

1.0 Project Objectives/Purpose Of And Need For Action

1.1 Introduction

This chapter discusses the project objectives, as called for by the California Environmental Quality Act (CEQA), and the purpose of and the need for the action, as called for by the National Environmental Policy Act (NEPA). The chapter also includes a discussion of how the December 15, 1994, State-federal accord on fish and wildlife protection is treated in this Draft EIR/EIS.

In this document, the proposed project and alternatives are analyzed under the EPA-developed guidelines for Section 404 (b) (1) of the Clean Water Act. The full Section 404(b)(1) analysis is found in Appendix 1.

1.2 Project Objectives/Purpose

The Department of Water Resources (DWR), the Bureau of Reclamation (Reclamation), and the Corps of Engineers (Corps) have identified the following two project objectives or purposes:

- Improve water levels and circulation in south Delta channels for local agricultural diversions; and
- Improve south Delta hydraulic conditions to increase diversion into Clifton Court Forebay and maximize the frequency of full pumping capacity at Banks Pumping Plant.

These project objectives or purposes were developed following consultation between the three agencies. They reflect these agencies' goals with respect to the proposed Interim South Delta Program (ISDP).

1.3 Need For Action

DWR and Reclamation have identified two needs for the proposed action (see Figure 1-1):

- The need to improve water levels and circulation in south Delta channels for local agricultural diversions; and
- The need to utilize full pumping capacity at Banks Pumping Plant. A description of each of these needs follows.

1.3.1 Need To Improve Water Levels And Circulation In South Delta Channels For Local Agricultural Diversions

Water conditions in the south Delta area are influenced in varying degrees by natural tidal fluctuation; San Joaquin River flow and quality; local agricultural drainage water; Central Valley Project (CVP) and State Water Project (SWP) export pumping; local diversions; inadequate channel capacity; and regulatory constraints. These factors affect water levels and

