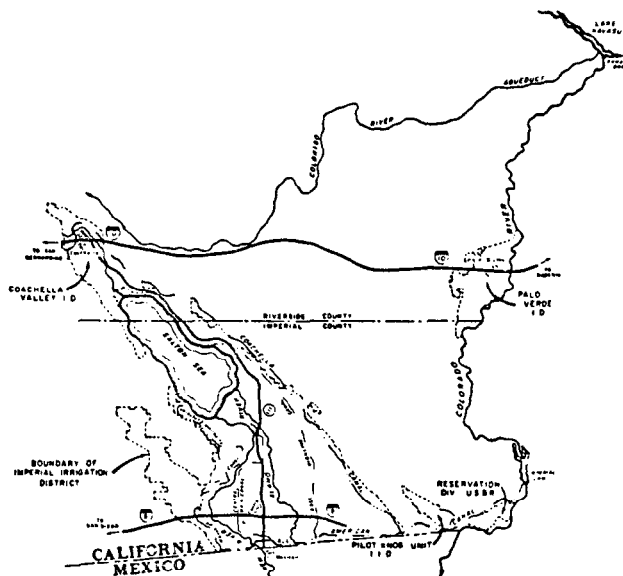


# IMPERIAL IRRIGATION DISTRICT ORDER TO SUBMIT PLAN AND IMPLEMENTATION SCHEDULE FOR CONSERVATION MEASURES WATER RIGHTS ORDER ORDER: WR 88 - 20



SEPTEMBER 1988

**STATE WATER RESOURCES CONTROL BOARD**



STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

In the Matter of )  
 )  
WASTE AND UNREASONABLE USE OF )  
WATER BY IMPERIAL IRRIGATION )  
DISTRICT. )

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ORDER: WR 88- 20

COUNTY: Imperial

ORDER TO SUBMIT PLAN AND IMPLEMENTATION SCHEDULE  
FOR WATER CONSERVATION MEASURES



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STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

In the Matter of	)	
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_____	)	

ORDER TO SUBMIT PLAN AND IMPLEMENTATION SCHEDULE  
FOR WATER CONSERVATION MEASURES

BY THE BOARD:

1.0 INTRODUCTION

The State Water Resources Control Board (Board) having issued Water Right Decision 1600 on June 21, 1984; Decision 1600 having found that the operational practices of the Imperial Irrigation District (IID or District) result in a misuse of water in violation of Article X, Section 2 of the California Constitution and Section 100 of the California Water Code; the Board having ordered that IID take specified measures to conserve water including the development of a comprehensive water conservation plan and implementation schedule; the Board having conducted further hearings on May 5, 1987 and March 30 and 31, 1988 to receive evidence regarding the status of IID's water conservation program and plans; IID and other interested parties having appeared and presented evidence; the evidence having been duly considered by the Board; the Board finds as follows:

## 2.0 BACKGROUND

### 2.1 Decision 1600 and Related Litigation

The Board's involvement in evaluating water use and the potential for water conservation in Imperial Irrigation District began with the filing of a complaint with the Board and the Department of Water Resources alleging waste and unreasonable use of water. Following investigation of the complaint, and failure to resolve the matter with IID, the Department of Water Resources referred the complaint to the Board for hearing. Based on the record developed at the hearing in September and December of 1983, the Board issued Decision 1600 on June 21, 1984. Decision 1600 reviewed the issues raised at the hearing concerning the operations of IID, the causes and quantity of water losses in IID, and the potential for reducing water losses through implementation of water conservation measures. The decision acknowledged efforts of IID and many individual farmers to conserve water, but it found that there were additional practical water conservation measures available and that the failure to implement such measures resulted in a misuse of water in violation of Article X, Section 2 of the California Water Code. IID was directed to submit evidence regarding tailwater monitoring, to repair or require the repair of defective tailwater structures, to submit a plan for resuming construction of regulatory reservoirs, to develop an improved water accounting system and to prepare a comprehensive water conservation plan specifying a schedule of implementation and method of financing for selected water conservation measures.



Following the Board's denial of a petition for reconsideration, IID filed suit challenging the Board's jurisdiction to adjudicate the reasonableness of IID's water usage under pre-1914 appropriative rights. The Superior Court ruled that Decision 1600 had no binding legal effect on IID. On November 4, 1986, however, the Court of Appeal upheld the Board's jurisdiction to adjudicate issues concerning the alleged waste or unreasonable use of water and to enter orders requiring corrective action where a misuse of water is determined to exist. (Imperial Irrigation District v. State Water Resources Control Board, (1986) 186 Cal.App.3d 1160, 231 Cal.Rptr. 283.) The California Supreme Court denied IID's petition for review and the case was remanded to Superior Court for determination of whether the evidentiary record supported issuance of Decision 1600.

On April 13, 1988, the Superior Court entered a Statement of Decision which concluded that the evidence amply supports the Board's finding that the failure of IID to implement additional water conservation measures is unreasonable and constitutes a misuse of water: The court also concluded that the Board had looked at all relevant aspects of IID's operations and declared that Decision 1600 is a reasonable and balanced directive for achieving compliance with Article X, Section 2 of the State Constitution. The court remanded the matter to the Board for establishing a new schedule for complying with Decision 1600. IID's motion for a new trial was denied on July 8, 1988.

2.2 Subjects Addressed at Hearing on March 30 and 31, 1988

No action was taken to enforce the requirements of Decision 1600 pending resolution of the litigation concerning the Board's

jurisdiction. A hearing was held on May 5, 1987 to receive a status report from IID on water conservation measures. A more extensive hearing was held on March 30 and 31, 1988 to receive evidence regarding: (1) the status of IID's 1985 Water Conservation Plan; (2) additional water conservation studies or programs which have been initiated or completed since adoption of the 3.985 Water Conservation Plan; (3) the priority in which identified water conservation measures would be implemented; (4) the economic feasibility and sources of funding for water conservation measures; (5) the schedule for implementing particular water conservation measures; (6) estimates of other water users' present and future needs for water which is made available as the result of IID water conservation; and (7) the anticipated effects of water conservation in IID upon beneficial uses of the Salton Sea.

### 3.0 STATUS OF IID WATER CONSERVATION PROGRAM

#### 3.1 Ongoing Water Conservation Measures

Imperial Irrigation District is involved in numerous water conservation projects. With respect to the repair of defective tailwater structures required by Decision 1600, IID notified all farmers within the District to repair defective tailwater structures or the District would repair the structures at the farmers' expense. The District also maintains an ongoing program of notifying farmers of faulty tailwater structures which do not allow for accurate water measurement. Testimony from District personnel and farmers indicates that the program is effective.

With respect to monitoring tailwater discharges, the District provided evidence indicating that, for 1987, District personnel monitored 91.7 percent of water deliveries of one cubic foot per second or greater. Deliveries for smaller amounts of water are normally for stockwater or rural domestic use which seldom have any tailwater. The Board concludes that the evidence presented substantially complies with the provisions of Decision 1600 directing IJD to submit evidence regarding the extent of tailwater monitoring.

With respect to developing an improved water accounting procedure as directed by Decision 1600, the District introduced evidence regarding its Water Balancing Accounting--Delivery Accounting Program which records the amount of water actually delivered at the farmers' headgates rather than simply the amount of water ordered as was done previously. The District also has implemented a program to make measurements of canal spills, deliveries to lateral headgates, field deliveries, tailwater discharge, and tile drainage at various locations throughout the District. A sampling method was utilized to develop a water balance for the District based on information from continuous water recorders placed at various randomly selected locations. Although development of the water accounting procedure is not complete, the evidence indicates that the District is making reasonable progress toward developing a comprehensive water accounting program as directed by Decision 1.600.

