THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

August 24, 2010

Mr. Steven C. Hvinden
Director
Boulder Canyon Operations Office
U.S. Bureau of Reclamation
P.O. Box 61470
Boulder City, NV 89006-1470

Dear Mr. Hvinden:

Metropolitan's Intentionally Created Surplus Certification Report, Calendar Year 2009

Enclosed is The Metropolitan Water District of Southern California's (Metropolitan) calendar year 2009 Certification Report for Extraordinary Conservation Intentionally Created Surplus (ICS) for the Metropolitan funded Palo Verde Irrigation District Forbearance and Fallowing Program. The Certification Report demonstrates:

- the amount of Extraordinary Conservation ICS created, and

- that the method of creation was consistent with Metropolitan's approved ICS Plan of creation and the requirements outlined in Section 3 of the *Interim Guidelines for the Operation of Lake Powell and Lake Mead* (Guidelines).

The Guidelines require a Contractor to:

- enter into a *Delivery Agreement* with the United States, and Forbearance Agreements necessary to bring the delivery of ICS into compliance with Articles II(B)(2) and II(B)(6) of the Consolidated Decree of the U.S. Supreme Court in *Arizona v. California*, 547 U.S. 150 (2006), and

- submit a plan for the creation of ICS.

Metropolitan entered into a *Delivery Agreement* with the United States, and Forbearance Agreements on December 13, 2007. Metropolitan received approval for its calendar year 2009 Revised Plan of creation in the Bureau of Reclamation's letter of December 4, 2009.

Metropolitan sought and received approval for the creation of 100,000 acre-feet of Extraordinary Conservation ICS based on the funding of our Forbearance and Fallowing Program with the Palo Verde Irrigation District. As an estimated 120,247 acre-feet of water was saved by the Forbearance and Fallowing Program, Metropolitan has satisfied the requirement that the ICS be created through an extraordinary conservation program that existed on January 1, 2006. Based on Metropolitan's consumptive use of Colorado River water, Metropolitan created 55,836 acre-feet of Extraordinary Conservation ICS in calendar year 2009, prior to the one-time deduction of five percent specified in the Guidelines to result in additional system water in storage in Lake Mead. Metropolitan looks forward to your review and verification of the information contained in the Certification Report, on behalf of the Secretary of the Interior, and your written decision regarding the amount of Extraordinary Conservation ICS created.

Should you have any questions regarding the Report, your staff may contact Mr. Jan Matusak of my staff at (213) 217-6772.

Very truly yours,

for Deven N. Upadhyay
Manager, Water Resource Management

JPM:tt

Enclosure

Metropolitan Funded
Palo Verde Irrigation District Forbearance and Fallowing Program
Intentionally Created Surplus
Certification Report

Calendar Year 2009

August 2010

The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Table of Contents

Introduction

The Secretary of the Interior (Secretary) approved a *Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead*, on December 13, 2007, which established guidelines for the creation and delivery of Intentionally Created Surplus (ICS). One type of ICS is Extraordinary Conservation, which allows a Contractor to utilize extraordinary conservation programs that existed on January 1, 2006 to create ICS.

The *Interim Guidelines for the Operation of Lake Powell and Lake Mead (Interim Guidelines)* contained in the Record of Decision condition the delivery of ICS on the terms of:

- a Delivery Agreement with the United States, and

- Forbearance Agreements necessary to bring the delivery of ICS into compliance with Articles II(B)(2) and II(B)(6) of the Consolidated Decree entered by the U.S. Supreme Court in *Arizona v. California*, 547 U.S. 150 (2006).

The Metropolitan Water District of Southern California (Metropolitan) entered into:

- a *Delivery Agreement* with the United States on December 13, 2007,

- a *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* with the State of Arizona, acting through the Arizona Department of Water Resources, Palo Verde Irrigation District (PVID), Imperial Irrigation District (IID), the City of Needles, Coachella Valley Water District (CVWD), Southern Nevada Water Authority, and the Colorado River Commission of Nevada on December 13, 2007, and

- a *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus* with PVID, IID, CVWD, and the City of Needles on December 13, 2007.

Exhibit G of the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* describes the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, an extraordinary conservation program that existed on January 1, 2006, which formed the basis for Metropolitan's creation of Extraordinary Conservation ICS in 2009. A copy of Exhibit G is contained in Appendix A. The *Interim Guidelines*, the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement*, and the *Delivery Agreement* require a plan for creation of ICS (ICS Plan). A *Revised Plan for the Creation of Extraordinary Conservation Intentionally Created Surplus During Calendar Year 2009* was submitted to the Bureau of Reclamation (Reclamation) on September 14, 2009 for the Secretary of the Interior's approval. Metropolitan received a letter from Reclamation on December 4, 2009 approving Metropolitan's ICS Plan for the creation of up to 100,000 acre-feet of Extraordinary Conservation ICS for 2009. A copy of the ICS Plan and Reclamation's letter is contained in Appendix B.

This *Certification Report* satisfies the requirements of the *Interim Guidelines* to submit for the Secretary's review and verification, appropriate information, to demonstrate the amount of ICS created and that the method of creation was consistent with Metropolitan's approved ICS Plan, the Forbearance agreements, and the *Delivery Agreement*.

Project Description

Under the August 18, 2004, *Forbearance and Fallowing Program Agreement* with PVID and landowner agreements for fallowing in PVID, Metropolitan pays landowners within the Palo Verde Valley to annually fallow a portion of their land, foregoing the planting and irrigation of crops. The agreements allow PVID to forbear use of water on lands that historically were and otherwise would be irrigated, increasing the amount of water available to Metropolitan.

The volume of water that becomes available to Metropolitan is governed by the October 10, 2003, *Quantification Settlement Agreement*[1] and the October 10, 2003, *Colorado River Water Delivery Agreement.*[2] Under these agreements:

- Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2[3] that is greater than 420,000 acre-feet in a calendar year, or

- Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by PVID is an additional acre-foot that becomes available to Metropolitan.

Palo Verde Valley landowners decided whether to participate in the 35-year program and those participating stop irrigating from 9 to 35 percent of their land in any year at Metropolitan's request. Upon one-year notice, Metropolitan has the option to change the percentage of land fallowed, with an increase in the percentage effective for a two-year period. The land taken out of agricultural production is maintained and rotated once every one to five years. The maximum amount of farmland taken out of production is 25,947 acres; however, fallowing in excess of 23,508 acres is limited to a total of ten years under the 35-year program. The landowner is responsible for payment of taxes, PVID water tolls, vegetation abatement, dust control and all other costs related to the fallowed lands. A history of farming is required for fields to be fallowed. Parcels to be fallowed must be at least 5 acres. Through February 2010, Metropolitan has paid $151.8 million in Program costs and another $15.9 million in Program costs will be incurred in September 2010.

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[1] The parties to the Quantification Settlement Agreement are IID, CVWD, and Metropolitan.
[2] The parties to the Colorado River Water Delivery Agreement are the United States, IID, CVWD, Metropolitan, and the San Diego County Water Authority.
[3] The Yuma Project Reservation Division holds California's Priority 2.

This activity is separate and distinct from Metropolitan's "Emergency Short-Term Fallowing Program" with PVID under which additional Palo Verde Valley lands were fallowed from April 2009 through July 2010. The Emergency Short-Term Fallowing Program was not included in the ICS Plan and $21.7 million in costs were incurred for this Program in September 2009.

Term of the Activity

The *Forbearance and Fallowing Program Agreement* with PVID terminates on July 31, 2040. Metropolitan's "Fallowing Call" in effect for the period commencing August 1, 2008 through July 31, 2010 was for 25,947 acres. Metropolitan has issued a Fallowing Call for 25,947 acres for the period commencing August 1, 2010 through July 31, 2012. An additional 13,222 acres were fallowed under the Emergency Short-Term Fallowing Program which extended through July 31, 2010 for fields fallowed on August 1, 2009.

Summary of Results for Calendar Year 2009

The total volume of Extraordinary Conservation ICS that Metropolitan created in calendar year 2009 under the *Interim Guidelines* was 55,836 acre-feet, prior to the one-time deduction of 5 percent specified in the *Guidelines* to result in additional system water in storage in Lake Mead. This volume is within the 100,000 acre-feet outlined in the Reclamation approved ICS Plan. An estimated 120,247 acre-feet of water was saved by the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program (Program that Existed on January 1, 2006) in calendar year 2009. Detailed data and calculations are described in subsequent sections of this report.

Extraordinary Conservation through a Program that Existed on January 1, 2006

By continuing to fund extraordinary conservation through a program that existed on January 1, 2006, Colorado River water was successfully conserved in calendar year 2009 that remained in Lake Mead for Extraordinary Conservation ICS credits. The section below describes the conservation of the water.

Methodology

As indicated in the PVID-Metropolitan-Reclamation Calendar Year 2009 Fallowed Land Verification Report, although it is evident that water is saved through fallowing, it is not possible to measure the exact amount because the types and acreage of crops that would have been grown on the fallowed lands absent the fallowing program are unknown. Appendix C contains a copy of the Calendar Year 2009 Fallowed Land Verification Report in which the water savings were estimated using two methods. Under the first method—the Historical Use Method, three periods of past years deemed representative of conditions in PVID were selected and irrigation water use rates during each period were calculated and used to estimate water savings from the fallowed lands for calendar year 2009. Under the second method—the Actual Use Method, irrigation water use rates on irrigated lands during calendar year 2009 were calculated and used to estimate water savings from the fallowed fields. The Actual Use Method is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley

during calendar year 2009. As such, the best estimate of the amount of water saved during calendar year 2009 by the Program that Existed on January 1, 2006 is 120,247 acre-feet. An additional 24,078 acre-feet is the best estimate of the amount of water saved during calendar year 2009 by the Emergency Short-Term Fallowing Program.

Verification Process of Fallowed Lands

Upon designation of fallowed acreage, a Metropolitan representative visited the field on the date when fallowing commenced and verified that fallowing conditions have been met. The same procedure is followed when program participants make changes in the area or location of fallowed lands.

In addition to field verification by Metropolitan, Reclamation conducted an independent verification with its own staff during the fall of 2009. Similar to past years' practice, Reclamation selected 5 percent of the acreage fallowed for inspection. On-site inspection was made of 1,958 acres of fallowed fields to observe fallowing conditions and take photographs. A report, PVID Fallowing Program Verification, Fall 2009, was prepared by Reclamation that confirms extraordinary conservation implementation, and includes field observations and relevant photographs of fallowing conditions on the acreage inspected in PVID. A copy of Reclamation's report, PVID Fallowing Program Verification, Fall 2009 is contained in Appendix D.

