

# **Attachment 1 – Environmental Compliance Sufficiency Review for the Central Valley Project and State Water Project Long-Term Operation, Operations Plan – Action 5**

**Record of Decision**

**Long-Term Operation of the Central Valley Project and  
State Water Project**



IN REPLY REFER TO:

# United States Department of the Interior

BUREAU OF RECLAMATION

Bay-Delta Office

801 I Street, Suite 140

Sacramento, CA 95814



BDO-100

2.2.1.06

## Draft Memorandum for Interested Party Review

To: Kristin White  
Deputy Regional Director

From: David Mooney  
Bay-Delta Office Manager

Subject: Environmental Compliance Sufficiency Review for the Central Valley Project and State Water Project Long-Term Operations Plan – Action 5

The implementation of the Long-Term Operations Plan - Action 5 (“Action 5”, attached), is within the range of impacts analyzed and disclosed in the 2024 Final Environmental Impact Statement on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project (2024 LTO Final EIS) and the effects analyzed within the 2024 National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) issued biological opinions. Action 5 is not expected to result in additional impacts to the environment nor additional effects to listed species. Reclamation has determined that existing environmental compliance is adequate and is requesting an updated incidental take statement from USFWS for Action 5 to operate the CVP consistent with *Executive Order 14181- Emergency Measures to Provide Water Resources in California and Improve Disaster Response in Certain Areas*, dated January 24, 2025 (E.O. 14181).

## PROPOSED ACTION

The Proposed Action is implementation of the Action 5 Operations Plan for the Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP). Action 5 modifies components included in Alternative 2 in the 2024 LTO Final EIS.

Action 5 removes the Delta Smelt Summer and Fall Habitat Action (Fall X2) and the Early Implementation measure of the Delta export reduction of the Healthy Rivers and Landscapes (HRL) program, formally Voluntary Agreements, and updates Delta operating criteria and Governance. Removal of Fall X2 is based upon the USFWS 2024 LTO Biological Opinion determination that Fall X2 is not anticipated to have observable effects on Delta smelt survival.

The removal of the Early Implementation measure is due to the lack of necessary processes to develop data and a program that could assist with determining whether and how to implement the HRL program. Updates to Delta entrainment management include an Old and Middle River (OMR) management at no more negative than -5,000 cubic feet per second (cfs), and a stormflex action of -6,500 cfs. Under Action 5, the governance structure is revised to ensure actions that restrict water supply provide a material benefit to listed species by using predictive tools for real-time assessment of environmental conditions. Full details for Action 5 are provided in *Exhibit 1 - Long-Term Operations of CVP and SWP Operations Plan – Action 5*.

Action 5 responds to Section 2 of E.O. 14181 by operating the CVP to deliver more water to high need communities, including by increasing storage and conveyance and coordinated operations of federal and state facilities.

## **NATIONAL ENVIRONMENTAL POLICY ACT COMPLIANCE**

This memorandum documents Reclamation’s analysis demonstrating Action 5 is within the scope of the 2024 LTO Final EIS. As described in detail in the sections below, there are no new circumstances, new information, or potential for unanticipated or unanalyzed environmental effects that warrant new or supplemental analysis before Action 5 can be implemented. Comments received during the public comment review period for the 2024 LTO Final EIS and E.O. 14181’s stated purpose guided the focus of this memorandum.

The 2025 516 Department Manual 1-U.S. Department of the Interior (DOI) Handbook of National Environmental Policy Act (NEPA) Implementing Procedures (DOI NEPA Handbook) recommends the use of existing environmental analyses to disclose effects associated with a proposed action when doing so would avoid redundancy, while still providing a coherent and logical record of the analytical and decision-making process. The DOI NEPA Handbook allows for the use of a Determination of NEPA Adequacy (DNA), memorandum to file or other writing to document this evaluation. A DNA may be used, following appropriate review and evaluation, if the effects of a proposed action are already adequately analyzed in an existing environmental document. To determine if potential impacts resulting from Action 5 are within the range of impacts analyzed in the 2024 LTO Final EIS, CalSim 3 modeling was conducted to simulate operations of the CVP and SWP systems under Action 5 and the alternatives analyzed in the 2024 LTO Final EIS using similar assumptions. Following completion of the 2024 LTO Final EIS CalSim3 modeling, Reclamation continued refining the base code with corrections and minor fixes to improve representation of the CVP and SWP system and operations. The results depicting the alternatives are very similar to the results in the 2024 LTO Final EIS and preserve the magnitude, directionality and ranking of alternatives 1-4 as described in the 2024 LTO Final EIS with respect to resources evaluated (*Exhibit 2 – Modeling Appendix*). HEC-5Q water temperature modeling for Action 5 and the alternatives analyzed in the 2024 LTO Final EIS was conducted for the Sacramento and American rivers based on proposed Delta operations

modifications. This combination of modeling tools was employed to determine whether new and substantial information or circumstances not previously analyzed resulted in substantially different environmental effects (DOI 2025 NEPA Handbook). Based on the modeling results, changes associated with Action 5 to resources discussed in the 2024 LTO Final EIS are described below. These changes are generally limited to the Sacramento River and the Delta. *Exhibit 3 – Determination of NEPA Adequacy Supporting Documentation* provides additional details of the Action 5 NEPA analysis.

## Water Supply

The CVP delivers water across California, in the Sacramento Valley to the north of the Delta, within the Delta, and throughout the San Joaquin Valley to the south of the Delta.

Water supply deliveries to CVP south of Delta agriculture under Action 5 are within the range analyzed in the 2024 LTO Final EIS (333 – 1,179 Thousand-Acre-Feet (TAF)). Action 5 is expected to deliver 1,057 TAF on average ([Figure 1](#)).

Water supply deliveries under Action 5 are expected to be similar or, more often, increase for CVP and SWP water contracts on average compared to the Preferred Alternative (Alt2v3) in the 2024 LTO Final EIS due to reduced weekly restrictions on Delta exports. This trend holds for dry and critically dry years ([Figure 2](#)).

Compared to the No Action Alternative (2020 Record of Decision), water supply deliveries under Action 5 are expected to increase on average for most CVP and SWP water contractors ([Figure 3](#)). Similar to the Preferred Alternative in the 2024 LTO Final EIS, CVP Settlement Contractors delivery averages are reduced due to the Shasta Framework, but to a lesser extent than in the 2024 document. Reduced deliveries compared to the No Action Alternative are within the range of impacts evaluated in the 2024 LTO Final EIS (Appendix H, *Water Supply Technical Appendix*), with Alternative 2 (Preferred Alternative) and Alternative 3.

