

Drought Resiliency Projects

*French Canyon Dam and
Cowiche Creek Water Exchange
Improvements Project*

Reclamation Drought Response Program Grant Proposal

Funding Opportunity Announcement No. BOR-DO-20-F002

Prepared by

YAKIMA-TIETON IRRIGATION DISTRICT

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Technical Proposal

1.1 Executive Summary

Date: August 4, 2020
Applicant: Yakima-Tieton Irrigation District
City/County/State: Yakima, Yakima County, Washington

This application is for funding by the U.S. Bureau of Reclamation's (Reclamation) Water Conservation Field Services Program for FY 2021 Funding Opportunity Announcement (FOA) No. BOR-DO-20-F002. This application from the Yakima-Tieton Irrigation District (YTID) is seeking \$1,349,365 in federal funding for a project that **builds long-term drought resilience by Expanding Small-Scale Surface Water Storage and Increases Stream Flow to Levels that are Biologically Compatible for Threatened or Endangered Species in Low-Flow Areas**. The Project includes improvements to French Canyon Dam including a pre-engineered gate structure to raise the reservoir pool elevation and provide additional storage capacity. The additional water stored in French Canyon Reservoir will be used to increase drought resiliency and water reliability in Cowiche Creek through the expansion of the Cowiche Creek Water Exchange (CCWE). The Project includes new water delivery turnouts near Cowiche Creek that create both the infrastructure and operational flexibility for dry-year water deliveries to Cowiche Creek and water deliveries to Cowiche Creek Water User Association (CCWUA) parcels that currently divert water from the creek. The requested funds will provide the resources needed to assist YTID with *final design, permitting, and construction*. Construction will commence October 2022. Construction will be completed and direct water deliveries to Cowiche Creek or indirect water deliveries to CCWUA parcels will begin in Spring 2023.

The Yakima Project is a federal Reclamation project authorized in 1905. There are seven divisions in the project: Storage, Kittitas, Tieton, Sunnyside, Roza, Kennewick, and Wapato. The YTID is part of the Tieton Division, and French Canyon Dam and Reservoir are owned by Reclamation.

1.2 Project Location

YTID is located in central Washington in Yakima County, with headquarters near the City of Yakima. YTID provides water to agricultural, industrial, and residential landowners on approximately 35,000 acres northwest of Yakima. Approximately 27,900 acres are in irrigation rotation. Many of the crops grown within YTID are high-value trees that require a steady supply of water for irrigation and frost protection. The crops, primarily apples, cherries, and pears, are exported around the world and represent a significant contribution to the local economy.

Figure 1 depicts YTID's entire service area, including its internal divisions, conveyance elements, and pump stations.

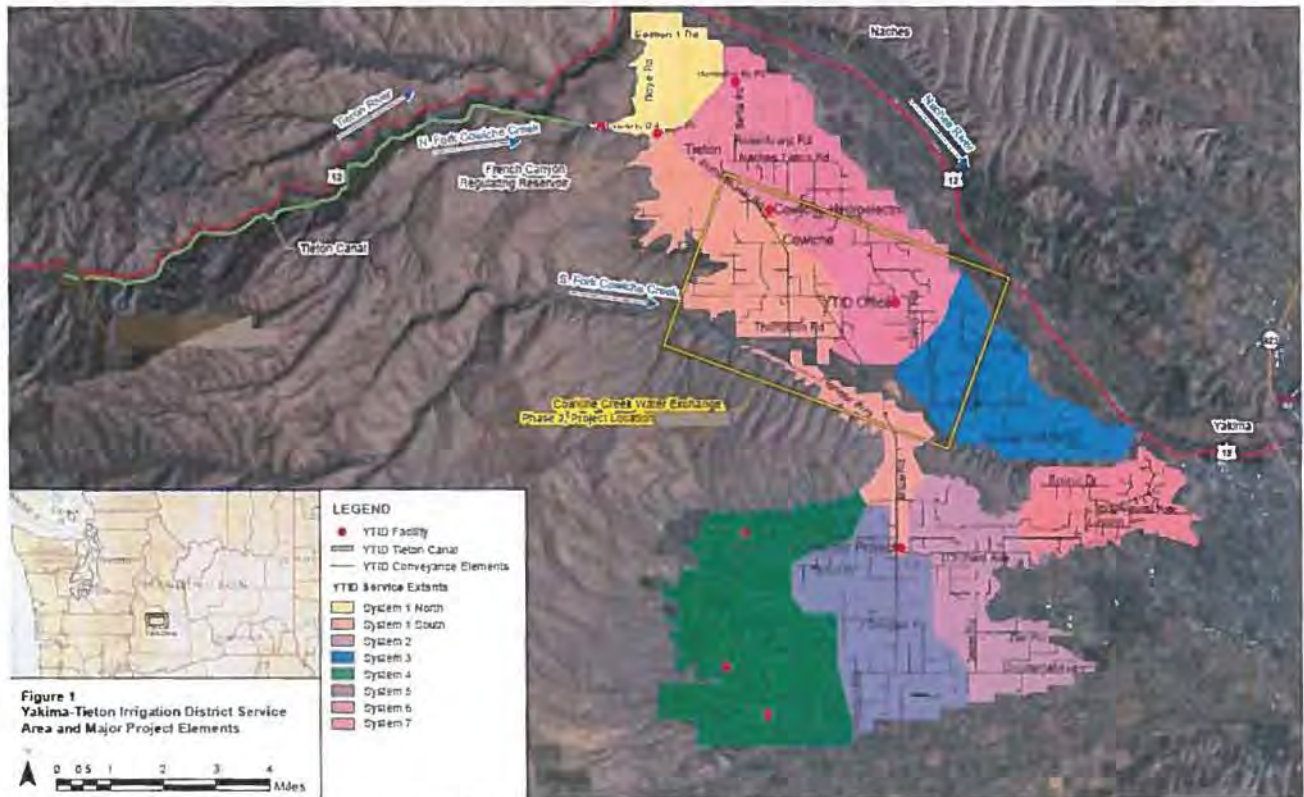


Figure 1. Yakima-Tieton Irrigation District

1.3 Technical Project Description and Milestones

YTID is proposing to complete final design, permitting, and construction of new facilities that will expand the storage volume of YTID's existing French Canyon Regulating Reservoir. YTID is also proposing to design and construct two new turnouts that will deliver water from YTID's main distribution pipeline directly to Cowiche Creek and deliver water to parcels of land that currently divert water from Cowiche Creek for irrigation purposes. Details of the proposed work are presented below.

Existing French Canyon Dam and Regulating Reservoir

French Canyon Dam is located on North Fork Cowiche Creek, approximately 1.5 miles west of Tieton, Washington. The dam was installed by YTID and Reclamation from 1984 to 1985. YTID operates the facility. The primary function of the reservoir is to provide short-term storage as part of irrigation management from March to October. The irrigation water is largely sourced from the Tieton River watershed to the west and conveyed to the French Canyon Reservoir by the Tieton Canal. The maximum storage capacity of the reservoir at the time of construction was approximately 540 acre-feet, which represents approximately 1 day of irrigation service.

French Canyon Dam Improvements

YTID has completed a preliminary feasibility study and proposes to raise the reservoir pool elevation at French Canyon Dam by installing new, pre-engineered gate equipment at the spillway crest. The plan layout and typical section of the dam, and profile view of the spillway crest are shown on Figures 2 through 5.

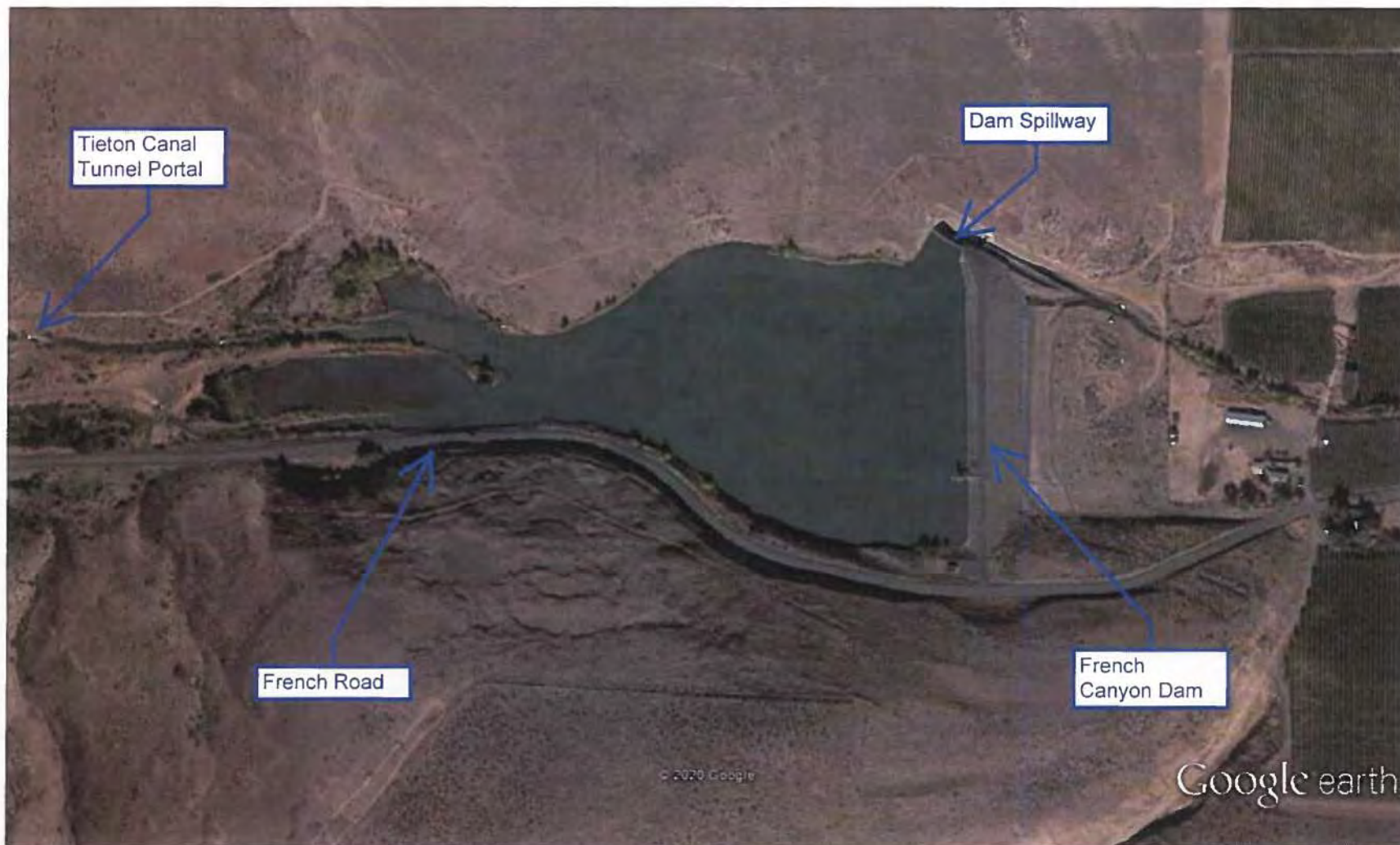
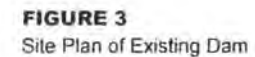


FIGURE 2
Yakima-Tieton Irrigation District
French Canyon Dam and Reservoir





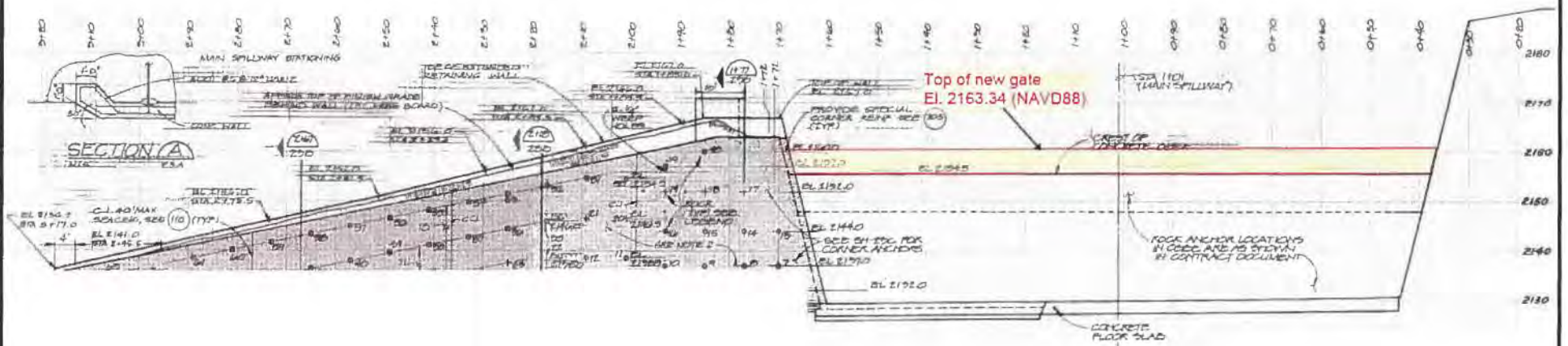


FIGURE 5
Profile of Proposed Spillway Modification

A pool raise of approximately 5 feet would increase the reservoir capacity by approximately 160 acre-feet, a 30 percent increase. The benefits of increased storage would be to provide instream flow and fish habitat benefits to Cowiche Creek and additional storage and operational flexibility to YTID which would build long-term resilience to drought. Minor changes to a county road are also required due to the increased reservoir footprint. The original 1983 design elevations and other pertinent elevation information are summarized in Table 1.

Table 1. Summary of Pertinent Elevation Information for French Canyon Dam

Elevations, feet	1983 design* (unknown datum)	June 2020**/** (NAVD88)	Proposed*** (NAVD88)
Dam crest	2,170 (nominal)	2,174.13 to 2,175.17	No change
Top of core	2,167 (nominal)	-	No change
Maximum pool (PMF*)	2,167	-	To be determined
Spillway crest	2,154.50****	2,158.34****	2,163.34 (raise 5 ft)
French Canyon Road (lowest)	-	2,163.52	Raise up to 5 ft, where needed
Tieton Canal water level	-	2,160.35	To be determined

Notes: PMF = Probable Maximum Flood

* Elevation datum for record drawings (CH2M HILL, 1983) is unknown.

