



Delta Conveyance Project Operations Plan





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Acronyms and Abbreviations

AF	Acre Feet
BiOps	Biological Opinions
CCF	Clifton Court Forebay
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFS	Cubic Feet per Second
COA	Coordinated Operations Agreement
CVP	Central Valley Project
DCC	Delta Cross Channel
DCP	Delta Conveyance Project
DWR	California Department of Water Resources
EC	Electrical Conductivity
E/I	Export/Inflow
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report
ITP	Incidental Take Permit
LTO	Long term operations
NDD	North Delta Diversion
NDOI	Net Delta Outflow Index
NMFS	National Marine Fisheries Service
OAMMP	Operations Adaptive Management and Monitoring Plan
SAC	Sacramento River
SJR	San Joaquin River
SOD	Sout of Delta
SWB	State Water Resources Control Board
SWP	State Water Project
TUCP	Temporary Urgency Change Petition
USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USFWS	United States Fish and Wildlife Service
WOMT	Water Operations Management Team
WQCP	Water Quality Control Plan



Definitions

Terms used in this Delta Conveyance Project Operations Plan are defined below.

Approach Velocity is the measure of flow during operation of the diversion intake, perpendicular to the fish screens' inlet holes and entering the intake.

Balanced Conditions are as defined in the Coordinated Operations Agreement: periods when it is agreed that releases from upstream reservoirs plus unregulated flow approximately equal the water supply needed to meet Sacramento Valley inbasin uses, plus exports.

Bypass Flow is the flow remaining in the Sacramento River immediately downstream of the proposed Delta Conveyance Project north Delta diversion intakes.

Carriage Water is the additional flow, added to Delta outflow, that is needed to carry a unit of water through the Delta to the south of Delta diversion facility in order to maintain salinity requirements.

Coordinated Operations Agreement is the Agreement Between the United States of America and the State of California for Coordinated Operation of the Central Valley Project and the State Water Project.

Emergency means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. "Emergency" includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage. (Ca. Pub. Res. Code § 21060.3)

Excess Conditions are as defined in the Coordinated Operations Agreement: periods when it is agreed that releases from upstream reservoirs plus unregulated flow exceed Sacramento Valley inbasin uses, plus exports.

Excess Flows are when the Delta has flows in excess of the in-basin uses and the amount necessary to comply with regulations, considering existing facilities.

Maintenance Flow Diversions are low level flows necessary to keep DCP infrastructure operational.

OAMMP is the Operating Adaptive Management and Monitoring Plan as defined in the DCP Incidental Take Permit application Appendix 3B.

Pulse Protections are additional restrictions for north Delta diversions that provide protection for fish passing through the intake reach and Delta above and beyond the Bypass Flow requirements.

Ramping Rate means the rate of increase or decrease in diversions at the north Delta intakes.

Real-Time Operations are daily decisions made by operators based on evaluation of many factors in order to operate the SWP in coordination with the CVP and meet applicable requirements.

Shifting for purposes of carriage water savings operations is diverting from the north Delta intakes in lieu of diverting SWP south Delta export facilities.

Sub Daily Operations are the implementation component of Real-Time Operations, where pumping units are turned on and off to schedules and where adjustments may need to be made to accommodate the dynamic nature of conditions (e.g., flow variation, tides), which may be different than projections.

Sweeping Velocity is the speed of the flow parallel to the intake screen and going past the fish screen informed by the average river velocities downstream of the north Delta intakes and as a function of a screen orientation.

USACE Clifton Court Permits mean those permits issued by the United States Army Corps of Engineers for Clifton Court operations, that have been and may be amended from time to time and include permit number SPK-1999-00715 and Public Notice 5820A dated October 13, 1981.



1.0 Introduction

This document presents a summary of the Delta Conveyance Project (DCP) operations commitments that the Department of Water Resources (DWR) has made for when the DCP becomes operational. These commitments have all previously been presented in several public documents, including the DCP Final Environmental Impact Report (FEIR) certified in December 2023 and the DCP Incidental Take Permit (ITP) Application submitted to the California Department of Fish and Wildlife (CDFW) in April 2024. This Version 2 also includes operational refinements included in the Incidental Take Permit (ITP) issued by CDFW on February 14, 2025. The DCP will add two new diversion facilities or intakes (north Delta intakes) to the existing State Water Project (SWP) facilities. While DCP operations will be integrated into the SWP operations, there are several key operational parameters that will apply to how the DCP north Delta intakes will be used once it is constructed and operational. Figure 1-1 is a schematic of the new facilities to implement the DCP. DCP operations will be consistent with all of the following:

- Existing applicable water right permits;
- Any applicable laws or regulatory obligations and any subsequent updates thereto;
- Any permit issued for the DCP; and
- Any DCP Settlement with permit conditions.¹

This DCP Operations Plan (Operations Plan) is intended to be a concise presentation of the DCP operations already presented in other documents to assist the reader in better understanding how the north Delta intakes will be operated. The Operations Plan is not intended to take precedence over applicable laws, regulations, or regulatory requirements.

This Operations Plan is a living document and will be updated periodically to reflect updates to applicable laws and regulations, permit requirements, and/or regulatory requirements. DWR has submitted a petition to the State Water Resources Control Board (SWB) for the change in point of diversion for existing SWP water rights to implement the DCP. Additionally, DWR has submitted various permit applications to other agencies, including an ITP Application to the CDFW. This Operations Plan is based on the FEIR and refined by the ITP issued by CDFW on February 14, 2025.