After entry of Decision 1600, IID applied for a low interest loan to construct an additional regulatory reservoir which it estimates will conserve 4,100 acre-feet per annum of direct operational discharge plus 500 acre-feet per annum of additional water conserved due to operational flexibility. The reservoir is scheduled to be in operation in August or September of this year. The District also has plans for another regulatory reservoir to be located adjacent to the East Highline Canal. Further construction of regulatory reservoirs appears to be closely related to the development and implementation of the District's overall water conservation plan as discussed below.

Other ongoing water conservation programs referred to in the record include continuation of the District's concrete lining of canals, a demonstration tailwater recovery program, operation of seepage recovery systems along portions of the East Highline Canal and All-American Canal, and participation in a cooperative study with the U. S. Bureau of Reclamation to determine the cost effectiveness of lining the East Highline Canal. The rate of concrete lining of canals, however, has decreased substantially in recent years due to budget limitations. (IID, 10, Table 14; T, I, 113:22-115:23)<sup>1</sup>

### 3.2 Development of Water Conservation Plan

IID presented testimony that its present water conservation plan is composed of a number of studies and reports developed over the last

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<sup>1</sup> Citations to exhibits in the record are indicated by the abbreviation of the party submitting the exhibit, the exhibit number, and the number of the page, table or figure within the exhibit. Citations to the hearing transcript are indicated by a "T" followed by the volume number, the beginning page and line number and the ending page and line number.

several years. These documents include the 1985 Water Conservation Plan and 1985 Supplement, the 1985 Water Requirements and Availability Study, the 1985 Water Transfer Study, and the 1986 and 1987 Water Conservation Activities and Update reports. In addition, IID has prepared an Environmental Impact Report on the proposed Water Conservation Program and Initial Water Transfer Study as well as a very recent Water Conservation Implementation Plan.

The 1985 Water Conservation Plan discusses District operations and on-going IID water conservation programs. The plan also specifies a number of long-term water conservation goals including additional concrete lining of District canals, replacing canals and drains with pipelines in cities and towns, construction of an 8,000 acre-foot reservoir near the East Highline Canal, construction of up to ten regulatory reservoirs of 200 to 500 acre-feet each, installation of automated remote system control and data acquisition devices at numerous locations, construction of spill collector systems and seepage recovery systems, use of computerized water delivery scheduling, collection and distribution of weather and soil data for farmers' use in scheduling water orders, cooperation in providing information on irrigation and tailwater recovery systems to farmers, continuation of on-farm improvements, implementation of irrigation management programs by farmers and installation of tailwater recovery systems. The long-term goals outlined in the plan are subject to funding availability. Consequently, no firm schedule is established for implementation of most specified conservation measures.

The 1986 and 1987 Water Conservation Activities and Updates reports provide information on changes in conditions and modifications to the plan made in each year. The Water Requirements and Availability Study was undertaken to identify the District's potential water supply needs and to determine the amount of water that could be conserved and made available for other uses.

The 1985 Water Transfer Study prepared for IID by Parsons Water Resources, Inc. examined a number of factors to determine the most likely candidates for a water transfer arrangement with IID. Factors considered include current and projected water supply and demands, feasibility of a water transfer, and benefits to both the transferor and the transferee. The study identified Metropolitan Water District, San Diego County Water Authority, and Kern County Water Agency as the three most likely candidates for entering into a water transfer arrangement. Of those three agencies, Metropolitan Water District (MWD) was determined to be the "most suitable candidate" because it has the necessary facilities and conveyance capacity, its receipt of additional water would benefit a number of water agencies in the south coastal region of the State, it has an existing contract for Colorado River water and it is familiar with the water contract administration policies of the U. S. Department of the Interior. (IID, 8, p.ES-5)

The Water Transfer Study concluded that IID should negotiate an initial water transfer agreement with MWD that would make additional water available for diversion into the Colorado Aqueduct System. The initial transfer would involve water made available as a result of previously implemented conservation measures. The study recommends

that additional water transfer agreements with MWD should follow as further water conservation occurs. In the event a water transfer cannot be negotiated within a reasonable time, the study recommends that a transfer to the San Diego Water Authority be negotiated.

Based on the information from the various water conservation documents prepared over the last few years, IID recently developed a Water Conservation Implementation Plan which is discussed in Section 5 below. The Environmental Impact Report for the proposed IID water conservation program is discussed in Section 7.

#### 4.0 NEED FOR WATER CONSERVATION

##### 4.1 Possible Increase in Water Demand Within IID

Implementation of water conservation measures in IID could make a substantial amount of water available for other uses, either within the District or elsewhere. Some of the water made available through water conservation may be required for increased leaching in IID to prevent salt build-up in the soil. Other factors which may increase IID's demand for water include the possibility of irrigating additional acreage, increased use of double cropping, and increased municipal demands. Imperial Irrigation District estimates that implementation of its proposed water conservation plan would result in conservation of 367,900 acre-feet per annum, in addition to water savings already achieved. IID proposes to transfer 250,000 acre-feet per year, holding the remainder in reserve to cover future water needs in the Imperial Valley. (T,I,56:10-56:17)

#### 4.2 Metropolitan Water District of Southern California

As noted in Section 3.2, IID's 1985 Water Transfer Study concluded that IID should negotiate a water transfer agreement with MWD. The projected water demands for MWD and the basis for those projections are explained in MWD Exhibit 12. As the result of wet conditions on the Colorado River since 1983, MWD has been able to divert close to the 1.3 million acre-foot capacity of its Colorado River aqueduct in each of the last five years. (T,II,339:17-19). Due to the development of the Central Arizona Project and other factors, however, the quantity of Colorado River water available for diversion by MWD on a dependable basis will be restricted to the quantity available under its fourth priority right to 550,000 acre-feet per annum. This quantity is reduced further by approximately 30,000 acre-feet per annum due to current levels of use by other holders of present perfected rights. There is a possibility of additional reductions in the quantity of water available to MWD due to increased use by Indian tribes. (MWD, 2, p. 22) The Central Arizona Project began deliveries in 1985 and, is expected to utilize its full apportionment in about 1992. (T,II,340:11-340:16). Without the development of additional supplies, the record indicates that MWD faces a potential systemwide shortfall during dry periods of 560,000 acre-feet per annum by the year 2000, increasing to 980,000 acre-feet per annum by 2010. (MWD, 12,pp. I, 13; MWD, 15, p. 2)

#### 4.3 Coachella Valley Water District

Imperial Irrigation District, Coachella Valley Water District (CVWD), Palo Verde Irrigation District and the Yuma Project collectively hold



rights to divert 3.85 million acre-feet per annum from the Colorado River. CVWD introduced evidence of water usage by the four agencies showing that in 5 of the last 28 years, the 3.85 million acre-feet per annum limitation was exceeded. If excess Colorado River water had not been available, CVWD would have faced shortages ranging from 8,000 to 232,000 acre-feet. (T,II,439:17-440:8; CVWD, 3) The estimated water shortages to CVWD are based upon the assumption that the water savings resulting from lining 49 miles of the Coachella Canal were in effect. (T,II,439:24-440:1)

Based upon the evidence of past water usage, CVWD contends that additional water conservation in IID is necessary to ensure that CVWD water demands can be met within the 3.85 million acre-feet apportionment of the four agricultural agencies. However, CVWD Exhibit 3 shows that since 1982, annual Colorado River water use of the four agencies has been below their 3.85 million acre-feet entitlement. No evidence was presented explaining the reasons for the reduction in water use in recent years or showing the extent to which additional water conservation measures will be required in order to stay within the 3.85 million acre-feet entitlement.

