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MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Robert E. Driff
EXECUTIVE SECRETARY
9-15

August 29, 1995

To: Board of Directors (Water Planning and Resource Committee-Information)
From: General Manager
Subject: Concluding Report on Palo Verde Test Land Fallowing Program

RECOMMENDATION:

For information only.

John R. Wodraska
General Manager

Submitted by:
Debra C. Man

Debra C. Man, Chief
Planning and Resources

Concur:
John R. Wodraska

John R. Wodraska
General Manager

FZK:jpa

Attachment

fzkbd165/board

EXECUTIVE SUMMARY:

Metropolitan and the Palo Verde Irrigation District (Palo Verde) implemented a two-year test land fallowing program (Program) from August 1, 1992 through July 31, 1994. Under the Program, 20,215 acres of agricultural farm land in the Palo Verde Valley were fallowed. By not irrigating the fallowed fields, approximately 186,000 acre-feet of Colorado River water was saved. The saved water is being stored by the United States in Lake Mead for use by Metropolitan prior to the year 2000. Participating lessees (or landowners if acreage was not leased) were compensated by Metropolitan \$620 per fallowed acre per year and were required to gain the landowners' consent. Based on the amount of water saved, this equates to a cost of \$135 per acre-foot. Results of four surveys conducted in the Palo Verde Valley during and after the Program showed that the Program was well received by the farmers and various community representatives, and that the Program caused a slight reduction in the average regional employment of approximately 1.3 percent. However, no data were collected nor studies conducted relating to the economic benefits resulting from participating farmers spending about 61 percent of Program payments in excess of fallowing costs within the local economy. The successful completion of the Program demonstrated the feasibility of making agricultural water available to urban users during periods of urban water shortages.

DETAILED REPORT:

After several years of negotiation, Metropolitan and the Palo Verde Irrigation District (Palo Verde) implemented a two-year test land fallowing program (Program) from August 1, 1992 through July 31, 1994. Implementation of the Program required entering into two principle types of agreements: (1) a Program Agreement among Metropolitan, Palo Verde, Imperial Irrigation District (Imperial), Coachella Valley Water District (Coachella), and the U.S. Bureau of Reclamation (Reclamation), and (2) Fallowing Agreements between Metropolitan and individual lessees and landowners (farmers) in the Palo Verde Valley. Sixty-three Fallowing Agreements were executed between Metropolitan and participating farmers who fallowed 20,215 acres for two years. In exchange, Metropolitan compensated the participating farmers \$620 per fallowed acre per year. By not irrigating the fallowed fields, 185,978 acre-feet of Colorado River water was saved. The Program Agreement provided that Imperial and Coachella agreed to not use or demand the saved water resulting from the Program, and that the saved water be stored by the United States in Lake Mead for use by Metropolitan prior to the year 2000.

According to the terms and conditions of the Fallowing Agreements, participating farmers were allowed to fallow up to 25 percent of their acreage with the same land lying fallow for the entire two-year period. The 25 percent limit was set to ensure that farmers continue their farming operations with minimal impacts from the Program and that all farmers had an equal opportunity to participate in the Program. To qualify to participate in the Program, the fallowed fields had to have had a history of agricultural production between August 1, 1987 and Program implementation. Also, the farmers had to affirm that the fields would have been farmed absent the Program. No irrigation water was to be applied to the fallowed fields for the entire two-year period. Furthermore, the fallowed fields were to be maintained free of weeds or volunteer vegetation for the duration of the two-year Program. This was achieved by plowing the fields or applying herbicides in compliance with approved Land Management Plans (Plans). Each participating farmer submitted a Plan prior to the commencement of the Program which was approved by Metropolitan. The purpose of the Plans was to conserve land and water resources, and to eliminate or minimize adverse Program impacts on adjacent farms, the community, and Palo Verde through the control of weeds and wind erosion. In addition, farmers had to comply with Soil Conservation Service (SCS) regulations for wind erosion control on highly erodible soils.

During both Program years, certain farmers had to implement special additional fallowing operations on 1,251 acres of land (first year) and 414 acres of land (second year) to comply with the SCS regulations.

Participating farmers were compensated by Metropolitan \$620 per fallowed acre per year. A total of five equal payments of \$248 per fallowed acre were made on August 1, 1992, February 1 and August 2, 1993, and February 1 and August 15, 1994. Before any payment was made, all fields were checked to verify Program compliance. The field checking process, i.e. visual inspection of the fields, began during enrollment of participating farmers into the Program to verify that the proposed fields were eligible for participation. All fields were checked at least once every month for the duration of the Program. In addition to field inspection, Metropolitan employed remote sensing imagery periodically to monitor Program compliance and provide a visual record of the fallowed fields. Three satellite images were acquired one each shortly after the beginning, and middle, and one shortly before the end of the Program in cooperation with Reclamation. The images were used to verify and document the fallow status of the participating fields during the two-year period of the Program. A fourth image was taken four months after the completion of the Program to identify the type and acreage of crops planted on the fallowed fields after they were returned into production.

Program payments by Metropolitan to participating farmers totaled \$25.1 million. In addition, Metropolitan paid Palo Verde \$0.5 million to cover Palo Verde's incremental costs associated with the Program and to develop and implement a computerized water ordering system. The cost of technical and professional services employed during the Program totaled \$0.8 million while Metropolitan administrative costs totaled \$0.2 million for a total Program cost of \$26.6 million. The unit cost based on payments to participating farmers was \$135 per acre-foot, and based on the total Program cost was \$143 per acre-foot.

To facilitate the administration of the Program, a five-member Measurement Committee (Committee) was established in accordance with the terms and conditions of the Program Agreement and consisted of one representative from each of the following organizations: Reclamation, Palo Verde, Imperial, Coachella, and Metropolitan. The Committee reviewed the status of the Program during the two-year period. Following the completion of the Program, the Committee determined the actual amount of water saved by the Program to be 4.6 acre-feet per fallowed acre per year for a total Program water savings of 185,978 acre-feet. The verified amount of water saved by the Program confirmed the contemplated amount of water savings stated in the Program Agreement. The saved water is being stored by Reclamation in Lake Mead for Metropolitan's use prior to the year 2000 in accordance with the terms of the Program Agreement.

Four surveys of the participating farmers and the Palo Verde community were conducted to evaluate the economic impacts of the Program on the participating farmers, local businesses providing farm services and supplies, and the regional economy as a whole. Principal findings indicated that the Program did not affect the overall regional economic performance in the Palo Verde Valley to any significant degree. Although the Program did not cause non-farm-related businesses in the region to reduce employment or lose revenue, it contributed to the loss of 27 full-time farm jobs, and 25 full-time and seven part-time jobs in farm-related businesses. The combined losses were equal to approximately 1.3 percent of the region's average employment for 1991-92. In comparison, gross farm receipts fell from \$189 million in 1988 to \$79 million in 1991 while the gross value of vegetable production fell from \$86 million in 1988 to \$11 million in 1991. This drop in gross crop revenues particularly vegetables prior to the implementation of the Program had a more significant impact on the region's farm employment. However, collection and analyses of the economic benefits resulting from participating farmers spending about 61 percent of Program payments in excess of fallowing costs within the local economy on farm improvements and

operations, debt repayment, and rent during the two-year Program period was beyond the scope of the surveys conducted. A copy of the Final Program Report is attached.

In summary, the Program was well accepted by the Palo Verde community and was successfully completed. The contemplated water savings were realized and are being stored in Lake Mead for Metropolitan's use prior to the year 2000. The Program, a pioneer of its type, demonstrated the feasibility of making agricultural water available to urban users during periods of urban water shortages.