Documentation of Conserved Water

Two methods were used to estimate the amount of saved water for calendar year 2009.

Historical Use Method

Three historical periods were selected that were deemed representative of typical conditions in PVID when cropping practices were not influenced by outside factors such as an impending fallowing program or a return to irrigation following a fallowing program. The lengths of the three periods selected were: 12 years, 5 years, and 3 years; and three separate analyses were conducted.

The first period extended from 1988 through 2002, but excluded 1992, 1993, and 1994 because the August 1992-July 1994 PVID-Metropolitan Test Fallowing Program affected water use and the amount of cropped acreage during those three years. This adjustment left 12 years of data for the analysis. Gross diversions at the Palo Verde Diversion Dam were tabulated by month for each year in the analysis. The 12 data points for each month were averaged, and the resulting averages for each month were summed to determine the annual diversions.

Similarly, data were tabulated for measured and unmeasured return flows and for water delivered to the Mesa portion of PVID. Gross diversions were reduced by measured returns, unmeasured returns, and deliveries to the Mesa to provide an estimate of irrigation use for the Valley lands of PVID. An annual average estimated irrigation use of 400,512 acre-feet was calculated. Over the same 12-year period, the irrigated acreage on Valley lands averaged 88,053 acres. Dividing the

average annual estimated irrigation use by the average irrigated acreage results in an average annual estimate of 4.55 acre-feet of water use per irrigated acre of land. The next step is to extrapolate the irrigation use per acre estimate to the fallowed lands in calendar year 2009.

Calculation of the average monthly net irrigation use yields an approximation for consumptive use by month and results in a pattern that is representative of water use throughout a typical year. Incorporation of a representative water use pattern is important in estimating the amount of saved water because a fallowed acre in one month does not yield the same amount of saved water as that of a different month due to changes in crop water requirements and climatic conditions. Average monthly net diversions were converted to percentages of the yearly total net diversions. Applying the resulting monthly percentages to the average annual irrigation use estimate of 4.55 acre-feet per acre, results in an estimate of the monthly quantity of water consumed by each acre of cropped land in PVID. This is called the monthly irrigation use factor and represents crop consumptive use in acre-feet per acre for each month. These monthly irrigation use factors were used to provide an estimate of saved water in PVID during calendar year 2009. The number of fallowed acres during each month in calendar year 2009 was determined from a database. The monthly factors were multiplied by the number of fallowed acres during the corresponding month to estimate the corresponding amount of saved water.

This procedure was applied to the fallowed acreage for all 12 months during calendar year 2009 and resulted in an estimated 118,059 acre-feet of saved water for the Program that Existed on January 1, 2006 and 24,133 acre-feet for the Emergency Short-Term Fallowing Program. The monthly calculations to arrive at these values are found in Appendix C.

The 5-year historical use was based on PVID data for the period 1998 through 2002. The procedure used to calculate the estimated water saved from fallowing Valley lands during calendar year 2009 was the same as that applied in computing the 12-year historical use estimate. The 5-year historical use method yielded an irrigation use factor of 4.75 acre-feet/acre and 123,248 acre-feet of saved water for the Program that Existed on January 1, 2006 and 25,675 acre-feet of saved water for the Emergency Short-Term Fallowing Program during calendar year 2009.

The 3-year historical use method was based on PVID data for the period 2000 through 2002. Following the same procedure as used for the other historical use methods, computations based on the 3-year historical use resulted in an irrigation use factor of 5.03 acre-feet/acre and 130,513 acre-feet of saved water for the Program that Existed on January 1, 2006 and 26,713 acre-feet of saved water for the Emergency Short-Term Fallowing Program during calendar year 2009.

Actual Use Method

Under the actual use method, water use and acreage data from PVID records for calendar year 2009 were used to estimate the amount of saved water. The amount of water diverted into the PVID system less measured and unmeasured returns and water pumped to the Mesa resulted in the net amount of irrigation water used in the Valley. Monthly irrigation water use was divided by the average number of acres in production for each month during calendar year 2009 and

summed for the 12 months, resulting in an average annual irrigation use of 4.63 acre-feet per acre.

The percentage of net diversions by month formed the basis for developing the monthly irrigation use factors. Each monthly factor was multiplied by the number of fallowed acres for each month during calendar year 2009. The actual irrigation water use per acre was extrapolated to the fallowed acres for each month to estimate the annual total of 120,247 acre-feet of saved water for the Program that Existed on January 1, 2006 and 24,078 acre-feet of saved water for the Emergency Short-Term Fallowing Program.

Conclusion

Appendix C serves as the basis for determining the amount of Extraordinary Conservation ICS that can be created by Metropolitan in 2009. The Actual Use Method described in Appendix C is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley during calendar year 2009. As such, the best estimate of the amount of water saved during calendar year 2009 by the Program that Existed on January 1, 2006 is 120,247 acre-feet. Of that amount, Metropolitan created 55,836 acre-feet of Extraordinary Conservation ICS as shown in Table 1, prior to the one-time deduction of 5 percent specified in the *Interim Guidelines* to result in additional system water in storage in Lake Mead.

Table 1
Metropolitan Creation of Extraordinary Conservation ICS in 2009

Water Budget Item	**Amount** (acre-feet)
Priority 4	550,000
IID-Metropolitan Water Conservation Program	93,000
Coachella Canal Lining Project (Metropolitan Exchange with SDCWA)	25,759
Coachella Canal Lining Project (2003 Allocation Agreement)	4,500
All-American Canal Lining Project (Metropolitan Exchange with SDCWA)	54,429
All-American Canal Lining Project (2003 Allocation Agreement)	11,148
IID Transfer to SDCWA (Metropolitan Exchange with SDCWA)	60,000
Priority 1, 2, and 3b Use Below 420,000 Acre-feet (Amount Influenced by Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program and Emergency Short-Term Fallowing Program)	90,058
Unused Priority 3a	242,322
Miscellaneous and Indian Present Perfected Rights Use	-1
Recovery of Water Stored in Central Arizona (Intentionally Created Unused Arizona Apportionment)	27,504
Lower Colorado Water Supply Project	2,349
Total Supply Available for Consumptive Use	1,161,068
Actual Metropolitan Consumptive Use	-1,105,232
Creation of Extraordinary Conservation ICS	55,836

The amount of Extraordinary Conservation ICS created in 2009 is less than the annual amount of Extraordinary Conservation ICS that can be created by Metropolitan under the December 13, 2007, *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*. The amount of Extraordinary Conservation ICS created in 2009, when added to the amount of Extraordinary Conservation ICS available to Metropolitan as of December 31, 2008, is less than the total amount of Extraordinary Conservation ICS which may be accumulated by Metropolitan under the December 13, 2007, *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*.

As limited by Exhibit G of the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement,* Metropolitan did not consumptively use the 55,836 acre-feet of Extraordinary Conservation ICS created through the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program. Absent the creation of Extraordinary Conservation ICS, the 55,836 acre-feet would have been beneficially used by Metropolitan. The amount of Extraordinary Conservation ICS that Metropolitan created in 2009 was limited to the amount of Colorado River water that, when added to its consumptive use, did not result in an inadvertent overrun pursuant to the October 10, 2003 *Inadvertent Overrun and Payback Policy* as shown in Table 1. The total amount of Extraordinary Conservation ICS created by the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program was less than the amount of water that could have been delivered for beneficial use from the Colorado River Aqueduct. Thus, Metropolitan has:

- satisfied all of the conditions to create,

- has demonstrated the creation of 55,836 acre-feet of Extraordinary Conservation ICS in 2009, and

- has demonstrated that the method of creation is consistent with Metropolitan's approved ICS Plan, Forbearance agreements, and the *Delivery Agreement*.

Appendix A

Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement
Exhibit G

Exhibit G

Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program

Type: "2.1 D. Extraordinary conservation programs that existed on January 1, 2006."

Under the August 18, 2004 Forbearance and Fallowing Program Agreement with Palo Verde Irrigation District (PVID) and landowner agreements for fallowing in PVID, The Metropolitan Water District of Southern California (Metropolitan) pays landowners within the Palo Verde Valley to annually fallow a portion of their land, foregoing the planting and irrigation of crops, allowing PVID to forbear use of water, increasing the amount of water available to Metropolitan. The volume of water that becomes available to Metropolitan is governed by the October 10, 2003 Quantification Settlement Agreement[1] and the October 10, 2003 Colorado River Water Delivery Agreement[2]. Under these agreements:

- Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is greater than 420,000 acre-feet in a calendar year, or

- Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by PVID is an additional acre-foot that becomes available to Metropolitan.

Palo Verde Valley landowners decided whether to participate in the 35-year program and those participating stop irrigating from 9 to 35 percent of their land in any year at Metropolitan's request. Upon one-year notice, Metropolitan has the option to change the percentage of land fallowed, with an increase in the percentage effective for a two-year period. The land taken out of agricultural production is maintained and rotated once every one to five years. The maximum amount of farmland taken out of production in any 10 years is 25,947 acres. No more than 23,508 acres is to be fallowed in any 25 years. The landowner is responsible for payment of taxes, PVID water tolls, vegetation abatement, dust control and all other costs related to the fallowed lands. A history of farming is required for fields to be fallowed. Parcels to be fallowed must be at least 5 acres.

Water saved could range from about 29,000 acre-feet per year to about 118,000 acre-feet per year depending on Metropolitan's option on the number of acres fallowed, assuming 4.54 acre-feet is saved per acre fallowed (the estimated average annual Palo Verde Valley irrigation use from 1988-2002 excluding the years of 1992-94 in which fallowing occurred). Through October 2007, Metropolitan has paid $112.6 million in program costs. Absent the creation of

[1] The parties to the Quantification Settlement Agreement are Imperial Irrigation District (IID), Coachella Valley Water District (CVWD), and Metropolitan.
[2] The parties to the Colorado River Water Delivery Agreement are the United States, IID, CVWD, Metropolitan, and San Diego County Water Authority.

Extraordinary Conservation Intentionally Created Surplus (EC ICS), such water would have otherwise been beneficially used.

Verification: Upon designation of fallowed acreage, a Metropolitan representative visits the field on the date when fallowing is to commence and verifies that fallowing conditions had been met. The same procedure is followed when program participants make changes in the area and/or location of fallowed lands.