#### 4.4 Effect of IID Water Conservation on Water Available to Other Areas

Imperial Irrigation District initiated negotiations with Metropolitan Water District in March 1984 to develop a water conservation funding program. (MWD, 8) As noted above, the 1985 Water Transfer Study prepared for IID also identified Metropolitan Water District, along with San Diego County Water Authority and Kern County Water Agency as the three most likely candidates to enter into a water transfer

agreement with IID. Neither San Diego County Water Authority nor Kern County Water Agency appeared at the Board hearing nor was any evidence presented to establish that either agency is seeking to negotiate a water transfer with IID. As a member agency of MWD, however, the San Diego County Water Authority would benefit by a water transfer arrangement which increases the overall reliable water supply available to MWD.

Although no evidence was presented of other major water users seeking to acquire water from IID, the State Water Contractors produced testimony showing how a transfer of water to MWD could increase the supplies available to other State Water Project (SWP) water users by reducing the demands of MWD for water from the SWP. (T,I,11:24-22:3) The State Water Contractors is a nonprofit corporation representing 28 of the 30 public agencies that purchase water from the SWP which together hold a contractual entitlement to 99.3 percent of SWP water delivery obligations. (T,I,10:21-11:1) The agencies represented by the State Water Contractors are located throughout the State ranging from Butte and Plumas Counties in the north to parts of San Diego, Riverside and Imperial Counties in the south. (SWC 3, Figure 1) Approximately 17 million people get at least a supplemental supply of water from the SWP. (T,I,11:12-11:13)

Utilizing existing facilities, the SWP can deliver a dependable water supply of 2.2 million acre-feet per annum to the State Water Contractors' in 1990 declining to 2.1 million acre-feet per annum by the year 2000 as water use in Northern California increases. (MWD, 2, p. 23) The State Water Contractors demands in the current year are about 2.6 million acre-feet per annum. (T,I,13:13-15:15) If there

were no surplus water available to MWD from the Colorado River, however, the State Water Contractors' demand for SWP water would increase to about 3.1 million acre-feet per annum, a demand which could not be met about 50 percent of the time with existing facilities. (T,I,13:4-13:24)

State Water Contractors' Exhibit 2 projects total SWP demand of about 3.6 million acre-feet per annum in the year 2010. With existing facilities capable of delivering a dependable supply of 2.1 million acre-feet per annum, a demand of 3.6 million acre-feet per annum would result in shortages to the State Water Contractors of about 1.5 million acre-feet per annum in dry years. The Department of Water Resources Bulletin 160-87 projects a SWP demand of 3.6 million acre-feet per annum in the year 2010 assuming that 250,000 acre-feet of water conserved in the Colorado River region becomes available for use in the South Coast region. (Staff 1, p. 43)

4.5 Summary of Evidence Regarding Need for Water Made Available Through IID Water Conservation

The Colorado River Aqueduct will soon have substantial excess capacity due to the reduced quantity of Colorado River water available to California water users. The fact that IID and MWO have been actively negotiating to arrange a water transfer provides strong evidence that there is a demand for water which could be made available through IID water conservation. To the extent that MWD could obtain a portion of the water made available by IID water conservation, its demand for water from the State Water Project would be reduced, thereby increasing supplies available to other SWP water users and reducing pressure for development of additional water supplies.

The evidence presented clearly establishes that California water users have a need for substantial additional water supplies and that additional water conservation in IID presents a feasible means of meeting a portion of that demand. The implementation plan set forth in Scenario No. 1 of IID Exhibit 25 proposes a series of water conservation measures which would enable IID to make 250,000 acre-feet per annum available for use by another water user 11 years after the plan is implemented. In making projections of future statewide water demand in Bulletin 150-87, the Department of Water Resources assumed that a transfer of 250,000 acre-feet per annum of water to other water users would occur due to IID water conservation. (Staff, 1, p. 41) The evidence presented at the Board hearing confirms that a transfer of this quantity of water would assist in meeting the identified future demands of California water users.

- 5.0 IID'S PRESENT IMPLEMENTATION PROPOSALS FOR WATER CONSERVATION PLAN
- IID has developed an implementation plan which presents a strategy for implementing those elements of its 1985 conservation plan which the District considers could be efficiently executed in a cost-effective manner. The implementation plan covers all proposed water conservation projects that are planned to be accomplished over the 35-year period beginning in 1989. The projects include those that are part of the District's system and on-farm projects to be implemented by the farmers at the District's expense. The District intends to review the plan periodically and modify it to reflect new technology developed in implementing the various conservation proposals.

The major elements of the implementation plan are described in IID Exhibit 25. The plan includes the following elements:

- (1) Canal lining.
- (2) Construction of regulatory reservoirs.
- (3) Installation of nonleak gates on canals.
- (4) Recovery of operational discharge (canal spills).
- (5) Automation of the water delivery system.
- (6) A study of water level fluctuation in lateral canals to assist in developing system automation strategies.
- (7) Farmer incentive programs to encourage water conservation.
- (8) Tailwater monitoring and excess tailwater assessments.
- (9) Program planning and design work.
- (10) Irrigation water management program to improve on-farm practices.
- (11) Installation of tailwater pumpbacks.
- (12) Farmer incentive payments to encourage installation and use of tailwater pumpbacks.
- (13) Salinity production loss payments to farmers using tailwater pumpbacks.
- (14) Land leveling to improve irrigation efficiency and reduce tailwater.
- (15) Reimbursement of hydropower revenues lost due to reduced water diversions.
- (16) Establishment of a salinity control fund to finance yet to be identified salinity control measures.
- (17) Environmental mitigation studies and programs.
- (18) Construction of evaporation ponds to maintain Salton Sea salinity at an acceptable level.
- (19) Legal contingency fund.

Implementation of the program elements described above would result in a comprehensive water conservation program and improvement in District operations. IID estimates that implementation of proposed programs with each of the elements identified above could occur over the next 35 years and would result in conserving 367,900 acre-feet per annum upon completion of the program. (IID, 25, Appendix A, Scenario No. 1)

Based on information from the Parsons Water Resources, Inc., report, however, it appears that the estimated quantity of water to be conserved through use of on-farm pumpback systems should be carefully reviewed. It appears that the conservation potential of the tailwater pumpback systems may have been overestimated if such systems are to be implemented in conjunction with other water conservation measures which would assist in reducing tailwater. The Board also notes that items 12 and 13 are proposed as incentives or compensation for farmers participating in installation and use of tailwater recovery systems. Some farmers, however, have voluntarily installed tailwater pumpbacks at their own expense. Therefore, it is unclear from the record whether items 12 and 13 would be necessary for widespread use of tailwater recovery systems. If the incentive and compensation programs of items 12 and 13 are necessary, then the cost of such programs should be considered together with the tailwater pumpback installation cost to provide an accurate indication of the total cost of tailwater recovery systems.

It should also be recognized that the salinity control fund as identified in item 16 above may be required to deal with salt build-up

in the soil and expected increases in Colorado River salinity whether or not an expanded water conservation program is implemented.<sup>2</sup> To the extent that a salinity control program is needed even in the absence of further water conservation measures, the cost of such a program should not be considered as part of the cost of water conservation.