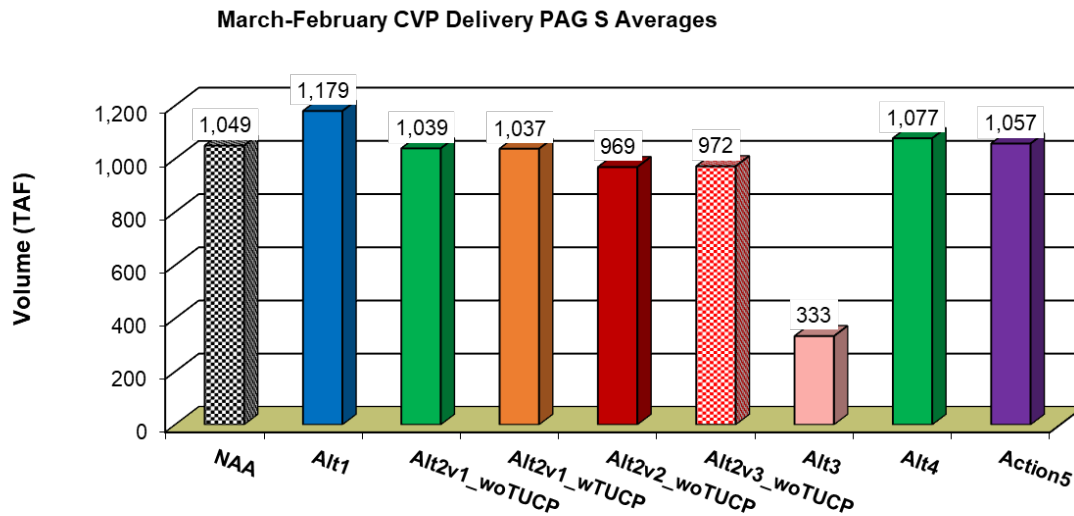


Figure 1. CVP South-of-Delta Project Agricultural (PAG S) Annual Average Deliveries

