

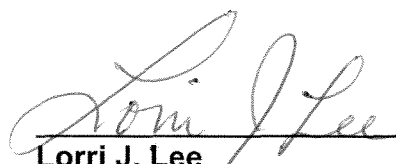
RECLAMATION

Managing Water in the West

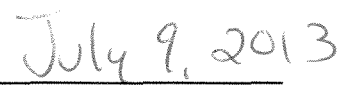
Record of Decision for the Yakima River Basin Integrated Water Resource Management Plan Final Programmatic Environmental Impact Statement

Yakima Project, Washington

Approved:



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Regional Director
Pacific Northwest Region



Date



U.S. Department of the Interior
Bureau of Reclamation
Pacific Northwest Region
Columbia-Cascades Area Office
Yakima, Washington

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MISSION STATEMENTS

The Department of the Interior

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Introduction

This document constitutes the Record of Decision (ROD) of the U.S. Department of the Interior, Bureau of Reclamation, regarding the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan). Reclamation has selected the Integrated Plan Alternative identified in the *Final Programmatic Environmental Impact Statement on the Yakima River Basin Integrated Water Resource Management Plan* (Final PEIS) for implementation to improve water resources and the ecosystem in the Yakima River basin.

Background

The Yakima River basin is located in central Washington State. It occupies a substantial portion of Kittitas, Yakima, and Benton Counties, and a small area of Klickitat County. This basin contains the largest agricultural economy in the State of Washington. Most of the agricultural activities in the basin are supported by irrigation. Thirty-four percent of the irrigated land in the basin is planted in tree crops and vineyards, and the remaining consists of forage, annual vegetables and field crops, hops, and mint. Reclamation operates five major reservoirs within the basin that supply water to about 450,000 acres of irrigated land. Runoff is derived primarily from snowpack that runs off in the spring and early summer, and is considered a “sixth reservoir” upon which the basin is highly dependent. The basin has experienced numerous droughts in the past decades including single-year events in 2001 and 2005 and a 3-year event during 1992 through 1994. During dry years and droughts, some of the largest irrigation districts in the basin, including the Roza Irrigation District (RID), Kittitas Reclamation District (KRD), and Wapato Irrigation Project, have had their water deliveries substantially reduced (to as little as 37 percent supply in 2001). The reduced supply of water has led to significant economic hardships for some sectors of the agricultural community. This situation is expected to worsen as a result of climate change. The University of Washington’s Climate Impacts Group recently predicted that climate change will result in declining snowpack and earlier snowmelt, which will, in turn, result in significantly reduced water supplies.

On October 12, 1977, the Washington State Department of Ecology filed an adjudication of the Yakima River system in the Superior Court of Yakima County naming the United States and all persons claiming the right to use the surface waters of the Yakima River system as defendants. The purpose of this adjudication was to determine all existing surface water rights within the basin and to correlate each right in terms of priority with all other rights. The adjudication is still in progress.

Then, in 1979, Congress directed Reclamation to conduct a feasibility study of the Yakima River Basin Water Enhancement Project (YRBWEP). The congressional objectives of the YRBWEP study were to develop a plan that would provide supplemental water for presently irrigated lands, water for new lands within the Yakama Reservation, water for increased instream flows for aquatic life, and a comprehensive plan for efficient management of basin water supplies. Fish passage problems were identified as needing immediate attention, and congressional legislation in 1984 authorized “YRBWEP Phase I,” which primarily involved rebuilding fish ladders and constructing fish screens. Subsequently, Title XII of the Yakima River Basin Watershed

Enhancement Project Act of October 31, 1994, Public Law 103–434 (commonly referred to as Phase II of the YRBWEP), was enacted, which authorized implementation and study of primarily nonstorage components for YRBWEP (conservation). The study and implementation results were to be the basis for future YRBWEP Phase III legislation which was expected to include elements such as construction of water storage features that would be needed for a complete YRBWEP plan to meet habitat, agricultural, municipal, and industrial needs of the basin.

In 2003, Reclamation and the Washington State Department of Ecology initiated the Yakima River Basin Water Storage Feasibility Study (Storage Study) to examine the feasibility and acceptability of storage augmentation in the Yakima River basin. The three objectives of the Storage Study were to provide irrigation and future municipal water needs and improve habitat for anadromous and resident fish. In January 2008, Reclamation and Ecology released a joint Storage Study Draft Planning Report/Environmental Impact Statement (PR/EIS). Public comments received on the Draft PR/EIS recommended that Reclamation and Ecology consider a wider range of alternatives and that the alternatives should include an integrated approach to benefit all resources, including fish passage and habitat improvements, in addition to improved storage. Ecology determined that the alternatives in the Draft PR/EIS were too narrowly focused and decided to separate from the joint NEPA/SEPA process for the Storage Study and prepared a separate SEPA Supplemental Draft EIS (December 2008), that evaluated an integrated approach to water management in the Yakima River basin.

Reclamation released its Final PR/EIS in December 2008, which identified the “No Action Alternative” as the Preferred Alternative, and Ecology issued its Final EIS in June 2009. Ecology’s Final EIS included an Integrated Water Resource Management Alternative consisting of elements for fish passage, modifications to existing facilities and operations, new water storage, groundwater storage, fish habitat improvements, enhanced water conservation, and market-based reallocation of water resources, to meet the three objectives listed above.