** June 2020 elevations based on topographical survey of project site.

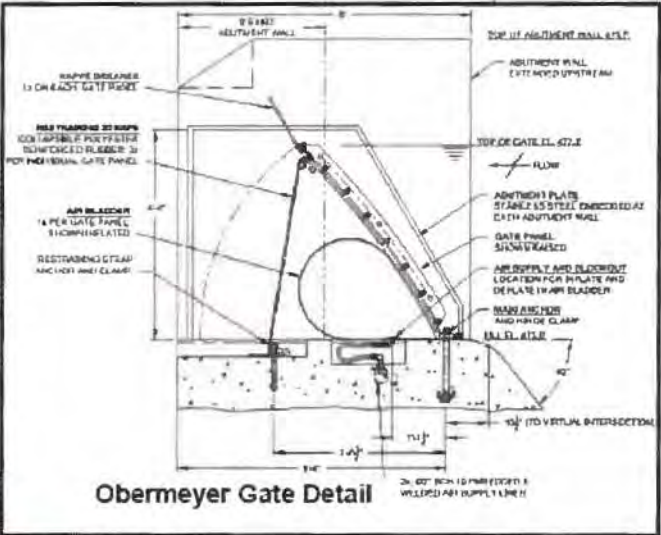
*** Elevation datum for current project is Washington State Reference Network (WSRN) NAVD88.

**** Based on comparison of design spillway crest elevation (see Figure 5) and June 2020 survey of the spillway crest, NAVD88 is 3.84 feet above the 1983 project datum.

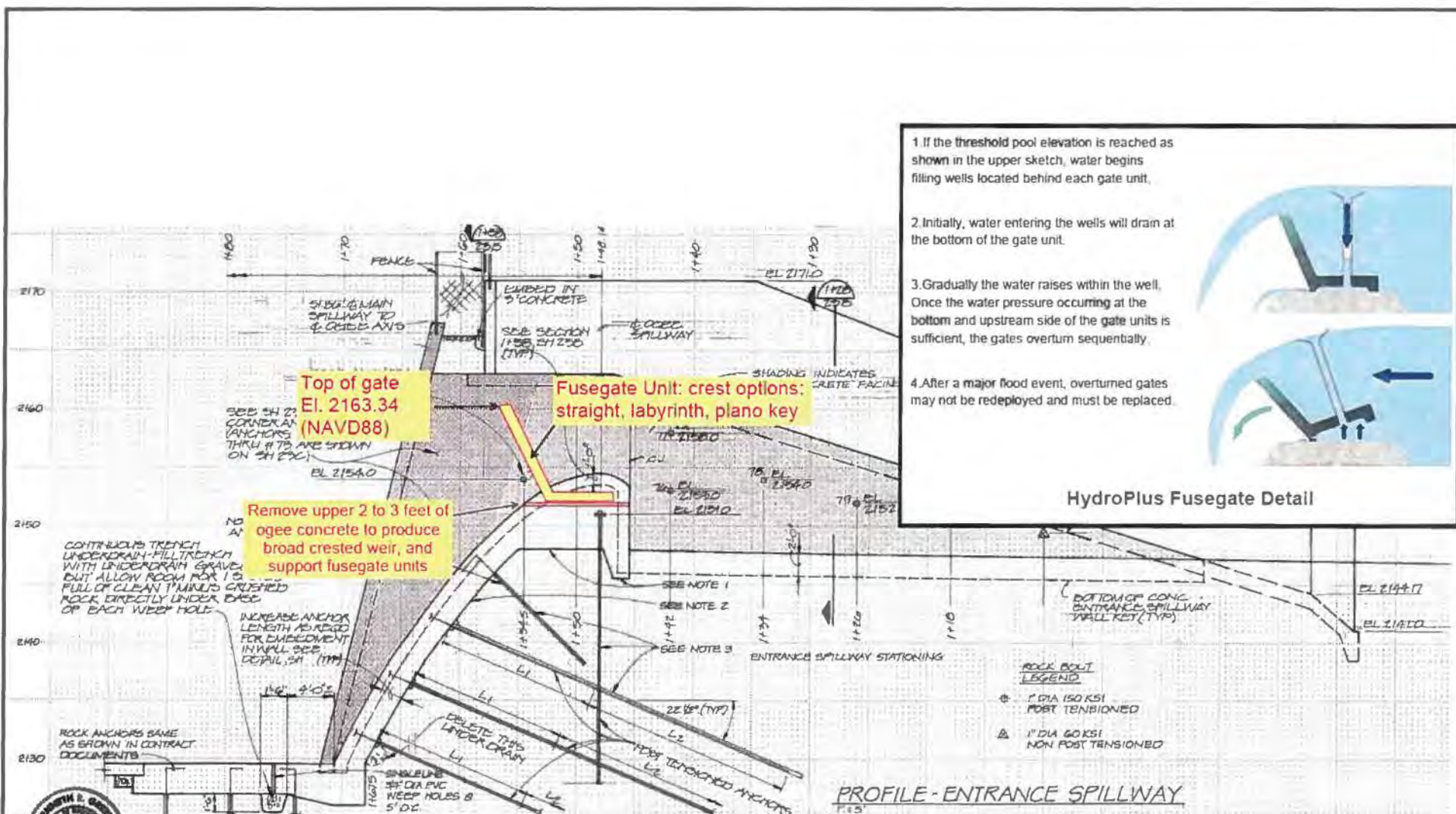
Proposed Spillway Modifications

YTID is considering the following new gate alternatives at the spillway:

- **Obermeyer Gate.** The Obermeyer gate illustrated on Figure 6, would consist of an inclined plate anchored to the spillway crest, raised and lowered to adjustable elevations using a pneumatic bladder. To minimize the influence of the gate on the spillway capacity, it is anticipated that the fully deflated gate would be installed at or below the existing ogee crest elevation, and a raised approach slab would be constructed. A significant advantage of this alternative is relatively low initial construction costs. However, the annual operation and maintenance costs and replacement costs may be higher than other alternatives.
- **Inflatable Dam.** Inflatable dam products may also be considered, with comparable installation and operational characteristics to the Obermeyer Gate.
- **HydroPlus Fuse Gate.** The HydroPlus Fuse gate illustrated on Figure 7, would consist of prefabricated concrete units, designed to overturn in a controlled sequence in response to major flood events. A significant advantage of this system is the relatively low annual maintenance required under normal conditions. However, the initial construction cost is higher and if a major flood event is sufficient to overturn one or more units, they cannot be redeployed and must be replaced.



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Reservoir Improvements

Raising the pool elevation in the reservoir will require minor improvements to other facilities. A short section of French Road south of the reservoir would be raised 3 to 5 feet to remain above the maximum normal water level in the reservoir. The road has a gravel surface and guardrail. There are no utilities under the road. The road is used infrequently because there are no occupied structures west of the reservoir.

Raising the pool elevation in the reservoir will also submerge the existing tunnel portal (outlet) at the Tieton Canal (Figure 2). The existing concrete headwall will be replaced and riprap erosion protection will be added to the tunnel outlet.

Cowiche Creek Water Exchange

In 2004, YTID, the Cowiche Creek Water Users Association (CCWUA), Reclamation, North Yakima Conservation District (NYCD), Trout Unlimited and others began discussing water deliveries to Cowiche Creek parcels using the YTID system. Under the water exchange agreement, YTID would provide water to Cowiche Creek water users through YTID's existing distribution system. In exchange, the Cowiche Creek water users would stop withdrawing water from Cowiche Creek and exchange their Cowiche Creek water right for an equivalent quantity of Tieton River water provided by YTID. A Cowiche Creek Water Exchange (CCWE) Agreement would benefit both fisheries restoration in Cowiche Creek and the Cowiche Creek landowners. Water would remain in Cowiche Creek to provide higher instream flow rates for steelhead spawning and rearing, and the reliability of water deliveries to landowners would be improved.

In 2013 YTID, CCWUA and NYCD entered into a Water Delivery Agreement for Delivery of CCWUA water rights. YTID and Reclamation also entered into an agreement to wheel the water through YTID's distribution system. The agreements were the culmination of nearly a decade of work by many stakeholders. Funding to complete the agreements was provided by Bonneville Power Administration through Trout Unlimited. YTID then constructed two turnouts from its main distribution pipeline to serve CCWUA to fulfill these agreements. Water delivery to CCWUA began April 1, 2014. This was considered the first phase of the overall CCWE concept. The turnouts are near the confluence of the North and South Forks of Cowiche Creek on YTID's 72-inch-diameter main pipeline. Together, the two turnouts deliver up to 8 cfs to the Cowiche parcels, or about 32 percent of the total Cowiche water right (25.18 cfs). Design and construction of the turnouts were funded in part by a \$925,000 grant from the Washington Salmon Recovery Funding Board.

The CCWE received widespread support from local, state and federal agencies as well as the Yakama Nation. The water exchange was included as a recommended mitigation strategy in the 2009 Yakima Steelhead Recovery Plan. The Steelhead Recovery Plan is a federally mandated document that describes proposed actions, cost estimates, and schedules for restoring steelhead to a non-threatened status under the Endangered Species Act.

Cowiche Creek Water Exchange Improvements

Figure 8 shows YTID's 72-inch distribution pipeline, the existing CCWUA East Lateral and West Lateral Turnouts, and CCWUA parcels served by YTID since 2014. Figure 8 also shows other CCWE parcels which are not currently served by YTID. These parcels hold water rights in Cowiche Creek and withdraw water directly from the creek for irrigation.

YTID proposes to reconfigure the existing West Lateral Turnout (Figure 9). The turnout is a 20-inch outlet from the 72-inch pipe, with a maximum capacity of approximately 15 to 20 cubic feet per second (cfs). The turnout is currently equipped with an 8-inch YTID turnout that can deliver up to 5 cfs. YTID proposes to remove the existing thrust block and 20-inch blind flange and add two new turnouts to the existing 20-inch outlet. One turnout would be a new 8-inch YTID turnout similar to the existing turnout, capable of delivering up to 5 cfs to any of the nearby CCWE parcels. Several parcels southwest of the turnout are ideal candidates for the proposed CCWE expansion. As with the original CCWUA, YTID would provide water to Cowiche Creek water users through YTID's existing distribution system in exchange for Cowiche Creek water users to stop withdrawing water from Cowiche Creek and exchange their Cowiche Creek water right for an equivalent quantity of Tieton River water provided by YTID. This expanded agreement will benefit both fisheries restoration in Cowiche Creek and the Cowiche Creek landowners. Water would remain in Cowiche Creek to provide higher instream flow rates for steelhead spawning and rearing, and delivery of water through YTID's system to landowners will be cleaner, more reliable, and pressurized compared to the seasonal supplies currently available from Cowiche Creek.

YTID also proposes to install a second new, 8-inch turnout from the existing 20-inch outlet. The second turnout would discharge water directly to Cowiche Creek to augment in-stream flow during dry months, or as needed to enhance fish spawning and migration in the creek. Despite the significant achievements of the original CCWE project, flow rates in the creek drop to near zero in dry summer months. For example, in July and August 2015, the mean flow rate in Cowiche Creek below the confluence of the North and South Forks fell to less than 2.0 cfs for 38 days. In September and October 2015, YTID supplied up to 2 cfs directly into the South Fork Cowiche Creek at the west turnout in cooperation with basin stakeholders. The second turnout could deliver up to 5 cfs directly to Cowiche Creek. The turnout to Cowiche Creek would be similar to a tributary supplementation program that was recently implemented by the Kittitas Reclamation District (KRD) in Kittitas County, Washington. This program was developed and endorsed by Reclamation, Ecology and many other federal, state, and local resource agencies.

As part of the CCWE expansion, YTID will work to develop memorandums of understanding between the YTID, USBR, state and federal fish agencies, Yakama Nation, and the other Cowiche Creek water right holders on a voluntary basis. The agreements would exchange Cowiche Creek water rights for equivalent water rights from the Tieton River. This is a complex process and it is anticipated that agreements will be in place with the goal of water delivery starting in April 2023.

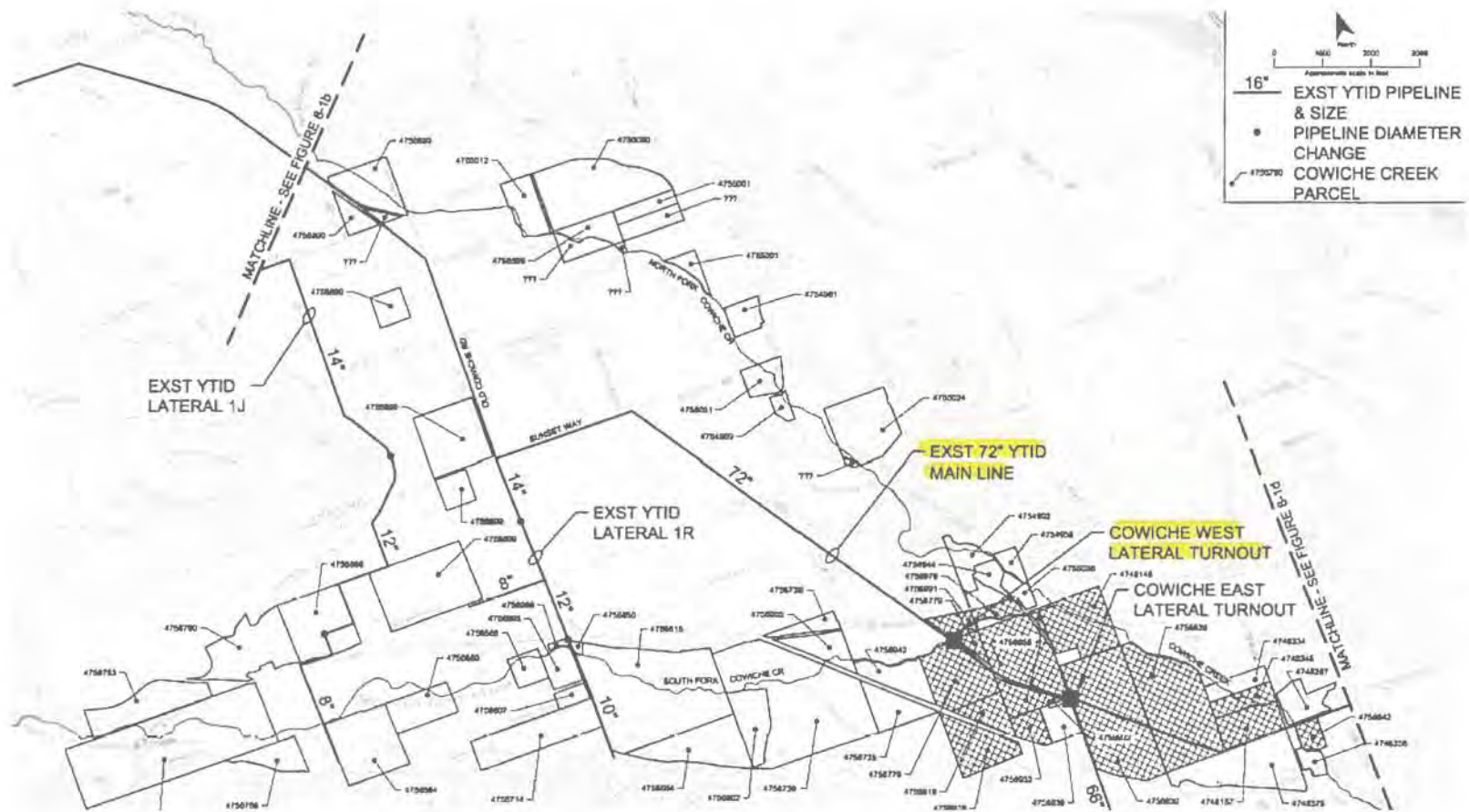


FIGURE 8
YTID Distribution System and Cowiche Creek
Water Users Association (CCWUA) Parcels