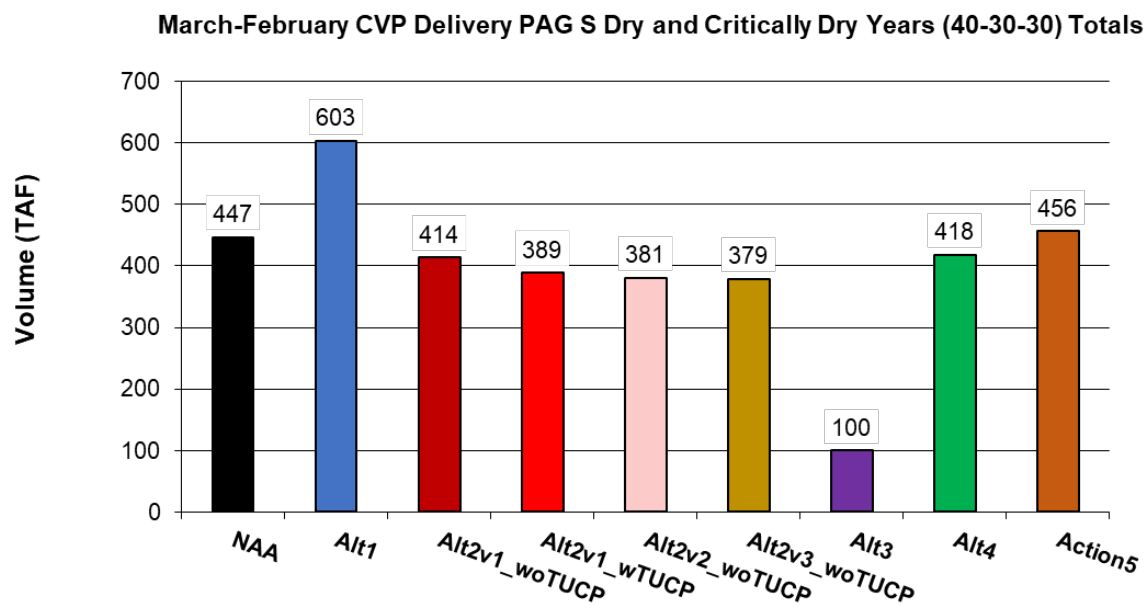


Figure 2. CVP PAG S Dry and Critically Dry Deliveries

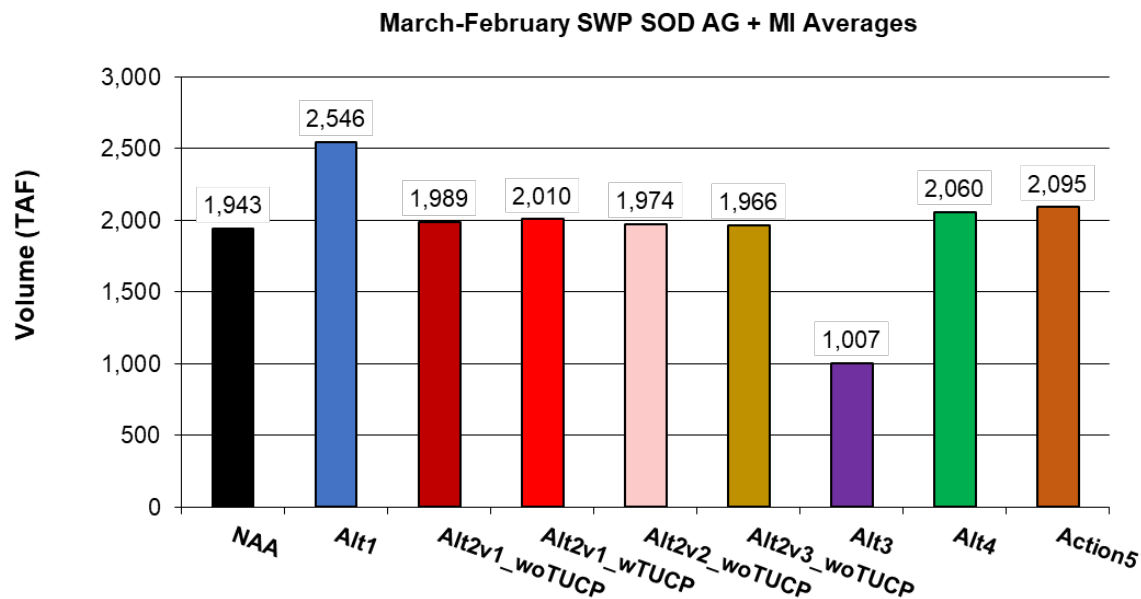


Figure 3. SWP South-of-Delta Annual Average Deliveries

The SWP delivery numbers are higher than the CVP agricultural delivery numbers in part because the CVP must deliver water to exchange contractors, San Joaquin River settlement contractors, and CVPIA wildlife refuges before it can deliver to its agricultural water service and repayment contractors. These deliveries total approximately 1.15 TAF. Water operations modeling generally does not accurately capture fish behavior which is necessary to determine fish salvage in the Projects' export facilities. The real-time decision making for operating towards OMR requirements is based off of fish salvage triggers. In CalSim3, a statistical proxy based on historical data was used to approximate the percentage of each month where a fish salvage action is triggered. On a monthly timestep, the OMR Requirement ranges from OMR Index > -3,500 cfs for the entire month to OMR Index > -5,000 cfs for the entire month (ignoring the effects of Storm-Flex). A sensitivity analysis showed the range of potential changes by running Alt2v1 with the OMR Requirement set statically at OMR Index > -3,500 cfs and a second run with the OMR Requirement set statically at OMR Index > -5,000 cfs. Average annual CVP deliveries may increase by up to 180 TAF and SWP may increase by up to 220 TAF.

## Land Use

The Land Use analysis is driven by changes in water supply deliveries. Water supply deliveries under Action 5 are within the range analyzed in the 2024 LTO Final EIS, as described above.

Less land is expected to be taken out of agricultural production under Action 5 relative to the Preferred Alternative (Alt2v3) in the 2024 LTO Final EIS based on expected increases in water supply (described above).

Overall, compared to the No Action Alternative, less land is expected to be taken out of agricultural production use under Action 5. For CVP Settlement Contractors, water supply would be reduced by six percent under average years and up to nine percent during dry and critical years, potentially resulting in additional land taken out of agricultural production. However, these reductions are within the range of impacts evaluated in the 2024 LTO Final EIS (Appendix R, *Land Use Technical Appendix*) with Alternatives 2 (Preferred Alternative) and Alternative 3 resulting in less water deliveries to CVP Settlement Contractors than Action 5 and potentially resulting in additional land taken out of agricultural production.

## Groundwater

The Groundwater analysis is mainly based on water supply. Water supply deliveries under Action 5 are within the range analyzed in the 2024 LTO Final EIS, as described above. A change in water supply may result in users changing their amount of groundwater pumping to offset this change in surface water supply. For example, if less surface water is supplied to an agricultural area, additional groundwater would likely need to be pumped and supplied to maintain cropping.

Impacts to groundwater resources are expected to decrease under Action 5 for both the Sacramento and the San Joaquin basins relative to the Preferred Alternative (Alt2v3) in the 2024 LTO Final EIS based on expected increases in surface water supply, which is confirmed by CalSim 3 modeling (*Exhibit 3 - Determination of NEPA Adequacy Supporting*).

Compared to the No Action Alternative, groundwater pumping under Action 5 is anticipated to be similar to or decrease for most CVP and SWP contractors due to an increase in surface water supply availability (see Water Supply). For CVP Settlement Contractors, deliveries are expected to be reduced by six percent under average years and up to nine percent during dry and critical years, resulting in potential impacts to groundwater resources in CVP Settlement Contractors service area by increasing groundwater pumping. This potential increase in groundwater pumping in the CVP Settlement Contractors service area under Action 5 is within the range of impacts evaluated in the 2024 LTO Final EIS, with Alternatives 2 (Preferred Alternative) and Alternative 3 resulting in less water deliveries to CVP Settlement Contractors in the Sacramento Valley Groundwater Basin and potentially resulting in an increase in groundwater pumping as compared to Action 5 (Appendix I, *Groundwater Resources Technical Appendix*).

## Power Resources

The Power Resources analysis is mainly based on water supply. Water supply deliveries under Action 5 are within the range analyzed in the 2024 LTO Final EIS, as described above.

Action 5 is anticipated to reduce restrictions on Delta exports compared to the No Action Alternative. These reduced restrictions on exports may result in more consumption of power from the CVP export facilities that could result in a reduction of power, and a potentially negative impact on power resources. Conversely, because these reduced export restrictions would result in an increase of water supply, there may be a decrease in groundwater pumping to meet water supply demands. A decrease in groundwater pumping would result in a decrease in power consumption and a potentially beneficial impact on power resources.

Net generation is expected to be minimally reduced under Action 5 (2,920 GWh; -2%) compared to the Preferred Alternative (Alt2v3) (2,987 GWh) ([Table 1](#)). For dry and critically dry years under Action 5 (2,179 GWh; 0%), no change to net generation is anticipated relative to the Preferred Alternative (2,180 GWh). Compared to the No Action Alternative (2,943, GWh), Action 5 is anticipated to have minimally reduced net generation (2,920 GWh; -1 %) for the long-term average ([Table 2](#)). For dry and critically dry years, Action 5 (2,179 GWh; 1%) is anticipated to minimally increase net generation relative to the No Action Alternative (2,158 GWh).

Table 1. Long-Term Generation Model Action 5 Comparison Table to the Preferred Alternative

Water Year	Use/Generation	Action 5 GWh	Alt2v3 GWh	Change between Action 5 and Alt2v3 (% change)
Long-Term Average	Energy Use	1593	1503	90 (6%)
	Generation	4513	4491	22 (0%)
	Net Generation	2920	2987	-67 (-2%)
Dry and Critically Dry Water Years	Energy Use	980	929	51 (5%)
	Generation	3159	3109	50 (2%)
	Net Generation	2179	2180	-1 (0%)



Table 2. Long-Term Generation model Action 5 Comparison Table to No Action Alternative

Water Year	Use/Generation	Action 5 GWh	NAA GWh	Change between Action 5 and NAA (% change)
Long-Term Average	Energy Use	1593	1535	58 (4%)
	Generation	4513	4478	35 (1%)
	Net Generation	2920	2943	-23 (-1%)
Dry and Critically Dry Water Years	Energy Use	980	956	24 (3%)
	Generation	3159	3113	46 (1%)
	Net Generation	2179	2158	21 (1%)

These changes are within the range evaluated for all alternatives in the 2024 LTO Final EIS (Appendix U, *Power Resources Technical Appendix*) because Action 5 is expected to result in more power generation (net generation) for the long-term average and in dry and critically dry years than Alternative 1.