Under YRBWEP authority, Reclamation and Ecology formed the YRBWEP Workgroup in April 2009; the first Workgroup meeting was held in June 2009. The Workgroup is composed of representatives of the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation); Reclamation; the U.S. Fish and Wildlife Service (Service); National Marine Fisheries Service (NMFS); Ecology; Washington Department of Fish and Wildlife (WDFW); Washington Department of Agriculture; Benton, Kittitas, and Yakima Counties; City of Yakima; American Rivers; Yakima-Tieton Irrigation District; KRDI; Kennewick Irrigation District (KID); Sunnyside Valley Irrigation District; RID; Yakima Basin Fish and Wildlife Recovery Board; and Yakima Basin Storage Alliance. In 2012, the U.S. Forest Service (USFS) was added to the Workgroup. Representatives from the Washington State congressional delegations have also attended Workgroup meetings. A preliminary Integrated Plan in December 2009 was subsequently developed based on Ecology’s Integrated Water Resource Management Alternative identified in their Storage Study Final EIS.

The preliminary Integrated Plan was further evaluated under the Yakima River Basin Study, and the Basin Study report entitled, *Yakima River Basin Study Volume 1 – Proposed Integrated Water Resource Management Plan*, was finalized in 2011. The Integrated Plan included seven elements: reservoir fish passage, structural and operational changes to existing facilities, surface

water storage, groundwater storage, habitat/watershed protection and enhancement, enhanced water conservation, and water market reallocation.

Specific problems addressed by the Integrated Plan included:

- Anadromous and resident fish populations are seriously depleted from historic levels and some species have been extirpated from the basin or listed as threatened under the Endangered Species Act (ESA).
- Demand for irrigation water by existing users significantly exceeds supply in dry and drought years, leading to severe prorationing¹ for proratable, or junior, water users. Economic impacts to existing users could be substantially reduced by ensuring that prorationing does not fall below 70 percent in most drought years.
- Demand for existing and future municipal and domestic water supplies is difficult to meet because water rights in the basin are fully appropriated, making it difficult to acquire new water rights, and pumping groundwater for irrigation and municipal uses has been shown to reduce surface water flows in some locations. Specific water rights will be evaluated under State water law and existing water rights on a feature-by-feature basis.
- Climate change projections indicate that there will be changes in runoff and streamflow patterns, which could increase the need for prorationing and reduce flows for fish.

Reclamation filed a Notice of Intent to prepare a combined Planning Report and Programmatic Environmental Impact Statement (PEIS) on April 5, 2011. Ecology served as a joint lead agency with Reclamation in the preparation of the PEIS. Reclamation and Ecology evaluated comments received during the joint public scoping period. As a result, the Integrated Plan Alternative was reevaluated, which then resulted in the Integrated Plan Alternative that is evaluated in the PEIS.

In November 2011, Reclamation and Ecology jointly released the *Draft Programmatic Environmental Impact Statement on the Yakima River Basin Integrated Water Resource Management Plan*. The PEIS is a combined document that meets the requirements of both National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA). The U.S. Forest Service (USFS) and Bonneville Power Administration (BPA) served as cooperating agencies in the development of the Final PEIS.

The Final PEIS (INT-FES-12-4) was filed with the Environmental Protection Agency on February 28, 2012, and released to the public in March 2012. The Final PEIS provides a programmatic analysis of the potential effects of the Integrated Plan Alternative.

Alternatives Considered

Two alternatives were described and analyzed in the Final PEIS—the No Action Alternative and the Integrated Water Resource Management Plan Alternative (Integrated Plan Alternative).

¹ Prorationing refers to the process of equally reducing the amount of water delivered to junior (“proratable”) Project water users in water-deficient years based on total water supply available (TWSA).

No Action Alternative

Under the No Action Alternative described in the Final PEIS, current management activities and ongoing projects in the basin would continue. The No Action Alternative reflects continued reliance on individual actions by various agencies and other entities to improve water management in the basin. Existing funding sources would be used to continue ongoing programs and those projects already funded. The individual actions that would continue under the No Action Alternative include the following general categories of ongoing projects and programs:

- Artificial fisheries supplementation programs:
 - Yakima/Klickitat Fisheries Project.
- Habitat improvements:
 - Reclamation improvements to existing facilities;
 - Yakima River side channels projects;
 - Kittitas Conservation Trust projects;
 - Salmon Recovery Funding Board supported projects;
 - Yakima County Comprehensive Flood Hazard Management Plans;
 - Conservation projects by private organizations; and
 - YRBWEP Phase II projects.
- Water conservation:
 - Water quality improvements;
 - Salmon Recovery Funding Board supported projects; and
 - YRBWEP Phase II projects.

Integrated Plan Alternative

The Integrated Plan Alternative is Reclamation's Preferred Alternative. It is a comprehensive approach to water management in the Yakima River basin. The Integrated Plan Alternative meets the need to restore ecological functions in the Yakima River system and to provide more reliable and sustainable water resources for the health of the riverine environment and for agricultural, municipal, and domestic needs. The Integrated Plan Alternative is also intended to provide flexibility and adaptability to address potential climate changes and other factors that may affect the basin's water resources in the future.

The Integrated Plan Alternative includes seven elements:

- Reservoir Fish Passage;
- Structural and Operational Changes to Existing Facilities;
- Surface Water Storage;

- Groundwater Storage;
- Habitat/Watershed Protection and Enhancement;
- Enhanced Water Conservation; and
- Water Market Reallocation.

Table 1 describes the package of projects intended to implement the elements along with a brief description of the projects. Locations of the individual projects are shown on Figure 1. Programmatic actions that are more dispersed geographically are not shown.