In addition to field verification by Metropolitan, the Bureau of Reclamation (Reclamation) conducts an independent verification with its own staff, selecting 5 percent of the fallowed land for inspection. An on-site inspection is made of all selected fields to observe fallowing conditions and take photographs. A report is then prepared that contains field observations and relevant photographs of fallowing conditions in PVID.

Total Amount of ICS Credited Annually: The amount of EC ICS that can be created during any Year is limited to the amount of water resulting from the program that Metropolitan does not consumptively use, for example, up to 118,000 acre-feet assuming 4.54 acre-feet is saved per acre fallowed. Annual consumptive use by PVID varies from Year to Year due to a number of factors including weather (temperature and precipitation) and agricultural markets. As consumptive use varies from Year-to-Year, the volume of water saved from not irrigating an acre of land in the Palo Verde Valley also varies from Year-to-Year. Following each Year, PVID, Metropolitan, and the Bureau of Reclamation examine consumptive use on those lands within the Palo Verde Valley that were irrigated and estimate the volume of water saved due to the fallowing of lands pursuant to the program. The agencies issue a joint report documenting the volume of water saved during the Year as a direct result of the program. This annual report would serve as the basis for determining the amount of Extraordinary Conservation ICS that can be created by Metropolitan. The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS dated December 13, 2007:

Limitations on Creation of EC ICS

a) The amount of EC ICS that Metropolitan may create in any Year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that could have been delivered for beneficial use from the Colorado River Aqueduct.

In Witness of this Exhibit G to the Forbearance Agreement executed contemporaneously herewith, the Parties affix their official signatures below, acknowledging approval of this document on the 13th day of December, 2007.

Approved as to form:

By: _____
W. Patrick Schiffer
Chief Counsel

THE STATE OF ARIZONA acting through the ARIZONA DEPARTMENT OF WATER RESOURCES

By: _____
Herbert Guenther
Director

Attest:

By: _____
Edward W. Smith
General Manager

PALO VERDE IRRIGATION DISTRICT

By: _____
Charles VanDyke
Chair

Attest and Approved:

By: _____
John Penn Carter
Legal Counsel

IMPERIAL IRRIGATION DISTRICT

By: _____
Stella Altamirano-Mendoza
President

Approved as to form:

By: _____
Robert Hargreaves
City Attorney

THE CITY OF NEEDLES

By: _____
Jeff Williams
Mayor

Approved as to form:

By: _____
Steven B. Abbott
Legal Counsel

COACHELLA VALLEY WATER DISTRICT

By: _____
Steven B. Robbins
General Manager/Chief Engineer

Approved as to form:

By: _____
Karen L. Tachiki
General Counsel

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: _____
Jeffrey Kightlinger
General Manager

Approved as to form:

By: _____
John J. Entsminger
Deputy General Counsel

SOUTHERN NEVADA WATER AUTHORITY

By: _____
Patricia Mulroy
General Manager

Approved as to form:

By: _____
Jennifer T. Crandell
Deputy Attorney General

COLORADO RIVER COMMISSION OF NEVADA

By: _____
George M. Caan
Executive Director

Appendix B

Revised ICS Plan of Creation Submitted to the U.S. Bureau of Reclamation with Letter of Acceptance

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office
September 14, 2009

Mr. Steve Hvinden
Area Manager
Boulder Canyon Operations Office
U.S. Bureau of Reclamation
P.O. Box 61470
Boulder City, NV 89006-1470

Dear Mr. Hvinden:

Metropolitan's Revised Plan for the Creation of
Extraordinary Conservation Intentionally Created Surplus During Calendar Year 2009

In September 2008, The Metropolitan Water District Southern California (Metropolitan) submitted a plan for the creation of Extraordinary Conservation Intentionally Created Surplus (ECICS) for 2009. Metropolitan later chose to not seek approval of the plan, as we needed all of our water supply to meet our service area demands due to prolonged drought conditions and regulatory limitations. Since that time, water supply conditions have improved somewhat, and Metropolitan has implemented additional extraordinary conservation activities, including the funding of a new one-year emergency fallowing program with Palo Verde Irrigation District. With this being the case, rather than divert all of our available water supplies, Metropolitan plans to create ECICS for use in future years. As such, we have amended our previously submitted ECICS plan and it is enclosed with this letter for the Secretary of the Interior's approval. We are seeking approval to create 100,000 acre-feet of ECICS for 2009. The plan is based solely on the funding of our forbearance and fallowing program with the Palo Verde Irrigation District, an extraordinary water conservation activity, which was augmented beginning in the spring of 2009. Following approval of our plan, we would provide the Bureau of Reclamation with a revised monthly schedule of diversions for the remainder of 2009, and would update that schedule as needed for the remainder of the year.

Metropolitan looks forward to the Secretary of the Interior's review and approval of the Revised Plan in consultation with the Lower Division States. Should you have any questions regarding our Revised Plan, please contact Bill Hasencamp, at (213) 217-6520.

Very truly yours,

Roger K. Patterson
Assistant General Manager

JPM/WJH:tt

Enclosure

The Metropolitan Water District of Southern California

Revised Plan for the Creation of
Extraordinary Conservation Intentionally Created Surplus
During Calendar Year 2009

Introduction

This revised plan for the creation of Extraordinary Conservation Intentionally Created Surplus (ICS) has been prepared pursuant to the specifications outlined in Section 3.B.1 on page 40 of the *Record of Decision: Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* signed by the Secretary of the Interior (Secretary) on December 13, 2007.

One activity, the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, is described in this plan. This activity is incorporated as an exhibit to the December 13, 2007, *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* among the Arizona Department of Water Resources, the Palo Verde Irrigation District, the Imperial Irrigation District, the City of Needles, the Coachella Valley Water District, Metropolitan, the Southern Nevada Water Authority, and the Colorado River Commission of Nevada. The projected yield of this activity is estimated to be approximately 133,000 acre-feet in calendar year 2009.

The total yield of this activity is less than the annual amount of Extraordinary Conservation ICS that can be created by Metropolitan under the December 13, 2007, *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*. Absent the creation of Extraordinary Conservation ICS, this water would otherwise be beneficially used by Metropolitan through diversion into the Colorado River Aqueduct. The amount of Extraordinary Conservation ICS that Metropolitan would create is limited to the amount of Colorado River water that, if added to its consumptive use, will not result in an inadvertent overrun pursuant to Reclamation's October 10, 2003, Inadvertent Overrun and Payback Policy. The total yield of this activity when added to the projected amount of Extraordinary Conservation ICS available to Metropolitan as of August 13, 2009, would be less than the total amount of Extraordinary Conservation ICS which may be accumulated by Metropolitan under the December 13, 2007, *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*.

Activity: Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program

Project Description

Under the August 18, 2004, Forbearance and Fallowing Program Agreement with the Palo Verde Irrigation District (PVID) and landowner agreements for fallowing in PVID, Metropolitan pays landowners within the Palo Verde Valley to annually fallow a portion of their land, foregoing the planting and irrigation of crops, allowing PVID to forbear use of water on lands that historically were and otherwise would be irrigated, increasing the amount of water available to Metropolitan.

The volume of water that becomes available to Metropolitan is governed by the October 10, 2003, *Quantification Settlement Agreement*[1] and the October 10, 2003, *Colorado River Water Delivery Agreement.*[2] Under these agreements:

- Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2[3] that is greater than 420,000 acre-feet in a calendar year, or
- Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by PVID is an additional acre-foot that becomes available to Metropolitan.

Palo Verde Valley landowners decided whether to participate in the 35-year program and those participating stop irrigating from 9 to 35 percent of their land in any year at Metropolitan's request. Upon one-year notice, Metropolitan has the option to change the percentage of land fallowed, with an increase in the percentage effective for a two-year period. The land taken out of agricultural production is maintained and rotated once every one to five years. The maximum amount of farmland taken out of production is 25,947 acres; however, fallowing in excess of 23,508 acres is limited to a total of ten years under the 35-year program. The landowner is responsible for payment of taxes, PVID water tolls, vegetation abatement, dust control and all other costs related to the fallowed lands. A history of farming is required for fields to be fallowed. Parcels to be fallowed must be at least 5 acres. Through July 2009, Metropolitan has paid $136 million in Program costs and another $15 million in Program costs will be incurred in September 2009.

---

[1] The parties to the Quantification Settlement Agreement are Imperial Irrigation District, Coachella Valley Water District, and Metropolitan.

[2] The parties to the Colorado River Water Delivery Agreement are the United States, Imperial Irrigation District, Coachella Valley Water District, Metropolitan, and the San Diego County Water Authority.

[3] The Yuma Project Reservation Division holds California's Priority 2.

Revised Plan for the Creation of Extraordinary Conservation Intentionally Created Surplus
Calendar Year 2009

This activity is separate and distinct from Metropolitan's "Emergency Short-Term Fallowing Program" with PVID under which additional Palo Verde Valley lands are being fallowed from April 2009 through July 2010. The Emergency Short-Term Fallowing Program is not included in this ICS Creation Plan, and $21 million in costs will be incurred for this Program in September 2009.

Term of the Activity

The Forbearance and Fallowing Program Agreement with PVID terminates on July 31, 2040.

Metropolitan's current "Fallowing Call" for 25,947 acres is in effect through July 31, 2010. Metropolitan has issued a Fallowing Call for 25,947 acres for the period commencing August 1, 2010 through July 31, 2012.

Estimate of the Amount of Water that Will be Conserved

The volume of projected savings during calendar year 2009 is 132,539 acre-feet based on the amount of water used for irrigation in the Palo Verde Valley in 2008. The monthly tabulation of this projected savings is as follows:

Month	Monthly Consumptive Use Fraction†	Acres Fallowed	Reduced Consumptive Use (acre-feet)*
January	0.00359141	25,947	476
February	0.05341147	25,947	7,079
March	0.09240248	25,947	12,247
April	0.10933428	25,947	14,491
May	0.11802433	25,947	15,643
June	0.14136546	25,947	18,736
July	0.14196060	25,947	18,815
August	0.15304101	25,947	20,284
September	0.10307295	25,947	13,661
October	0.06213304	25,947	8,235
November	0.02183917	25,947	2,895
December	-0.00017620	25,947	-23
Total	1.00000000	----	132,539

†Monthly fraction of annual use of 5.108 acre-feet per acre.
*Volumes rounded to the nearest acre-foot.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon designation of fallowed acreage, a Metropolitan representative visits the field on the date when fallowing is to commence and verifies that fallowing conditions have been met. The same procedure is followed when program participants make changes in the area or location of fallowed lands.