## Air Quality and Greenhouse Gas Emissions

The Air Quality and Greenhouse Gas Emission analyses are driven by changes in surface water supply that then cascade into changes in groundwater pumping and hydropower production. Water supply deliveries under Action 5 are within the range analyzed in the 2024 LTO Final EIS, as described above. Impacts to groundwater resources are expected to decrease under Action 5 for both the Sacramento and the San Joaquin basins relative to the Preferred Alternative (Alt2v3) in the 2024 LTO Final EIS based on expected increases in surface water supply, which is confirmed by CalSim 3 modeling (*Exhibit 3 - Determination of NEPA Adequacy Supporting Documentation*). This decrease in groundwater pumping is expected to result in less emissions.

Compared to the No Action Alternative, emissions (including greenhouse gas emissions) under Action 5 are expected to decrease or be similar in most of the action area due to an increase in surface water supply availability resulting in a potential decrease in groundwater pumping and similar hydroelectric power production. Air quality and greenhouse gas emissions expected under Action 5 are within the range of impacts evaluated in the 2024 LTO Final EIS because Action 5 is expected to result in less emissions than Alternative 3 and Alternative 2 (the Preferred Alternative) and possibly the No Action Alternative.

## Geology and Soils

Geology and Soils analysis for the 2024 LTO Final EIS is mainly based on groundwater resources and reservoir elevations. Groundwater resources and reservoir elevations under Action

5 are within the range analyzed in the 2024 LTO Final EIS, as described above and below, respectively.

Under Action 5, it is anticipated that an increase in water supply compared to the Preferred Alternative (Alt2v3), and the No Action Alternative would decrease soil erosion on crop-idled lands through anticipated increase in irrigated acres (see Land Use). Compared to the No Action Alternative and the Preferred Alternative (Alt2v3), Action 5 is expected to result in similar or decreased groundwater pumping, respectively (see Groundwater Resources above). Action 5 would also result in increased reservoir elevations compared to the Preferred Alternative (Alt2v3) and the No Action Alternative (See Recreation below), thereby potentially increasing shoreline erosion. However, these potential increases in shoreline erosion are within the range of impacts evaluated in the 2024 LTO Final EIS, with Alternative 3 expected to result in the most shoreline erosion (Appendix H, *Water Supply Technical Appendix*).

## Regional Economics

Regional Economics analysis for the 2024 LTO Final EIS is mainly based on water supply, which cascades to other components that generate disposable income and spending. Water supply deliveries under Action 5 are within the range analyzed in the 2024 LTO Final EIS, as described above.

Spending in the regional economics under Action 5 is anticipated to increase for most regions relative to the Preferred Alternative (Alt2v3) in the 2024 LTO Final EIS based on expected increases in water supply and increase in agricultural acreage and revenues. An increase in water supply would potentially decrease the amount of land taken out of agriculture production and reduce cost associated with groundwater pumping. Increase in agricultural water supply in the region could result in an increase in irrigated acreage and agricultural revenues in the region. This increase in irrigated acres is anticipated to support employment in the related job sector(s). Overall increases in agricultural revenues would likely result in more spending to the regional economy.

Compared to the No Action Alternative, spending in the regional economy under Action 5 is expected to increase for most CVP and SWP water contractors due to increased water supply and power generation. Similar to the Preferred Alternative in the 2024 LTO Final EIS, CVP Settlement Contractors delivery averages are reduced due to the Shasta Framework, but to a lesser extent. These reductions are within the range of impacts evaluated in the 2024 LTO Final EIS, with Alternatives 2 (Preferred Alternative) and Alternative 3 resulting in less water deliveries to CVP Settlement Contractors potentially affecting agricultural revenues and decreasing spending in that area (Appendix Q, *Economics Technical Appendix*).

Impacts to regional economics associated with recreational activities and commercial fishing are described under the Recreation and Fish and Aquatic resources sections.

## Recreation

Recreation opportunities under Action 5 are within the range analyzed in the 2024 LTO Final EIS. The Recreation analysis correlates reservoir storage with reservoir elevation. The range of Shasta and Trinity reservoir elevations analyzed in the 2024 LTO Final EIS is 1,013 – 1,020 ft and 2,306 – 2,310 ft, respectively. Shasta and Trinity reservoir elevations under Action 5 are 1,017 ft and 2,308 ft, respectively. The range of Sacramento River flows analyzed is 8,421 – 8,578 cfs and the range for Trinity River flows is 1,049 – 1,066 cfs. Flows under Action 5, on average, are 8,427 cfs on the Sacramento River and 1,058 cfs on the Trinity River (Exhibit 3, *Determination of NEPA Adequacy Supporting Documentation*).

Recreational opportunities under Action 5 are anticipated to increase slightly relative to the Preferred Alternative (Alt2v3) in the 2024 LTO Final EIS due to higher (1 ft) Trinity and Shasta reservoir elevations. An increase in reservoir elevations under Action 5 would provide a benefit to boating, camping, day use, and fishing access opportunities. In addition, under Action 5, both the Sacramento and Trinity River flows are essentially equivalent to the Preferred Alternative (Alt2 v3) maintaining a similar level of riverine recreation.

Compared to the No Action Alternative, Action 5 is anticipated to have higher (4 ft) Shasta Reservoir elevations and higher (1 ft) Trinity Reservoir elevations. On average, Action 5 is anticipated to have essentially equivalent Sacramento River and Trinity River flows when compared to the No Action Alternative. Thus, impacts to recreational opportunities are within the range of impacts evaluated in the 2024 LTO Final EIS (Appendix S, *Recreation Technical Appendix*).

On average, given the anticipated increase to boating, camping, day use, and fishing access and opportunities under Action 5, revenue from recreational activities are expected to slightly increase relative to the No Action Alternative and the Preferred Alternative (Alt2 v3) in the 2024 LTO Final EIS, providing a small boost for the regional economy.

## Visual

The Visual Resources analysis is driven by changes in reservoir storage and flows. As described in the Recreation section above, changes in reservoir elevations and storage under Action 5 are within the range of effects analyzed under the 2024 LTO Final EIS. Impacts to visual resources under Action 5 are mainly anticipated to decrease relative to the Preferred Alternative (Alt2v3) in the 2024 Final EIS due to higher Trinity and Shasta (1 ft) Reservoir elevations. Compared to the No Action Alternative, Action 5 is anticipated to have higher Shasta Reservoir elevations (5 ft) and higher Trinity Reservoir elevations (1 ft) decreasing impacts to visual resources. Flows for the Sacramento River and the Trinity River are similar under Action 5, the Preferred Alternative (Alt2v3) and the No Action Alternative in the 2024 LTO Final EIS.