Table 1. Elements and Associated Actions Included in Integrated Plan Alternative

ACTION	DESCRIPTION
Reservoir Fish Passage	
Clear Lake Dam Cle Elum Dam Bumping Lake Reservoir Dam Tieton Dam Keechelus Dam Kachess Dam	Improve upstream and downstream fish passage at Clear Lake Add upstream and downstream fish passage facilities at other dam sites (Cle Elum, Bumping Lake, Tieton, Keechelus, and Kachess)
Structural and Operational Changes	
Raise Pool at Cle Elum Dam Kittitas Reclamation District Canal Modifications Keechelus-to-Kachess Conveyance Subordinate Power at Roza Dam and Chandler Power Plants Wapatox Canal Improvements	3-foot increase in storage pool elevation Reduce seepage and enhance tributary flows Optimize storage between two reservoirs Reduce water diversions to support fish migration Improve efficiency and consolidate diversions
Surface Water Storage	
Wymer Dam and Pump Station Lake Kachess Inactive Storage Enlarged Bumping Lake Reservoir Columbia River Pump Exchange with Yakima Basin Storage	New off-channel reservoir (162,500 acre-feet). Also investigate removal of Roza Dam Access inactive storage volume (up to 200,000 acre-feet added) Enlarge reservoir to 190,000 acre-feet Conduct feasibility study; periodically evaluate need for additional supplies
Groundwater Storage	
Shallow Aquifer Recharge Aquifer Storage and Recovery	Late winter/early spring infiltration prior to storage control Off-season recharge of the aquifer for the City of Yakima's municipal supplies
Habitat/Watershed Protection and Enhancement	
Mainstem Floodplain Restoration Tributaries Habitat Enhancement Targeted Watershed Protection and Enhancements	Program to implement a range of fish habitat projects Program to implement a range of fish habitat projects Program to acquire and protect sensitive lands, including aquatic and terrestrial habitats
Enhanced Water Conservation	
Agricultural Water Conservation Municipal and Domestic Water Conservation	Agricultural water conservation program to implement a range of projects Create fund to promote water use efficiency basinwide
Water Market Reallocation	
Near-term Effort Long-term Effort	Reduce barriers to water transfers Additional steps to reduce barriers to transfers

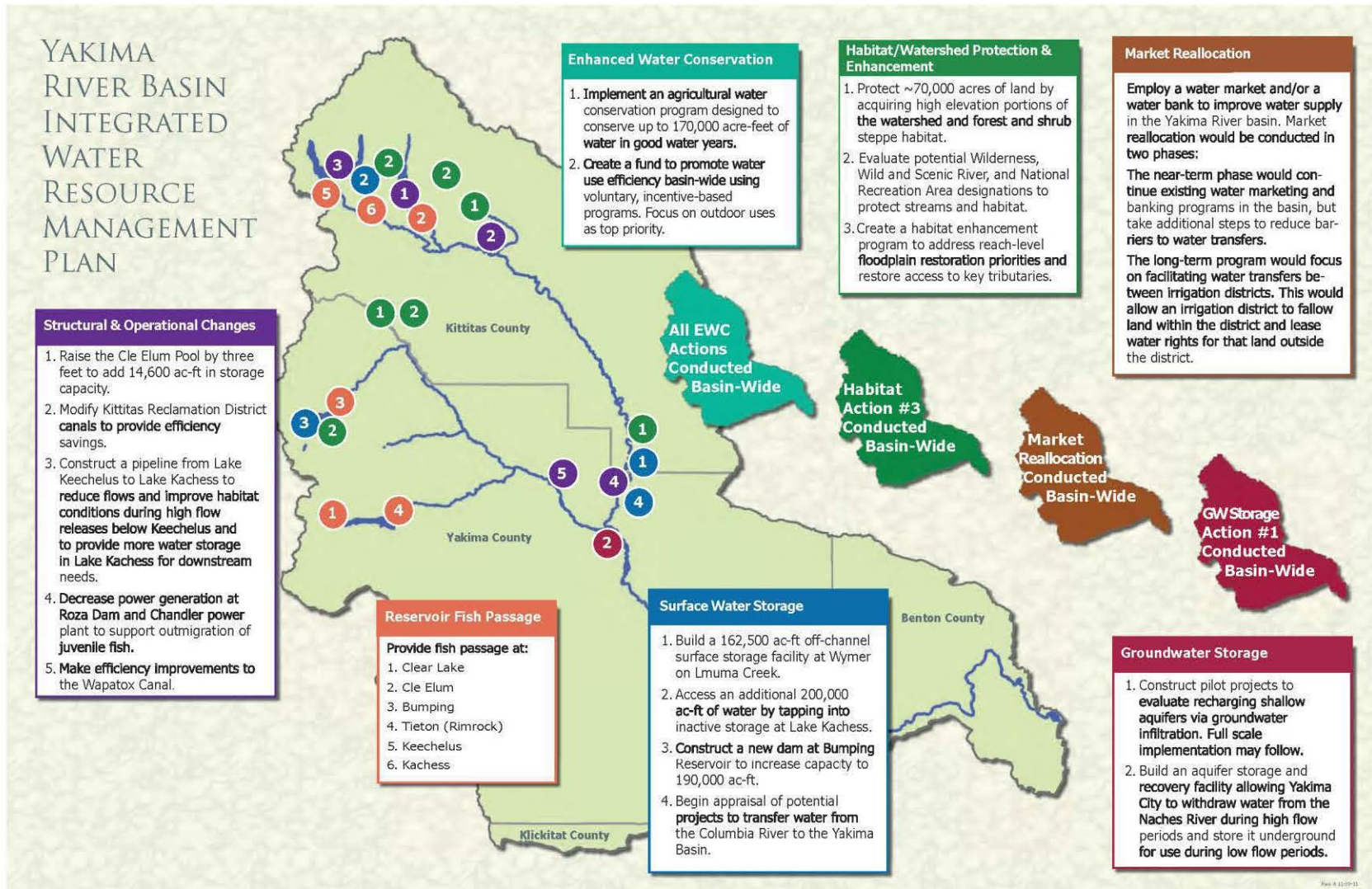


Figure 1. Project Locations

Environmentally Preferable Alternative

The Integrated Plan Alternative is the Environmentally Preferable Alternative. It would address ecosystem restoration, watershed enhancement, water supply, and climate change issues in the basin. The overall effect of the Integrated Plan Alternative is expected to be more beneficial than the No Action Alternative to water supply for agriculture, municipal and domestic uses, and for resident and anadromous fish.

