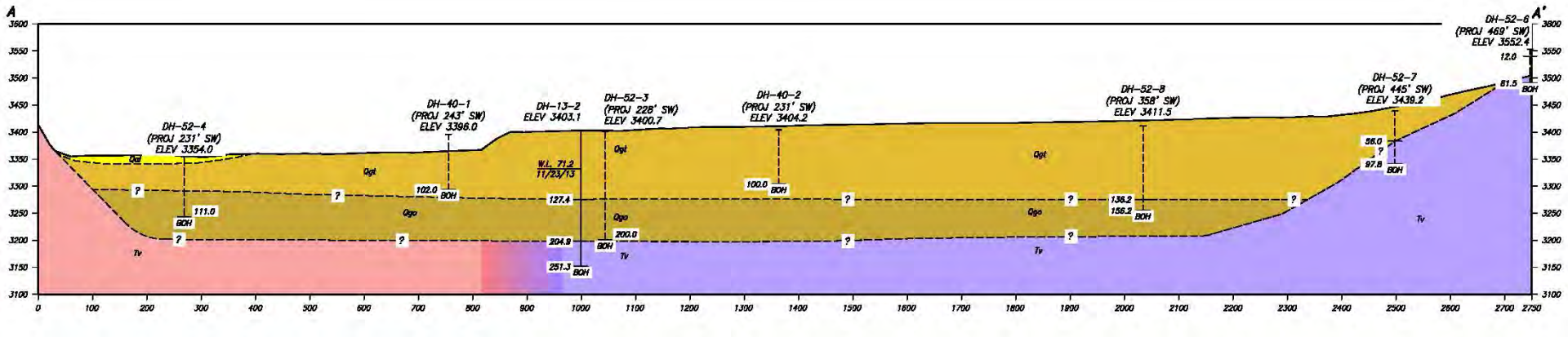
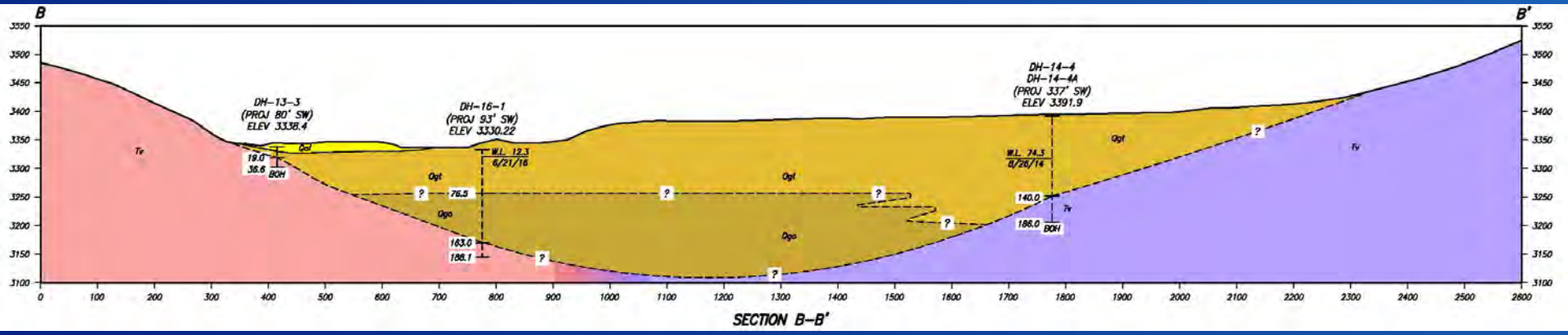
Alignment A



Alignment B



RECLAMATION

Conclusions:

- 4 holes drilled for geotechnical data (≈800 ft)
- Both sections encountered a fairly layer-cake geology (Glacial deposits on top of volcanic bedrock)
- Gathered Geotechnical Data (SPT, Permeability tests)
- Need more geological explorations

RECLAMATION

RECLAMATION

Managing Water in the West

Proposed Bumping Dam Modifications – Summary of Geophysical Surveys

Rich Markiewicz
Geophysicist
Technical Service Center, Denver

U.S. Department of the Interior
Bureau of Reclamation

Seismic Refraction Surveys

- Used to delineate top of bedrock configuration.
- Seismic velocities tell us something about the subsurface materials properties.
- Excavation conditions can *sometimes* be predicted with refraction surveys.

Seismic Refraction Surveys

What is seismic survey?

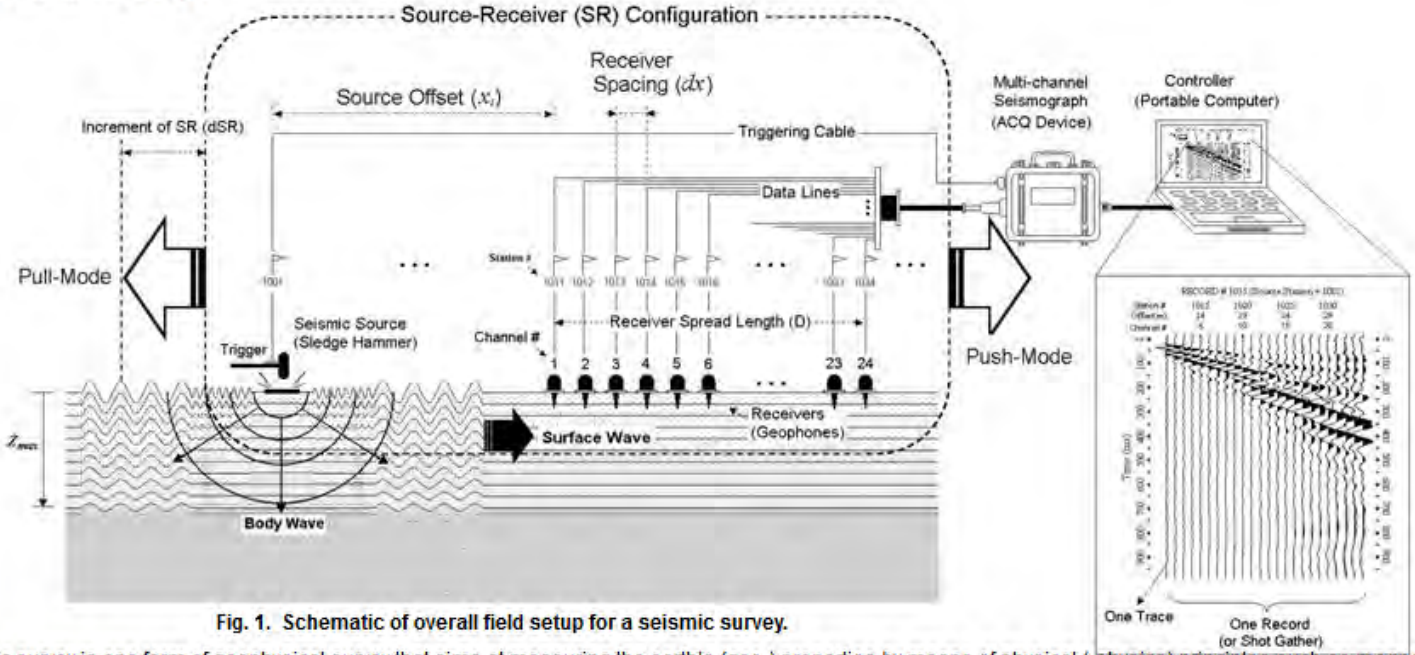


Fig. 1. Schematic of overall field setup for a seismic survey.

The seismic survey is one form of geophysical survey that aims at measuring the earth's (geo-) properties by means of physical (-physics) principles such as magnetic, electric, gravitational, thermal, and elastic theories. It is based on the theory of elasticity and therefore tries to deduce elastic properties of materials by measuring their response to elastic disturbances called seismic (or elastic) waves.

What Are Seismic Waves?

A seismic source-such as sledgehammer-is used to generate seismic waves, sensed by receivers deployed along a preset geometry (called receiver array), and then recorded by a digital device called seismograph (**Fig. 1**). Based on a typical propagation mechanism used in a seismic survey, seismic waves are grouped primarily into direct, reflected, refracted, and surface waves (**Fig. 2**).

There are three major types of seismic surveys: refraction, reflection, and surface-wave, depending on the specific type of waves being utilized. Each type of seismic survey utilizes a specific type of wave (for example, reflected waves for reflection survey) and its specific arrival pattern on a multichannel record (**Fig. 3**). Seismic waves for the survey can be generated in two ways: actively or passively. They can be generated actively by using an impact source like a sledgehammer or passively by natural (for example, tidal motion and thunder) and cultural (for example, traffic) activities. Most of the seismic

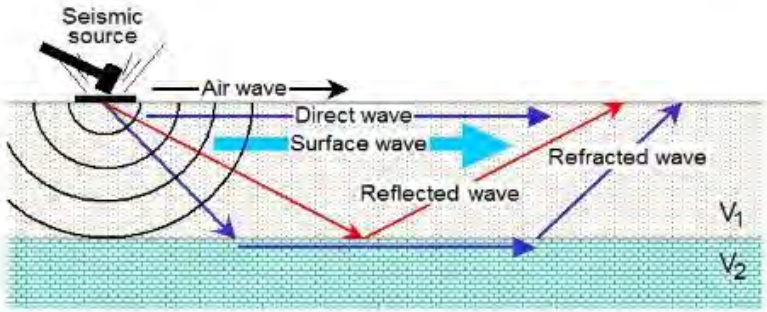


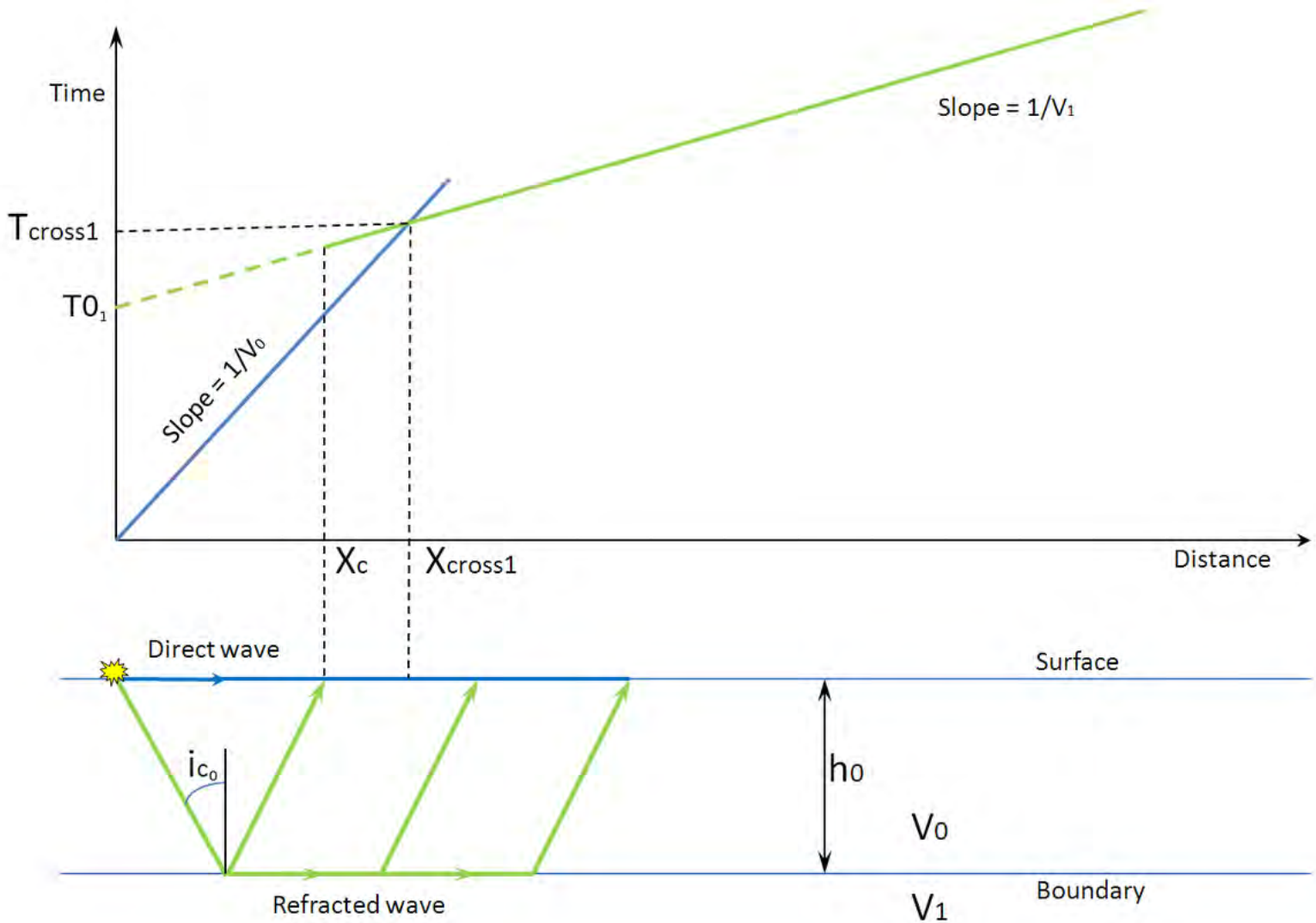
Fig. 2. Major types of seismic waves based on propagation characteristics.

(from ParkSeismic.com)

RECLAMATION

Simple Refraction Model

Two Horizontal Layers. [edit]



(from Wikipedia.com)

RECLAMATION

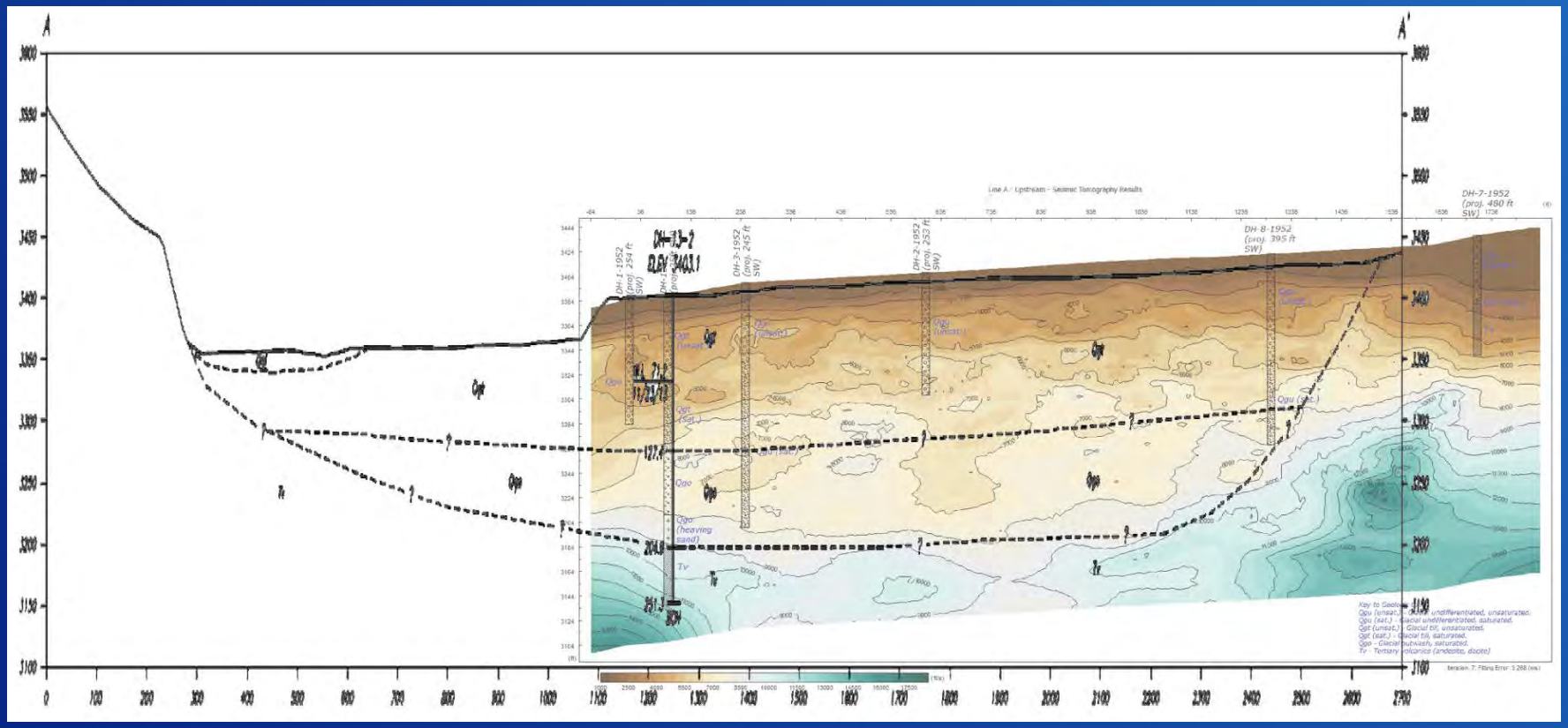
Seismic Refraction Field Equipment

Seismic survey targets

- Top of Bedrock configuration – refraction survey results are often combined with drilling results to form a cross-section of the site.
- Excavation Conditions estimate - There is a rough correlation between seismic velocity and excavation conditions. The actual conditions are also equipment-dependent.

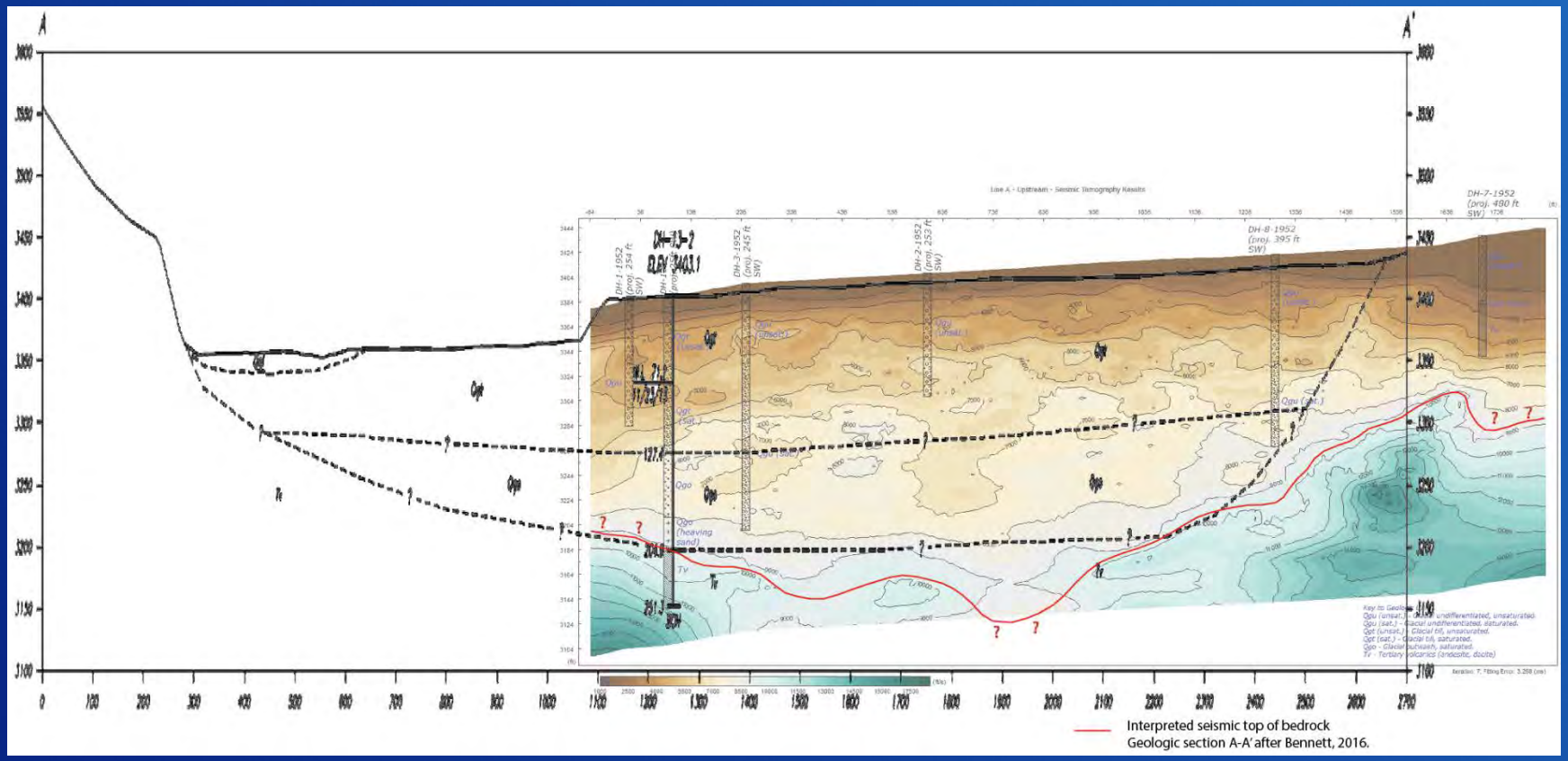
RECLAMATION

Seismic refraction section, A-A’ (upstream)



RECLAMATION

Seismic refraction section, A-A' (upstream) with interpretation



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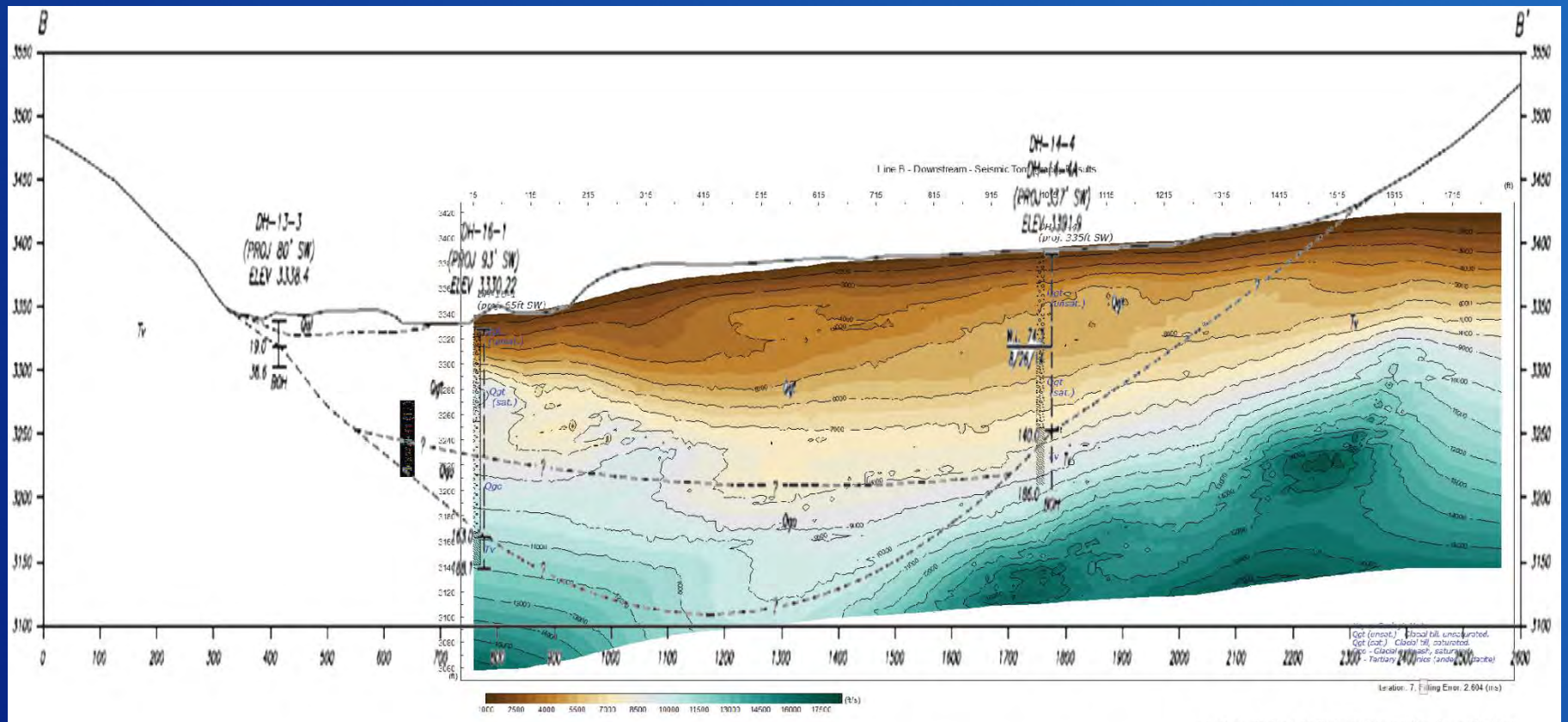
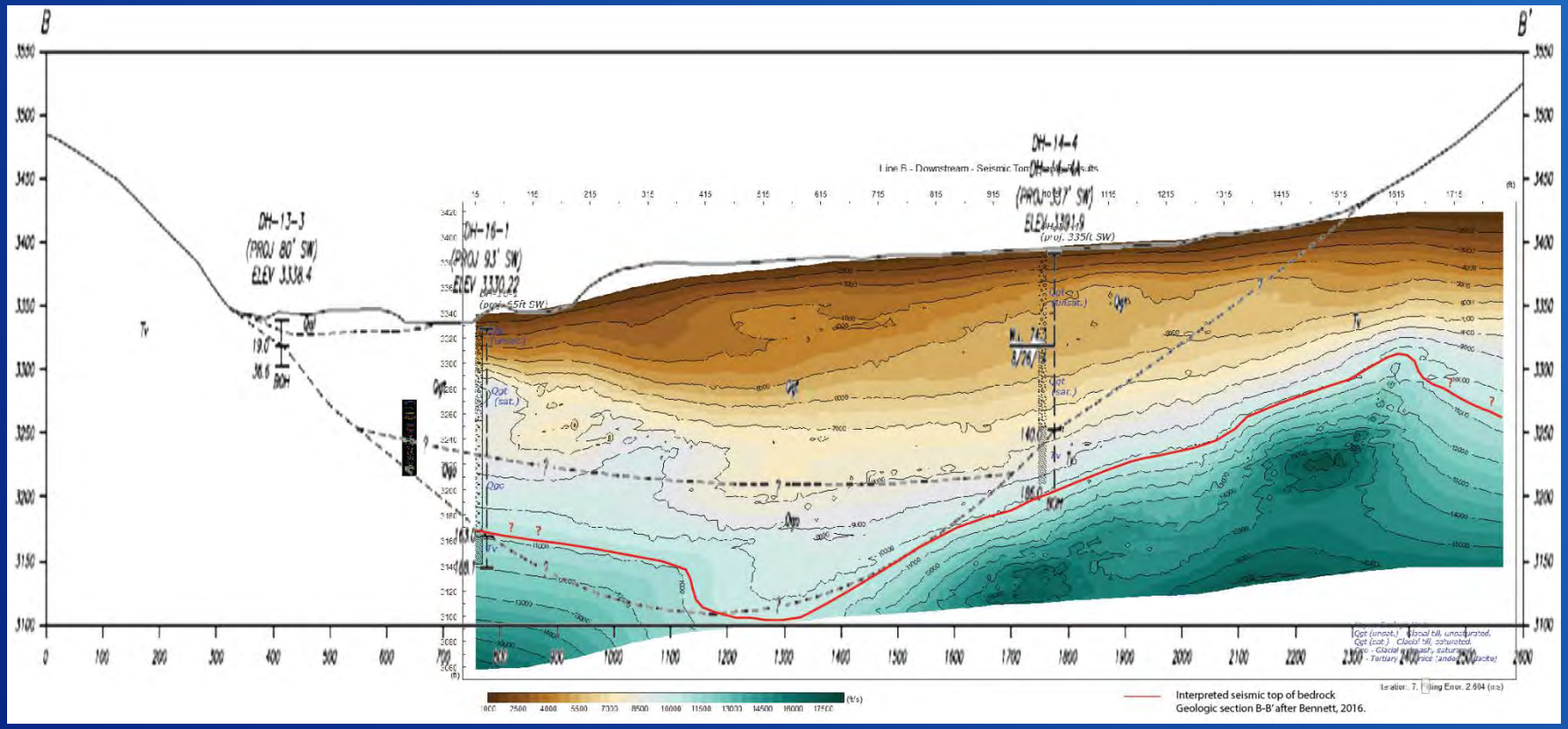
Seismic refraction section, B-B' (downstream)



Geologic Sections B-B' (downstream) after Bennett (2016).

RECLAMATION

Seismic refraction section, B-B' (downstream) with interpretation



RECLAMATION

Summary

- Seismic refraction and borehole geologic logs suggest that maximum depths to top of bedrock are roughly 160-210 feet at both the A (upstream) and B (downstream) sites.
- These data also suggest that there is an appreciable difference in expected excavation effort, and cost savings, with the B site requiring less excavation work.

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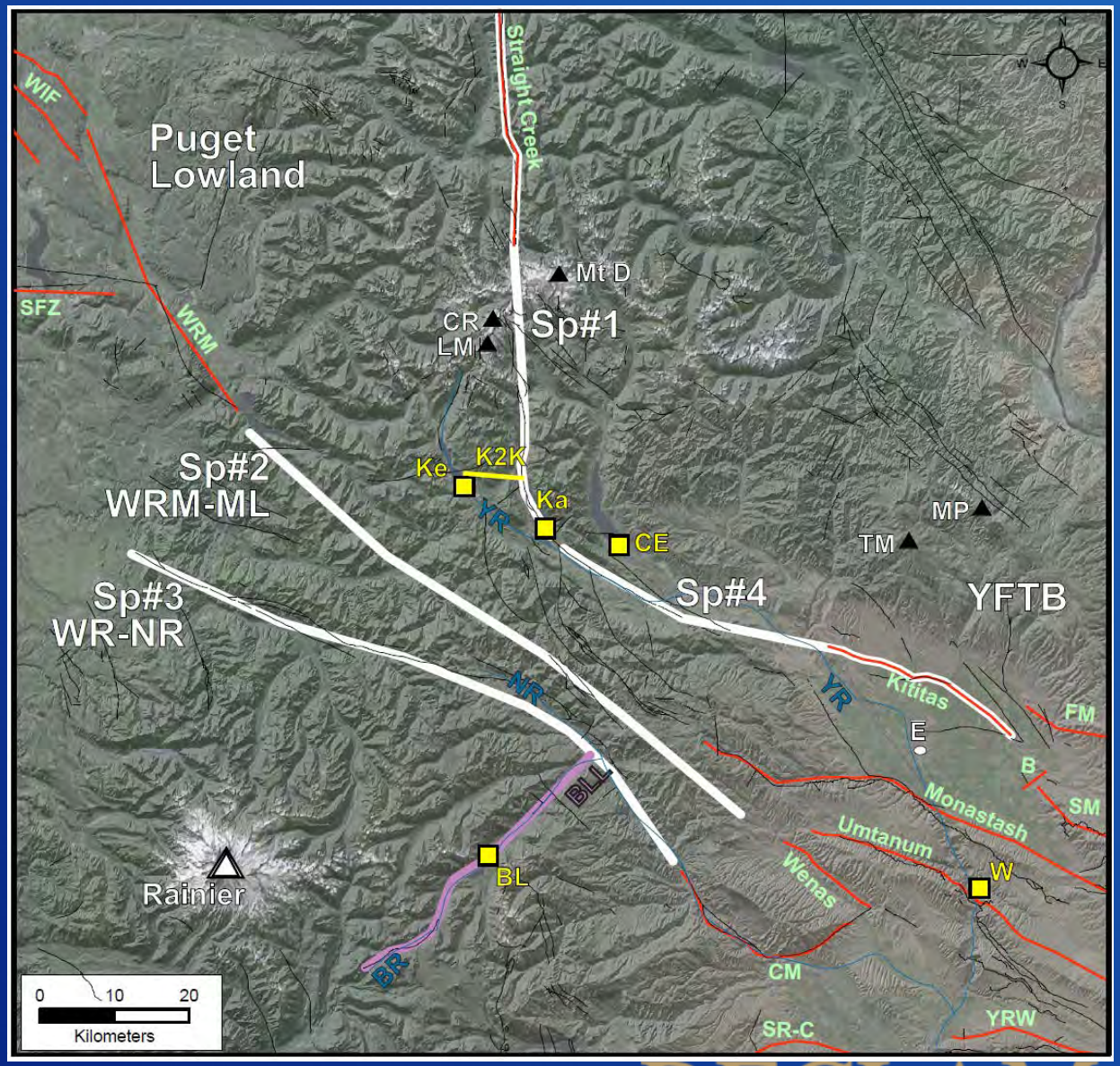
Summary (cont'd)

- Seismic and borehole results to date on the right (southeast) side of the B site are somewhat sparse. Further explorations would be required to more confidently assess geologic and engineering conditions on the right side.

Regional Geology



From Redwine, USBR, 2014

RECLAMATION

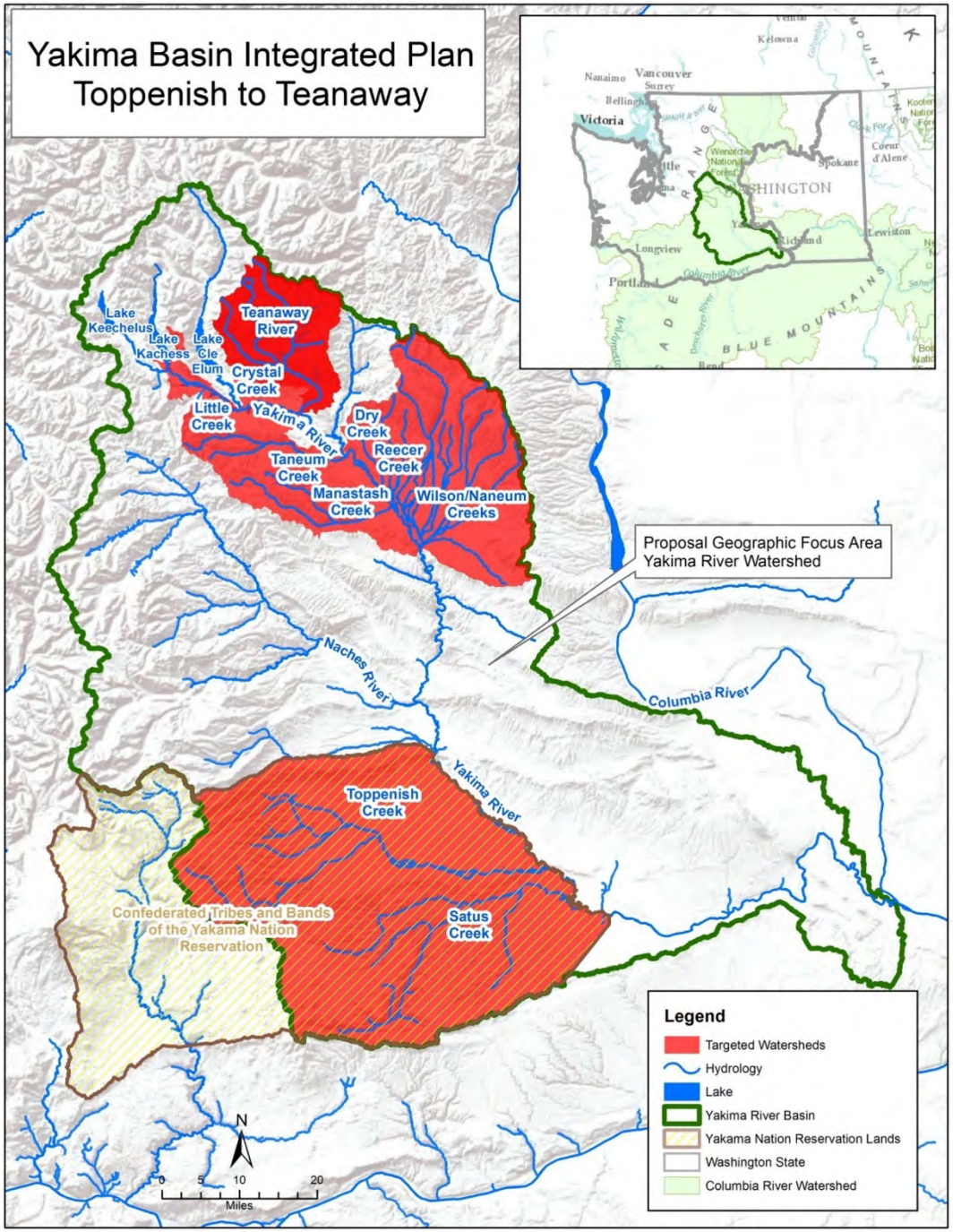
Yakima Integrated Plan - Toppenish to Teanaway

Regional Conservation Partnership Program

2017-2021

Regional Conservation Partnership Program

- October 2014 (Columbia Basin CCA)
  - Yakama Nation
  - Ecology ($16 million, basin wide request)
- November 2015 (Columbia Basin CCA)
  - Yakama Nation
  - KCCD ($5 million, Kittitas County)
- September 2016 (National Pool)
  - Yakama Nation/KCCD Joint Proposal – Toppenish to Teanaway


Yakima Basin Integrated Plan
Toppenish to Teanaway
Teanaway River
Lake Keechelus
Lake Kachess
Lake Cle Elum
Crystal Creek
Little Creek
Yakima River
Dry Creek
Reecer Creek
Taneum Creek
Manastash Creek
Wilson/Naneum Creeks
Proposal Geographic Focus Area
Yakima River Watershed
Naches River
Columbia River
Yakima River
Toppenish Creek
Satus Creek
Confederated Tribes and Bands of the Yakama Nation Reservation
Legend
Targeted Watersheds
Hydrology
Lake
Yakima River Basin
Yakama Nation Reservation Lands
Washington State
Columbia River Watershed
N
0 5 10 20
Miles
Kelowna
Nanaimo
Vancouver
Surrey
Victoria
Spokane
Coeur d'Alene
Longview
Portland
Richland
Lewiston
Columbia River
BLUE MOUNTAINS

$9,425,925 80%

Budget

	Financial Assistance (FA) Requested	Partner Technical Assistance (TA) Requested	NRCS Technical Assistance (TA) Requested	Acres	Total Requested
Environmental Quality Incentives Program (EQIP)	$3,720,000 (KCCD) $1,213,333 (YN)	$267,454 (KCCD)	$314,000 (KCCD) $60,667 (YN)	22,400 (KCCD) 500 (YN)	$5,575,454
Conservation Stewardship Program (CSP)	$105,500 (KCCD) $105,000 (YN)		$41,500 (KCCD) $21,000 (YN)	5861 (KCCD) 5833 (YN)	$273,000
ACEP-ALE	$760,000 (KCCD)	$22,675 (KCCD)	$94,575 (KCCD)	160 (KCCD)	$877,250
ACEP-WRE (Wetland Reserve)	$110,000 (KCCD)	$4,536 (KCCD)	$63,000 (KCCD)	4 (KCCD)	$177,536
Healthy Forest Reserve Program (HFRP)	$553,000 (KCCD)	$9,500 (KCCD)	$75,000 (KCCD)	150 (KCCD)	$637,500
Total	$6,566,833	$304,165	$669,742	14908	$7,540,740

Partner Contribution

Partner Name	Total Contributed
Wapato Irrigation Project	$800,000
Yakima Nation/Columbia River Inter-Tribal Fish Commission	$110,000
WA Department of Ecology	$2,014,600
WA State Conservation Commission	$1,669,000
WA Department of Natural Resources	$40,000
WA Department of Fish & Wildlife	$40,000
Kittitas County Conservation District	$519,209
Kittitas County Public Works	$910,000
Trout Unlimited	$120,000
Forterra	$1,360,000
Washington Water Trust	
National Fish & Wildlife Foundation	
Totals	$7,582,809

Kittitas County Conservation District

$6,672,809

Confederated Tribes and Bands Yakama Nation Treaty of 1855

$910,000

Yakama Reservation Projects-
Managing Water and Habitat Across the Landscape

Irrigation conservation & aquifer recharge

Beaver relocation for habitat and water storage in mountain headwaters

Floodplain reconnection and habitat restoration

KCCD Projects-

Irrigation System Upgrades for Water Quality and Quantity

On-Farm Upgrades – Sprinklers

Water Quality & Water Quantity

Irrigation water delivery upgrades

KCCD Projects-
Fish Screens and Fish Passage

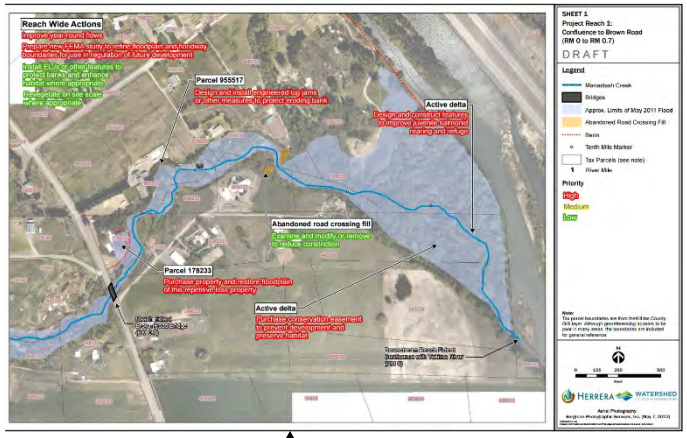
Correcting Fish Passage Barriers

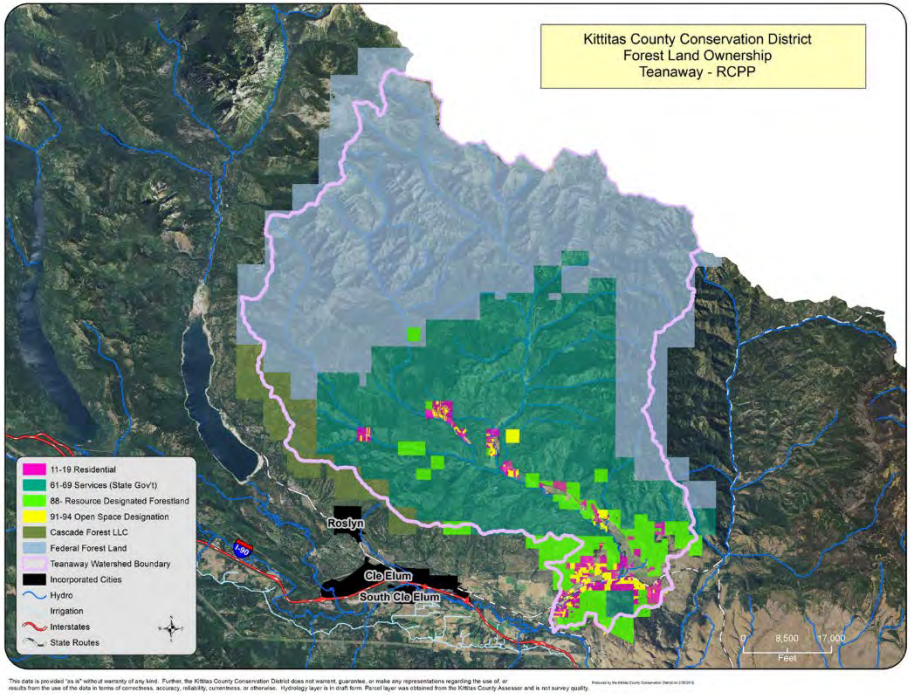
Fish Screens

KCCD Projects - Grazing

Teanaway Grazing & Restoration

KCCD Projects-
Easements





Healthy Forest Reserve Program

ACEP (Wetland Reserve)

ACEP (Farmland Easements)

Tom Tebb, 509-575-3989

Agenda

Yakima River Basin Water Enhancement Project Workgroup

June 21, 2017, 9:30 AM to 12:00 PM at
NEW LOCATION: Ecology Central Region Office, Large Conference Room,
1250 Alder Street, Union Gap, WA

Time

9:30 – 9:40 Welcome/Introductions and Agenda Overview/Public Comment[1]
Ben Floyd, Anchor QEA

9:40 – 9:45 Implementation Committee Update
Tom Tebb, Ecology and Implementation Committee Members

9:45 – 10:05 Outreach Update – Video Vignette and Update on Municipal Conservation Meetings
Steve Malloch, Western Water Futures, Nicky Pasi, American Rivers, and Dave Brown, City of Yakima

10:05 – 11:00 Technical Work Update
- NEPA/SEPA Process Overview – *Beth Reinhart, Reclamation and Mark Schuppe, Ecology*
- Reclamation Land Acquisition Processes – *Steve Wake, Reclamation*
- Cle Elum Adult Upstream Fish Passage - Whoooshh Update – *Joel Hubble, Reclamation and Dave Fast, Yakama Nation*

11:00 – 11:15 Public Comment

11:15 – 11:35 Economic Subcommittee – Panel Presentation on Draft Economics Report
Mike Leita, Yakima County; Jonathon Smith, New Vision; Jon DeVaney, Washington State Tree Fruit Association; and Leslie Roy, Roy Farms

11:35 – 11:50 Workgroup – Roundtable Discussion
Ben Floyd, Anchor QEA

Workgroup Meeting Ends

Upcoming 2017 Meetings: Sep. 20 (Prosser), Dec. 14 (Union Gap)

Public Perspectives Session

We are trying a new approach based on public feedback requesting more time to share perspectives on the Integrated Plan. Based on response to this session, we may schedule additional sessions in the future.