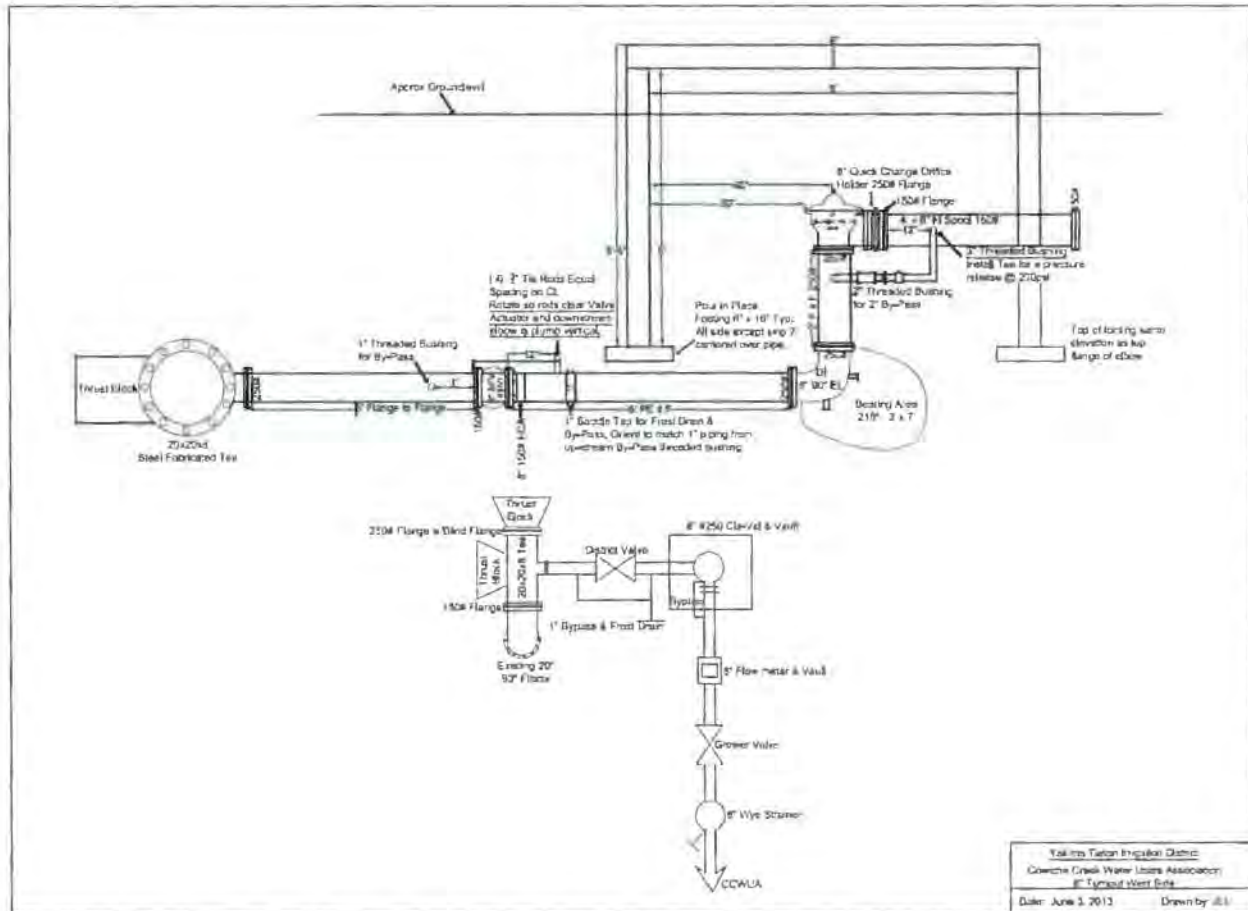


Figure 9. Cowiche Creek Water Users Association West Lateral Turnout

Modifying the existing West Lateral Turnout appears to be the most effective means of expanding the CCWE. Two other options could be considered depending on the location of willing CCWUA landowners. YTID could modify or replace the existing turnout near Weikel and Zimmerman Roads. The existing turnout operates at 15 cfs with no flow control capability (the turnout is on or off). A new valve, modified orifice plate, or turnout would be required to release less than 15 cfs. This turnout is currently only used during the spring when water is in the Cowiche Creek. If the discharge of the turnout exceeds 40 percent of the discharge in Cowiche Creek, then the turnout becomes a false attraction for aquatic species. This turnout is located below Cowiche Hydro and is used to maintain the discharge at Cowiche Hydro which needs 40-45 cfs to operate without interruption.

YTID could also consider upsizing Laterals 1J and 1R (see Figure 8). The existing 14-inch laterals are at full capacity. If modifications and/or replacement of the existing turnouts described above are not desirable, these laterals could be upsized to deliver additional water to CCWE.

Table 2 summarizes the proposed project schedule. YTID is currently completing a feasibility study for this project and the feasibility study is not included as part of this funding request. Grant funding would be used to complete the final design, permitting, stakeholder involvement, and construction of the dam and reservoir improvements and the CCWE improvements.

Table 2. Project Schedule (Calendar Months)

Task	2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Feasibility Study*												
Final Design												
Stakeholder Involvement	X	X	X	X	X	X	X					
Develop Final Design Criteria	X	X										
Data Collection and Condition Assessments		X	X									
Final Engineering Evaluation			X	X								
60% Design			X	X								
90% Design				X	X							
IFC Design					X	X						
Environmental Review	X	X	X									
Environmental Permits				X	X	X	X					
Construction Permits							X					
Bidding and Construction							X	X	X	X		
Start-up and Water Delivery										X		

1.4 Performance Measures

The new YTID turnouts will be equipped with magnetic flow meters. YTID will measure and record monthly water deliveries to CCWE parcels and direct discharges to the creek. Water deliveries to CCWE parcels will reduce diversions from Cowiche Creek, which will commensurately increase the in-stream flow. Direct discharge to the creek will also increase instream flow rates. Flow rates and quantities can be managed consistently and effectively based on new agreements made through the expanded CCWE. The goal is to be neutral to the Total Water Supply Available (TWSA) as with the existing CCWUA project.

1.5 Evaluation Criteria

1.5.1 Evaluation Criterion A: Project Benefits

Building Long-Term Resilience to Drought

The Project will enhance fish flows and fish habitat for Endangered Species Act (ESA)-listed steelhead, create new storage and new water for pro-rated irrigation districts, and improve the operational flexibility, reliability, and reuse of limited water resources in the Yakima River Basin. The proposed project would directly contribute to additional water for the basin.

The Project will build long-term resilience to drought by creating both the infrastructure and operational flexibility for dry-year water deliveries to Cowiche Creek. YTID could deliver up to 5 cfs

to the South Fork Cowiche Creek during dry years, or deliver water to the creek at other rates and times as requested or agreed by participating resource agencies. A continuous flow rate of 5 cfs is equivalent to about 300 acre-feet per month. In addition, YTID could deliver up to 5 cfs to participating CCWUA agricultural parcels. The new YTID turnout serving CCWUA would typically supply approximately 1,000 acre-feet of water over a typical 7-month irrigation season. Water deliveries to the CCWUA parcels would also build long-term resilience to drought, because the deliveries would reduce water diversions from the creek. With routine maintenance provided by YTID, the life expectancy of the turnouts should be 50-years or more.

Making Additional Water Supplies Available and Improving Overall Water Supply Management

The new spillway gates at French Canyon Dam are expected to create an additional 160 acre-feet of reservoir storage capacity. In most years, including most dry years, Rimrock Reservoir fills to capacity in the late spring months and water is released from the reservoir to make room for incoming snow-melt. By creating additional storage at French Canyon Reservoir, water that is currently released could be captured and used more effectively. On average, excess water is available in 9 of 10 years. Therefore, this project could increase basin water supplies by up to 1,440 acre-feet over 10 years, or about 144 acre-feet per year on average.

YTID's full water right totals 114,049 acre-feet per year, including 38,181 acre-feet of pro-ratable rights and 75,868 acre-feet of non-portable rights. After settlement with Yakama Nation, State of Washington, and Reclamation, YTID can divert up to 96,611 acre-feet from April 1 to October 31 and 3,881 acre-feet from November 1 to March 31. YTID is also allowed 908 acre-feet from the North Fork Cowiche Creek from March 1 to July 31. The additional reservoir capacity created by this project is small compared to YTID's overall water rights. Nevertheless, the ability to provide dry season water deliveries to Cowiche Creek builds long-term resiliency to drought which is widely supported in the Yakima River Basin.

Increasing the storage at French Canyon Dam and Reservoir by 30 percent will also increase the operational flexibility of YTID's existing delivery system. Reduced Tieton Canal flow changes will be needed for early season frost water delivery, orchard cooling and other delivery operations. It will also be an additional benefit to one of the alternatives or combination of alternatives under consideration in the Tieton River Restoration and Water Reliability Project.

Benefits to Fish, Wildlife or the Environment

Salmon and steelhead populations in the Columbia River Basin have declined dramatically over the past 150 years. Pre-development fish populations in the Columbia River have been estimated between 8 and 14 million fish (Yakima Basin Fish & Wildlife Recovery Board, 2009). Recently, the total run of all Columbia River salmon and steelhead ranged from 1 to 2 million fish, with approximately three-quarters of those fish reared in hatcheries. Steelhead were listed as threatened under the ESA in 1999.

Similarly, fish populations have declined in the Yakima River Basin in two distinct phases. Between 1850 and 1900, salmon and steelhead populations declined by about 90 percent because of diversions of instream flows into unscreened irrigation canals. From the early to mid-1900s, the construction of dams for hydropower, irrigation, and flood control blocked

many miles of spawning and rearing habitat. The quantity and quality of habitat were also reduced by reduced flow rates below the dams and higher water temperatures in the rivers.

Reclamation, YTID, Yakama Nation, and Washington Department of Fish and Wildlife (WDFW) have a long history of long-range water planning in the Yakima River Basin which includes working alongside larger workgroups of partners and stakeholders. These participants collaborated to develop the Yakima River Basin Study - Volume 1 - Proposed Integrated Water Resource Management Plan (Basin Study) (HDR et al. 2011), which has three primary goals:

- Protect, mitigate, and enhance fish and wildlife habitat
- Provide increased operational flexibility to manage instream flows and meet ecological objectives
- Improve reliability of the water supply for irrigation, municipal supply, and domestic uses

Cowiche Creek is a tributary to the Naches River just west of Yakima, WA. The stream provides habitat for steelhead and bull trout, two species listed as Threatened under the Endangered Species Act. The stream is also used by coho and Chinook salmon, and by scores of resident fish species. A significant impediment to healthy aquatic species habitats in Cowiche Creek is the over-appropriation and over-use of creek water during the irrigation season. During summer, portions of Lower Cowiche Creek nearly dry up because of irrigation withdrawals from the creek. The Project will provide benefits to aquatic species by providing late-season water deliveries in dry years. By raising French Canyon Dam and constructing the turnouts and other improvements described above, YTID could increase flows in Cowiche Creek by up to 10 cfs through a combination of direct deliveries to the creek (5 cfs) and offsets to creek diversions via indirect deliveries to CCWUA parcels (5 cfs).

1.5.2 Evaluation Criterion B: Drought Planning and Preparedness

Reclamation, YTID, Yakama Nation, and Washington Department of Fish and Wildlife (WDFW) have been instrumental participants in the long-range water planning in the Yakima River Basin, working alongside a larger workgroup of partners and stakeholders that collaborated to develop the Yakima River Basin Study - Volume 1 - Proposed Integrated Water Resource Management Plan (Basin Study) (HDR et al. 2011). The Basin Study has three primary goals:

- Protect, mitigate, and enhance fish and wildlife habitat
- Provide increased operational flexibility to manage instream flows and meet ecological objectives
- Improve reliability of the water supply for irrigation, municipal supply, and domestic uses

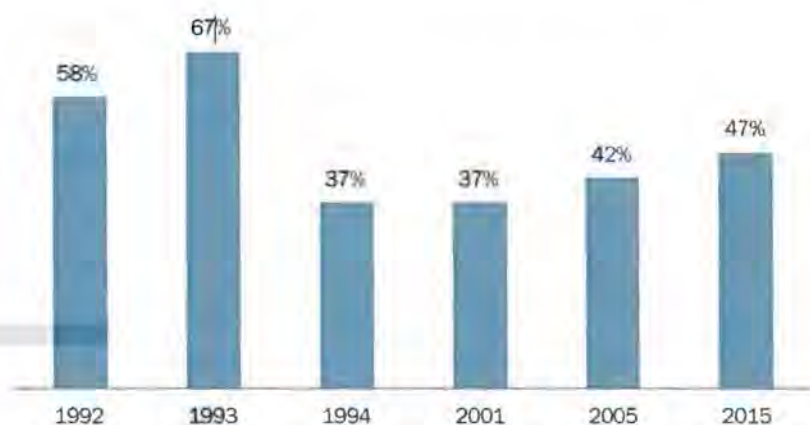
The Basin Study addresses the need for drought mitigation in the Yakima Basin through several components including better operational capacity of existing reservoirs. The Basin Study also identified additional specific needs for the Yakima River Basin, including the following:

- Resident and anadromous fish: Improved mainstem and tributary habitat, including habitat protection and enhancement, flow restoration, fish barrier removal, and screening diversions
- Irrigation water supply: Providing a water supply of 70 percent of pro-rated water rights during drought years (the threshold for minimally acceptable supply)

This Project builds directly on Basin Study and Integrated Plan goals and needs as well as recent studies led by YTID, the Yakama Nation, and Washington State Department of Ecology (Ecology).