## Hazards

Hazards under the 2024 LTO Final EIS primarily focus on wildfires, land uses, and water storage within the region. The hazards analysis for the 2024 LTO Final EIS is mainly based on water supply, which cascades to other components such as water storage and water deliveries. Water supply deliveries and water storage under Action 5 are within the range analyzed in the 2024 LTO Final EIS, as described above.

The 2024 LTO Final EIS does not include construction activities and discussion of hazards focuses on water elevations of reservoirs. Wildfire related hazards may be affected by stored water in reservoirs used for fighting wildfires in the region. On average, water elevations in reservoirs are expected to increase under Action 5 compared to the Preferred Alternative (Alt2v3) and the No Action Alternative in the 2024 LTO Final EIS (see Recreation). Thus, these impacts are within the range analyzed in the 2024 LTO Final EIS, with the No Action Alternative, Alternative 1, Alternative 2 (Preferred Alternative), and Alternative 4 resulting in lower reservoir elevations of water available to fight wildfires (Appendix V, *Hazards and Hazardous Materials Technical Appendix*).

## Cultural Resources

There is no ground disturbance associated with the 2024 LTO Final EIS. Thus, the cultural resources analysis for the 2024 LTO Final EIS is based on changes to Shasta and Trinity reservoir storage and Shasta and Trinity River flows. The cultural resources analysis correlates reservoir storage with reservoir elevation. Changes to reservoir elevations and river flows under Action 5 are within the range analyzed in the 2024 LTO Final EIS. The ranges of Shasta and Trinity reservoir elevations analyzed in the 2024 LTO Final EIS are 1,013 – 1,020 ft and 2,306 – 2,310 ft, respectively. Shasta and Trinity reservoir elevations under Action 5 are 1,017 ft and 2,308 ft, respectively. The range of Sacramento River flows analyzed in the 2024 LTO Final EIS are 8,421 – 8,578 cfs and the range for Trinity River flows are 1,049 – 1,066 cfs. Flows under Action 5, on average, are 8,427 cfs on the Sacramento River and 1,058 cfs on the Trinity River.

Under Action 5, both Shasta and Trinity reservoir elevations would show a slight increase (1 ft) on average when compared to the Preferred Alternative (Alt2 v3). Sacramento and Trinity River flows are essentially equivalent under Action 5 and the Preferred Alternative (Alt2 v3).

Compared to the No Action Alternative, Action 5 is anticipated to have higher (4 ft) Shasta Reservoir elevations and higher (1 ft) Trinity Reservoir elevations. On average, Action 5 is anticipated to have essentially equivalent Sacramento River and Trinity River flows when compared to the No Action Alternative. Thus, potential impacts to cultural resources are within the range of impacts evaluated in the 2024 LTO Final EIS (Appendix K, *Cultural Technical Appendix*).

## Indian Trust Resources

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States (U.S.) for federally recognized Indian Tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITAs can include land, minerals, federally reserved hunting and fishing rights, federally reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally recognized Indian Tribes with trust land; the U.S. is the trustee. By definition, ITAs cannot be sold, leased, or otherwise encumbered without approval of the U.S. government. The characterization and application of the U.S. trust relationship have been defined by case law that interprets congressional acts, executive orders, and historic treaty provisions.

Although there is no single statutory definition for ITA's, the federal trust responsibility, established in *Cherokee Nation v. Georgia*, 30 U.S. (5 Pet.) 1 (1831), and reaffirmed in *Seminole Nation v. United States*, 316 U.S. 286 (1942), obligates the U.S. to act in the best interest of tribal beneficiaries. This responsibility is codified in the Indian Trust Asset Reform Act, Pub. L. No. 114–178, 130 Stat. 432 (2016), which guides federal agencies in managing and protecting ITAs during project planning and implementation.

There are no ITAs in Central Valley rivers that would be affected by Action 5. Changes in Trinity Reservoir elevations would not affect ITAs within the reservoir inundation areas. Analysis of impacts to Indian Trust Resources are, therefore, focused on Trinity River releases. Trinity River releases are analyzed through a separate Trinity River action with the Hoopa Valley Tribe and the Yurok Tribe as joint leads for the NEPA compliance process.

## Water Quality

The Water Quality analysis is driven by changes in Delta outflows, Delta inflows, water temperatures, exports, and salinity. These factors are generally within the range analyzed in the 2024 LTO Final EIS. Accordingly, the water quality parameters bromide, chloride, selenium, methylmercury, and harmful algae blooms under Action 5 are expected to fall within the previously analyzed range, and the water quality effects from these parameters of Action 5 are not anticipated to be materially different from those analyzed in the 2024 LTO Final EIS.

Average Delta outflow ranges from 20,512 cfs – 24,384 cfs; Action 5 is 21,671 cfs ([Figure 4](#)). Average Delta outflow under Action 5 is less than under the No Action Alternative (21,810 cfs) and the Preferred Alternative (22,070 cfs).

Average Delta inflow under Action 5 falls within the range analyzed for Sacramento River at Freeport (20,642 cfs - 21,104 cfs; Action 5 is 20,988 cfs), the flow through Yolo Bypass (4,183 cfs – 4,416 cfs; Action 5 is 4,266 cfs) and the San Joaquin River at Vernalis (3,457 cfs – 3,729 cfs; Action 5 is 3,696 cfs). Average Delta inflow at Sacramento River at Freeport under Action 5

is more than the No Action Alternative (20,886 cfs) and less than the Preferred Alternative (21,104 cfs); for flow through Yolo Bypass, Action 5 is more than the No Action Alternative (4,183 cfs) and the Preferred Alternative (4,198 cfs); and for the San Joaquin River at Vernalis, Action 5 is more than the No Action Alternative (3,664 cfs) and the Preferred Alternative (3,679 cfs).

Action 5 does not change Stanislaus River flows and Delta exports at Jones Pumping Plant are within range (1,643 TAF – 2,474 TAF; Action 5 is 2,370 TAF).