Noon – 1 PM Yakima Basin Integrated Plan – Perspectives
Jay Schwartz and Bill Campbell; and Agricultural Producers Impacted by Drought Conditions

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[1] In addition to the public comment time on the agenda, opportunities will be provided to the public for questions or to make brief observations for each agenda item after Welcome/Introductions and before the Workgroup Roundtable discussion. Those wanting to provide public comment need to sign up for comment and each commenter will be limited to 2 – 3 minutes for comments (depending upon how many want to provide comments) to maintain meeting schedule. Additional written material can be submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.

Contact: Tom Tebb, Washington State Department of Ecology, (509) 575-3989

Meeting Notes - Yakima River Basin Water Enhancement Project Workgroup

June 21, 2017

Washington State Department of Ecology, Union Gap, WA

Welcome, Introductions and Agenda Overview

Ben Floyd, Anchor QEA, welcomed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup members and other attendees, led introductions, and provided an overview of the agenda. These notes summarize the YRBWEP Workgroup presentations and the public comments. For details, please see the full presentations, which are available on the project website: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html.

Implementation Committee Update

Tom Tebb, Washington State Department of Ecology (Ecology) Office of Columbia River (OCR), provided an update on the Implementation Committee. The committee is working with both the U.S. Senate and House of Representatives on Integrated Plan legislation (HR 714). The Bureau of Reclamation was recently awarded an additional $8 million in Federal discretionary funds for water conservation and fish passage for Federal Fiscal Year 2017. The State Legislature is also in session and considering funding in the 2017-2019 biennial budget. Implementation Committee members met with legislators in Olympia and provided follow-up communications.

Public Input on this Agenda Item: None

Outreach Update

The Outreach Workgroup representatives, Steve Malloch, Western Water Futures, and Nicky Pasi, American Rivers, provided an overview of recent outreach activities and shared three video vignettes highlighting elements of the Integrated Plan. The videos highlighted the following topics:

- Farmers: the Integrated Plan and drought and climate change risks to agricultural products produced by Yakima River basin water supply.
- Teanaway Community Forest: recreation, conservation, restoration, and climate change risks to stream flows for fish and water supply, the connection of the forest and river as a functioning ecosystem, and importance of healthy watersheds.

- Yakama Nation: the importance of the Integrated Plan for members of the Yakama Nation, and the aim to protect and enhance water supplies for fish and agriculture for future generations. Working together is occurring within the Yakama Nation and on the implementation of the Integrated Plan.
- These videos can be accessed on YouTube: https://www.youtube.com/channel/UCIansPZCImLL0PeW6PB46Ug

Dave Brown, City of Yakima and Chair of Municipal Subgroup, reported that the subgroup recently sponsored two meetings focused on water conservation, water rights, and water system management with municipal water purveyors in the basin.

Nicky reported that recent public outreach activities featured the Integrated Plan in several community events throughout the Yakima River basin and on the west side of the State.

Public Input on this Agenda Item: None.

Technical Work Updates

1. State Environmental Policy Act (SEPA) Overview

Mark Schuppe, Ecology, presented information on SEPA and the environmental review process and described how it helps State agencies in making decisions. SEPA provides a disclosure process for agencies and the public, addresses regulatory gaps and overlaps, helps identify and provide opportunity for review of potential impacts from proposed actions early in the process, and helps streamline decision-making. SEPA has the authority to require mitigation, if not covered by permits. SEPA can be integrated with the National Environmental Policy Act (NEPA) process. A SEPA process timeline was reviewed.

2. NEPA Process Overview

Wendy Christensen, Reclamation, introduced the NEPA topic and Beth Reinhart, NEPA specialist from Reclamation's Pacific Northwest Regional Office in Boise, ID. Beth described how NEPA compliance could be accomplished through categorical exclusions (CE), environmental assessments (EA), and environmental impact statements (EIS), depending upon the type of Federal action being considered. She explained the following:

- A CE is a minor act with no significant impact; it applies to actions that do not have significant effects on the human environment.
- An EA is prepared when a CE cannot be used, because there are minor impacts; therefore, a finding of no significant impact (FONSI) can be issued to allow a project to move forward.
- An EIS requires more steps and a planned timeline, as there are potential significant impacts on the environment that must be disclosed and potentially mitigated, and reasonable alternatives must be considered.

She focused on the EIS process noting that it can take 2 to 5 years to prepare, depending upon the nature and complexity of the proposed action and the number of cooperating agencies participating and making decisions. Beth discussed the steps of NEPA process and minimum timelines required. Beth encouraged participation in the NEPA process and described how Reclamation provides notice for public comment opportunities through the *Federal Register*, websites, letters, and emails to interested parties. She reviewed the following required NEPA steps:

- Notice of Intent (NOI) is published in the *Federal Register* to notify the public that an EIS is being prepared.
- Public scoping begins with public meetings, open houses, and solicitation of comments on the project, as Reclamation actively seeks public participation.
- The agency sorts through comments associated with public scoping.
- A draft environmental impact report (DEIS) will be released for public review and comments, more public meetings will be held, and more comments collected.
- Public comments collected on the DEIS will be reviewed and responded to in the final environmental impact statement (FEIS).
- The FEIS will be released to the public.
- The lead agency can issue a record of decision (ROD) 30 days after EPA has published the Notice of Availability (NOA) of the FEIS.

3. Land Acquisition Process Overview

Wendy Christensen, Reclamation, introduced the land acquisition topic and Steve Wake, realty specialist with Reclamation's Pacific Northwest Regional Office in Boise. Steve reviewed a diagram of the land acquisition process. Reclamation land acquisitions are predicated on determined needs; they consist of easements, fee purchases, and temporary and permanent acquisitions. Each type of acquisition has specific requirements and steps to follow. The Reclamation Office of Valuation Services performs appraisal evaluations, which are required for acquisitions greater than $25,000.

Public Input on this Agenda Item:

Why is only positive information shared in the videos? Adverse impacts should also be acknowledged, including where the water comes from.

- Adverse impacts along with other potential effects are considered in the SEPA and NEPA environmental review processes and in decision-making for specific projects, which is a separate process from outreach communications that highlight the overall benefits of the Integrated Plan from a variety of perspectives.

What happens to comments provided during environmental review? Do the agencies address the substance of public comments, or do comments just go into a "black hole"? It feels like comments are made, but that these are not addressed.

- Because the SEPA and NEPA timelines can extend over multiple years, some commenters may feel like their concerns are not being considered, but all comments are categorized, read, considered, and responded to. There can be a significant time lapse between the public comment period and responses provided, depending upon the nature and complexity of the environmental review process.

What is the schedule for the Kachess Drought Relief Pumping Plant (KDRPP) draft EIS?

- Reclamation released the DEIS early 2015. Based upon changes in the proposed actions, Reclamation and Ecology are now preparing a supplemental draft EIS (SDEIS). The SDEIS will be available to the public by the end of 2017. Reclamation and Ecology will respond to all comments previously received, as well as additional comments submitted for the SDEIS. Reclamation and Ecology will address comments and their responses will be documented in the final EIS (FEIS).

4. Cle Elum Dam Fish Passage Facilities Update

Wendy Christensen, Reclamation, introduced this topic. Reclamation continues to make progress on Cle Elum Fish Passage with the secant pile construction underway. The contractor is using the road and bridge constructed in 2015/2016. More than 200 concrete columns will be poured, and these columns extend 116 feet below ground.

Dave Fast, Yakama Nation, updated the Workgroup on the importance of fish passage for sockeye reintroduction efforts. The basin used to produce more than 200,000 sockeye, and this run was extirpated when the reservoirs were constructed, as passage was not provided. The Yakama Nation and others propose to restore this and other fish runs. Dave shared the history of sockeye reintroduction efforts and results from recent years. The new passage system will allow juveniles to out-migrate at different pool elevations and, potentially, allow adults to return to the reservoir through cost-effective and safe passage facilities. Testing of the adult system will continue this summer.

Joel Hubble, Reclamation fisheries biologist, shared more details on the current testing of the adult Whooshh™ passage system. Reclamation conducted prior tests at Roza and Prosser dams, and the next test will be at Cle Elum Dam in July. It will be a 1700-foot passage tube operated with pressure differentials, 150 feet high, and the adult fish will be transported through the tube for approximately 45 seconds. A sorting system will ensure that the right size and species of fish enter the transport tube, while others will be redirected to the river. The test will include tracking tagged fish from Roza Dam up to and over Cle Elum passage facilities. Survival rates will be evaluated.

Public Input on this Agenda Item:

Will this type of technology potentially work at Bumping Lake Dam, including the existing dam?

Yes, it should work at Bumping Lake Dam and theoretically at any height, as pneumatics are used to transport the fish.

Are there plans for fish passage and sockeye restoration at Kachess Reservoir?

- Yes, fish reintroduction is planned for all reservoirs. After the Cle Elum testing, the next opportunity will be at Rimrock Lake/Tieton Dam. Comments were provided on KDRPP by Robert Angrisano who expressed concern over project costs, such as, who would pay for the project and that costs need to factor in operations and maintenance, mitigation, legal, and other expenses?
- The proratable irrigation districts have said that they would pay for the KDRPP.

When will the KDRPP EIS be final? This EIS process has been ongoing for more than 2 years. When will we see responses to comments that have been provided?

- All previously made comments will be responded to in the FEIS and additional opportunity for comment will be provided when the SDEIS is issued later in 2017. Comments on both the Draft EIS and Supplemental Draft EIS will be responded to in the Final EIS.

Economic Subcommittee Panel

Mike Leita, Yakima County, introduced a panel comprised of Jonathon Smith, New Vision; Jon DeVaney, Washington State Tree Fruit Association; Leslie Roy, a producer in the Moxee area; and Neil Aaland, Aaland Planning Services. Jonathon, Jon, and Leslie are members of the Economic Subcommittee, and Neil facilitates Economic Subcommittee meetings. The subcommittee was established in 2016 to assemble economic information and develop a report that identifies specific economic benefits of the Integrated Plan. Local government and private business funded the preparation of the report.

The report reaffirms that the Yakima River basin economy runs on water. Forty percent or 96,000 jobs in the basin are dependent upon water. Agriculture and food processing directly employs 28,000 of the 96,000 water-dependent jobs. Seventy five percent of the agricultural products produced in the basin are exported internationally: hay, hops, apples, grapes, and other products. The world depends on the producers in the Yakima River basin for a reliable supply of these products. The production of organic products, such as blueberries, is increasing. Dairy and cattle production are also dependent on water. The Yakima River basin is a premier location for producing a diversity of agricultural products the National and world markets want.

Reliable water supply provides certainty and sustains the permanent crops in the basin. Droughts results in losses in the millions of dollars, and drought impacts can last for multiple years, resulting in losses of market share that are difficult to recover.

Water supports a $1.2 billion recreation economy in the basin and more than 14,000 jobs. Water supports and maintains Yakama Nation treaty rights and helps maintain Yakama Nation's spiritual, cultural, and economic connection to the basin's water and fish resources. Risk to water supply also creates uncertainty for future development.

The water dependent sectors of the basin's economy produce $13 billion in annual output compared with the $4 billion, 30-year cost of the Integrated Plan. Construction projects implemented with the plan will generate more than $2.5 billion in direct economic output. Recreation and commercial fisheries value will increase between $100 and $300 million.

Workgroup Discussion:

Lisa Pelly: Are permanent crops becoming more prevalent in Kittitas County?

Yes, several investments in tree fruit and other permanent crops have been made in the county in recent years.

Public Input on this Agenda Item:

The Washington State Chapter of the Sierra Club submitted comments on the draft economic plan. The comment letter states the report is deficient in findings in several areas, including economic impact from droughts, in identifying how irrigators will pay their share of the Integrated Plan, and in not accounting for loss of ancient forest value. The detailed comments are attached.

- The economic report was prepared by subject matter experts. The investments in projects identified in the Integrated Plan can provide returns for the next 50 to 100 years. We have been fighting for new storage in the basin for nearly 60 years, and it is needed to sustain the Yakima basin's economy.

All agree that the Yakima basin has a vibrant agricultural economy, but everyone also has to look at the on-the-ground impacts. We need to address (1) how much water is needed, (2) how much it will cost, and (3) who will pay for it. This needs to be a complete look and not just from the perspective of special interests.

Workgroup Roundtable

Dawn Wiedmeier, Reclamation: Kudos to the Outreach Committee for their work, and to the Economic Subcommittee for their report.

Urban Eberhart, Kittitas Reclamation District (KRD): This is a great snow year, allowing KRD to implement the tributaries flow supplementation program. This supplementation effort would not have been possible without the cooperation that has developed through the Integrated Plan. Recreation is also an important component of the Integrated Plan, and the recreation economy is important to Kittitas County. Urban also announced the first steelhead have been seen upstream of Reed Diversion Dam, which was removed in 2016. Tanuem Creek is also producing steelhead. Massive efforts in a short time are resulting in real improvements.

David Brown, City of Yakima: City of Yakima aquifer recharge project continues to move forward.

Paul Jewell, Kittitas County: Good to see the progress at Cle Elum Dam for fish passage.

Jeff Thomas, U.S. Fish and Wildlife Service: The information put together by the Outreach Committee is not propaganda, and suggesting that it is, is disrespectful.

Lisa Pelly, Trout Unlimited: She and Urban Eberhart (KRD) recently met with Oregon Water Resources, where they shared lessons learned from the Integrated Plan. Thanks to Mike Leita and the Economic Subcommittee for their work. Lisa was skeptical at first, but is impressed with the report.

Jim Milton, Yakima-Tieton Irrigation District: Economics can be a difficult and tough issue to determine.

Wendy McDermott, American Rivers: Thanks for the presentations and perspectives shared today.

Peter Dykstra, Plauche and Carr, and Chair, Watershed Lands Subcommittee: Peter announced a recent public acquisition of 215 acres of river and upland area in the lower Teanaway. It will provide additional recreational access, access to the community forest, and opportunity for additional restoration. Water rights will be dedicated to instream flows. This is a shining example of the type of projects that emerge and leveraged by the Integrated Plan and associated partnerships.

Scott Revell, Roza Irrigation District: Regarding questions raised earlier in the meeting about funding the KDRPP project, Roza will pay for 100 percent of KDRPP construction and operations and maintenance costs. The State does not pay for one-half of this or any other individual projects as suggested earlier. There is a misunderstanding of Revised Code of Washington 90.38.120, which states: "At least one-half of the total costs to finance the implementation of the Integrated Plan must be funded through federal, private, and other non-state sources, including a significant contribution of funding from local project beneficiaries. This section applies to the total costs of the Integrated Plan and not to individual projects within the plan." Scott also extended an invitation to meet with Kachess homeowners and to provide them a tour of the Roza Irrigation District.

Sid Morrison, Yakima Basin Storage Alliance: Disappointed with the sockeye fish returns in 2017. He is excited about the Integrated Plan projects, but concerned with the basis of benefit being on significant fish returns.

- The returns this year are less than desirable and are a direct result of impacts from the 2015 drought, where 90 percent of the sockeye were lost. We cannot just look at 1 year to say efforts are not working. The Integrated Plan will help with sockeye restoration.

Upcoming meetings

The next Workgroup meeting will be on September 7, 2017, at the Benton PUD Auditorium in Prosser, WA.

Attendance

Workgroup Members in Attendance:

Dale Bambrick, National Marine Fisheries Service

Dave Brown, City of Yakima

Wendy Christensen, Bureau of Reclamation - Columbia-Cascades Area Office

Ron Cowin, Sunnyside Valley Irrigation District

Seth Defoe, Kennewick Irrigation District

Peter Dykstra, Plauche & Carr, and Chair of Watershed Lands Subcommittee

Urban Eberhart, Kittitas Reclamation District

David Fast, Yakama Nation

Paul Jewell, Kittitas County

Mike Leita, Yakima County

Mike Livingston, Washington State Department of Fish and Wildlife

Wendy McDermott, American Rivers

Jason McShane, Chair of YRBWEP Lower River Subgroup, Kennewick Irrigation District

Jerrod MacPherson, Benton County

Sid Morrison, Yakima Basin Storage Alliance

Lisa Pelly, Trout Unlimited

Scott Revell, Roza Irrigation District, and Chair of YRBWEP Water Use Subcommittee

Rick Roeder, Washington Department of Natural Resources

Jeff Tayer, Chair of YRBWEP Habitat Subcommittee (Washington Department of Fish and Wildlife)

Tom Tebb, Washington State Department of Ecology - Office of Columbia River

Jeff Thomas, U.S. Fish & Wildlife Service, Mid-Columbia River Fishery Office

Ron VanGundy, Roza Irrigation District

Dawn Wiedmeier, Bureau of Reclamation

Mike Williams, U.S. Forest Service

Other Attendees

Robert Angrusano, Lake Kachess resident

Bob Anderson, Geosyntec

Stephanie Balzanini, Department of the Interior

Tammy Bauer, Office of Senator Maria Cantwell

Julius Black, Lake Kachess resident

David Bowen, Washington State Department of Ecology

Bill Campbell, Lake Kachess Homeowners Association

Debbie Carlson, Bonneville Power Administration

Murray Chapman, resident

David Child, Yakima Basin Joint Board

Tony Coluccio, Frank Coluccio Construction

Randal and Sharon Conrads, Lake Kachess residents

Stuart Crane, Yakama Nation

Jane Creech, Washington State Department of Ecology

John Daugherty, Citizen

Charlie de la Chappelle, Yakima Basin Storage Alliance

Jeanne Demorest, Bureau of Reclamation - Columbia-Cascades Area Office

Karen Dera, Bureau of Reclamation - Columbia-Cascades Area Office

Jon DeVaney, Washington State Tree Fruit Association

Kay Duncanson, Lake Kachess Homeowners Association resident

John Easterbrooks, Washington State Department of Fish and Wildlife

Jack and Beneitta Eaton, Landowners

Brad Engberg, Lake Kachess resident

Larry Felton, LEF Engineering

Carrey Fincham-Gallaway, Board Kachess Lake Homeowners Association

Ben Floyd, Anchor QEA

Tim and Jean Fountain, Lake Kachess Homeowners Association

Joel Freudenthal, Yakima County

Don Gatchalian, Yakima County

Lonnie Gienger, Lake Kachess Homeowners Association

Raylene Gold, Audubon Society

Bob Hall, Yakima Basin Storage Alliance

Carron Hellburg, Bureau of Reclamation

Tim Hill, Washington State Department of Ecology

Elayne Hovde, Natural Resource Conservation Service

Joel Hubble, Bureau of Reclamation

Christian Johnson, Lake Kachess Homeowners Association

Brad Jonas, Lake Kachess resident

Kaitlyn Kelly, EH intern, KLPHD

Ken Kemp, Lake Kachess Homeowners Association resident

Ryan Kemp, Lake Kachess Homeowners Association resident

Brady Kent, Yakama Nation

Chuck Klarich, Yakima Basin Storage Alliance

Walter Larrick, Citizen

Ann Lewis, Yakima Basin Coalition

Edward Lisowski, Citizen

Jeff and Stacie Loftus, Lake Kachess resident

Mitch Long, Kittitas Conservation Trust

Chris Lynch, Citizen

Thomas Lynne, Lake Kachess resident

Steve Malloch, Western Water Futures LLC (alternate for American Rivers)

Joel Martin, Lake Kachess Homeowners Association resident

Natalie Martinkus, Heritage University

Chris Maykut, Friends of Bumping Lake

Saundra McPhee, Citizen

Saun McQuisch, Lake Kachess resident

Jean Mendoza, Friends of Toppenish Creek

Teresa Merriman, Bureau of Reclamation

Holly Myers, EH supervisor, KLPHD

Bryan Myre, Yakama Reservation Irrigation District

Richard and Martin Olsen, Olsen Bros. Growers

George Onwumere, Washington State Department of Ecology

David Ortman, Sierra Club

Laura Osiadacz, Kittitas County Commissioner

Elaine Packard, Sierra Club

Sage Park, Washington State Department of Ecology

Nicole Pasi, American Rivers and the Yakima Basin Integrated Plan

Laila Possam, Lake Kachess Homeowners Association

Joye Redfield-Wilder, Washington State Department of Ecology

Beth Reinhart, Bureau of Reclamation

Tom Ring, Yakama Nation

Charles and Paula Royal, Lake Kachess residents

Leslie Roy, Citizen

Mark Roy, Roy Farms

Jay Schwartz, Lake Kachess resident

Kaitlyn Seguin, Lake Kachess resident

Kerry Seguin, Lake Kachess Homeowners Association resident

Joanne Sheldon, Lake Kachess consultant/resident

Mike Shuttleworth, Yakima Valley Council of Governments

Colleen Smith, Washington State Department of Ecology

Jonathon Smith, Yakima County Development Association

Amy and Roy Sparks, Lake Kachess residents

Danielle Squeochs, Washington State Department of Ecology – Office of Columbia River

Chad Stuart, Bureau of Reclamation – Yakima Field Office

Arden Thomas, Washington Water Trust

Terri Towner, Lake Kachess resident

Duane Unland, Nakaty Enterprises

Ric Valicoff, Roza Boardman

Steve Wake, Bureau of Reclamation

Bret Walters, U.S. Army Corps of Engineers

Jerry Watts, Kittitas County Fire District No. 8

Laine Young, Washington State Department of Ecology

Where to Find Workgroup Information

Meeting materials, notes, presentations, and materials submitted during public comment for the Workgroup meetings will be posted on Reclamation's project website: (http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html). A list of information sources, many of which are available online, is also posted on the website.

If anyone needs help finding an information source, contact Tom Tebb, Washington State Department of Ecology at (509) 575-3989, or Ben Floyd, Anchor QEA Kennewick office at (509) 491-3151 or bfloyd@anchorqea.com.

RECLAMATION

Managing Water in the West

Federal Processes:

EIS and Land Acquisition

Beth Reinhart, Environmental Specialist, PNRO Boise, ID

Steve Wake, Supervisory Realty Specialist, PNRO Boise, ID

U.S. Department of the Interior
Bureau of Reclamation

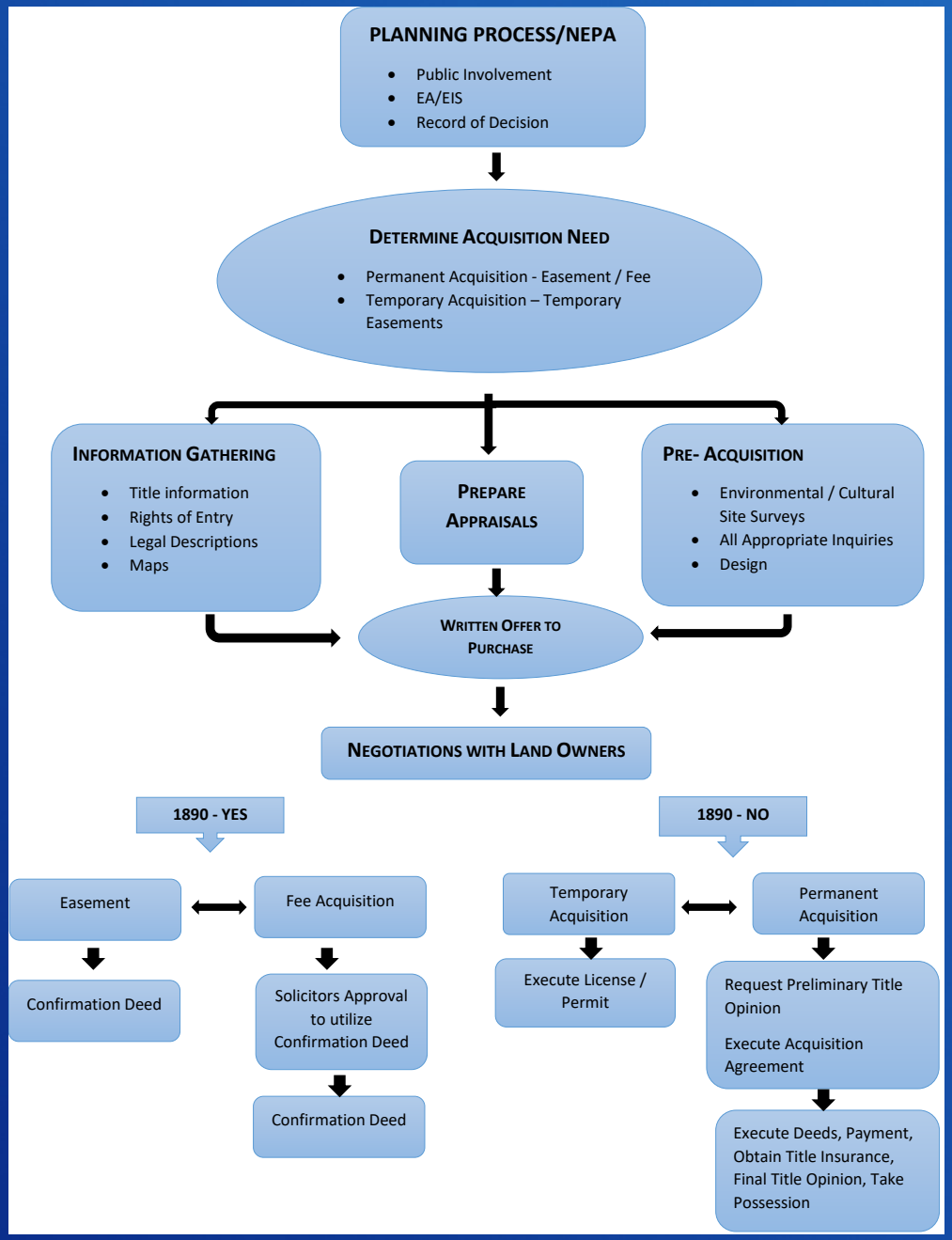
National Environmental Policy Act

Environmental Impact Statement (EIS) Process

- Determine Lead Agency
- Publish Notice of Intent
- Conduct scoping process
- Prepare Draft EIS
- Circulate Draft EIS for review
- File Draft EIS with EPA
- Public meetings, as appropriate
- Prepare Final EIS
- Circulate Final EIS
- File with EPA
- Adopt Final EIS
- Make agency decision
- Prepare Record of Decision

RECLAMATION

Land Acquisition Process



RECLAMATION

Yakima Basin Integrated Plan
NEPA/SEPA Process

Mark C. Schuppe – Operations Manager, Office of Columbia River

June 21, 2017

DEPARTMENT OF
ECOLOGY
State of Washington

Key Aspects of SEPA

- Disclosure process for agencies and the public
- Addresses regulatory gaps and overlaps
- Reviews impacts early in the process
- Streamlines decision-making

NEPA and SEPA





- NEPA applies to federal agencies
  - Federal project, federal permits, or federal funding
- Both NEPA and SEPA reviews may be required on the same proposal
- NEPA documents may be adopted under SEPA – but usually not vice versa

Comparison of NEPA & SEPA

NEPA

- Categorical Exclusion
- Documented Categorical Exclusion
- Environmental Assessment
- FONSI or DS/EIS
- Record of Decision

SEPA

- Categorical Exemption
- Environmental Checklist
- DNS or DS/EIS

Integrating the Review Process

- State and federal agencies collaborate as “co-leads” and issue combined NEPA-SEPA documents
- SEPA review “shadows” the NEPA document production and distribution
- SEPA is done separately from the NEPA review process.

Application or Agency Proposal

Review for Exemption

Determine SEPA Lead Agency

Evaluate the Proposal

Are Significant Impacts Likely?

IF Significant

DS/Scoping Notice

Issue Draft EIS
(30 days)

Issue Final EIS
(7 day wait)

Agency Decision

IF Nonsignificant

Issue DNS (or MDNS)
(May have 14 day review)

If DNS comment period, retain, modify, withdraw

Agency Decision
(Unless DNS is withdrawn)

Yakima River Basin Integrated Water Resource Management Plan – Cle Elum Fish Passage update

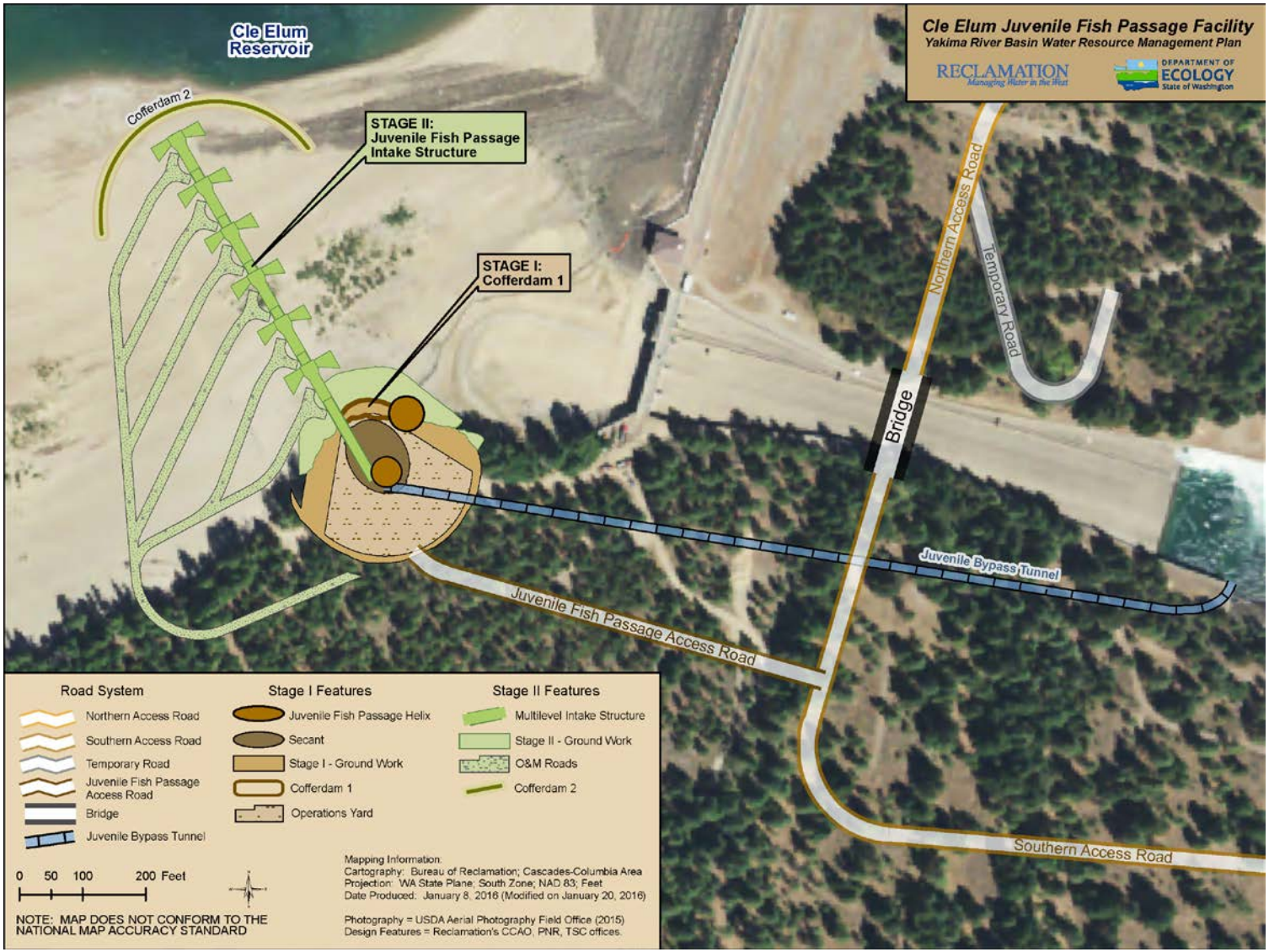
YRBWEP Workgoup Meeting
Yakima, WA
June 21, 2017

Presented by:

Joel Hubble, Reclamation

Dave Fast, Yakama Nation

Cle Elum Dam Fish Passage Construction



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BUREAU OF RECLAMATION

DEPARTMENT OF ECOLOGY
State of Washington

Cle Elum Fish Passage
Secant Construction

Cle Elum Fish Passage
Secant Construction

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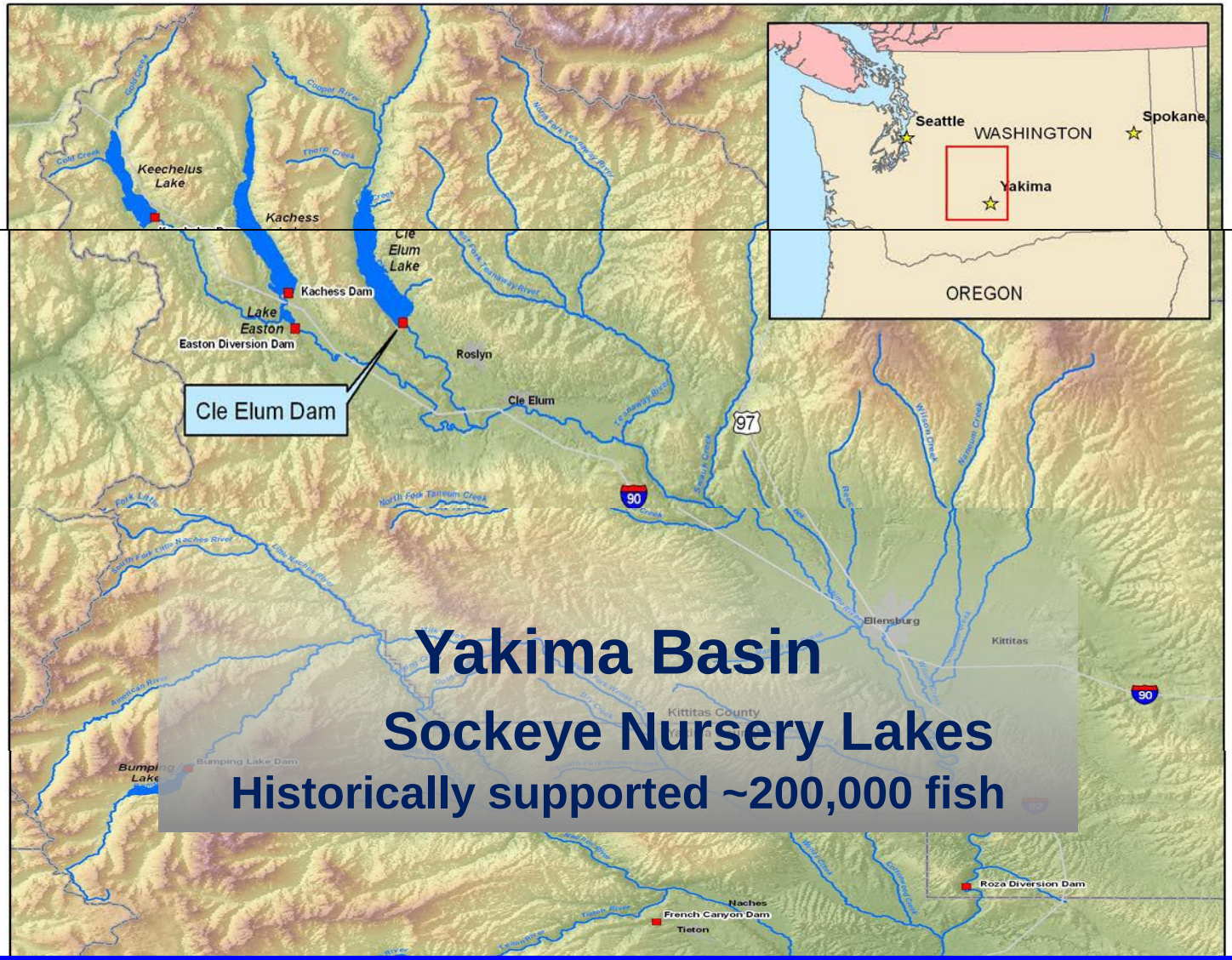
DEPARTMENT OF
ECOLOGY
State of Washington



Yakima Basin

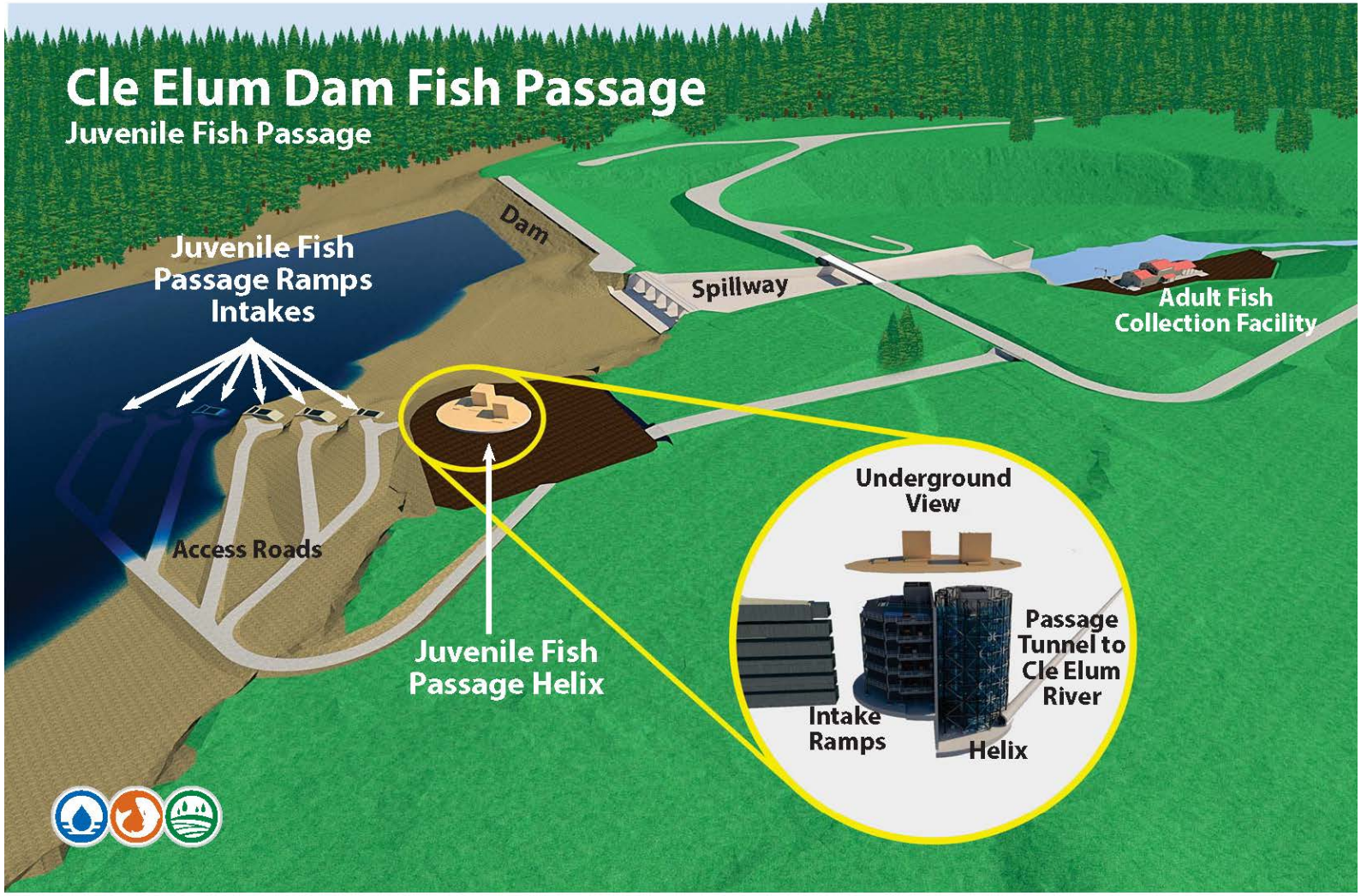
Sockeye Nursery Lakes

Historically supported ~200,000 fish

2013 - First Sockeye to be born and raised in the Yakima River Basin in over 100 years to return, released into Cle Elum Lake