1.5.3 Evaluation Criterion C: Severity of Actual or Potential Drought Impacts to be addressed by the Project

In dry years, water supply is inadequate to meet all water rights in the Yakima River Basin. As a result, deliveries are reduced to irrigation districts with pro-rated junior water rights. Since the early 1990s, droughts that reduced water deliveries to those holding pro-rated water rights in the basin occurred every fourth year on average. In prior basin-wide water planning efforts, a pro-rationing level of 70 percent has been identified as a volume that meets minimal supply needs and prevents severe economic losses to farmers during a drought. During the 2001 drought, pro-rationed water supplies were only 38 percent (HDR et al 2011). Figure 10 shows the volume of water delivered to junior water right (pro-rated) districts as a percent of their total allotment. In addition, reduced summer and early fall streamflows may affect migrating, spawning, and rearing conditions for anadromous fish.



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

Reclamation and Ecology 2012

Figure 10. Volume of Water Delivered to Junior Water Right (Pro-rated) Districts as a Percent of their Total Allotment

The 2015 water year was one of the driest on record with 85 percent of the state designated as “extreme drought” status. The Washington Department of Agriculture estimated statewide economic damage from the drought to agricultural production at \$639 million to \$780 million. These figures underestimate the drought’s total economic impact, because the analysis did not include losses from all agricultural producers, and it did not include secondary or indirect impacts, such as losses or increased costs to packinghouses. Further, impacts to the Yakima Basin economy as published do not include short- and long-term impacts to the fishery. [Source: Water Security for the Yakima River Basin’s Economy, Communities, and Watersheds, ECONorthwest, June 14, 2017]

Climate change is expected to affect both water supplies and consumptive use by crops in the Yakima Basin (HDR et al 2011). Climate change will affect the timing and quantity of precipitation which will affect stream flows in both magnitude and timing. Drought-year impacts are expected to increase in frequency and magnitude with climate change. Drought and climate change are anticipated to cause disproportionately negative impacts to pro-rated

water districts and to instream flows for fish. The potential consequences of failure to address these factors, which are known to have persisted for decades creates legal and financial risks for Reclamation and water users. Continued collaboration among water users to manage water resources will minimize the adverse impacts of climate change.

1.5.4 Evaluation Criterion D: Project Implementation

YTID hired a licensed surveyor in June 2020 to support data collection efforts for this Project. The surveyor collected field elevations at critical locations including the dam spillway, dam crest, county road, and tunnel portal outlet. During summer of 2020, YTID's consulting engineer used the survey data to prepare conceptual designs and cost estimates for this project, which includes installation of a pre-engineered gates at or near the spillway crest. The project also includes new YTID turnouts to serve the CCWUA. As part of the conceptual design phase, the engineer also consulted with Reclamation's Dam Safety personnel to identify any challenges that the Agency foresees regarding the concept alternative. Reclamation provided information and guidance related to a dam safety review that will be required during final design. Additional future analysis will be required to complete the design. Final design activities will include the following tasks:

- Develop Final Design Criteria
- Collect Data and Perform Condition Assessments
- Conduct Final Engineering Evaluation
- Develop 60 Percent Design Package
- Develop 90 Percent Design Package
- Develop Issue for Construction (IFC) Package
- Complete Environmental Permitting

Section 1.3 provides a detailed description of the preliminary design, which is independent of the funding request associated with this grant application activities.

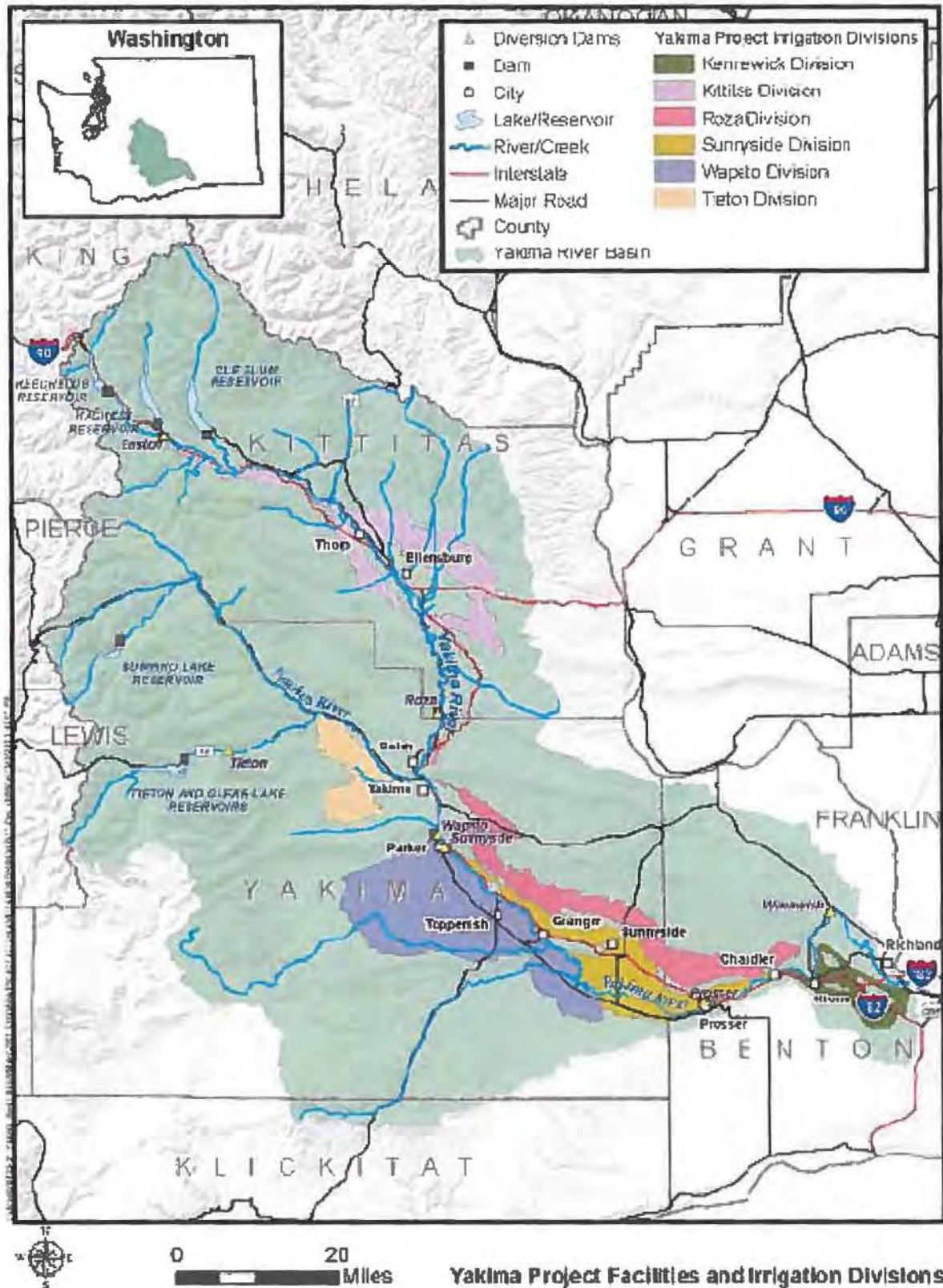
Final design elements include the following:

- French Canyon Dam Improvements
- Raise the county road
- Infrastructure improvements associated with the expanded CCWE

Project construction is expected to occur during the non-irrigation season, because work on the dam will require the reservoir to be dewatered. Construction is expected to begin in late October 2022 and be completed by March or April 2023 when the next irrigation season begins. Section 1.3 provides a project schedule. The schedule is 3-years in duration.

1.5.5 Evaluation Criterion E: Nexus to Reclamation

The Yakima Project is a federal reclamation project authorized in 1905. The Project is operated by Reclamation and delivers irrigation water to fertile land extending 175 miles along both sides of the Yakima River in south-central Washington. There are seven divisions in the Project: Storage, Kittitas, Tieton, Sunnyside, Roza, Kennewick, and Wapato. Yakima-Tieton Irrigation District is part of the Tieton Division. The French Canyon Dam and Reservoir are owned by Reclamation and operated by Yakima-Tieton Irrigation District. Figure 11 identifies Yakima Project facilities and irrigation divisions.



Source: Yakima River Basin Study – Volume 1 – Proposed Integrated Water Resource Management Plan; HDR et al., 2011
Figure 11. Yakima Project Facilities and Irrigation Divisions

The Wapato Division is operated by the Bureau of Indian Affairs but receives most of its water supply from the Yakima Project for irrigation of 136,000 acres of land (HDR et al., 2011). The Wapato Project delivers water to tribal land within the Yakama Indian Nation. This project supports the goals and objectives of the Yakama Nation. A letter of support from the Nation is included in Section 6.

1.5.6 Evaluation Criterion F: Department of the Interior and Bureau of Reclamation Priorities

The French Canyon Dam and Cowiche Creek Water Exchange Improvements Project would provide an excellent opportunity to resolve Reclamation water storage and distribution systems conflicts and expand capacity. Drought impacts to fish in Cowiche Creek would be reduced, and the capacity of French Canyon Reservoir would be increased. This project is supported by conservation organizations advocating for balanced stewardship and use of public lands. Refer to the letters of support in Section 6.

Additional storage will make more water available to meet water deliveries for water users and increase stream flows during drought conditions. Water would remain in the storage system, which would benefit late-season water supplies. This project will minimize economic losses from drought conditions by improving the reliability of water supplies during times of drought.

YTID has been a good steward of Tieton River water for many years. The original CCWE received widespread support from local, state and federal agencies as well as the Yakama Nation. This project will continue to establish trust with our local communities by making additional stored water available in times of drought, along with providing a reliable source of irrigation water to CCWU and YTID's water users.

It is anticipated that there will be minor environmental impacts to earth (soils), air, plants, animals, energy, natural resources, environmental health (health hazards and noise), land and shoreline use, housing, aesthetics, light and glare, recreation, historic and cultural preservation, transportation, public services, and utilities. When the improvements to French Canyon Dam are operational, there will be an overall positive effect to the environment, particularly to making stored water available to increase late-season streamflows.

The work will be limited to YTID and Reclamation's existing rights-of-way. No known environmental or cultural resources of special value will be significantly impacted. Therefore, it is expected that activities required for NEPA, NHPA, and ESA compliance will be minimal when the project is ready for construction. The subsequent construction project will follow Ecology's State Environmental Policy Act (SEPA) review procedures.

The engineering measures proposed utilize proven technology. Construction of the French Canyon Dam Improvement Project will be bid competitively which facilitates private sector efforts to construct infrastructure projects serving American needs.

References

HDR, Anchor QEA, ECONorthwest, ESA Adolfson, and Golder Associates. 2011. Yakima River Basin Study. Volume 1. Proposed Integrated Water Resource Management Plan. Report prepared for Bureau of Reclamation and Washington Department of Ecology. April. 128 p.

Project Budget

2.1 Funding Plan and Letters of Commitment

The total cost for engineering, permitting, and construction of the French Canyon Dam and Cowiche Creek Water Exchange Improvements Project is estimated to be \$2,698,730. The cost estimate is a combination of in-kind design and construction services provided by YTID, design services provided by an engineering consultant, and construction services provided by a licensed general contractor.

The constructed project will consist of the following parts:

- **Work Element 1 - Cowiche Creek Water Exchange West Lateral Turnout Improvements.** YTID will self-perform this work. YTID will design, permit, and construct the West Lateral Turnout improvements. The West Lateral Turnout is similar to hundreds of other turnouts within the District and YTID is well-qualified to complete the work.
- **Work Element 2 - French Canyon Dam and Reservoir Improvements.** YTID will retain an engineering consultant to design and permit the new spillway gates, county road improvements, and tunnel portal improvements. After the design is completed, YTID will retain a construction contractor through a competitive bid process to build the improvements.

YTID is requesting a 50/50 cost split for all work. YTID would pay 50 percent of all costs with District funds. Federal funding through this grant award would provide the remaining 50 percent share of all costs. The District will not seek funding from other sources, so letters of commitment from others are not necessary or provided.

The detailed project budget is provided in Attachment A. A summary of non-federal and federal funding sources is shown in Table 3. Please refer to the Detailed Project Budget provided in Attachment A. A copy of the completed SF 424C Budget Information – Construction Programs is provided with the other required Federal Forms.

Table 3. Summary of Non-Federal and Federal Funding Sources

Sources	Amount
Funding and In-Kind Services by YTID	\$1,349,365
Reclamation Funding	\$1,349,365
Total Project Cost	\$2,698,730

2.2 Budget Proposal

A detailed project cost estimate is provided in Attachment A. A copy of the completed SF 424C Budget Information – Construction Programs is provided with the other required Federal Forms.

Attachment A, Work Element 1, summarizes the cost and funding sources to complete the CCWE West Lateral Turnout Improvements. Most of this work will be provided by YTID as in-kind services. YTID will prepare the design and construct the work with in-house District labor and equipment.

Attachment A, Work Element 2, summarizes the cost and funding sources to complete the French Canyon Dam and Reservoir improvements. Most of the design and permitting work will be performed by an engineering consultant. A licensed construction contractor will construct the facilities. Reclamation will provide a dam safety review and serve as the NEPA Lead Agency for the environmental documentation and permitting.