Potential sources of funding for an expanded water conservation program are discussed in Section 6 below. In order to secure adequate funds to implement a proposed conservation program, it will be important for IID to calculate as closely as possible the quantity of water expected to be saved and the costs which will be incurred in implementing the program. If IID were to implement all 19 elements of its present implementation plan as set forth in Exhibit 25, the District estimates that upon completion of the program it could conserve 367,900 acre-feet per annum at a total cost over 35 years of \$3,350,571,578. A second scenario set forth in IID Exhibit 25 calls for full implementation of some of the programs discussed above, partial implementation of others, and no implementation of the remaining elements. This scenario was analyzed for the same 35-year period at a total cost of \$729,013,416. Upon completion, the program identified in the second scenario is estimated to conserve 104,823 acre-feet of water per annum. (IID, 25, Appendix A, Scenario 2)

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<sup>2</sup>In addition to salinity control measures which IID may implement, the problem of high salinity levels in the lower Colorado River has been the subject of a basin-wide program to control and reduce sources of salinity in upstream areas.

The documents described in Section 3.2 above provide an extensive amount of valuable information for use in developing a comprehensive water conservation plan. They set forth what has been termed a "menu" from which to select the desired water conservation measures. Based upon the selections from the menu, IID Exhibit 25 sets forth what the District considers to be an "ideal program" which includes all feasible water conservation projects identified in previous studies. (T, I, 49:7-49:24) The inability of the District to provide or secure adequate funding for its proposed water conservation program, however, has delayed widespread implementation of specified measures.

6.0 SOURCES OF FUNDING FOR INCREASED WATER CONSERVATION

6.1 Imperial Irrigation District Funding

Funding for IID water conservation measures implemented to date has come primarily from revenues generated by District water sales. (IID, 3, pp. ES, 9, VI.8) The 1985 IID Water Conservation Plan states that future expenditures on water conservation will be at the maximum level commensurate with funding capabilities, including, revenues derived from sales of water. (IID, 3, pp. VI.9 and VI.10) Other sources of funding which IID may consider in the future include loans, bond sales, and increased rates or assessments. (IID, 3, p. VI.9)

There was little evidence introduced on the financial feasibility of IID funding a 'substantially expanded' conservation program in the absence of external funding. Currently, IID assesses a \$1.00 per acre-foot charge on water deliveries to finance water conservation



measures. (T,I,100:12-24) Between 1980 and 1986, the portion of water charges allocated to conservation was \$1.75 per acre-foot, but it declined to \$1.00 per acre-foot in 1987 due to District budget considerations. (T,I,100:20-101:10) Evidence was presented indicating that IID spends 10 percent of its water budget on water conservation. (IID, 31, p. 11; T,I,58:10-12)

Although no detailed information was requested or offered regarding the economic condition of agriculture in the Imperial Valley, there were a number of general statements presented stressing that the farmers in IID are experiencing economic hardship. In addition, the Water Conservation Advisory Board presented extensive testimony on the unique problems facing farmers in IID and the fact that their real water costs substantially exceed the \$10/acre-foot charged by the District. (T,I,247:9-25;T,I,258:13-259:17) The position of the District and the farmers is that the farmers cannot afford substantially higher water rates to underwrite water conservation measures. (T,I,482:9-483:13, T,I,222:17-21;T,I,224:18-225:2)

Information in the 1985 Water Conservation Plan shows that the IID 1985 budget was composed of total expenditures of nearly \$104 million, approximately \$23 million for water operations and \$81 million for power. Total estimated revenue was "slightly over \$105 million", of which approximately \$23.4 million was from Water Department operations. Thus, over 75 percent of IID revenue and expenditures are tied to sale and production of electrical energy. (IID,3, pp. 11.20, 11.21) The possibility of funding water conservation measures with

revenues generated by power sales was not addressed in the evidence presented. If a different method of funding additional water conservation in IID is not established and implemented in the near future, the possibility of funding certain conservation measures with revenue from electrical power sales should be investigated.

6.2 External Sources of Funding for IID Water Conservation

Several existing and potential external sources of funding for water conservation measures within IID were identified at the hearing.

These sources are discussed below.

6.2.1 State and Federal Financial Assistance

IID has pursued a variety of state and federal programs to provide funding for water conservation measures and studies. The USBR has assisted with an irrigation scheduling program which, since 1981, has involved 52,423 acres and monitoring of over 7,000 irrigations. (IID, 31, pp. 4, 5; IID, 15) IID also cooperated with the USBR's preparation of a lengthy report entitled "Water Conservation Opportunities, Imperial Irrigation District, Special Report", July 1984. (IID, 26) State funding was obtained through the Clean Water Bond Law of 1984 for construction of the Trifolium Reservoir and nearby canal lining. (T,I,45:8-10) In addition, IID has applied to DWR for low interest loans for several other water conservation projects. (T,I,45:10-15) IID also has applied for a loan authorized by the Water Conservation and Water Quality Bond Law of 1986 to fund a feasibility study of large evaporation ponds as a means of limiting the increase in Salton Sea salinity levels. (T,I,46:18-47:2) These,

and a number of other programs and studies identified at the hearing demonstrate that IID has utilized state and federal funding and assistance where available. There was no evidence introduced, however, of any state or federal programs which could provide sufficient funding to implement comprehensive water conservation programs of the type proposed in IID's water conservation plan and related documents. (IID, Exhibits 3, 4, 5, 12, and 25)

#### 6.2.2 Metropolitan Water District

The 1985 Water Transfer Study by Parsons Water Resources identifies MWD as the most likely candidate for a program involving the transfer of water in exchange for water conservation improvements. (IID, 8, p. ES-5) MWD presented written and oral testimony that it would be willing to pay "all reasonable costs" of implementing water conservation measures in IID in exchange for use of the water made available through such conservation. (MWD, 15, pp. 1 and 2; T,II,349:25-353:4)

In July of 1985, the negotiating teams from IID and MWD reached a memorandum of understanding which envisioned an initial transfer of 100,000 afa for use in MWD for a period of 35 years in exchange for MWD paying \$10 million per year into an IID water conservation fund for a period of 38 years. Payments to the conservation fund would begin three years before the initial transfer of water, resulting in an average payment of \$109 for each acre-foot of water transferred. (T,II,286:17-293:3; MWD, 9a) Following the rejection by the IID Board of Directors of the memorandum of understanding, the IID/MWD negotiations have continued, but no agreement has been reached.

Both districts submitted evidence indicating that the primary obstacle which has prevented a water transfer agreement is disagreement over the costs of implementing an expanded water conservation program; (IID, 31, p. 14; MWD, 15, p. 2) Exhibits and testimony presented at the hearing illustrate the differences in the two districts' views of the reasonable costs of implementing a water conservation program. IID Exhibit 25 sets forth a scenario for transferring 250,000 acre-feet per annum to MWD at a cost per acre-foot of \$288.60. (IID, 25, Appendix A, Scenario 1) As an alternative, IID proposes a transfer of 100,000 acre-feet per annum at a cost per acre-foot of \$175. (IID, 25; Appendix A, Scenario 2)

Based on information from the 1985 Water Requirements and Availability Study (IID, 6), MWD Exhibit 11 sets forth a proposed water conservation program of 114,000 acre-feet per annum at a cost per acre-foot of \$64.00 (MWD 11, Figures 1 and 2; T, II, 311:1-312:25). MWD also proposed an alternative set of water conservation measures intended to save 267,000 acre-feet per annum at a cost per acre-foot of \$78. (MWD, 11, Figures 3 and 4; T, II, 311:1-312:25)

The substantial differences in cost estimates of IID and MWD are due to several factors. First, IID's position is that if IID assumes the risk of providing an assured Supply to MWD, then MWD should pay the entire costs of the conservation program rather than just a percentage of the costs based on the amount of water transferred; (T, II, 515:5-13) MWD responds that it is not equitable for it to pay the entire

cost Of a program estimated to conserve 367,900 acre-feet per annum if MWD would receive a maximum guaranteed amount of 250,000 acre-feet Per annum.