Public Involvement

Scoping

On April 5, 2011, Reclamation published a Notice of Intent to prepare a PEIS in the *Federal Register*. Reclamation and Ecology issued a joint press release to local media on April 6, 2011, announcing scoping meetings.

On May 3, 2011, Reclamation and Ecology jointly held two scoping meetings at the Hal Holmes Center in Ellensburg, Washington; 45 individuals attended. On May 5, 2011, two joint public scoping meetings were held at the Yakima Arboretum in Yakima, Washington; 26 individuals attended. At the meetings, the proposed Integrated Plan was described and attendees were given the opportunity to comment on the proposal, the NEPA/SEPA process, and alternatives and resources being evaluated.

The scoping period concluded June 15, 2011. Reclamation received 79 written comments during the scoping period which were used in the preparation of the Draft PEIS. Reclamation and Ecology prepared a *Scoping Summary Report* which summarizes the comments. The report can be found on Reclamation's website at: <http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html>.

Comments on the Draft PEIS

Reclamation released the Draft PEIS in November 2011. The public comment period began November 16, 2011, when the notice was published in the *Federal Register*, and ended January 3, 2012. Reclamation and Ecology held open house meetings in Cle Elum, Washington, on December 5, 2011; in Ellensburg, Washington, on December 6, 2011; and in Yakima, Washington, on December 14, 2011.

During the comment period, Reclamation and Ecology received 2,285 comment submittals (of which 2,198 were form letters) on the Draft PEIS in the form of letters, emails, and handwritten comments submitted at the open house meetings. Responses were included in the Comment and Responses section of the Final PEIS.

Consultation and Coordination

The Integrated Plan Alternative was developed with involvement by the Yakama Nation; Federal, State, and local agencies; and interested members of the public. The USFS and BPA served as cooperating agencies in the development of the PEIS. Additional consultation and coordination will occur when individual projects are carried forward. The following sections describe the consultation and coordination that was carried out for the Integrated Plan Alternative.

Endangered Species Act, Section 7

The Endangered Species Act requires Reclamation to consult with the Service and NMFS on those actions which may affect threatened and endangered species under those agencies' respective jurisdictions. After coordination with the Service and NMFS, Reclamation determined selection of the Integrated Plan alternative would not have immediate impacts on listed species because additional, project-specific environmental analysis will occur prior to implementation of projects within the plan. This correspondence with the Service and NMFS is included in the Final PEIS. Reclamation will consult on the implementation of Integrated Plan projects which may affect listed species and on the cumulative implementation of certain Integrated Plan projects.

Fish and Wildlife Coordination Act

Reclamation consulted with the Service under the Fish and Wildlife Coordination Act. The Final Coordination Act Report was completed in February 2012, and is posted on the Yakima River Basin Water Enhancement Project Integrated Plan website at <http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html>.

Cultural and Historic Resources Consultation

Reclamation did not initiate formal consultation under the National Historic Preservation Act (NHPA) on the Integrated Plan Alternative because the EIS is programmatic and specific project details are not known. Copies of the Draft PEIS and the Final PEIS were provided to the Washington Department of Archaeology and Historic Preservation (DAHP), but no comments were received from the agency.

Additional cultural and historic review and consultation under NHPA will be undertaken as part of project-specific environmental reviews required when specific projects are carried forward. These will include site-specific cultural resource surveys and determinations of appropriate mitigation, when needed, in coordination with the affected Indian Tribes, the Washington State Historic Preservation Officer, and other agency and land managers. Reclamation will comply with the NHPA, Native American Graves Protection and Repatriation Act, and Executive Order 13007 regarding Indian Sacred Sites when individual projects are carried forward.

Tribal Consultation

Reclamation will initiate Government-to-Government consultation with the potentially affected and interested Tribes when specific projects in the Integrated Plan Alternative are carried forward to implementation. Consultation will include contact with the Bureau of Indian Affairs (BIA) and potentially affected and interested Tribes to determine the potential presence of Indian Trust Assets (ITAs) or other resources of concern within the project area.

Public Response to the Final PEIS

Reclamation received 10 written comment letters on the Final PEIS. The major issues raised in the letters and Reclamation’s responses to those issues are presented in Table 2.

Table 2. Responses to issues raised in comment letters.