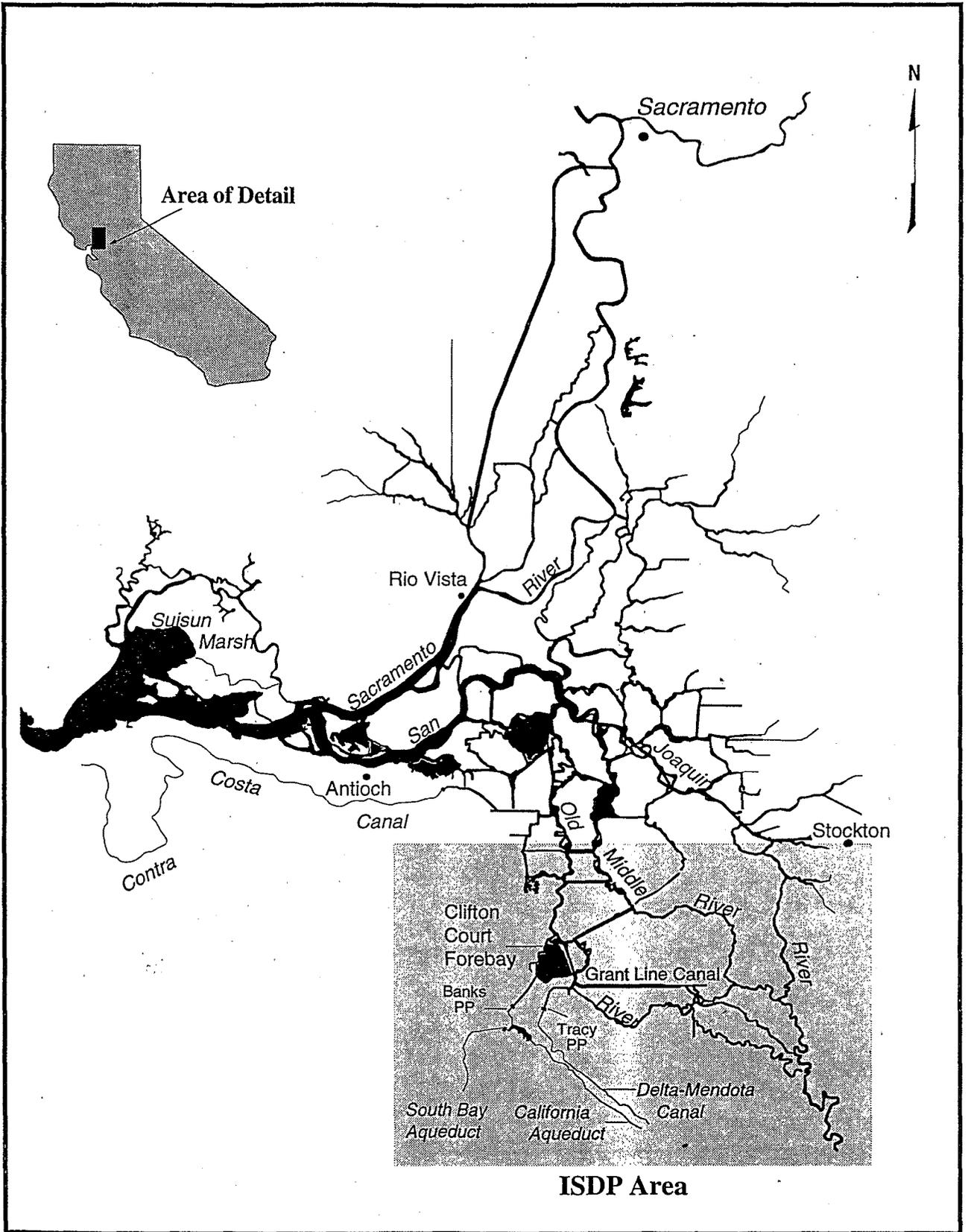


Figure 1-1. Interim South Delta Program Site Location Map

availability at some local diversion points. When the CVP and SWP are exporting water, water levels in local channels can be drawn down. Also, diverging and converging flows can occur in some channels. In some areas net flows over a complete tidal cycle approach zero. If local agricultural drainage water is pumped into the channels where circulation is poor, such as shallow, stagnant, or dead-end channels, water quality can be affected. Channels that are too shallow and narrow also restrict flow and the volume of water available for export pumping.

Problems associated with diverting water from south Delta channels prompted a series of actions and agreements to address the problems. The first action occurred during the 1976-77 drought, when DWR installed a temporary rock barrier in Old River to improve water conditions in the south Delta. Additional actions and agreements include a lawsuit filed by the South Delta Water Agency, modifications to Tom Paine Slough, a Joint Powers Agreement, a Framework Agreement, and a draft settlement agreement. A discussion of those actions and agreements follows.

- *South Delta Water Agency Lawsuit*

South Delta Water Agency is a public agency formed for entering into contracts with the United States and the State of California to protect the water supply of lands within the agency from salinity intrusion and to assure a dependable water supply for lands within the SDWA. Water for lands within SDWA boundaries is supplied almost exclusively from Delta channels. In July 1982, SDWA filed a lawsuit over the effects of SWP and CVP operations on the south Delta. The suit sought a declaration of the rights of the parties as well as preliminary and permanent injunctions requiring that the projects be operated to protect the south Delta. SDWA alleged that: (1) CVP operations on the San Joaquin River, primarily Friant Dam, unlawfully reduce the quantity and degrade the quality of water flowing in the San Joaquin River to the south Delta; (2) SWP and CVP pumping operations violate SDWA rights by lowering water levels, reversing flows, and diminishing the influence of the tides; and (3) the Secretary of the Interior's designation of the Stanislaus River basin for allocation of water from New Melones Reservoir violates SDWA rights by not including the south Delta in the basin.

DWR is involved in the suit only because of the potential effects of the SWP and CVP pumps on south Delta water levels and circulation. The other issues involve only Reclamation.

- *Tom Paine Slough Modifications*

In May 1984, SDWA complained of low water levels in Tom Paine Slough. DWR responded by installing three stage recorders on Tom Paine Slough: one below the tidal control structure, one above the structure, and one near the southern end of the slough.

In March 1985, SDWA again complained about low water levels, claiming difficulty in getting sufficient water into Tom Paine Slough to meet irrigation needs. In response, DWR made soundings along the slough and found high spots in the channel bottom above and below the tidal control structure. DWR also repaired the gates, which were functioning improperly, and removed a small amount of sediment from around the control structure. However, in July 1985, SDWA claimed that water levels in both Tom Paine Slough and southern Middle River were so low that adequate irrigation was impossible and crops were being lost. Emergency efforts concentrated on Tom Paine Slough, where DWR installed three portable pumps to provide water supply. Also, Clifton Court Forebay gate operation was modified to improve water levels in channels.

In September 1985, DWR signed a letter of intent with SDWA describing conditions in south Delta channels and setting forth the agencies' responsibilities to develop a permanent solution for the water level and circulation concerns affecting SDWA.