A second difference between the IID and MWD water conservation cost estimates is due to differences in the specific conservation measures proposed by each district. MWD proposes a program which would implement the most cost-effective measures whereas IID's Exhibit 25 sets forth what IID considers to be an "ideal program" which includes all feasible water conservation projects identified in previous studies. (T,I,49:7-24) MWD rejects some of the proposals identified in Scenario 1 of IID Exhibit 25 on the basis of excessive costs. IID responds that it is important that the program be implemented systematically and that effective implementation of some of the more cost-effective projects would not be feasible without also implementing certain of the more expensive projects. Focusing on the more cost-effective projects identified by MWD would result in reducing the unit cost of each acre-foot of water conserved, but it would also reduce the overall amount of water conservation.<sup>3</sup>

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<sup>3</sup> It should be noted that 51,000 acre-feet per annum of the difference between the water savings projected for IID's 367,900 acre-feet per annum program and MWD's 267,000 acre-feet per annum program is attributable to the projected water savings from lining the All-American Canal between Pilot Knob and Drop 1. Both districts agree that such a conservation measure should be undertaken. IID proposes that the project be included in its overall water conservation program, with construction beginning 10 years after program implementation begins. (IID, 25, Appendix A, Scenario 2) MWD, on the other hand, supports federal legislation which would authorize lining of the All-American Canal from Pilot Knob to Drop 4 by any of the existing California agencies receiving water deliveries from the Colorado River. (MWD, 13, p. 7)

(CONTINUED)

A third major area of disagreement between the cost estimates of IID and MWD involves indirect costs such as environmental mitigation measures, potential litigation expenses, and reduction in hydropower generation; The programs proposed in Scenario 2 of IID Exhibit 25 include allowances for numerous identified indirect costs of an expanded water conservation program, including environmental mitigation, litigation contingencies, hydropower replacement, farmer incentives, and evaporation ponds to maintain the salinity of the Salton Sea at a viable level for survival of the fishery. (IID, 25, Appendix A, Scenario No. 2) In contrast, the costs shown for the program described in MWD Exhibit 12 include capital costs and operations and maintenance expenses but do not include a separate allocation of expense for each of several indirect costs identified in the IID proposal. This is apparently due to the contention that some of the indirect costs included in the IID proposal are unrelated or only marginally related to water conservation. (MWD, 14, p. 8)

A fourth difference in the cost estimates of the two districts is due to the completion of additional studies. The cost estimates set forth in MWD Exhibit 11 are based upon the estimates of Parsons Water Resources, Inc. which were prepared for IID in 1985. (MWD, 11, p. 1) The cost estimates for the proposals described in IID Exhibit 25

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<sup>3</sup> (FOOTNOTE CONTINUED)

Thus, MWD is interested in obtaining additional water due to lining the All-American Canal, but it appears that MWD would prefer to undertake that project independently from any water transfer agreement with IID.

reflect additional studies by IID and recent changes which have reduced the operations and maintenance expenses required for the present system. (T,II,509:5-511:13)

The large differences in the IID and MWD cost estimates for a water conservation program are due to the factors identified above and other factors identified in the testimony and exhibits. Due to the parties' inability to negotiate a mutually acceptable agreement to date, MWD requests that the Board select specific water conservation measures to be implemented, formulate financing for the selected measures, establish a schedule for complying with requirements of the California Environmental Quality Act and National Environmental Policy Act, and establish a schedule for implementing selected measures.

(MWD, 15, p. 5) If the Board or a court were to attempt to formulate the details of an IID water conservation program as suggested by MWD, detailed analysis of the economic costs of such a program would be required. Although the differences in the conflicting cost estimates could be resolved by the Board or a court in appropriate circumstances, resolution of that issue is beyond the scope of this order.

#### 6.2.3 Other Sources of Funding

Another source of funding for additional water conservation by IID is payment received from parties located near IID who wish to obtain a supply of water from the District. IID recently completed a contract with IT Corporation in which IID agreed to supply 100 acre-feet per annum for \$250 per acre-foot. IID reports that it has been approached

by two other potential water users for similar contracts to supply 250 and 5,000 acre-feet per annum, respectively. (IID, 31, p. 11) With the exception of the IID/MWD negotiations, however, there was no evidence presented of any potential agreements to supply water to water users outside IID's boundaries which would provide sufficient funding for all or a major portion of the various water conservation measures proposed in IID Exhibits 3, 4, 5, 12, and 25.

## 7.0 ENVIRONMENTAL CONSIDERATIONS

### 7.1 Salton Sea

The Salton Sea Basin is a low-lying, rather flat desert basin largely surrounded by mountains. It includes the Coachella Valley and the Imperial Valley, which are separated by the Salton Sea, and part of the Mexicali Valley south of the Mexican border. Elevations in the basin vary from about 2,000 feet at the northwest end of the upper Coachella Valley, to a low of 278 feet below sea level at the bottom of the Salton Sea. (Staff, 12, from 1983 SWRCB Hearing, p. 9) From time to time as the Colorado River meandered back and forth across its delta, its entire flow entered the Salton Basin creating a body of water about 117 miles long and 30 miles wide. This ancient body of water was called Lake Cahuilla and appears to have evaporated away for the last time about 500 years ago. (Staff, 12, from 1983 SWRCB Hearing, p. 10)

The modern day Salton Sea was formed by the accidental and uncontrolled diversion of Colorado River flood flows during 1905 to



1907. (Staff, 12, from 1.983 SWRCB Hearing, p. iii) The Salton Sea is sustained primarily by agricultural drainage water and, to a lesser extent, by return flows from domestic water use. Minor amounts of rainfall and groundwater also enter the Salton Sea. (Staff, 12, from 1983 SWRCB Hearing, p. 12) The elevation of the Salton Sea has fluctuated from a maximum of 196 feet below sea level in 1907 to as low as 250 feet below sea level in 1920. Agricultural expansion and the resulting increase in drainage water have caused the sea to rise to its current level of approximately 227 feet below sea level. (IID, 12, Attachment 15)

The historic record of the Salton Sea shows a gradual increase in the concentration of dissolved salts. Since the Salton Sea is in a closed basin having no outlet, salinity is a function of the degree to which inflow balances evaporation. Although salinity levels have fluctuated slightly, the historic trend shows an increase in salinity. In January of 1986, the salinity concentration in the Salton Sea was approximately 39,300 mg/l. (IID, 2, p. 3-8) As explained below, the Environmental Impact Report for the proposed water conservation program recognizes that one consequence of reduced inflow to the Salton Sea will be a more rapid rate of increase in the salinity.