ISSUE RAISED	RESPONSE
<p>Opposition to the Integrated Plan recommendation that areas in the Okanogan-Wenatchee National Forest be designated as National Recreation Areas (NRA) with off-road vehicle (ORV) use allowed in some portions of the NRA.</p> <p>Related concerns that the designations and ORV use were not evaluated in the Draft PEIS and there was no opportunity for public input.</p>	<p>The USFS is charged with primary statutory responsibility for area planning and administration of the affected public lands. The USFS is currently developing a revised land and resource management plan that will make recommendations for Wilderness and Wild and Scenic Rivers (W&SRs). They are also completing a travel management plan, implementing the 2005 Travel Management Rule that will analyze the effects of motorized activities and make decisions about motorized access over the existing road/trail system. The Rule requires motor vehicle use off the designated system to be prohibited. As a Federal cooperating agency with Reclamation for the PEIS, the USFS has provided valuable expertise and insight in the development of the NRA and W&SR proposals. These plan elements may be desirable for success of the overall Integrated Plan.</p> <p>In addition to the comment letters that were opposed to the NRAs, there were also public and agency comments and communications received following issuance of the Final PEIS that were supportive of the proposed NRAs and W&SR designations. The views expressed by the public and agencies, as well as Reclamation’s conversations with the USFS, have pointed out questions regarding the proposals that require additional consideration.</p> <p>However, as part of this ROD, Reclamation will not be making a recommendation to Congress.</p> <p>It is not uncommon to add more detailed information about a project to a Final EIS if that information becomes available after issuance of the Draft EIS or as provided in response to comments as long as the new information does not significantly differ from information provided in the</p>

ISSUE RAISED	RESPONSE
	Draft EIS or alter conclusions with respect to probable adverse environmental impacts. The impacts of NRA designations would not be significantly different than those identified in the Draft EIS.
Concerns about inadequacies of the Federal Register Notice for the Final PEIS.	The purpose of a Federal Register Notice is to notify the public that a document is available. A public comment period on the Final PEIS was not identified in the Federal Register because NEPA does not require solicitation of public comment on a Final EIS. Nevertheless, public comments were accepted and were considered in the preparation of the ROD. Although not all Integrated Plan Alternative elements were clearly labeled in the Federal Register Notice, the function of the Notice to notify the public that the document was available was achieved.
Questions about developing the Early Action Project list prior to completion of NEPA.	The Early Action Items that Reclamation is involved in, such as planning studies and data collection, have existing legal authorizations. Any activity that is environmentally disturbing will undergo additional project-level environmental review.

Some comments expressed concerns about the limited number of alternatives evaluated in the PEIS and stated opposition to expansion of Bumping Lake Reservoir. Additional comments expressed support for the Integrated Plan, support and justification for including the proposed NRA designations, and support for the Keechelus-to-Kachess conveyance in coordination with the I-90 connectivity areas.

Overall, the comments received on the Final PEIS did not raise substantive or new issues that had not been addressed in the Final PEIS.

Summary of Environmental Impacts

Table A-1 (see Appendix A) gives specific environmental impacts for the Integrated Plan Alternative. The phrase “short-term” refers to impacts associated with construction activities while the phrase “long-term” refers to impacts following the construction period.

In general, the primary impacts of the Integrated Plan Alternative include:

1. Temporary construction impacts would include erosion and sedimentation, water quality, increased dust, noise, and traffic disruptions. These impacts would be similar to those of the No Action Alternative, but on a substantially larger scale and of longer duration.
2. Improved ability to meet irrigation demand and increased supply for municipal and industrial uses.

3. Overall benefits from fish passage facilities, improved streamflows, and habitat/watershed protection and enhancement projects. Combined elements would contribute to flow conditions more closely resembling natural flows and improve fish passage and habitat throughout historic ranges.
4. Permanent loss of shrub-steppe and mature forest vegetation and habitat from new and expanded reservoirs, but an overall positive impact to upland habitat due to habitat/watershed protection and enhancement projects. Land acquisition and habitat enhancement components are expected to result in a net improvement in conditions for listed fish and wildlife species.
5. Power subordination at the Roza and Chandler Powerplants would substantially impact the amount of energy produced by hydropower in the Yakima basin and would likely have substantial economic and operational impacts on the RID, KID, Reclamation, and BPA.

The Integrated Plan Alternative impact on Indian Trust Assets (ITAs) has yet to be determined. Consultation will include coordination with the Bureau of Indian Affairs and potentially affected and interested Tribes to determine the presence of ITAs within the project area and the potential for adverse effects on these assets.

Environmental Commitments and Impacts

This section describes the environmental commitments included in the Final PEIS that will apply to implementation of the Integrated Plan Alternative. As indicated, specific mitigation measures have not been developed for individual project actions at this time due to the programmatic nature of the Final PEIS, but will be developed during project-specific review for each project action carried forward. Reclamation will develop applicable environmental commitments at that time. Together, the best management practices (BMPs) and mitigation measures identified below represent Reclamation's adoption of all practicable means to avoid or minimize environmental harm that can be reasonably identified at this programmatic level of analysis.

Additional studies that are likely to be required for individual projects are summarized in the next section, followed by general measures proposed to minimize impacts of implementing the Integrated Plan Alternative, including construction practices and measures to protect specific resources.

Additional Studies

Additional studies of individual projects will help identify potential short- and long-term impacts of projects and will be used to develop project-specific BMPs and mitigation measures. In addition to feasibility studies and subsequent environmental compliance, the following site-specific studies will be required for most projects:

- Geotechnical studies: Projects such as new surface storage, groundwater storage, and canal improvements will require site-specific geotechnical studies to identify subsurface and seismic issues, unstable slopes, and other local factors that can contribute to slope instability and increase erosion potential.
- Hydrogeological studies: Studies will include seepage studies on irrigation canals that will be lined or piped, studies on irrigation facilities to determine the amount of water that could be conserved, groundwater studies to better characterize the amount of water that would return to surface water from the Groundwater Storage Element, and studies to better estimate the potential for large-scale water transfers to benefit irrigation water supply for some water users.
- Additional RiverWare modeling: Additional modeling will be required to better understand impacts on Yakima Project operations. Studies of the impact on return flow from irrigation conservation measures could also assist Reclamation in determining the impact of conservation measures.
- Cultural resources review: Field investigations will be required once specific locations for projects are identified. These investigations will determine if any archaeological sites, historic structures, or Traditional Cultural Properties will be affected and how to best mitigate those impacts.
- Habitat and wildlife surveys: Surveys will be conducted within project areas. They will include rare plant surveys and identification of habitat of significance to listed species.