Salinity conditions in the Delta under Action 5 are generally within the range analyzed in the 2024 LTO Final EIS (*Exhibit 2, Modeling Technical Appendix, Attachment 2-05 – DSM2 Salinity*). However, modeled results indicate instances of elevated salinity at certain Delta locations, like the San Joaquin River at Jersey Point ([Figure 5](#)). These deviations, which were no more than 10 percent above the range analyzed in the LTO 2024 Final EIS, are likely attributable to the removal of the Fall X2 action. Importantly, the modeled values for the D-1641 compliance locations (Sacramento River at Collinsville, Sacramento River at Emmaton, San Joaquin River at Jersey Point, and Old River at Rock Slough) remain within the range of historically observed salinity conditions ([Table 3](#)). These potential increases in salinity are most similar to Alternative 1 in the LTO 2024 Final EIS and are not considered a new significant impact.

Action 5 is anticipated to continue to meet the objectives of D-1641 that includes meeting water quality objectives for municipal and industrial beneficial uses. Reclamation will continue coordination with Contra Costa Water District (CCWD) per current Coordination Operations Agreement among Reclamation, DWR, and CCWD.



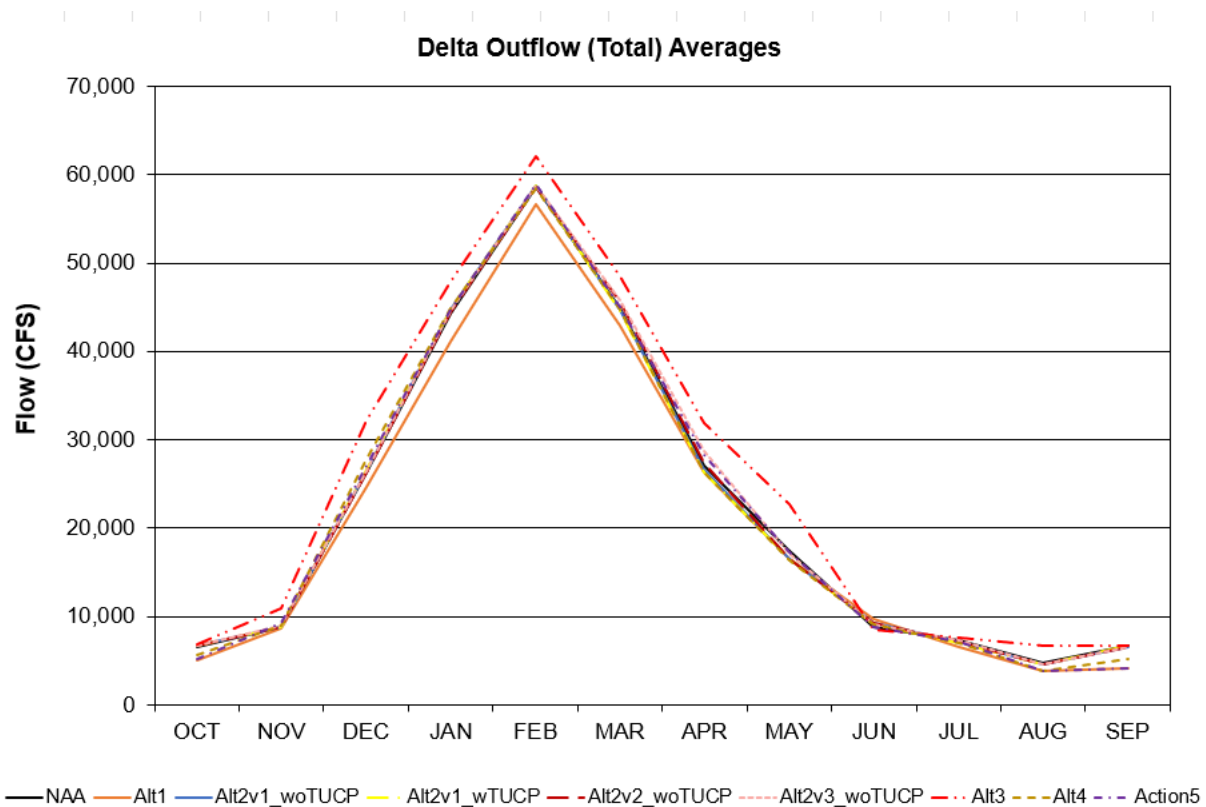
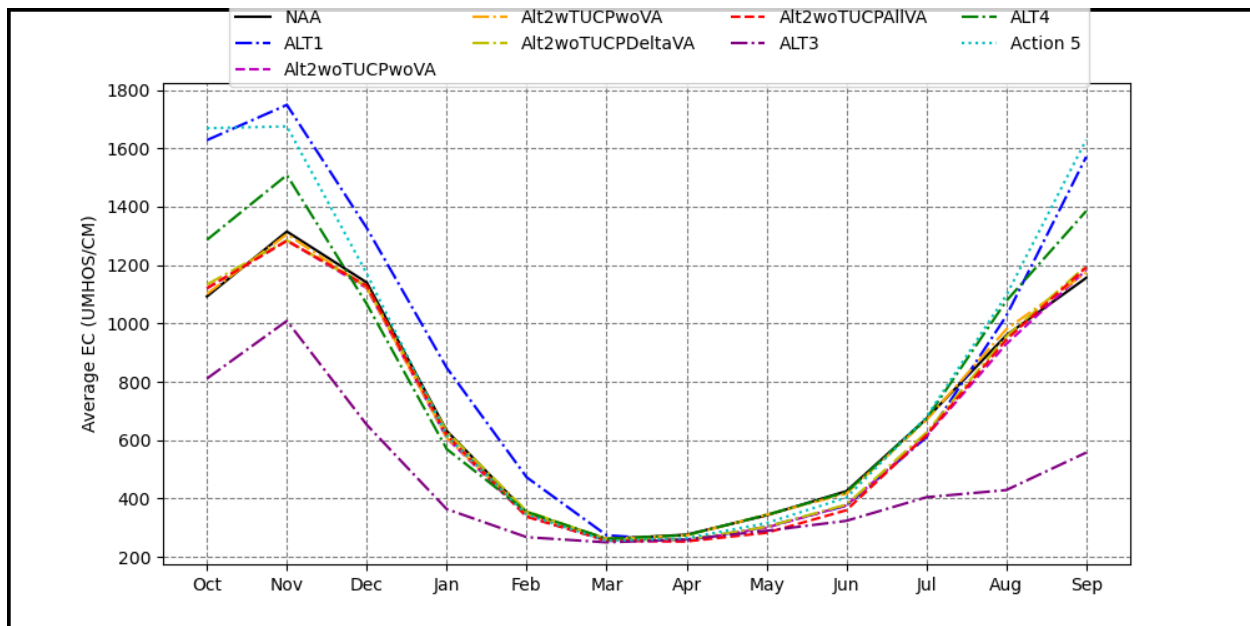


Figure 4. Average Delta Outflow (cfs)



\*As defined by the 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

\*These results are displayed with calendar year - year type sorting.