Year	Spawning sockeye released in reservoir	Returning Sockeye
2009	1,000	
2010	2,500	
2011	4,100	
2012	10,000	
2013	4,000	800
2014	10,000	2,600
2015	10,000	300
2016	10,000	4,600

Cle Elum Dam Fish Passage



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 August 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

Roza Fish Passage Test

Test of the 1100’ Transport Tube

Prosser Fish Passage Test

Test of the Fish Sorting System

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State of Washington

Cle Elum Fish Passage Test

Test of the Complete Whooshh Fish Transport System

Approximately 1700’ long, 150’ high,
45 seconds transport time for fish

Whooshh Fish Transport System

Cle Elum Dam

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State of Washington

WHOOSHH TEST 2017 – COLLECTION/ENTRY

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BUREAU OF RECLAMATION

DEPARTMENT OF ECOLOGY
State of Washington

TRANSPORT TUBE
OVER CLE ELUM DAM

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DEPARTMENT OF ECOLOGY
State of Washington

TRANSPORT TUBE & FLUME
ON DAM FACE

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

DEPARTMENT OF ECOLOGY
State of Washington

RISE UP THE FACE OF CLE ELUM DAM

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DEPARTMENT OF ECOLOGY
State of Washington

FISH EXIT INTO RESERVOIR

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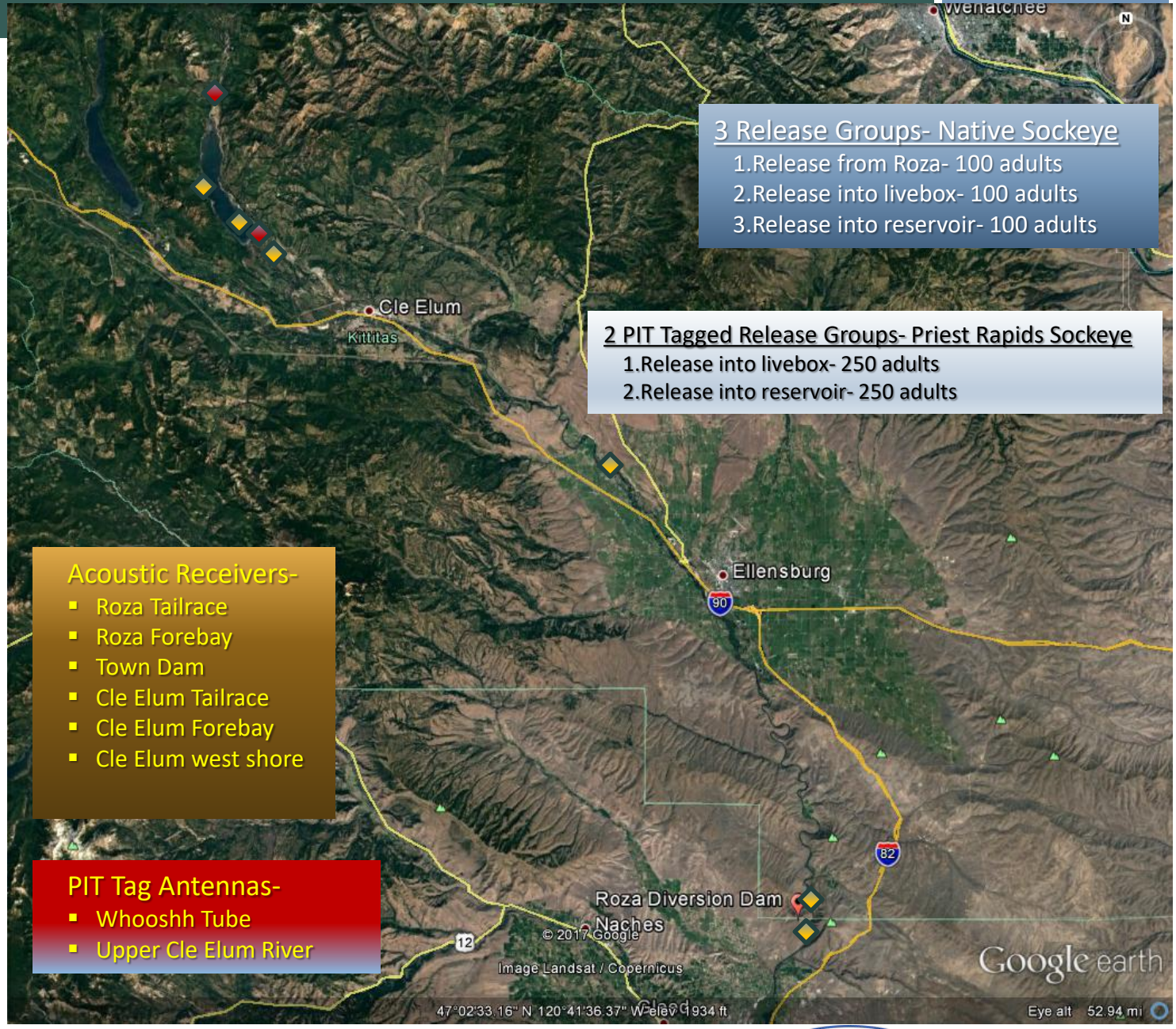
DEPARTMENT OF
ECOLOGY
State of Washington

TRANSPORT TUBE INTO RESERVOIR

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

DEPARTMENT OF
ECOLOGY
State of Washington



3 Release Groups- Native Sockeye

1. Release from Roza- 100 adults
2. Release into livebox- 100 adults
3. Release into reservoir- 100 adults

2 PIT Tagged Release Groups- Priest Rapids Sockeye

1. Release into livebox- 250 adults
2. Release into reservoir- 250 adults

Acoustic Receivers-

- Roza Tailrace
- Roza Forebay
- Town Dam
- Cle Elum Tailrace
- Cle Elum Forebay
- Cle Elum west shore

PIT Tag Antennas-

- Whooshh Tube
- Upper Cle Elum River

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DEPARTMENT OF ECOLOGY State of Washington

Questions?

For further information on the web:

http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/

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

Water Security for the Yakima River Basin's Economy, Communities, and Watersheds

June 21, 2017 Workgroup

This Study:

Yakima Basin Integrated Plan

Who?


YAKIMA
COUNTY


FROM THE CASCADES...TO THE COLUMBIA
KITTITAS COUNTY


COUNTY OF
BENTON

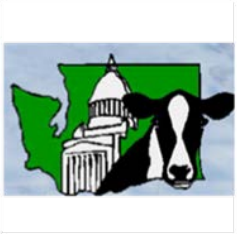

CONFEDERATED
TRIBES AND BANDS
YAKAMA NATION
TREATY OF
1855


TROUT
UNLIMITED


WASHINGTON
TRAILS
ASSOCIATION
EST.
1966


American Rivers
Rivers Connect Us


KITTITAS RECLAMATION
KRD
DISTRICT




NEW VISION
YAKIMA COUNTY DEVELOPMENT ASSOCIATION


usbank


KeyBank


Washington State
Tree Fruit Association

Study conducted by:

EcoNorthwest

- Focused on using data to make resource use decisions
- Headquartered in Seattle, with four offices in PNW
- One of several contractors for Reclamation's Four Accounts Analysis

RFP submitted, ECONorthwest selected from 3 finalists

Study funded by:

Yakima County

Kittitas County

Benton County

Yakima Valley Conference of Governments

Yakima County Development Association

Private Businesses

Yakima Basin Joint Board of Irrigators

ECONorthwest

ECONOMICS • FINANCE • PLANNING

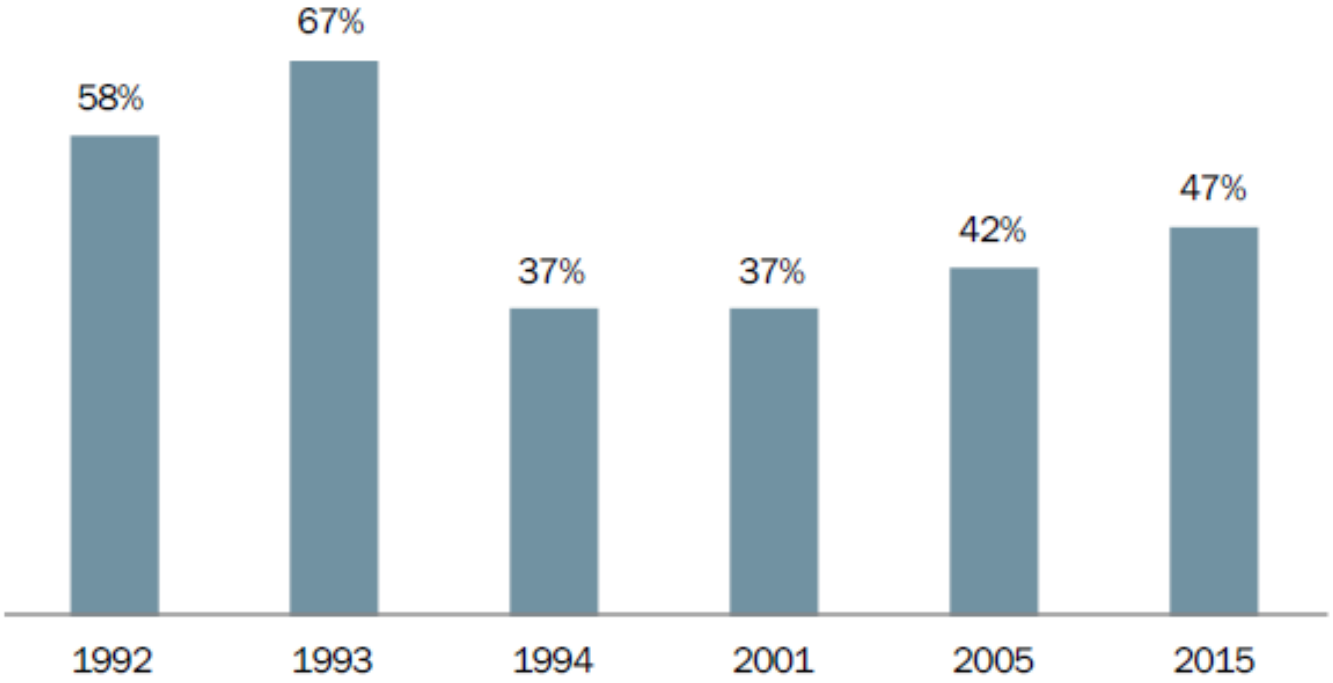
Water Security Study Findings:

DROUGHT AND THE YAKIMA BASIN

Vulnerable Water Supply

Agricultural Diversity

Drought Vulnerability



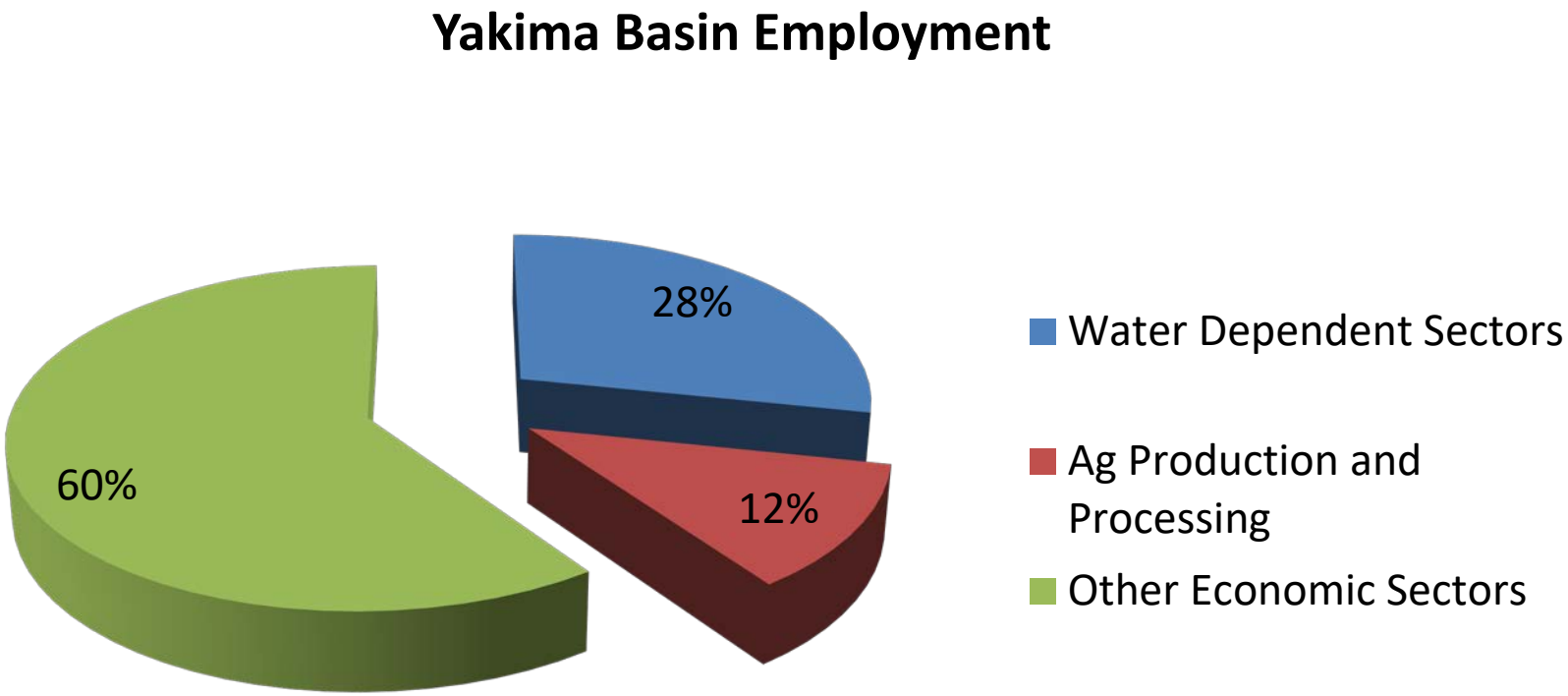
Source: Reclamation and Ecology. 2012A, Table 3-8; Revell, S. 2015. *Memo Re: Kachess Temporary Floating Emergency Drought Relief Pumping Plant*. Roza Irrigation District.

Drought Losses

Water Security Study Findings:

YAKIMA BASIN JOBS & ECONOMY

40% of Basin employment



Ag Economy

Recreation Economy

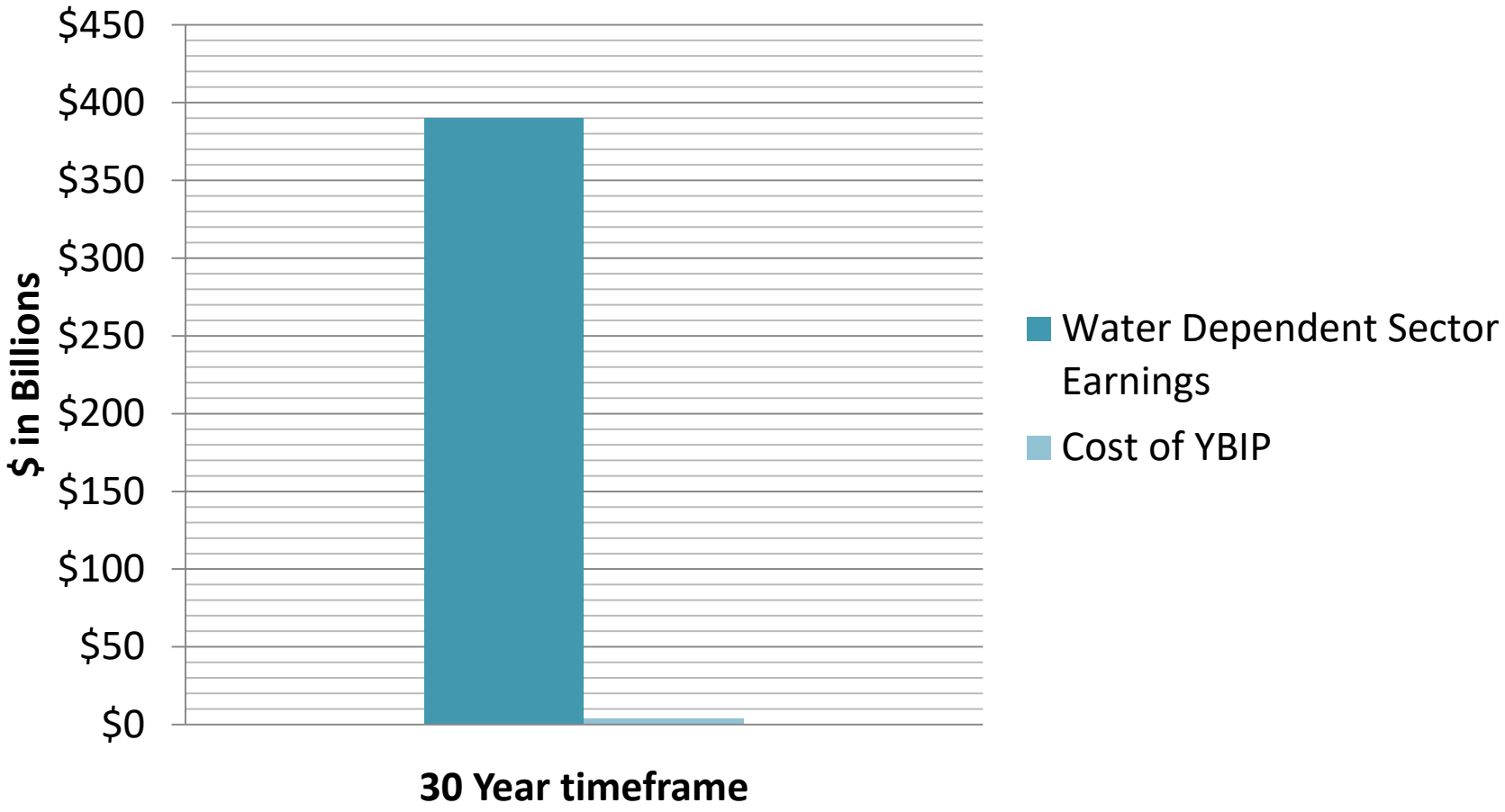
Future Development

Yakama Nation Rights

Water Security Study Findings:

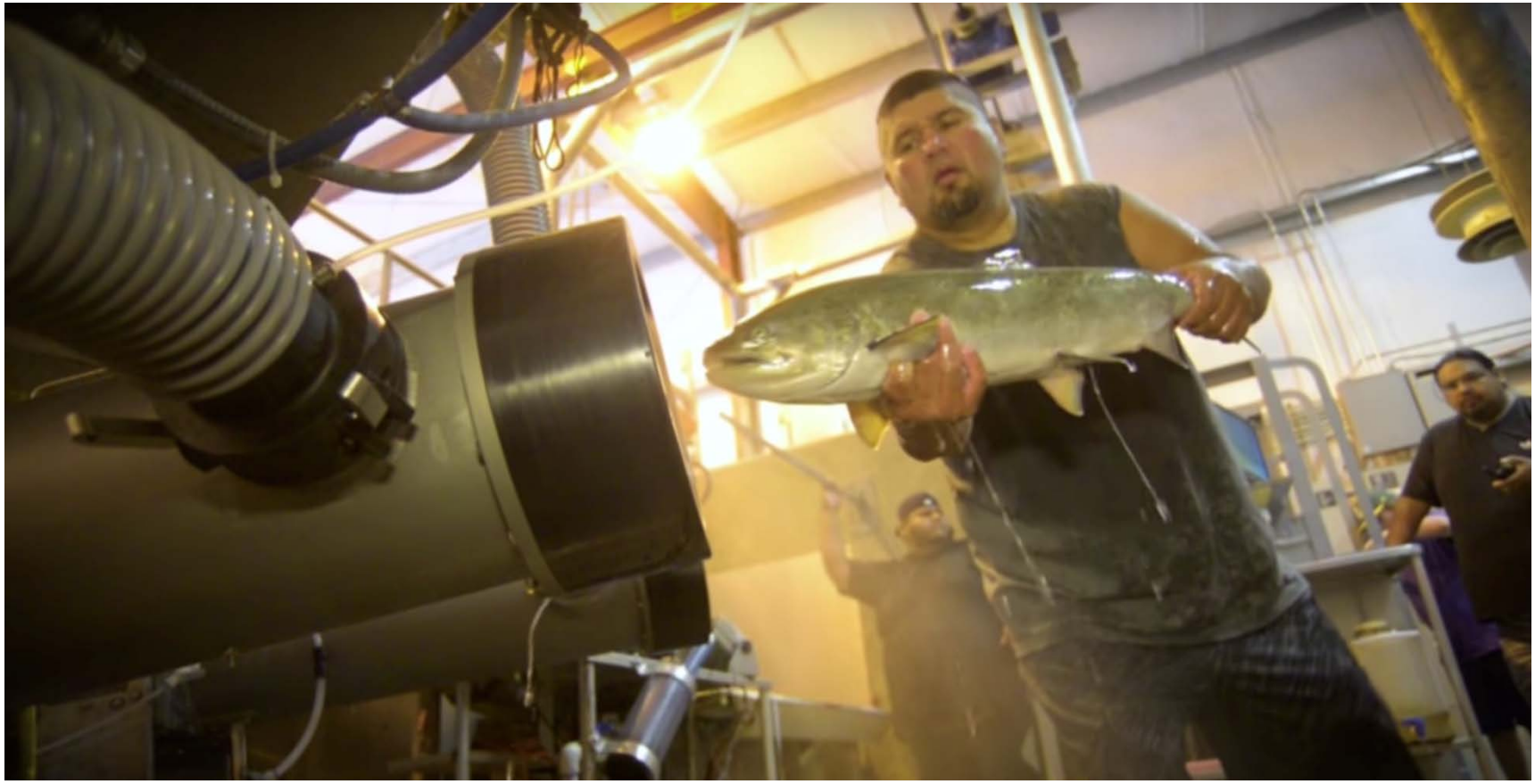
YBIP BENEFITS & RETURN ON INVESTMENT

Costs:


$450
$400
$350
$300
$250
$200
$150
$100
$50
$0
$ in Billions
30 Year timeframe
Water Dependent Sector Earnings
Cost of YBIP

Construction Projects

Fisheries Restoration



Recreation Economy

Reduction in Losses

Questions?

Yakima Basin Integrated Plan

RECLAMATION
Managing Water in the West

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Contact: Wendy Christensen, 509-575-5848, ext. 203 **Tom Tebb, 509-575-3989**

Agenda

Yakima River Basin Water Enhancement Project Workgroup

September 20, 2017, 9:30 AM to 12:30 PM at Benton PUD Auditorium,
250 N. Gap Road, Prosser, WA

Time

9:30 – 9:35 Welcome/Introductions and Agenda Overview/Public Comment[1]
Ben Floyd, White Bluffs Consulting

9:35 – 9:50 Ron VanGundy Remembrance
Scott Revell, Roza Irrigation District and Workgroup Members

9:50 – 10:05 Adjudication Update/Path Forward
Trevor Hutton and Tom Tebb, Ecology, Phil Rigdon and Tom Ring, Yakama Nation, and Dawn Wiedmeier and Chad Stuart, Reclamation

10:05 – 10:15 Implementation Committee Update
Tom Tebb, Ecology and Committee Members

10:15 – 10:45 2017 Technical Work Update
Teresa Merriman and Richard Visser, Reclamation; and Dave Fast, Yakama Nation

10:45 – 10:55 Public Comment

10:55 – 11:10 **Break**

11:10 – 12:10 Executive Committee, Subcommittees and Subgroups Updates
Tom Tebb, Ecology and Teresa Merriman, Reclamation and Chairs

- Water use – Roza rereg, YTID, KRD storage/Water SMART/ video, and market reallocation, *Scott Revell, Roza ID*
- Groundwater update *Tom Ring, Yakama Nation*
- Habitat –Manastash video, Teanaway Community Forest and Lower River updates (Wapato and Bateman), *Jeff Tayer, WDFW*
- Lower River update, *Jason McShane, KID*

12:10 – 12:30 Workgroup – Roundtable Discussion
Ben Floyd, White Bluffs Consulting

Adjourn

Next Meeting – December 13 (Yakima Arboretum) 9:30 AM
For additional information, see the reports and documents available at this link:
http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html

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[1] In addition to the public comment time on the agenda, opportunities will be provided to the public for questions or to make brief observations for each agenda item after Welcome/Introductions and before the Workgroup Roundtable discussion. Those wanting to provide public comment need to sign up for comment and each commenter will be limited to 2 – 3 minutes for comments (depending upon how many want to provide comments) to maintain meeting schedule. Additional written material can be submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.

Contact: Wendy Christensen, Columbia-Cascades Area Office, (509) 575-5848, ext. 203
Tom Tebb, Washington State Department of Ecology, (509) 574-3989

Meeting Notes
Yakima River Basin Water Enhancement Project Workgroup

September 20, 2017
Benton Public Utility District, Prosser, WA

Welcome, Introductions and Agenda Overview

Ben Floyd, White Bluffs Consulting, welcomed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup members and other attendees to the meeting. Ben recognized new member Bret Walters, U.S. Army Corps of Engineers, and departing YRBWEP Outreach Coordinator, Nicky Pasi, American Rivers. He also recognized Scott Revell who is replacing the late Ron Van Gundy as Roza Irrigation District's representative.

The following notes summarize the YRBWEP Workgroup presentations and public comments. For details, please see the full presentations available on the project website: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html.

Ron Van Gundy Remembrance

Scott Revell, Roza Irrigation District, led a remembrance for Ron Van Gundy who passed away in July. Scott showed slides from Ron's life and career and remarked on his critical role in bringing the diverse parties involved in Yakima Basin Integrated Plan (Integrated Plan) together around a common goal. Many other Workgroup members also shared their memories of Ron.

Yakima River Basin Surface Water Adjudication Update and Path Forward

Trevor Hutton, Washington State Department of Ecology (Ecology), gave an update on the adjudication of surface waters in the Yakima River basin. Adjudication is a court process with the purpose of confirming existing water rights; no new rights are established in the adjudication process. Numerous issues led to the decision in the 1970s to adjudicate the basin including droughts, unresolved treaty rights with the Yakama Nation, layers of confusing and conflicting legal history, and a need for certainty. The process began in 1977, and is now resulting in Conditional Final Orders (CFOs) for each claimant. These CFOs will be folded into a final decree, which will become the master document describing surface water rights in the basin. The process is nearing completion; the proposed final decree process is expected to be complete in spring 2018.

Ground water rights have not been adjudicated in the Yakima River basin.

Workgroup Discussion:

Chad Stuart, Bureau of Reclamation: Reclamation is happy to see the process coming to an end. This will greatly help with Reclamation's operations as they relate to managing water in the Yakima basin. The operations will be streamlined but will not change much.

Tom Ring, Yakama Nation: Water right validity during transfers will be much clearer. Tom reminded the Workgroup that adjudication does not fix water supply issues, but when issues arise, there will be written documentation of water rights, which rights are unmet, and how to manage from that standpoint.

Tom Tebb, Ecology, Office of Columbia River (OCR): The adjudication clearly establishes priority and total water supply available.

Scott Revell: Scott asked about permit-exempt wells and how they fit into adjudication and water rights management.

- Trevor Hutton: Permit exempt wells have an effect on water supply in the basin, and if we run up against supply issues, Ecology will refer to priority dates to properly administer these water allocations.
- Tom Tebb: The Integrated Plan is intended to help avoid conflicts between surface water- and groundwater users and between instream and out-of-stream uses. This will hopefully avoid the need to undertake an adjudication of groundwater rights in the future.

Public input on this agenda item:
None.

Implementation Committee Update

Tom Tebb: The Implementation Committee was very active during the last legislative session. The State Senate and House capital budgets for Integrated Plan projects were aligned to include the full request of $31.1 million. The Legislature did not pass the capital budget, so there are ongoing discussions about what to do next. There is talk about how to continue making progress on the Integrated Plan until the funding uncertainties are resolved. Tom is confident that a capital budget will pass, aided by conversations with senators; however, it will likely have to wait until the next legislative session.

The legislative tours planned this summer did not occur because of the wildfires in the basin. Regarding Federal legislation, the committee is hoping for a House companion bill alongside Senator Cantwell's Senate bill. The committee will try to visit DC this fall. Congressmen Newhouse and Reichert have indicated they would like to move this legislation forward in the House.

Workgroup Discussion:
Charlie de la Chapelle, Yakima Basin Storage Alliance: How much money is in the Federal legislation?

- Tom Tebb: This remains to be seen, as the earmark issues with the previous legislation is being sorted out. Peter Dykstra, Plauche and Carr LLC, echoed those remarks and suggested we may know how much funding will be available sometime next month, and it may be similar to what was introduced in the last Congress. The previous bill was estimated around $92 million. Large shares were identified for Wapato and water conservation projects.

Public input on this agenda item:
None.

Technical Work Updates

1 – Cle Elum Pool Raise

Teresa Merriman, Bureau of Reclamation, gave an update on the Cle Elum Pool Raise project. She reviewed the project background and purpose. Construction of the radial gates was completed in April 2017. Reclamation is now working with the Forest Service and landowners to install shoreline protection over approximately the next 5 years. No additional water can be stored until the shoreline protection component is completed, and all additional storage will be dedicated for instream flow purposes for fish. The first shoreline protection contract was awarded for the USFS Cle Elum River Campground in August 2017 and construction is set to begin fall 2017.

NEPA Process for KDRPP and KKC

The Kachess Drought Relief Pumping Plant (KRRPP) and Keechelus-to-Kachess Conveyance (KKC) Supplemental Draft Environmental Impact Statement (EIS) will be released for public review in December or January. After public comments are received, preparation of the Final EIS is expected to take about 1 year.

Workgroup Discussion:
Steve Malloch, Western Water Futures, LLC: Regarding the Cle Elum Pool Raise project, how many of the shoreline protection pieces must be complete before the radial gates are operational?

- The entire shoreline protection must be complete, which may take up to 5 years. It will depend on completion of contracts related to the project and coordination with landowners.

Public input on this agenda item:
None.

2 – Cle Elum Fish Passage Project

Richard Visser, Reclamation, reviewed the fish passage project at Cle Elum Dam. The helix downstream passage system will be effective in a 63-foot range of pool elevations, and trap-and-haul is the method for upstream passage. Secant pile construction is in progress and is about 50 percent done. Progress has slowed because of wildfire is the area, but Reclamation expects the vault excavation will begin in spring 2018. Construction of the lower two intakes will provide some challenges: the pool level will need to remain at or below 2170 for 75 consecutive days. This may impact carryover storage if a drought occurs in the following year. Reclamation will discuss this further with its water users, Yakama Nation, System Operations Advisory Committee and others.

Workgroup Discussion:

None.

Public input on this agenda item:

Chuck Klarich, Yakima Basin Storage Alliance: Are funds for the helix system authorized? And is it on track to be installed within the next 5 or 10 years?

- The helix is designed and tested; it would be installed in approximately 2021 and 2022. The project is authorized but funds have not been allocated.

3 – Whooshh™ System at Cle Elum

Dave Fast, Yakama Nation, gave an update on the Whooshh™ system for upstream fish passage at Cle Elum Dam. They are studying the effectiveness of the system using an onsite prototype. The Workgroup viewed a video showing the prototype at Cle Elum Dam.

Workgroup Discussion:

Dale Bambrick, National Marine Fisheries Service: How well will the system have to perform to be considered satisfactory?

- This has yet to be determined. They want make decisions based on the results of initial system testing. The full-scale test will occur next year.

Sean Gross, National Marine Fisheries Service: When will a decision be made about full implementation and operation of the system?

- There will be a meeting with stakeholders in November or December. Reclamation is planning to construct the traditional trap-and-haul system but configure it so that the Whooshh™ technology could easily be installed.

Public input on this agenda item:
None.

General Public Comments:

Chris Maykut, Friends of Bumping Lake: Chris submitted an article about a California water project where Reclamation contributed $85 million in planning funding, covering approximately $50 million of what were allegedly supposed to be irrigation district costs. Chris shared his understanding that the irrigation districts had promised to fully pay for the project and no Federal tax money would be used.

Ann Lewis, Yakima Basin Coalition: Ann described the presentation given by Jay Schwartz in June as part of a Public Perspectives Session. She stated his presentation used Reclamation's numbers to show the KDRPP project does not make sense. She asked "Why do they plan to build it when it doesn't make sense?"

Executive Committee, Subcommittees, and Subgroups Updates

Executive Committee (Tom Tebb): The committee is working on keeping Integrated Plan activities moving while waiting for resolution of the stalled State capital budget. Tom thanked the Workgroup members who have helped with that effort.

Water Use Subcommittee:

Scott Revell: Roza Irrigation District has nearly completed installing and activating its 1,600 acre-foot reregulation reservoir. This reservoir will operate like a "shock absorber" in the middle of the system. It can take water 4 to 5 days to reach the lower system from the upper basin reservoirs, so a mid-system

reservoir is very helpful, particularly in drought years. Use of the reregulation reservoir will also add about 5,500 acre-feet to streamflow in the Yakima River, in non-drought years.

Rick Dieker, Yakima-Tieton Irrigation District: YTID is studying alternatives to replacing its main canal from the Tieton River. They hope to complete the initial study by the end of the year, and would then move to environmental assessment of the project.

Urban Eberhart, Kittitas Reclamation District: KRD was awarded a Federal WaterSmart grant for a water marketing analysis focused on market opportunities, barriers, and how to transfer water efficiently in drought years. KRD is also examining small gravity-fed storage sites for conserved and seasonal waters not yet used for storage purposes. The Workgroup viewed a film about the KRD tributary flow supplementation projects.

Melissa Downes, Ecology: Ecology issued a Request for Proposals for a market reallocation study, related to the KRD work. They plan on evaluating proposals in October and will award a contract in October or November.

Scott closed Water Use Subcommittee discussion by mentioning the critical near-term issue is a good quantification of feasible water transfers, particularly in the upper basin. This needs to recognize that only the consumptive portion of a water right can be transferred. Numbers released by others a couple of years ago did not properly account for this and overstated the quantity of water that could potentially be available for transfer.

Workgroup Discussion:

Mike Leita, Yakima County: Are the KRD water storage projects considered an addition to the Integrated Plan?

- They are part of the Integrated Plan and are quick, achievable, water supply projects. The small projects are more efficient at getting storage in place.

Groundwater Subcommittee:

Tom Ring: There is a half-day symposium on October 10 regarding groundwater storage. Two notable projects are an Oregon State University graduate student's study of aquifer headroom and the City of Yakima Aquifer Storage and Recovery project.

Habitat Subcommittee:

Jeff Tayer, Washington Department of Fish and Wildlife (WDFW): The Teanaway Community Forest (TCF) is a flagship project for the Integrated Plan and is the largest acquisition for conservation purposes in State history. Mike Livingston, WDFW, mentioned the Teanaway Valley Family Farm was recently purchased and provides a key cross-valley connection within the TCF. It enhances recreation access and contains wetlands, floodplains, and riparian areas. Peter Dykstra elaborated on the history of the purchase and mentioned that The Trust for Public Land played a big role. They currently hold the

water rights and are working to change ownership to the Washington Water Trust and Kittitas County. This will support the county's mitigation program for exempt well users.

Paul Jewell, Kittitas County: Water was the driving issue getting the county involved in the acquisition. Water right acquisitions were 346 acre-feet, of which Kittitas County retains 81 acre-feet. Nine are allocated for the TCF, while 72 are allocated for a back-mitigation bank. This provides a good step toward a final goal of 800 acre-feet for the bank. Commissioner Jewell also discussed recreational access and the need to have very clear boundaries (particularly signs) between public and private property. Jeff Tayer mentioned that the collaboration between private and public stakeholders to get this done is a new way of doing business, and we should continue this good work.

Rick Roeder, Washington State Department of Natural Resources (WDNR): Rick gave an update on the fencing project that supports compatibility of grazing and habitat conservation in the TCF. The goal is to install approximately 9 miles of fencing, about half of which is completed. Wildfires have slowed progress, but the project is progressing now. Regarding the Jolly Mountain fire, a fire line has been established and people are allowed back into the areas south of the fire. It is primarily an understory burn, and a full survey of impacts has yet to be done.

Merritt Mitchell-Wajeeh, Mid-Columbia Fisheries: Merritt gave updates on the Bateman Island project and Wapato Reach Action Plan. For Bateman Island, there is good forward progress toward restoration of flow at the dike location. There was a stakeholder meeting in June and a technical team developed a draft guiding project statement. They are awaiting a decision from the U.S. Army Corps of Engineers on funding. Relationships with multiple stakeholders are in good condition. A subgroup of the Habitat Subcommittee is nearing completion of the Wapato Reach action Plan for habitat improvements. It includes acquisitions of floodplain land, modification or removal of floodplain levees, and other actions.

Workgroup Discussion:

Tom Tebb: Have there been any outreach to engage Wapato area communities in the project?

- Not yet.

Lower River Subgroup:

Seth Defoe, Kennewick Irrigation District: The subgroup is working on an action plan for lower river project, and determining which projects are really actionable. The lower river is not itself an element of the Integrated Plan, so the subgroup needs to restructure and place projects within the seven elements. Ben Floyd and Scott Revell mentioned the smolt survival study, and Scott brought up smolt survival issues in the lower river. Efforts for smolt survival in the upper river must be complemented in the lower river.

Economic Subcommittee:

Mike Leita: Economic report is done.

Public input on this agenda item:
David Ortman, Sierra Club: Tom Tebb had mentioned groundwater storage at a Columbia River Policy Advisory Group (CRPAG) meeting, when will this be addressed?

- That is a Douglas County study and not related to the Integrated Plan.

Workgroup Roundtable

Dale Bambrick, National Marine Fisheries Service: Dale commended KID's work on the lower river.

Paul Jewell, Kittitas County: The County is dramatically impacted by the Jolly Mountain fire, which is the first big fire since the Workgroup started focusing on the upper county. They will have a good view in the Teanaway of what heavy fire impacts may look like as it relates to the Integrated Plan

Jeff Tayer, WDFW: Jeff commended the Workgroup for making progress on big, meaningful projects and expressed appreciation for what a "big deal" purchasing the Teanaway and fish passage projects are. He believes the group is succeeding in their mission.

Scott Revell, Roza Irrigation District: Scott and Walk Larrick will meet with Kachess Homeowners on September 21.

Steve Malloch, Western Water Futures LLC: Steve is happy to hear the good news on the TCF. He recommends retaining focus on smaller projects because they can rapidly produce results.

Charlie de la Chapelle, YBSA: More progress needs to be made on storage projects and funding.

Alex Conley, YBFWRB: Alex is happy to see progress on Bull Trout issues, and commends the Workgroup for helping in that effort.

Jeff Thomas, USFWS: Jeff mentioned transporting Bull Trout around Clear Creek Dam. They have transported 19 this year, as opposed to 17 last year, and the population above the dam is showing success.

Lisa Pelly, Trout Unlimited: Lisa thanked Trevor Hutton, Ecology, and WDFW for their project work. KRD is helping to get water to places it hasn't been and helps mitigate dry year issues.

Dave Brown, City of Yakima: Dave introduced City of Yakima Deputy Mayor, Carmen Mendez. Dave reported that the Norse Creek fire in the American River headwaters is expected to cause turbidity issues for the city's water supply. Once it becomes operational, the city's Aquifer Storage and Recovery project will enable the city to more easily utilize groundwater, helping to offset this kind of surface water quality problem.

Mike Leita, Yakima County: Mike echoed Jeff Tayer's remarks that this truly is a new way of doing business. Leaving behind singular, self-interested projects and working as a collective is resonating, and everyone needs to get into that mindset.

Rick Dieker, Yakima-Tieton Irrigation District: The adjudication piece was a good reminder that the basin is over-allocated, and economic impacts will occur. The return on Federal investment in preparing for impacts is great, and continued investments need to be made.

Upcoming Meetings

The next Workgroup meeting will be on December 13, 2017, at the Yakima Arboretum (9:30 a.m.).