## 7.2 Impacts of Water Conservation in IID

IID prepared an Environmental Impact Report (EIR) for the proposed water conservation program which identified several adverse effects of implementing the program. With respect to the Salton Sea, the EIR recognizes that a reduction in inflow of agricultural return flow will

result in a reduced elevation of the Salton Sea and an accelerated increase in salinity. At some point, increasing salinity levels will interfere with the survival of the fishery. (Staff 12, from 1983 SWRCB hearing, p. 16) Implementation of additional water conservation measures will also result in a reduction of existing wetland habitat along the Salton Sea shoreline. The EIR states that the reduction in habitat could cause significant damage to terrestrial wildlife, especially the Yuma Clapper Rail, a federally designated endangered species and California designated rare avian species. (IID, 2, p. 4-23)

Recreational activities at the Salton Sea would also be adversely affected by an accelerated increase in salinity expected to occur due to water conservation. The 1986 Draft EIR estimated the total recreational activity at the Salton Sea to be 750,000 recreational use days annually. This includes 400,000 days related to fishing, 150,000 days related to hunting, and 200,000 days of other recreational uses. With or without implementation of additional water conservation measures, the EIR assumed that continued deterioration of the Salton Sea due to increasing salinity will result in the loss of all fishing activity and one-half of the other recreational activity, or a total loss of 575,000 recreation days annually. (IID, 2, p. 4-27)

Impacts to recreational use of the area depend to a large extent on when the fishery would be severely impacted. For purposes of the EIR, it was assumed that a salinity level of 45,000 mg/l is the point at which most fishery activity would be severely reduced. This salinity level would be reached three years sooner with the implementation of

water conservation measures proposed in IID's 1985 plan. (IID, 2, p. 4-27)

Additional water conservation in IID will significantly reduce flows in the Alamo River, the New River, and drains flowing directly to the Salton Sea. The reduction in inflow to both rivers will result in an increase in salinity and pollutant concentrations which will impact the aquatic and terrestrial biota. (IID, 2, pp. 4-22 and 4-23)

The most significant beneficial impacts which would result from an expanded water conservation program are the availability of conserved water for other uses, the reduced demand on other sources of water, and the economic stimulus provided to the local economy through increased construction activity. The extent of both such benefits depends upon the scope of the conservation program and the rate of implementation. For purposes of the EIR, it was assumed that a conservation program would entail construction expenditures of \$300 million and annual operation and maintenance expenses of \$20 million. (IID, 2, p. 1-4) Other beneficial impacts of the program identified in the EIR include lower farm production costs and reduced penalty payments to landowners experiencing flooding due to the existing high water level of the Salton Sea. Offset against the economic stimulus was a projected \$13.5 million loss in regional income due to accelerated loss of recreation and \$10.4 million in "social costs" representing the value of lost recreational enjoyment, reduced property values and related property taxes. It is reasonable to assume that both the adverse and beneficial effects of water conservation in IID will vary depending upon the specific water conservation measures involved and the quantity of water conserved.

### 7.3 CEQA Considerations

In April of 1986 the Imperial Irrigation District circulated a draft EIR through the State Clearinghouse (SCH 86012903) for the District's proposed Water Conservation Program and Initial Water Transfer. On June 18, 1986 the State Board commented on the draft EIR, and in October of 1986 IID released the final EIR. On December 2, 1986 IID approved the Water Conservation Program and the Initial Water Transfer, and filed Notices of Determination with the County Clerks of Imperial and Riverside Counties and the State Secretary for Resources. The EIR addresses the environmental impacts of an expanded water conservation program in IID, but the discussion of environmental mitigation measures is limited.

The Notice of Determination for the proposed Water Conservation Program acknowledged that the plan would have significant effects on the environment and reports that findings of overriding considerations were adopted by IID's Board. (IID, lb and 1c) The Imperial Irrigation District's findings were based on the premise that specific economic, social, and other considerations made infeasible the project alternatives identified in the final EIR. Entry of a finding of overriding considerations is authorized by Public Resources Code Section 21081 which specifies the circumstances under which a public agency can approve or carry out a project which will significantly impact the environment.

Significant environmental impacts identified in the EIR include the following: (1) lower elevation and higher salinity of the Salton Sea resulting from reduced inflows (IID, la, p. 2); (2) increased salinity

and decreased flow of the New and Alamo Rivers (IID, la, p. 8); (3) increased pollutant concentrations in the New River at the outlet by as much as twenty percent, and in the Alamo River by as much as fifty percent at some locations, assuming present pollutant loads (IID, la, p. 11); (4) increased uptake of pollutants into the terrestrial food chain through the New and Alamo Rivers wetlands/riparian habitats (IID, la, p. 20); (5) reduction of migratory bird use areas within Imperial and Riverside Counties which are part of the Pacific Flyway (IID, la, p. 24); (6) decreased use of the Salton Sea aquatic and riparian habitats by terrestrial biota (IID, la, p. 31); (7) accelerated loss of biota and fishery in the Salton Sea, including the desert pupfish (endangered species) (IID, la, p. 37); (8) accelerated loss of recreation value of the Salton Sea (IID, la, 46); and (9) accelerated loss in resort and property values near the Salton Sea (IID, la, p. 52).

The EIR discusses mitigation measures for these environmental impacts in general terms but generally does not identify specific mitigation measures available to rectify adverse impacts to the environment.<sup>4</sup>

The lack of detailed discussion of mitigation measures may be partially due to the fact that the District has not yet determined which particular water conservation measures should be pursued or what the schedule for implementation should be.

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<sup>4</sup> Characteristic of the non-specific mitigation measures specified in the EIR are statements such as "habitat loss and degradation will be mitigated by enhancing other habitats or creating new ones". (IID, 2, p. 5-2)

In view of the very general nature of the water conservation program approved by the District in 1986, the EIR certified in that year should be considered a Program EIR which provides a general assessment of the overall environmental effects of increasing water conservation efforts in IID. Prior to the approval of a specific water conservation program by IID, either a subsequent EIR or a supplement to the existing EIR may be required in accordance with the criteria specified in the State CEQA Guidelines. (CCR, Title 14, Sections 15162 and 15163) Reasons for requiring a subsequent EIR or an EIR supplement include substantial changes in the nature of the proposed project, changes in the circumstances under which it is to be undertaken or the availability of new information of substantial importance to the project. One example of significant new information which was not available in 1986 concerns the proposed feasibility study of evaporation ponds as a means of limiting the increase in Salton Sea salinity levels. (T, I, 46:18-47:2) The results from this study and other ongoing studies conducted by IID and other agencies should be considered in determining appropriate mitigation measures for the adverse environmental impacts identified in the 1986 EIR.

## 8.0 'LEGAL PRINCIPLES APPLICABLE TO IID WATER CONSERVATION PROPOSALS

### 8.1 'Constitutional and Statutory Requirements to Maximize Beneficial Use of Water

Article X, Section 2 of the California Constitution sets forth the basic policy governing all water use in the State of California':

"It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented; and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water.... This section shall be self-executing, and the Legislature may also enact laws in the furtherance of the policy in this section contained." (Emphasis added.)

A similar mandate is set forth in Section 100 of the California Water Code. These basic constitutional and statutory provisions reflect several important principles.

First, the California Constitution and Water Code prohibit the wasteful or unreasonable use, method of use or method of diversion of water. Numerous factors which should be considered in evaluating instances of alleged waste or unreasonable use are discussed in Decision 1600. (Decision 1600, pp. 24-29)<sup>5</sup> A key concept relevant to the future use of Colorado River water by water users in California is set forth in a 1935 California Supreme Court decision regarding water use in another area of the state:

"What is a beneficial use, of course, depends upon the facts and circumstances of each case. What may be a

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<sup>5</sup> See Kramer and Turner "Prevention of Waste and Unreasonable Use of Water: The California Experience". 1 Agricultural Law Journal 519, 522 (1980).

reasonable beneficial use, where water is present in excess of all needs, would not be a reasonable beneficial use in an area of great scarcity and great need. What is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time." (Tulare Irr. Dist. v. Lindsay-Strathmore Irr. Dist., 3 Cal.2d 489, 45 P.2d 972, 1007 (1935), emphasis added.)

A second, and related, principle established by Article X, Section 2 is that the limited availability of water for use in California means that those water resources which are available must be applied to the maximum beneficial use of which they are capable. Merely making some beneficial use of the water is not sufficient. Rather, beneficial use of water is to be maximized and "the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare."

