DRAFT

Environmental Impact Report
for the
Proposed Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program

Palo Verde Irrigation District
180 W. Fourteenth Avenue
Blythe, CA 92225

May 2002

Palo Verde Irrigation District
Land Management, Crop Rotation and Water Supply Program
Draft Environmental Impact Report

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Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program

Riverside and Imperial Counties
California

Draft Environmental Impact Report

State Clearinghouse No. 2001101149

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EXECUTIVE SUMMARY

ES-1 INTRODUCTION

The Palo Verde Irrigation District (PVID) and The Metropolitan Water District of Southern California (Metropolitan) propose to commence a Land Management, Crop Rotation and Water Supply Program (Program) in the California portion of the Palo Verde Valley within PVID below the Palo Verde Diversion Dam. The Program area is situated within the southeastern portion of Riverside County and the northeastern portion of Imperial County. This Draft Environmental Impact Report (EIR) analyzes the environmental effects that could potentially occur should the proposed Program be implemented. This Draft EIR has been prepared pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. PVID is the CEQA Lead Agency for this EIR, and Metropolitan is a Responsible Agency under CEQA.

ES-2 ENVIRONMENTAL SETTING

The proposed Program would be implemented at various irrigated PVID farmlands within the California portion of the Palo Verde Valley and below the Palo Verde Diversion Dam. PVID is located along the Colorado River in southeastern Riverside and northeastern Imperial counties, approximately 200 miles east of Los Angeles. PVID contains approximately 131,228 acres, 104,500 acres of which are in the Palo Verde Valley. The remaining 26,728 acres of PVID are located on the Palo Verde Mesa and would not be included in the proposed Program. An estimated 91,000 acres of PVID's valley lands below the Palo Verde Diversion Dam are irrigated. The Colorado River, which generally acts as the boundary between Arizona and California, forms PVID's eastern and southern boundaries.

The Palo Verde Valley lies in the Colorado River floodplain, is approximately nine miles wide and 30 miles long, and is relatively level. The Program area experiences a long, hot growing season that is ideal for agriculture. Mild winters, with a minimum of frost, permit growing of crops year round, including alfalfa, cotton, wheat, sudan grass, melons, lettuce and other vegetables.

ES-3 PROGRAM DESCRIPTION

ES-3.1 Overview and Implementation

PVID diverts water from the Colorado River to irrigate farmlands in the Palo Verde Valley. Metropolitan diverts water from the Colorado River, via the Colorado River Aqueduct, at its existing Whitsett Intake Pumping Plant in Lake Havasu. Metropolitan then delivers this Colorado River water to its member agencies—26 cities, municipal water districts and a county water authority that provide drinking water to more than 17 million people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura counties.

The proposed Program would provide Metropolitan with a water supply option of from 25,000 to approximately 111,000 acre-feet of Colorado River water per year for 35 years. Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of PVID would be "saved" and an equal amount of water would be made available to Metropolitan. The water would be saved through land management and crop rotation measures, which are part of the proposed Program.

The proposed Program also would assist in stabilizing the farm economy within the Palo Verde Valley through a one-time entry payment and bi-annual payments applicable to participants in the proposed Program and through providing a funding mechanism for future, as yet undetermined, community improvement projects. Although the exact agreement structure has not yet been finalized, two types of agreements are contemplated: (1) a Program agreement between PVID and Metropolitan and (2) land contracts, each with a term of up to 35 years, between Metropolitan and participants in the Palo Verde Valley. Farmlands would be voluntarily committed to the proposed Program through an estimated 60 to 70 land contracts. An amount of water equal to the water saved by the proposed Program would be made available to Metropolitan to help meet water demands within its service area. No additional water above the amount either currently diverted or historically delivered would be conveyed to Metropolitan's service area from the Colorado River.

Making water available to Metropolitan under the proposed Program would not affect existing rights to Colorado River water for either PVID or Metropolitan. To the contrary, the saved water would be made available to Metropolitan within the context of The Law of the River. Federal and state laws encourage water conservation and the voluntary movement of water from agricultural to urban uses. Federal and state laws also provide protections against loss of water rights by agricultural entities that undertake such programs. Under these laws, water sold by PVID to Metropolitan pursuant to the proposed Program would in no manner result in forfeiture or loss of PVID's historic water rights.