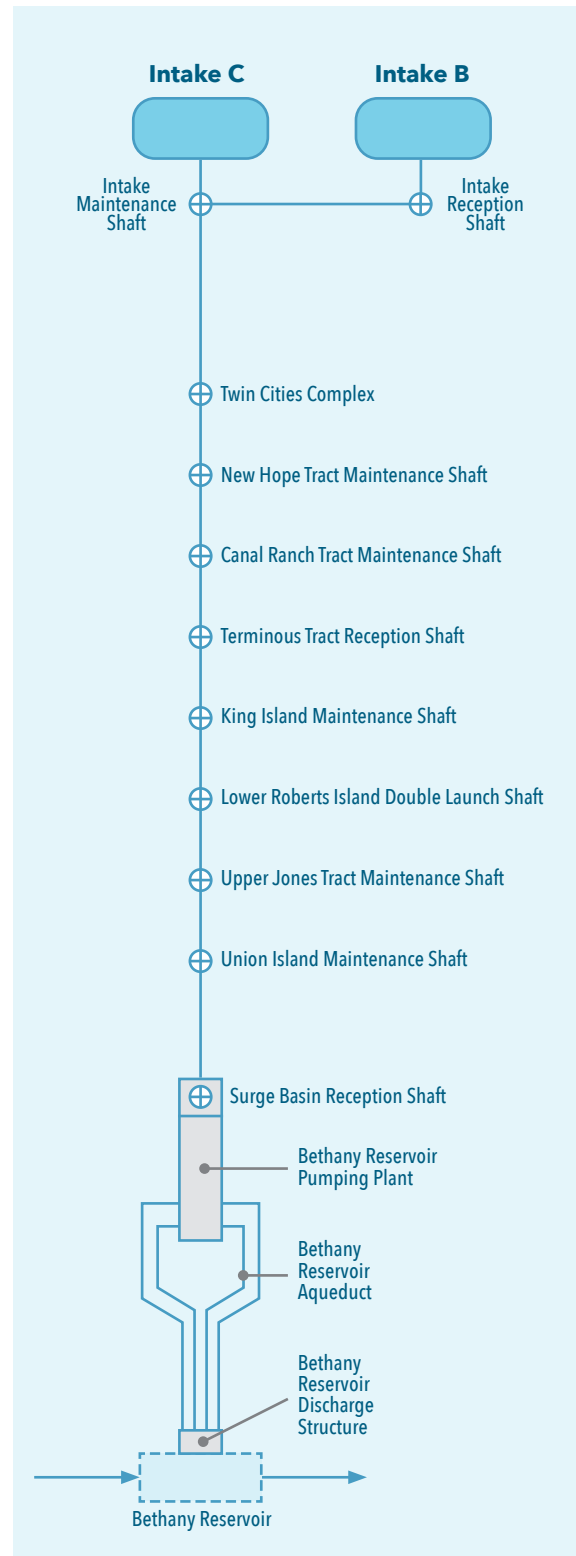


Figure 1-1 Delta Conveyance Project Schematic

¹ Settlement terms may be summarized in this document. Operational conditions in settlements are subject to the terms of the specific settlement and may only be applicable if DCP is built and becomes operational.

This Operations Plan does not address construction of the DCP or mitigation and monitoring related to the construction period. Rather, the Operations Plan is focused on how the DCP will be operated once it is constructed. Figure 1-2 shows the location of the north Delta intakes on the Sacramento River. Figure 1-3 shows the tunnel alignment. Figure 1-4 shows the location of facilities necessary to deliver water into Bethany Reservoir.



Figure 1-2 Proposed Intake Locations and Infrastructure

MAP LEGEND

- Intake
- Launch Shaft
- Reception Shaft
- Maintenance Shaft
- Belowground Tunnel