The third principle reflected in Article X, Section 2 and Water Code Section 100 is that the right to the use of water extends only to such water as is reasonably required for the beneficial use to be served. Thus, if there are reasonable water conservation measures available to reduce the quantity of water needed to serve existing beneficial uses, then such conservation measures should be utilized. Determination of reasonableness with respect to water use and methods of use depends upon the circumstances of each case in view of statewide considerations, including "the ever increasing need for conservation of water in this state". Joslin v. Marin Municipal Water District 67 Cal.2d 132, 429 P.2d 889 (1967). In circumstances where the constitutional standard of reasonable use leads to the conclusion that additional water conservation measures should be employed, a water



user cannot maintain a right to divert and use a quantity of water which is needed only if unreasonable practices are followed.

Stated differently, a water user cannot "bank" the availability of a future water supply by failing to implement water conservation measures needed to comply with Article X, Section 2 of the California Constitution. To the contrary, under present California law, in a situation where practical water conservation measures are available, an established water right can be protected most effectively by reducing the quantity of water used through implementing water conservation measures. (See generally Water Code Section 1011.)

With respect to encouraging water conservation in IID specifically, in 1984 the Legislature enacted Water Code Section 1012 which provides as follows:

"Notwithstanding any other provision of law, where any person, public agency, or agency of the United States undertakes any water conservation effort, either separately or jointly with others entitled to delivery of water from the Colorado River under contracts with the United States, which results in reduced use of Colorado River water within the Imperial Irrigation District, no forfeiture, diminution, or impairment of the right to use the water conserved shall occur, except as set forth in the agreements between the parties and the United States."<sup>6</sup>

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<sup>6</sup> A non-codified provision of the bill by which Section 1012 was enacted provides:

"The Legislature finds and declares that the enactment of Section 1012 of the Water Code is intended to clarify and make specific existing California law in regard to water conservation measures which may be taken within the Imperial Valley. In enacting Section 1012 of the Water Code, it is  
(CONTINUED)

In summary, it must be recognized that a water right is not necessarily protected simply by diverting water and applying it to a beneficial use. Protection of the water right also requires that the method of diversion and use must be reasonable in view of all relevant circumstances. The availability of financial resources for implementing proposed water conservation measures is a factor to be considered in evaluating the reasonableness of an existing method of diversion and use. If sufficient funding is available to implement reasonable water conservation measures, then the failure to implement such measures could endanger the underlying water right. A water right is protected most effectively under California law by making reasonable and beneficial use of water while implementing all reasonably available water conservation measures.

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<sup>6</sup> (FOOTNOTE CONTINUED)

not the intent of the Legislature to alter the relationship of state and federal law, as each may apply to the distribution and use of Colorado River water." (Stats. 1984, c. 429, § 1.)

The statement of intent was added in recognition of the legal dispute regarding the effect of potential conflicts between specific provisions of state law and the various aspects of federal statutes, judicial decisions, agreements, and international treaties which govern diversion of water from the Colorado River and which are known collectively as the "Law of, the River". The State Board's position has been that it will not attempt to resolve issues involving the right to sell or transfer water outside of the priority scheme reflected in the federal contracts for delivery of Colorado River water without first determining that it has jurisdiction in the particular case and then only pursuant to an orderly proceeding in exercise of that jurisdiction. Such a proceeding would include the submission of legal briefs by interested parties.

## 8.2 Jurisdiction of State Water Resources Control Board

The responsibility of the State Water Resources Control Board to pursue the policies established by Article X, Section 2 of the California Constitution is established by several statutory provisions and judicial opinions. The role of the Board with respect to California water resources is summarized in Water Code Section 174 which provides in relevant part:

"The Legislature hereby finds and declares that in order to provide for the orderly and efficient administration of the water resources of the state it is necessary to establish a control board which shall exercise the adjudicatory and regulatory functions of the state in the field of water resources."

Water Code Section 275 charges the Department of Water Resources and the State Board with the responsibility of preventing the misuse of water in California:

"The department [of Water Resources] and board [the State Water Resources Control Board] shall take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use; unreasonable method of use, or unreasonable method of diversion of water in this State."

The issue of the Board's jurisdiction with respect to water conservation in IID was raised in litigation initiated by IID following entry of Decision 1600. In rejecting IID's argument regarding the alleged lack of Board jurisdiction, the Court of Appeal for the Fourth Appellate District concluded that "the Board's authority includes the power to adjudicate the article X, section 2, issue of unreasonable use of water by IID." Imperial Irrig. Dist. v. State Water Resources Control Board 186 Cal.App.3d 1160, 1171; 231 Cal.Rptr. 283, 290

(1986). The Court also concluded that the adjudicatory authority of the Board in the matter of unreasonable use, would include the authority to order IID "to submit a plan to conserve water as was done here." (186 Cal.App.3d at 1170, 231 Cal.Rptr. at '289.)

Following the Court of Appeal ruling confirming the Board's jurisdiction in waste and unreasonable use proceedings, the suit was returned to the Superior Court for review of Decision 1600. In its Statement of Decision upholding Decision 1600, the Superior Court emphasized that:

"While the Court agrees that the primary responsibility for evaluating and implementing potential water conservation measures for IID lies with the District itself, it is the board (along with the Department) which is charged with the responsibility of preventing the misuse of water. Water Code 6275. Furthermore, recent decisions have recognized a 'broad', 'open-ended', 'expansive' authority on the part of the Board to undertake comprehensive planning and allocation of the State's water resources. [Citations omitted.] Indeed, as the Court stated in United States v. State Water Resources Control Board (1986) 182 Cal.App.3d 82 at page 129, 'All water rights, including appropriative, are subject to the overriding constitutional limitation that water use must be reasonable . . . . To that end, the Board is empowered to institute necessary judicial, legislative or administrative proceedings to prevent waste or unreasonable use...'"

The Superior Court remanded the matter to the Board for the purpose of determining new dates of compliance with the order provisions of Decision 1600.

### 8.3 Implementation of Water Conservation Measures Pursuant to Agreement to Transfer Conserved Water

As discussed in Sections 6.1 through 6.2.3, IID and other interested parties have directed considerable attention to the possibility of

funding additional water conservation measures in IID as part of an agreement to transfer the right to use water made available through IID water conservation measures. With the enactment of Water Code Section 109 in 1980, the California Legislature went on record in favor of promoting voluntary transfers of water or water rights as a means of meeting the State's growing water needs. Specific authorization for the transfer of water made available through water conservation efforts is provided by subdivision (b) of Water Code Section 1011:

"Water, or the right to the use of water, the use of which has ceased or been reduced as the result of water conservation efforts as described in subdivision (a), may be sold, leased, exchanged, or otherwise transferred pursuant to any provision of law relating to the transfer of water or water rights, including, but not limited to, provisions of law governing any change in point of diversion, place of use, and purpose of use due to the transfer."

With respect to water conservation in IID, Water Code Section 1012 provides that no diminution or impairment of IID's right to the use of conserved water shall occur, except as set forth in the agreement between the participating parties and the United States. In summary, the California Water Code not only authorizes the voluntary transfer of water made available through implementation of conservation measures, but it actively encourages such transfers and protects the underlying water right of the agency which conserves the water.

#### 8.4 Implementation of Water Conservation Measures Pursuant to Physical Solution Doctrine

The record clearly establishes the existence of alternative needs for water which could be made available through IID water conservation, the feasibility of conserving substantial amounts of water through

improvements to the IID system, and the expressed interest of IID and other water users in cooperating to implement such improvements. Although a voluntary agreement between IID and other parties interested in the use of conserved water appears to provide the most feasible way of achieving significant water conservation in the near future, the failure of the affected parties to reach an agreement would not preclude the Board or the courts from developing and ordering implementation of a "physical solution" to the dispute. Under the physical solution doctrine, a junior appropriator or appropriators could finance improvements to IID's water distribution system in exchange for receiving the water made available through such conservation measures.