Execution of contracts committing landowners to participate in the proposed Program would be voluntary. Program lands would cease irrigation beginning August 1 of each year through July 31 of the following year (a "contract year"). At Metropolitan's request and with specific notice periods, specific portions of farmlands subject to the contracts would not be irrigated for the requested period of time. The farmlands not being irrigated would be rotated once every year up to once every five years, at the participant's option. In the event that a landowner fails to comply with its obligations, Metropolitan would have the right to require the non-irrigation of discrete parcels of land until compliance is attained. For each acre of Palo Verde Valley farmland not irrigated under the proposed Program, Metropolitan would have the ability to use an amount of water equal to the amount of water saved. It is estimated that actively farming one acre of land within the Palo Verde Valley for one year uses approximately 4.2 acre-feet of Colorado River water. PVID's water use is determined by the "diversion less return" method (i.e., water use is defined as the amount diverted by PVID at the Palo Verde Diversion Dam, minus the amount of water that returns to the Colorado River through PVID's drains or through the groundwater aquifer). The actual amount of water saved by the proposed Program would be determined on an annual basis by a verification committee composed of PVID, Metropolitan and the U.S. Department

of the Interior, Bureau of Reclamation. The amount of water saved by the proposed Program would be proportional to the amount of land included in the proposed Program during a contract year.

A maximum of approximately 29 percent of any one participant's land in the Palo Verde Valley would not be irrigated in any one contract year under the proposed Program. However, if there was insufficient interest in the proposed Program (i.e., some number of the estimated 60 to 70 land contracts would not be executed), then the area of an individual farm that would not be irrigated could be voluntarily increased up to a maximum of approximately 35 percent. The proposed Program's 29 and 35 percent values would be a guide—further adjustment could be necessary to recognize individual field sizes, connections to headgates, other physical characteristics and/or the location of the land.

Up to a maximum of 24,000 acres in any 25-year period or 26,500 acres in any ten-year period during the 35-year Program would not be irrigated under the proposed Program. Assuming adequate participation in the proposed Program, Metropolitan would exercise the increases such that the average non-irrigated area over the 35 years would equal at least 12,000 acres per year (approximately 13 percent of irrigated valley lands).

Because PVID's and Metropolitan's existing facilities are adequate to implement the proposed Program, no new construction or the modification of existing facilities would be required. Metropolitan would continue to divert Colorado River water available under the terms of the proposed Program at Lake Havasu. The amount of water diverted under the proposed Program would be within approved historic volumes and would not constitute a change in operations or an increase in the amount diverted.

ES-3.2 Payments and Funding

The proposed Program would have benefits to both Program participants and the larger Palo Verde Valley community, as described below.

In exchange for an agreement or contract to not irrigate certain portions of farmlands at Metropolitan's request, Metropolitan would compensate participants with both a Program entry payment and bi-annual compensation during active participation in the proposed Program. The Program entry payment (which might be spread out over a period of up to five years) would depend on the maximum number of acres to be not irrigated in a contract year under the individual land contract. In addition, Metropolitan would pay participants bi-annual payments equal to a fixed amount per acre multiplied by the acreage not irrigated in that contract year under the land contract. Each participant would be responsible for payment of property taxes, PVID water toll and assessment fees, vegetation abatement, dust control and all other costs related to the Program lands. Metropolitan also would reimburse PVID for administrative costs associated with the proposed Program.

In addition, Metropolitan would fund specific future, as yet to be determined, community improvement projects. The funding mechanism and expenditure of such funds would be determined by a committee composed of representatives of PVID, members of the Palo Verde Valley community and Metropolitan.

Special attention may be given to educational and vocational programs depending on the direction given by the committee. This Draft EIR for the proposed Program does not evaluate the proposed community improvement projects because specific future projects have not been selected for implementation. When specific community improvement projects ultimately are selected for funding and implementation, PVID or another lead agency, as applicable, would be required to evaluate what CEQA review and other related technical documentation, if any, would be required for those projects.