In addition to field verification by Metropolitan, it is proposed that the Bureau of Reclamation (Reclamation) conduct an independent verification with its own staff during the fall of 2009. Similar to past years' practice, it is proposed that Reclamation select 5 percent of the 25,947 acres fallowed for inspection. On-site inspection would be made of all selected fields to observe fallowing conditions and take photographs. A report would be prepared that confirms extraordinary conservation implementation, and includes field observations and relevant photographs of fallowing conditions in PVID.

A calendar year 2009 Fallowed Land Verification Report will be prepared jointly by PVID, Metropolitan, and Reclamation. The Report will determine the actual amount of water saved in 2009 by the Program.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to the provisions of the California Environmental Quality Act (CEQA), PVID certified the "Final Environmental Impact Report for the Proposed Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program" and adopted its Findings of Fact on September 18, 2002. Because no significant impacts would result with Program implementation, as determined by PVID, no statement of overriding considerations and no mitigation monitoring or reporting program were required. Metropolitan certified that it reviewed and considered the information in the certified 2002 Final EIR and adopted PVID's findings on October 22, 2002.

United States Department of the Interior

BUREAU OF RECLAMATION
Lower Colorado Regional Office
P.O. Box 61470
Boulder City, NV 89006-1470

IN REPLY REFER TO:
LC-4226
WTR-4.03

DEC 0 4 2009

CERTIFIED - RETURN RECEIPT REQUESTED

Mr. Roger K. Patterson
Assistant General Manager
The Metropolitan Water District
of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Subject: Approval of The Metropolitan Water District of Southern California (MWD) Plan for the Creation of Extraordinary Conservation Intentionally Created Surplus (ICS) for Calendar Year 2009

Dear Mr. Patterson:

The Bureau of Reclamation has received MWD's ICS plan in a letter dated September 14, 2009. Based upon Reclamation's review of MWD's ICS plan and completion of the Basin States consultation process, Reclamation hereby approves MWD's plan for the creation of up to 100,000 acre-feet of extraordinary conservation ICS for 2009. The factors Reclamation considered in reviewing MWD's ICS plan are discussed below.

The Secretary of the Interior issued a Record of Decision (ROD) on December 13, 2007, for Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Interim Guidelines). Among other things, the Interim Guidelines establish criteria for the development and delivery of ICS. Prior to creating ICS, the Interim Guidelines require a contract holder to enter into a Delivery Agreement with the Secretary and a Forbearance Agreement with Arizona, Nevada, and certain California contract holders. On December 13, 2007, MWD entered into the necessary delivery and forbearance agreements.

Also, on December 13, 2007, the Palo Verde Irrigation District, MWD, Coachella Valley Water District, The Imperial Irrigation District, and the City of Needles entered into the California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus (California ICS Agreement). The California ICS Agreement discusses the amount of ICS that MWD can create in a given year and in total. Although Reclamation is not a party to the California ICS Agreement, Reclamation verified that the ICS plan submitted by MWD does not exceed the limits set forth in the California ICS Agreement.

Reclamation's review of MWD's ICS Plan confirmed that it contains the following information required by Section 3.B.2 of the Interim Guidelines:

a. Project description, including what extraordinary measures will be taken to conserve or import water.
b. Term of activity.
c. Estimate of the amount of water that will be conserved or imported.
d. Proposed methodology for verification of the amount of water conserved or imported.
e. Documentation regarding any state or Federal permits or other regulatory approvals that have already been obtained by the contractor or that need to be obtained prior to creation of ICS.

The Interim Guidelines provide for the submittal of a certification report by MWD to Reclamation, in the year following creation of the ICS, to demonstrate the amount of ICS created and that the method of creation was consistent with the approved ICS plan. Any technical issues associated with the actual creation of the ICS will be addressed during the verification process described in Section 3.D.2 of the Interim Guidelines.

If you have questions, please contact Mr. Paul Matuska at 702-293-8164.

Sincerely,

Lorri Gray-Lee

Lorri Gray-Lee
Regional Director

cc: Mr. Gerald Zimmerman
Executive Director
Colorado River Board of California
770 Fairmont Avenue, Suite 100
Glendale, CA 91203-1035

Mr. Herb R. Guenther
Director
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012-2105

Mr. George M. Caan
Executive Director
Colorado River Commission of Nevada
555 East Washington Avenue, Suite 3100
Las Vegas, NV 89101-1065

Mr. William Hasencamp
Manager, Colorado River Resources
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Continued on next page.

cc: Continued from previous page.

Mr. Dennis Strong
Director
Utah Division of Water Resources
P.O. Box 146201
Salt Lake City, UT 84114-6201

Mr. John D'Antonio
State Engineer
Office of the State Engineer
P.O. Box 25102
Santa Fe, NM 87504-5102

Ms. Jennifer Gimbel
Director
Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203-2239

Mr. Donald Ostler
Executive Director
Upper Colorado River Commission
355 South 400 East Street
Salt Lake City, UT 84111-2904

Mr. Patrick T. Tyrell
State Engineer
State of Wyoming
Herschler Building, 4th Floor East
Cheyenne, WY 82002-0001

Appendix C

CALENDAR YEAR 2009
FALLOWED LAND VERIFICATION REPORT

PVID/MWD Forbearance and Fallowing Program

Palo Verde Irrigation District,
The Metropolitan Water District of Southern California, and
U.S. Bureau of Reclamation

Final Report
May 7, 2010

CALENDAR YEAR 2009
FALLOWED LAND VERIFICATION REPORT

PVID/MWD Forbearance and Fallowing Program

Palo Verde Irrigation District,
The Metropolitan Water District of Southern California, and
U.S. Bureau of Reclamation

Final Report
May 7, 2010

CALENDAR YEAR 2009
FALLOWED LAND VERIFICATION REPORT

Executive Summary

On January 1, 2005, the Palo Verde Irrigation District (PVID) and The Metropolitan Water District of Southern California (MWD) initiated a 35-year "Forbearance and Fallowing Program" (Long Term Program) with landowners within PVID. A total of 25,947 acres were enrolled and fallowing commenced on January 1, 2005 and would extend through July 31, 2040. The water that would have been used to grow crops on the fallowed land is made available to MWD.

Due to the drought conditions during calendar year (CY) 2009, MWD and PVID initiated in March a one-year "Emergency Fallowing Program" (Emergency Program) with landowners within PVID. A total of 13,222 acres were enrolled in the Emergency Program in addition to the enrolled acreage under the Long Term Program. Fallowing commenced on April 15, 2009 and extends through July 31, 2010 for fields fallowed on August 1, 2009. The water that would have been used to grow crops on land fallowed under the Emergency Program is made available to MWD.

Although it is evident that water is saved through fallowing, it is not possible to measure the exact amount because the types and acreage of crops that would have been grown on the fallowed lands absent the fallowing program are unknown. Water savings were estimated using two methods. Under the first method, three periods of past years deemed representative of conditions in PVID were selected and irrigation water use rates during each period were calculated and used to estimate water savings from the fallowed lands for CY 2009. Under the second method, irrigation water use rates on irrigated lands during CY 2009 were calculated and used to estimate water savings from the fallowed fields. The resulting estimates of saved water for each method are shown in Table E-1.

Table E-1: Estimates of Saved Water by Method – CY 2009

Method	Long Term Program (acre-feet)	Emergency Program (acre-feet)	Total of Two Programs (acre-feet)
12-Year Average (1988-2002)*	118,059	24,133	142,192
5-Year Average (1998-2002)	123,248	25,675	148,923
3-Year Average (2000-2002)	130,513	26,713	157,226
Actual Use Method CY 2009	120,247	24,078	144,325

*1992, 1993 and 1994 data were not included in the analysis due to the 1992-94 PVID-MWD Test Fallowing Program.

Estimates of water saved by the two fallowing programs in CY 2009 ranged from 142,192 acre-feet to 157,226 acre-feet.

The Actual Use Method is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley during CY 2009. As such, the best estimate of the amount of water saved during CY 2009 by the Long Term Program is 120,247 acre-feet and by the Emergency Program is 24,078 acre-feet, for a combined total of 144,325 acre-feet.

CALENDAR YEAR 2009
FALLOWED LAND VERIFICATION REPORT
Table of Contents

List of Tables

List of Attachments

CALENDAR YEAR 2009
FALLOWED LAND VERIFICATION REPORT

1.0 Program Description

On January 1, 2005, the Palo Verde Irrigation District (PVID) and The Metropolitan Water District of Southern California (MWD) initiated a 35-year "Forbearance and Fallowing Program" (Long Term Program) with landowners within PVID that would extend through July 31, 2040. Participation in the Program was voluntary but required participating landowners sign a 35-year participation contract. A total of 25,947 acres were enrolled in the Long Term Program. MWD compensated participating landowners with a one-time signup payment, and with annual payments for fallowing land within PVID that is served with Priority 1 Colorado River water delivered by PVID. In return for the payments, the water that would have been used to grow crops on the fallowed lands is made available to MWD.

Due to the drought conditions prevailing in the State of California during 2009, MWD and PVID initiated in March a one-year "Emergency Fallowing Program" (Emergency Program) with landowners within PVID. A total of 13,222 acres were enrolled in the Emergency Program in addition to the enrolled acreage under the Long Term Program. Fallowing commenced on April 15, 2009 and extends through July 31, 2010 for fields fallowed on August 1, 2009. MWD compensated participating landowners/lessees with a one-time payment, and in return for the payment, the water that would have been used to grow crops on the fallowed lands is made available to MWD.

2.0 Palo Verde Irrigation District

The Palo Verde Irrigation District Act was passed by the California Legislature in 1923. PVID was then organized and began functioning in 1925. Governance is provided by a 7-member board of trustees. Administration is provided through a General Manager and a staff of currently 66 not counting Board members. Currently, PVID covers about 189 square miles in Riverside and Imperial counties of California. The principal city in PVID's service area is Blythe that, with its urban fringe, has a population of about 21,800 people. Currently, PVID contains approximately 131,285 acres with 104,485 acres located in the Palo Verde Valley (Valley) portion of PVID and 26,800 acres located on the adjacent Palo Verde Mesa (Mesa). PVID diverts water from the Colorado River, which is regulated by the U.S. Bureau of Reclamation (Reclamation).

The Valley with its long, hot growing season is ideal for agriculture. Crops include vegetables, forage, grains and fibers. Mild winters, with a minimum of frost, permit the growing and harvesting of crops throughout the year.