Attendance

Workgroup Members:

Dale Bambrick, National Marine Fisheries Service
Dave Brown, City of Yakima
Alex Conley, Yakima Basin Fish & Wildlife Recovery Board
Ron Cowin, P.E., Sunnyside Valley Irrigation District
Seth Defoe, Kennewick Irrigation District
Rick Dieker, Yakima-Tieton Irrigation District
Peter Dykstra, Plauche & Carr, LLP
Urban Eberhart, Kittitas Reclamation District
David Fast, Yakama Nation – Yakima/Klickitat Fisheries Project
Jaclyn Hancock, Washington State Department of Agriculture
Paul Jewell, Kittitas County
Mike Leita, Yakima County
Mike Livingston, Washington State Department of Fish and Wildlife
Lisa Pelly, Washington Water Project, Trout Unlimited
Scott Revell, Roza Irrigation District and Chair, YRBWEP Water Use Subcommittee
Phil Rigdon, Yakama Nation
Rick Roeder, Washington State Department of Natural Resources
Jeff Tayer, Chair, YRBWEP Habitat Subcommittee (Washington Department of Fish and Wildlife)
Tom Tebb, Washington State Department of Ecology - Office of Columbia River
Jeff Thomas, U.S. Fish & Wildlife Service, Mid-Columbia River Fishery Office
Bret Walters, US Army Corps of Engineers

Other Attendees:

Marcella Appel, Benton Conservation District
Charlie de la Chapelle, Yakima Basin Storage Alliance (YBSA)
David Child, Yakima Basin Joint Board
Stuart Crane, Yakama Nation
Jeanne Demorest, Bureau of Reclamation - Columbia-Cascades Area Office

Dean Dennis, Kennewick Irrigation District
Karen Dera, Bureau of Reclamation - Columbia-Cascades Area Office
Melissa Downes, Washington State Department of Ecology
John Easterbrooks, Washington State Department of Fish and Wildlife
Rick Evans, Senator Maria Cantwell's Office
Larry Felton, LEF Engineering
Ben Floyd, Anchor QEA
Chuck Freeman, Yakima County
Joel Freudenthal, Yakima County
Adam Fyall, Benton County
Don Gatchalian, Yakima County
Raelene Gold, Seattle Audubon, LWVWA
Andrew Graham, HDR Engineering, Inc.
Dan Graves, HDR Engineering, Inc.
Sean Gross, National Oceanic and Atmospheric Administration (NOAA) Fisheries
Tim Hill, Washington State Department of Ecology
Trevor Hutton, Washington State Department of Ecology – Central Regional Office
Brady Kent, Yakama Nation
Chuck Klarich, Yakima Basin Storage Alliance
Walter Larrick, Citizen
Ann Lewis, Yakima Basin Coalition
Chris Lynch, Bureau of Reclamation
Jerrod MacPherson, Benton County
Steve Malloch, Western Water Futures LLC (alternate for American Rivers)
Chris and Samantha Maykut, Friends of Bumping Lake
Carmen Mendez, City of Yakima
Jean Mendoza, Friends of Toppenish Creek
Teresa Merriman, Bureau of Reclamation - Columbia-Cascades Area Office
Jim Milton, Yakima-Tieton Irrigation District
Merritt Mitchell-Wajeeh, Mid-Columbia Fisheries
David Ortman, Sierra Club
Nicole Pasi, American Rivers and the Yakima Basin Integrated Plan
Joye Redfield-Wilder, Washington Department of Ecology
Kristina Ribellia, Washington Water Trust
Tom Ring, Yakama Nation
Chad Stuart, Bureau of Reclamation – Yakima Field Office
Arden Thomas, Washington Water Trust
Richard Visser, Bureau of Reclamation - Columbia-Cascades Area Office
Laine Young, Washington State Department of Ecology

Where to Find Workgroup Information

Meeting materials, notes, presentations, and materials submitted during public comment for each Workgroup meeting will be posted on Reclamation's project website: (http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html). A list of information sources, many available online, is also posted on the website.

If you need help finding an information source, contact those listed at the top of page 1 of these notes or Ben Floyd at Anchor QEA, Kennewick office, (509) 491-3151 or bfloyd@anchorqea.com.

Yakima River Surface Water Adjudication
(*Acquavella*)
1977 - ??

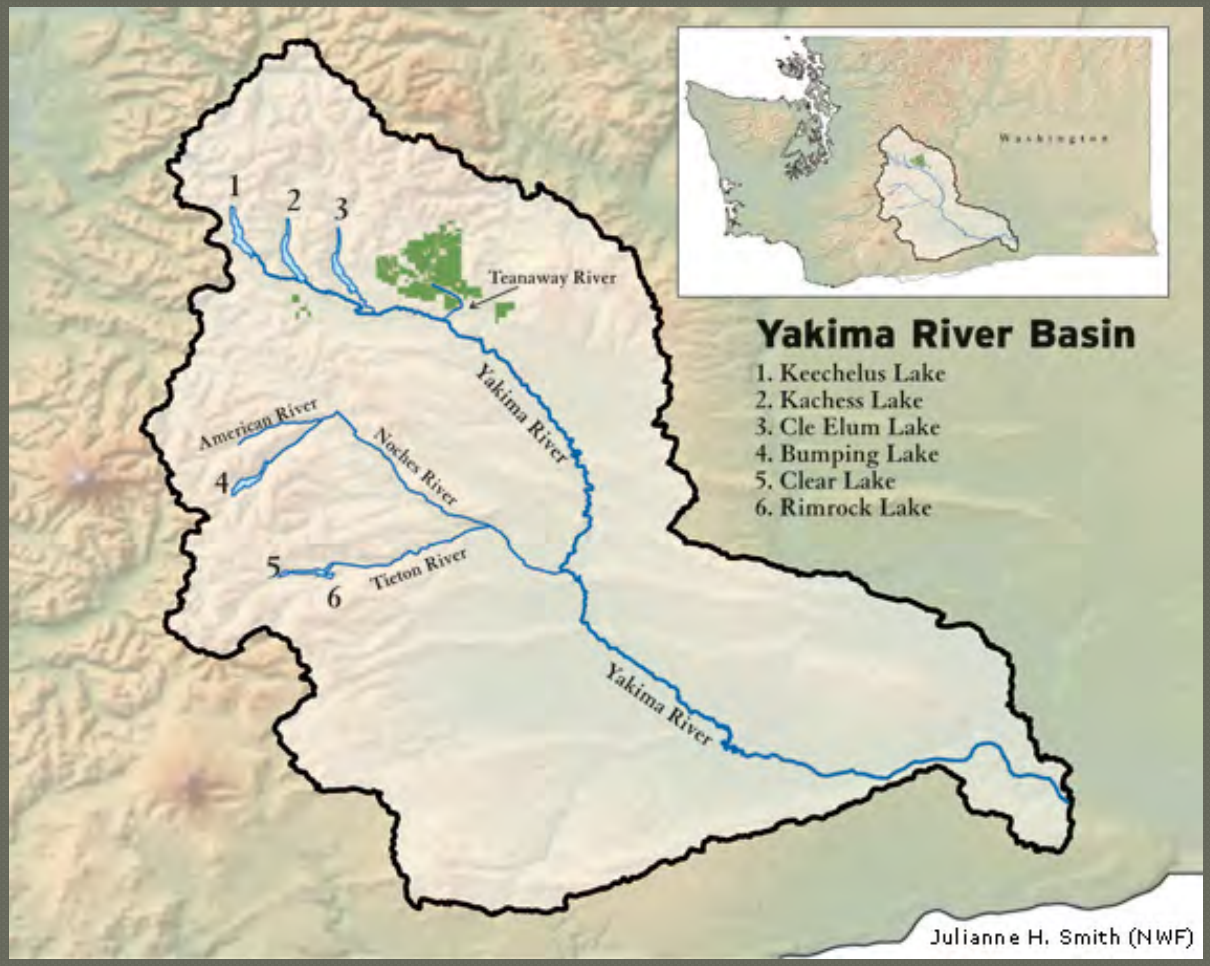
Water Resources Program

WASHINGTON STATE DEPARTMENT OF ECOLOGY

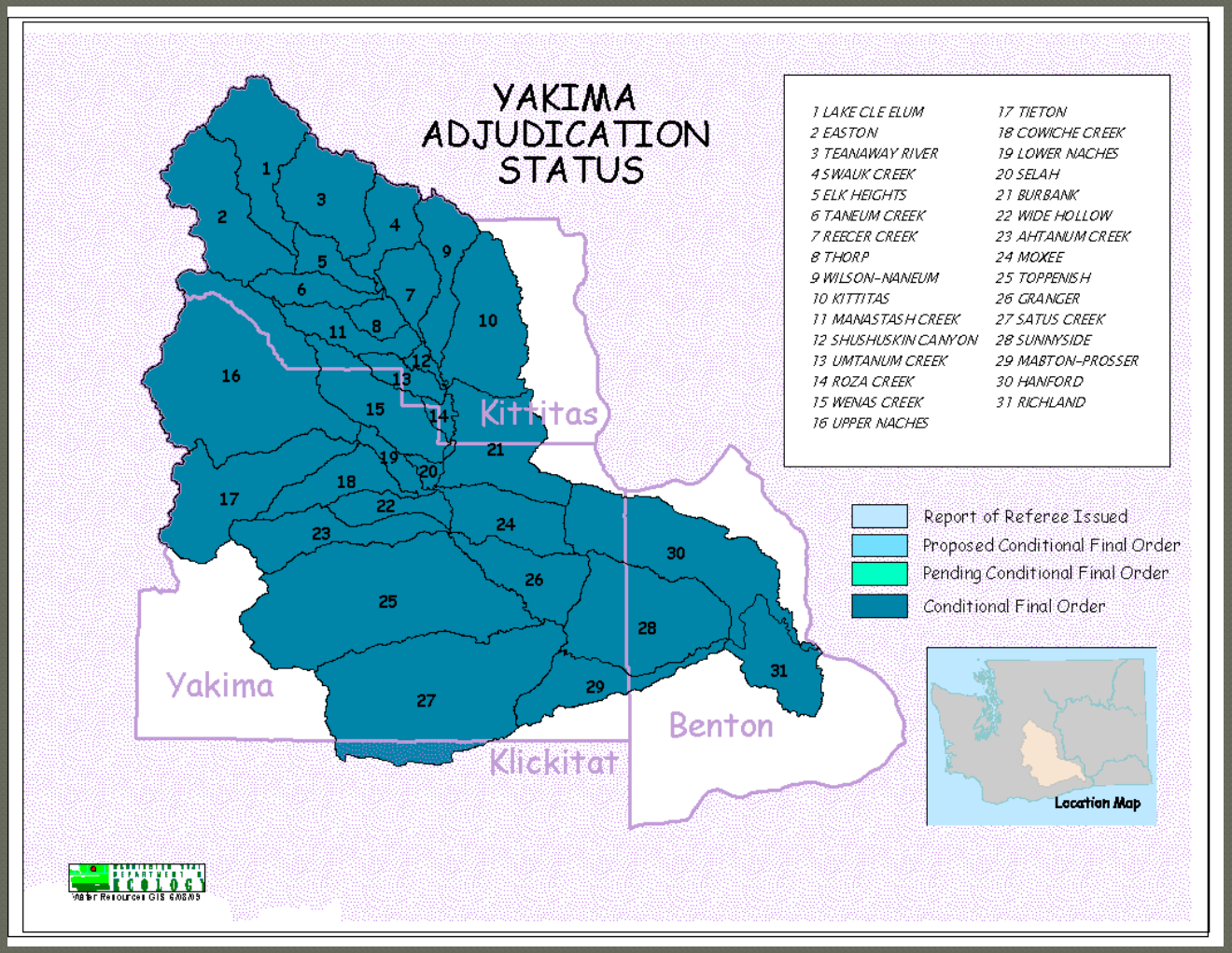
Background – On Adjudication

- Water rights adjudication is a court process to comprehensively determine water rights within a defined basin
- Legal procedure filed in County Superior Court
  - Ecology files case & is plaintiff
  - Water right claimants are defendants
- Process adopted by 1917 Water Code
- Does not create new water rights, only confirms existing rights
- Produces authoritative water rights information
  - Validity – Is there a water right
  - Extent – purposes, quantities, where and when
  - Priority – seniority of rights – which rights get satisfied first during shortages

Where?


Yakima River Basin
1. Keechelus Lake
2. Kachess Lake
3. Cle Elum Lake
4. Bumping Lake
5. Clear Lake
6. Rimrock Lake
Washington
Teanaway River
Yakima River
American River
Naches River
Tieton River
Yakima River
1
2
3
4
5
6
Julianne H. Smith (NWF)

Subbasin Status



Why?

- 1977 – prediction of historic drought
- Unresolved treaty rights for Yakama Nation
- Over-appropriation in basin
- Large amount of water right claims registered with the State per RCW 90.14
- Layers of confusing and conflicting legal history
- A need for certainty regarding water rights

What?

- Case split into 4 distinct pathways
  - Federal Reserved – Indian Pathway
  - Federal Reserved – Non-Indian
  - Subbasins – 31 subbasins delineated
  - Major Claimants – cities, irrigation districts

What?

- Conditional Final Orders (CFO's)
  - Issued for all 31 subbasins
  - Issued for 30 major claimants
  - Yakama Nation CFO issued in 1996
  - Will be folded into the final decree

When?

- 1977 – case filed in Yakima Superior Court
- Jurisdiction took a few years (State court vs. Federal Court)
- Service of summons took a few years (including appeal to Supreme Court)
- Several years spent developing procedures and pre-trial orders (17 PTO's, some amended)
- First evidentiary hearing was in 1987
- First CFO issued in 1989, most recent 2009

Proposed Final Decree

- Issued on August 10, 2017
- Objections to the PFD are due on November 15, 2017
- Responses to objections to the PFD are due on February 13, 2018
- Replies to responses to objections to the PFD are due on April 16, 2018
- Hearings may be set as necessary
- Final Decree, issue certs etc.

Challenges of *Acquavella*

- Longevity and cost
- Complexity
- Accuracy
- Groundwater not included
- Succession

Fruits of *Acquavella*

- Certainty
- Regulation during shortage
- Water marketing
- Legal precedents
- Cooperation amongst water users
- Metering order
- Instream flows set
- 2009 legislation modernizing process

Questions/Comments

Leigh Bedell – Adjudications Lead
(360) 407-6017

leigh.bedell@ecy.wa.gov
or
yrba@ecy.wa.gov

Yakima River Basin Integrated Water Resource Management Plan – Technical Projects update

YRBWEP Workgoup Meeting
Prosser, WA
September 20, 2017

Presented by:

Teresa Merriman, Reclamation

Richard Visser, Reclamation

Dave Fast, Yakama Nation

Cle Elum Pool Raise Project

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DEPARTMENT OF ECOLOGY
State of Washington

Cle Elum Pool Raise

14,600 acre-feet managed for instream flows

- **Modify radial gates**
- **Shoreline protection**
- **Land acquisition**

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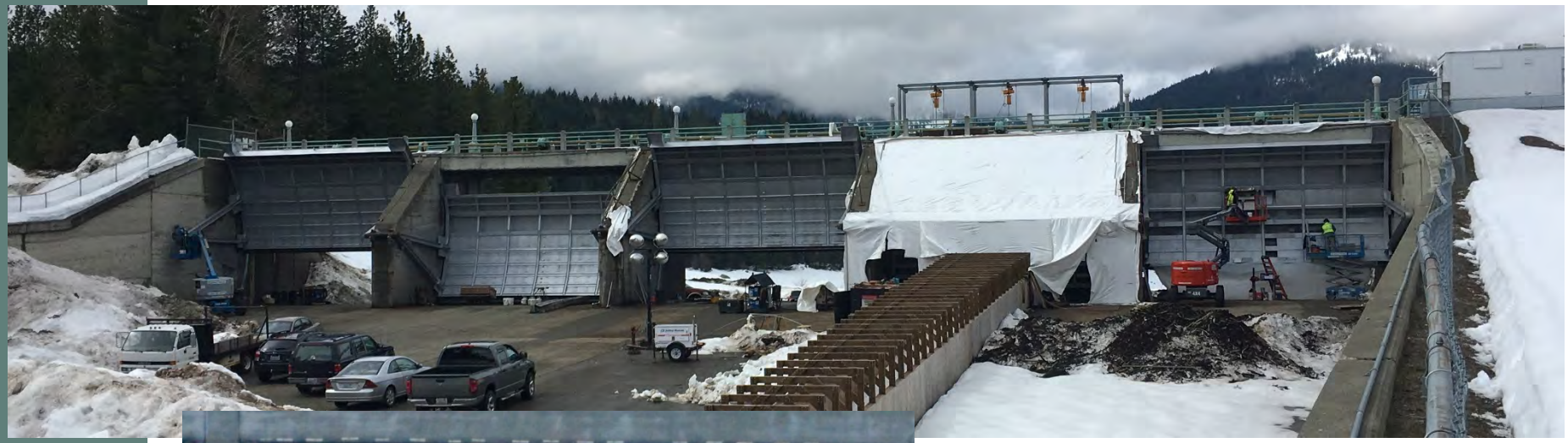
DEPARTMENT OF ECOLOGY
State of Washington

Cle Elum Pool Raise

- **Final EIS; Record of Decision signed June 2015**
- **Radial Gate Modification**
  - Awarded contract in September 2015
  - Construction completion April 2017
- **Shoreline Protection**
  - Dikes raised and update completed September 2016
  - Preparing bid packages
  - Continued coordination with USFS and landowners
  - Awarded contract for Cle Elum River Campground Sep 2017, Construction September/October 2017

Cle Elum Dam Pool Raise Construction



Cle Elum Dam Pool Raise
Radial Gates Complete

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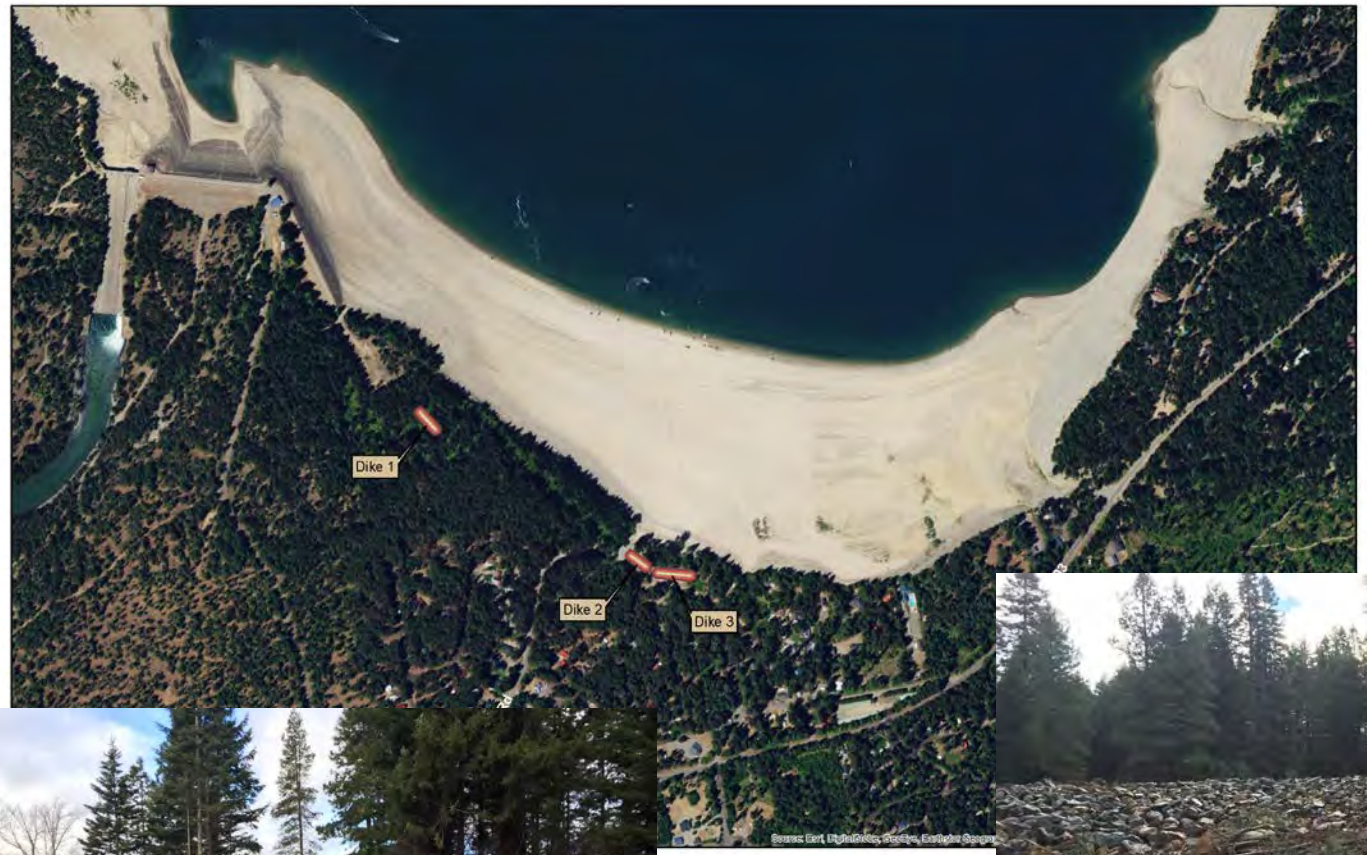
Cle Elum Pool Raise - Dikes



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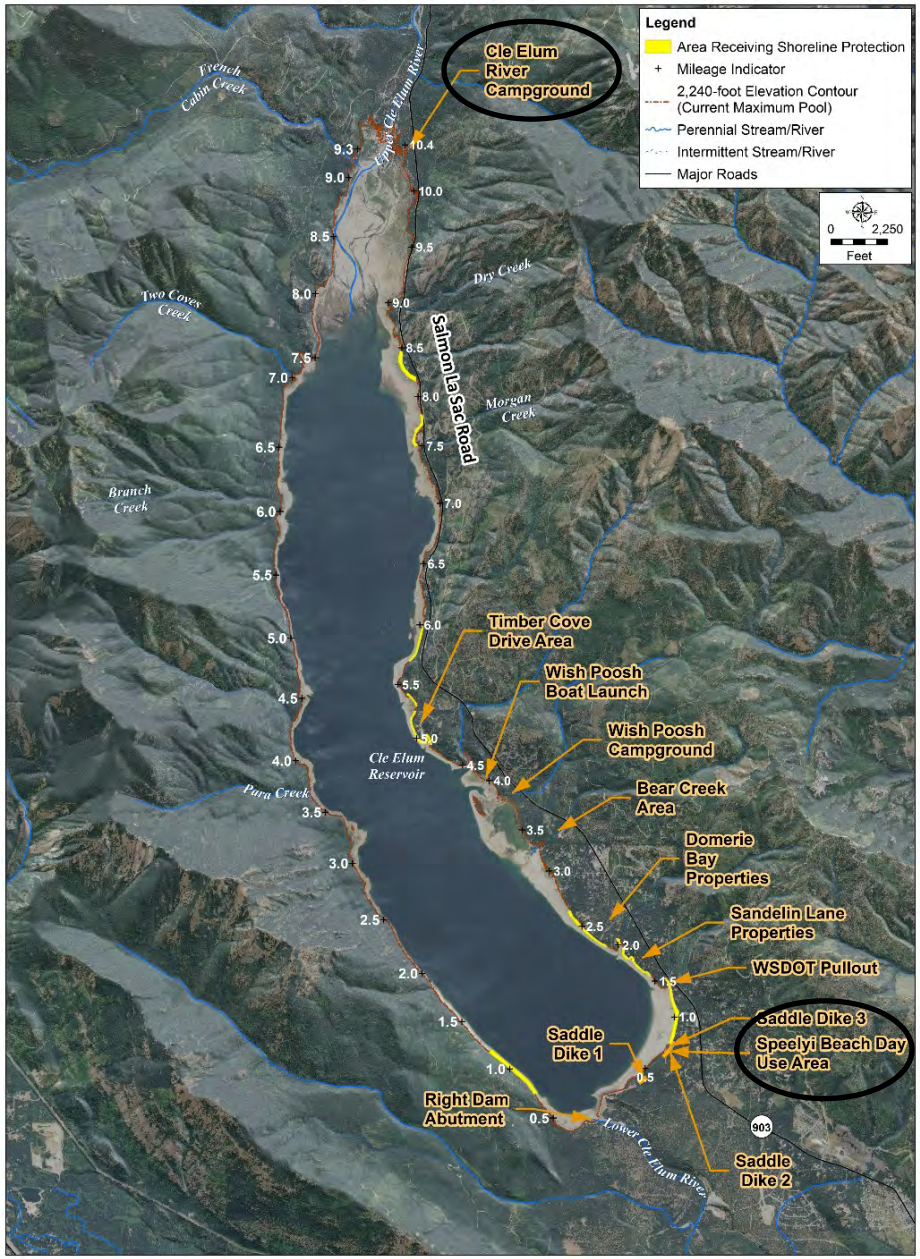


Cle Elum Pool Raise

Shoreline Protection

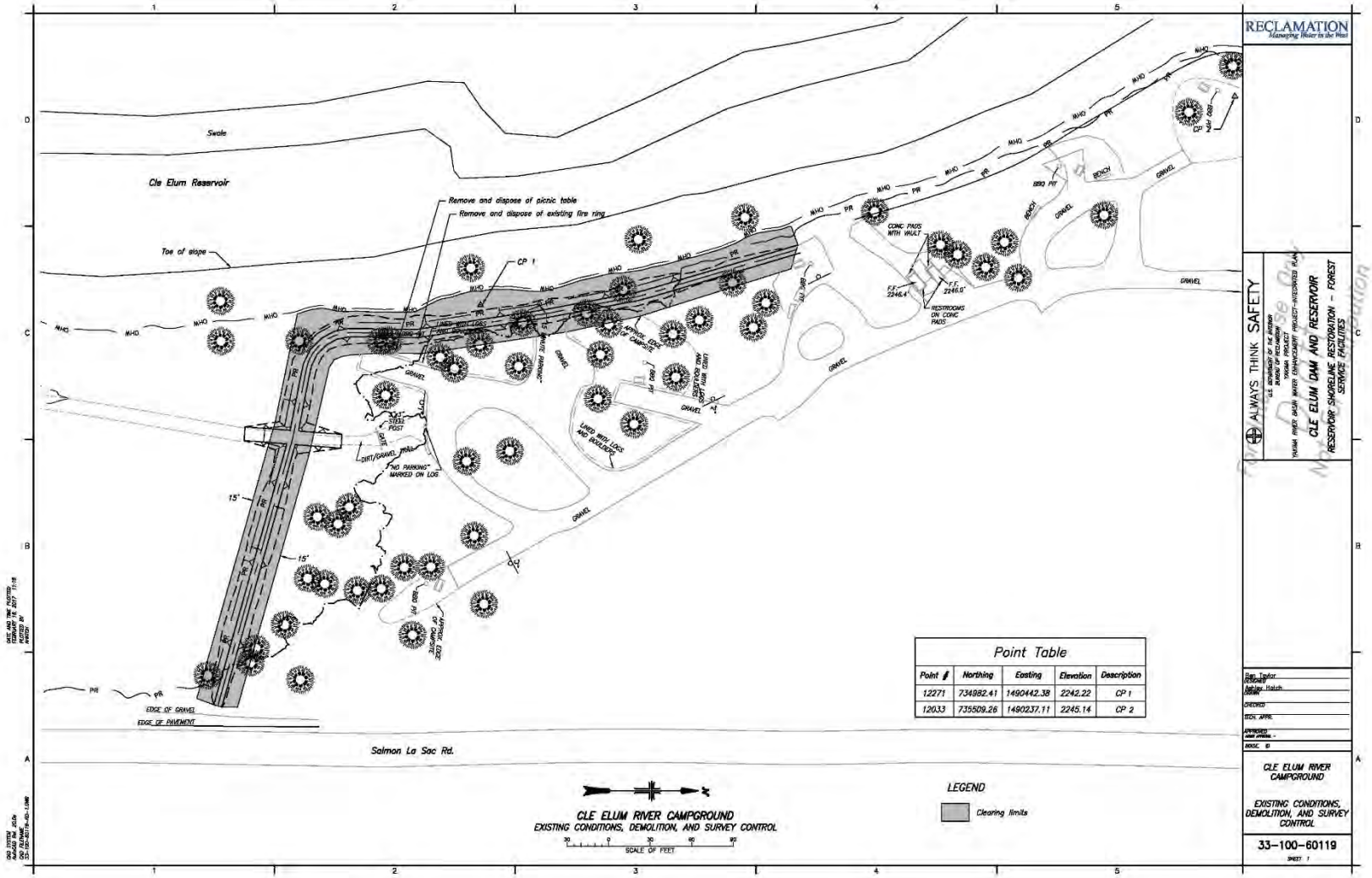
Cle Elum Reservoir Existing Shoreline

Cle Elum River Campground

Cle Elum Reservoir Existing Shoreline

Cle Elum River Campground

Cle Elum Reservoir Shoreline Construction



Cle Elum River Campground

Cle Elum Pool Raise Project Contracts/Timeline

Cle Elum Dam Pool Raise Contracts	Duration	Status
Radial Gates	2 to 3 years	Completion – April 2017
Cle Elum River Campground	1 year	Award - 2017
Speelyi Beach Day Use, Wishpoosh & Speelyi Beach	1 to 2 years	Award - 2018
Sandelin	1 to 2 years	Award - TBD
Domerie Bay	1 to 2 years	Award - TBD
Timber Cove	1 to 2 years	Award - TBD
Anna Bell	1 to 2 years	Award - TBD
Morgan Creek & Night Sky Drive	1 to 2 years	Award - TBD

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Kachess Drought Relief Pumping Plant and Keechelus-to-Kachess Conveyance Supplemental DEIS

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State of Washington

KDRPP Milestones

Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance Projects

NEPA-SEPA Process

Time not to scale

THE OFFICE OF COLUMBIA RIVER
Water for Families, Farms, and Fish

RECLAMATION
Managing Water in the West

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State of Washington

Cle Elum Fish Passage Project

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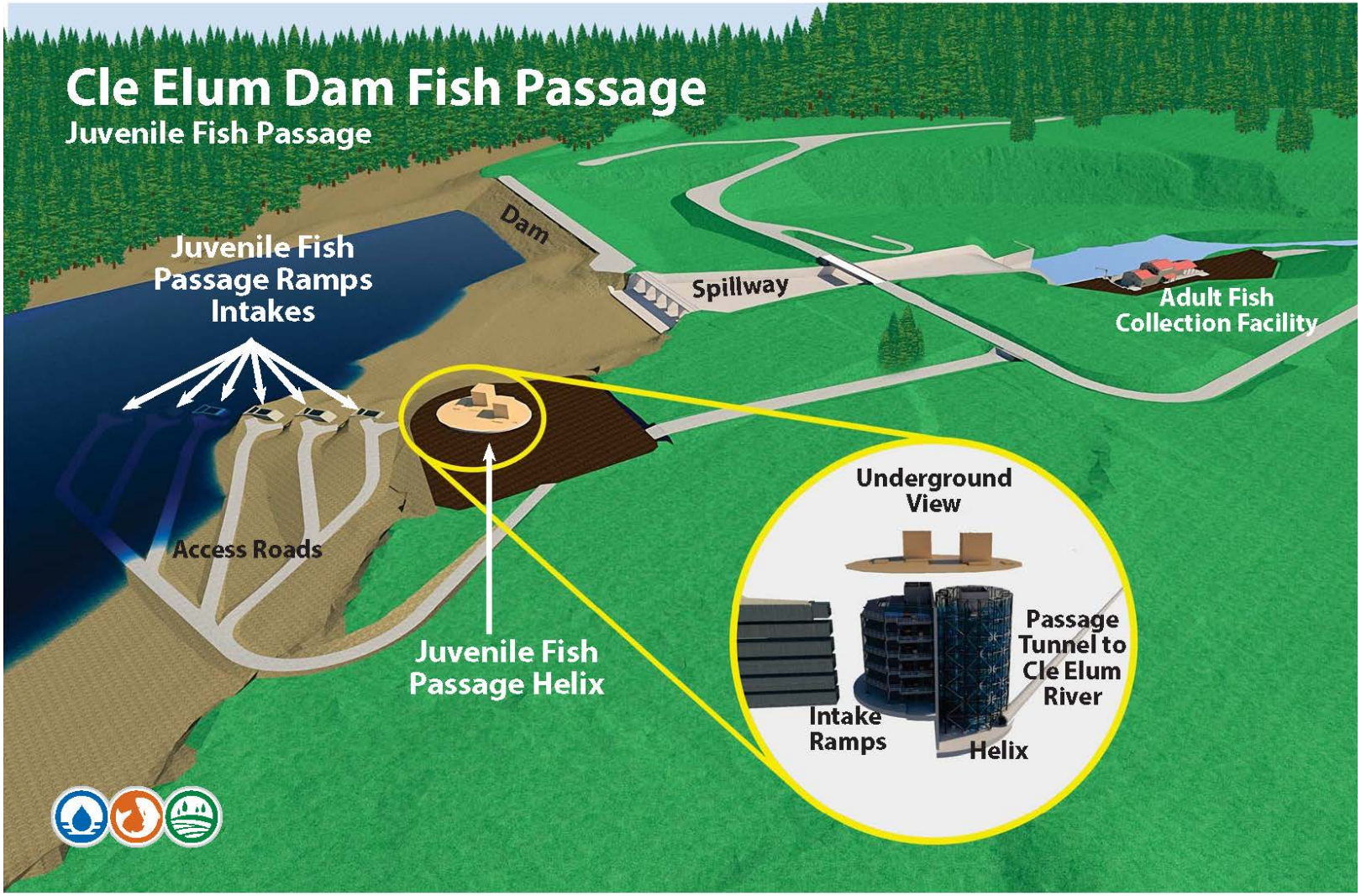
State of Washington

Cle Elum Dam Fish Passage



Cle Elum Dam Fish Passage Construction

7/15/2014

7/13/2017

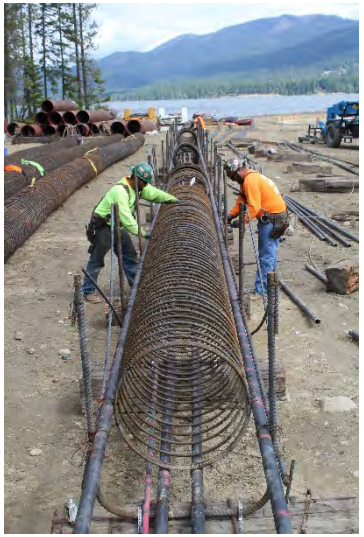
Cle Elum Fish Passage
Secant Construction – Coffer Dam

Cle Elum Fish Passage
Secant Construction – Guide Wall

Secant Pile Example

Cle Elum Fish Passage
Secant Construction – Drilling

Cle Elum Fish Passage - Secant Construction – Rebar Construction & Placing



Cle Elum Fish Passage

Secant Construction – Time Lapse Photos

Cle Elum Fish Passage
Secant Construction – <u>Schedule</u>

Added a Night Shift in July

Fire Slow Down for a Week in September

Piles Complete As of 9/13
- Primary 52%
- Secondary 42%

- Piles Expected to Be Complete By Early November

- Excavation Starting in Spring 2018

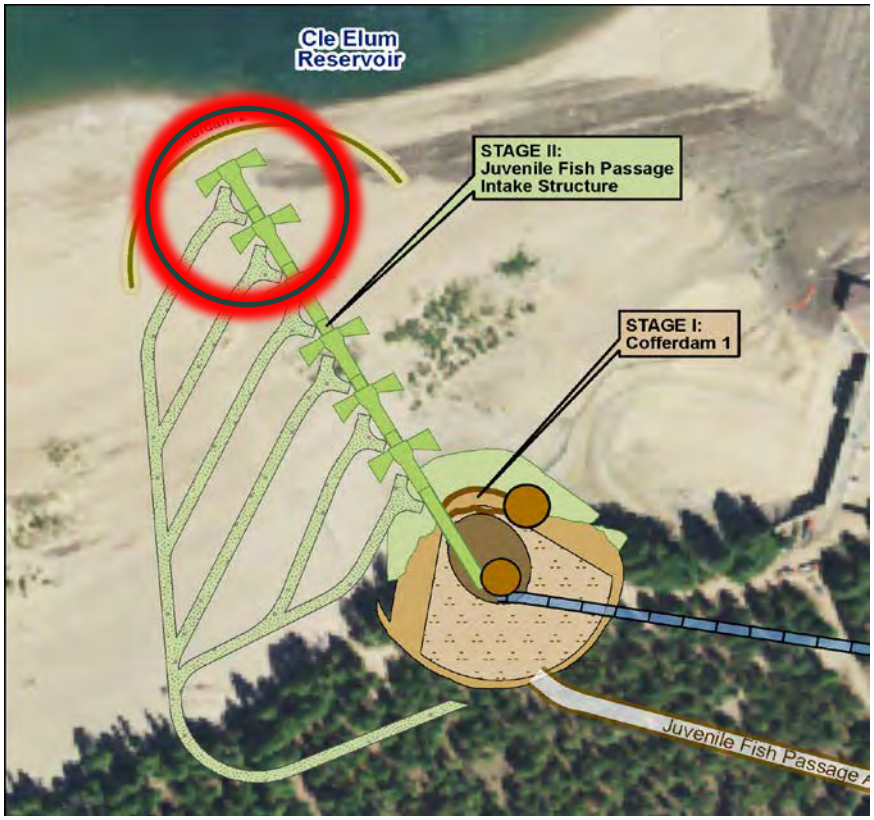
Cle Elum Dam Fish Passage Facilities Contracts/Timeline

Cle Elum Dam Fish Passage Project Contracts	Construction Duration	Status
Roads and Bridge	1 year 3 mo	Completed - 10/16
Secant Pile	2 to 3 years	Construction In Progress
Tunnel	2 Years	Awarded - 08/17 Construction 2018-19
Intake Structure, Gate & Helix	3 years	Award – 2018 Construction 2019-21
Splitter Wall	Less than a year	TBD
Adult Facility	2 years	TBD

Cle Elum Fish Passage
Gates, Helix and Intake Structures Contract
Intake Structures Construction - <u>Drawdown</u>

Contract specification for drawdown:

- Drawdown to below 2170 for at least 75 days
- Drawdown will occur in 1 out of 3 years (2019 – 2021) depending on water year
- Drawdown from end of August into November
- Reclamation will consult with Stakeholders and determine the drawdown year



Cle Elum Dam Fish Passage Whooshh Testing Update

2013 - First Sockeye to be born and raised in the Yakima River Basin in over 100 years to return, released into Cle Elum Lake

Year	Adult Sockeye Released in Reservoir	Returning Sockeye
2009	1,000	
2010	2,500	
2011	4,100	
2012	10,000	
2013	4,000	800
2014	10,000	2,600
2015	10,000	300
2016	10,000	4,600
2017	1,000	350 - estimate

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Cle Elum Fish Passage Test
Whooshh Fish Transport System,

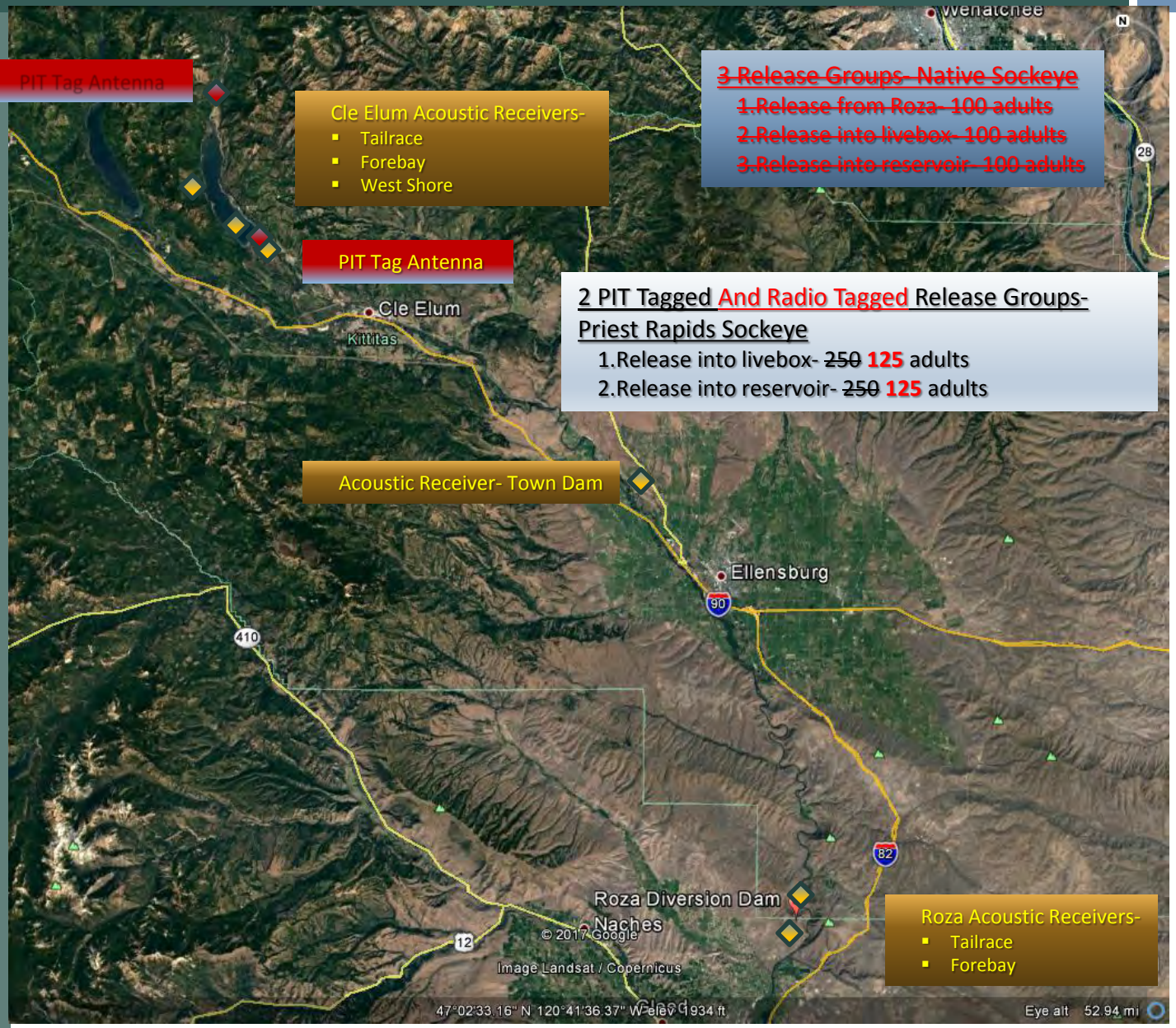
Cle Elum Fish Passage
Whooshh Fish Transport System

Approximately 1700’ long, 150’ high,
Less than 60 seconds transport time for fish

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 August 2016, and at Prosser Dam October 2016, and is currently being tested at Cle Elum Dam
- The Cle Elum Test Transported Sockeye July 2017 with Study Results Expected in December 2017
- Initial indications are that this technology is economical and fish friendly
- http://www.whooshh.com/fish-passage.html


PIT Tag Antenna
Cle Elum Acoustic Receivers-
Tailrace
Forebay
West Shore
~~3 Release Groups- Native Sockeye~~
~~1.Release from Roza- 100 adults~~
~~2.Release into livebox- 100 adults~~
~~3.Release into reservoir- 100 adults~~
PIT Tag Antenna
Cle Elum
Kittitas
2 PIT Tagged And Radio Tagged Release Groups-
Priest Rapids Sockeye
1.Release into livebox- ~~250~~ 125 adults
2.Release into reservoir- ~~250~~ 125 adults
Acoustic Receiver- Town Dam
Ellensburg
90
410
82
Roza Diversion Dam
Naches
12
© 2017 Google
Image Landsat / Copernicus
Roza Acoustic Receivers-
Tailrace
Forebay
47°02'33.16" N 120°41'36.37" W elev 1934 ft
Eye alt 52.94 mi

Sockeye Research - Cle Elum 2017

2017 Cle Elum River Sockeye returns at Roza as 9/6/17 = 137 according to ykfp.org
2017 Columbia River Sockeye count at Bonneville as of 9/6/17 = 87,686
Bonneville count is only 27.8% of the ten-year average which is 315,610 according to the Fish Passage Center
2017 is lowest count since the 24,376 count in 2007, highest recent count was in 2015 615,179.