Construction Practices

To minimize the potential for sediment production and delivery to stream channels for any construction site, BMPs such as temporary erosion and sediment control with isolation will be employed and containment plans prepared in accordance with Federal, State, or local requirements. Measures will include timing of construction activities to avoid earth disturbances during periods of high precipitation; using appropriate sedimentation control devices; covering exposed soil stockpiles; retaining vegetation where possible; and replanting as soon as possible following construction.

Habitat that is determined to be of significant importance (e.g., presence of listed species) will be preserved to the greatest extent possible. Delineated and well-marked clearing boundaries will be established to limit disturbance to habitat. Facilities, access roads, and staging areas will be located in areas of disturbed vegetation to minimize the disturbance of intact vegetation as much as possible. Where possible, vegetation that is removed for construction will be replaced with appropriate native plant species.

To minimize impacts to fish, construction activities with in-water components will be done within appropriate instream fish work windows to avoid critical periods (i.e., breeding, spawning, and migration). Mitigation for stream bypasses will be negotiated

with fish agencies as part of permitting for individual projects. Reservoir drawdowns will be scheduled to minimize effects on water supplies and fish.

Reclamation will coordinate with water users and construction personnel to ensure that construction activities are scheduled to minimize short-term disruptions in surface water irrigation supply due to construction activities. To the extent possible, conveyance construction will be scheduled outside the irrigation season.

Measures will be implemented as appropriate to minimize dust from construction sites and haul routes. Emissions from construction vehicles could be reduced by following BMPs to minimize emissions, such as maintaining engines in good working order and minimizing trip distances. Other measures to minimize emissions include coordinating project planning, combining workers' trips, and using local materials.

Construction noise impacts could be mitigated by limiting construction hours, using equipment with mufflers or noise control, and situating noise-generating equipment away from houses or other sensitive receivers. Measures to reduce noise and limit human activity should be incorporated for project activities that are near high-quality habitats such as old-growth or riparian zones.

Mitigation measures to reduce construction impacts to transportation routes will include maintaining access to properties, installing signs, marking detour routes, flagging, and providing information to the public, including notifications in advance of construction activities. Access to and from recreational facilities may be temporarily closed or limited during construction. Advance public notice will occur and, to the extent possible, alternate access routes will be provided.

Mitigation planning related to utility disruption will include coordination with involved service providers as well as with potentially impacted local residents/landowners.

Surface Water

Long-term impacts of the Integrated Plan Alternative on surface water quantity are expected to be positive. The potential for short-term negative water quality impacts will be mitigated by following required regulatory permits for the construction and operation of the project along with BMPs. Implementation of long-term adaptive management and monitoring will be beneficial for maintaining and enhancing water quality. Reservoir operational practices related to the timing and volume of storage releases will be structured to mitigate water quality impacts.

Fish and Wildlife Habitat

Overall, the long-term impacts on fish and aquatic species as a result of the Integrated Plan Alternative will be beneficial to these species and their habitats. Specific projects will be evaluated through applicable Federal, State, and local environmental review and permitting processes. Project-specific mitigation measures will be identified for long-term impacts from each individual project.

Earth

Dam safety inspections and monitoring of slopes, hydrostatic pressures, and seismicity will help document management strategies that are effective and identify any needed changes to management strategies over the long term. Managing recharge volumes and pressures in groundwater storage aquifers to limit seepage, inventorying slopes in the project area, and monitoring pressures in slope areas during recharge and storage will minimize potential slope instability. Constructing facilities in accordance with all applicable design requirements and monitoring to ensure that potential impacts do not develop during operation will minimize the potential for earth-related impacts.

Groundwater

The timing of operational activities will be used to reduce the impact on groundwater. Additionally, the use of artificial recharge or withdrawal will be considered as part of the impact management strategy. Monitoring during operations will document the effectiveness of management strategies implemented.

Hydropower

Mitigation measures will be developed to compensate for the impacts of further power subordination at the Roza and Chandler Powerplants. Mitigation measures and any changes in hydropower generation will be coordinated with BPA, Reclamation, and other affected agencies.

Visual Resources

For projects implemented by Reclamation, Reclamation will, to the extent practicable, ensure they meet Bureau of Land Management's Resource Inventory management objectives and the prescribed USFS Visual Quality Objective of Retention.

Air Quality

Dust control plans will be developed to mitigate the impacts of increased dust from fallow fields and dry infiltration basins. Measures to reduce dust will include installing plantings around the infiltration basins and planting drought-tolerant plants in fallow areas. In some cases, air quality permits may be required for use of nonelectric pumping, injection, or treatment equipment.

Recreation

Reclamation will relocate or replace any recreational facilities that are displaced by the Integrated Plan Alternative to the extent possible, within available authorization and funding. Mitigation for impacts at Bumping Lake will be coordinated between Reclamation and the USFS.

Climate Change

Changes in water availability in the Yakima River basin will require the managing agencies to adaptively manage the river to respond to changing conditions. Reclamation will coordinate with Ecology and other water, fish, agriculture, energy, forest, and public health managers to adapt to climate change. The Integrated Plan Alternative, on the whole, will improve the resiliency of the basin to respond to the effects of climate change.