Not to scale

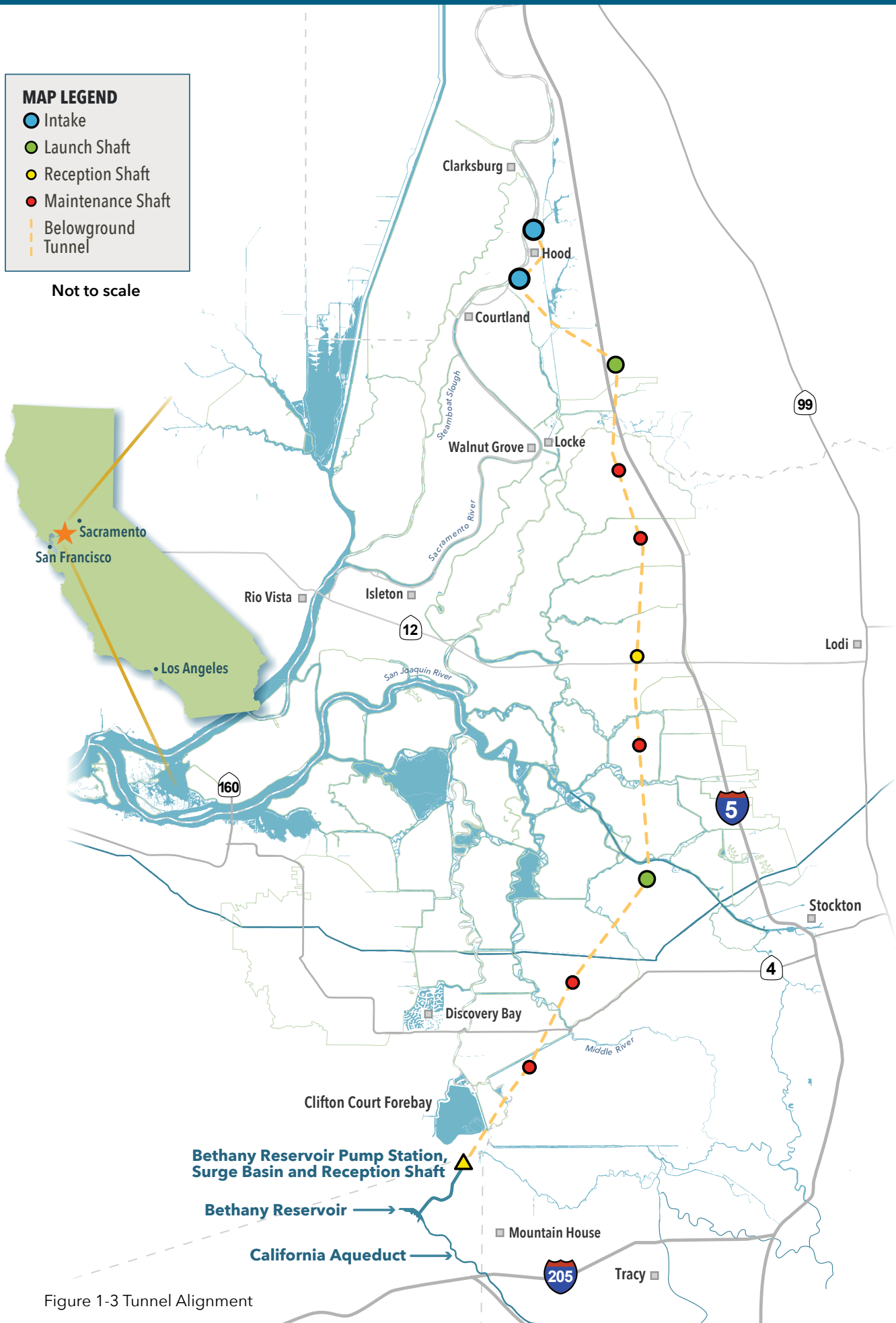


Figure 1-3 Tunnel Alignment





Figure 1-4 Bethany Facilities

1.1 Permits and other Regulations

Version 2 of the Operations Plan uses the preferred alternative (5) from the FEIR and is refined by the ITP issued by CDFW on February 14, 2025, for DCP construction, operations, and maintenance. Operational criteria refinements were developed based on feedback from CDFW during the CESA consultation process. The refinements include updated bypass criteria to achieve minimization targets for CESA listed fish, as well as adjustments in the sub-daily operations. Other than these refinements, all operational criteria identified in the Operating Plan are still applicable. DWR does not control the timeframe for review and issuance of any permit and thus cannot predict what additional restrictions, if any, will be placed on DCP operations. This Operations Plan is intended to be updated consistent with any permit conditions or other regulations applicable to the DCP that are added to or replace those currently in the Operations Plan. Nothing in this Operations Plan is intended to conflict with any permit or regulatory requirement. This Operations Plan is a tool to inform DCP operations but is not intended to obligate DWR to implement certain operations precisely as dictated in this plan.

DWR is not seeking additional permit coverage for existing SWP facilities. Existing SWP Delta operations are covered by the 2024 ITP for SWP long-term operations (LTO) (CDFW 2024).



2.0 Integration into Existing SWP Operations

Once the DCP is constructed, operations will be integrated into SWP operations and subject to the permits and legal requirements placed on the SWP, in addition to the DCP specific requirements and operations set forth in this Operations Plan and as described in section 1.1.

2.1 Upstream Reservoirs, including Oroville Reservoir

The DCP will not change operational criteria associated with upstream reservoirs. Upstream facilities will continue to be operated to meet then existing regulatory, environmental, and contractual obligations consistent with existing SWP operations.

DWR is committed to not changing upstream reservoir operations to move additional stored water through the north Delta intakes. DWR will not make additional stored water releases, beyond those possible as of the date of this Operations Plan without the use of the DCP, from the Lake Oroville Complex, or any other of its now existing upstream reservoirs for the purpose of south Delta SWP exports, except as provided below. This will be achieved by limiting SWP water diversions at the existing south Delta facilities and the north Delta intakes to the amount allowed under the United States Army Corps of Engineers (USACE) Clifton Court Permits, when balanced conditions are declared and the Central Valley Project (CVP) and SWP are collectively withdrawing water from storage, excluding the following, each of which is subject to any applicable legal requirements:

- i. Export of any carriage water savings generated by DCP operations;
- ii. Export of any transfer or wheeling water consistent with applicable law; and
- iii. Export of any (a) required upstream flood control releases; and (b) required regulatory releases capable of export.

2.2 Integration with the South Delta Operations

2.2.1 Excess Flow Operations

The north Delta intakes will operate in conjunction with the existing SWP south Delta export facility and would first maximize moving water through the south Delta export facility. The proposed intakes will augment the ability to capture Excess Flows and improve the flexibility of the SWP operations such as for meeting the SWB D-1641 Delta salinity and outflow requirements. The DCP is not proposing to increase the total quantity of water permitted for diversion under existing DWR water rights. The following describes the integration of the DCP with the existing SWP south Delta facilities.