- *Joint Powers Agreement*

In June 1986, DWR signed a joint powers agreement with SDWA regarding interim mitigation in SDWA channels. This agreement provided for dredging Tom Paine Slough (completed in October 1986), constructing a seasonal low rock weir in Middle River (completed in May 1987), constructing siphons in Tom Paine Slough (completed in June 1989), and developing intake gate operation criteria for Clifton Court Forebay that eliminate diversions during the low-low tide. All appropriate permits and certifications required under regulatory and legislative acts were acquired.

- *Framework Agreement*

In October 1986, DWR, Reclamation, and SDWA entered into an agreement to provide a framework to settle the SDWA lawsuit. All three parties agreed to work together to develop mutually acceptable, long-term solutions to the water supply concerns of water users within SDWA. To facilitate negotiations, the parties agreed to a stay of all actions in the litigation.

- *Draft Settlement Agreement*

In 1990, DWR, Reclamation and SDWA agreed to a draft settlement to the 1982 lawsuit by SDWA against DWR and Reclamation. In a September 17, 1991, election 97 percent of the voters in the SDWA service area approved the agreement. The agencies are now working to get Congressional approval for Reclamation to sign the agreement.

The draft agreement focuses on short-term and long-term actions to resolve the water supply problems in the south Delta. It provides for interim releases by Reclamation from New Melones to resolve the portion of the litigation relating to San Joaquin River flows and sets forth the framework for Reclamation and SDWA to negotiate an amendment to the agreement. It also includes provisions to test and construct barrier facilities in certain south Delta channels. Those facilities would improve channel water levels and provide agricultural water supply of adequate quantity and quality for water users along portions of Old River, Middle River, and Grant Line Canal that lie within SDWA boundaries.

The barriers testing program, referred to as the South Delta Temporary Barriers Project, was initiated in 1991. Its objectives are the short-term improvement of water conditions for the south Delta and the development of data for the design of permanent barriers. The program involves the seasonal installation of four barriers: one in Middle River; two in Old River, and one in Grant Line Canal. Three of the barriers are designed to improve water levels and circulation for agricultural diversions; they are to be in place during the growing season. Of those, the temporary barrier on Middle River was installed in 1992, 1993, and 1994; and the temporary barrier in Old River near Tracy, east of Delta Mendota Canal, was installed in 1991, 1992, 1993, and 1994. The temporary barrier in Grant Line Canal is being delayed until surveying and engineering studies are completed. The fourth barrier, in Old River at the San Joaquin River, is designed to assist fish migration on the

San Joaquin River. This barrier has been installed during the fall for many years. The Temporary Barriers Project is investigating installing the barrier in the spring to assist out-migrating salmon. It was installed during spring 1992 and 1994 but was not installed in 1993 due to the possibility of high San Joaquin River flows and concerns about delta smelt.

Long-term actions to resolve water supply problems in south Delta are proposed through the Interim South Delta Program. DWR and Reclamation, through the Interim South Delta Program, are proposing the installation of permanent barriers to improve water levels and circulation in the south Delta. Barriers will be designed and operated according to information developed by the Temporary Barriers Project.

1.3.2 Need To Utilize Full Pumping Capacity At Banks Pumping Plant

- *State Water Project Service Area Needs*

Twenty-nine public agencies have long-term water supply contracts with the SWP. Those contracts contain water delivery schedules reflecting the increasing water needs in the SWP service areas through 2035. In most cases, SWP water supplements other imported or local supplies in the individual service areas. Of the total 4.2 MAF entitlements under SWP contracts, 2.9 MAF is for municipal and industrial use, and 1.3 MAF is for agricultural use.

California's population is projected to increase by 15 million people between 1990 and 2020. About half of this increase is expected to occur within the South Coast region, a major portion of the SWP service area. Average-year water supply demands for this area are projected to increase 1.5 MAF by 2020. The estimated increase and supporting studies have been presented in Bulletin 160-93.

- *State Water Project Water Supply Delivery Capability*

Dependable water supplies from the SWP are currently estimated at about 2.9 and 1.9 MAF per year for average and drought conditions respectively. Some of this water comes from Lake Oroville on the Feather River; the majority is developed from excess flows in the Sacramento-San Joaquin Delta. As SWP contract entitlements increase, without new facilities the capability of the SWP to meet its contractual entitlements decreases gradually with time. The ability of the SWP to develop additional water supply also diminishes as non-SWP water use within the area of origin increases. (Areas where water originates have the right to use the water reasonably required to supply its beneficial needs.)