ES-3.3 Land Management Measures

Land management measures used to control weed growth and wind erosion would be an integral part of the proposed Program, as described below. Requirements to implement these land management measures would be included in the participants' respective agreements or contracts with Metropolitan.

Weed and invasive plant growth on non-irrigated fields due to rainfall or due to water seepage from canals or from neighboring irrigated farmland, especially along the outside borders of non-irrigated fields, would be controlled by the participants. Control measures would be undertaken by the participants to prevent the spread of these plants, their consumptive use of water and associated issues concerning the spread of plant disease, insects and other pests. Weeds and other invasive plants would be controlled using measures of each participant's choice, including chemical, biological or mechanical methods. The level of herbicides necessary to control weeds would be similar to or less than application levels associated with active farming. Applicable local, state and federal permits would be obtained by the Program participants for the use of herbicides, pesticides and insecticides as part of Program land management measures.

Measures to minimize or eliminate the hazards of wind erosion on potentially susceptible soil types would be provided by the participants. Wind erosion control measures may include adopting appropriate practices such as providing stubble, sod remnants or "clod plowing." Leaving non-irrigated fields with stubble residue or sod remnants, which lowers wind speeds at the soil surface and provides a root system to help hold soil in place, is recognized by several federal government agencies as an effective means to reduce erosion (see Section 3.4.3).

For crops that would not leave an adequate stubble residue (such as cotton and many vegetable or melon crops), clod plowing could be implemented. The term "clod plowing" refers to the practice of tilling a field when it is wet so that large, damp clumps of soil are produced. These wet clumps break down into clods of soil that have a low susceptibility to wind erosion because they contain a relatively hard crust. In order to ensure compliance with Farm Service Agency Conservation Plans developed by the U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS) for farms in the Palo Verde Valley, the maximum continuous period that clod plowing could be used as an erosion control measure is three years. After three years, either a new round of clod plowing would need to be implemented, a cover crop would need to be established, or a different field within the participating farm would be rotated into non-irrigation. Participants would be encouraged to take advantage of natural precipitation to re-establish cover crops or to implement additional clod plowing as feasible.

Metropolitan would monitor non-irrigated fields throughout the 35-year term of the proposed Program. When Metropolitan requires that enrolled Program participants not irrigate a portion of their fields, Metropolitan would inspect the non-irrigated fields at the start of the Program contract year to ensure that the fields are not in agricultural production and to ensure that appropriate land management measures have been implemented. Inspections would continue on a year-round basis to document that weed abatement and erosion control measures are adequate and to ensure that crops are not grown on non-irrigated fields. In particular, Metropolitan would assess erosion control measures during the Spring windy season (March through May). Should noticeable wind erosion be observed during inspections, additional erosion control measures (remedial measures) would be implemented at the participant's cost. These additional measures are presented in Section 3.4.3 and would be enforceable through the participant's agreement or contract with Metropolitan.

ES-3.4 Restrictions on Conversion/Transfer of Committed Farmlands

To ensure that adequate fields are available to rotate through periods of non-irrigation at Metropolitan's request, Program participants would need to maintain at least 35 to 42 percent of their fields in agriculture for the 35-year term of the proposed Program. This requirement reflects the absolute minimum amount of land necessary to meet Program commitments. In practice, PVID anticipates that most participants would maintain the vast majority or all of their existing farmlands in agricultural use.

Should farmlands committed to the proposed Program be sold or transferred through other means (such as inheritance), the new owner would be obligated to maintain the original owner's commitment to the proposed Program. This requirement would be included as a component of the agreements between Metropolitan and Program participants, probably taking the form of an easement or deed restriction.

ES-4 ENVIRONMENTAL ANALYSIS

Based on the results of a CEQA Initial Study prepared for the proposed Program and circulated by PVID with the Notice of Preparation (see Appendix A), the environmental analysis for this Draft EIR focuses on five topics:

- Agricultural Resources
- Geology and Soils
- Air Quality
- Hydrology and Water Quality
- Biological Resources

For each of these topics, this Draft EIR addresses existing conditions of the Program area, describes the significance criteria against which potential impacts are assessed, discusses any adverse impacts that could occur as a result of Program implementation and provides an assessment of CEQA level of significance. Consistency with applicable guidance in the Riverside County, Imperial County and city of

Blythe general plans and the Southern California Association of Governments' *Regional Comprehensive Plan and Guide* also is assessed.