Property Acquisition

Appropriate compensation will be provided for acquisition of private property in accordance with applicable Federal or State regulations. Any lands acquired under the Habitat/Watershed Protection and Enhancement element will be purchased only from willing sellers.

Cultural Resources

Mitigation measures for adverse effects to cultural resources will be determined in consultation with the DAHP and potentially affected and interested Tribes. Construction contracts will require that if any cultural resources material is discovered during construction, all construction activities in the immediate vicinity will halt. The DAHP and a professional archaeologist and the affected Tribe will be contacted for further assessment and mitigation prior to resuming construction activity in that area. Some construction projects may require monitoring by cultural resource specialists.

Reclamation's Decision

Implementation of the Integrated Plan Alternative will have a variety of benefits in the basin. It will improve the health of anadromous and resident fish populations, including species listed as threatened and endangered under the ESA, by providing passage at storage dams, instream flow improvements, habitat enhancement actions, and watershed protection. Preservation and restoration of old growth forest and shrub-steppe habitat, and benefits to associated wildlife will occur as a result of the land acquisition and watershed protection actions included in the Integrated Plan. The Integrated Plan Alternative will also improve water supply for irrigation by reducing drought-year shortages as a result of new storage, water conservation, structural and operational modifications, and water marketing. These same actions will improve the availability of water for future municipal and domestic needs, thus reducing the risk of substantial economic impact for water users throughout the basin. While implementation of the Integrated Plan Alternative cannot occur without some adverse environmental impacts, the generally widespread, substantial, and beneficial impacts of the Integrated Plan Alternative outweigh the negative impacts when compared to the No Action Alternative.

Based upon these factors, Reclamation selects the Integrated Plan Alternative for implementation, as described in the Final PEIS and this ROD, including all Environmental Commitments contained in this ROD. Implementation will include the appropriate project-specific NEPA review and ESA consultation. This alternative most effectively achieves the purpose and need of the project in an environmentally-sensitive manner.

Next Steps in Implementing the Integrated Plan Alternative

If Reclamation receives authorization and funding to carry the Integrated Plan forward, the first steps in the process will be to undertake additional project definition, design, modeling, geotechnical review, and other appropriate technical analyses for proposed projects. Once the projects and actions have received adequate definition and design, they will undergo project-level environmental review. In addition to the studies mentioned in the “Additional Studies” section above, the project-level review will include the following:

- Project-level environmental review to analyze impacts of individual projects and develop appropriate mitigation measures;
- Reclamation’s project-level planning report feasibility analyses, including benefit-cost analyses and other environmental analyses to meet the requirements of the 1983 *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*;
- Cultural resource consultation;
- Tribal consultations;
- Endangered Species Act compliance; and
- Completion of other Federal, State, and local regulatory requirements and permitting.

Reclamation will likely be the lead Federal agency for NEPA, potentially working with a cooperating agency such as the USFS or Bureau of Land Management, depending upon the nature of the project. It is anticipated that the USFS may play an important role in several environmental reviews where projects are located within or substantially affect the National Forest. Reclamation will continue its collaboration with Ecology on design and environmental review. Environmental review would either be an EIS, supplemental EIS, environmental assessment, or categorical exclusion checklist.

In October 2012, Reclamation released the *Framework for Implementation of the Yakima River Basin Integrated Water Resource Management Plan* (Framework). The Framework includes refined cost estimates and a Four-Accounts Analysis including the

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National Economic Development, Regional Economic Development, Environmental Quality, and Other Social Effects analyses for the Integrated Plan Alternative. The Framework includes a possible schedule for implementing the Integrated Plan Alternative as well as a description of the adaptive approach that will be used in implementation. The framework is neither an irretrievable or irrevocable commitment of resources nor a commitment to the priority, schedule, or order of implementation activities.

Although the workgroup meetings have continued since the completion of the Final PEIS, those meetings have not obligated Reclamation to any irretrievable or irrevocable commitment of resources nor predetermined to the priority, schedule, or order of implementation activities.

Appendix A

Summary of Impacts

Table A-1. Impacts of the Integrated Plan Alternative

Resource	Integrated Plan Alternative
Earth	<p><u>Short-term</u>: Construction-related erosion and sedimentation.</p> <p><u>Long-term</u>: Loss of some earth-related resources, permanent landscape modifications, and changes in stream channel and floodplain conditions. Disruption of sedimentation downstream of storage facilities. Decrease in erosion potential in conservation areas.</p>
Surface Water Resources	<p><u>Short-term</u>: Potential disruption during construction.</p> <p><u>Long-term</u>: Increased TWSA, end-of-season reservoir storage, annual diversions, and improved streamflow.</p>
Groundwater	<p><u>Short-term</u>: Temporary reduction of usability of wells in the immediate vicinity of construction sites.</p> <p><u>Long-term</u>: Groundwater levels and quantities would increase with potential decreases near canal lining sites.</p>
Water Quality	<p><u>Short-term</u>: Risk of erosion and contaminants from construction.</p> <p><u>Long-term</u>: Net benefit to water quality by improving streamflow conditions, riparian areas, and floodplain habitat. New reservoirs have potential to increase temperatures of water released from the dams in downstream surface waters at certain times of the year (late summer/early fall); however, the reservoirs will be operated to minimize and mitigate temperature impacts. Preserving watersheds through land acquisition, public land designations, and river corridor designations would protect water quality, contribute to cooler water temperatures, and reduce sedimentation.</p>
Hydropower	<p><u>Short-term</u>: No impact.</p> <p><u>Long-term</u>: Reduction of hydroelectric generation at Roza and Chandler Powerplants and the Drop 2 and Drop 3 powerplants in the Wapato Irrigation Project.</p>
Fish	<p><u>Short-term</u>: Temporary habitat disturbance, construction-related impacts.</p> <p><u>Long-term</u>: Overall benefits from fish passage facilities, improved streamflows and habitat/watershed protection and enhancement projects. Combined elements would contribute to flow conditions resembling natural flows and improve fish passage and habitat throughout historic ranges.</p>
Vegetation	<p><u>Short-term</u>: Temporary disruption of vegetation, including shrub-steppe and mature forest vegetation.</p> <p><u>Long-term</u>: Negative impacts, including habitat loss, from new and expanded reservoirs, but an overall positive impact due to habitat/watershed protection and enhancement. Permanent removal of some areas of shrub-steppe and mature forest vegetation.</p>
Wildlife	<p><u>Short-term</u>: Temporary disruption of habitat during construction. Substantial habitat impact could occur if replacement habitat is unavailable. Short-term impacts for some species could be substantial at Wymer Dam and during expansion of Bumping Lake Reservoir.</p>