Water needs for the SWP service areas now exceed the delivery capability of existing SWP facilities. Because augmenting SWP yield through new construction has been delayed, DWR has been examining operation strategies to improve average annual delivery capability for the existing facilities. Although currently regulated by State Water Resources Control Board (SWRCB) Decision 1485 standards, DWR is voluntarily meeting the requirements of the 1994 Bay-Delta Accord. While operating to meet the requirements of the 1994 Bay-Delta Accord, the year 2020 delivery capability could increase to 3.2 MAF during an average year and 2.0 MAF during a drought year. (See Section 1.4, Treatment of December 15 State-federal Accord, for a further discussion of the 1994 Bay-Delta Accord and Section 2.4.2, Water Rights, for a further discussion

of Decision 1485). However, future actions of the SWRCB may affect SWP operations and the planning of additional SWP facilities.

DWR believes long-term water shortages will be about 1.0 MAF greater than in the present if DWR and other agencies are not able to develop additional water supplies. To develop those supplies, it may be necessary to construct new facilities, change SWP operations, implement Delta water management programs, and develop offstream surface water and ground water storage south of the Delta. DWR is also participating in various urban and agricultural water conservation and demand reduction programs.

- *Long-Range Planning (Firm Yield)*

The measure of delivery capability for the SWP was originally founded on the concept of firm yield operation. Defined in SWP water contracts as minimum project yield, firm yield is the dependable annual water supply that can be made available without exceeding specified allowable reductions in deliveries to agriculture during extended dry periods. Operation studies defined the firm yield water supply that would be available through a historical seven-year dry period (1928-1934) used to plan all large water projects in northern California. Those studies determined the benefits to be derived from the SWP, which in turn helped determine the financing methods and repayment process for the SWP.

- *Yearly Adjustments to Operation (Risk Analysis)*

Beginning in 1987, SWP contractors' requests for delivery of entitlement water exceeded the firm yield of the existing facilities. In recent years, DWR has worked with the contractors to develop techniques to increase average annual deliveries. One such method is to relax the minimum reservoir carryover storage requirements. This method would increase annual deliveries in all but very dry years.

Theoretically, the amount of water available for delivery in any given year is dependent upon the amount of storage held in reserve for the next year. If too much water is held in reserve for the next year, the deliveries for the current year might be unnecessarily reduced. If too little water is held in reserve, the deliveries for the following year might not meet minimum needs. Responsible management requires that the risk of not having enough water for the following year be balanced with the amount of deliveries permitted in the current year.

A technique called water delivery risk analysis uses the concept of probabilities to rationally determine the amount of SWP deliveries for the current year while maintaining prudent storage reserves for deliveries the following year. As a short-range operation tool, the risk analysis seems to increase deliveries in most years. However, deliveries during extended dry periods will undoubtedly decrease.

- *Delivery Capability*

SWP delivery capability can be assessed by operation studies for the historical 71-year hydrology from 1922 through 1992. Series of 71 one-year operation studies were used to give a general range of frequency (chances) of deliveries which could be expected with and without the proposed

facilities. The same 71 one-year operation studies were used to show water supply deficiencies that would occur with and without the proposed facilities.

In the long-term, the SWP will be operated to meet the demand level-the maximum annual contracted entitlement. Utilizing the risk analysis concept, there is only a seven percent chance of delivering that amount in any given year with existing facilities. Thus, even when operated according to the risk analysis, the SWP cannot meet present needs with existing facilities.

DWR staff prepared an economic analysis to estimate the benefits of the proposed ISDP to the SWP service areas due to increased reliability of SWP deliveries (Appendix 2). This analysis uses a least-cost planning criterion to evaluate long-term and contingency water management options available to service areas based on DWR Bulletin 160-93 Level I and Level 2 water management options. These water management costs are then balanced against economic risks or losses associated with water shortages. The analysis compares two scenarios with and without the proposed ISDP. The results show that the proposed ISDP provides a \$27 million annual benefit to SWP service areas due to increased reliability of water deliveries.

1.4 Treatment Of December 15 State-Federal Accord

1.4.1 Introduction/Background

On December 15, 1994, the State of California and the federal government agreed to a comprehensive package of fish and wildlife protections for the Bay-Delta estuary. The plan is designed to protect the Bay-Delta ecosystem for three years, from 1995 through 1997. During this three-year period, the SWRCB will conduct a water rights proceeding to allocate responsibility for meeting the new standards to all water rights holders within the Bay-Delta watershed. In the interim, the CVP and SWP have committed voluntarily to meeting the new standards.