Climatic data for temperature, precipitation and evapotranspiration (ETo) in the Valley for the period 1988-2009 are shown in Table 1. The highest maximum annual average temperature was 93.0° Fahrenheit (F) in 2003; and the lowest minimum annual average temperature was 52.8° F in 2009. Annual rainfall ranged between a low of 0.72 inches in

2000 to a high of 6.49 inches in 1998. Annual ETo varied between a low of 65.13 inches in 2005 to a high of 79.32 inches in 1994.

3.0 The Metropolitan Water District of Southern California

MWD was incorporated in 1928 and currently has 26 member agencies. Governance is provided by a 37-member board of directors with each member agency entitled to be represented by one director with representation by additional directors being based on assessed valuation. Administration is provided through a General Manager and a staff of about 1,900 employees.

MWD provides supplemental water supplies to its service area from two sources: 1) MWD's Colorado River Aqueduct; and 2) the Department of Water Resources' State Water Project/California Aqueduct. Water is provided to almost 19 million people located in a service area of approximately 5,200 square miles in portions of Los Angeles, Orange, San Diego, Riverside, San Bernardino, and Ventura counties of California. MWD has increased its ability to supply water, particularly in dry years, through the implementation of storage and transfer programs.

On October 10, 2003, the United States, Imperial Irrigation District, Coachella Valley Water District, MWD, and San Diego County Water Authority executed the "Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement for purposes of Section 5(B) of the Interim Surplus Guidelines." Under that agreement, MWD agreed that if consumptive use of Colorado River water in accordance with Priorities 1 and 2 of the contracts for delivery of Colorado River water in California, together with the use of Colorado River water on PVID Mesa lands in accordance with Priority 3(b), exceeds 420,000 acre-feet in a calendar year, the Secretary of the Interior (Secretary) will reduce the amount of water otherwise available to MWD, by the amount that such use exceeds 420,000 acre-feet. To the extent that the amount of water used in accordance with Priorities 1, 2, and 3(b) is less than 420,000 acre-feet in a year, the Secretary will deliver to MWD the difference. For the purposes of this agreement, consumptive use means diversions from the Colorado River less such measured and unmeasured return flow thereto as is available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation.

4.0 Program Implementation

Under the Long Term Program, MWD issues a yearly fallowing call to participating landowners a year in advance of the fallowing start date of August 1. The fallowing call is for a two-year period and once issued, may not be rescinded or diminished. The fallowing call for the two-year period August 1, 2008 through July 31, 2010 was for 100% of the landowners' maximum fallowing commitments. As required by the call, 25,947 acres were fallowed during the period January through December 2009 as shown in Table 2. Attachment 1 shows the fallowed fields on January 16, 2009 and Attachment 2 shows the fallowed fields on August 1, 2009.

Table 1: Climatic Data, Palo Verde Valley, California – 1988 - 2009

Year	Maximum Annual Average Temperature[1] (°F)	Minimum Annual Average Temperature[1] (°F)	Annual Rainfall[2] (inches)	ETo Palo Verde[3] (inches)	ETo Blythe NE[4] (inches)	ETo Ripley[5] (inches)
1988	88.50	57.10	3.53	72.30		
1989	90.10	54.90	1.26	68.99		
1990	88.20	56.30	1.66	73.04		
1991	86.50	55.80	4.32	68.75		
1992	87.50	58.60	6.21	70.47		
1993	88.70	57.20	5.05	77.15		
1994	88.50	57.40	3.40	79.32		
1995	89.20	58.30	2.53	73.55		
1996	90.10	59.60	2.34	73.53		
1997	88.40	58.30	5.79	68.20	69.03	
1998	86.50	56.80	6.49	68.42	66.71	
1999	88.50	56.30	3.20	70.58	72.52	69.67
2000	89.40	58.60	0.72	68.81	69.13	67.22
2001	89.50	56.10	4.78	69.11	67.50	68.81
2002	89.20	57.20	0.76	71.09	72.41	69.34
2003	93.03	60.32	2.68	67.26	68.46	67.15
2004	91.90	59.55	2.57	66.78	66.64	67.69
2005	87.11	55.77	6.39	65.66	67.11	65.13
2006	90.50	57.90	1.57	69.60	75.50	67.90
2007	88.57	59.89	1.93	69.85	73.38	68.27
2008	89.65	57.48	2.41	71.47	73.69	68.18
2009[6]	85.39	52.83	1.31	68.05	70.77	71.42
Average	88.86	57.39	3.22	70.54	70.22	68.25

[1] National Oceanic and Atmospheric Administration (NOAA) data from Blythe Station except for October 1997; August, September, and November 1999; January and December 2000; December 2001; and October 2006 when NOAA values from Blythe Airport Station were used because of missing data.

[2] NOAA data from Blythe Station.

[3] Data from Palo Verde CIMIS #72 for 1988-2000; and from Palo Verde II CIMIS#175 for 2001-2008. Values for 2003-2006 have been revised according to the most recent CIMIS data for this station.

[4] Data from Blythe Northeast CIMIS #135. Values for 2003-2006 have been revised according to the most recent CIMIS data for this station.

[5] Data from Ripley CIMIS #151. Values for 2003-2006 have been revised according to the most recent CIMIS data for this station.

[6] Data for maximum and minimum temperatures, and rainfall are averages of the three CIMIS stations at Palo Verde, Blythe, and Ripley and will be replaced by NOAA data as soon as NOAA data for 2009 becomes available.

Fallowing under the Emergency Program commenced on April 15 with 288 acres. Additional acres were put into fallowing in May, June, July, and August 1 for a total of 13,222 acres as shown in Table 2. Each fallowed field will be fallowed for a continuous period of 12 months from the date it was put into fallowing with all fallowing ending on July 31, 2010. Attachment 3 shows the fallowed fields on August 1, 2009.

All fallowed acres designated by the participants were qualified by PVID for fallowing eligibility, i.e. entitled to receive Priority 1 water and had been irrigated at least one year out of the past five years. Following the designation of fallowed acreage, a MWD representative visited the field on the date when fallowing was to commence and verified that fallowing conditions had been met and took photographs as needed to document the fallow status of fields. The same procedure was followed when participants would make changes in the area and/or location of fallowed lands under the Long Term Program at various points in time during the year thus ensuring that only qualified land is being fallowed.

Table 2: Fallowed Valley Acreage – CY 2009

		Emergency Program			
Month	Long Term Program (acres)	Fallowed Acreage Added	Monthly Average Acreage Added	Cumulative Acreage Added	Total of Two Programs (acres)
Jan	25,947				25,947
Feb	25,947				25,947
Mar	25,947				25,947
Apr*	25,947	288	144	144	26,091
May	25,947	1,958	979	1,267	27,214
Jun	25,947	625	312.5	2,558.5	28,505.5
Jul	25,947	2,505	1,252.5	4,123.5	30,070.5
Aug**	25,947	7,846		13,222	39,169
Sep	25,947			13,222	39,169
Oct	25,947			13,222	39,169
Nov	25,947			13,222	39,169
Dec	25,947			13,222	39,169

* 288 acres were fallowed on April 15 under the Emergency Program; however, for purposes of water savings calculation, 144 acres or half of the added acreage were assumed fallowed for the full month of April. Similarly for May, June, and July the added acreage for each month was averaged over the month.
** Fallowing of the remaining added acreage under the Emergency Program commenced on August 1.

5.0 Saved Water

The purpose of the fallowing program is to save water that would have been otherwise used for agricultural production in PVID. In order to estimate the amount of water saved, it is necessary to estimate the amount of water that would have been consumed on the

fallowed lands had crops been produced. Although it is evident that water is saved, it is not possible to estimate the exact amount because the types and acreage of crops that would have been grown on the fallowed lands absent the fallowing program are unknown. Therefore, it is necessary to develop acceptable procedures to estimate the amount of saved water to the degree of accuracy allowed by available data.

Two methods were used to estimate the amount of saved water for calendar year CY 2009. Under the first method (Historical Use Method), three periods of past years deemed representative of conditions in PVID were selected and irrigation water use rates during each period were calculated and used to estimate water savings from the fallowed lands during CY 2009. Under the second method (Actual Use Method), irrigation water use rates on irrigated lands during CY 2009 were calculated and used to estimate water savings from the fallowed fields during CY 2009.

6.0 Historical Use Method

Three historical periods were selected that were deemed representative of typical conditions in PVID when cropping practices were not influenced by outside factors such as an impending fallowing program or a return to irrigation following a fallowing program. Three periods were selected: 12 years, 5 years, and 3 years; and three separate analyses were conducted.

6.1 12-Year Average: 1988 – 2002 (Excluding 1992-94)

The first period extended from 1988 through 2002, but excluded 1992, 1993, and 1994 because the August 1992-July 1994 PVID-MWD Test Fallowing Program affected water use and the amount of cropped acreage during those three years. This adjustment left 12 years of data for the analysis. Gross diversions at the Palo Verde Diversion Dam were tabulated by month for each year in the analysis. The 12 data points for each month were averaged, and the resulting averages for each month were summed to determine the annual diversions.

Similarly, data were tabulated for measured and unmeasured return flows and for water delivered to the Mesa portion of PVID. Gross diversions were reduced by measured returns, unmeasured returns, and deliveries to the Mesa to provide an estimate of irrigation use for the Valley lands of PVID. Diversions and cropped acreage for lands upstream of the Palo Verde Diversion Dam were not included in the analysis. Table 3 shows the tabulation for each month, which when summed, results in an annual average estimated irrigation use of 400,512 acre-feet.

Over the same 12-year period of data, the irrigated acreage on Valley lands averaged 88,053 acres (Table 4). Dividing the average annual estimated irrigation use of 400,512 acre-feet by 88,053 acres results in an average annual estimate of 4.55 acre-feet of water use per irrigated acre of land. The next step is to extrapolate the irrigation use per acre estimate to the fallowed lands in CY 2009.