Tag Date	# Fish Delivered	# WFTS Transported	Weight Range	Forklength Range	Comments
July 14,	35	35	0.5-2.1 kg	35-56 cm	25 PIT- and Radio-tagged, 10 PIT-tagged
July 17,	28	27	0.6-2.1 kg	38-56 cm	
July 18,	32	32	0.5-1.9 kg	37-57 cm	
July 19,	31	31	0.7-2.0 kg	40-56 cm	
Totals	126	125**	Ave wt 1.38 kg	Ave FL 50 cm	Ave passage time 56 sec*

Whooshh Video
July 2017

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ECOLOGY
State of Washington

Questions?

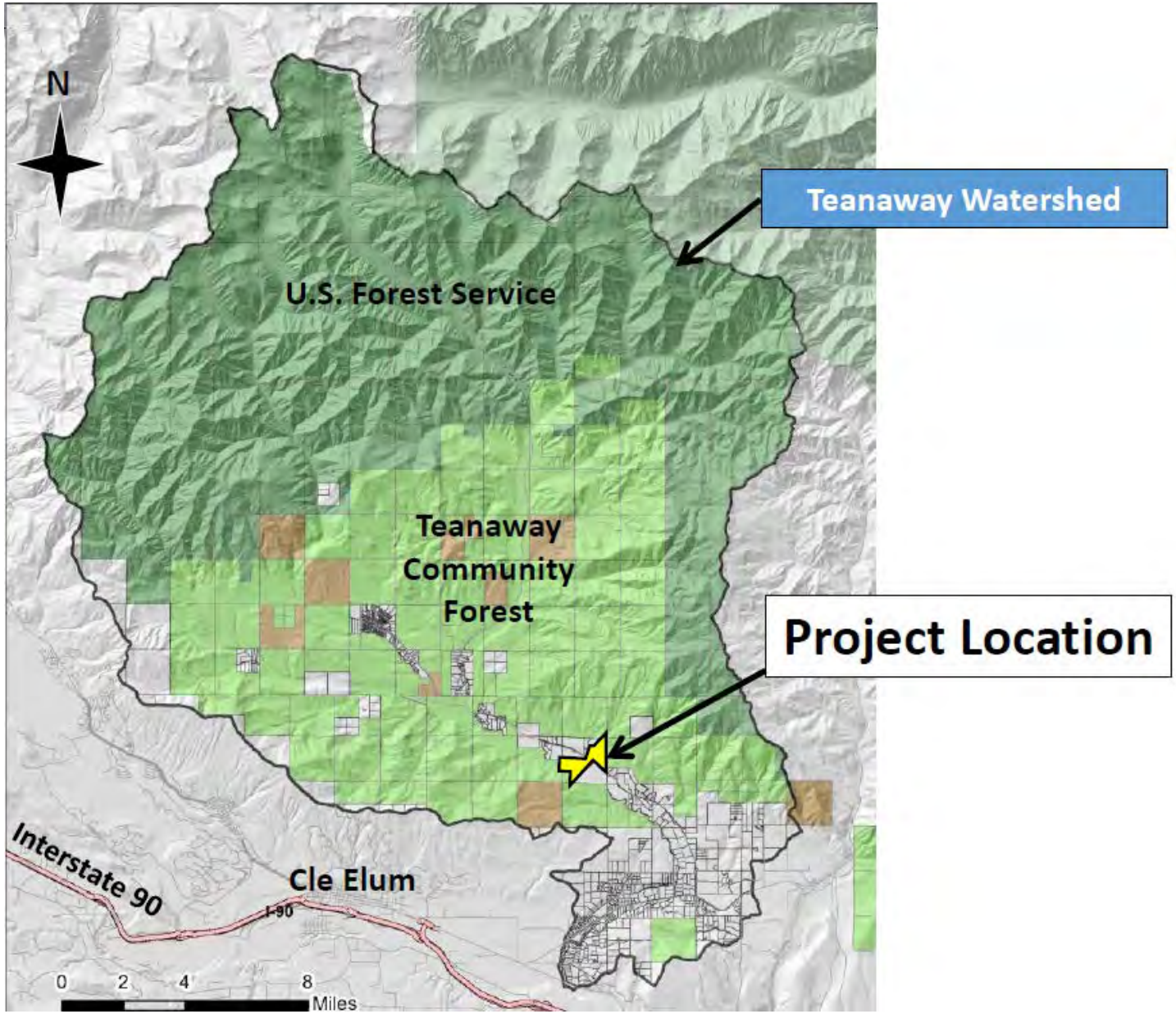
For further information on the web:

http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/

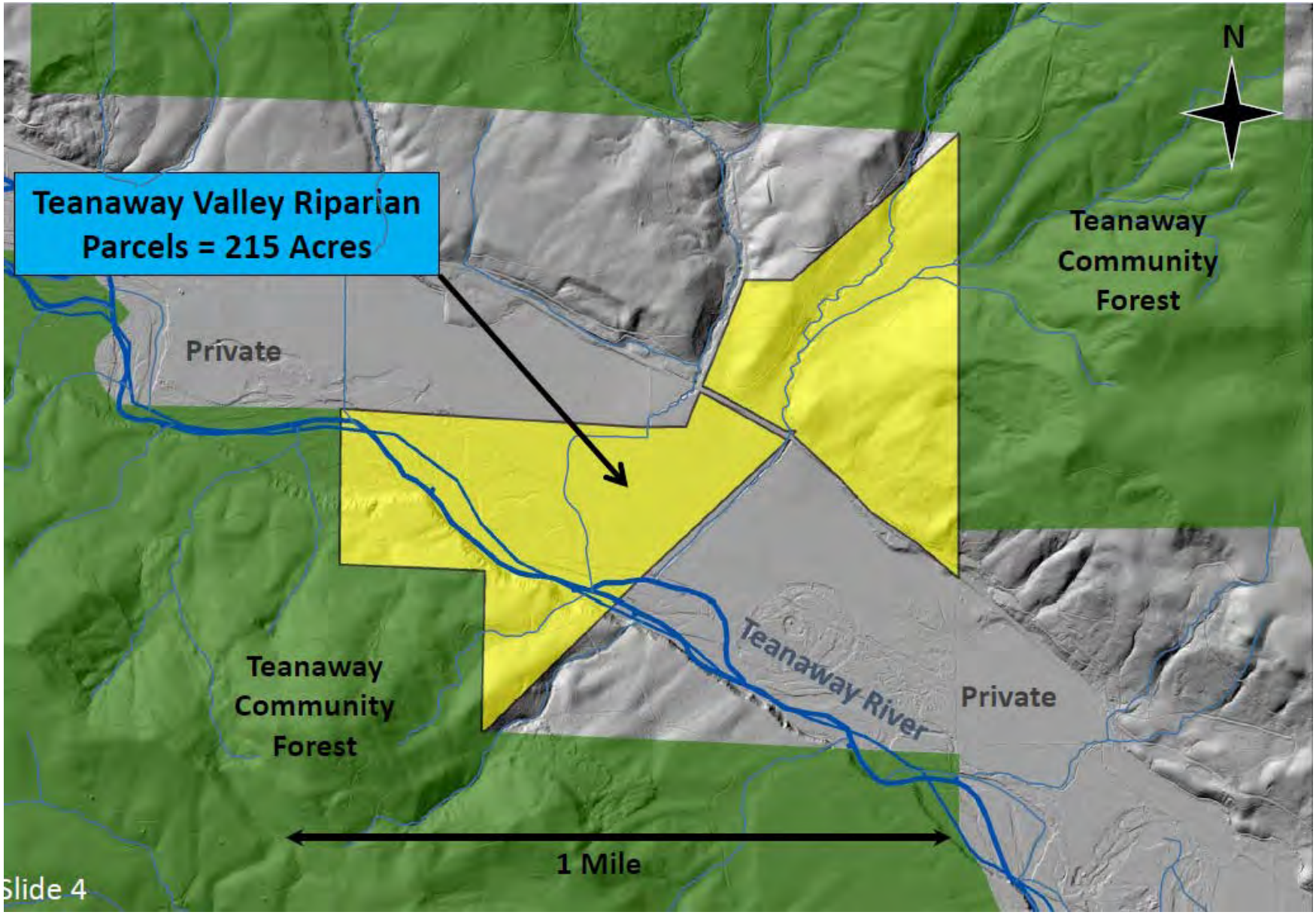
http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html

Roza Irrigation District's Reregulation Reservoir

Teanaway Valley Family Farm



Teanaway Valley Family Farm



Teanaway Valley Family Farm

Watershed, Habitat, Recreation Benefits

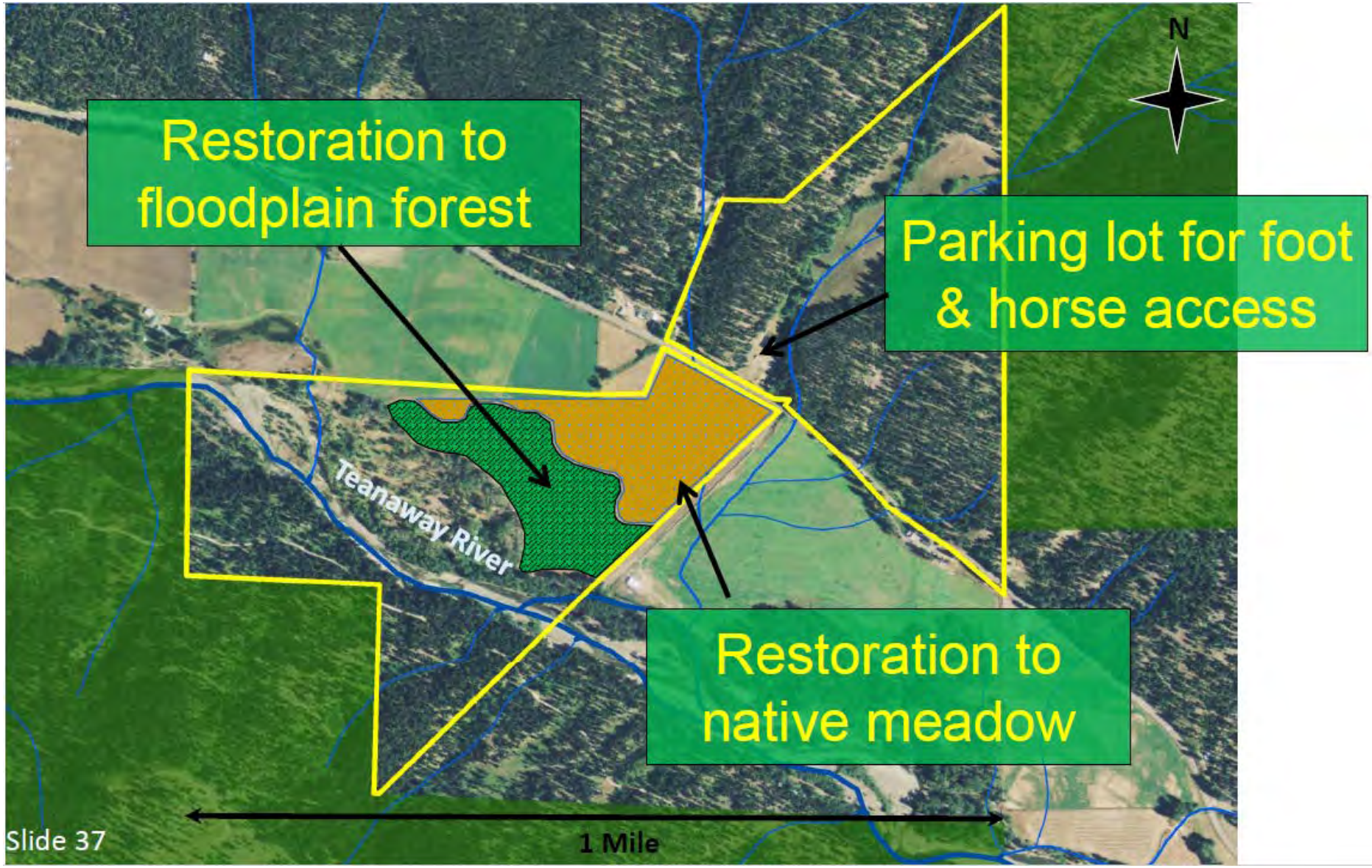
- Conserves 215 acres, 117 acres Total Riparian (54%) & 98 acres upland
- Protects 2 miles for streams & Teanaway River (37 acres)
- Protects 20 acres of wetlands
- Conserves 60 acres of active floodplain
- Complements $100 million investment for watershed and fish
- Key location for access into the Community Forest

Teanaway Valley Family Farm

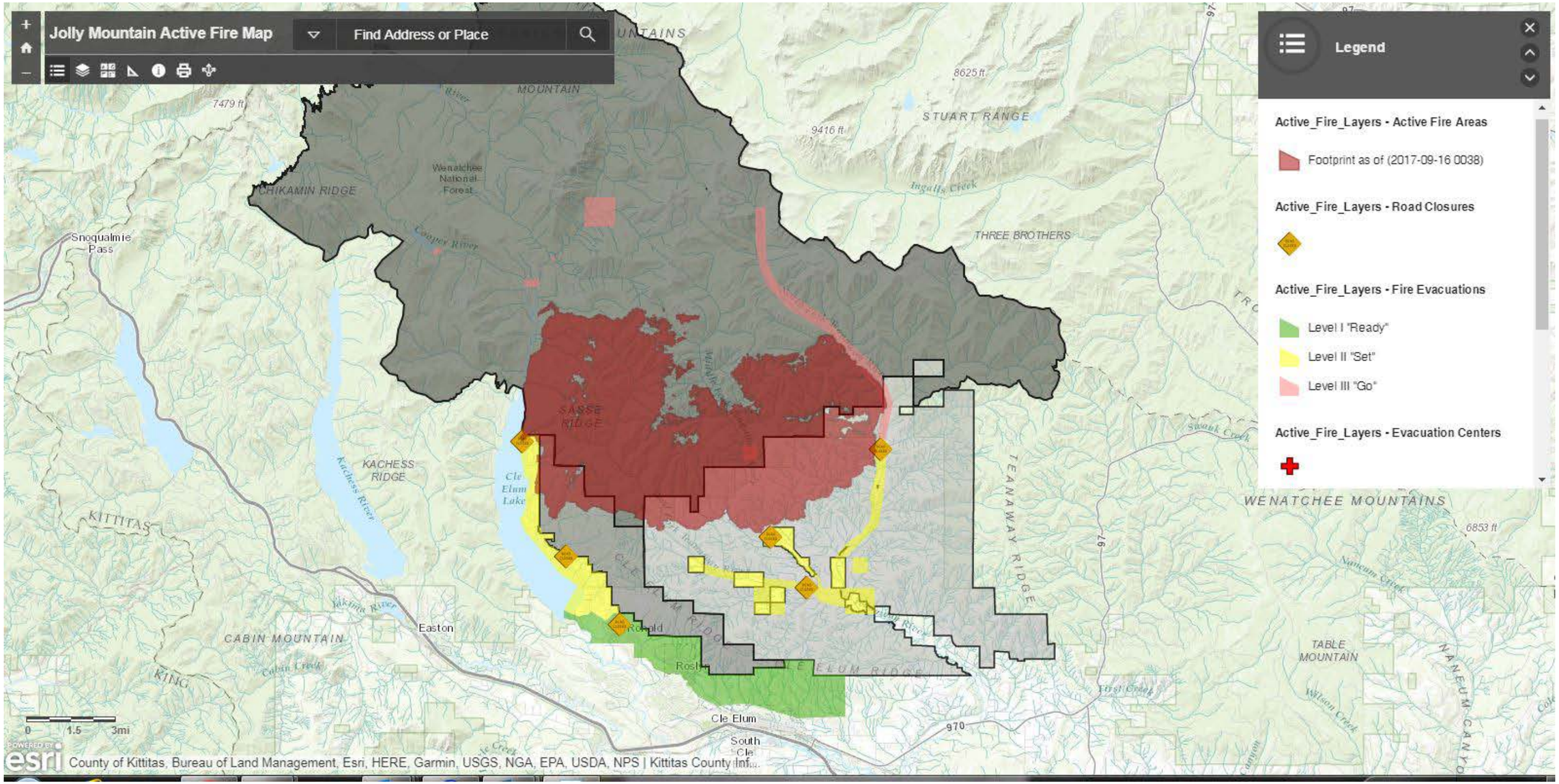
Funding Mix

- USFS – Section 6 Grant to WDFW
- Kittitas County
- Dept. Of Ecology – Yakima Basin Integrated Plan
- Trust for Public Land – Private Donation

Teanaway Valley Family Farm



Examples of Grazing Fences in the Teanaway Community Forest



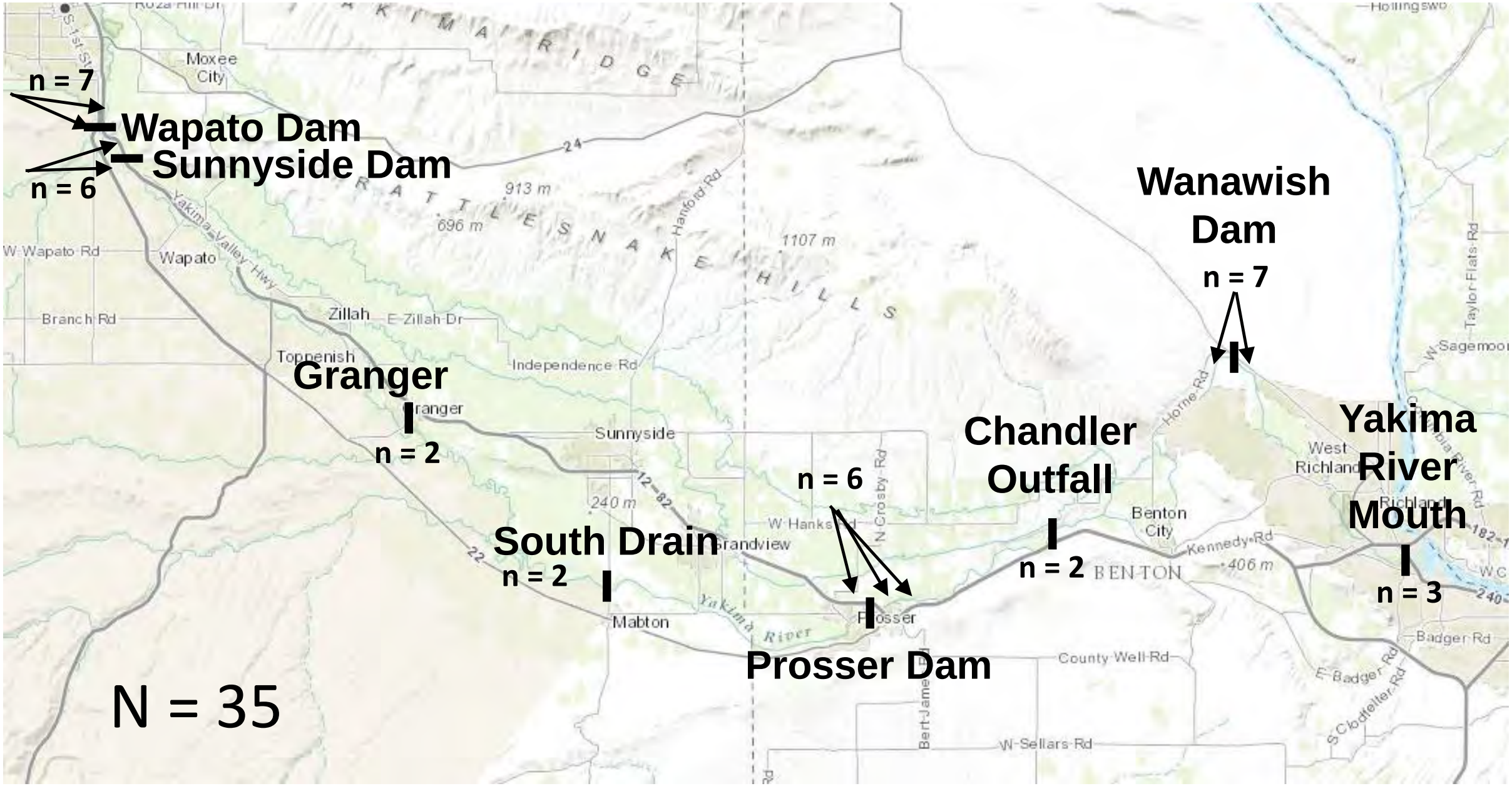
Jolly Mountain Active Fire Map

Yakima River Delta Enhancement Project – Bateman Island

- June 2017 - Core Stakeholder group led by WDFW met to discuss funding options with or without USACE.
- July-August 2017- Technical team consisting of City of Richland, NOAA, DNR, WDFW, MCF and Yakama Nation developed a DRAFT guiding Project Statement.
- Currently awaiting USACE 1135 CRA funding decision to determine next steps – anticipate guidance before December.

Draft Project Statement:

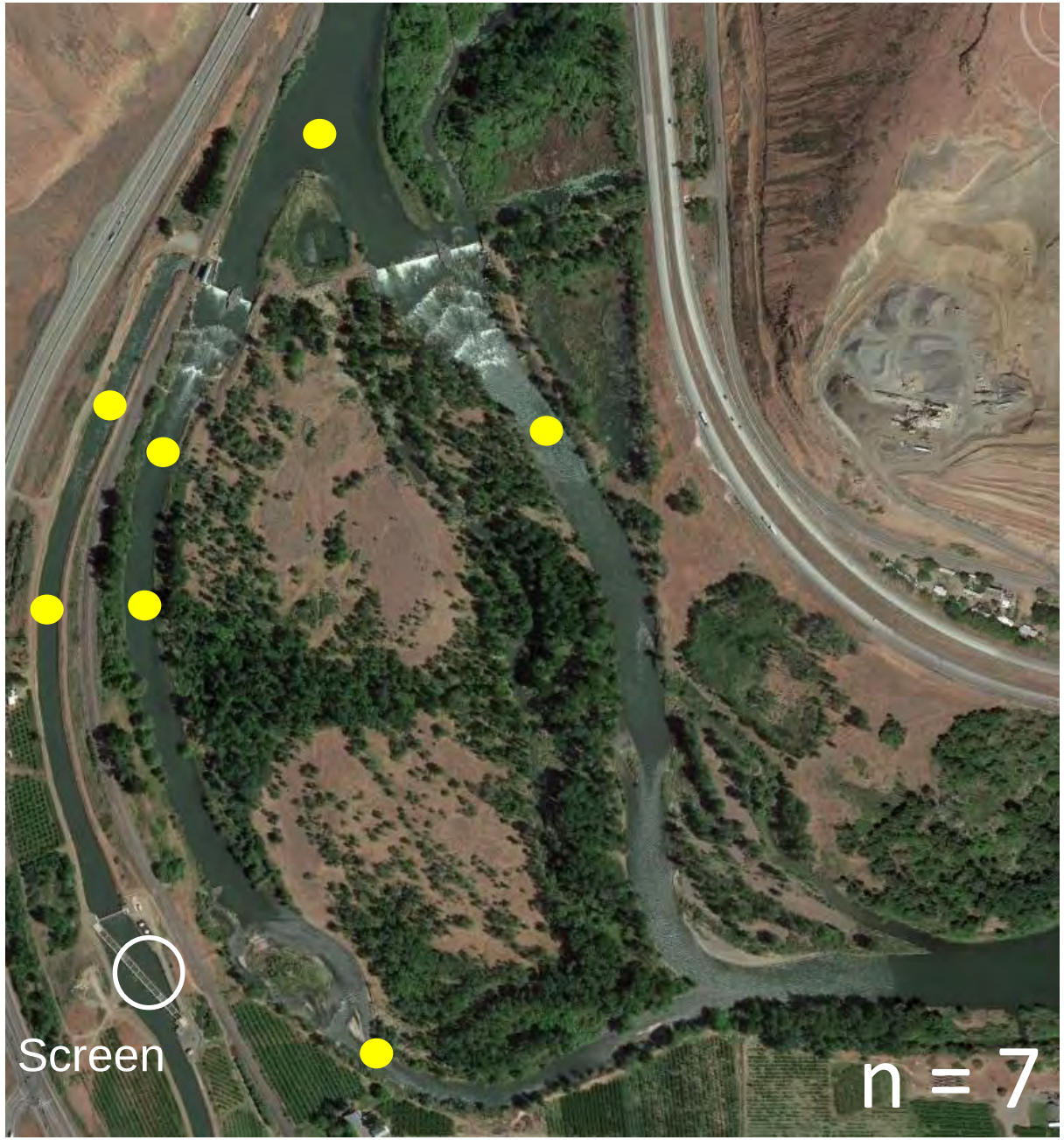
Restore the Yakima Delta to benefit migrating salmon and steelhead, improve overall water quality and habitat, protect cultural resources, and maintain and create opportunities for public recreation and private interests, including a boat launch and marina, through local and regional planning, public and private land management, and environmental regulation.


n = 7
Wapato Dam
Sunnyside Dam
n = 6
Wanawish Dam
n = 7
Granger
n = 2
Chandler Outfall
n = 2
Yakima River Mouth
n = 3
South Drain
n = 2
n = 6
Prosser Dam
N = 35
Moxee City
Wapato
Zillah
Toppenish
Sunnyside
Mabton
Prosser
Benton City
West Richland
Richland
Yakima River
Hanford Rd
Independence Rd
Horne Rd
Kennedy Rd
County Well Rd
W Sellars Rd
Badger Rd
E Badger Rd
Taylor Flats Rd
W Wapato Rd
Branch Rd
E Zillah Dr
Yakima Valley Hwy
N Crosby Rd
Bert James Rd
S Clodfelter Rd
913 m
696 m
1107 m
240 m
406 m

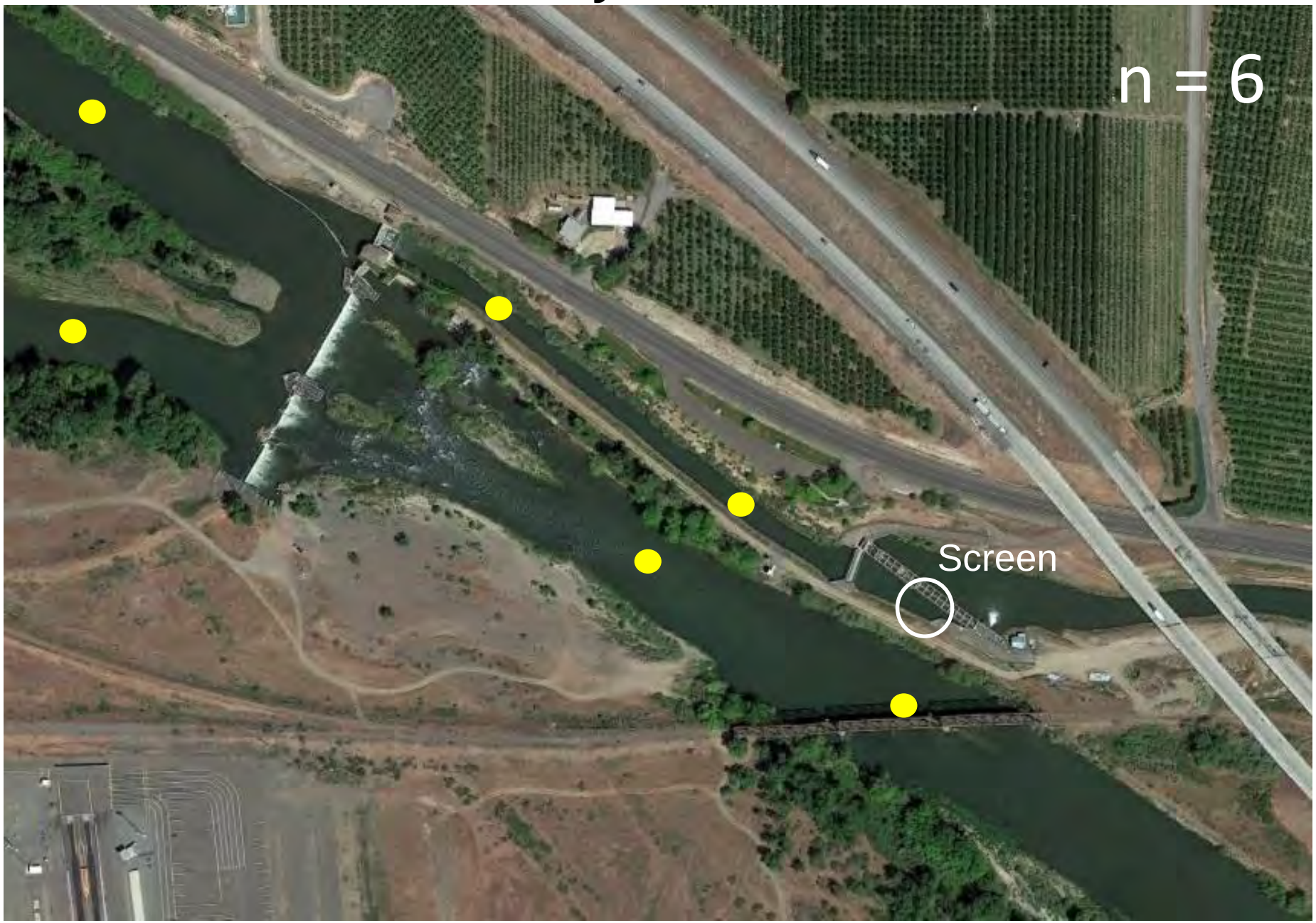
Upstream Release Site

Hwy 24 bridge
~ 4.5 miles upstream
of Wapato Dam

Wapato Dam



Sunnyside Dam



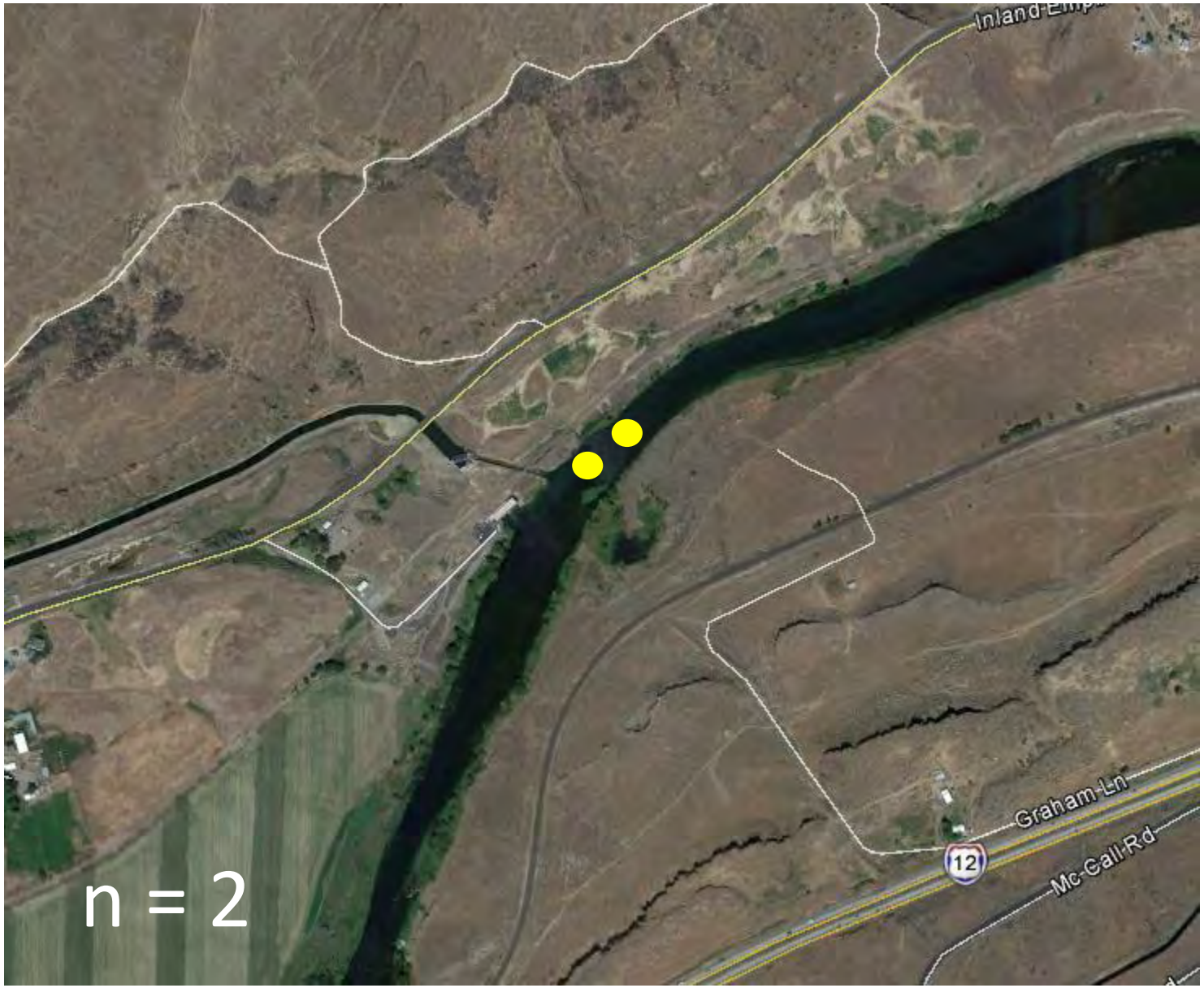
Granger

South Drain

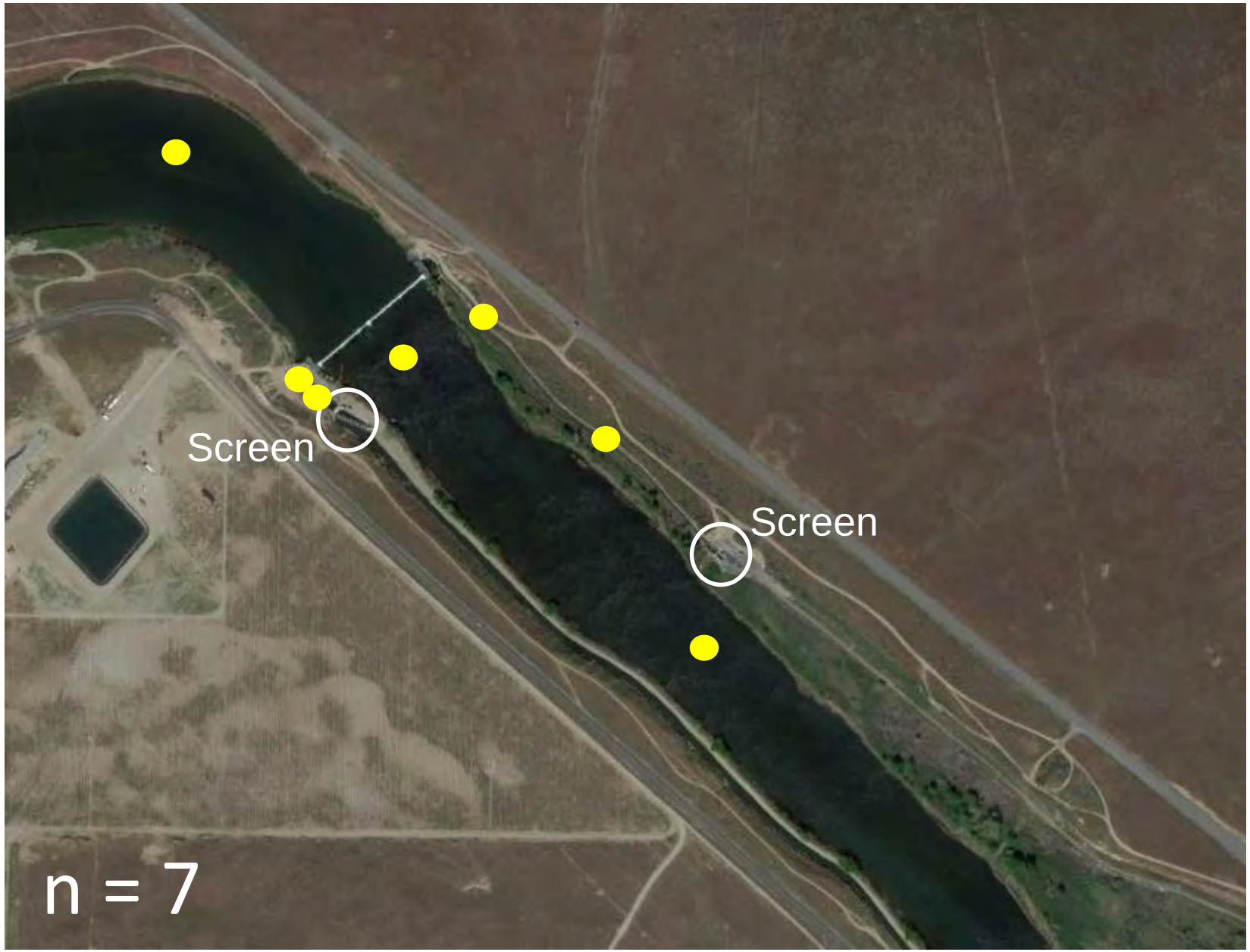

McGee Rd
Dwinell Rd
Belma Rd
W Charvet Rd
241
Vance
Sunnyside-Mabton Rd
Jackson St
© 2017 Google
n = 2

Prosser Dam

Chandler Outfall



Wanawish Dam



Site details still being worked out. May need 1 more receiver

Yakima Mouth

Monitoring plans at the mouth may be revised to get survival through smaller sub-reaches, depending on interest and number of receivers available

Audit: US misuses taxpayer cash for California water project

ELLEN KNICKMEYER Associated Press

September 08, 2017 9:01 PM SAN FRANCISCO

The U.S. Interior Department improperly contributed $85 million in taxpayer funds to help pay for a giant California water project backed by Gov. Jerry Brown, despite pledges from Brown and other state and federal authorities that local water districts would bear all the costs, a federal audit said Friday.

California law and an agreement by the water districts dictate that California's politically influential water districts are supposed to bear the costs of Brown's $16 billion proposal to re-engineer California's shipment of water by building dozens of miles of tunnels to tap into the state's largest river, the Sacramento.

In 2011, Brown and the then-secretary of the Interior Department reaffirmed that pledge of using no taxpayer funds in a joint public statement supporting the tunnels plan. Other top California officials have repeatedly insisted no tax dollars were being spent on the tunnels, often called a legacy project of the 79-year-old governor, now in his last term.

Asked if auditors wanted California water districts to repay the money, Interior spokeswoman Nancy DiPaolo said, "We certainly hope so."

Brown's office did not respond to requests for comment Friday, and state water spokesman Lisa Lien-Mager refused all comment, calling the audit and transaction a federal matter.

The audit's findings were appalling, said Doug Obegi of the Natural Resources Defense Council environmental group, which has opposed the tunnels on the grounds that it would speed up the extinction of endangered native species in and around the Sacramento River and San Francisco Bay.

"The public is paying for what a private party is supposed to pay for," Obegi said, who said the audit also raises questions overall about whether water districts can afford to take on the costly water project. "That is taking the public's money, and that's not OK."

The proposed tunnels are part of Brown's decades-long push to overhaul the complex system of pumps, aqueducts and canals by which California ships Northern California water southward, mainly for use by cities and farms in central and Southern California. Voters rejected an early version of Brown's proposal, envisioning canals rather than tunnels, in a statewide vote in the 1980s.

California water districts are making final decisions on whether to go ahead with the controversial project.

Federal authorities did not fully disclose to Congress or the public that it was supplying $84.8 million for the project planning, and waived reimbursement for $50 million of it, the audit said. The federal Reclamation Bureau also did not disclose the arrangement in its certified financial reports, the audit said.

"USBR could not provide us with a rationale for its decision to subsidize (California) water contractors, other than the water contractors asked USBR to pay," the audit noted.

The actions by the Bureau of Reclamation, which is part of the Interior Department, mean that federal taxpayers paid a third of the cost of the project's planning up to 2016, the audit said.

Meanwhile, Central Valley water districts that were supposed to pay 50 percent of the tunnels' planning costs contributed only 18 percent, the audit found.

Thomas Birmingham, general manager of the sprawling Central Valley rural water district Westlands, which received one of the largest shares of the federal money, said he knew of nothing about the arrangement that was "inconsistent with either state or federal law."

"The state was aware of it," Birmingham said of the federal payments. "No one indicated this was somehow a violation of the letter or spirit of the agreement" guiding the costs of the project.

Birmingham indicated water districts might never repay those funds. Under federal law, he said, water districts would be responsible for reimbursing the federal money only if the project went forward and benefited those districts.

While the transaction occurred during the Obama administration, the audit said approval for the deal came from a regional Reclamation budget officer.

In response to the inspector-general's findings, the Reclamation bureau told auditors that it had disclosed the payments in a 2013 letter to seven unidentified members of Congress, and said it planned to make no more such payments for the tunnels project. Bureau spokesmen refused comment Friday.

"The audit stopped at 2016," said Patricia Schifferle, a tunnels opponent who has helped lead financial scrutiny of the project. "How much more has been spent in 2017?"

A former lobbyist for Westlands, David Bernhardt, has been a top official in the Interior Department under the George W. Bush administration and again under Trump. Critics long have said Westlands has benefited from its ties to the federal agency, which the water district and Interior deny.

"I wish I were surprised to learn that the Westlands Water District colluded with the Interior Department to hide millions of dollars in unauthorized payments from Congress. But this is typical of the longstanding and incestuous relationship between the largest irrigation district in the country and its federal patrons," said U.S. Rep. Jared Huffman, a California Democrat.