Resource	Integrated Plan Alternative
	<p><u>Long-term</u>: Negative impacts to habitat from new or expanded reservoirs. Overall positive impact for wildlife from habitat/watershed protection and enhancement. Permanent impact on shrub-steppe and mature forest vegetation.</p>
Threatened and Endangered Species	<p><u>Short-term</u>: Temporary disruption of habitat during construction. Removal of some areas of shrub-steppe and mature forest habitat.</p> <p><u>Long-term</u>: Negative impacts to species that may be displaced from the area of a new or expanded reservoir. Overall positive impacts from fish passage facilities, improved streamflows, and habitat/watershed protection and enhancement projects. Permanent impact on shrub-steppe and mature forest vegetation; however, land acquisition and habitat enhancement components are intended to result in a net improvement in conditions for listed fish and wildlife species</p>
Visual Resources	<p><u>Short-term</u>: Presence of construction equipment and activities during construction would generally create an unattractive visual setting during the construction period.</p> <p><u>Long-term</u>: Visual impacts would be primarily of local scale and are not expected to be significant with the potential exception of new and expanded reservoirs.</p>
Air Quality	<p><u>Short-term</u>: Minor dust and emissions associated with construction and traffic.</p> <p><u>Long-term</u>: Some projects may cause long-term impacts from emissions associated with stationary pollutant sources, although impacts are not expected to be significant.</p>
Climate Change	<p><u>Short-term</u>: Increases in greenhouse gas emissions associated with construction of individual projects.</p> <p><u>Long-term</u>: Multiple benefits to water supply, agriculture, and fish, improving the ability of water and fisheries managers to adapt to future climate change.</p>
Noise	<p><u>Short-term</u>: Increased noise from construction equipment and activities, including blasting associated with certain individual projects.</p> <p><u>Long-term</u>: Some equipment or vehicles may be audible in the vicinity of projects.</p>
Recreation	<p><u>Short-term</u>: Temporary access restrictions or nuisance dust and noise.</p> <p><u>Long-term</u>: Some recreational facilities and resources at Bumping Lake Reservoir would be eliminated and it may not be possible to relocate. Many projects would improve fishing and wildlife viewing opportunities. Motorized vehicle use would be restricted in designated Wilderness. Watershed protection actions would enhance recreational opportunities.</p>
Land and Shoreline Use	<p><u>Short-term</u>: Temporary access restrictions caused by construction. Property or conservation easement acquisitions of private property.</p> <p><u>Long-term</u>: Property and easement acquisitions, shift from forest and rangeland to water storage in Wymer Reservoir area, potential land use changes due to market reallocation.</p>

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	Potential decreased tax base with the conversion of private lands to public ownership.
Utilities	<p><u>Short-term</u>: Potential temporary disruption during construction.</p> <p><u>Long-term</u>: Reduced supply of electricity due to power subordination and increased demand from new equipment.</p>
Transportation	<p><u>Short-term</u>: Temporary traffic delays and possible detours, in some cases, for up to 3 to 5 years for major projects.</p> <p><u>Long-term</u>: Bumping Lake Enlargement would eliminate some Forest Roads and reduce access to some National Forest areas.</p>
Cultural Resources	<p><u>Short-term</u>: Potential impacts on historic structures, traditional cultural properties, or sacred sites from increased dust, vibration, noise, or construction activity. Construction could cause permanent impacts to cultural resources.</p> <p><u>Long-term</u>: Projects have the potential to cause long-term impacts on cultural resources located within the footprint of any new ground-disturbing construction activities. These impacts could be substantial where habitat improvements projects are located in areas with a high likelihood for significant Native American cultural resources. The potential impacts on cultural resources would likely be higher than under the No Action Alternative because of the large-scale projects that are likely to be constructed.</p> <p>Ground disturbance, erosion, and increased vandalism of cultural resources. Potential impacts to historic structures.</p>
Socioeconomics	<p><u>Short-term</u>: Project-related funding would likely have short-term positive impacts on jobs and incomes and reduced uncertainty and risk.</p> <p><u>Long-term</u>: Potential increase in the value of goods and services derived from the basin's water and related resources in the long term. Reduction in uncertainty and risk.</p>
Environmental Justice	Most projects are not expected to cause disproportionate impacts to environmental justice communities. Additional environmental justice analysis would be required during project-level analysis.