Table 3: Average Monthly and Annual Gross Diversions, Measured and Unmeasured Return Flows, Deliveries to Mesa, and Irrigation Use, PVID Valley Lands – 1988 – 2002[1]

Month	Gross Diversions	Measured & Unmeasured Return Flows	Deliveries to Mesa	Estimated Irrigation Use
	(acre-feet)			
Jan	31,460	30,191	210	1,059
Feb	52,419	32,927	403	19,089
Mar	71,357	38,837	639	31,881
Apr	87,610	41,522	948	45,140
May	102,507	46,644	1,169	54,694
Jun	109,957	48,197	1,273	60,487
Jul	116,762	50,094	1,371	65,297
Aug	108,093	52,536	1,385	54,172
Sep	79,391	48,362	987	30,042
Oct	65,820	45,938	787	19,095
Nov	49,483	40,725	528	8,230
Dec	51,782	39,908	548	11,326
Annual	926,641	515,881	10,248	400,512

[1] 1992, 1993 and 1994 data were not included due to the 1992 – 94 PVID-MWD Test Fallowing Program. This reduced the data series to 12 years.
Source of Gross Diversions, Measured and Unmeasured Return Flows data is Reclamation Records and source of Deliveries to Mesa is PVID Records.

Since the consumptive use of crops is difficult to measure, especially on a district-wide basis, irrigation use is considered to be a close approximation. Calculation of the average monthly net irrigation use yields an approximation for consumptive use by month and results in a pattern that is representative of water use throughout a typical year.

Table 4: Farmed Acreage in Valley Portion of PVID – 1988 - 1991 and 1995 - 2002[1]

Year	Cropped Land (acres)	Year	Cropped Land (acres)	Year	Cropped Land (acres)
1988	87,086	1995	88,243	1999	88,910
1989	86,701	1996	88,721	2000	88,709
1990	86,561	1997	88,645	2001	88,901
1991	86,601	1998	88,921	2002	88,633
				Average	88,053

[1] 1992, 1993, and 1994 farmed acreages are not included due to the 1992-94 PVID-MWD Test Fallowing Program; 2003 farmed acreage is not included due to the Coachella Valley Water District Fallowing Program; and 2004 - 2008 farmed acreages are not included due to the current PVID-MWD Fallowing Program.
Source: PVID records.

Incorporation of a representative water use pattern is important in estimating the amount of saved water because a fallowed acre in one month does not yield the same amount of saved water as that of a different month due to changes in crop water requirements and climatic conditions. Average monthly net diversions were converted to percentages of the yearly total net diversions and are shown in Table 5.

Applying the resulting monthly percentages to the average annual irrigation use estimate of 4.55 acre-feet per acre, results in an estimate of the monthly quantity of water consumed by each acre of cropped land in PVID. This is called the monthly irrigation use factor and represents crop consumptive use in acre-feet per acre for each month. These monthly irrigation use factors were used to provide a reasonable estimate of saved water in PVID during CY 2009.

Landowners provided PVID/MWD with the location of the fields that they were going to fallow and the date when fallowing would begin. PVID/MWD recorded the information from each landowner into a database, located the fallowed land on maps, and inspected the land to verify that the land was fallowed on the date indicated by the landowner. Through this procedure, it was possible to determine and verify the number of fallowed acres.

Table 5: Valley Portion of PVID Average Net Diversions, Percentage Distribution and Irrigation Use Factors by Month – 1988-2002[1]

Month	Average Monthly Net Diversions (acre-feet)	Percent of Yearly Total (%)	Monthly Irrigation Use Factor (acre-feet/acre)
Jan	1,059	0.264412	0.012031
Feb	19,089	4.766149	0.216860
Mar	31,881	7.960061	0.362183
Apr	45,140	11.270574	0.512811
May	54,694	13.656020	0.621349
Jun	60,487	15.102419	0.687160
Jul	65,297	16.303382	0.741804
Aug	54,172	13.525687	0.615419
Sep	30,042	7.500899	0.341291
Oct	19,095	4.767647	0.216928
Nov	8,230	2.054870	0.093497
Dec	11,326	2.827880	0.128669
Total	400,512	100	4.55

[1] Data for 1992, 1993 and 1994 were not included due to the PVID-MWD Test Fallowing Program. This reduced the data series to 12 years.

The number of fallowed acres during each month in CY 2009 was determined from the database, resulting in 12 separate time periods during the year (Table 6). The monthly factors, as discussed above, were multiplied by the number of fallowed acres during the corresponding time period to estimate the corresponding amount of saved water.

For example, for the month of January, 25,947 acres were verified to be fallowed under the Long Term Program. Based on the 12 years of historical data, 0.264412% of the total annual net diversions occurred in January. Multiplying 0.264412% by 4.55 acre-feet/acre results in 0.012031 acre-feet/acre, the average quantity of water that would have been consumed by each acre during January. Multiplying the average quantity of water consumed by each acre by the 25,947 acres of fallowed land results in an estimated water savings for January of 312 acre-feet. This same procedure was applied to the fallowed acreage under the Long term Program and the Emergency Program for all 12 months during CY 2009 and resulted in an estimated 118,059 acre-feet of saved water by the Long Term Program and 24,133 acre-feet by the Emergency Program.

Table 6: Monthly Irrigation Use Factors, Fallowed Lands, and Saved Water Using the 12-Year Average Method – CY 2009

		Long Term Program		Emergency Program		
Month	**Monthly Irrigation Use Factors (acre-feet/acre)**	**Fallowed Land (acres)**	**Monthly Saved Water (acre-feet)**	**Fallowed Land (acres)**	**Monthly Saved Water (acre-feet)**	**Total of Two Programs (acre-feet)**
Jan	0.012031	25,947	312			312
Feb	0.216860	25,947	5,627			5,627
Mar	0.362183	25,947	9,398			9,398
Apr	0.512811	25,947	13,306	144	74	13,380
May	0.621349	25,947	16,122	1267	787	16,909
Jun	0.687160	25,947	17,830	2,558.5	1,758	19,588
Jul	0.741804	25,947	19,248	4,123.5	3,059	22,307
Aug	0.615419	25,947	15,968	13,222	8,137	24,105
Sep	0.341291	25,947	8,855	13,222	4,513	13,368
Oct	0.216928	25,947	5,629	13,222	2,868	8,497
Nov	0.093497	25,947	2,426	13,222	1,236	3,662
Dec	0.128669	25,947	3,338	13,222	1,701	5,039
Total for Year	4.55		118,059		24,133	142,192

6.2 5-Year Average: 1998 - 2002

The 5-year historical use was based on PVID data for the period 1998 through 2002. The procedure used to calculate the estimated water saved from fallowing Valley lands during CY 2009 was the same as that applied in computing the 12-year historical use estimates.

The 5-year historical use method yielded an irrigation use factor of 4.75 acre-feet/acre and 123,248 acre-feet of saved water from the Long Term Program and 25,675 acre-feet of saved water from the Emergency Program during CY 2009.

6.3 3-Year Average: 2000 - 2002

The 3-year historical use method was based on PVID data for the period 2000 through 2002. Following the same procedure as used for the other historical use methods, computations based on the 3-year historical use resulted in an irrigation use factor of 5.03 acre-feet/acre and 130,513 acre-feet of saved water from the Long term Program and 26,713 acre-feet of saved water from the Emergency Program during CY 2009.

7.0 Actual Use Method – CY 2009

Under the actual use method, water use and acreage data from PVID records for CY 2009 were used to estimate the amount of saved water. The amount of water diverted into the PVID system less measured and unmeasured returns and water pumped to the Mesa resulted in the net amount of irrigation water used in the Valley. Monthly irrigation use was divided by the average number of acres in production for each month during CY 2009 and summed for the 12 months, resulting in an average annual irrigation use of 4.63 acre-feet per acre (Table 7).

Table 7: PVID Monthly Net Diversions, Pumped to Mesa, Irrigation Use on Valley Lands, Irrigated Valley Acreage, and Monthly Irrigation Use Factors – CY 2009

Month	Net Diversions (acre-feet)	Less Pumped to Mesa (acre-feet)	Irrigation Use on Valley Lands (acre-feet)	Irrigated Valley Acreage (acres)	Monthly Irrigation Use Factors (acre-feet/acre)
Jan	2,120	649	1,471	63,220	0.023268
Feb	8,334	669	7,665	63,220	0.121243
Mar	28,773	1,154	27,619	63,220	0.436871
Apr	35,463	1,532	33,931	63,076	0.537938
May	45,013	1,661	43,352	61,953	0.699756
Jun	43,745	1,670	42,075	60,661.5	0.693603
Jul	45,666	2,058	43,608	59,096.5	0.737912
Aug	34,831	1,983	32,848	49,998	0.656986
Sep	26,568	1,792	24,776	49,998	0.495540
Oct	10,384	1,275	9,109	49,998	0.182187
Nov	3,070	842	2,228	49,998	0.044562
Dec	998	776	222	49,998	0.004440
Total	284,965	16,061	268,904		4.634306
Yearly Average				57,036	

Source: PVID and Reclamation records.

The PVID 2009 Crop Report shows a total of 89,167 acres in the Valley portion of PVID that could have received water. The same procedure used in Table 6 was followed to develop Table 8. The percentage of net diversions by month formed the basis to develop the monthly irrigation use factors. Again, each monthly factor was multiplied by the fallowed acres for each month during CY 2009.

The actual irrigation use per acre was extrapolated to the fallowed acres for each month to compute the annual total of 120,247 acre-feet of water saved by the Long Term Program and 24,078 acre-feet saved by the Emergency Program, for a combined total of 144,325 acre-feet for CY 2009.

Table 8: Monthly Irrigation Use Factors, Fallowed Land and Saved Water Using the Actual Use Method – CY 2009

		Long Term Program		Emergency Program		
Month	**Monthly Irrigation Use Factors (acre-feet/acre)**	**Fallowed Land (acres)**	**Monthly Saved Water (acre-feet)**	**Fallowed Land (acres)**	**Monthly Saved Water (acre-feet)**	**Total of Two Programs (acre-feet)**
Jan	0.023268	25,947	604			604
Feb	0.121243	25,947	3,146			3,146
Mar	0.436871	25,947	11,335			11,335
Apr	0.537938	25,947	13,958	144	77	14,035
May	0.699756	25,947	18,157	1267	887	19,044
Jun	0.693603	25,947	17,997	2,558.5	1,775	19,772
Jul	0.737912	25,947	19,147	4,123.5	3,043	22,190
Aug	0.656986	25,947	17,047	13,222	8,687	25,734
Sep	0.495540	25,947	12,858	13,222	6,552	19,410
Oct	0.182187	25,947	4,727	13,222	2,409	7,136
Nov	0.044562	25,947	1,156	13,222	589	1,745
Dec	0.004440	25,947	115	13,222	59	174
Total for Year	4.634306		120,247		24,078	144,325

8.0 Conclusions

Two methods were used to estimate the amount of saved water during CY 2009: a historical use method and an actual use method. Three historical periods were used covering 12-year, 5-year and 3-year periods. The 12-year historical use method estimated 4.55 acre-feet/acre for irrigation use, the 5-year historical use method estimated 4.75 acre-feet/acre for irrigation use, and the 3-year historical use method estimated 5.03 acre-feet/acre for irrigation use. Compilation of actual crop and irrigation water use data for CY 2009 in PVID resulted in an estimated irrigation use of 4.63 acre-feet/acre.