During the winter and spring when there are available Excess Flows in the system:

- The SWP will first use south Delta facilities to divert water up to what is permitted under the existing water rights and all applicable state and federal laws and regulations. Following that, if operators determine water is available in excess of the amount required to comply with state and federal laws and regulations, the north Delta intakes will be used to capture these additional flows, consistent with existing water rights for total SWP exports (i.e., the existing 10,350 cfs limitation in DWR's water right will remain and govern combined north and south Delta SWP diversions).
- Relocating the diversion from the SWP south Delta export facility to the north Delta intakes has trade-offs and is not expected unless there is an operational advantage to do so at the discretion of DWR and in coordination with the United States Bureau of Reclamation (USBR), and fish and wildlife agencies, and through the Water Operations Management Team (WOMT) (e.g., to provide additional real-time south Delta fish protections).
- There will likely be conditions where diversions through the north Delta intakes are not maximized even when the Bypass Flow requirements will allow greater diversions. Examples of these conditions may include when other operational criteria are controlling or when south of Delta storage is full. (See section 3.0 for more information on Bypass Flow requirements and other operational criteria.)



2.2.2 Balanced Condition Operations

During the late spring, summer, and fall, when the SWP is typically operating to meet SWB D-1641 salinity and outflow requirements in the Delta:

- Both the existing SWP south Delta export facility and the north Delta intakes will be operated together to meet the SWB D-1641 salinity and outflow requirements.
- Some level of combined SWP and CVP south Delta diversions will be needed to manage salinity in the Old River and Middle River corridor. From July through September, if the combined SWP and CVP south Delta diversions are less than 3,000 cfs, SWP water will not be diverted through the north Delta intakes facility.
- The south Delta diversions and the north Delta diversions will be balanced and adjusted to meet the SWB D-1641 salinity requirements at the western Delta stations on the Sacramento and San Joaquin Rivers (e.g., increasing salinity at Jersey Point could be managed by reducing diversions from the south Delta intake and increasing a like amount at the north Delta intakes, whereas increasing salinity at Emmaton could be managed by reducing diversions from the north Delta intakes and increasing a like amount at the south Delta intake). This operation is expected to result in a more efficient system operation where less water will be required to meet the same water quality standards and result in additional water that could either remain in storage or be diverted.
- Upstream SWP storage operations will continue to be managed to the existing and future regulatory and contractual obligations of the SWP in determining the amount of stored water available for diversion. DWR will not increase storage withdrawal for diversions even though the DCP may provide additional diversion capacity. The exceptions are described in section 2.1.

Nothing in this section will preclude DCP diversions for low level maintenance as described in section 5.0 or in Emergency situations as described in section 6.0.

2.2.3 Carriage Water Operations

During balanced conditions, the DCP may be utilized to more efficiently manage water quality conditions in the western Delta, resulting in a Carriage Water savings. Carriage Water savings can be generated by moving some limited amount of south Delta pumping from Clifton Court Forebay to the DCP.

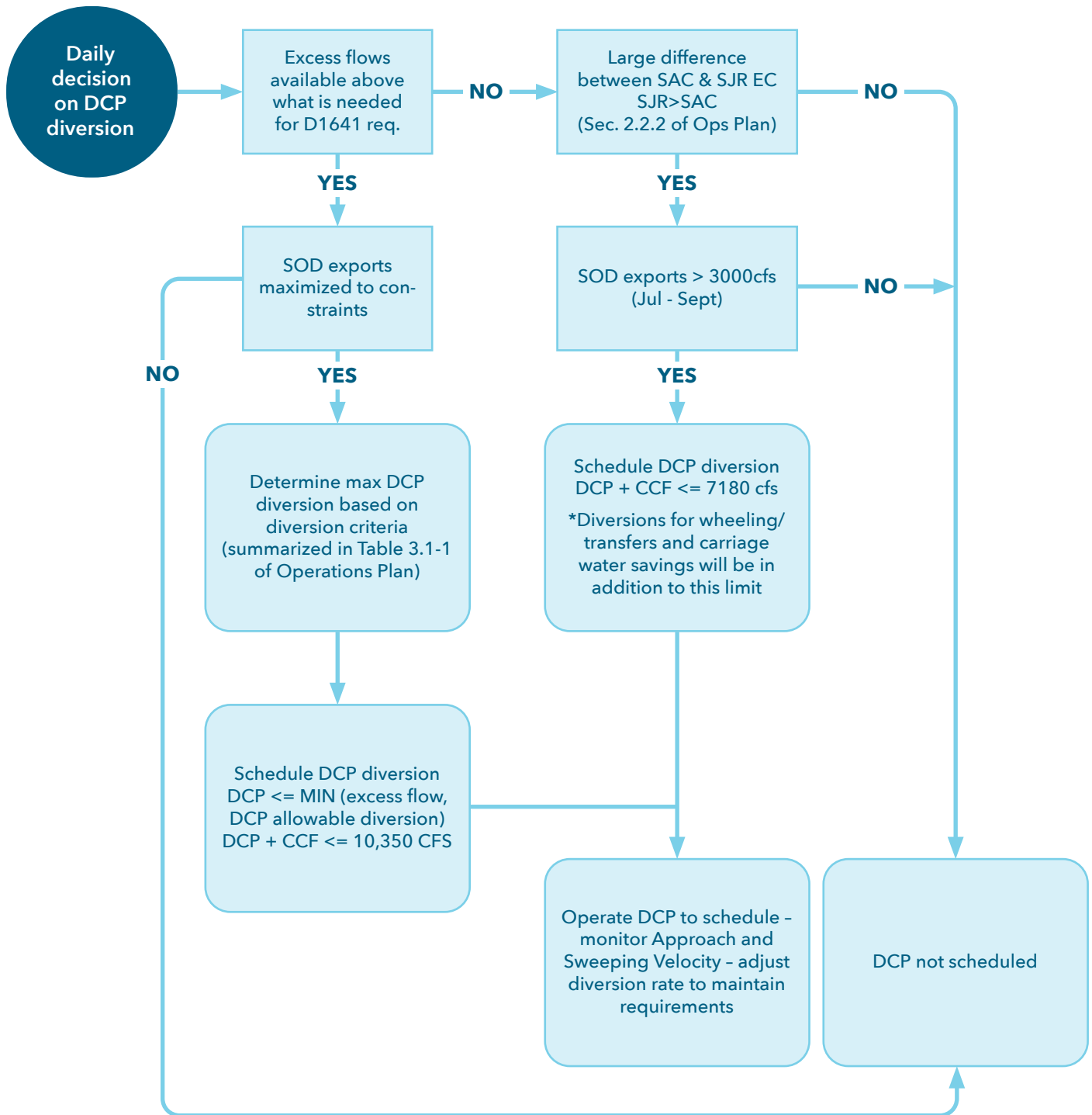
Carriage Water is the additional flow, added to Delta outflow, that is needed to carry a unit of water through the Delta to the south of Delta diversion facility in order to maintain salinity requirements. The primary driving Delta standard for Carriage Water is the Jersey Point requirement on the San Joaquin River in the western Delta. This station is also used as a monitoring station when the Jersey Point requirement is no longer in effect for the season. The SWP (and CVP) monitor and make adjustments to SWP (and CVP) operations based on Jersey Point salinity to maintain interior and south Delta salinity for Municipal and Industrial water quality requirements.