The protective measures were grouped into four categories. Category I measures establish a Delta outflow/salinity standard for estuarine shallow-water habitat in the Suisun Bay region. Category II measures consist of other flow and operational requirements for the Bay-Delta relating to CVP and SWP Delta export limitations; criteria for Delta Cross Channel gate operation; water quality standards for protection of fish and wildlife, municipal and industrial uses, and Delta agriculture; and minimum levels of Delta outflow and flows on the Sacramento and San Joaquin Rivers. Category III measures are programs to address non-flow related biodegradation factors and to improve habitat and fish transport. Category IV measures concern implementation of the agreed-upon plan, including balancing responsibility among all Bay-Delta watershed users, developing a mitigation credit program, fully crediting CVP agricultural water costs toward Central Valley Project Improvement Act obligations, and identifying possibilities for an Environmental Restoration Fund. In addition, the agreement called for a comprehensive monitoring program to be developed for Bay-Delta aquatic resources.

To deal with take of delta smelt and winter-run chinook salmon under the regulatory authority of the Endangered Species Act (ESA), the State-federal agreement empowered a joint State-federal operations group (CALFED Operations Group) to develop operational flexibility by adjusting proposed export limits. Adjustments would be based on real-time monitoring data and are intended to result in no net annual water supply loss to CVP and SWP water users.

The combined Category I and II operational measures which the CVP and SWP have committed to meeting for the next three years replaced previous standards and operational constraints in the Delta. Those standards and constraints were set and implemented by the combination of (1) SWRCB Decision 1485 and (2) other protections governing CVP and SWP operations set forth by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) under the authority of the ESA to avoid jeopardizing the continued existence of Sacramento River winter-run chinook salmon and delta smelt. These protections were previously specified through a long-term biological opinion for winter-run salmon (issued in 1993) and biological opinions for delta smelt issued by the USFWS and updated yearly.

On March 6, 1995, the USFWS issued a new long-term biological opinion covering delta smelt and Sacramento splittail, a species being considered for listing under the ESA. The NMFS issued an amendment to the long-term biological opinion for winter-run salmon on April 15, 1995. These opinions were rendered under formal consultation pursuant to Section 7(a)(2) of the federal ESA on the effects of the long-term operations of the CVP and the SWP. They were based on operation of the CVP and SWP under the standards of the 1994 Bay-Delta agreement. Both opinions concluded that operating the CVP and SWP according to the combined Category I and II measures for the next three years is not likely to jeopardize continued existence of winter-run salmon, delta smelt, and Sacramento splittail.

1.4.2 Proposed ISDP Consistency

The proposed ISDP, in conjunction with the new Bay-Delta standards, is consistent with the Governor's comprehensive April 1992 water policy declaration. The water policy declared that: "We need to take immediate interim actions in the South Delta that will help restore the environment and improve the water supply. And concurrently, we will link South Delta facilities to improved interim standards for protection of fish and wildlife." The new Bay-Delta standards, to be in effect for the next three years, provide the interim fish and wildlife protection. The proposed ISDP is the parallel and concurrent action to improve water supply conditions in the south Delta. The Governor's water policy clearly links implementation of the proposed ISDP with the implementation of new Bay-Delta standards.

DWR, Reclamation, and DFG executed an agreement in 1995 under the Article VII negotiations between these three agencies. This agreement stipulates that since the new standards effectively offset the existing indirect losses of fish attributable to joint CVP/SWP operations, DWR and Reclamation may proceed to prepare the final DEIR/EIS for the proposed ISDP.

As indicated in Section 1.4.1, the December 15, 1994, Bay-Delta agreement allows the CALFED Operations Group to adjust the proposed export limits. Exports could be increased above the proposed limits when fisheries are not sensitive. Exports could also be decreased below the proposed limits when fisheries are sensitive, as long as there is no net water supply impact to water users than what would have occurred had there been no export adjustments. To implement this aspect of the new Bay-Delta agreement effectively, project operational flexibility must be optimized. The proposed ISDP accomplishes this goal by maximizing full pumping capability at Banks Pumping Plant. Because the operations group would determine how and when the capability is used, the proposed ISDP will provide the operations group with another means to implement the new Bay-Delta standards.