2.3 Budget Narrative

The budget categories shown in Attachment A and the scope of work for each category are described below.

2.3.1 Salaries and Wages

Attachment A, Work Element 1 summarizes YTID salaries and wages required to self-perform the design and construction of the West Lateral Turnout Improvements. Wages and salaries include a combination of office resources to complete the design, and field resources to complete the construction.

Attachment A, Work Element 2 summarizes YTID salaries and wages required to oversee and coordinate the French Canyon Dam and Reservoir Improvements. YTID will coordinate with Reclamation, the design consultant, and the construction contractor. YTID will also provide limited on-site observation of the construction work at the reservoir. This line item also includes costs to be incurred while reporting to federal funders. In accordance with the FOA requirements, YTID will prepare and submit to Reclamation an SF-425 Federal Financial Report. While the specific terms and conditions pertaining to reporting requirements will be included in the financial assistance agreement, for cost estimating purposes it is assumed YTID will submit monthly reports over the 3-year duration of the projects.

2.3.2 Fringe Benefits

The applicant's fringe benefit costs are included and shown as salaries, wages, and benefits under Section 2.4.1.

2.3.3 Travel

In Attachment A, Work Element 1, there are no travel costs because travel costs are included in YTID's in-house equipment cost estimate.

For Work Element 2, YTID is showing a mileage charge and assumed mileage over the duration of the project.

2.3.4 Equipment

Attachment A, Work Element 1 provides an estimate of YTID equipment costs to complete the West Lateral Turnout. YTID will use District-owned equipment, or rent equipment as necessary, including a backhoe, excavator, dump truck, crane, and service vehicle.

YTID is not expected to use District-owned equipment for the dam and reservoir improvements (Attachment A, Work Element 2).

2.3.5 Materials and Supplies

Attachment A, Work Element 1, provides an estimate of the materials and supplies required to construct the West Lateral Turnout. Materials and supplies will include ductile iron pipe, valves, flow meters, valve vaults, imported backfill, concrete, and other construction materials. Unit prices for materials and supplies is based on historical YTID costs for similar structures. YTID has no materials and supply costs associated with the design or construction of the dam and reservoir improvements (Attachment A, Work Element 2).

2.3.6 Contractual

YTID will complete a competitive bid processes and enter into contracts with the winning bidder for design and construction of the French Canyon Dam and Reservoir Improvements. The anticipated approach and scope of work to deliver these services are described in the following subsections.

2.3.6.1 Engineering Consultant

YTID plans to enter into an agreement with a consulting engineer to provide permitting support and final design of the French Canyon Dam and Reservoir Improvements. The proposed approach to design of the French Canyon Dam pool raise includes eight tasks, including multiple deliverables that will be submitted for USBR review, and a total of six (6) review meetings to better incorporate USBR perspectives in the design. Each task is briefly described below. The total cost for A&E is summarized in Attachment A. Individual tasks are listed in Attachment B, with the detailed estimated level of effort and expenses.

Final Design Criteria (Task 1)

Task 1 will study existing available information, establish final design criteria, and identify needs for data collection and conditions assessments. Where appropriate, engineering calculations will be completed to inform recommendations for further investigation. Review of applicable agency guidelines will be completed. The findings will be summarized in a technical memorandum, and review meetings will be held with YTID and USBR.

Site Investigations and Conditions Assessment (Task 2)

In Task 2, site investigations will be completed to address data gaps and perform conditions assessments. Field inspections, and field and laboratory data will be presented in a data report. Anticipated subcontractors are as follows:

- Surveying and utility locating
- Geotechnical drilling

- A single borehole will be advanced at the centerline of dam, in the vicinity of the deepest portion of the key trench. Drill 75 feet using hollow-stem auger equipment to allow high quality sampling of core material. In the same borehole, or an offset location, perform sonic drilling to 100 feet, then install slope indicator casing for downhole geophysical measurements, and for lateral movement monitoring after completion of the project.
- Two borings will be advanced through the shell of the dam, one each upstream and downstream of the core, using sonic drilling equipment. Install slope indicator casing for downhole geophysical measurements, for the purpose of liquefaction screening for foundation soils. The boring at the upstream side of the dam would be accomplished by constructing a temporary access ramp during winter months when the reservoir level is lowered.
- Downhole geophysical measurements will be performed to characterize the shear wave velocity profile in each borehole for use in seismic hazard analyses.
- Geotechnical laboratory testing will be performed on representative samples. Index tests will be done for soils classification. Advanced testing, such as cyclic direct simple shear testing will be done for the core material if determined necessary for liquefaction screening, and/or seismic stability and deformation analyses.

Final Design (Tasks 3-6)

Final engineering evaluations will be completed in Task 3. The design effort will be multi-disciplinary. Principle components of the dam safety evaluation will include hydrologic, hydraulic, structural, and geotechnical analysis. The engineering evaluation will be documented in a basis of design report (BODR). Where components are designed by others, such as a vendor-design spillway gate, that information will be attached to the BODR.

Tasks 4, 5, and 6 will prepare 60%, 90% and Issued for Construction (IFC) design packages, including drawings, specifications, the engineer's cost estimate, and an operations and maintenance (O&M) manual specific to the proposed improvements. Each package will be submitted to Reclamation for review.

Environmental Permitting (Task 7)

Environmental permitting will be completed in Task 7, including an assessment of potential impacts to the environment or cultural resources.

It is anticipated that any environmental costs incurred would be related to YTID and their consultant's time with Reclamation to: determine the level of environmental compliance required for the project; prepare any necessary environmental compliance documents or reports; review any environmental compliance documents; and time required for approvals or permits.

Services During Construction (Task 8)

Task 8 will represent services performed by the designer during construction, including bid review, submittal review, special inspection, and preparation of as-built drawings. YTID will perform resident engineering for the project, with periodic special inspection by the engineer.

2.3.6.2 Construction Contractor

YTID plans to enter into an agreement with a construction contractor to execute all improvements in accordance with IFC contract documents for French Canyon Dam and Reservoir Improvements. The total anticipated construction cost is summarized in Attachment A (see Attachment C for detail). The anticipated construction is described in the following subsections, and a detailed Class 5 construction cost estimate is shown in Attachment C.

Spillway Improvements

As discussed in Section 1.3, YTID proposes the installation of new gate equipment at the spillway crest, such as an Obermeyer Gate, inflatable dam, or HydroPlus Fusegate. For all three alternatives, the initial step will be to demolish the upper portion of the spillway crest, reinforce and/or anchor the spillway slab or gallery wall as determined necessary in final design, and construct a broad-crested weir that will also serve as a pedestal for the new gate equipment.

YTID and their engineering consultant will evaluate performance characteristics and life-cycle costs for gate equipment candidates. Based on preliminary information, it is anticipated that the Obermeyer Gate, or approved equal, will be specified for the project, including requirements for hydraulic performance, submittal of shop drawings and manufacturer's installation manual, and an operation and maintenance manual. The cost estimate in Attachment C is based on the Obermeyer Gate alternative.

County Road Improvements

It is estimated that 1,600 feet of French Road will need to be raised approximately 3 to 5 feet to maintain the top of road 5 feet above the proposed crest elevation. The construction cost estimate includes earthwork, gravel surfacing, signage, and guardrail for the affected area. It is assumed that buried utilities, if any, would not be impacted by these modifications and that blasting to shift the existing road further into the hillside and away from the raised water surface of French Canyon dam will not be required.

Tunnel Portal Improvements

The pool raise is expected to inundate the tunnel portal. To mitigate the risk of erosion and slope instability of the slopes surrounding the portal, the portal headwall and wingwalls will need to be replaced with more extensive protection. It is anticipated the new structure will consist of 10-foot high walls, extending 30 feet downstream of the portal and a concrete slab extending between the wingwalls at the bottom of the channel. Approximately 4,000 square feet of riprap protection is anticipated to mitigate erosion downstream of the concrete structure. The cost estimate assumes these improvements would be constructed during low reservoir levels and would not require temporary shoring or construction dewatering.

2.3.7 Third-Party In-Kind Contributions

There are no third-party in-kind contributions as part of this project.

2.3.8 Other Expenses (Reclamation Costs)

Reclamation will incur costs related to this project. No Reclamation costs are anticipated for the Cowiche Water Exchange Turnout design (Attachment A, Work Element 1). Reclamation will serve as the NEPA lead agency for environmental permitting and they will perform a dam safety review. These costs are estimated and presented in Attachment A, Work Element 2.

2.3.9 Indirect Costs

For this project, the recipient will not have any indirect costs. All costs associated with the project are direct and can be documented as such.

SECTION 3

Environmental and Cultural Compliance

Environmental compliance will include meeting the requirements of the National Environmental Policy Act (NEPA) with Reclamation as the lead, and the State Environmental Policy Act (SEPA) with YTID as the lead. An Environmental Checklist will be prepared, and a determination of insignificance is assumed for SEPA. YTID anticipates that a Categorical Exclusion will be prepared and approved by Reclamation for NEPA.

Impacts are anticipated to be minimal and insignificant. Environmental resources that may have minimal impacts include wetlands and protected species and habitats. Habitat losses resulting from the raised reservoir would be offset by enhanced environmental habitat for protected and endangered fish (Middle Columbia River Steelhead) in Cowiche Creek. Potential impacts to wetlands, species/habitats and cultural resources will be investigated, evaluated, findings documented, and reports submitted as part of the NEPA/SEPA evaluation and the environmental permitting process. If mitigation is necessary, mitigation measures will be planned and implemented.

Compliance with the Endangered Species Act (Section 7) will include a website check of state and federal protected species and habitat, a site survey by a qualified biologist of property that would be submerged by the raised reservoir, and an endangered species report to be submitted as part of NEPA/SEPA will be prepared.

Compliance with the National Historic Preservation Act (Section 106) will include a data search of existing information of the area and a site evaluation. A qualified archeologist will survey the property that would be submerged by the raised reservoir, prepare a cultural resources report that includes any historic or cultural resources that may be found and submit the report to the Washington State Department of Archeology and Historic and Preservation (DAHP) for approval. It is assumed that no historic inventories will be needed and there will be no findings that would require an Archeological Permit to explore the site further.

SECTION 4

Required Permits or Approvals

Permits for raising the French Canyon Regulating Reservoir's pool elevation by approximately five (5) feet are expected to include the following:

Permit	Reason	Agency
Environmental Review:		
National Environmental Policy Act	NEPA compliance, includes evaluation of all environmental resources of the natural and built environments	Reclamation
State Environmental Policy Act	SEPA compliance, includes evaluation of all environmental resources of the natural and built environments.	YTID
National Historic Preservation Act (Section 106)	Cultural Resources Evaluation/Approval	DAHP
Endangered Species Act	Protected Species and Habitat Evaluation/Approval	WDFW/Reclamation
Clean Water Act (CWA)	Determine if any potential wetlands or waters of the US or state are present	USACE
Environmental Permits:		
Hydraulic Project Approval	Project is located in waters of the state that may potentially affect fish and their habitat.	WDFW
CWA Section 404	Impacts to any jurisdictional aquatic resources	USACE
CWA Section 401	Water Quality Certification	Ecology
Construction and Operations Related Permits:		
Dam Safety	Obtain approval to safely elevate the dam spillway that supplies water to the reservoir	Reclamation
General Construction Stormwater Permit	Stormwater management and control	Ecology
Air Emissions	Construction air emission management and control	Ecology/Air Agency
Site Development Permit	Building permits (grading, site, facility improvements)	Yakima County
Flood Development Review	Construction within a FEMA-designated floodplain	Yakima County
Water Rights	To transfer water rights from Cowiche Creek water users to YTID.	Ecology

Permitting agencies will be contacted to provide notice of forthcoming applications for permits. A Joint Aquatic Resources Permit Application (JARPA) will be prepared and submitted to the USACE, Ecology and WDFW. If potential impacts to aquatic resources are identified, a mitigation plan will be submitted as part of the JARPA. Hydraulic project approval from WDFW will be required.

A Notice of Intent (NOI) will be filed on Ecology's website. A Stormwater Pollution and Prevention Plan (SWPPP) that includes a Spill Prevention and Countermeasures Control (SPCC) Plan and Sediment, Erosion and Countermeasures engineering drawing will be prepared for the stormwater permit with Ecology. An NOI for construction air emissions will be prepared if necessary and submitted to Ecology. An application for a Site Development Permit Application will be prepared and submitted to the Yakima County Building Department for any local building permits.

In addition, applications would be prepared to obtain approval from Reclamation for the dam modifications project under the LOPP and to obtain a flood development permit from Yakima County.

Furthermore, an application would be submitted to Ecology to transfer water rights from the Cowiche Creek water users to YTID. This would prevent future withdrawals from Cowiche Creek and provide water to Cowiche Creek water users via the YTID water system.

SECTION 5

Existing Drought Contingency Plan

The Yakima River Basin Study is an extensive planning document that was developed by Reclamation and Ecology. The Basin Study includes numerous provisions to address and mitigate drought in the Yakima Basin. Cowiche Creek is identified in the Basin Study as a high-priority tributary that could benefit from direct discharge. Please refer to Section 1.5.2, *Evaluation Criterion B: Drought Planning and Preparedness*.

SECTION 6

Letters of Support

This Project is a multi-benefit project that will improve drought resiliency for fish and water users. The additional reservoir capacity will allow storage of water that can provide instream flow and fish habitat benefits to Cowiche Creek plus add to YTID's system operational flexibility. YTID's approach helps advance elements of the Yakima Basin Integrated Plan and has widespread support from local, state and federal agencies as well as the Yakama Nation. Letters of Support from the following entities are included in Attachment D.

- Confederated Tribes and Bands of the Yakama Nation
- National Oceanic and Atmospheric Administration (NOAA)
- North Yakima Conservation District
- Trout Unlimited
- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- U.S. Fish and Wildlife Service
- Yakima Basin Fish and Wildlife Recovery Board
- Yakima Basin Joint Board
- Yakima County Board of Commissioners

SECTION 7

Official Resolution

YTID is committed to the financial and legal obligations associated with the receipt of financial assistance under the Drought Response Program. YTID has the resources and capability to provide the amount of funding for contributions specified in the funding plan. YTID will work with Reclamation to meet the established deadlines to enter into a cooperative agreement.