The north Delta diversions will improve the flexibility of SWP operations to meet water quality requirements during late spring through early fall. The amount of Shifting from diversions in the south Delta to the north Delta will be primarily determined by salinity conditions in the western Delta at Emmaton on the Sacramento River and Jersey Point on the San Joaquin River, during the summer and fall seasons. During the summer and fall, DWR could shift a portion of the SWP diversions from the SWP south Delta export facility to the north Delta intakes to help reduce salinity at Jersey Point while continuing to meet other water quality standards and operational criteria.

Shifting from the SWP's south Delta export facility to the north Delta intakes could reduce the need for Carriage Water releases from upstream reservoirs or improve the SWP's ability to divert those releases in the Delta while still maintaining water quality requirements. During these periods when the proposed north Delta intakes are operating to more efficiently manage Delta water quality, the Carriage Water savings could either be diverted or stored in upstream reservoirs for future use. Decisions regarding diversion or storage of saved Carriage Water will meet all regulatory and contractual requirements.

SWP operators will use the DCP to balance south Delta diversions and the proposed north Delta diversion so that less water or Delta outflow will be required to meet the same water quality standards. The Shifting that could occur is primarily defined by the summer and fall season. SWP operators, in real time, will primarily use salinity conditions at Jersey Point and Emmaton to determine if Shifting will be beneficial and result in reduced Carriage Water. Other operational limits will be followed when making these decisions. Shifting can be limited by the following: (1) export/inflow (E/I) ratio; (2) north Delta diversion Bypass Flow requirement, or other sub-daily criteria; (3) maintaining total south Delta diversions greater than 3,000 cfs, July through September. (4) total combined SWP diversion at the south Delta and north Delta diversions less than or equal to 7,180 cfs, excluding diversions for transfers and wheeling.

DCP Operational Decision Flow Chart



DCP Diversions will be scheduled considering, but not limited to:

- Meeting WQCP/ESA/CESA requirements
- Demand and available storage
- Forecasted Tides

2.3 Temporary Urgency Change Petitions

Given the commitment to operate the south Delta SWP facilities as described in section 2.2, the conditions during a Temporary Urgency Change Petition (TUCP) are not times when the north Delta intakes will likely be used. The SWB retains its authority under the California Water Code to address emergencies and act in ways that can protect the State's interests, and the DCP does not seek to modify those authorities. Future circumstances under which the SWB will be responding to emergencies are unknown at this time.

3.0 North Delta Intakes Operations

3.1 Bypass Flows and Other Criteria

Bypass Flow will be implemented based on instantaneous flows or another basis as agreed to by CDFW. Bypass Flows include several criteria that are subject to change through the permitting process and are discussed by timeframe below. Each bypass criterion and other criterion are shown on Table 3.1-1 below and discussed in more detail in the following subsections.

Criteria	Description
Minimum Bypass Flow	August-September 5,000 cfs
Minimum Bypass Flow	October 7,000 cfs
Minimum Bypass Flow	November 10,000 cfs
Minimum Bypass Flow	December through February 10,000 cfs minimum bypass flow. If the Sacramento River flow is between 10,000 and 20,000 cfs six percent can be diverted through the DCP. If Sacramento River flow is between 20,000 cfs and 35,000 cfs six percent can be diverted through the DCP, increasing up to 10 percent if approved in response to a risk assessment. If Sacramento River flow exceeds 35,000 cfs 10 percent can be diverted through the DCP, increasing up to 12 percent if approved in response to a risk assessment.
Minimum Bypass Flow	March-May diversions are limited to three percent of Sacramento River flow if the Sacramento River Flow is greater than 20,000 cfs. If Sacramento River flow exceeds 35,000 cfs 10 percent can be diverted increasing up to 12 percent in response to a risk assessment.
Minimum Bypass Flow	June 10,000 cfs minimum bypass flow. Two levels of bypass flow requirements are proposed, with additional ability to divert under the conditions described in Table 3.1-2 ²
Approach and Sweeping Velocities	North Delta diversions at all the intake screen units will be subject to a maximum approach velocity of 0.2 feet per second and a minimum sweeping velocity in the river of 0.4 feet per second. Velocity compliance will be informed by real-time hydrological and diversion flow data measured at each of the intake locations ³ .