1.4.3 Water Supply Impacts Of The Bay-Delta Accord

DWR conducted detailed modeling studies to assess the water supply impacts of the accord on the SWP and CVP in comparison to the previous standards and constraints, including Decision 1485. The 71 year modeling shows that under different conditions the water available for contractor deliveries will be changed by the following amounts:

	<u>Change in Water</u> <u>(Acre Feet/Year)</u>
Critical Dry Period Average (May 1928 - Oct. 1934) ¹	- 985,000
71 Year Average (1922 - 1992) ²	- 300,000
Average Annual Carryover Storage Sacramento Basin	+ 15,000
Average Annual Carryover Storage New Melones	-665,000

The assumptions for this analysis include any "additional water" required from San Joaquin River system to meet Vernalis flow requirements under the accord, as well as other limitations to meet the both D-1485 and the accord requirements.

1.5 Prior CEQA/NEPA Reviews Of Project Components

In June 1990, DWR and Reclamation released a DEIR/DEIS on the original South Delta Water Management Program. This document analyzed the impacts of the proposed barriers to improve water levels and circulation, along with an enlarged forebay to provide greater flexibility for SWP water diversions. Impacts for the original program would have been greater than those associated with the proposed ISDP. However, work on this DEIR/EIS was not completed, owing to a shift in the State's water policy priorities. DWR also prepared an EIR in 1986 on the installation of four additional pumps at Banks Pumping Plant. At that time DWR agreed not to operate the new pumps until the environmental effects of additional Delta pumping had been evaluated. This Draft EIR/EIS for the proposed ISDP is providing that required environmental evaluation.

The Corps of Engineer's Section 10 permit and Public Notice 5820-A presently limit the amount of water that can be pumped at Banks Pumping Plant. The Corps will use this Draft EIR/EIS for the proposed ISDP to consider modifying the terms of Public Notice 5820-A and increasing the amount of pumping permitted at Banks Pumping Plant. The following section provides background information on Public Notice 5820-A.

¹ Includes adjustments due to upstream net storage used and additional flows from Tuolumne and Merced River System to meet Vernalis pulse flows.

² Includes adjustments due to additional flows from Tuolumne and Merced River systems to meet Vernalis pulse flows.

1.6 Corps Public Notice 5820-A

DWR operates Banks Pumping Plant under the constraints of Public Notice 5820-A, dated October 13, 1981, as amended. Alternative methods of operating the additional pumps were evaluated in the Four Pumps EIR of 1986; the preferred alternative was to operate the plant to constraining criteria set forth in Public Notice 5820-A, as amended. These constraints limit Delta diversions to historical volumes except in winter, when San Joaquin River flows are high. (DWR could divert 1/3 of the San Joaquin River flows at Vernalis if they exceed 1,000 cfs from mid-December to mid-March.)

Channel hydraulics, under certain conditions, also limited the ability to pump up to the 10,300 cfs capacity that the new pumps could provide. Hydraulic constraints were the limited channel size in the southern Delta and the inlet and volume capacity of Clifton Court Forebay.

Installation of the four additional pumps benefited the SWP through lower power costs, standby pumping capacity, and increased water supply reliability even if the pumps were never used to their full capacity. In 1991, installation of four additional pumps at Harvey O. Banks pumping plant was completed. However, the SWP was not able to obtain a permit to utilize the full pumping capability of the Banks Pumping Plant because of the constraints limiting diversion amounts into Clifton Court Forebay. DWR retained the right to petition the Corps in the future to operate the plant without the existing constraints if conditions changed.

In 1986, DWR and DFG reached an agreement to mitigate for the impacts of the SWP exports on Delta fisheries (Agreement Pursuant to Article VII Negotiations for the Interim South Delta Facilities Concerning Fish in the Sacramento-San Joaquin Delta). The agreement was to mitigate for the direct and indirect impacts of Banks Pumping Plant on Delta fisheries. DWR and DFG subsequently conducted a variety of studies to determine what the impacts were and how any adverse impacts could be reduced or eliminated.

DWR, Reclamation and DFG executed an agreement in August, 1995 under the Article VII negotiations between the three agencies. This agreement stipulates that since the new standards effectively offset the existing indirect losses of fish attributable to joint CVP/SWP operations. The agreement also stated that DWR and Reclamation may proceed to prepare the final EIR/EIS for the proposed ISDP including a component to revise the Section 10 Rivers and Harbors Act permit to increase allowable diversion into Clifton Court Forebay to support the full 10,300 cfs pumping capability at Banks Pumping Plant. The agreement also stated that incremental impacts of the Interim South Delta Facilities will be addressed through environmental documentation and permitting processes.