Separately, the state auditor's office disclosed on its website Friday that the release of its examination of California's financial management of the project has been delayed for at least a third time, to October.

Read more here: http://www.sacbee.com/news/business/article172016477.html#storylink=cpy

RECLAMATION
Managing Water in the West

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Contact: Wendy Christensen, 509-575-5848, ext. 203 **Tom Tebb, 509-575-3989**

Agenda

Yakima River Basin Water Enhancement Project Workgroup

December 13, 2017, 9:30 AM to 12:00 PM at Yakima Arboretum,
1401 Arboretum Dr., Yakima, WA

Time

9:30 – 9:40 Welcome/Introductions and Agenda Overview/Public Comment[1]
Ben Floyd, Anchor QEA

9:40 – 9:50 Implementation Committee Update
Tom Tebb, Ecology and Committee Members

9:50 – 9:55 Washington DC Leadership Group Meeting Recap
Tom Tebb, Ecology; Wendy Christensen, Reclamation; and Implementation and Executive Committee Members

9:55 – 10:10 Kachess Drought Relief Pumping Plant and Keechelus Reservoir to Kachess Reservoir Conveyance Supplemental Draft EIS and Cle Elum Fish Passage and Cle Elum Pool Raise Projects – Status Update
Teresa Merriman and Richard Visser, Reclamation

10:10 – 10:30 Water Supply and Storage Sites Evaluation History and Overview –
Scott Revell, Roza Irrigation District and Teresa Merriman, Reclamation

10:30 – 10:45 Clear Creek Bull Trout Passage
Jeff Thomas, USFWS

10:45 – 10:55 Public Comment

10:55 – 11:10 **Break**

11:10 – 11:40 Executive Committee, Subcommittees and Subgroups Updates
Tom Tebb, Ecology and Wendy Christensen, Reclamation and Chairs
- Lower River Subgroup – Draft Action Plan process update
- Groundwater Subcommittee

11:40 – 12:00 Workgroup – Roundtable Discussion
Ben Floyd, Anchor QEA

12:00 – 12:45 PM Holidays Celebration

2018 Meetings: March 14 (Ellensburg), June 6 (Yakima), Sep. TBD (Toppenish), Dec. 12 (Yakima)

For additional information, see the reports and documents available at this link:
http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html

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[1] Public comment opportunities will be provided for each agenda item after Welcome/Introductions and before the Workgroup Roundtable discussion, in addition to the comment time on the agenda. Those wanting to provide public comment need to sign up for comment and each commenter will be limited to 2 – 3 minutes for comments (depending upon how many want to provide comments) to maintain meeting schedule. Additional written material can be submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.

Contact: Wendy Christensen, Columbia-Cascades Area Office, (509) 575-5848, ext. 203

Tom Tebb, Washington State Department of Ecology, (509) 574-3989

Meeting Notes

Yakima River Basin Water Enhancement Project Workgroup

December 13, 2017

Yakima Arboretum, Yakima, Washington

Welcome, Introductions, and Agenda Overview

Ben Floyd, White Bluffs Consulting, welcomed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup members and other attendees. Meeting attendees were introduced by name and affiliation.

The following notes summarize the YRBWEP Workgroup presentations and public comments. For details, please see the full presentations available on the project website: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html.

Implementation Committee Update

Tom Tebb, Washington State Department of Ecology, Office of Columbia River, described the Implementation Committee (IC) meetings held in Washington DC in late October and early November. The IC met with multiple U.S. House committees, Speaker of the House staff, as well as staff for Senators Maria Cantwell and Patty Murray and Representatives Dan Newhouse and Dave Reichert. Representatives Newhouse and Reichert introduced HR 4419 (*Bureau of Reclamation and Bureau of Indian Affairs Water Project Streamlining Act*) to the House on November 16, 2017. There is now a Yakima Basin Integrated Plan bill in both the House and Senate. The IC members will work with Representatives Newhouse and Reichert to refine further the Integrated Plan elements of House Bill 4419. Urban Eberhart, Kittitas Reclamation District (KRD), testified for the bill. The IC also met with the DC Leadership Group, as discussed below. YRBWEP has been receiving Federal discretionary funds each year for the past several years, which Tom attributes to the energy from the YRBWEP Workgroup.

Public input on this agenda item:

Bill Campbell, Lake Kachess Homeowners Association: Bill requested a complete list of individuals and groups the IC met with as well as handouts.

- Tom Tebb: This is public information and will be available.

DC Leadership Group Meeting

Tom Tebb: The primary meeting purpose was to establish strong connections with new agency leaders under the Trump administration. Andrea Travnicek, Acting Assistant Secretary for Water and Science, Department of the Interior, hosted the meeting. Approximately 50 people attended (some by phone).

The group discussed project progress and the work of the DC Leadership Group agencies that correlates with activities in the Yakima River basin. Wendy Christensen, Bureau of Reclamation, Columbia-Cascades Area Office, mentioned there is continuity in the continued support of the DC Leadership Group from the past administration. It will be important to be in contact with the new Assistant Secretary for Water and Science, once chosen. She also noted that Brenda Burman has been confirmed as the Commissioner for Reclamation.

Workgroup Discussion:

Rick Dieker, Yakima-Tieton Irrigation District: Is there any indication that environmental reviews will become more user-friendly or faster because of Executive Orders?

- Wendy Christensen: So far, it is too early to tell. Environmental review remains important, and Reclamation will continue to follow the National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) requirements for all Reclamation projects.

Public input on this agenda item:

None.

Technical Work Updates

1 – Cle Elum Pool Raise

Wendy Christensen: The modified radial gates at Cle Elum Dam will add 14,600 acre-feet of storage capacity to Cle Elum Reservoir. Cle Elum River Campground improvements are complete, and dikes have been raised. The next project will be construction of a boat ramp and a pedestrian ramp at the Speelyi Beach Day Use Area. This contract will be awarded in FY 2018. There is significant work ahead for shoreline protection projects planned over the next few years.

Public input on this agenda item:

None.

2 – Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance Supplemental Draft EIS (SDEIS)

Wendy Christensen: The floating pumping plant alternative is under evaluation. Wendy showed slides with 3D schematics of the floating pumping plant at high pool, current minimum pool and proposed minimum pool elevations. Wendy also described plans for volitional fish passage at the Narrows (the area between upper and lower Kachess reservoirs). The SDEIS is expected to be issued on December 29, 2017, if all the internal Reclamation and U.S. Department of the Interior approvals happen. Wendy encouraged comments from the Workgroup and audience regarding the SDEIS; public meetings will be held, and the 60-day comment period will be open from the release date of the through the end of February, if the SDEIS is released on December 29, 2017. The final EIS (FEIS) will be issued in 2018 and will contain responses to previous comments received on the 2015 Draft EIS (DEIS) as well as new comments on the SDEIS. See Karen Dera, Bureau of Reclamation, to be included on the mailing list.

Public input on this agenda item:

Ann Lewis, Yakima Basin Coalition: Could there be public meetings in the Seattle area for westside users of the Kachess Campground?

- Wendy Christensen: The meetings are typically held in the area of impact. Meetings are currently scheduled inCle Elum and Ellensburg. Reclamation and Ecology welcome comments from all on the SDEIS. Please be sure to provide your name and mailing address to Karen Dera if you would like a copy of the SDEIS.

- **Chuck Klarich, Yakima Basin Storage Alliance:** The *Northern Kittitas County Tribune* has an excellent article on fish passage at Cle Elum Reservoir.

3 – Cle Elum Fish Passage

Richard Visser, Bureau of Reclamation: The project is broken into multiple construction contracts. The access road and bridge construction contract is complete, and the secant pile construction contract is ongoing. Secant piles have been installed to form the wall of the elliptical shaft that will house the gate and helix. Excavation of the shaft is in progress. Other projects will follow (bypass tunnel to the river below the spillway, helix/gate and intake and adult upstream passage facilities) as shown the PowerPoint presentation table. The presentation included slides and a time lapse video of secant pile construction to date; work will continue until winter weather prevents it. The Whooshh™ system demonstrated that adult fish can be moved over the 150-foot vertical lift at Cle Elum Dam, which may be added later if deemed desirable. Overall, the project is making good progress.

Workgroup Discussion:

Jaclyn Hancock, Washington State Department of Agriculture: Is there data available on fish survival rates during Whooshh™ testing?

- Richard Visser: Findings are preliminary. Slightly reduced survival was observed compared to truck transport, and smaller fish tended to have higher mortality due to handling of fish to move them into the Whooshh tube. A final report will be issued in March.

Public input on this agenda item:

Jane Creech, Washington State Department of Ecology: Was temperature monitored during the Whooshh™ test?

- Richard Visser: Yes, both in the reservoir and the river, as well as air temperature.

Water Supply and Storage Sites Evaluation History and Overview

Scott Revell, Roza Irrigation District (Roza): Following the Reclamation Act of 1902 and establishment of the Bureau of Reclamation, nearly all available sites in the Yakima River basin were surveyed for water storage potential. In 1984, the same sites got an updated review, many of which were found to have limitations. Another storage study was conducted between 2003 and 2008 that further evaluated potential surface storage locations. The Yakama Nation and Roza submitted a joint letter at the end of the study recommending an integrated planning process be followed to address Yakima River basin water supply and fisheries needs, rather than a project-by-project focus, which led to the development of the Integrated Plan.

Scott described the Selah Creek canyon site as an example of a storage site that has been evaluated multiple times; it has significant costs and technical issues. People often ask about storage potential at the site because it is so visible, but prior studies have determined the site has significant limitations for

construction and operation as a storage reservoir. Wendy Christensen stated that the focus is on in-basin storage first, though there is consideration of Columbia River water in the future.

Urban Eberhart described planning efforts to use existing infrastructure to capture and manage water in gravity-fed off channel storage locations, potentially making the best use of flows, particularly during "flashy" runoff events. One possible use for this captured water is aquifer recharge using existing infrastructure, such as small local ponds that do not require pumping. This provides a more systematic view of storage, rather than project-by-project. Mike Leita, Yakima County, encouraged these ideas, but reminded the Workgroup to stick to the plan of full storage as identified in the Integrated Plan. The county expects "not one drop less" from new storage projects.

Public input on this agenda item:

Chris Maykut, Friends of Bumping Lake: Bumping Reservoir has been studied numerous times but never pencils out. Why has it come back into consideration after taken off the table in 2008?

- Wendy Christensen: The Workgroup considered Bumping Reservoir at a reduced volume than had been studied previously, which avoids much of the impacts to bull trout at Deep Creek. Also, it is not treated as a standalone project, but as part of a holistic comprehensive strategy under the Integrated Plan

- Tom Ring, Yakama Nation: The Tribe suggested using Bumping Reservoir for multiple uses including fish flow enhancement. So, the purpose of Bumping as part of the Integrated Plan is quite different than the purpose intended in the 2008 storage study.

Steve Malloch, Consultant to American Rivers: What was the previous minimum size for a reservoir to be considered?

- Scott Revell: Several reservoir sizes were considered; there was not a single size criterion.

Clear Creek Bull Trout Passage

Jeff Thomas, U.S. Fish & Wildlife Service (USFWS), Mid-Columbia River Fishery Office, described the fish passage projects at Clear Creek Dam. Distinct groups of Bull Trout (determined through tagging) have been found both above and below the dam, concluding that adult Bull Trout cannot migrate up the current spillway channel under any conditions. Fish are able to get from the creek to the reservoir, but not back. Jeff described the efforts to transport fish by hand from below the dam and up into the reservoir. Reclamation has provided $59,000 for designing a passage project at the dam (not at the spillway). They expect a 30 percent design document by the end of 2018 and a final design document by the end of 2019. The USFWS team will continue to transport Bull Trout by hand each year until a permanent passage facility is developed.

Public input on this agenda item:

Sean Gross, National Oceanic and Atmospheric Administration (NOAA) Fisheries: Is downstream passage safe for fish?

- Jeff Thomas: Fish can pass in numerous situations, but it may or may not be safe.

Judy Neibauer, USFWS: Having the North Fork Tieton, South Fork Tieton, and Indian Creek Bull Trout commingle is a good thing; mixed gene pools may lead to greater species resiliency.

General Public Comments:

None.

Executive Committee, Subcommittees, and Subgroups Updates

Lower River Action Plan

Jason McShane, Kennewick Irrigation District, described the Lower River Subgroup and its purpose and goals. The subgroup considers all seven elements of the Integrated Plan, and the action plan is developed in sections based on those elements. The subgroup is supporting numerous projects including the Yakima Delta enhancement, Wapato Reach projects, the smolt out-migration study, and the cold water refugia project. They are also looking to fix Kennewick Irrigation District water supply conditions. The lower river region is an important focus, because it is important to all migrating fish entering the Yakima River no matter where they are headed. Toby Koch, U.S. Geological Survey, gave a presentation on the lower river smolt outmigration study objectives and elements. The study will be conducted in 2018 through 2020; it will evaluate juvenile salmon and lamprey survival rates from Wapato Dam through the mouth of the river. Sean Gross emphasized that the sites selected for the survival study were designed to inform decisions on possible future actions in the lower river.

Ground Water Subcommittee (Tom Ring): The Oregon State University study is currently on hold because the lead researcher is on leave. Dave Brown, City of Yakima Water and Irrigation Manager, addressed the City's aquifer storage and recovery program: they are submitting compliance data and are working on an operation and maintenance (O&M) plan. Urban Eberhart also mentioned that monitoring devices have been installed regarding KRD's program to capture "flashy" flows for groundwater infiltration. Urban expects similar actions in the future on the Naches arm (Yakima-Tieton Irrigation District) and at the Wapato Irrigation Project. Tom Ring mentioned that the Yakama Nation is recharging approximately 8 cubic feet per second of water into the Toppenish Creek alluvial fan.

Workgroup Roundtable

Scott Revell, Roza Irrigation District: Scott acknowledged David Child's work as a fisheries biologist for the Roza-Sunnyside Board of Joint Control for the past ten years andthanked him for his service to the YRBWEP Workgroup. David is retiring the end of December. Scott will be continuing his dialogue with the Kachess Homeowners about KDRPP.

Seth Defoe (KID): Would like to thank David Child for his service to the YRBWEP Workgroup.

Mike Livingston, Washington State Department of Fish and Wildlife (WDFW): Teanaway Community Forest recreation planning is in progress. WDFW and the Washington State Department of Natural Resources have concept maps available and will hold a public meeting on December 14, 2018.

Paul Jewell, Kittitas County: Pleased with progress on storage in 2017, and hopes to see similar progress in 2018. Overall, Paul is glad to see the momentum and longevity of the Integrated Planning process.

David Fast (YN): is pleased with the progress on the Cle Elum Fish Passage. Happy Holidays.

Lisa Pelly, Trout Unlimited (TU): The WaterSMART project is funded by Reclamation for a water marketing study. TU and KRD are partners in the study.

Rick Dieker, Yakima-Tieton Irrigation District: The District is making good progress in reviewing options for replacing its main canal.

Jaclyn Hancock, State Department of Agriculture: Reflecting on 2015 drought impacts report. Highlights the importance of Roza Re-regulation reservoir having been completed.

Jeff Thomas, USFWS: Has been participating in this process for 8 ½ years. I am pleased with the progress. Happy Holidays.

Charlie de la Chapelle, YBSA: Happy to see projects in the lower basin. We need to fix the thermal barrier at the Yakima River mouth, because it could reduce the value of other Integrated Plan efforts for fish restoration.

Wendy McDermott, American Rivers: Wendy has been a participant for 1 year, and over that time has come to appreciate the value of the comprehensive vision and cooperative nature of the Integrated Plan.

Wendy Christensen, Reclamation: On behalf of Dawn Wiedmeier who sends her regrets for not being here, we would like to thank David Child for his service to the YRBWEP Workgroup and SOAC among other groups that he has served on. It has been a pleasure working with him.

Upcoming Meetings

The next YRBWEP Workgroup meeting will be held on Wednesday, March 14, 2018, in Ellensburg (9:30 a.m.).

Attendance

Workgroup Members/Alternates:

Dale Bambrick, National Marine Fisheries Service

Dave Brown, City of Yakima

Wendy Christensen, Bureau of Reclamation – Columbia-Cascades Area Office

Ron Cowin, P.E., Sunnyside Valley Irrigation District

Seth Defoe, Kennewick Irrigation District

Charlie de la Chapelle, Yakima Basin Storage Alliance (YBSA)

Jerome Delvin, Benton County

Rick Dieker, Yakima-Tieton Irrigation District

Peter Dykstra, Plauche & Carr, LLP

Urban Eberhart, Kittitas Reclamation District

David Fast, Yakama Nation – Yakima/Klickitat Fisheries Project

Jaclyn Hancock, Washington State Department of Agriculture

Paul Jewell, Kittitas County

Mike Leita, Yakima County

Mike Livingston, Washington State Department of Fish and Wildlife

Wendy McDermott, American Rivers

Lisa Pelly, Washington Water Project, Trout Unlimited

Scott Revell, Roza Irrigation District and Chair, YRBWEP Water Use Subcommittee
Jeff Tayer, Chair, YRBWEP Habitat Subcommittee (Washington Department of Fish and Wildlife)
Tom Tebb, Washington State Department of Ecology - Office of Columbia River
Jeff Thomas, U.S. Fish & Wildlife Service, Mid-Columbia River Fishery Office
Karen Zelch, US Army Corps of Engineers

Other Attendees:
Douglas Bennett, Bureau of Reclamation
Tina Blewett, Ducks Unlimited
Lori Brady, Sunnyside Valley Irrigation District
Michael Callahan, Washington State Department of Ecology
Bill Campbell, Lake Kachess Homeowners Association
Debbie Carlson, Bonneville Power Administration
David Child, Yakima Basin Joint Board
Stuart Crane, Yakama Nation
Jane Creech, Washington State Department of Ecology
Jeanne Demorest, Bureau of Reclamation - Columbia-Cascades Area Office
Jeff Dengel, Washington Department of Fish and Wildlife
Karen Dera, Bureau of Reclamation - Columbia-Cascades Area Office
Melissa Downes, Washington State Department of Ecology
John Easterbrooks, Washington State Department of Fish and Wildlife
Jack and Beneitta Eaton, Landowners
Kevin Eslinger, Kittitas Reclamation District
Rick Evans, Senator Maria Cantwell's Office
Ben Floyd, White Bluffs Consulting
Joel Freudenthal, Yakima County
Patty Garvey-Darda, US Forest Service – Cle Elum Ranger District
Don Gatchalian, Yakima County
Andrew Graham, HDR Engineering, Inc.
Dan Graves, HDR Engineering, Inc.
Sean Gross, National Oceanic and Atmospheric Administration (NOAA) Fisheries
Bob Hall, YBSA/Yakima Auto Dealers

Justin Harter, Naches-Selah Irrigation District

Mike Hiler, Citizen

Tim Hill, Washington State Department of Ecology

Elayne Hovde, Natural Resource Conservation Service at Reclamation Offices

Joel Hubble, Citizen

Chuck Klarich, Yakima Basin Storage Alliance

Toby Koch, USGS

Walter Larrick, Citizen

Ann Lewis, Yakima Basin Coalition

Edward Lisowski

Chris Lynch, Bureau of Reclamation

Jerrod MacPherson, Benton County

Tom Matthews, US Forest Service

Steve Malloch, Western Water Futures LLC (alternate for American Rivers)

Chris and Samantha Maykut, Friends of Bumping Lake

Doug Mayo, Citizen

Miles McPhee, Yakima County Resident

Saundra McPhee, Yakima County Resident

Jason McShane, Kennewick Irrigation District

Carmen Mendez, City of Yakima

Jean Mendoza, Friends of Toppenish Creek

Jim Milton, Yakima-Tieton Irrigation District

Merritt Mitchell-Wajeeh, Mid-Columbia Fisheries

Judy Neibauer, US Fish and Wildlife Service

Courtney O'Neill, AECOM

David Ortman, Sierra Club

Kirk Rathbun, Kennewick Irrigation District

Colleen Rauert, Washington State Department of Ecology

Joye Redfield-Wilder, Washington State Department of Ecology

Tom Ring, Yakama Nation

Jason Rouvine, US Fish and Wildlife Service

Chad Stuart, Bureau of Reclamation – Yakima Field Office

Duane Unland, Nakaty Enterprises

Richard Visser, Bureau of Reclamation - Columbia-Cascades Area Office

Jason Wagner, Bureau of Reclamation

Rocky Wallace, City of Toppenish

Ben Watts, US Forest Service

Where to Find Workgroup Information

Meeting materials, notes, presentations, and materials submitted during public comment for each Workgroup meeting will be posted on Reclamation's project website: (http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html). A list of information sources, many available online, is also posted on the website.

If you need help finding an information source, contact those listed at the top of page 1 of these notes or Ben Floyd at White Bluffs Consulting, (509) 539-3366 or ben@whitebluffsconsulting.com.

Yakima River Basin Integrated Water Resource Management Plan – Technical Projects update

YRBWEP Workgoup Meeting
Yakima, WA
December 13, 2017

Presented by:

Wendy Christensen, Reclamation

Richard Visser, Reclamation

Cle Elum Pool Raise Project

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Cle Elum Pool Raise

14,600 acre-feet managed for instream flows

- **Modify radial gates**
- **Shoreline protection**
- **Land acquisition**

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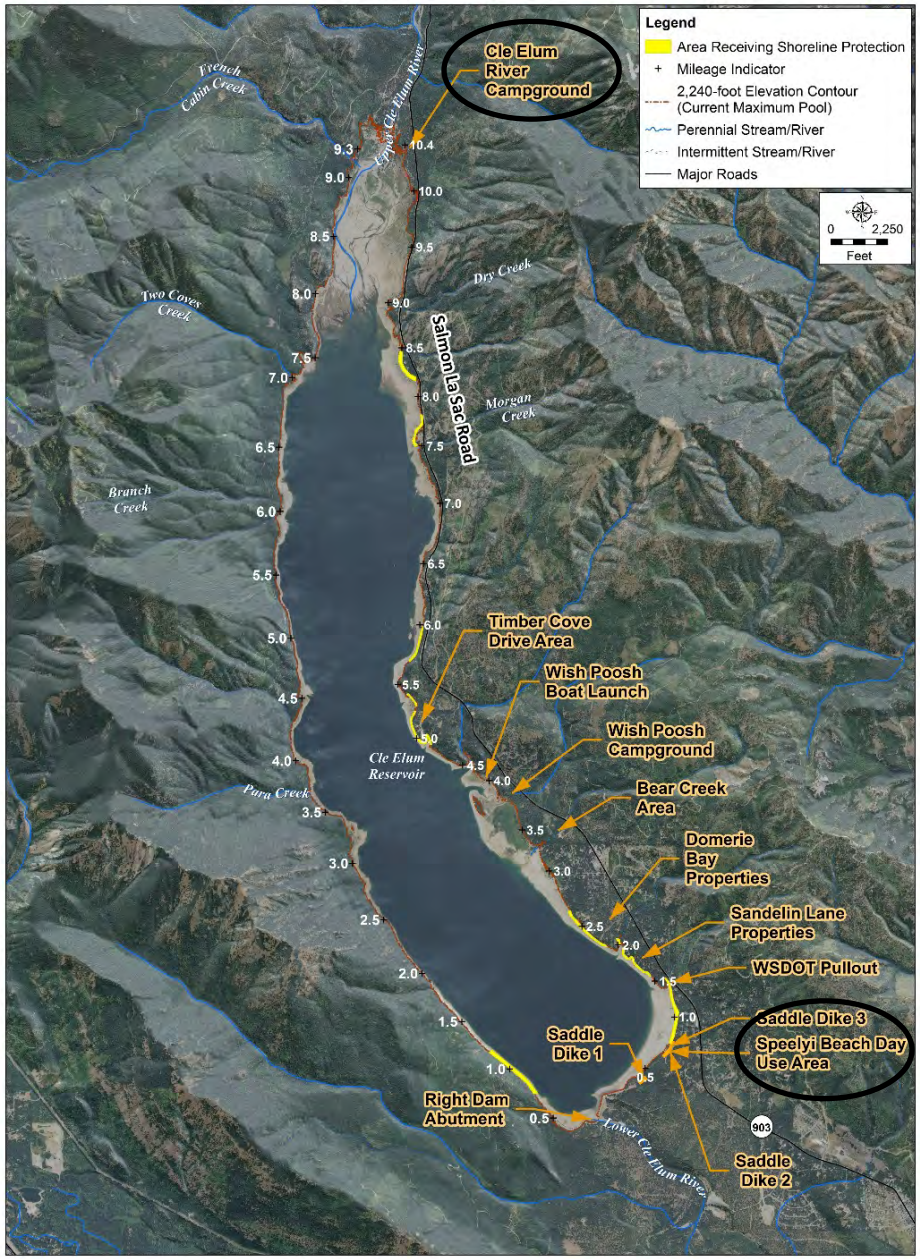
Cle Elum Pool Raise

- **Final EIS; Record of Decision signed June 2015**
- **Radial Gate Modification – completed April 2017**
- **Shoreline Protection**
  - Dikes raised and update completed September 2016
  - Preparing bid packages
  - Continued coordination with USFS and landowners
  - Completed Cle Elum River Campground Nov 2017
  - Award Speelyi Day Use Area Summer 2018, Construction Fall 2018



Cle Elum Pool Raise

Shoreline Protection

USFS Facilities

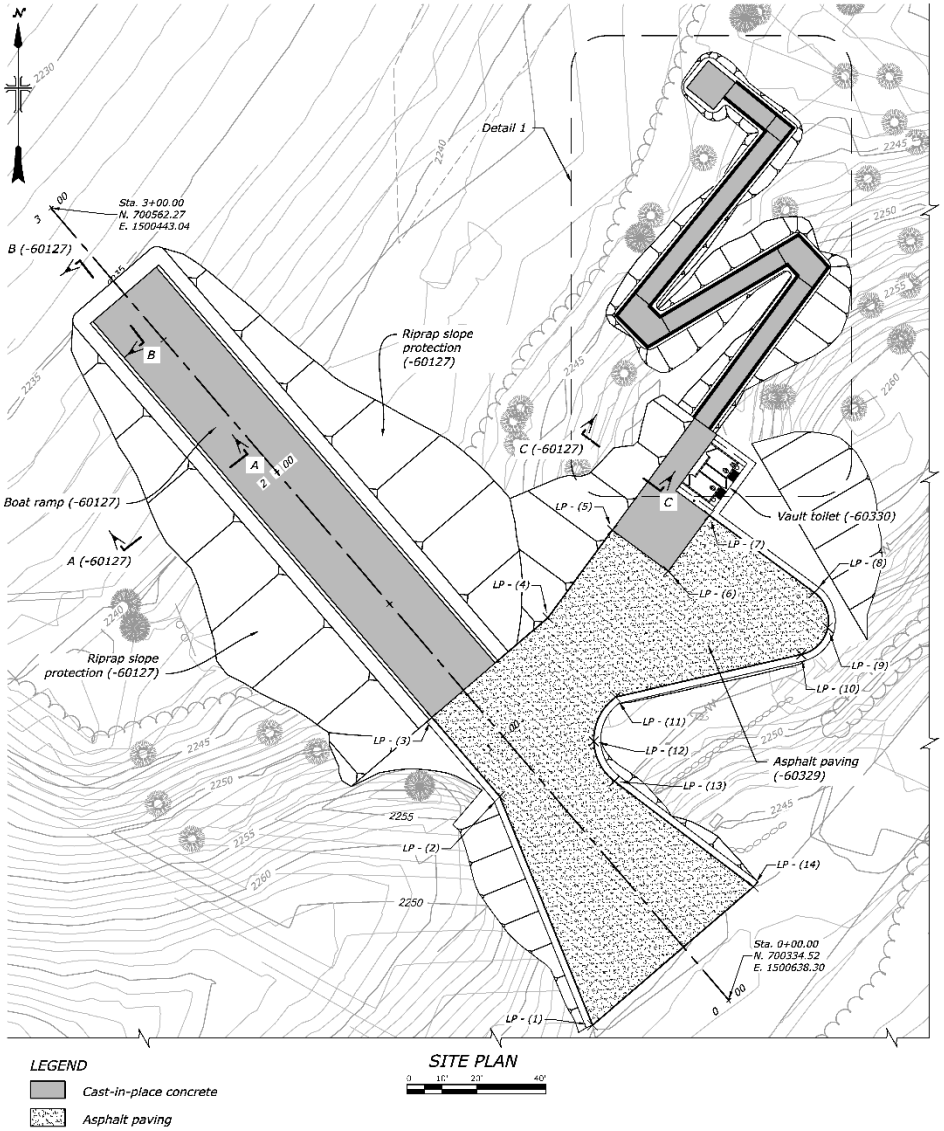
Cle Elum Reservoir Existing Shoreline

Cle Elum River Campground

Cle Elum Reservoir New Shoreline

Cle Elum River Campground

Cle Elum Reservoir Shoreline Construction



Speelyi Day Use Area New Construction

Cle Elum Pool Raise Project Contracts/Timeline

Cle Elum Dam Pool Raise Contracts	Duration	Status
Radial Gates	2 years	Completed – April 2017
Cle Elum River Campground	2 months	Completed – Nov 2017
Speelyi Beach Day Use, Wishpoosh & Speelyi Beach	1 to 2 years	Award - 2018
Sandelin	1 to 2 years	Award - TBD
Domerie Bay	1 to 2 years	Award - TBD
Timber Cove	1 to 2 years	Award - TBD
Anna Bell	1 to 2 years	Award - TBD
Morgan Creek & Night Sky Drive	1 to 2 years	Award - TBD

Kachess Drought Relief Pumping Plant and Keechelus-to-Kachess Conveyance Supplemental DEIS

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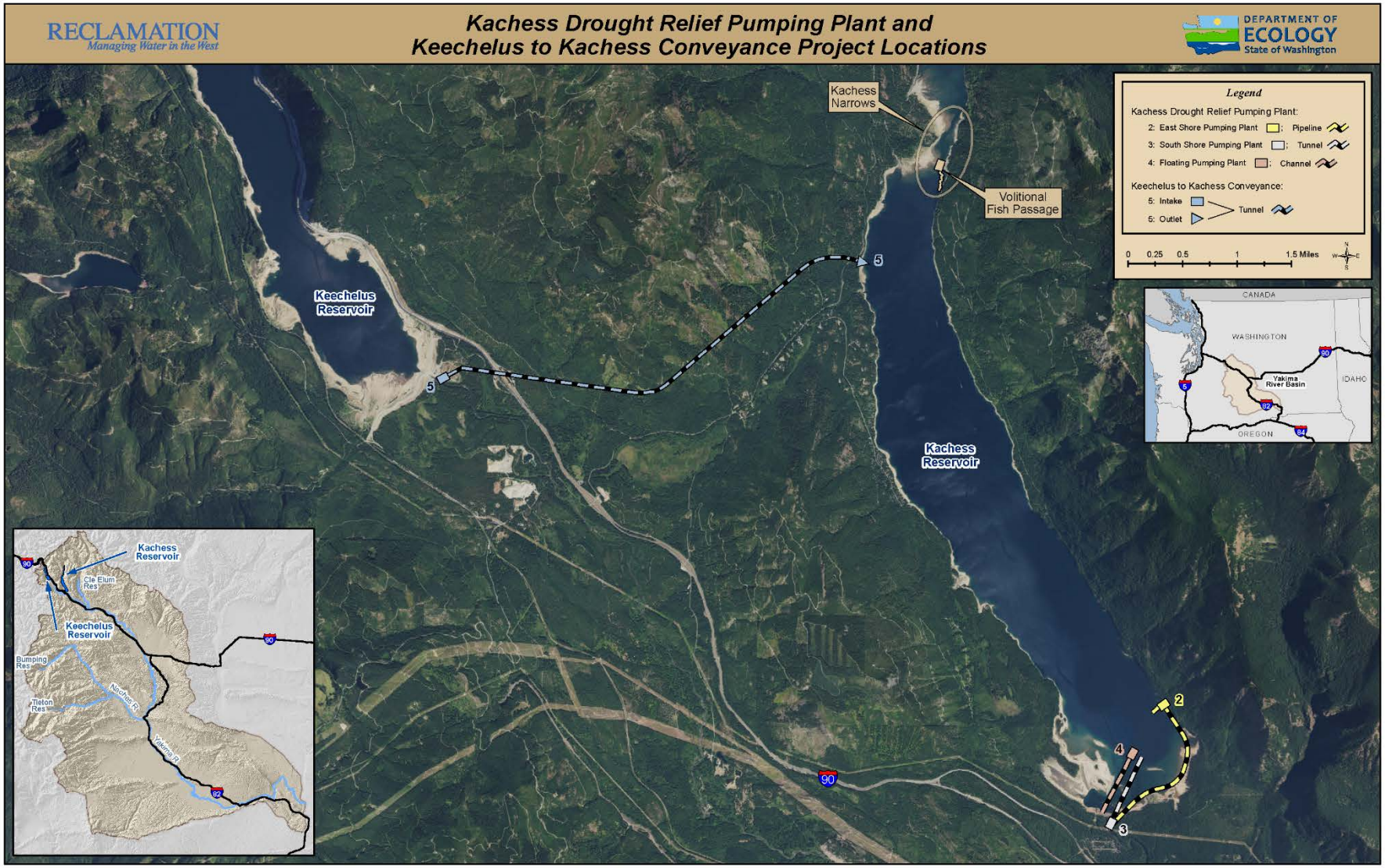
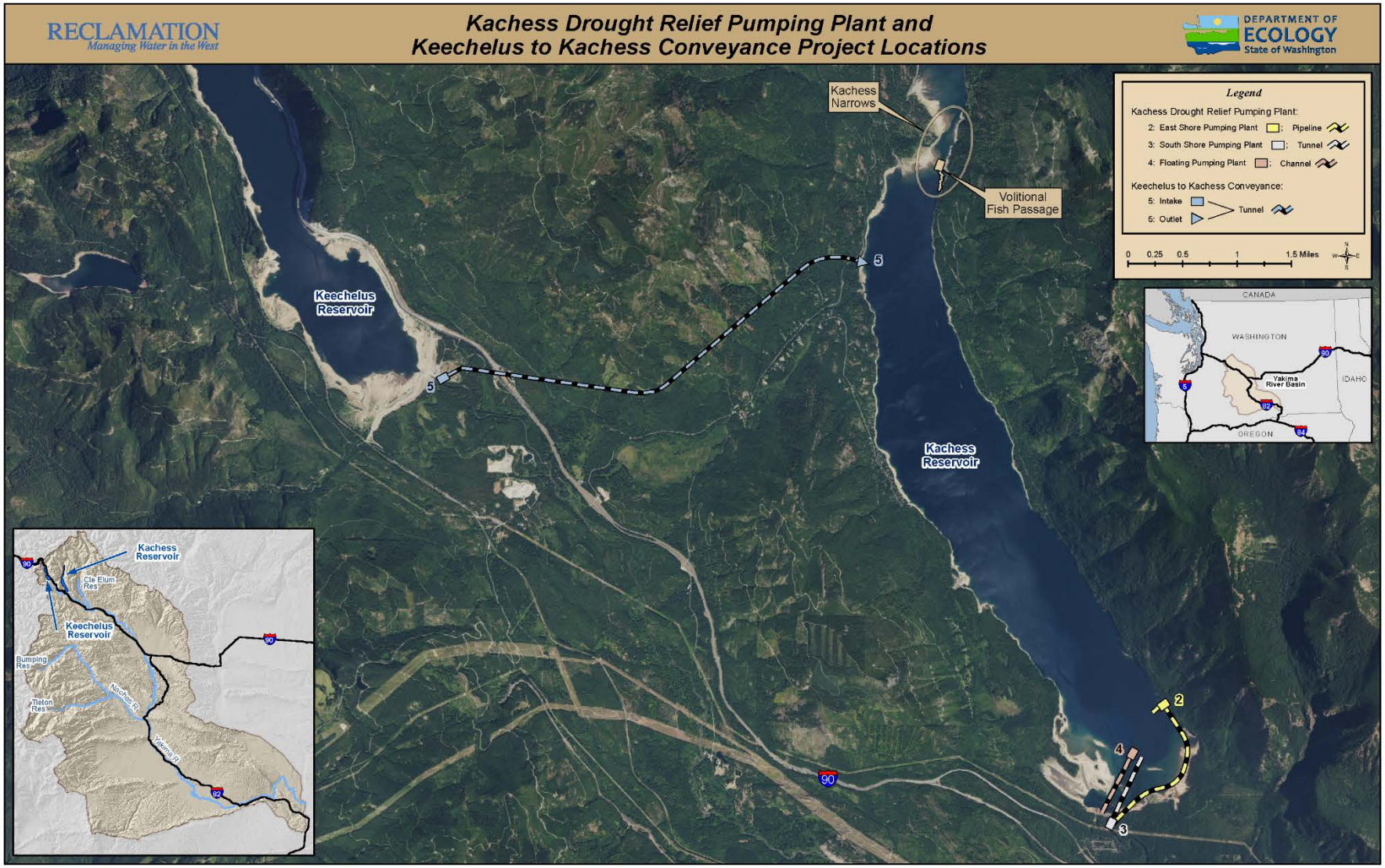
Kachess Drought Relief Pumping Plant & Keechelus-to-Kachess Conveyance Locations



Kachess Drought Relief Pumping Plant & Keechelus-to-Kachess Conveyance Locations



Kachess Drought Relief Pumping Plant

Floating Pumping Plant

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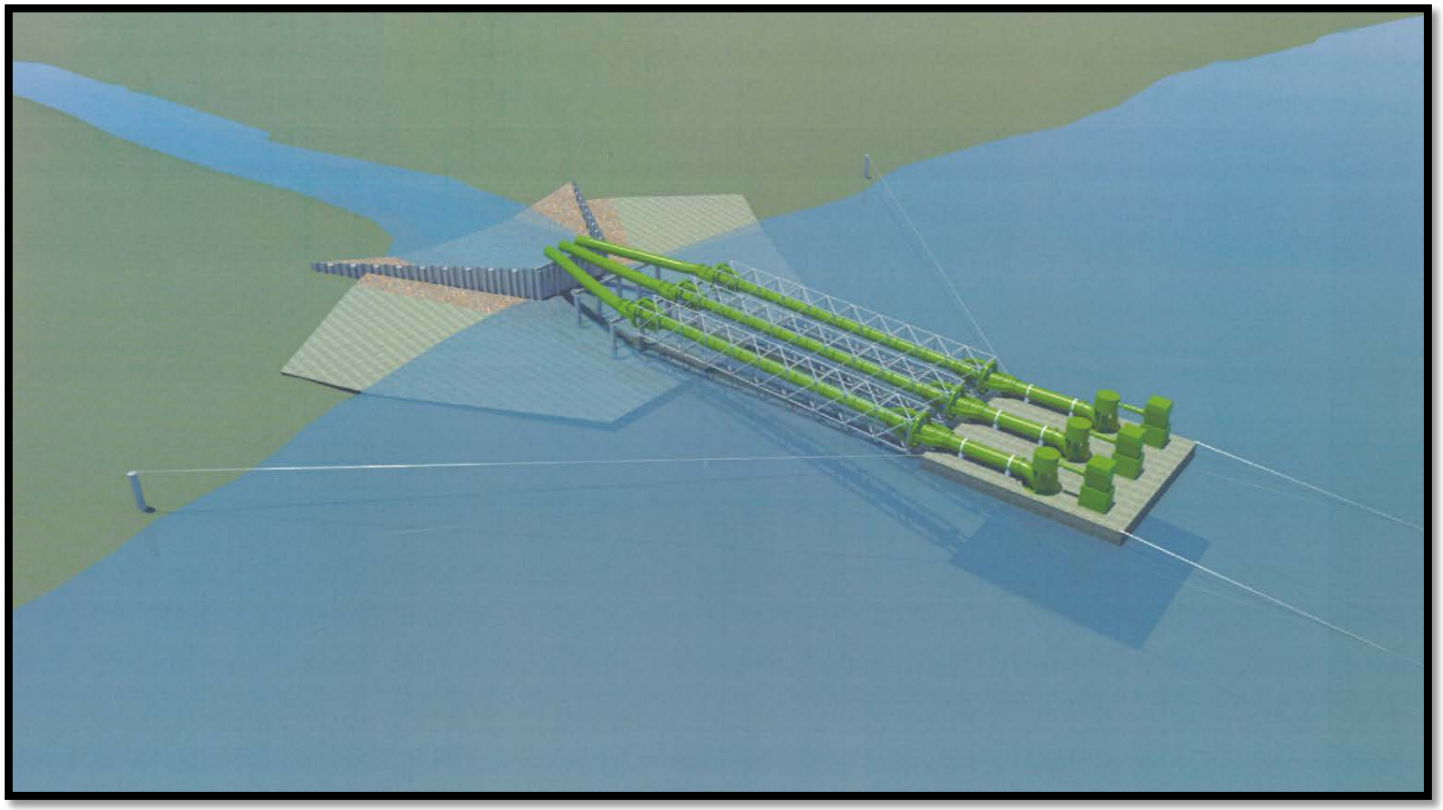
Kachess Drought Relief Pumping Plant
Floating Pumping Plant