Table 3.1-1: North Delta Intakes Operations Criteria

² A salmon presence offramp in June and an onramp in June, July, and November would apply.

³ Location of gages to be determined by permitting and other legal requirements.

3.1.1 Bypass Flows

3.1.1.1 June through November

During the timeframe from August through September, the minimum Bypass Flow must be 5,000 cfs, prior to any diversion into the DCP. During October, the minimum Bypass Flow must be 7,000 cfs, prior to any diversion into the DCP. In June, July, and November, the minimum Bypass Flow must be 10,000 cfs, prior to any diversion into the DCP. In June, based on salmon presence, operations will off-ramp to the minimum Bypass Flow described in Table 3.1-2. Additionally, during this timeframe DCP operations will be informed by salinity management/Carriage Water savings opportunities consistent with section 2.0.

3.1.1.2 December through February⁴

During the timeframe from December through February there will be no diversions into the DCP if the Sacramento River Flow is less than 10,000 cfs. If Sacramento River Flow is between 20,000 cfs and 35,000 cfs, six to ten percent of the flow can be diverted into the DCP. If Sacramento River Flow exceeds 35,000 cfs, 10 to 12 percent of the flow can be diverted into the DCP.

3.1.1.3 March through May

During the timeframe from March through May there will be no diversions if the Sacramento River flow is below 20,000 cfs. If Sacramento River Flow is between 20,000 cfs and 35,000 cfs three percent of the flow may be diverted. If the Sacramento River Flow exceeds 35,000 cfs 10 to 12 percent of the flow may be diverted.

3.2 North Delta Diversion Monitoring Team

A North Delta Diversion Monitoring Team (NDDMT) will be formed to meet and review hydrologic, SWP and CVP operational, fishery, and water quality data, and provide opportunities for engagement and discussion among biologists and operators on relevant information and issues associated with the weekly risk assessments. The purpose of the NDDMT shall be to evaluate system conditions broadly and develop risk assessments regarding operations of the north Delta intakes. The NDDMT shall include representatives from DWR and CDFW. Upon mutual agreement, representatives from Reclamation, USFWS, and NMFS staff may also attend.

DWR will convene the NDDMT weekly beginning the first week in October. The NDDMT will begin to conduct risk assessments related to North Delta Intake diversions in the last week of October, to forecast for conditions starting in November, and meet weekly throughout November. DWR may convene the NDDMT and conduct weekly risk assessments as needed from December – June each year. DWR will convene weekly NDDMT meetings in July to conduct risk assessments. Risk assessments will include, but not be limited to: (1) Hydrological operation and Meteorological information; (2) Biological information related to covered fish species; (3) Salmon through Delta survival; (4) Risk of exposure to impacts at the North Delta Intakes analysis; (5) Routing Risk and potential increase in exports to South Delta Operations; (6) Statute of Delta Conditions set forth in the 2024 Long Term Operations ITP of the State Water Project; and (7) Status of Sacramento River hydrograph.

Additionally, the ITP includes Biological Criteria for listed aquatic species, which were developed based on the project's effects analysis and consultation process and function as limits to changes to, for example, the population growth rates of Covered Fish Species as a result of DCP project operations. Operating criteria will be evaluated to ensure that project operations achieve Biological Criteria for Covered Fish Species. The operating criteria and Biological Criteria were developed using best available science and data available. Consistent with the adaptive management process described in the Final EIR.

DWR proposes new monitoring and science to augment available data and refine or develop analytical tools to assess the magnitude, timing and spatial distribution of impacts of project operations on Covered Fish Species. This new science, modeling, and data shall be used by the NDDMT to inform real-time assessments of risk of impacts of Project operations on Covered Fish Species and adjust operations within the range identified to meet the Biological Criteria. Building on elements included in the Final EIR, DWR and CDFW have further developed covered species monitoring and scientific studies, including fisheries evaluation studies, water quality evaluation studies, ecological response evaluation studies, fish guidance system studies, hydraulic testing studies, and associated monitoring, which are needed to establish baseline biological and environmental conditions before impacts associated with specified Covered Activities begin. The science and monitoring required during pre-project historical conditions and/or In-Water Preconstruction Monitoring time periods shall be used to establish baseline conditions before impacts associated with project operations begin. Science and monitoring conducted during in-water construction monitoring may be included in calculations of baseline conditions, as approved by CDFW. Based on the above information, DWR with the NDDMT will assess the data and make recommendations for DWR to operate, consistent with the ITP.

⁴ Based on the outcome of future studies and real-time risk assessment processes identified in the ITP, diversions up to 15% could be allowed in January and February when bypass flows are greater than 35,000 cfs.