An official resolution that identifies the official with legal authority to enter into agreement was adopted by YTID Board of Directors at its meeting on July 16, 2020 (see Attachment E).

Attachment A
Budget Proposal

Attachment A
Budget Proposal
French Canyon Dam and Cowiche Creek Water Exchange Improvements

Budget Item Description	\$/Unit	Units	Unit Type	Cost
Work Element 1 - Design, Permitting, and Construction of West Lateral Turnout (CCWE) Improvements				
Applicant's Salaries, Wages and Benefits				
Rick Dieker (PM)	\$ 64.34	16	Hrs.	\$ 1,029
Asst. Manager	\$ 47.99	24	Hrs.	\$ 1,152
Project Coord.	\$ 36.74	40	Hrs.	\$ 1,470
Admin. Asst.	\$ 29.87	6	Hrs.	\$ 179
Field Superintendent	\$ 38.18	35	Hrs.	\$ 1,336
Equipment Operator	\$ 36.60	45	Hrs.	\$ 1,647
Laborer	\$ 35.32	320	Hrs.	\$ 11,302
Applicant's Equipment				
Backhoe	\$ 140.23	5	Days	\$ 701
Dump Truck	\$ 103.66	2	Days	\$ 207
Excavator	\$ 350.00	7	Days	\$ 2,450
Service Vehicle	\$ 139.50	15	Days	\$ 2,093
Crane	\$ 1,000.00	1	Days	\$ 1,000
Applicant's Supplies and Materials				
Fabricated fittings	\$ 21,290.00	1	LS	\$ 21,290
Ductile Fittings	\$ 7,992.00	1	LS	\$ 7,992
ClaVal	\$ 7,698.00	2	EA	\$ 15,396
Butterfly Valve	\$ 985.00	4	EA	\$ 3,940
Couplers	\$ 410.00	4	EA	\$ 1,640
Valve Vault	\$ 2,750.00	2	EA	\$ 5,500
Flow Meter	\$ 1,760.00	2	EA	\$ 3,520
FM Enclosure	\$ 953.00	2	EA	\$ 1,906
Orifice Holder	\$ 1,100.00	1	EA	\$ 1,100
Wye strainer	\$ 1,455.00	1	EA	\$ 1,455
By-pass assembly	\$ 1,410.00	1	LS	\$ 1,410
Concrete	\$ 148.00	10	CY	\$ 1,480
Gravel	\$ 9.10	30	CY	\$ 273
Applicant's Contractural/Construction				
A&E Consultant	\$ 1,000.00	1	LS	\$ 1,000
Other				
Contingency (20%)				\$ 18,494
Work Element 1 - Subtotal				\$ 110,962

Attachment A
Budget Proposal

French Canyon Dam and Cowiche Creek Water Exchange Improvements

Budget Item Description	\$/Unit	Units	Unit Type	Cost
Work Element 2 - Design, Permitting, and Construction of French Canyon Dam Improv.				
Applicant's Salaries, Wages and Benefits				
Rick Dieker (PM)	\$ 64.34	100	Hrs.	\$ 6,434
Asst. Manager	\$ 47.99	150	Hrs.	\$ 7,199
Project Coord.	\$ 36.74	200	Hrs.	\$ 7,348
Admin. Asst.	\$ 29.87	40	Hrs.	\$ 1,195
Applicant's Travel	300	0.58	Mi.	\$ 174
				\$ -
Applicant's Contractural/Construction				
A&E Consultant (See Attachment B)	\$ 757,452	1	T&M	\$ 757,452
Constr. Contractor (See Attachment C)	\$ 1,657,965	1	T&M	\$ 1,657,965
Other (Reclamation Costs)				
Dam Safety	\$100,000	1	T&M	\$ 100,000
NEPA Lead Agency	\$50,000	1	T&M	\$ 50,000
Work Element 2 - Subtotal				\$ 2,587,767
Total Project Cost				\$ 2,698,730

Attachment B
A&E Consultant Budget Detail

Attachment B - A&E Fee Estimate

Task Order 17 - French Canyon Reservoir and Cowiche Creek Water Exchange Improvements

Task	Description	Todd Hunaker Project Manager	Craig Broadhead Senior Reviewer	Seabring, Traci Project Controls	Marlene Gullike Env./Permitting Lead	Michael Chidley Archaeology Lead	Betsy Phoebeus NEPA Task Leader	John Mulligan Environmental Scientist	Jenny Kindig Civil Engineer	Bon Fehring Conveyance Engineer	Ken Hansen Hydraulic Engineer	Sheryl Stuart Instrumentation & Controls	Howie Hennison Structural Engineer	Travis Munson Project Engineer	Todd Cotten Geotechnical Reviewer	Marcelo Azevedo Geotechnical Engineer	Jaco Esterhuizen Dam Safety Engineer	John DeWolf Cost Estimator	Rose Brown CAD Graphics	Any Norred Technical Editor	Kathleen Malin Specifications Editor	Admin Assistant	Total Hours	Total Labor	Expenses	Travel	Task Totals
1.0	Final Design Criteria	34	-	8	-	-	-	-	35	31	47	14	27	164	56	1	31	5	41	53	1	17	565	\$ 95,240	\$ -	\$ -	\$ 95,240
1.01	Kickoff conference call	4							1	1	1	1	1	12	4	1	1	1	1	1	1	1	32	\$5,472			\$5,472
1.02	Hydrology	2												2			2						22	\$4,452			\$4,452
1.03	Spillway hydraulics	2									16			2			2						22	\$4,452			\$4,452
1.04	Structures	2									16		8	16	2	2							30	\$6,116			\$6,116
1.05	Embankment and foundation seepage	2												24	8		4						38	\$6,384			\$6,384
1.06	Static and seismic stability and deformation	2												60	16		8						86	\$14,040			\$14,040
1.07	French Road	2							16					8	4				12				42	\$6,344			\$6,344
1.08	Tieton Canal outfall	2								16				8	4								30	\$5,728			\$5,728
1.09	Cowiche Creek turnout improvements	2							8	8				8	4				8				38	\$6,304			\$6,304
1.10	Cowiche Creek pipeline																						-	\$0			\$0
1.11	Cost estimating	2																4					6	\$1,192			\$1,192
1.12	Draft Design Criteria Technical Memorandum	4		4					8	4	8	4	8	24	8		8		16	40		8	144	\$22,508			\$22,508
1.13	YTID Review Meeting #1	2										2		4	2		2					2	14	\$2,474			\$2,474
1.14	Final Design Criteria Technical Memorandum	4		4					2	2	2	1	2	8	2		2		4	12		4	49	\$7,588			\$7,588
1.15	USBR Review Meeting #1	2									2			2	2		2					2	12	\$2,186			\$2,186
2.0	Data Collection and Conditions Assessment	29	-	4	-	-	-	-	19	-	31	4	39	88	28	192	24	-	56	124	-	22	660	\$ 102,461	\$ 133,259	\$ 8,825	\$ 244,545
2.01	Surveying and utility locating (subcontractor)	4							8			4		4					12	24			56	\$8,288	\$19,500		\$27,788
2.02	Hydraulic inspection	2									16			2	2		2					2	26	\$5,070		\$1,525	\$6,595
2.03	Structures inspection	2											24	2	2		2					2	34	\$6,742		\$1,525	\$8,267
2.04	Geotechnical inspection	4												32	4		4					2	46	\$7,374		\$1,525	\$8,899
2.05	Geotechnical drilling	8												16	8	104	4			24		2	166	\$24,998	\$67,256	\$4,250	\$96,504
2.06	Borehole Geophysics	2												4	2	24	2			24			58	\$8,528	\$5,720		\$14,248
2.07	Geotechnical laboratory testing													8	4	12	4						28	\$4,528	\$40,783		\$45,311
2.08	Draft Data Report	4							8		12		12	16	4	48	4		40	40		8	196	\$29,428			\$29,428
2.09	YTID and USBR Review Meeting #2	1							1		1		1	2	1		1					2	10	\$1,691			\$1,691
2.10	Final Data Report	2		4					2		2		2	2	1	4	1		4	12		4	40	\$5,814			\$5,814
3.0	Final Engineering Evaluation	32	-	8	-	-	-	-	22	26	94	18	78	200	64	-	34	22	44	52	-	16	710	\$ 123,410	\$ -	\$ -	\$ 123,410
3.01	Hydrology	2												4	2		2		4				54	\$10,632			\$10,632
3.02	Spillway hydraulics	4									24			4	2		2		4				40	\$7,792			\$7,792
3.03	Structures	2										12	60	40	8		4		4				130	\$24,116			\$24,116
3.04	Embankment and foundation seepage	2												16	8		4		4				34	\$5,768			\$5,768
3.05	Static and seismic stability and deformation	4												80	24		8		4				120	\$19,560			\$19,560
3.06	French Road	2							8					16	4		2		12				44	\$6,756			\$6,756
3.07	Tieton Canal outfall	4							8	16	8		12	8	2		2		12				72	\$13,076			\$13,076
3.10	Cost estimating	2												4				16					22	\$3,976			\$3,976
3.11	Draft Basis of Design Report (BODR)	4		4					4	4	16	4	4	16	8		4	4		40		8	120	\$19,368			\$19,368
3.12	YTID Review Meeting #3	2								2	2			2	2		2					2	14	\$2,598			\$2,598
3.13	Final Basis of Design Report (BODR)	2		4					2	2	2	2	2	8	2		2	2		12		4	46	\$7,170			\$7,170
3.14	USBR Review Meeting #3	2								2	2			2	2		2					2	14	\$2,598			\$2,598
4.0	60% Design Package	14	-	8	-	-	-	-	28	20	32	12	40	38	6	-	6	26	84	16	16	6	352	\$ 58,402	\$ -	\$ -	\$ 58,402
4.01	Spillway modifications - 15 sheets	2		2										16	12	16	4	2		32			88	\$15,430			\$15,430
4.02	French Road - 5 sheets	2		2					16					4					24				48	\$6,758			\$6,758
4.03	Tieton Canal outfall - 5 sheets	2		2						8	2		12	4					24				54	\$8,998			\$8,998
4.06	Specifications	2		2					12	12				12	16						16	2	74	\$12,000			\$12,000
4.07	Cost estimating	2												4				24					30	\$5,448			\$5,448
4.08	Draft O&M Manual	2									12			4	2		2		4	16		2	44	\$7,214			\$7,214
4.09	USBR Review Meeting #4	2									2			2	2		2	2				2	14	\$2,554			\$2,554

Attachment B - A&E Fee Estimate Cont.

Task Order 17 - French Canyon Reservoir and Cowiche Creek Water Exchange Improvements

		Todd Huniker Project Manager	Craig Broadhead Senior Reviewer	Soebbing, Traci Project Controls	Mariens Cuhike Env./Permitting Lead	Michael Chideley Archology Lead	Betsy Phorbis NEPA Task Leader	John Mulligan Environmental Scientist	Jenny Kindig Civil Engineer	Bon Fehring Conveyance Engineer	Ken Hansen Hydraulic Engineer	Sherry Stuart Instrumentation & Controls	Howie Hennikson Structural Engineer	Travis Munson Project Engineer	Todd Cotton Geotechnical Reviewer	Marcelo Azevedo Geotechnical Engineer	Jaco Esterhuizen Dam Safety Engineer	John DeWolf Cost Estimator	Rose Brown CAD Graphics	Amy Norred Technical Editor	Kathleen Malin Specifications Editor	Admin Assistant	Total Hours	Total Labor	Expenses	Travel	Task Totals
5.0	90% Design Package	7	-	8	-	-	-	-	14	10	16	6	20	19	3	-	3	13	42	16	24	4	205	\$ 32,932	\$ -	\$ -	\$ 32,932
	5.01 Spillway modifications - 15 sheets	1	-	2	-	-	-	-	-	-	8	6	8	2	1	-	1	-	16	-	-	-	45	\$7,818	-	-	\$7,818
	5.02 French Road - 5 sheets	1	-	2	-	-	-	-	8	-	-	-	-	2	-	-	-	-	12	-	-	-	25	\$3,482	-	-	\$3,482
	5.03 Tieton Canal outfall - 5 sheets	1	-	2	-	-	-	-	-	4	1	-	6	2	-	-	-	-	12	-	-	-	28	\$4,602	-	-	\$4,602
	5.04 Specifications	1	-	2	-	-	-	-	6	6	-	-	6	8	-	-	-	-	-	-	24	-	53	\$8,144	-	-	\$8,144
	5.05 Cost estimating	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	12	-	-	-	15	\$2,724	-	-	\$2,724	
	5.06 Draft O&M Manual	1	-	-	-	-	-	-	-	-	6	-	-	2	1	-	1	-	2	16	-	2	31	\$4,782	-	-	\$4,782
	5.07 USBR Review Meeting #5	1	-	-	-	-	-	-	-	-	1	-	-	1	1	-	1	1	-	-	-	2	8	\$1,380	-	-	\$1,380
6.0	IFC Design Package	7	-	4	-	-	-	-	7	5	8	3	10	10	2	-	2	7	21	8	12	4	108	\$ 17,470	\$ -	\$ -	\$ 17,470
	6.01 Spillway modifications - 15 sheets	1.0	-	1.0	-	-	-	-	-	-	4.0	3.0	4.0	1.0	0.5	-	0.5	-	8.0	-	-	-	23	\$4,023	-	-	\$4,023
	6.02 French Road - 5 sheets	1.0	-	1.0	-	-	-	-	4.0	-	-	-	-	1.0	-	-	-	-	6.0	-	-	-	13	\$1,855	-	-	\$1,855
	6.03 Tieton Canal outfall - 5 sheets	1.0	-	1.0	-	-	-	-	-	2.0	0.5	-	3.0	1.0	-	-	-	-	6.0	-	-	-	15	\$2,415	-	-	\$2,415
	6.04 Specifications	1.0	-	1.0	-	-	-	-	3.0	3.0	-	-	3.0	4.0	-	-	-	-	-	-	12.0	-	27	\$4,186	-	-	\$4,186
	6.05 Cost estimating	1.0	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	6.0	-	-	-	8	\$1,476	-	-	\$1,476	
	6.06 Final O&M Manual	1.0	-	-	-	-	-	-	-	-	3.0	-	-	1.0	0.5	-	0.5	-	1.0	8.0	-	2.0	17	\$2,608	-	-	\$2,608
	6.07 USBR Review Meeting #6	1.0	-	-	-	-	-	-	-	-	0.5	-	-	0.5	0.5	-	0.5	0.5	-	-	-	2.0	6	\$907	-	-	\$907
7.0	Environmental Permitting	12	14	4	68	16	36	456	10	-	-	-	-	-	4	-	10	-	72	8	-	10	720	\$ 102,226	\$ 200	\$ 2,425	\$ 104,851
	7.01 NEPA - Cat X	1	1	1	2	2	4	16	-	-	-	-	-	-	-	-	-	-	4	-	-	-	31	\$4,573	-	-	\$4,573
	7.02 SEPA - Environmental Checklist	1	1	1	6	2	2	24	-	-	-	-	-	-	2	-	2	-	12	2	-	2	57	\$8,391	-	-	\$8,391
	7.03 Wetlands/ESA Survey & Reporting	1	1	1	8	-	10	92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	113	\$15,433	\$100	\$650	\$16,183
	7.04 Cultural Resources Survey & Reporting	1	-	-	8	12	10	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	111	\$15,844	\$100	\$650	\$16,594
	7.05 IARPA	1	1	-	4	-	4	40	-	-	-	-	-	-	2	-	-	-	32	2	-	2	88	\$12,128	\$0	\$375	\$12,503
	7.06 CWA Section 401 and 404	1	2	1	8	-	1	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	\$4,559	-	-	\$4,559
	7.07 Hydraulic Project Approval	1	1	-	4	-	1	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	\$2,434	-	-	\$2,434
	7.08 Dam Safety	2	2	-	8	-	1	40	-	-	-	-	-	-	-	-	4	-	8	-	-	2	67	\$9,762	\$0	\$375	\$10,137
	7.09 Construction Permits (SW, Site Dev., Air)	1	1	-	8	-	1	80	10	-	-	-	-	-	-	-	-	8	2	-	-	2	113	\$15,172	-	-	\$15,172
	7.10 Flood Development Review	1	2	-	6	-	1	20	-	-	-	-	-	-	-	-	4	-	-	-	-	-	34	\$5,364	-	-	\$5,364
	7.11 Water Rights	1	2	-	6	-	1	40	-	-	-	-	-	-	-	-	-	8	2	-	-	2	62	\$8,566	-	\$375	\$8,941
8.0	Services During Construction	20	-	8	-	-	-	-	4	28	32	24	92	92	32	-	12	8	40	-	-	-	392	\$ 71,452	\$ -	\$ 9,150	\$ 80,602
	8.01 Bid Review	4	-	2	-	-	-	-	4	4	8	8	8	12	4	-	4	8	-	-	-	-	66	\$12,318	-	-	\$12,318
	8.02 Submittal Review	4	-	2	-	-	-	-	-	-	8	12	16	4	-	-	-	-	-	-	-	-	46	\$8,378	-	-	\$8,378
	8.03 Special Inspection	8	-	2	-	-	-	-	-	24	24	8	60	40	16	-	8	-	-	-	-	-	190	\$36,690	-	\$9,150	\$45,840
	8.04 As-built Documentation	4	-	2	-	-	-	-	-	-	-	-	12	24	8	-	-	-	40	-	-	-	90	\$14,066	-	-	\$14,066
Total -->		155	14	52	68	16	36	456	139	120	260	81	306	610.5	194.5	193	121.5	80.5	400	277	53	79	3,712	\$63,593	\$13,459	\$20,400	\$75,452