Estimates of saved water for CY 2009 from the two programs are shown in Table 9 and ranged from 142,192 acre-feet to 157,226 acre-feet (Table 9).

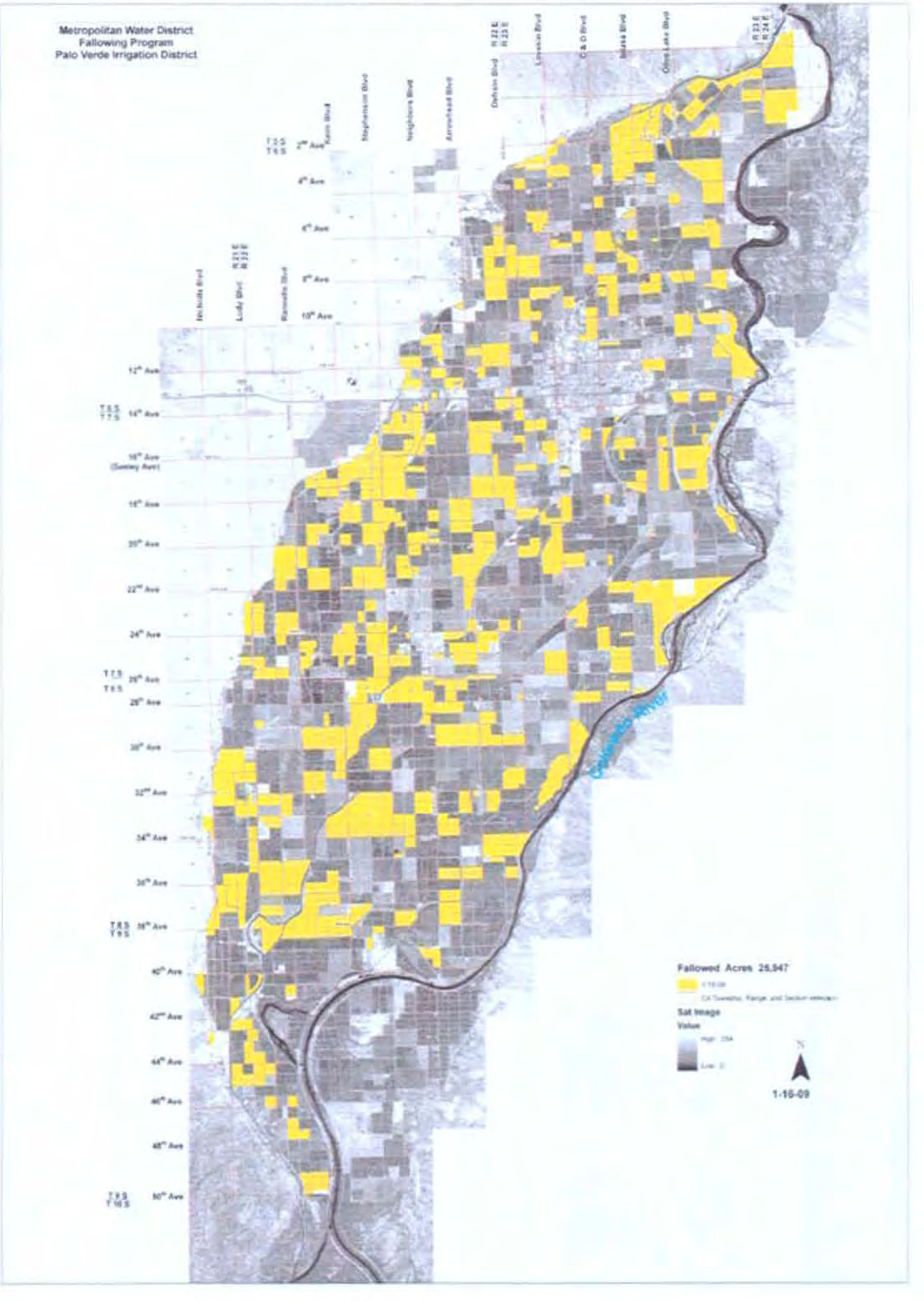
The Actual Use Method is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley during CY 2009. As such, the best estimate of the amount of water saved during CY 2009 by the Long Term Program is 120,247 acre-feet and by the Emergency Program is 24,078 acre-feet for a combined total of 144,325 acre-feet.

Table 9: Estimates of Saved Water by Method – CY 2009

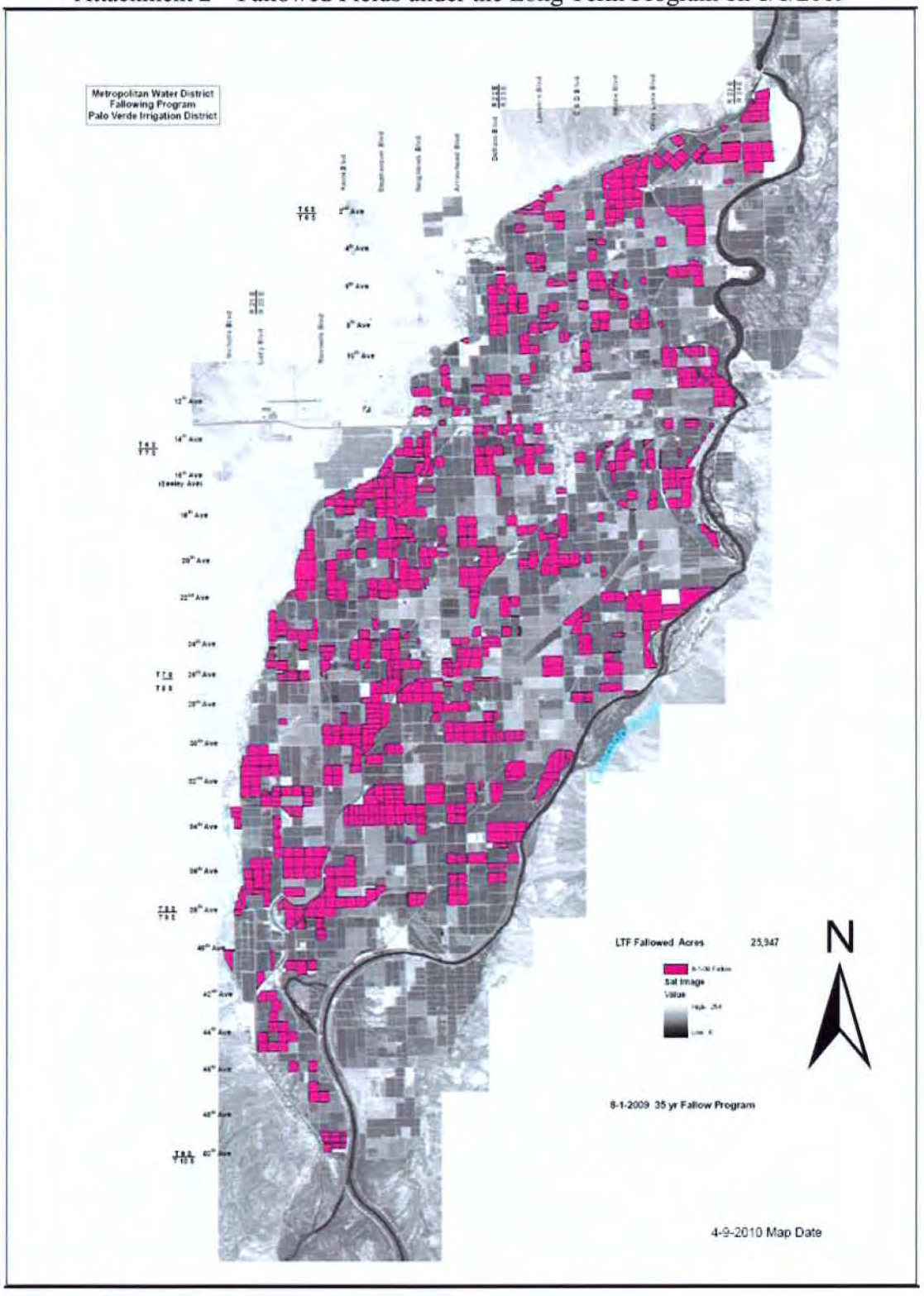
Method	Long Term Program (acre-feet)	Emergency Program (acre-feet)	Total of Two Programs (acre-feet)
12-Year Average (1988-2002)*	118,059	24,133	142,192
5-Year Average (1998-2002)	123,248	25,675	148,923
3-Year Average (2000-2002)	130,513	26,713	157,226
Actual Use Method CY 2009	120,247	24,078	144,325

*1992, 1993 and 1994 data not included in analysis due to the 1992-94 PVID-MWD Test Fallowing Program.