If Sacramento River flow is over ^{5,6}	...But not over	...The bypass is ⁷
October		
0 cfs	7,000 cfs	100% of the amount over 0 cfs
7,000 cfs	No limit	A minimum of 7,000 cfs
November		
0 cfs	10,000 cfs	100% of the amount over 0 cfs
10,000 cfs	No limit	A minimum of 10,000 cfs
December - February		
0 cfs	10,000 cfs	100% of the amount over 0 cfs
10,000 cfs	20,000 cfs	94%, with a minimum of 10,000 cfs
20,000 cfs	35,000 cfs	94-90%, with a minimum of 20,000 cfs
35,000 cfs	No limit	90-88%, with a minimum of 35,000 cfs
March - May		
0 cfs	20,000 cfs	100% of the amount over 0 cfs
20,000 cfs	35,000 cfs	97%, with a minimum of 20,000 cfs
35,000 cfs	No limit	90-88%, with a minimum of 35,000 cfs
June Initial Criteria		
0 cfs	10,000 cfs	100% of the amount over 0 cfs
10,000 cfs	10,900 cfs	10,000 cfs
10,900 cfs	15,000 cfs	100% of amount over 900 cfs
15,000 cfs	17,000 cfs	94% of the Sacramento River flow at Freeport
17,000 cfs	20,000 cfs	15,980 cfs plus 60% of Sacramento River flow above 17,000 cfs.
20,000 cfs	No limit	17,180 cfs minimum
June After 15 days of Sacramento River bypass flows above 20,000 cfs		
0 cfs	10,000 cfs	100% of the amount over 0 cfs
10,000 cfs	11,000 cfs	Diversions cannot exceed 900 cfs
11,000 cfs	15,000 cfs	10,100 plus 50% of the Sacramento River flow at Freeport above 11,000 cfs.
15,000 cfs	No limit	13,000 cfs plus 20% of Sacramento River flow at Freeport above 15,000
July		
0 cfs	10,000 cfs	100% of the amount over 0 cfs
10,000 cfs	No limit	A minimum of 10,000 cfs
August - September		
0 cfs	5,000 cfs	100% of the amount over 0 cfs
5,000 cfs	No limit	A minimum of 5,000 cfs

Table 3.1-2

⁵ Condition 11.111.3 of the ITP requires the establishment of the North Delta Diversion Monitoring Team (NDDMT) to guide real time operations based on weekly risk assessments. The NDDMT would be convened weekly starting the first week of October and would conduct week ahead risk assessments, based on relevant biological and abiotic conditions (such as presence of listed fish near the intake reach), modeling, and forecasting (as described further in the ITP) starting the first week of November. The NDDMT would continue in this role annually through July. Risk assessments would inform real-time operations as follows: November default criteria could be transitioned to December criteria based on risk assessment; December-May diversion could range from 6-10% (20-35,000 cfs) and 10-12% (greater than 35,000 cfs) based on risk assessment; June would transition based on a Salmon Presence Offramp (ITP Condition 11.111.6); July default could differ based on adaptive management and on risk assessment. (AHO-065)

⁶ Please see ITP (AHO-065) sections 11.111 – 11.111.6 for additional information on DCP operational requirements.

⁷ Represents post salmon off-ramp criteria for June

3.3 Sub Daily Operations

The Delta is a complex network of over 700 miles of tidally influenced channels and sloughs. Four strong forcing mechanisms drive circulation, transport, and mixing water in the Delta: (1) freshwater river and tributary flow to the Delta; (2) tides from the west propagating from the Pacific Ocean through the San Francisco Bay; (3) SWP and CVP water supply facilities operating in the Delta; and (4) collective effects of in-Delta agricultural diversions.

Reverse flows in the Sacramento River upstream of the DCP occur naturally, especially during low flows in the Sacramento River. As described below, DCP operations will have minimal effects on these reverse flows. Additionally, the ITP includes a requirement to work with CDFW to develop a Hydraulic Data Plan which will also consider accuracy of equipment used for real time measurements of Sacramento River flow and diversions, and physical constraints associated with pump operations and intake screens, in advance of operations. This Plan will inform real-time implementation of sub-daily operational criteria.

3.3.1 Uniform Daily Diversions

During higher flow conditions (approximately 20,000 cfs or higher) when the tidal influence is dampened, the north Delta intakes will be operated with uniform diversions throughout the day starting at 12:00 am. During more tidally influenced conditions (below 20,000 cfs), diversions will be focused on periods with downstream flow. The diversion rate will be based on daily allotment of DCP diversions adjusted for Ramping Rate and Sweeping Velocity requirements described below.

3.3.2 Diversion Ramping Rate

When diversions into the DCP begin and as they decline, they will occur consistent with a Ramping Rate. During all operational timeframes, the diversion Ramping Rate will not exceed an increase or decrease of more than 1,000 cfs every 15 minutes.

3.3.3 Approach and Sweeping Velocities

Approach Velocity for the DCP is limited to a maximum of 0.2 feet per second based on CDFW/United States Fish and Wildlife Service (USFWS) criteria for Delta fisheries species. To ensure the Approach Velocity criteria are met, instantaneous velocities will be calculated based on the real-time flows entering each intake screen unit divided by the intake screen's wedgewire surface area (i.e., the porous screening media). Gates behind the screen units will modulate to prevent excess flow through each screen unit. Facility performance testing and modeling studies will be conducted to demonstrate compliance with this CDFW criterion given that instantaneous velocities are calculated based on a uniform velocity assumption.

Sweeping Velocities are the speed of the flow parallel and going past the fish screen informed by the average river velocities downstream of the north Delta intakes. The DCP includes a minimum Sweeping Velocity requirement of 0.4 feet per second to further minimize near-field effects of the intakes operations, consistent with fish agency criteria. The minimum Sweeping Velocity will facilitate passage of fish and debris past the intakes. Sweeping Velocities will be informed by real-time river flows, less North Delta diversion intake flows, divided by the river's wetted cross-sectional area at a location just downstream of each screened intake facility. Refinements to these criteria will be considered through ongoing fish agency coordination and adaptive management. Diversion operations will be adjusted to account for natural tidally influenced river velocities.