\*All scenarios are simulated at 2022 Median climate condition and 15 cm sea level rise.

Figure 5. San Joaquin River at Jersey Point Salinity, Long Term Average EC (UMHOS/CM)\*

Table 3. Occurrences of Delta Salinity Under Action 5 Within Historical Observations

Location	Month	Final EIS Min	Final EIS Max	Historical Min	Historical Max	Action 5
Jersey Point	Oct	585	1621	152	2531	1632
Jersey Point	Nov	859	1601	318	2184	1649
Jersey Point	Dec	1077	1540	607	1832	1589
Jersey Point	Sep	447	1078	202	2363	1097
Emmaton	Oct	1208	2083	146	4741	2088
Emmaton	Nov	1520	2244	392	4674	2349
Collinsville	Oct	5169	8104	633	11607	8376
Collinsville	Nov	6018	8188	2228	11008	8756
Collinsville	Dec	5896	7436	586	11468	7730
Rock Slough	Nov	403	672	162	1598	703
Rock Slough	Dec	499	679	280	1069	714
Rock Slough	Jan	485	697	344	4299	716

## Fish and Aquatic Resources

The Fish and Aquatic Resources for the LTO focus on steelhead, eulachon, green sturgeon, coastal cutthroat trout, brown trout, rainbow trout, Kokanee salmon, winter-run Chinook salmon, spring-run Chinook salmon, steelhead, Delta smelt, longfin smelt, white sturgeon, native minnows (Sacramento splittail, hardhead, Sacramento hitch), Pacific lamprey, western river lamprey, threadfin shad American shad, black basses, starry flounder, killer whale, striped bass, spotted bass and California roach. Biological modeling analysis for listed species is described in *Attachment 4 - Endangered Species Act Compliance Documentation* and *Appendix O - Fish and Aquatic Resources, Section O.2. Methods and Tools*.

The range of average Sacramento River flows below Keswick Dam analyzed in the 2024 LTO Final EIS is 8,421 – 8578 cfs. Flows under Action 5, on average, are 8,427 cfs on the Sacramento River below Keswick Dam. Flows under Action 5 are slightly less than the average flows under the Preferred Alternative (Alt2v3) (8,440 cfs) and under the No Action Alternative (8,447 cfs), but still within the range analyzed in the 2024 LTO Final EIS (*Exhibit 3 - Determination of NEPA Adequacy Supporting Documentation*). For dry and critically dry years, the range of Sacramento River flows below Keswick Dam in the 2024 LTO and Final EIS is 6,789 – 7,096 cfs. Flows under Action 5 during these years are 6,837 cfs. Flows under Action 5 are slightly less than average flows under both the Preferred Alternative (Alt2v3) (6,878 cfs) and the No Action Alternative (6,957 cfs), but still within the range analyzed in the 2024 LTO Final EIS. Action 5 does not change the Shasta Framework from the 2024 LTO Final EIS.

For June through August, average Sacramento River water temperatures below Keswick Dam analyzed in the 2024 LTO Final EIS are 51.8°F – 52.7°F. Action 5 water temperatures (51.8°F)



are within that range, and are lower than both the Preferred Alternative (Alt2v3) (52°F), and the No Action Alternative (52.3°F). During dry and critically dry years, water temperatures in the Sacramento River below Keswick Dam for these months ranged between 52.3°F – 53.9°F. Action 5 water temperatures (52.3°F) are within that range, and are lower than the Preferred Alternative (Alt2v3) (52.7°F) and the No Action Alternative (52.8°F) analyzed in the 2024 LTO Final EIS.

For September through November, average Sacramento River water temperatures below Keswick Dam analyzed in the 2024 LTO Final EIS are 52.9°F – 54.2°F. Action 5 water temperatures (53°F) are within that range, and are lower than both the Preferred Alternative (Alt2v3) (53.2°F), and the No Action Alternative (53.3°F). During dry and critically dry years, water temperatures in the Sacramento River below Keswick Dam for these months ranged between 53.9°F – 55.4°F. Action 5 water temperatures (54.3°F) are within that range, and are lower than both the Preferred Alternative (Alt2v3) (54.8 °F) and No Action Alternative (54.7°F) analyzed in the 2024 LTO Final EIS. Action 5 water temperatures are within the range analyzed in the 2024 LTO EIS. Potential water temperature impacts under the Preferred Alternative (Alt2v3) and the No Action Alternative are greater than under Action 5.

Similarly to the alternatives analyzed in the 2024 LTO Final EIS, Action 5 is not expected to contribute to water temperature impacts in the Delta.

Delta inflow and outflow can influence fish species through altered habitat conditions (e.g., salinity), as well as migration behaviors for salmonids and other fish species. As described above in the Water Quality section, average Delta outflow in the LTO 2024 Final EIS ranges from 20,512 cfs – 24,384 cfs. Action 5 Delta outflow is 21,671 cfs (Figure 1 – Water Quality section) and within the ranged analyzed. Average Delta inflow under Action 5 falls within the range analyzed for Sacramento River at Freeport (20,642 cfs - 21,104 cfs; Action 5 is 20,988 cfs), and the flow through Yolo Bypass (4,183 cfs – 4,416; Action 5 is 4,266 cfs). The potential impacts on Sacramento River and Delta flow that would result from Action 5 to fish and aquatics are within the range of impacts analyzed in the 2024 LTO Final EIS. (*Exhibit 3 - Determination of NEPA Adequacy Supporting Documentation* and 2024 LTO Final EIS).

Action 5 is not expected to change ocean abundance, fishing opportunity, or revenue from commercial fisheries. relative to the No Action Alternative and the Preferred Alternative (Alt2 v3) in the 2024 LTO Final EIS. Opportunities for recreational fishing are similar under Action 5 relative to the No Action Alternative and the Preferred Alternative (Alt2 v3) in the 2024 LTO Final EIS. Additional information on abundance of Chinook salmon is provided in *Exhibit 4 - Endangered Species Act Compliance Documentation*.