Attachment C
Construction Contractor Budget Detail

Project Name French Canyons Dam Improvements
Project Number D33986
Design Stage 10%

Estimator: D H Rose
Revision/Date: 00/31 JUL 2020
Estimate Class: 5

D33988-D1_French Canyon Dam Imperviousness

Estimator: D.H. Rose
Revision/Date: 00/31/JUL/2020
Estimate Class: 5

8/12/2011 11:50 AM
Page 2

Project type: Water Resources
 Job Size: 1,500,000 \$
 Duration: 3 MO

INTERNAL REVIEW REPORT
 Project Name: French Canyon Dam Improvements
 Project Number: D33986
 Design Stage: 10%

Estimator: D.H. Rose
 Revision/Date: 00/31/JUL/2020
 Estimate Class: 5

Facility	Work Pkg	Trade Pkg	WorkActiv	Unit Price	Description	Takeoff Quantity	Labor Hours	Labor Cost/Unit	Labor Price	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Total Cost/Unit	Total Amount	
			31.28.0010		Excavate at Headwall & Wingwalls for Formwork														
			31.29.01.00		Earthwork, Structural Excavation														
					Structure Excavation Excavate and Trim, Medium Crown 1% slope	10.00 CY	3.315	1.56 /CY	498.51 /hr	154					156.81 /hr	830	1.52 /CY	1,174	
					Crown for walls 1/2 width and 1/2 depth, Crown and Top of wall to 1/2 width Medium Crown	40.00 cu	3.133	1.41 /cy	534.88 /hr	153					151.12 /hr	152	1.58 /cy	230	
					Imper Aggregate Base Under slab, Crown and Excavation to Under Medium Crown	10.00 m	1.790	5.15 /m	514.88 /hr	82	27.00 /m	350			151.05 /hr	81	30.87 /m	405	
					Structure Slab, Crown and Excavation to Under Medium Crown	10.00 CY	10.800	8.62 /CY	588.42 /hr	754					473.75 /hr	580	8.45 /CY	1,273	
					31.28.01.00 Earthwork, Structural Excavation	300.00 CY	22.784	4.88 /CY		1,468			362				1,371	10.80 /CY	3,180
					31.28.0010 Excavate at Headwall & Wingwalls for Formwork	300.00 CY	22.784	4.88 /CY		1,468			362				1,371	10.80 /CY	3,180
					31.28 Earthwork, Structural	300.00 CY	22.784	4.88 /CY		1,468			362				1,371	10.80 /CY	3,180
					31.0 Earthwork	300.00 CY	22.784	4.88 /CY		1,468			362				1,371	10.80 /CY	3,180
					120 HEADWALL & WING WALLS	1.00 LS	652.378	40,089.65 /LS		40,089			13,842			3,987	13,315	70,412.48 /LS	70,412

Estimate Totals

Description	Amount	Total	Hours	Rate	Cost / Unit	% of Total
Labor	193,290		3,188,298 hrs		0.129	13.09%
Material	567,905				0.335	54.02%
Subcontract	112,845				0.015	7.62%
Equipment	67,003		1,067,149 hrs		0.045	4.52%
Other						
Subtotal Raw Costs	876,043	876,043			8.586	88.27%
Material Sales & Use Tax - %	35,203			7.000 %	0.023	2.38%
Construction Equip Tax - %	4,590			7.000 %	0.003	0.32%
Total Taxes	39,793	915,836			8.911	2.70%
Total Cost To Prime Contractor		915,836			8.911	81.97%
General Conditions	54,954			8.000 %	0.017	1.72%
Multistep/Overhead/Profit	27,411			3.000 %	0.018	1.86%
Subtotal Indirect Costs	82,431	998,267			8.946	8.88%
Prime Contractor Home Office/Off	89,833			10.000 %	0.067	8.78%
Prime Contractor Profit	49,918			8.000 %	0.033	3.34%
Bonds & Insurance	24,913			2.170 %	0.017	1.69%
Subtotal O&P	174,662	1,172,929			9.782	11.82%
Design Contingency	234,598			20.000 %	0.156	15.97%
Subtotal Contingency	234,598	1,407,528			9.838	18.87%
Excavation	70,378			5.000 %	0.044	4.78%
Subtotal Excavation	70,378	1,477,906			9.985	4.78%
Total Construction Cost		1,477,906			9.985	100.00%
Total		1,477,906			9.985	100.00%

← Excludes county road improvements

County road improvements 180,000
 (see next page)

Total 1,657,965

Attachment C
County Road Improvements
 French Canyon Dam and Cowiche Creek Water Exchange Improvements

Budget Item Description	\$/Unit	Units	Unit Type	Cost
Work Element 2 - County Road Improvements				
Labor with mark-ups				
Field Superintendent	\$ 81.60	80	Hrs.	\$ 6,528
Equipment Operator	\$ 62.22	320	Hrs.	\$ 19,910
Laborer	\$ 52.00	160	Hrs.	\$ 8,320
Equipment with mark-ups				
Grader	\$ 47.78	160	Hrs.	\$ 7,645
Dump Truck	\$ 41.26	160	Hrs.	\$ 6,602
Front End Loader	\$ 61.80	160	Hrs.	\$ 9,888
Drum Compactor	\$ 44.42	160	Hrs.	\$ 7,107
Materials with mark-ups				
Imported Aggregate	\$ 25.00	4000	CY	\$ 100,000
Guardrail	\$ 14.00	1000	LF	\$ 14,000
Work Element 2 - Total				\$ 180,000

Attachment D
Letters of Support



Confederated Tribes and Bands
of the Yakama Nation

Established by the
Treaty of June 9, 1855

July 24, 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

RE: Yakima Tieton Irrigation District (YTID) Application for funds under USBR Funding
Opportunity No: BOR-DO-20-F002 WaterSMART Drought Response Program: Drought
Resiliency Projects

Dear Ms. Gray:

As you know, the Yakima Basin has diverse uses for its water and leads the country in
innovative projects that achieve multiple goals.

The Yakama Nation is writing to support the Yakima – Tieton Irrigation District
WaterSMART application for Drought Resiliency. The project will increase the storage
capacity at French Canyon Dam and Reservoir, potentially provide instream flow and
fish habitat benefits to Cowiche and Ahtanum Creeks, and offer additional operational
flexibility to YTID. The project will provide an increase to the storage capacity of the
existing system for the short term as well as instream flow benefits. It also will enhance
future operations with the alternatives proposed in the Tieton River Restoration and
Water Reliability Project Alternatives. In addition to wheeling and storing water for
direct releases into Cowiche Creek the District will also review existing pipeline
distribution system changes downstream of French Canyon Dam and reservoir to wheel
water to existing Cowiche Creek Water Right users for instream flow benefits. While not
a part of the plan, this project is consistent with the goals and objectives of the Yakima
Basin Integrated Plan.

We look forward to tracking the progress of this proposal.

Sincerely,

Phil Rigdon
Yakama Nation Superintendent
Department of Natural Resources

Cc: Carrie Hessman, WaterSmart Coordinator
Talmadge Oxford, Area Manager
Chad Stuart, Yakima Field Office Manager

Wendy Christensen, YRBWEP Manager
Rick Dieker, YTID

Post Office Box 151, Fort Road, Toppenish, WA 98948 (509) 865-5121



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
304 S. Water Street, Suite 201
Ellensburg, Washington 98926-3617

July 31, 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

Re: Yakima Tieton Irrigation District (YTID) Application for funds under U.S. Bureau of Reclamation (Reclamation) Funding Opportunity No: BOR-DO-20-F002 WaterSMART Drought Response Program: Drought Resiliency Projects

Dear Ms. Gray:

I am writing to support the YTID WaterSMART application to increase the storage at French Canyon Reservoir. In addition to increasing operational flexibility within the YTID, YTID has expressed a willingness to use a portion of this additional storage to provide instream flow and fish habitat benefits to Cowiche Creek.

Cowiche Creek is seasonally flow limited and any flow improvement during the summer base flow period would complement the substantial regional investments already made to improve fish passage and instream flows there as part of the effort to recover Middle Columbia River steelhead and reestablish coho salmon in the Yakima Basin. In addition, this project is consistent with the goals and objectives of the Yakima Basin Integrated Plan.

We look forward to the implementation of this proposal.

Sincerely,

F. Dale Bambrick, Chief
Columbia Basin Branch
Interior Columbia Basin Office

cc: Sean Gross, NMFS Fish Biologist
Talmadge Oxford, Area Manager
Chad Stuart, Yakima Field Office Manager
Wendy Christensen, YRBWEP Manager
Rick Dieker, YTID





North Yakima Conservation District

1606 Perry St., Suite C - Yakima, WA 98902 - (509) 454-5743, Ext. 5 - northyakimacd.wordpress.com

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706

July 29, 2020

RE: Yakima Tieton Irrigation District Application for funds under USBR Funding Opportunity No: BOR-DO-20-F002 WaterSMART Drought Response Program: Drought Resiliency Projects.

Dear Ms. Grey,

The North Yakima Conservation District is in full support of the Yakima Tieton Irrigation Districts (YTID) application for funds under the above referenced program. As a local natural resource entity working with landowners and entities like the YTID, we applaud efforts that will improve / enhance and protect natural resources like fish habitat, instream flow and the emerging issue of drought resiliency. The project will increase the storage at French Canyon Dam and Reservoir, provide instream flow and fish habitat benefits to Cowiche Creek and additional operational flexibility to YTID. The project will provide an increase to the storage capacity of the existing system for the short term as well as instream flow benefits. It also will enhance future operations with the alternatives proposed in the Tieton River Restoration and Water Reliability Project Alternatives. In addition to wheeling and storing water for direct releases into Cowiche Creek the District will also review existing pipeline distribution system changes downstream of French Canyon Dam and reservoir to wheel water to existing Cowiche Creek Water Right users for instream flow benefits. This project is consistent with the goals and objectives of the Yakima Basin Integrated Plan.

We look forward to tracking the progress of this proposal.

Sincerely,

Mr. Gail Thornton
NYCD Chairman

Cc: Carrie Hessman, WaterSmart Coordinator
Talmadge Oxford, Area Manager
Chad Stuart, Yakima Field Office Manager
Wendy Christensen, YRBWEP Manager
Rick Dieker, YTID



Trout Unlimited: America's Leading Coldwater Fisheries Conservation Organization

July 21, 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

RE: Yakima Tieton Irrigation District (YTID) Application for funds under USBR Funding Opportunity No: BOR-DO-20-F002 WaterSMART Drought Response Program: Drought Resiliency Projects

Dear Ms. Gray:

Trout Unlimited (TU) is pleased to support the YTID's application for funds under the 2020 WaterSMART Drought Response Program funding opportunity. YTID's project is a true multi-benefit project that will improve drought resiliency for fish and farms alike.