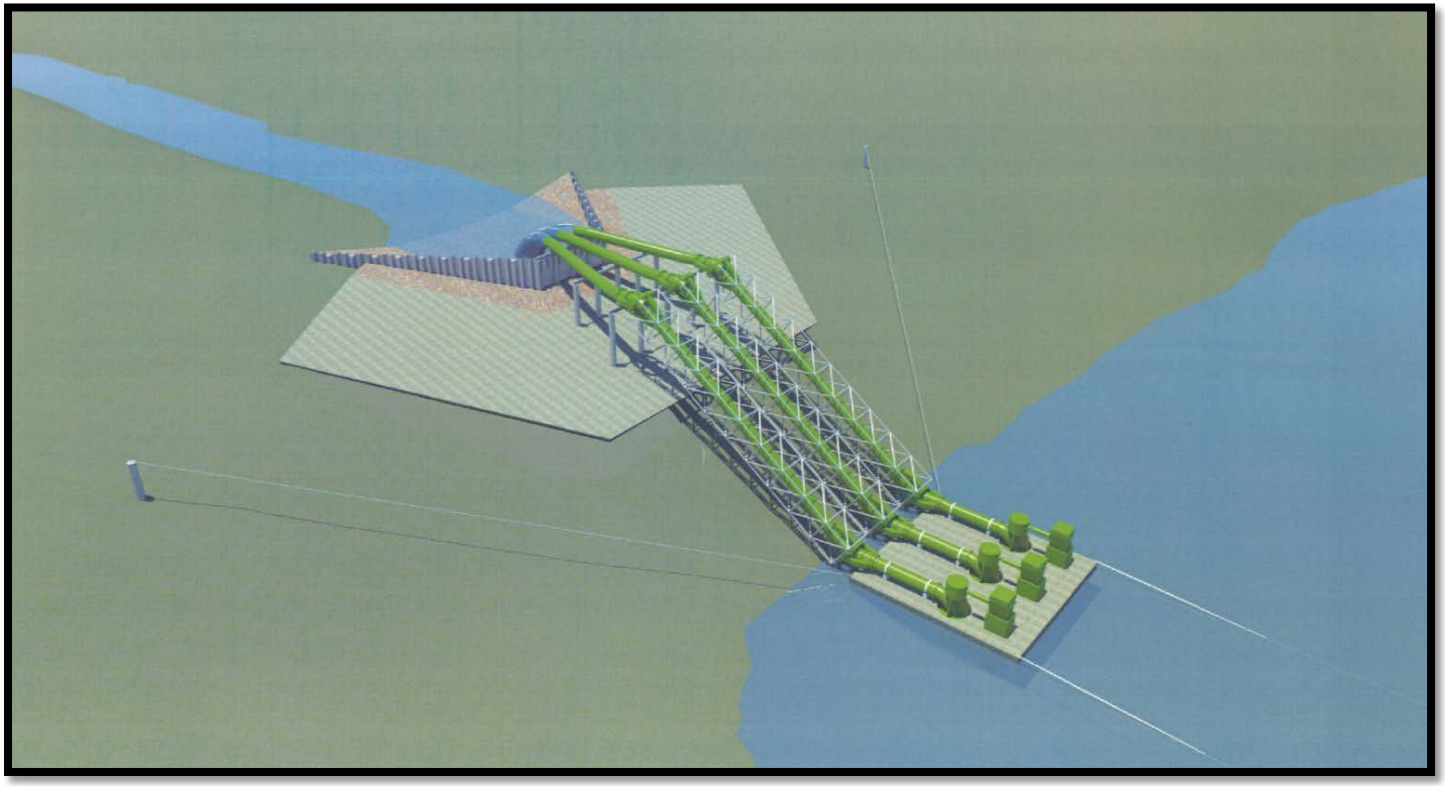
Kachess Reservoir full pool

Kachess Drought Relief Pumping Plant
Floating Pumping Plant



Kachess Reservoir existing low pool

Kachess Drought Relief Pumping Plant
Floating Pumping Plant



Kachess Drought Relief Pumping Plant
Volitional Fish Passage

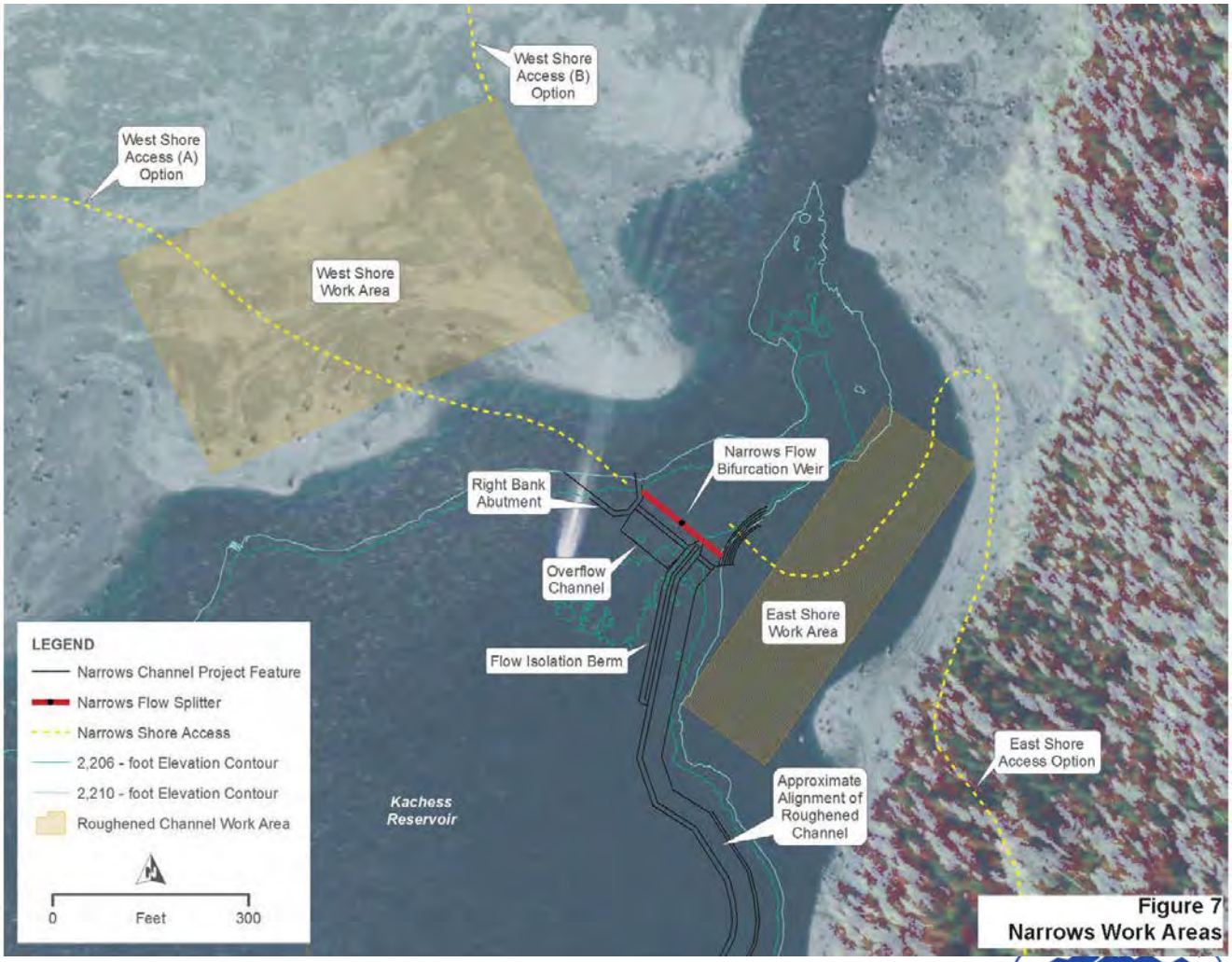


Figure 7
Narrows Work Areas

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Milestones

Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance Projects

NEPA-SEPA Process

Time not to scale

Cle Elum Fish Passage Project

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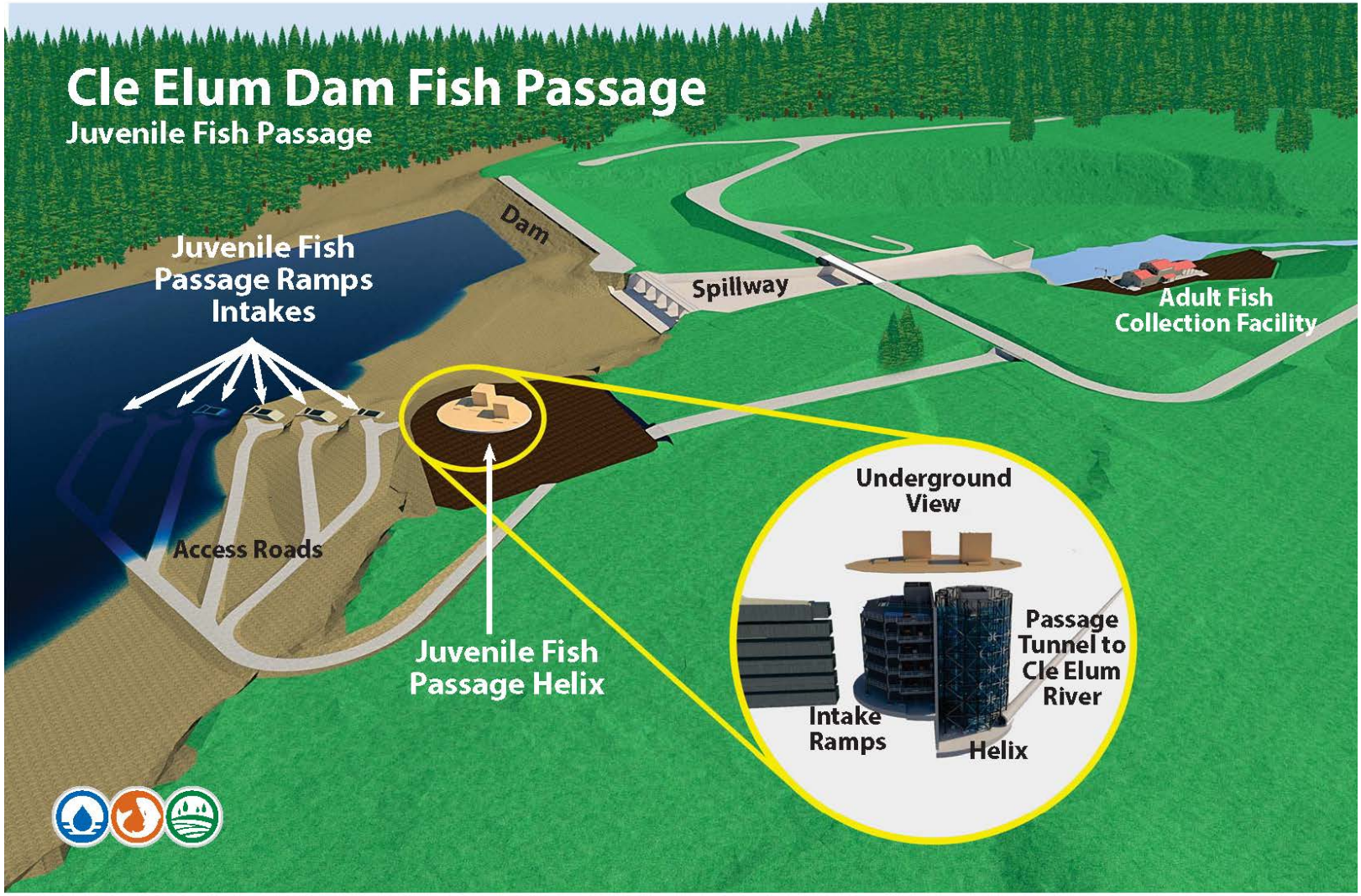


DEPARTMENT OF ECOLOGY State of Washington

Cle Elum Dam Fish Passage Construction

7/15/2014

7/13/2017

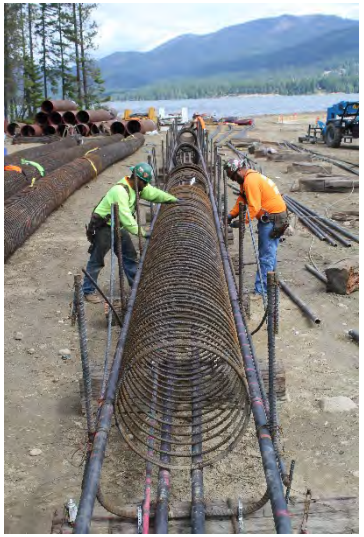
Cle Elum Fish Passage
Secant Construction – Coffer Dam

Cle Elum Fish Passage
Secant Construction – Guide Wall

Secant Pile Example

Cle Elum Fish Passage
Secant Construction – Drilling

Cle Elum Fish Passage - Secant Construction – Rebar Construction & Placing



Cle Elum Fish Passage

Secant Construction – Time Lapse Photos

Cle Elum Fish Passage
Secant Construction – <u>Schedule</u>

Added a Night Shift in July

Fire Slow Down for a Week in September

Piles Complete As of 9/13
- Primary 52%
- Secondary 42%

- Piles Expected to Be Complete By Early November

- Excavation Starting in Spring 2018

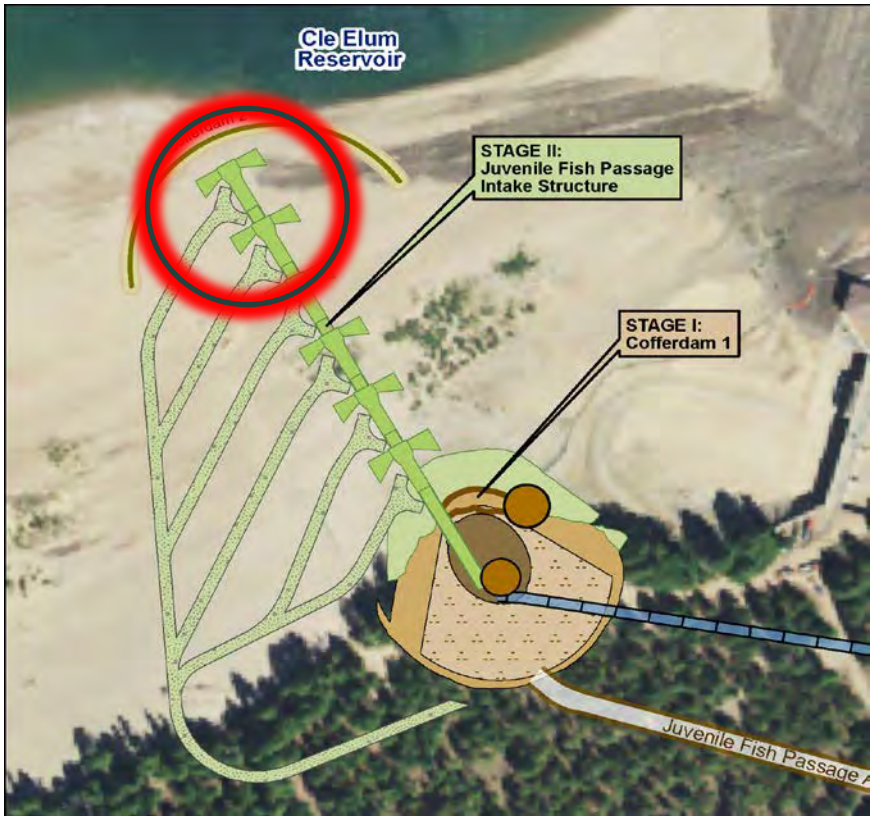
Cle Elum Dam Fish Passage Facilities Contracts/Timeline

Cle Elum Dam Fish Passage Project Contracts	Construction Duration	Status
Roads and Bridge	1 year 3 mo	Completed - 10/16
Secant Pile	2 to 3 years	Construction In Progress
Tunnel	2 Years	Awarded - 08/17 Construction 2018-19
Intake Structure, Gate & Helix	3 years	Award – 2018 Construction 2019-21
Splitter Wall	Less than a year	TBD
Adult Facility	2 years	TBD

Cle Elum Fish Passage
Gates, Helix and Intake Structures Contract
Intake Structures Construction - <u>Drawdown</u>

Contract specification for drawdown:

- Drawdown to below 2170 for at least 75 days
- Drawdown will occur in 1 out of 3 years (2019 – 2021) depending on water year
- Drawdown from end of August into November
- Reclamation will consult with Stakeholders and determine the drawdown year



Cle Elum Dam Fish Passage Whooshh Testing Update

2013 - First Sockeye to be born and raised in the Yakima River Basin in over 100 years to return, released into Cle Elum Lake

Year	Adult Sockeye Released in Reservoir	Returning Sockeye
2009	1,000	
2010	2,500	
2011	4,100	
2012	10,000	
2013	4,000	800
2014	10,000	2,600
2015	10,000	300
2016	10,000	4,600
2017	1,000	350 - estimate

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DEPARTMENT OF ECOLOGY
State of Washington

Cle Elum Fish Passage Test
Whooshh Fish Transport System,

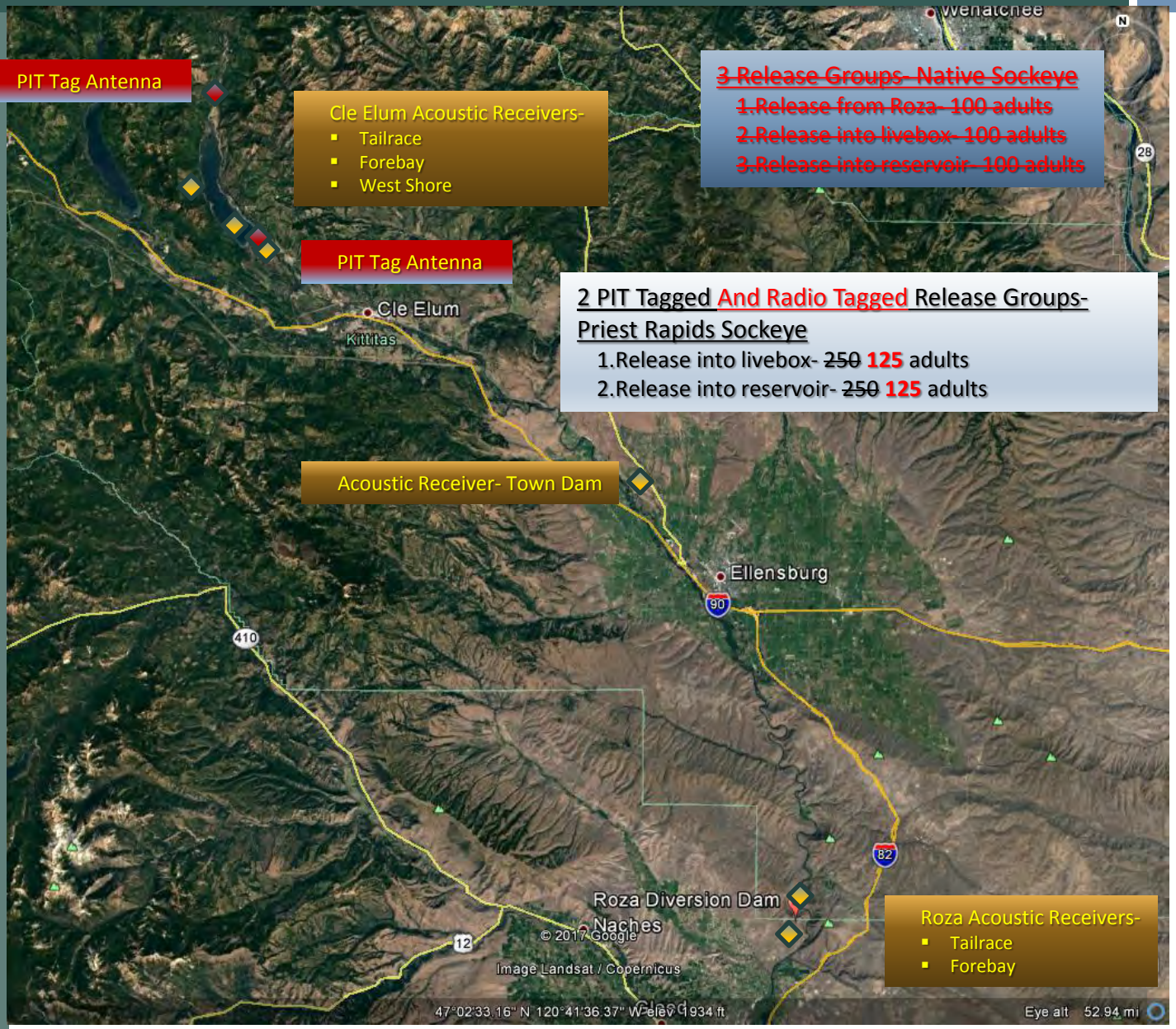
Cle Elum Fish Passage
Whooshh Fish Transport System

Approximately 1700’ long, 150’ high,
Less than 60 seconds transport time for fish

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 August 2016, and at Prosser Dam October 2016, and is currently being tested at Cle Elum Dam
- The Cle Elum Test Transported Sockeye July 2017 with Study Results Expected in December 2017
- Initial indications are that this technology is economical and fish friendly
- http://www.whooshh.com/fish-passage.html


PIT Tag Antenna
Cle Elum Acoustic Receivers-
Tailrace
Forebay
West Shore
~~3 Release Groups- Native Sockeye~~
~~1.Release from Roza- 100 adults~~
~~2.Release into livebox- 100 adults~~
~~3.Release into reservoir- 100 adults~~
PIT Tag Antenna
Cle Elum
Kittitas
2 PIT Tagged And Radio Tagged Release Groups-
Priest Rapids Sockeye
1.Release into livebox- ~~250~~ 125 adults
2.Release into reservoir- ~~250~~ 125 adults
Acoustic Receiver- Town Dam
Ellensburg
90
410
82
Roza Diversion Dam
Naches
12
© 2017 Google
Image Landsat / Copernicus
Roza Acoustic Receivers-
Tailrace
Forebay
47°02'33.16" N 120°41'36.37" W elev 1934 ft
Eye alt 52.94 mi

Sockeye Research - Cle Elum 2017

2017 Cle Elum River Sockeye returns at Roza as of 9/6/17 = 137 according to ykfp.org	
2017 Columbia River Sockeye count at Bonneville as of 9/6/17 = 87,686	
	Bonneville count is only 27.8% of the ten-year average which is 315,610 according to the Fish Passage Center
	2017 is lowest count since the 24,376 count in 2007, heightest recent count was in 2015 615,179.

Tag Date	# Fish Delivered	# WFTS Transported	Weight Range	Forklength Range	Comments
July 14,	35	35	0.5-2.1 kg	35-56 cm	25 PIT- and Radio-tagged, 10 PIT-tagged
July 17,	28	27	0.6-2.1 kg	38-56 cm	
July 18,	32	32	0.5-1.9 kg	37-57 cm	
July 19,	31	31	0.7-2.0 kg	40-56 cm	
Totals	126	125**	Ave wt 1.38 kg	Ave FL 50 cm	Ave passage time 56 sec*

Whooshh Video
July 2017

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DEPARTMENT OF
ECOLOGY
State of Washington

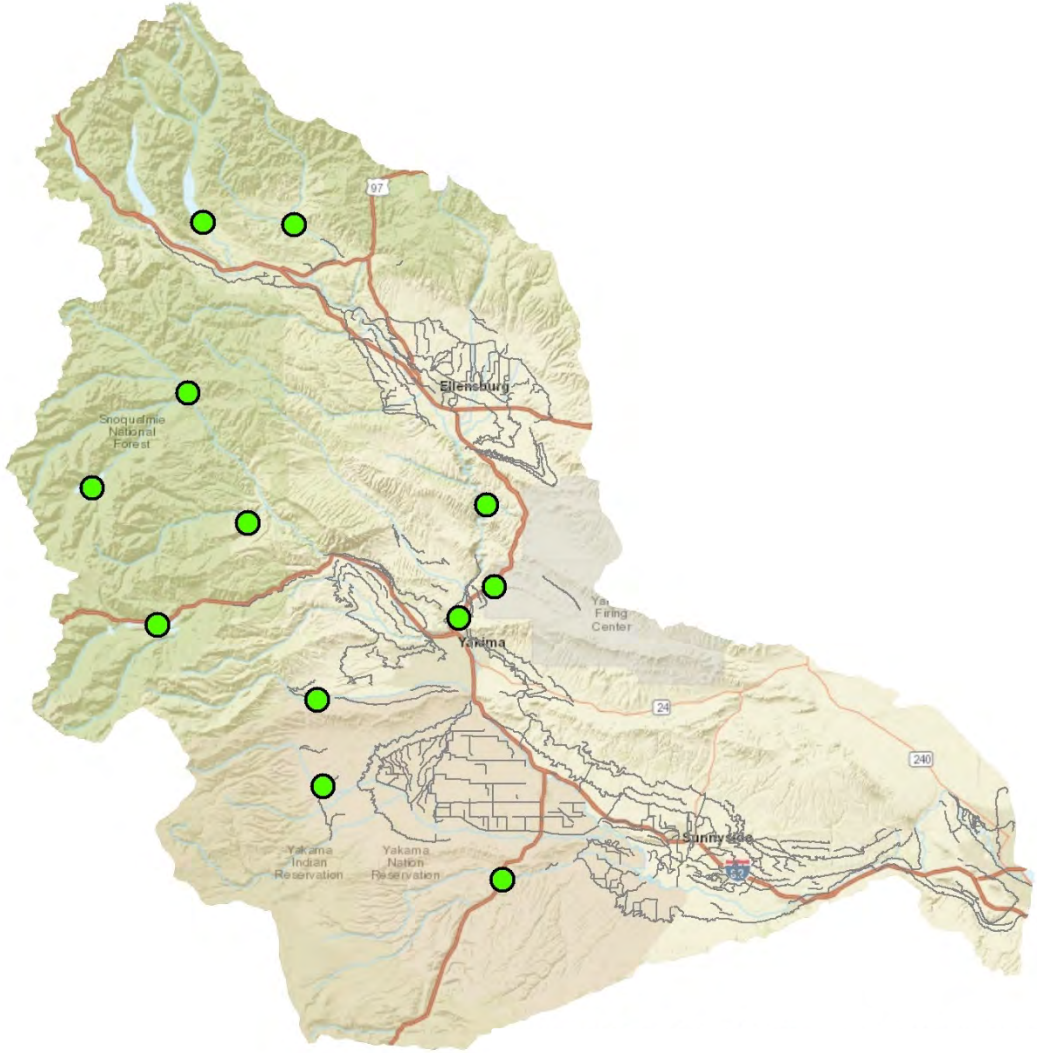
Questions?

For further information on the web:

http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/

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

Potential Reservoir Sites

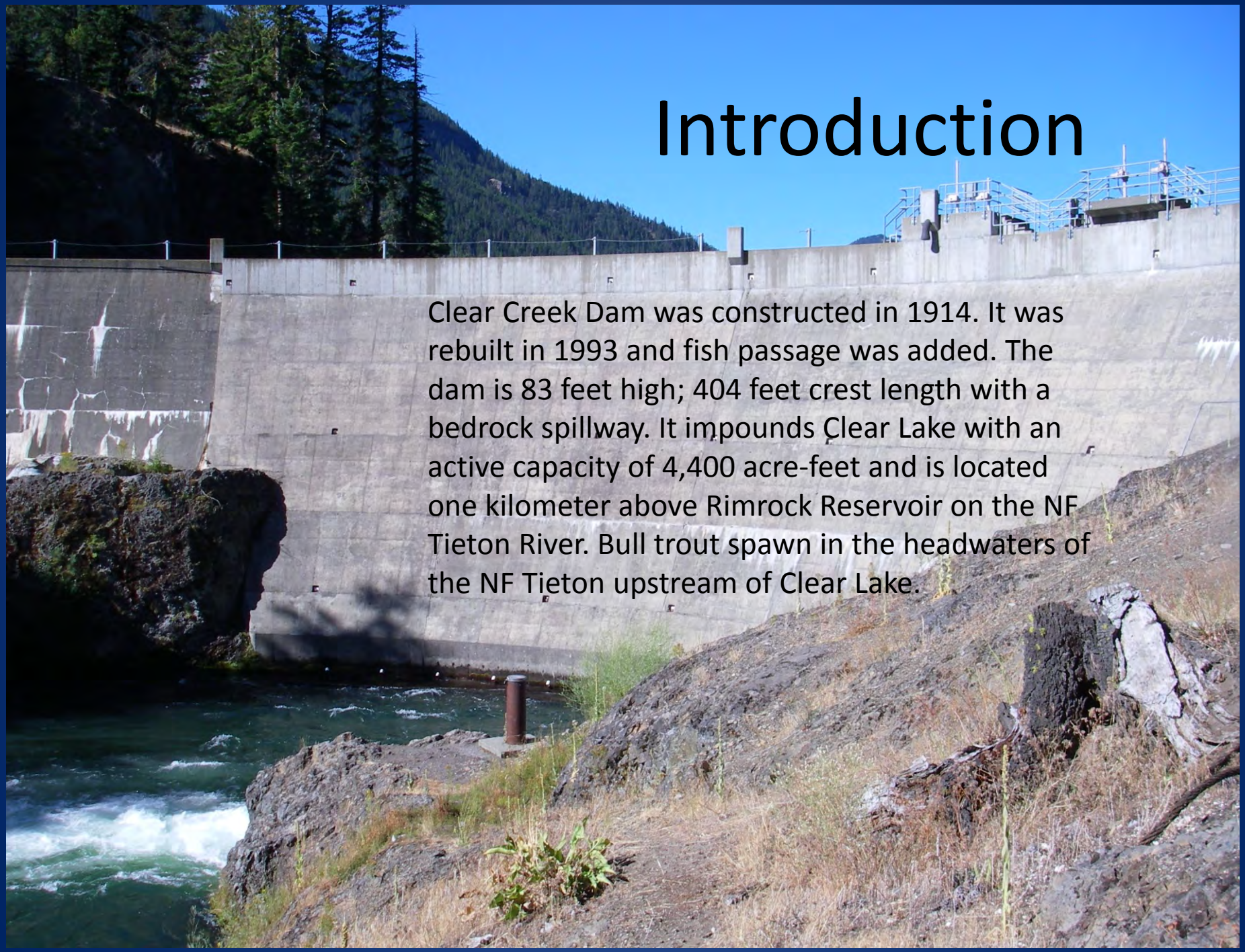


NF Tieton Bull Trout Transport Project

2016 and 2017

Jeff Thomas, Pat Monk, Rob Randall

Yakima River Basin Water Enhancement Project



Introduction

Clear Creek Dam was constructed in 1914. It was rebuilt in 1993 and fish passage was added. The dam is 83 feet high; 404 feet crest length with a bedrock spillway. It impounds Clear Lake with an active capacity of 4,400 acre-feet and is located one kilometer above Rimrock Reservoir on the NF Tieton River. Bull trout spawn in the headwaters of the NF Tieton upstream of Clear Lake.


World
N
NF-740
NF-744
NF-745
NF-745
100 feet
25 m
© 2014 Microsoft Corporation
© 2013 Nokia

Review of 2012-2015 Passage Assessment

- 29 Post-spawn adult Bull Trout PIT-tagged in the NF Tieton River above Clear Lake, monitored for movement
- 27 of these fish were detected in subsequent years. Most appear to reside in Clear Lake; just four were confirmed to have migrated downstream of Clear Lake after spawning
- The estimated size of the spawning population was 59 individuals with a 95% confidence interval between 37-135

Review of Passage Assessment cont'd

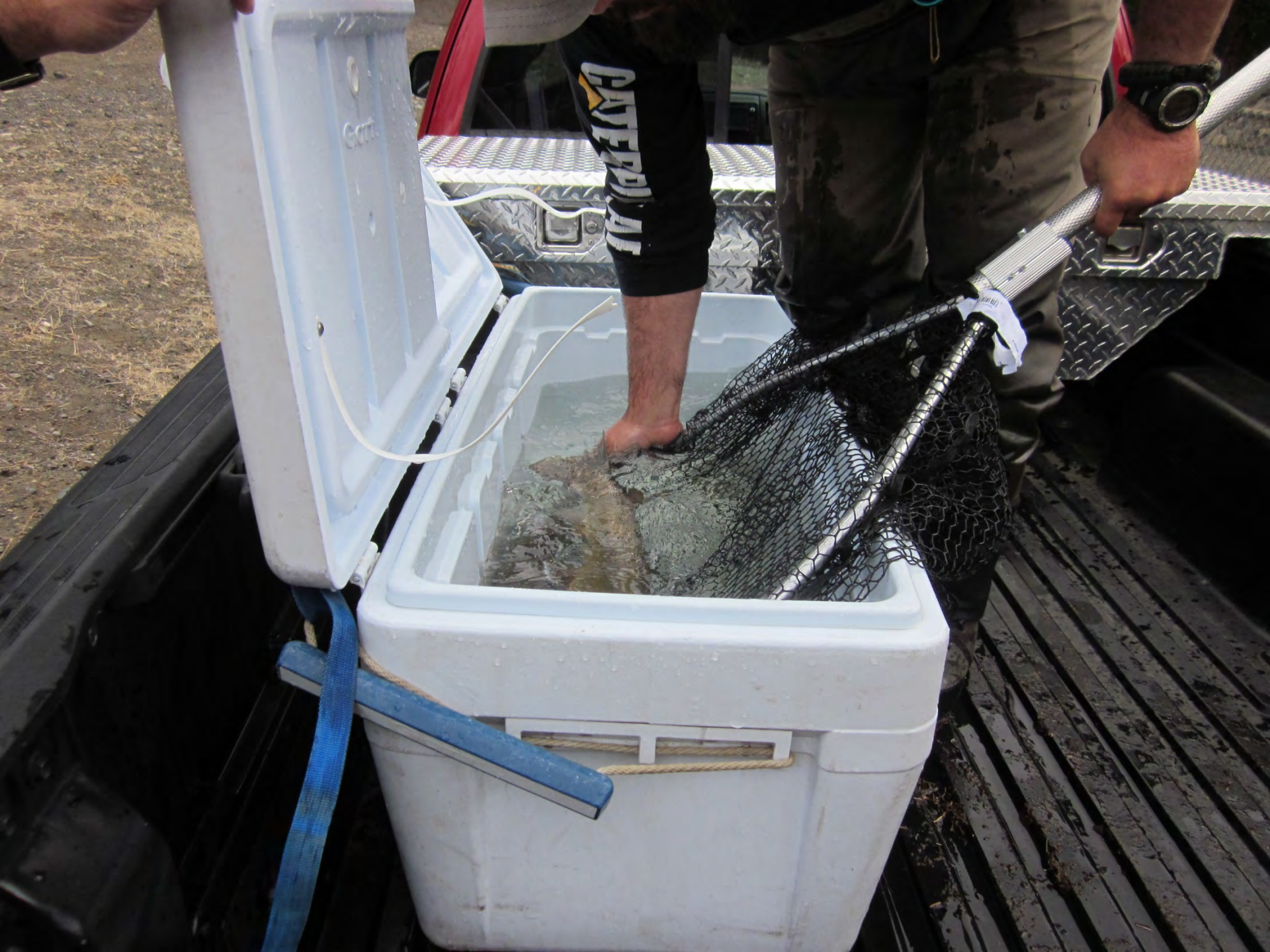
- 22 fish were tagged below the dam in 2014-15 (19 NF Tieton, one SF Tieton, one Indian Creek, one hybrid)
- The size of the population found below the dam was estimated at 71 individuals with a 95% confidence interval of 41-95
- After four years of study, the assessment concluded that adult bull trout were unable to migrate up the spillway channel under any conditions

Capture and Transport Study Objectives

- Capture adult bull trout in the stilling basin directly below Clear Creek Dam
- Tag the fish with HDX PIT tags and collect genetic samples
- Transport tagged bull trout above the dam
- Monitor movements of the fish in the NF Tieton watershed
- Assess the spawning success of transported fish

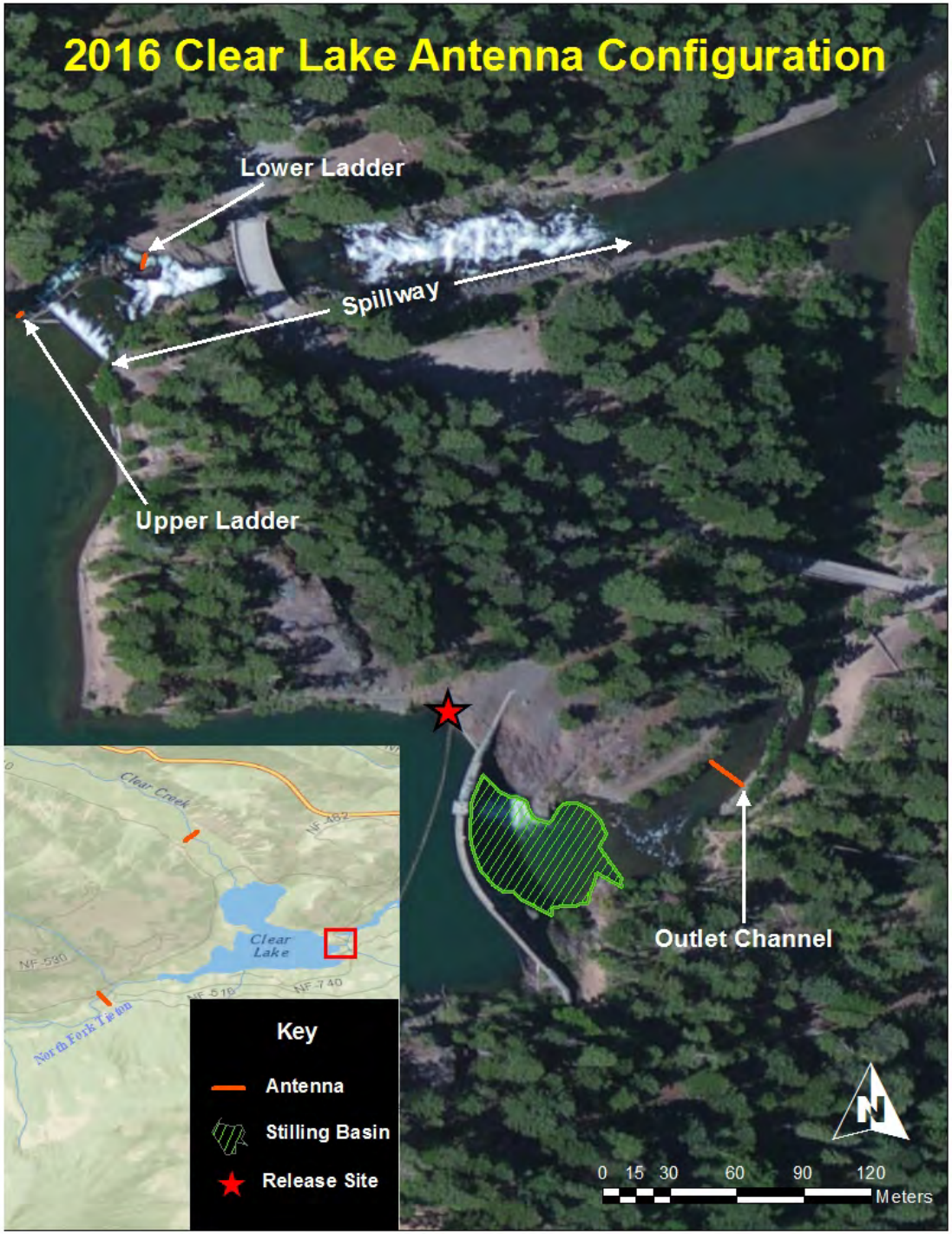
32.5 cm July 7

70 cm July 7


CATERPILLAR


KOBALT

2016 Clear Lake Antenna Configuration



Results 2016

Thirty fish were captured and transported during five sampling dates between July 7 and August 3.

Seventeen of these fish genetically keyed to the NF Tieton population; 14 of them were subsequently detected up the NF Tieton River

Of the remaining 13 fish, seven belonged to the Indian Creek population, five to the SF Tieton, and one was a hybrid


NRS-3
NRS-3
RESEARCH


RESEARCH


RESEARCH
ELITE

Results 2017

Thirty-six fish were captured during five sampling dates between June 26 and July 31

Nineteen of these fish genetically keyed pure to the NF Tieton population; These were the only fish transported. Nine belonged to the Indian Ck population, 6 SF Tieton, and two hybrids; all but the hybrids were released downstream

Twelve of the transports were subsequently detected up the NF Tieton River along with seven from the previous year

Conclusion

Thirty-six NF Tieton bull trout were transported above Clear Creek Dam in 2016 and 2017. Eighteen of these fish appeared to be females and eight males (we could not visually determine the sex of the other 10)

The number of bull trout redds counted in the NF Tieton River above Clear Lake last September was 39. This is the highest count recorded in the 10 years since surveys began and nearly double the ten-year average of 20 redds


Please provide us passage at Clear Creek Dam

YAKIMA BASIN
INTEGRATED PLAN

LOWER RIVER SUBGROUP AND 2018 WORK PLAN

Purpose and Composition

- Formed with focus to provide a specific look at the Lower Yakima River from Parker Gage to the Mouth
- Work as a Liaison to Entities working on Lower Basin Solutions
- Bring Focused effort to improving conditions in the Lower Basin
- Composed of Members of the Workgroup
- Attended by many others that are actively working on improvements to the Lower Basin

Unique in Purpose

- Lower River Subgroup provides a cross section of the Integrated Plan
- Seven Elements:
  - Fish Passage
  - Habitat Enhancement
  - Modifying Existing Structures and Operations
  - Surface Storage
  - Market-Based Reallocation
  - Groundwater Storage
  - Enhanced Water Conservation

Action Plan

- Goals:
  - Identify Needs
  - Active Projects/Studies
  - Future Projects

- Action Plan developed in sections based on the Seven Elements

On-Going Activities

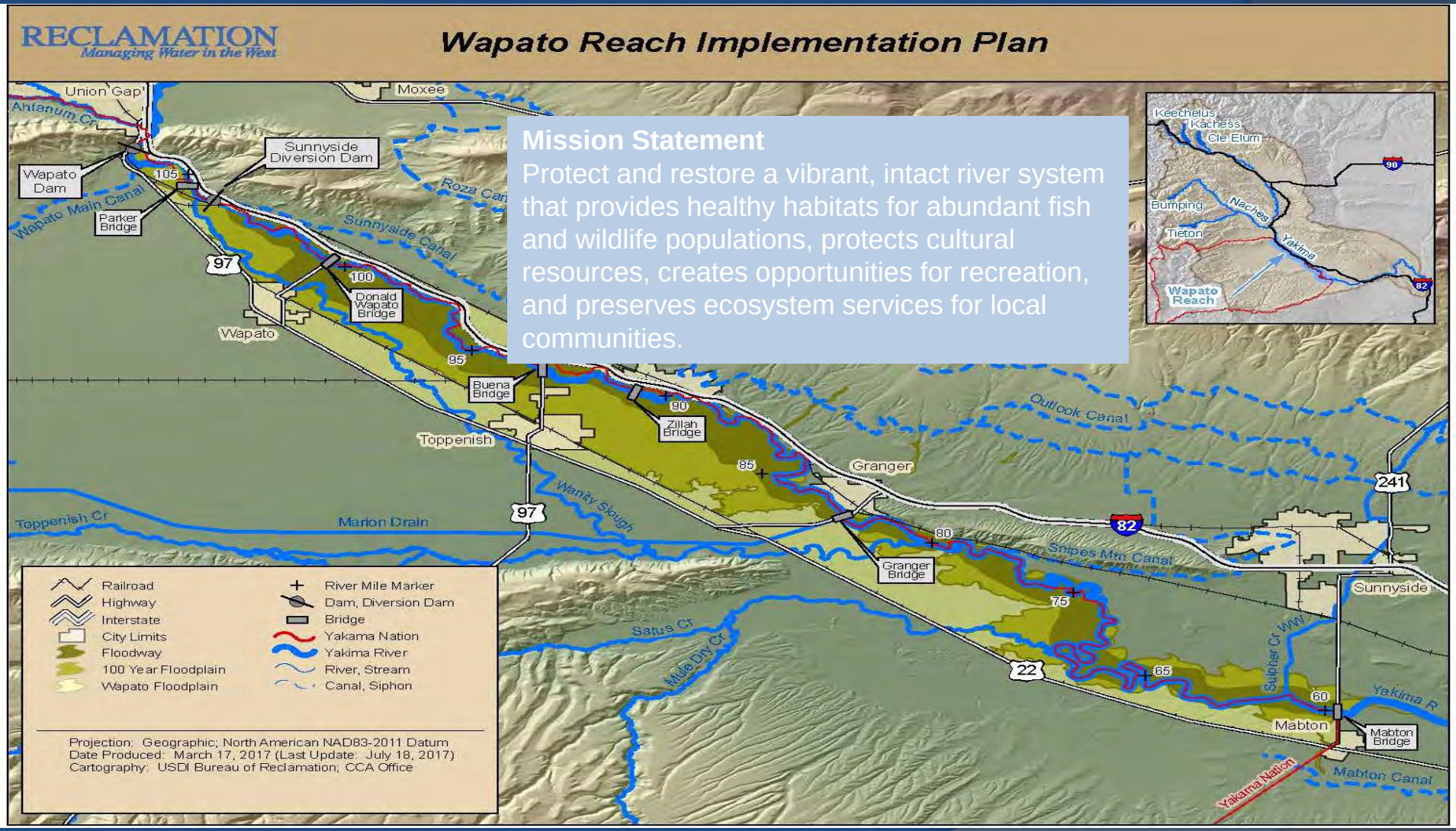
- Work Plan
- Water Supply Improvements
- Yakima River Delta Enhancement (Bateman Island Causeway Project)
- Wapato Reach
- Cold Water Refugia Pilot Projects
- Lower River Smolt Outmigration Study

Yakima River Delta Enhancement

Project Description:

Restore the Yakima Delta to benefit migrating salmon and steelhead, improve overall water quality and habitat, protect cultural resources, and maintain and create opportunities for public recreation and private interests, including a boat launch and marina, through local and regional planning, public and private land management, and environmental regulation.

