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METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

*Karen E. Duff*  
Executive Secretary

February 16, 1994

To: Board of Directors (Engineering & Operations Committee--Information)  
Board of Directors (Finance and Insurance Committee--Information)

From: General Manager

Subject: Status Report on the Imperial Irrigation District/  
Metropolitan Water District Water Conservation Program

Report

The Imperial Irrigation District (Imperial) and Metropolitan entered into a water conservation agreement (Conservation Agreement) in December 1988 which became effective in December 1989 after Coachella Valley Water District (Coachella) and Palo Verde Irrigation District's (Palo Verde) approval. The Conservation Agreement calls for Metropolitan to bear the capital, annual direct, and indirect costs of 15 different conservation projects that Imperial is implementing. Imperial is bearing all costs associated with two additional projects designated as augmentation projects. The capital costs of the Imperial/Metropolitan Water Conservation Program (Program) were estimated in 1988 dollars to total \$97.8 million. Indirect costs total \$23 million. The annual direct costs were estimated in 1988 dollars to total \$2.6 million upon full implementation of the Program. In return, Metropolitan will be entitled to divert from the Colorado River a quantity of water equal to the amount of water conserved by the conservation and augmentation projects, estimated in 1989 to total 106,110 acre-feet per year upon full implementation of the Program, and for at least 35 years thereafter, except under certain limited conditions specified in the 1989 Approval Agreement.

The Program is administered by a three-person Program Coordinating Committee (PCC) consisting of a representative from Imperial, Metropolitan, and a third person mutually selected by Imperial and Metropolitan and who serves as Chairman. A five-person Water Conservation Measurement Committee (WCMC) oversees and approves the determination of the water conserved by the Program. In addition to the three PCC members, the WCMC includes one member representing Coachella and another representing Palo Verde.

Conservation project implementation began in February 1990. From 1990 through 1993 approximately \$104.6 million has been expended as shown in Table 1. During 1993, 43.6 miles of lateral and main canals were concrete lined, one regulatory reservoir was placed into operation, and some 17,800 twelve-hour deliveries were made instead of the standard 24-hour water deliveries to farmers. Also, three tailwater recovery systems were installed, six canal checks/headings and two reservoirs were automated, ten non-leak gates were installed, and an operational study of the Plum-Oasis Lateral Interceptor was initiated. These projects and those completed through 1992 have conserved an estimated 72,870 acre-feet of water which is available to Metropolitan in 1994 (Table 2). Additionally, the new Water Control Center (Center) has been placed into operation and planning/design for the last three tailwater recovery systems of the 24 systems planned under the Program is underway. Due to improved control over water flow in canals, the new Center will help to reduce canal operational spills and over-deliveries to farmers, thus resulting in water savings.

The development of an irrigation training laboratory originally planned to provide training and demonstration facilities for on-farm irrigation systems which would conserve water has been cancelled. This is due to increasing projected costs and an inability to reach agreement with the County of Imperial on issues which would ensure operation of the facility for the 35-year operational period of the agreements. Imperial's Irrigation Management Unit is presently preparing a Project Plan for Project 14, Irrigation Water Management, to identify other alternatives and means of providing training and demonstration facilities for on-farm irrigation systems which would conserve water or support Project 18 in conserving water.

Verification of conserved water continued through 1993 particularly on canal lining, 12-hour deliveries, lateral interceptors, on-farm irrigation management, and system automation. Improved technical procedures for collecting field data and methods of analysis of available data have led to more accurate and verifiable estimates of conserved water for canal lining and 12-hour deliveries. The current estimate for canal lining is 124 acre-feet per mile per year versus 110 acre-feet per mile per year as originally estimated in the Conservation Agreement. The current estimate for 12-hour deliveries is 24,000 acre-feet per year versus an original estimate of 12,000 acre-feet per year. The final verification recommendations for system automation have been delayed

due to the need for additional technical studies to be completed in early 1994.

Work continues with Imperial on the Final Environmental Impact Report (EIR) for the remaining two lateral interceptor projects and completion projects. A general description of the completion projects is provided in Table 3. The completion projects along with the projects already implemented or under development should provide the targeted amount of conserved water of 106,110 acre-feet per year. The EIR is being prepared at the request of the Regional Water Quality Control Board, Colorado River Basin Region. Based on the current schedule, the Final EIR will be filed by Imperial in April 1994. Due to the requirement to prepare the EIR for the two lateral interceptor projects and the completion projects, a delay of 16 months in implementation of the remainder of the Program has resulted. Based upon the design and construction requirements of the remaining projects needed to attain the 106,110 acre-foot per year objective, implementation of the Program is expected to be completed in mid-1996. This would result in the Program's current water conservation estimate of 106,110 acre-feet per year being available to Metropolitan in 1997.

Projects budgeted for implementation in 1994 are estimated to conserve approximately 9,880 acre-feet at a capital cost of \$15.2 million in 1994 dollars. Budgeted projects include automation of lateral headings of the Plum-Oasis Lateral Interceptor, additional system automation, Pinto Wash Detention Reservoir, East Lowline Lateral Interceptor, East Highline Mid-Canal Reservoir, lateral canal lining, and additional tailwater recovery systems.

As contemplated at the time the Agreement was negotiated, an increase in the capital appropriation on the order of \$15 million will be required to account for the increase in capital costs of the projects over the 1988 estimated costs due to the escalation of construction costs. Actual capital costs of certain projects, particularly canal lining and system automation, are higher than were estimated in the Conservation Agreement mainly due to the unforeseen need for additional project planning, acquisition of field verification data and analysis of such data to establish methods and procedures to verify these projects' conserved water volumes. However, when actual costs of all implemented projects are de-escalated to 1988 dollars, it is anticipated that the Program will

be implemented at or below the unit cost contemplated in the Conservation Agreement of \$120 per acre-foot in 1988 dollars.