The project will increase storage at YTID's French Canyon Dam and Reservoir. The additional reservoir capacity will allow storage of water that can provide instream flow and fish habitat benefits to Cowiche Creek *plus* add to YTID's system operational flexibility. YTID's approach provides immediate benefits through the additional water available, and enhances future operations aligned with the Tieton River Restoration and Water Reliability Project Alternatives. In addition to wheeling and storing water for direct releases into Cowiche Creek, YTID will also review existing pipeline distribution system changes downstream of French Canyon Dam and Reservoir to wheel water to existing Cowiche Creek water right users to facilitate further instream flow restoration.

YTID's approach helps advance elements of the Yakima Basin Integrated Plan. "YBIP" is a collaborative, basin-wide approach to water resource management that includes protecting farms, improving water supply, and restoring fish populations to better prepare the basin to deal with drought and changing climate. This project provides meaningful community and ecosystem benefits through water management.

As a national, coldwater fisheries conservation non-profit, TU partners with landowners and local entities to develop and implement multi-benefit projects that provide meaningful benefits for fish and communities. Several years ago, TU worked with YTID and others to implement a Cowiche Creek water conservation and streamflow restoration project. YTID's new project leverages prior investments and will enhance benefits.

TU supports the U.S. Bureau of Reclamation's funding this project.

Sincerely,

Lisa Pelly, Director-Trout Unlimited Washington Water Project

Washington Water Project

103 Palouse, Suite 14, Wenatchee, WA 98801; 115 S. Glover Street, Twisp, WA 98856;
119 W. 5th Ave, Ellensburg, WA 98926,
(509) 888-0970 • Fax: (509) 888-4352 • www.tu.org



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

1250 W Alder St • Union Gap, Washington 98903-0009 • (509) 575-2490
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

July 23, 2020

Lorri Gray, Regional Director
Bureau of Reclamation
Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233


**RE: Yakima Tieton Irrigation District (YTID) Application for funds under USBR
Funding Opportunity #BOR-DO-20-F002 / WaterSMART Drought Response
Program: Drought Resiliency Projects**

Dear Lorri Gray:

Washington State Department of Ecology's, Office of Columbia River, is writing to support the Yakima-Tieton Irrigation District application for funds under this program. The project will increase the storage at French Canyon Dam and Reservoir, provide instream flow and fish habitat benefits to Cowiche Creek and additional operational flexibility to YTID. The project will provide an increase to the storage capacity of the existing system for the short term as well as instream flow benefits. It also will enhance future operations with the alternatives proposed in the Tieton River Restoration and Water Reliability Project Alternatives. In addition to wheeling and storing water for direct releases into Cowiche Creek the District will also review existing pipeline distribution system changes downstream of French Canyon Dam and reservoir to wheel water to existing Cowiche Creek Water Right users for instream flow benefits. This project is consistent with the goals and objectives of the Yakima Basin Integrated Plan.

We look forward to tracking the progress of this proposal. If you have any questions, I can be reached by phone at (509) 952-5080 or by email at gteb461@ecy.wa.gov.

Sincerely,


G. Thomas Tebb, L.Hg., L.E.G.
Director, Office of Columbia River

GTT:RD:cms (200708)

cc: Carrie Hessman, WaterSmart Coordinator
Talmadge Oxford, Bureau of Reclamation, Yakima Field Office Area Manager
Chad Stuart, Bureau of Reclamation, Yakima Field Office Manager
Wendy Christensen, Bureau of Reclamation YRBWEP Manager
Rick Dieker, Yakima Tieton Irrigation District



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

South Central Region 3 • 1701 South 24th Avenue, Yakima, WA 98902-5720
Telephone: (509) 575-2740 • Fax: (509) 575-2474

July 31, 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

RE: Yakima Tieton Irrigation District (YTID) Application for funds under USBR Funding Opportunity
No: BOR-DO-20-F002 WaterSMART Drought Response Program: Drought Resiliency Projects

Dear Ms. Gray:

We are writing to support the Yakima – Tieton Irrigation District's application for funds under this program. The project will increase the storage at French Canyon Dam and Reservoir, provide increased opportunity for instream flow and fish habitat benefits to Cowlitz Creek and additional operational flexibility to YTID. The project will provide increased short-term storage capacity of the existing system as well as instream flow benefits via water wheeling or direct discharge. It also will enhance future operations with the alternatives proposed in the Tieton River Restoration and Water Reliability Project Alternatives. In addition to wheeling and storing water for direct releases into improve flow, the District will also review existing pipeline distribution system changes downstream of French Canyon Dam and reservoir, to wheel water further upstream to existing Cowlitz Creek Water Right users for instream flow benefits. This project is consistent with the goals and objectives of the Yakima Basin Integrated Plan.

We look forward to tracking the progress of this proposal. Please feel free to contact me with any questions or clarifications you may require. My phone number is 509-594-5201. You can also reach me at perry.harvester@dfw.wa.gov.

Sincerely,

A handwritten signature in black ink, reading "Perry Harvester", is located below the "Sincerely," text.

Perry Harvester
South-Central Regional Habitat Program Manager
Washington Department of Fish and Wildlife

Cc: Carrie Hessman, WaterSmart Coordinator
Talmadge Oxford, Area Manager
Chad Stuart, Yakima Field Office Manager
Wendy Christensen, YRBWEP Manager
Rick Dieker, YTID



United States Department of the Interior
U.S. Fish and Wildlife Service
Mid-Columbia Fish and Wildlife Conservation Office
Yakima Sub-Office
1917 Marsh Road
Yakima, WA 98901



August 3, 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

RE: Yakima Tieton Irrigation District (YTID) Application for funds under USBR Funding
Opportunity No: BOR-DO-20-F002 WaterSMART Drought Response Program: Drought
Resiliency Projects

Dear Ms. Gray:

USFWS is writing to support the Yakima – Tieton Irrigation District application for funds under this program. The project will increase the storage at French Canyon Dam and Reservoir and provide a minimum of 5 cfs of instream flow to Cowiche Creek during critical out-migration periods. In addition, the project will provide operational flexibility to YTID. The project will also allow wheeling and storing water for direct releases into Cowiche Creek. The District will also review existing pipeline distribution system changes downstream of French Canyon Dam and reservoir to wheel water to existing Cowiche Creek Water Right users for instream flow benefits. This project is consistent with the goals and objectives of the Yakima Basin Integrated Plan and we look forward future YTID structural changes that will benefit both irrigators and fisheries resources.

Sincerely,

Jason Romine
US Fish and Wildlife Service Yakima Program Lead

Cc: Carrie Hessman, WaterSmart Coordinator
Talmadge Oxford, Area Manager
Chad Stuart, Yakima Field Office Manager
Wendy Christensen, YRBWEP Manager
Rick Dieker, YTID



YAKIMA BASIN
FISH AND WILDLIFE
RECOVERY BOARD

July 28, 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

RE: Yakima Tieton Irrigation District (YTID) Application for funds under USBR Funding Opportunity No: BOR-DO-20-F002 WaterSMART Drought Response Program: Drought Resiliency Projects

Dear Ms Gray,

I write to you today on behalf of the Yakima Basin Fish and Wildlife Recovery Board (the Board). The Board was created by 22 county and city governments and the Yakama Nation to promote the recovery of at-risk fish and wildlife species in the Yakima Basin. One of our primary goals is to support recovery of steelhead and bull trout, so that these species can be removed from the federal Endangered Species Act (ESA) threatened species list. The Board wrote the Yakima Bull trout Action Plan (BTAP) and the Yakima Steelhead Recovery Plan (which has been incorporated into NOAA's ESA-required Middle Columbia River Steelhead Recovery Plan). The Board actively supports actions that implement priorities identified in these plans.

The Yakima Tieton Irrigation District's proposed WaterSMART project will increase the storage at French Canyon Dam and Reservoir, provide instream flow and fish habitat benefits to Cowiche Creek and additional operational flexibility to YTID. The project is consistent with the goals and objectives of the Yakima Basin Integrated Plan, and creates increased flexibility in water management that will support implementation of the following priority actions identified in the Yakima Steelhead Recovery Plan:

Basinwide Action #1: Modify reservoir operations to improve out-migration flows

Lower Mainstem Action #5: Improve hydrograph through artificial storage

Naches Action #4: Modify flip-flop flow regime

Naches Action #21: Reduce irrigation diversions from Cowiche Creek

Naches Action #22: Improve riparian, floodplain and temperature conditions in Cowiche Creek.

We are excited to see this valuable project move forward, as it will achieve goals set forth in the Yakima Basin Integrated Plan and contribute to recovering listed fish in the Yakima Basin.

Sincerely,

A handwritten signature in black ink, appearing to read "Alexander Conley", with a long horizontal flourish extending to the right.

Alexander Conley
Executive Director

CC: Carrie Hessman, WaterSmart Coordinator
Talmadge Oxford,, Area Manager
Chad Stuart, Yakima Field Office Manager
Wendy Christensen, YRBWEP Manager
Rick Dieker, YTID

YAKIMA BASIN JOINT BOARD
*A Partnership of Public Entities Promoting
the Multiple Uses of the Yakima Valley's
Water Supply*

IRRIGATION ENTITIES

KITTITAS RECLAMATION DISTRICT

ROZA IRRIGATION DISTRICT

SUNNYSIDE DIVISION

YAKIMA-TIETON IRRIGATION DISTRICT

NATCHES SELAH IRRIGATION DISTRICT

SELAH MOXEE IRRIGATION DISTRICT

COLUMBIA IRRIGATION DISTRICT

MUNICIPALITIES

CITY OF YAKIMA

July 24, 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

RE: Yakima Tieton Irrigation District (YTID) Application for funds under USBR Funding Opportunity No:
BOR-DO-20-F002 WaterSMART Drought Response Program; Drought Resiliency Projects

Dear Ms. Gray:

The Yakima Basin Joint Board (YBJB) is writing to support the Yakima – Tieton Irrigation District application for funds under this program. The project will increase the storage at French Canyon Dam and Reservoir, provide instream flow and fish habitat benefits to Cowiche Creek and additional operational flexibility to YTID. The project will provide an increase to the storage capacity of the existing system for the short term as well as instream flow benefits. It also will enhance future operations with the alternatives proposed in the Tieton River Restoration and Water Reliability Project Alternatives. In addition to wheeling and storing water for direct releases into Cowiche Creek the District will also review existing pipeline distribution system changes downstream of French Canyon Dam and reservoir to wheel water to existing Cowiche Creek Water Right users for instream flow benefits. This project is consistent with the goals and objectives of the Yakima Basin Integrated Plan.

We look forward to tracking the progress of this proposal.

Sincerely,


Lori Brady
Yakima Basin Joint Board President

Cc: Carrie Hessman, WaterSmart Coordinator
Talmadge Oxford, Area Manager
Chad Stuart, Yakima Field Office Manager
Wendy Christensen, YRBWEP Manager
Rick Dieker, YTID



BOARD OF YAKIMA COUNTY COMMISSIONERS

RECEIVED

July 24, 2020

JUL 24 2020

Lorri Gray, Regional Director
Bureau of Reclamation Pacific Northwest Regional Office (PN-6400)
1150 North Curtis Road, Suite 100
Boise, ID 83706-1233

**YAKIMA-TIETON
IRRIGATION DISTRICT**

RE: Yakima Tieton Irrigation District Application for funds under USBR Funding Opportunity
No. BOR-DO-20-F002 WaterSMART Drought Response Program: Drought Resiliency Projects

Dear Ms. Gray,

The Board of Yakima County Commissioners supports the Yakima-Tieton Irrigation District (YTID) application for Drought Resiliency Project funds under the WaterSMART Drought Response Program.

The proposed project will increase the storage at French Canyon Dam and Reservoir, provide instream flow and fish habitat benefits to Cowiche Creek and additional operational flexibility to YTID.

In addition to wheeling and storing water for direct releases into Cowiche Creek, YTID will also review existing pipeline distribution system changes downstream of French Canyon Dam and reservoir to wheel water to existing Cowiche Creek Water Right users for instream flow benefits. This project is consistent with the goals and objectives of the Yakima Basin Integrated Plan.

We appreciate your consideration of the application and look forward to tracking the progress of this proposal.

Sincerely,

Norm Childress
Chairman
District 3

Ron Anderson
Commissioner
District 2

Victoria L. Baker
Commissioner
District 1

Cc: Carrie Hessman, WaterSMART Coordinator
Talmadge Oxford, Area Manager
Chad Stuart, Yakima Field Office Manager
Rick Dieker, YTID

RESOLUTION NO. 2020-4

YAKIMA-TIETON IRRIGATION DISTRICT

WHEREAS, The Board of Directors of the Yakima-Tieton Irrigation District has reviewed and is in support of the Application of funds under the Bureau of Reclamation Funding Opportunity Announcement No. BOR-DO-20-F002, WaterSMART Drought Response Program: Drought Resiliency Projects; AND

WHEREAS, The Yakima-Tieton Irrigation District is capable of providing funding and leveraging this money and resources cost sharing with Reclamation on Drought Resiliency Projects that will increase the reliability of water supplies, improve water management and provide benefits for fish, wildlife, and the environment to mitigate impacts caused by drought; AND

WHEREAS, Yakima-Tieton Irrigation District has demonstrated a commitment to meeting the goals of the Yakima Basin Integrated Plan by working with all the stakeholders. The District has entered into agreements to wheel water through existing facilities to provide instream flow benefits to Cowiche Creek which is habitat for ESA listed species, salmonids, and other fish species; AND

WHEREAS, The project to add additional storage to French Canyon Dam and Reservoir and the associated project features meets the objectives of the Funding Opportunity listed above and the goals of the Yakima Basin Integrated Plan; AND

WHEREAS, The Yakima-Tieton Irrigation District will work with the Bureau of Reclamation to meet all established deadlines for entering into the necessary agreements for project implementation.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors agrees and authorizes this resolution to approve and support this grant application and project.

NOW THEREFORE, BE IT RESOLVED that the Secretary-Manager Richard Dieker, is duly authorized, empowered and directed to execute and deliver, in the name and on behalf of Yakima-Tieton Irrigation District, the Grant Agreement(s) if so, awarded by the Bureau of Reclamation.

DATED: July 16, 2020



RON SMITH, PRESIDENT



ATTEST: RICHARD DIEKER, SECRETARY-MANAGER