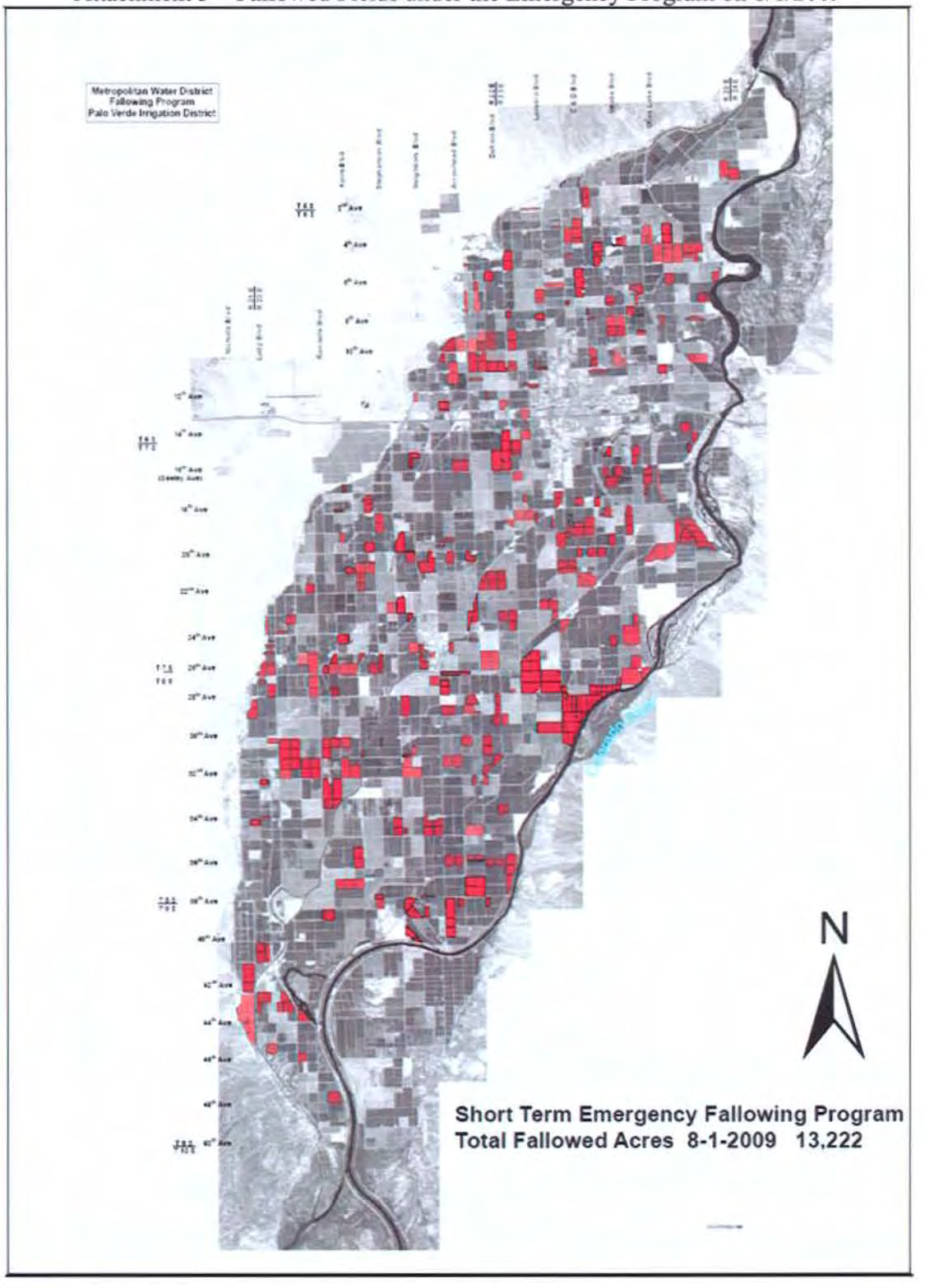
Attachment 1 – Fallowed Fields under the Long term Program on 1/16/2009



Attachment 2 – Fallowed Fields under the Long Term Program on 8/1/2009



Attachment 3 – Fallowed Fields under the Emergency Program on 8/1/2009



Appendix D

U.S. Bureau of Reclamation's PVID Fallowing Program Verification, Fall 2009

PVID Fallowing Program Verification
Fall 2009

Five percent of the 39,169 acres in the PVID fallowing program was checked in the verification program. This equates to 1958 acres inspected. See MWD/PVID Forbearance and Fallowing Program documentation for detailed information on the program. Program verification notes are attached as A: Fallowed Field Verification.

David B. Chalk — Inspected By — 03/04/10 — Date

Paul Wilcox — Group Manager — 3/4/2010 — Date

Extraordinary conservation implementation for this period is _X_ confirmed ____ unconfirmed

Observation: Green growth was viewed on some fields, which was attributed to localized rainfall (thunderstorms). PVID staff indicated that Fallowing Program participants, in accordance with environmental mitigation requirements for potential air quality impacts, were required to implement dust control Best Management Practices (BMPs) when necessary. These BMPs include (but are not limited to) leaving vegetation residue on the field or seeding a cover crop prior to the fallowing start date.

A: Fallowed Field Verification

Fallowing Program Field No. 63953-007; S19-T7S-R22E; Canal & Gate No. C03-11-4-8N; 159 Acres.
Comments: Photo No. 1, November 25, 2009; Fallow (Disked, clean, level) (Ripped); Soils: Clay loam; Water use history checked from PVID records.

Fallowing Program Field No. 63907-185; S10-T8S-R22E; Canal & Gate No. C16-18N; 80 Acres.
Comments: Photo No. 2, November 25, 2009; Fallow w/<1% senescent weeds; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63945-031; S20-T8S-R22E; Canal & Gate No. C03-21-16S; 80 Acres.
Comments: Photo No. 3, November 25, 2009; Fallow w/senescent wheat; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 65386-007; S15-T9S-R21E; Canal & Gate No. C03-178W; 49 Acres.
Comments: Photo No. 4, November 25, 2009; Fallow (Disked, clean, level); Soils: Clay loam; Water use history checked from PVID records.

Fallowing Program Field No. 65389-001; S15-T9S-R21E; Canal & Gate No. C03-178S+; 102 Acres.
Comments: Photo No. 5, November 25, 2009; Fallow (Disked, clean, level); Soils: Clay loam; Water use history checked from PVID records.

Fallowing Program Field No. 65389-002; S15-T9S-R21E; Canal & Gate No. C03-178S+; 54 Acres.
Comments: Photo No. 6, November 25, 2009; Fallow (Disked, clean, level); Soils: Silty Clay; Water use history checked from PVID records.

Fallowing Program Field No. 65389-003; S22-T9S-R21E; Canal & Gate No. C03-178S+; 70 Acres.
Comments: Photo No. 7, November 25, 2009; Fallow (Disked, clean, level); Soils: Silty Clay; Additional Comment: Total acreage (70) under 2 contracts (35 acres each); Water use history checked from PVID records.

Fallowing Program Field No. MET-150; S32-T8S-R22E; Canal & Gate No. C25-8W; 35 Acres.
Comments: Photo No. 8, November 25, 2009; Fallow with <1% alfalfa volunteers; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63900-020; S36-T8S-R22E; Canal & Gate No. D23-1-42W; 40 Acres.
Comments: Photo No. 9, November 25, 2009; Fallow with 4 inch tall wheat stubble; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63900-021; S36-T8S-R22E; Canal & Gate No. D23-1-42W; 35 Acres.
Comments: Photo No. 10, November 25, 2009; Fallow with 4 inch tall wheat stubble; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63900-0180 S36-T8S-R22E; Canal & Gate No. D23-1-38E; 25 Acres.
Comments: Photo No. 11, November 25, 2009; Fallow with 4 inch tall wheat stubble; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63900-017; S36-T8S-R22E; Canal & Gate No. D23-1-40W; 20 Acres.
Comments: Photo No. 12, November 25, 2009; Fallow with 4 inch wheat stubble; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63900-035; S25-T8S-R22E; Canal & Gate No. D23-1-28E; 152 Acres.
Comments: Photo No. 13, November 25, 2009; Fallow (Disked, clean, level); Soils: Silty Clay; Water use history checked from PVID records.

Fallowing Program Field No. 63903-015; S13-T8S-R22E; Canal & Gate No. D23-1-14W; 140 Acres.
Comments: Photo No. 14, November 25, 2009; Fallow with 5 percent senescent weeds; Soils: Silty Clay; Water use history checked from PVID records.

Fallowing Program Field No. 63940-052; S18-T8S-R23E; Canal & Gate No. D23-39S; 134 Acres.
Comments: Photo No. 15, November 25, 2009; Fallow with less than 1 percent weeds; Soils: Sandy Clay; Water use history checked from PVID records.

Fallowing Program Field No. 63940-053; S6-T8S-R23E; Canal & Gate No. D23-26W; 82 Acres.
Comments: Photo No. 16, November 25, 2009; Fallow (Disked, clean, level) (Ripped); Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63940-049; S31-T7S-R23E; Canal & Gate No. D23-24W; 160 Acres.
Comments: Photo No. 17, November 25, 2009; Fallow (Disked, clean, level); Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63898-032; S33-T7S-R23E; Canal & Gate No. D10-11-39E; 128 Acres.
Comments: Photo No. 18, November 25, 2009; Fallow with senescent wheat stubble; Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63907-284; S36-T6S-R23E; Canal & Gate No. D10-13-25E; 38 Acres.
Comments: Photo No. 19, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay; Water use history checked from PVID records.

Fallowing Program Field No. 63907-283; S36-T6S-R23E; Canal & Gate No. D10-13-23E; 38 Acres.
Comments: Photo No. 20, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay; Water use history checked from PVID records.

Fallowing Program Field No. 63907-281; S36-T6S-R23E; Canal & Gate No. D10-13-23E; 38 Acres.
Comments: Photo No. 21, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay; Water use history checked from PVID records.

Fallowing Program Field No. STEFP#19; S28-T6S-R23E; Canal & Gate No. D08-10N; 33 Acres.
Comments: Photo No. 22, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay; Water use history checked from PVID records.

Fallowing Program Field No. STEFP#19; S28-T6S-R23E; Canal & Gate No. D08-10N; 20 Acres.
Comments: Photo No. 23, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay; Water use history checked from PVID records.

Fallowing Program Field No. STEFP#19; S28-T6S-R23E; Canal & Gate No. D-10 16W; 9 Acres.
Comments: Photo No. 24, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay; Water use history checked from PVID records.

Fallowing Program Field No. 63902-018; S23-T6S-R22E; Canal & Gate No. C03-2-28W and B38S; 63 Acres.
Comments: Photo No. 25, November 25, 2009; Fallow (Disked, clean, level) (Ripped); Soils: Clay Loam; Water use history checked from PVID records.

Fallowing Program Field No. 63913-008; S23-T6S-R22E; Canal & Gate No. B-35S; 48 Acres.
Comments: Photo No. 26, November 25, 2009; Fallow (Disked, clean, level); Soils: Clay Loam;
Water use history checked from PVID records.

Fallowing Program Field No. 65029-014; S23-T6S-R22E; Canal & Gate No. B-P35N; 13 Acres.
Comments: Photo No. 27, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay;
Water use history checked from PVID records.

Fallowing Program Field No. 63907-287; S11-T6S-R23E; Canal & Gate No. K-26E; 72 Acres.
Comments: Photo No. 28, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy Clay;
Water use history checked from PVID records.

Fallowing Program Field No. 63913-006; S34-T5S-R23E; Canal & Gate No. D02-0N; 41 Acres.
Comments: Photo No. 29, November 25, 2009; Fallow (Disked, clean, level); Soils: Sandy;
Water use history checked from PVID records.