The total 1994 Program budget, capital and annual direct costs, approved by the PCC was approximately \$17.4 million. Since certain projects planned for implementation in 1994 are subject to completion of the Final EIR now being prepared, the PCC approved an initial funding call of only approximately \$2.9 million--consisting of capital costs of projects being implemented and annual costs of projects in operation, less funds carried over from 1992 and an estimate of interest to be earned on 1994 funds. The PCC requested that Imperial not issue a funding call for the planned projects at this time as the Final EIR has not yet been completed. After Imperial issues the Notice of Determination following certification of the Final EIR, a second funding call would be issued by Imperial. At that time, Metropolitan will have a more precise estimate of the total cost of the Program and a recommendation for an increase in the appropriation can be proposed to your Board so that payment of further Funding Calls can be made in 1995 and 1996 to complete the Program.

#### Board Committee Assignments

This letter is referred for information to:

The Engineering and Operations Committee because of its authority to study, advise, and make recommendations on the performance of construction programs and work and operation and maintenance of facilities required for the production of water pursuant to Administrative Code Section 2431(b) and (c); and

The Finance and Insurance Committee because of its authority to study, advise, and make recommendations on disposition of funds and authorization of appropriations pursuant to Administrative Code Section 2441(c) and (d).

#### Recommendation

For information only.

  
John R. Wodraska

AKD/FZK:vb

Attachments

Table 1

Imperial/Metropolitan Water Conservation Program  
Actual Costs Through 1993 and Estimated 1994 Costs

(Million Dollars)

<u>Year</u>	<u>Capital and Annual Direct Funding Call</u>	<u>Interest Earned</u>	<u>End-of-Year Capital and Annual Direct Bank Account Balance</u>	<u>Costs (1)</u>			
				<u>Capital</u>	<u>Annual Direct</u>	<u>Indirect</u>	<u>Total</u>
1990	18.3	0.9	3.0	15.6	0.6	4.6	20.8
1991	36.8	1.4	12.5	27.2	1.5	4.6	33.3
1992	20.1	0.8	12.0	19.5	1.9	4.6	26.0
1993	<u>13.6</u>	<u>0.4</u>	6.1	<u>17.7</u>	<u>2.2</u>	<u>4.6</u>	<u>24.5</u>
Subtotal	88.8	3.5		80.0	6.2	18.4	104.6
1994	<u>2.9</u> <sup>(2)</sup>	<u>0.2</u>		<u>15.2</u>	<u>2.2</u>	<u>4.6</u>	<u>22.0</u>
Total	91.7	3.7		95.2	8.4	23.0	126.6

(1) Current Dollars.

(2) Initial Funding Call portion of \$17.4 million 1994 Budget approved by the PCC.

Table 2  
 Water Conserved Through 1994 by  
 Imperial/Metropolitan Water Conservation Program

<u>Year</u>	<u>Annual Amount of New Water Conserved (Acre-Feet)</u>	<u>Water Available to Metropolitan (Acre-Feet)</u>
1989 (Augmentation Projects)	6,110	-----
1990	20,590	6,110
1991	7,229	26,700
1992	20,901	33,929
1993	18,040	54,830
1994	9,880(1)	72,870
1995		82,750(1)

(1) Estimated

Table 3

General Description of the Projects Which May Complete  
the Imperial/Metropolitan Water Conservation Program

- Pinto Wash Detention Reservoir--permanent retirement of approximately 450 to 950 acres along the Westside Main Canal in the southwest corner of Imperial Irrigation District which are frequently flooded by runoff from the adjacent desert. The actual acreage that would be affected has not been determined yet. A reservoir would be constructed to detain flood waters. It is estimated that 3,000 acre-feet of water could be conserved by this project.
- Lateral Interceptor No. 1 (Peach Lateral)--an interceptor canal collecting water from eight lateral canals which would have otherwise been discharged into the drain system, and a regulating reservoir and a pump facility located at the terminus of the Peach Lateral 1.
- Lateral Interceptor No. 2 (Elder Lateral)--seven interceptor canals that would collect water from twelve lateral canals, which would have otherwise been discharged into the drain system, and convey the intercepted water to the Central Main Canal. The existing 300 acre-foot Fudge Reservoir located at the end of the Central Main Canal (Canal) would be used to regulate excess flows in the Canal.
- Westside Main Canal Seepage Recovery--surface and subsurface seepage recovery systems to recover seepage along the Westside Main Canal which would have otherwise been lost to the drain system. (This project has been deleted from further consideration after field investigations indicated low seepage rates making it economically unattractive under the current Program.)
- East Highline Canal Seepage Recovery--surface and subsurface seepage recovery systems to recover seepage along the East Highline Canal which would have otherwise been lost to the drain system. Recovered water would be pumped back into the canal.
- East Highline Mid-Canal Reservoir--an in-line (in-canal) storage facility achieved by constructing higher embankments on both sides of the existing canal between Check No. 11 and the Orchid Weir, which section is located near the midsection of the East Highline Canal, for conserving water that would have otherwise been discharged into the drain system.

- Lateral Interceptor No. 3 (Orita-Munyon Lateral)--an interceptor canal collecting water from ten lateral canals, which would have otherwise been discharged into the drain system, and a regulating reservoir and a pump facility located at the terminus of the Munyon Lateral.

- Canal/Lateral Canal Concrete Lining--concrete lining of approximately 100 miles of main and lateral canals in addition to the 265 miles of canal lining already included in the Program.

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