With respect to resolving a dispute between competing water users in which the parties could not agree on a physical solution, the California Supreme Court has stated:

"... it is not only within the power but it is also the duty of the trial court to admit evidence relating to possible physical solutions, and if none is satisfactory to it to suggest on its own motion such physical solution. [Citations omitted.] The court possesses the power to enforce such solution regardless of whether the parties agree." (City of Lodi v. East Bay Municipal Utility District (1936) 7 Cal.2d 316, 60 P.2d 439, 450).

The Court went on to say in the Lodi decision that, if a physical solution is ordered to be implemented, any substantial cost should be borne by the holder of the junior right (Id., 7 Cal.2d at 341, 60 P.2d at 450). With respect to water transfer proposals between IID and MWD, if the ongoing negotiations prove unsuccessful, the dispute

could be resolved pursuant to the physical solution doctrine.<sup>7</sup> If the physical solution doctrine were applied, it would be necessary to determine which water conservation measures should be implemented and how the holder of the junior right would pay the reasonable cost of implementing the selected measures. It is reasonable to assume that environmental mitigation measures and other expenses directly attributable to the water conservation program would be included as part of a physical solution and the associated costs. Any programs which are unrelated to water conservation measures, however, would not normally be included in the calculation of costs of implementing a physical solution.

#### 9.0 CONCLUSION

Since the issuance of Decision 1600, IID has undertaken or expanded a wide variety of studies and programs to increase water conservation. IID has prepared a comprehensive array of planning documents which identify various water conservation measures which could be implemented and a tentative implementation schedule under differing assumed conditions. Limitations resulting from present methods of funding, however, have impeded implementation of additional conservation measures and have even reduced the rate of canal lining in recent years. The tentative schedule for implementation of water conservation measures proposed in the IID planning documents is highly contingent upon the District developing adequate financing. In the

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<sup>7</sup> For a general discussion of the physical solution doctrine and application of the doctrine to water conservation in the Imperial Irrigation District, see Harrison C. Dunning, "The 'Physical Solution' In Western Water Law", University of Colorado Law Review, Vol. 57, No. 3, Spring 1986.

absence of additional sources of funding for water conservation, it is very unlikely that IID will implement all or a major portion of the water conservation measures identified in its plans at any time in the near future.

Implementation of the water conservation measures proposed by IID would require a period of several years before the major portion of water conservation is achieved. The evidence firmly establishes that there will be a need for water which could be made available within the period of time required for implementation of identified water conservation measures as specified in IID's recent proposals. In order to comply with the constitutional mandate to maximize beneficial use of water, it is imperative to establish a definite schedule for implementing a comprehensive water conservation program and to begin implementation as soon as possible.

The numerous studies and planning documents already developed by IID provide a solid basis of information from which to finalize a specific water conservation plan and implementation schedule. Implementation of a specific plan on a timely basis, however, will require four further interrelated developments. First, the specific water conservation measures actually to be implemented must be determined. Second, sufficient funding must be arranged for whatever conservation measures are selected. Third, a schedule for implementing the selected water conservation measures must be established. Fourth, the selected water conservation measures must be implemented in accordance with the specified schedule. Implementation of a water conservation



plan must be in compliance with the California Environmental Quality Act. In addition to the mitigation measures identified in the 1986 EIR, CEQA requires that if new information of substantial importance becomes available regarding environmental impacts and mitigation measures, such information must be evaluated in a supplemental environmental document or documents and appropriate mitigation measures taken.

In view of the progress made to date, and in view of the fact that the Superior Court review of Decision 1600 was concluded only recently, the Board concludes that IID should be given until January 1, 1989 to submit a written plan and definite implementation schedule for the additional water conservation measures which IID selects. The plan should specify water conservation measures estimated to conserve at least 100,000 acre-feet per annum by January 1, 1994. The conservation of at least 100,000 acre-feet per annum as proposed in the plan shall be in addition to water conservation due to previous actions or improvements.

In order that the selected water conservation measures be implemented on schedule, the plan should specify the chosen method of financing and should be accompanied by proof of diligent efforts to secure such financing. The Board's direction to submit a specific plan of implementation should not be interpreted as a call for further feasibility studies or development of tentative alternatives for further investigation. Although further studies may be required in the course of developing IID's ultimate water conservation program,

sufficient information presently is available for IID to develop and submit by January 1, 1989, a definite plan and implementation schedule for conservation of an additional 100,000 acre-feet of water per annum. If no such plan and schedule are submitted, the Board will determine what additional steps are appropriate at that time.

The need for substantial additional water supplies in California and the prospects for substantial water conservation in IID have been well established. Development of a definite schedule and implementation plan for conserving at least 100,000 acre-feet per annum should be regarded as an initial step in developing and implementing an overall water conservation program which will assist in meeting identified needs. Based on presently available information, the Board finds that conservation of 367,900 acre-feet per annum as proposed in IID Exhibit 25 is a reasonable long-term goal which will assist in meeting future water demands. The Board will retain jurisdiction to review implementation of the initial plan and future water conservation measures.

#### ORDER

IT IS HEREBY ORDERED that:

1. Imperial Irrigation District shall submit to the Board by January 1, 1989 a specific written plan of implementation containing a definitive schedule for implementing additional water conservation measures. The specified water conservation measures shall be sufficient to conserve at least 100,000 acre-feet per annum by January 1, 1994. The plan shall identify the source or sources of funding for the selected water conservation measures.

2. Imperial Irrigation District shall submit to the Board by January 1, 1989 proof of diligent efforts to secure funding sufficient to implement the Water conservation measures described in Paragraph 1 of this Order. Said proof of efforts to secure funding shall consist of a resolution by the Imperial Irrigation District Board of Directors committing the District to fund implementation of the selected water conservation measures using District resources, or an executed agreement with a separate entity willing to finance water conservation measures in Imperial Irrigation District, or evidence of a comparable action which assures adequate funding for the selected water conservation measures. If the Imperial Irrigation District Board of Directors determines that an election is needed to approve the selected method of financing or implementation of the selected water conservation measures, or both, the District shall submit evidence by January 1, 1989 establishing that the District has scheduled such election.
3. Imperial Irrigation District shall submit semi-annual progress reports to the Board showing the status of implementation of the District's water conservation program. The progress reports shall be submitted commencing on July 1, 1989 and continuing at six-month intervals until further notice from the Board.
4. Imperial Irrigation District shall submit evidence to the Board by July 1, 1991 showing that 20,000 acre-feet per annum of the 100,000 acre-feet per annum referred to in Paragraph 1 of this Order has been conserved by January 1, 1991.

5. The Board reserves jurisdiction in this matter for the purpose of reviewing the adequacy of the required water conservation implementation plan and District actions, monitoring the progress of the District in carrying out the various elements of the water conservation plan and taking such other action as may be appropriate to ensure that the requirements of Article X, Section 2 of the California Constitution are met.

## CERTIFICATION

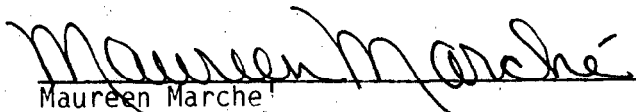
The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 7, 1988.

AYE: W. Don Maughan  
Eliseo M. Samaniego  
Danny Walsh

NO: None

ABSENT: Darlene E. Ruiz  
Edwin H. Finster

ABSTAIN: None

  
Maureen Marche  
Administrative Assistant to the Board