## Terrestrial Biological Resources

The Terrestrial Biological Resources analysis for the 2024 LTO Final EIS focus on the northwestern pond turtle, foothill yellow-legged frog (North Coast DPS and South Sierra DPS), giant garter snake, soft bird's-beak, Suisun thistle, bank swallow, western yellow-billed cuckoo, and least bell's vireo. Species present on the Trinity, lower American and Stanislaus River are not expected to be impacted by Action 5. The foothill yellow-legged frog (North Coast DPS) and Northwest pond turtle are also present on the Sacramento River, along with bank swallow, western yellow-billed cuckoo, and least bell's vireo. Changes in flows have the potential to impact the species above through stranding, altered habitat, or life stage development. Therefore, changes to Sacramento River flows associated with Action 5 are described below.

As described in the Fisheries and Aquatic Resources section, average flows in the Sacramento River below Keswick under Action 5 are slightly less than the average flows under the Preferred Alternative (Alt2v3) (8,440 cfs) and under the No Action Alternative (8,447 cfs), but still within the range analyzed in the LTO 2024 Final EIS (*Exhibit 3 - Determination of NEPA Adequacy Supporting Documentation*). For dry and critically dry years, the range of Sacramento River flows below Keswick Dam in the 2024 LTO and Final EIS is 6,789 – 7,096 cfs. Flows under Action 5 during these years are 6,837 cfs. Flows under Action 5 are slightly less than average flows under both the Preferred Alternative (Alt2v3) (6,878 cfs) the No Action Alternative (6,957 cfs), but still within the range analyzed in the 2024 LTO Final EIS.

As discussed in the Water Quality section, Delta outflow, Delta inflow and water temperatures, and salinity under Action 5 is generally within the range analyzed in the 2024 LTO Final EIS. While modeling of some Delta locations exhibit elevated salinity, these instances remain within the historically observed range. Potential impacts resulting from increased salinity would be similar to those analyzed under Alternative 1 and would not result in new significant impacts not described in the 2024 LTO Final EIS (*Appendix P - Terrestrial Biological Resources Technical Appendix*).

Sacramento Valley populations of giant garter snake depend on rice fields and associated irrigation and drainage channels, leaving them vulnerable to wide-scale habitat loss in the event of changes in agricultural management such as changes in crops or fallowing large areas of rice fields. When rice fields are left out of production, there is a reduction or elimination in the use of the surrounding and nearby water conveyance structures by snakes. Reclamation entered into an Agreement with the CVP Settlement Contractors for the Drought Protection Program that includes these reductions, and the effects are addressed under the environmental compliance for that agreement, which remains unchanged.

## Public Health and Safety

Potential impacts to Public Health and Safety for the 2024 LTO Final EIS focus on Valley fever, bioaccumulation of methylmercury in fish, and exposure to harmful algal blooms. Public health and safety analysis for the 2024 LTO Final EIS is mainly based on water supply, which cascades to other components such as water quality and land use. Water supply deliveries under Action 5 are within the range analyzed in the 2024 LTO Final EIS, as described above (See Water Supply).

Irrigated soils are less likely to contain Valley fever fungus than dry, previously undisturbed soils. Under Action 5, it is anticipated that an increase in water supply may result in an increase in irrigated acres (see Land Use) compared to the Preferred Alternative (Alt2v3) and the No Action Alternative in the 2024 LTO Final EIS.

Flooding in terrestrial ecosystems contributes to increased levels of water column and fish methylmercury. Under Action 5, changes to terrestrial ecosystem flooding are not anticipated relative to the No Action Alternative and the Preferred Alternative (Alt2v3) in the 2024 LTO Final EIS.

Cyanobacteria harmful algal blooms (CHABs) are dependent on warmer water temperatures; water clarity and irradiance; a calm, stratified water column coupled with long water residence times; and sufficient availability of dissolved nitrogen and phosphorus. As described under Water Quality and Fish and Aquatic Resources, it is anticipated that changes to these CHAB factors under Action 5 will remain within the range of alternatives analyzed in the 2024 LTO Final EIS.

For additional information on public health and safety please refer to *Appendix X - Public Health and Safety Technical Appendix* of the 2024 LTO Final EIS.

## **DETERMINATION OF NATIONAL ENVIRONMENTAL POLICY ACT ADEQUACY**

In accordance with 2025 DOI NEPA Handbook, Reclamation reviewed the 2024 LTO Final EIS and answered the questions below to determine whether the EIS adequately covers Action 5:

- 1) Is the new proposed action a feature of, or essentially like an alternative analyzed in the existing environmental document? Yes, Action 5 reflects the foundational components and overarching approach to water management of the Preferred Alternative in the 2024 LTO Final EIS. (*Attachment 1 - Long-Term Operations of CVP and SWP Operations Plan – Action 5*).
- 2) Is the proposed action within the same analysis area, or if the location of the proposed action is different, are the geographic and resource conditions sufficiently like those

analyzed in the existing environmental document? If there are differences, can the bureau explain why they are not substantial? Yes, Action 5 is within the exact same analysis area as was considered in the 2024 LTO Final EIS.

- 3) Is the range of alternatives analyzed in the existing environmental document appropriate with respect to the new proposed action, given current environmental concerns and resource values? Yes, the range of alternatives described in the 2024 LTO Final EIS is appropriate with respect to Action 5 given current environmental concerns and resource values. The range of alternatives in the 2024 LTO Final EIS provides the bounds for reasonable long-term operation of the CVP and SWP by emphasizing different operational tradeoffs among the multiple purposes of the CVP and SWP (See *Chapter 3 – Alternatives* of the 2024 LTO Final EIS).
- 4) Is the existing analysis valid considering any new information or circumstances relevant to the proposed action? Can the bureau reasonably conclude that new information and new circumstances do not warrant substantial change to the analysis of the new proposed action? Yes, the analysis within the 2024 LTO Final EIS is still valid as no new information since December 2024 has become readily available. Environmental circumstances, including hydrologic conditions, remain consistent and similar to the affected environment described and evaluated in the 2024 LTO Final EIS.
- 5) Are the environmental effects that would result from implementation of the new proposed action similar (both quantitatively and qualitatively) to those analyzed in the existing environmental document? Yes, as described above, the environmental effects related to Action 5 are similar to those analyzed in the 2024 LTO Final EIS (Appendices G through Y, and Chapters 4-22)

## OTHER PERMITTING AND COMPLIANCE

Action 5 was developed to comply with Executive Order 14181. Documentation of Endangered Species Act Section 7 (a)(2) compliance is provided on *Attachment 4 – Endangered Species Act Compliance Documentation*. Action 5 will not affect the LTO existing applicability for compliance with the Clean Water Act and the National Historic Preservation Act. Existing compliance with the Magnuson-Stevens Fishery Conservation and Management Act and the Water Infrastructure Improvements for the Nation Act is applicable for Action 5.