Wapato Reach Project



Mission Statement

Protect and restore a vibrant, intact river system that provides healthy habitats for abundant fish and wildlife populations, protects cultural resources, creates opportunities for recreation, and preserves ecosystem services for local communities.

Cold Water Refugia Pilot Projects

Duportail Boat Launch
to Bateman Island
08/14/08

Migration Survival of Juvenile Chinook Salmon and Steelhead from Wapato Dam to the Mouth of the Yakima River, Washington, 2018

Tobias Kock[1], Michael Porter[2] and Russell Perry[1]

December 13, 2017

[1]U.S. Geological Survey
[2]Yakama Nation Fisheries

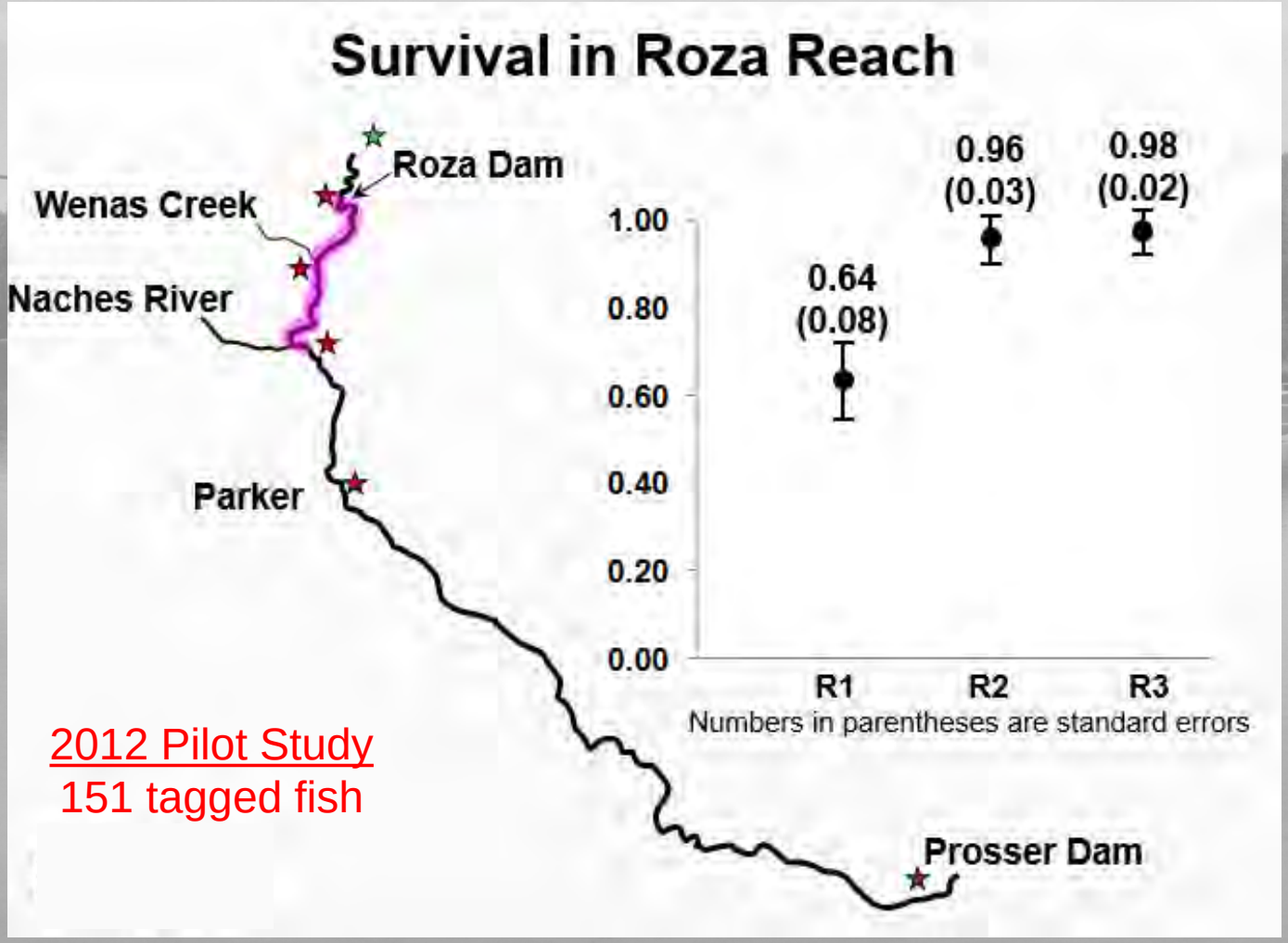
U.S. Department of the Interior
U.S. Geological Survey

Overview

- Species
  - Yearling Chinook salmon (*n* = 350)
  - Subyearling Chinook salmon (*n* = 350)
  - Steelhead (*n* = 400)
  - *Lamprey (n = 200)*
- Study area
  - Lower Yakima River: Yakima to Richland
  - *Likely to include mainstem Columbia River*
- Duration
  - 2018, 2019, 2020
  - 2018 is pilot study
  - March to July each year
- Funding and collaboration
  - Funding: Yakama Nation and Bureau of Reclamation
  - Fieldwork, analysis and reporting: U.S. Geological Survey and Yakama Nation

USGS

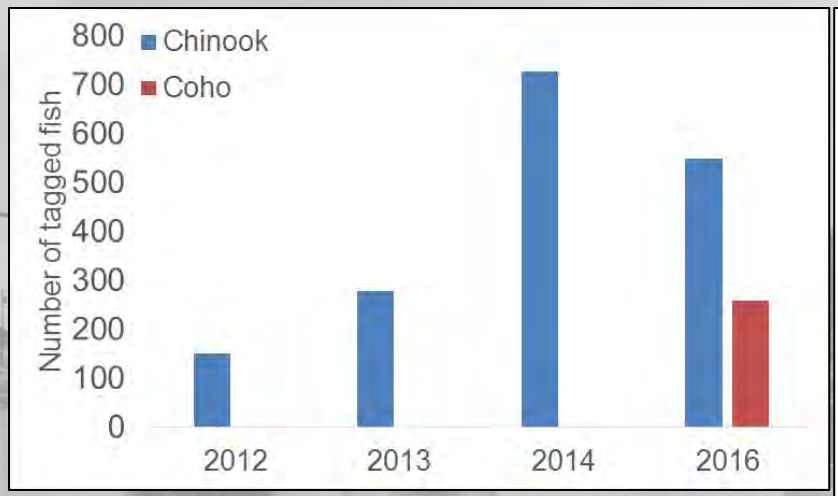
Roza Reach Studies

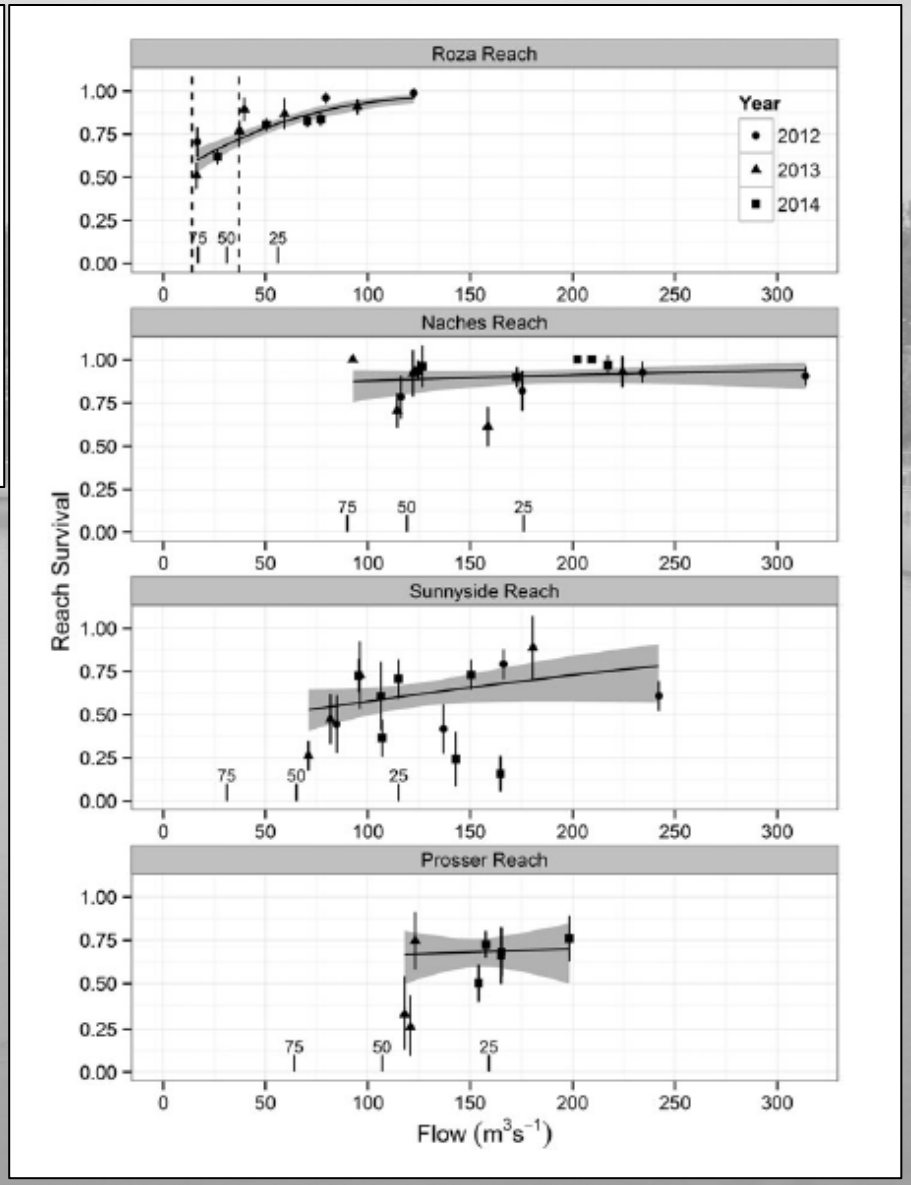


2012 Pilot Study
151 tagged fish

USGS

Roza Reach Studies





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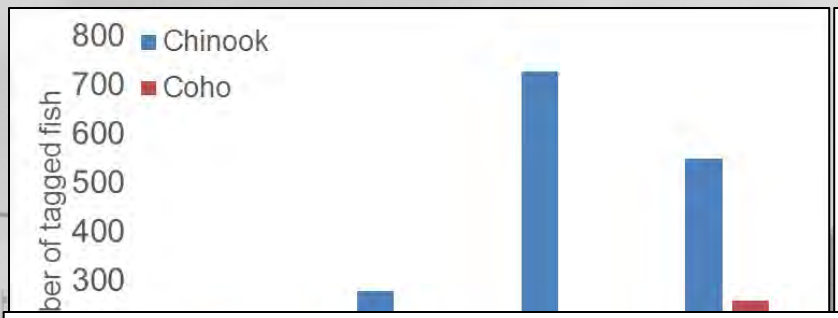
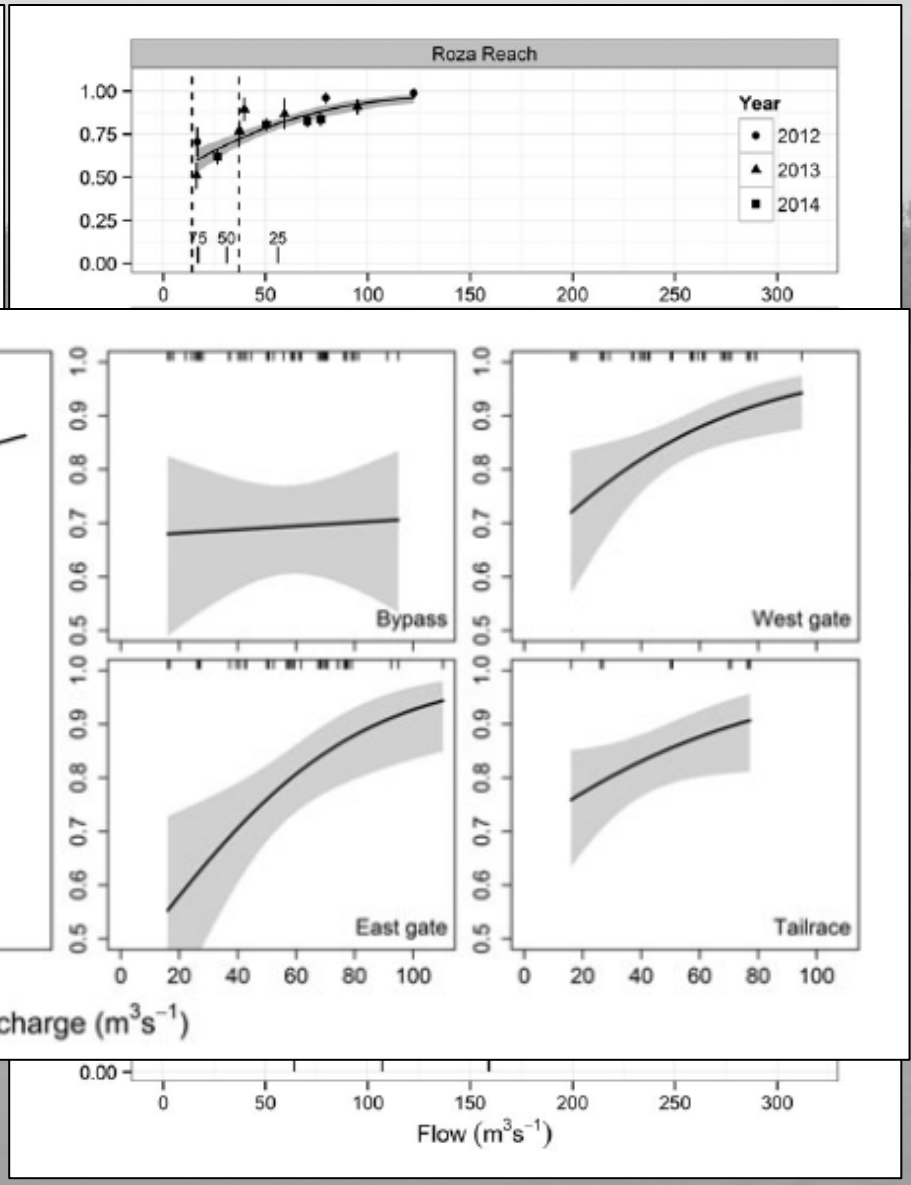
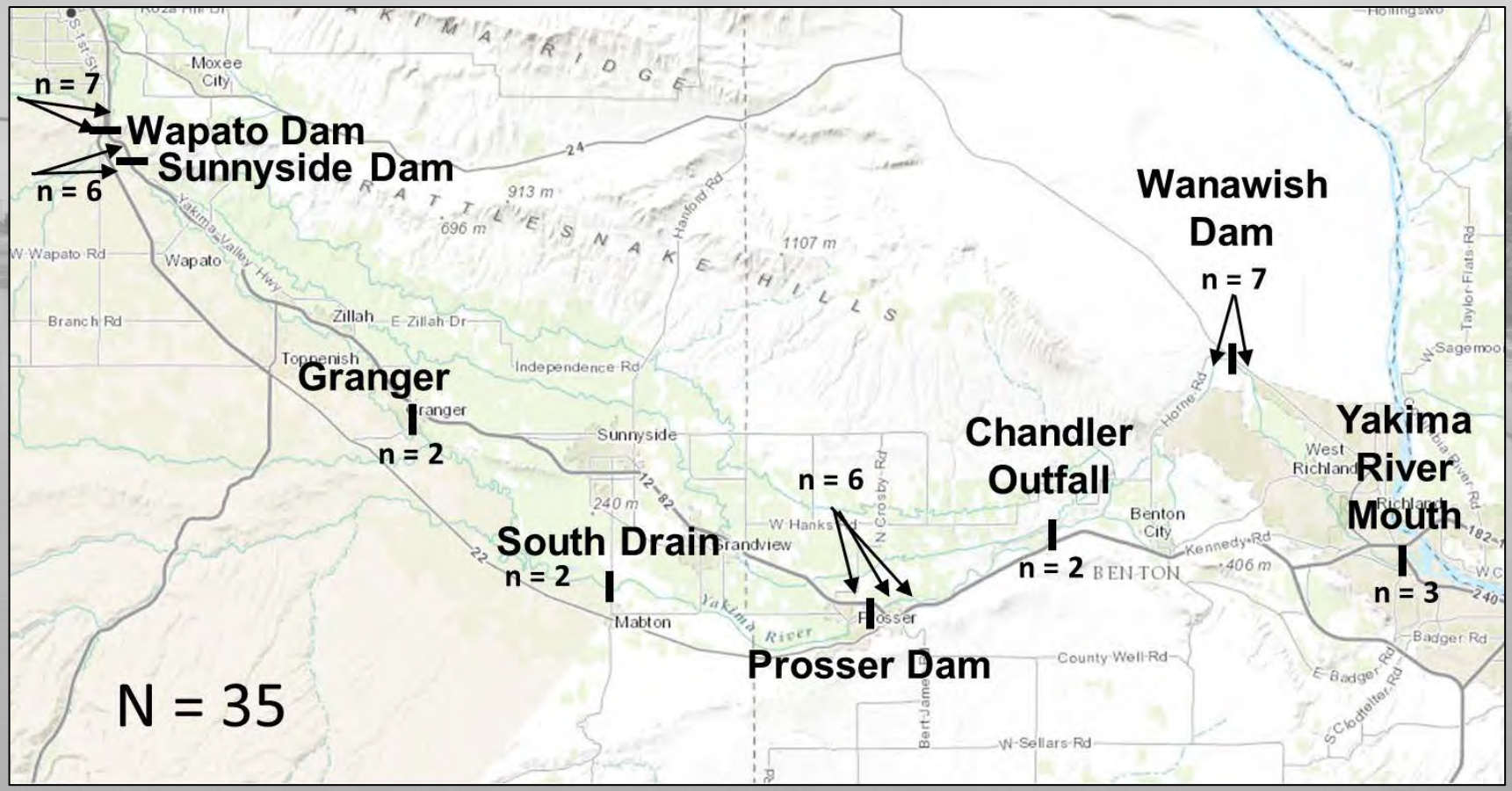
Roza Reach Studies





Study Area and Monitoring Sites



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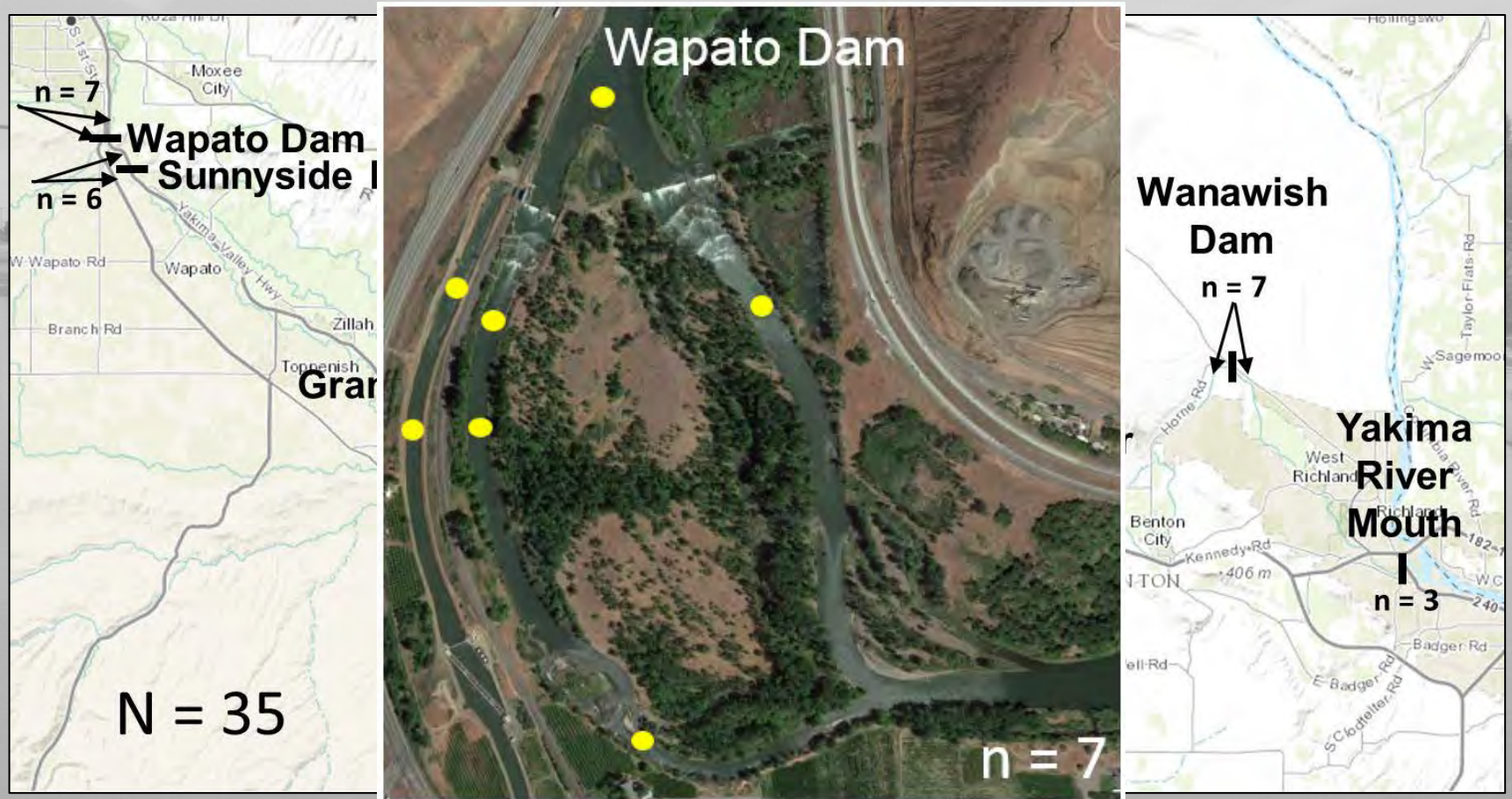
Study Area and Monitoring Sites

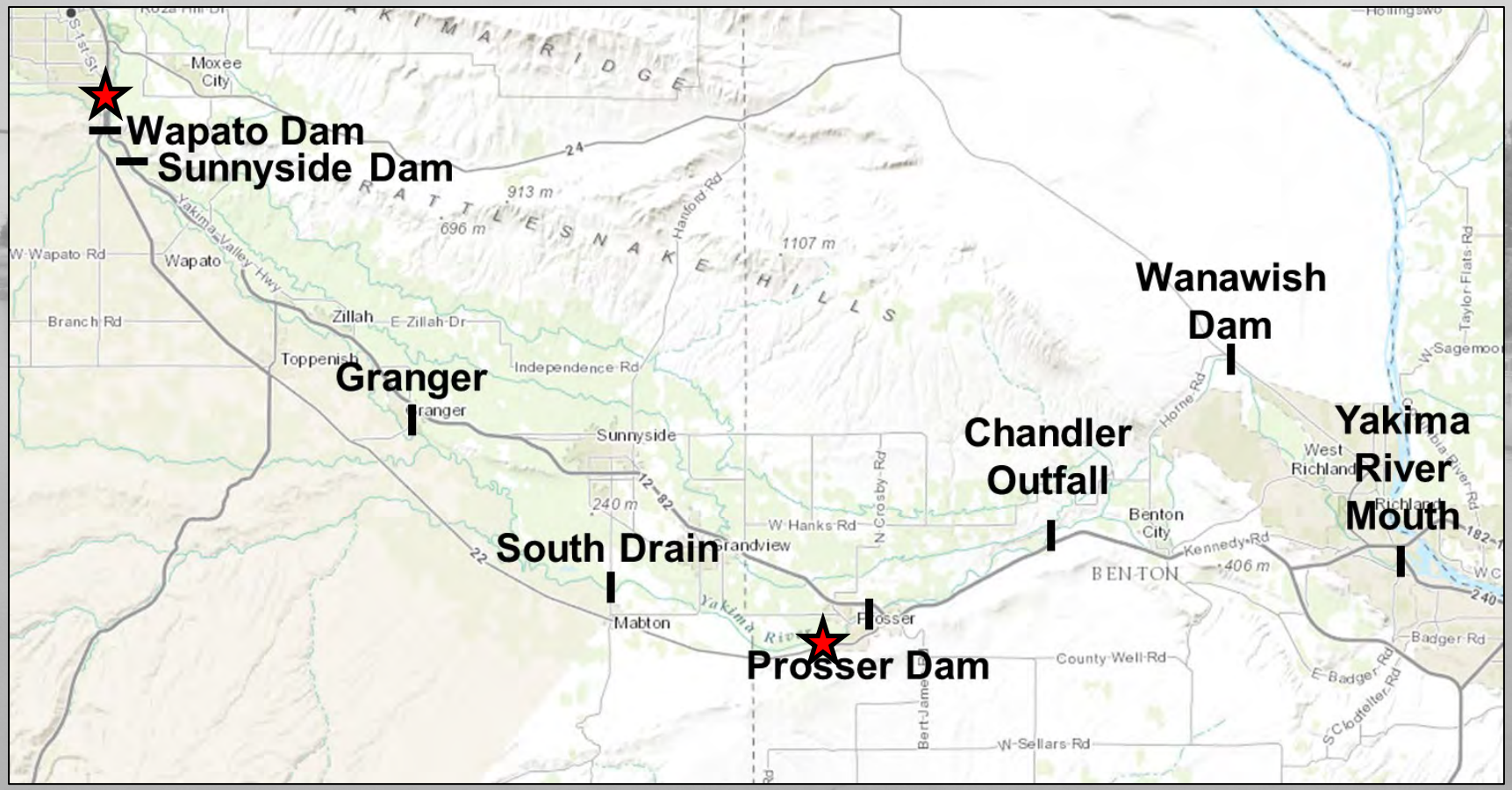


USGS

Study Area and Monitoring Sites

USGS

Fish Tagging and Release



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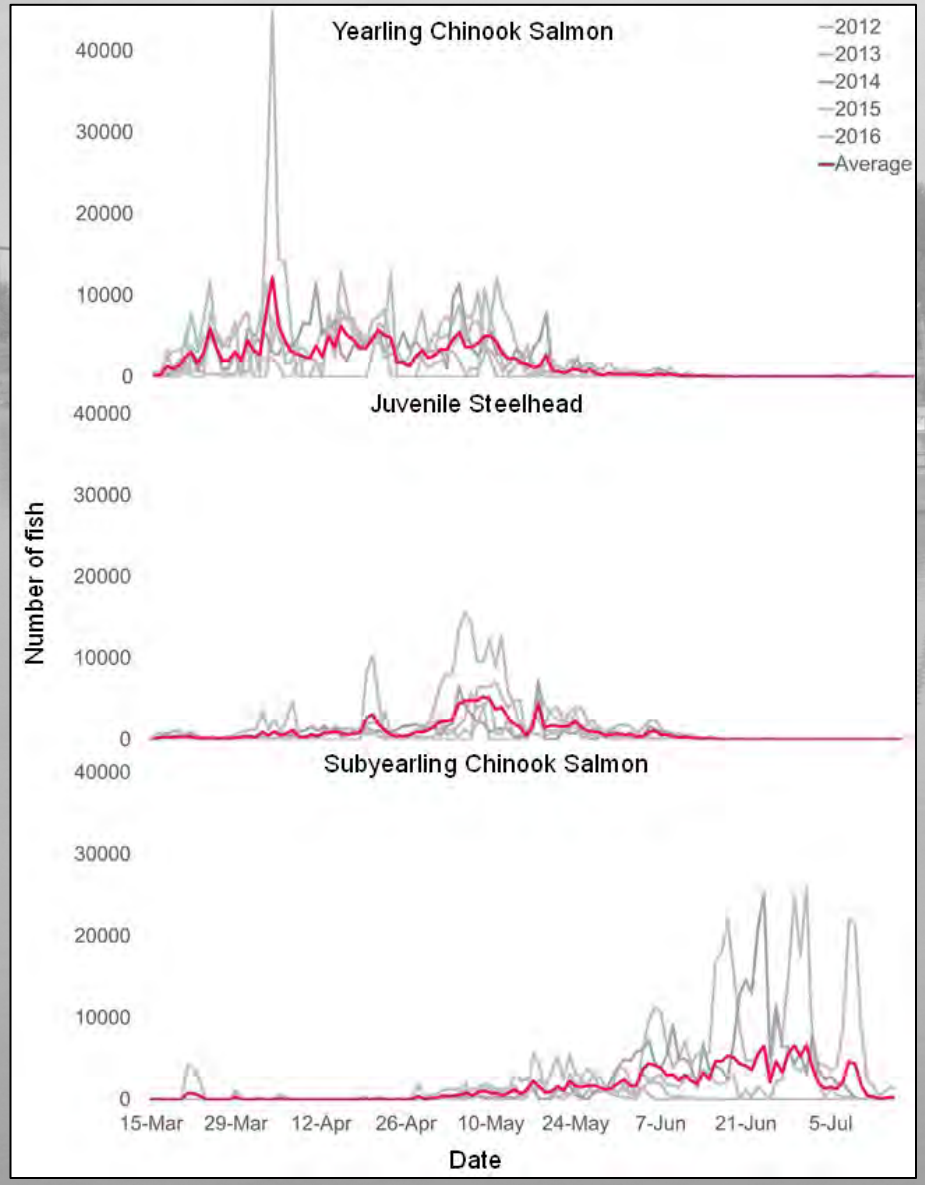
Fish Tagging and Release



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Fish Tagging and Release

Week	Yearling Chinook		Subyearling Chinook		Steelhead	
	Wapato	Prosser	Wapato	Prosser	Wapato	Prosser
Mar 26-30	30	20				
Apr 2-6	30	20				
Apr 9-13	30	20			30	20
Apr 16-20	30	20			30	20
Apr 23-27	30	20			30	20
Apr 30-May 4	30	20			30	20
May 7-11	30	20			30	20
May 14-18			30	20	30	20
May 21-25			30	20	30	20
May 28-Jun 1			30	20		
Jun 4-8			30	20		
Jun 11-15			30	20		
Jun 18-22			30	20		
Jun 25-29			30	20		
Jul 2-6			30	20		
Totals	210	140	240	160	210	140
	350		400		350	

USGS

Other Data Collection

Covariate	Source
Fish size	Fork length and weight measurements collected at tagging.
Release date	Release date recorded at time of release.
Discharge	Obtained from in-river flow gages: (1) Wapato Dam to Sunnyside Dam reach: data from Parker gage (PARW) + data from diversion at Sunnyside Canal. (2) Sunnyside Dam to Granger reach: data from PARW gage. (3) Granger to South Drain reach: data from the PARW gage + tributary input flow data. (4) South Drain to Prosser Dam reach: data from the Euclid Bridge gage (YGVW). (5) Prosser Dam to Chandler Outfall reach: data from the Prosser gage (YRPW). (6) Chandler Outfall to Wanawish Dam reach: data from the Kiona gage (KIOW). (7) Wanawish Dam to Yakima River Mouth reach: data from KIOW – data from diversion at Wanawish Dam.
Water Temperature	Hourly data from thermographs located in each reach; supplemented with instantaneous measurements by predator sampling crews.
Turbidity	Instantaneous measurements by predator sampling crews.
Predator index	(1) Weekly reach-specific counts of juvenile and adult piscivorous predators within reference reaches of each reach. (2) Weekly reach-specific counts of avian predators collected when possible.

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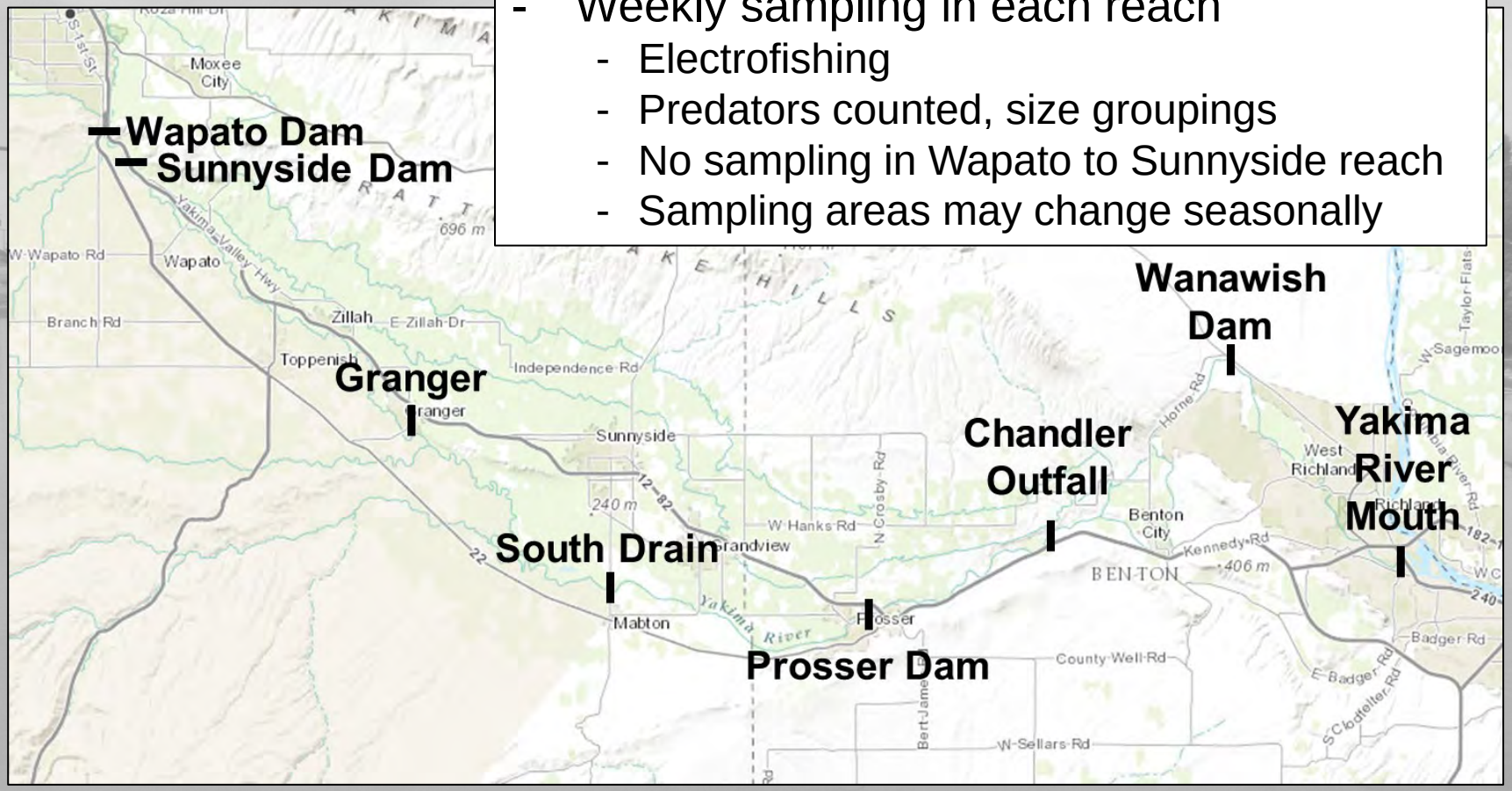
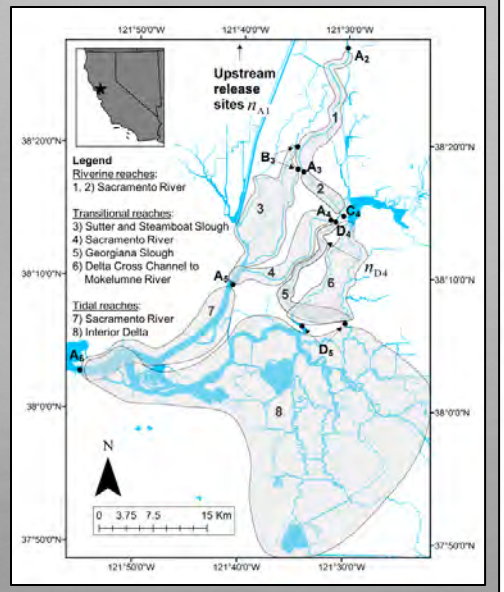
Predator Index

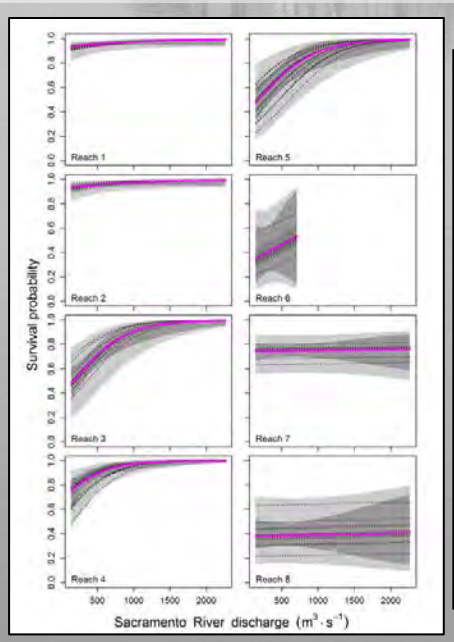
- Weekly sampling in each reach
  - Electrofishing
  - Predators counted, size groupings
  - No sampling in Wapato to Sunnyside reach
  - Sampling areas may change seasonally

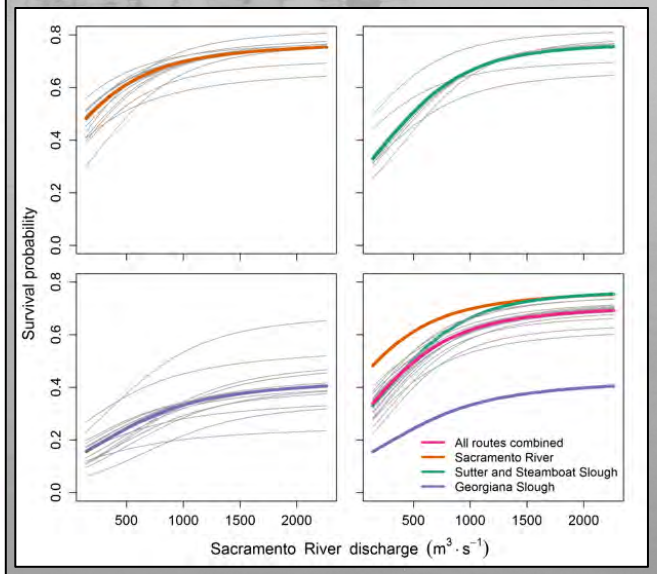


Data Analysis

- Limitations of 2012-2016 studies
  - Sample size (in lower Yakima reaches)
  - Model limitations (fish grouped into cohorts)
- 2018-2020 analysis plan
  - Model survival in relation to individual time-varying covariates
  - Bayesian framework (Perry et al. *In press*)
  - Annual estimates of migration survival
  - Multi-year analysis to develop decision support tool







Refining the Study Design

- Several factors to consider
  - Predator sampling surveys
    - Seasonal changes within reaches
    - Avian predators
  - Other studies
  - Lamprey
  - Additional input welcomed

USGS