3.3.4 Reverse Flows Upstream and Downstream of North Delta Intakes

The north Delta intakes diversion flows and Sweeping Velocity operations described above avoid or minimize increases in frequency or magnitude of tidal reverse flows at Freeport by effectively providing a limitation on the amount of time during the day that DCP diversions can occur (i.e., when low flows at Freeport become tidal and begin to have periods of the day that reverse direction on the flood tide). Under these conditions, diversion flows will be limited to periods when the river is moving in the downstream direction. It is expected that river Sweeping Velocities will significantly constrain daily diversions during lower river flow periods and thus minimize increasing tidal reverse flows. Once the DCP becomes operational, DWR will coordinate operations with the Sacramento Area Sewer District and Freeport Regional Water Authority operations and share projections of tidal reverse flows and any diversions that may be anticipated.

DCP bypass criteria were developed in coordination with state and federal fish agencies to minimize far-field effects of North Delta Diversions to reduce upstream transport of fish into Georgiana Slough and the Delta Cross Channel (DCC). These bypass criteria were developed based on available data and understanding of tidal reverse-flow hydrodynamics at this river junction.

Although DCP operations criteria are designed to avoid or minimize flow reversals, diverting water from the Sacramento River can potentially increase the frequency and duration of reverse-flow conditions. DWR will undertake tidal habitat restoration in the north Delta to mitigate for potential hydrodynamics-related effects. The mitigation approach will be focused on offsetting any incremental effects of DCP operations. The extent of this tidal habitat restoration will be determined in coordination with CDFW, National Marine Fisheries Service (NMFS), and USFWS.



4.0 USBR Coordination

When the DCP becomes operational, DWR will continue to coordinate with USBR to minimize or avoid additional outflow requirements or require additional upstream stored water releases due to DCP operations.

5.0 Maintenance Flows

Maintenance Flow Diversions may periodically be required for general facility maintenance at the Bethany Reservoir Pumping Plant, the north Delta diversions, and/or other tunnel system facility requirements. Maintenance Flow Diversions will likely only occur if the pumps are not otherwise exercised during normal monthly diversion operations. Maintenance Flow Diversions will be limited to a maximum of 300 cfs. The duration of these flows could be up to eight hours per pump per month. There are 14 pumps so in no event will these low-level Maintenance Flow Diversions exceed 112 hours per month. The maintenance flow requirements for other DCP facilities will be satisfied concurrently with the maintenance flow requirements of the pumping plant's unit maintenance.

Maintenance Flow Diversions are subject to operational requirements described in section 3. Maintenance Flow Diversions will be coordinated as needed with other system operations to maintain regulatory compliance.

6.0 Emergency Situations

DWR may operate the DCP outside of the parameters provided in this Operations Agreement in the event of Emergency situations, subject to necessary authorizations.

7.0 Transfers

Water Code section 1810 et seq. provides that a public entity may not deny a bona fide transferor of water access to available conveyance capacity if the conveyance of transfer water will not adversely affect the beneficial uses or quality of water in the facility and the conveyance can be provided without injuring any other legal user of water, without unreasonably affecting fish, wildlife, or other instream beneficial uses and without unreasonably affecting the overall economy or the environment of the county from which the water is being transferred.

The existing process for determining where there is unused capacity for transfers is described below. This information was used to determine if there was existing transfer capacity without the DCP.

In determining the availability of unused capacity within the SWP or CVP for transferring water, DWR and USBR operators analyze annual hydrology, project operations, contractor requests, and regulatory and operational restrictions. One such restriction is the 2024 Biological Opinions (BiOps) and the 2024 ITP. The 2024 BiOps and 2024 ITP limit water transfers to the months of July through November. Additionally, the annual volume is limited based on the Sacramento Valley Water Year Hydrologic classification. Even with operational constraints, the existing facilities typically have sufficient capacity to move desired water transfers, and adding the DCP is not expected to affect the amount of non- project water transfers that may occur during any water year type.

If some transfer water is conveyed through the DCP, then the amount of transfer water and associated Carriage Water flowing into the Delta could be reduced relative to the amount that occurs under existing conditions, depending on the hydrologic year and the amount of water purchased. The use of the DCP for water transfers will result in minimal effects on Delta water quality relative to current operations. Under current operations, the Carriage Water portion of the water transfer action maintains water salinity conditions in the Delta to be the same as without the water transfer. In other words, the "with" and "without" water transfer conditions under current operations will have similar Delta salinity conditions.

As such, transferring water through the DCP will result in similar Delta salinity conditions as "with" or "without" water transfer conditions under current operations, as the amount of Sacramento River inflow for transfer will be over and above the inflow required to meet the Delta salinity regulatory requirements, and diverting that water at the north Delta intakes does not result in any additional salinity changes in the Delta.

If water transfers were diverted through the proposed north Delta intakes, buyers may assume that they will receive a larger percentage of the purchased water because less Carriage Water will be needed to maintain water quality. This assumption may lead to buyers purchasing less transfer water, but the difference will likely be small. Any water transfers that use the DCP will comply with all the criteria specified in this Operations Plan as it may be updated from time to time.

8.0 Changes to the Operations Plan

This Operations Plan was prepared for the sole purpose of compiling publicly available operational information for the purposes of the DCP change in point of diversion proceeding for the convenience of the public. This Operations Plan is a living document and will continue to be updated as the DCP receives final permits and as necessary in the future.





Delta Conveyance Project

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