The proposed Program may have potential environmental effects in the Palo Verde Valley area, where the Program agreements would be implemented, and along the Colorado River between Lake Havasu/Parker Dam and the Palo Verde Valley, where river levels may be slightly modified due to a change in the point of diversion for up to a maximum of approximately 111,000 acre-feet of water per Program contract year. Because the proposed Program would not induce growth or require new facilities within Metropolitan's service area, no environmental effects would occur within Metropolitan's service area and it is not addressed in the topic-by-topic environmental analysis.

Because the proposed Program would reduce the level of farming activity within the Palo Verde Valley, it may affect the local economy. Under CEQA and the State CEQA Guidelines, economic or social effects are not treated as significant effects on the environment in an EIR. The State CEQA Guidelines suggest that information on economic and social effects be presented in an EIR in whatever form the Lead Agency desires (State CEQA Guidelines Section 15131). As such, a discussion on potential effects to housing, population and employment is presented in Section 9.11.

ES-4.1 Agricultural Resources

The vast majority of irrigated farmland within the Palo Verde Valley is designated Prime Farmland or Farmland of Statewide Importance. While implementation of the proposed Program would not convert any farmland to non-agricultural uses, it would entail a reduction in the amount of Palo Verde Valley farmland that is being irrigated at any one time. Under the agreements or contracts between Metropolitan and participants, the longest period that a given field would not be irrigated would be five years, after which, the non-irrigated field would be returned to active farming in order to remain eligible for continued inclusion in the proposed Program. Only the time between growing crops would be changed. Because no farmland conversion would occur as a result of Program implementation, no impacts would occur with regard to farmland conversion or consistency with zoning and land use designations.

Approximately 24,300 acres of farmland within the Palo Verde Valley have been entered into Land Conservation Contracts pursuant to California's Williamson Act, and some of these Williamson Act-contracted lands may participate in the proposed Program. Under the Williamson Act, farmers that contractually agree not to convert farmland to non-agricultural uses for ten-year periods receive property tax reductions on their contracted lands. Jurisdictions (counties and cities) that administer the Williamson Act at the local level receive payments (called "subventions") from the state, based on the amount of contracted farmlands within their jurisdiction. Currently, local jurisdictions receive $5 per acre for prime agricultural lands that are under Williamson Act contracts and $1 per acre for other Williamson Act contract lands. One of the criteria used to assess whether farmland qualifies as "prime agricultural land" pursuant to the Williamson Act is whether the dollar value of unprocessed plant production equals or exceeds $200 per acre. (Note that the "Prime Farmland" and "Prime Agricultural Land" designations are defined differently and serve separate purposes.) Because the non-irrigation of fields would reduce the

amount of unprocessed plant production on participants' farms, the per-acre dollar value may decrease to less than $200 per acre on some participants' farms (when considered on a farm-wide basis). Although this could affect state subventions to local governments, it would not alter the agricultural status of the lands and thus would not conflict with Williamson Act contracts entered into by Program participants.

Participants in the proposed Program also would remain eligible for most U.S. Department of Agriculture economic benefit programs (e.g., subsidies), although land that is not irrigated as a result of Program implementation could not concurrently be entered into other federal, state or local programs that pay farmers to reduce their irrigated acreage ("set-aside" programs).

The up to 26,500 acres of Palo Verde Valley agricultural fields that would not be irrigated under the proposed Program represent less than 0.1 percent of California's farmlands and approximately 2.5 percent of the farmlands (excluding grazing lands) in Riverside and Imperial counties. Based on the small percentage of farmland affected and the fact the proposed Program would not convert farmlands to non-agricultural use, the 35-year reduction in farm production would constitute a less-than-significant impact to agricultural resources.

Because impacts to agricultural resources would be less than significant, no mitigation would be required.

ES-4.2 Geology and Soils

The assessment of geology and soils resources focuses on the potential for farmlands committed to the proposed Program to incur a substantial increase in wind erosion of topsoils. Many of the soil types present in the Palo Verde Valley have been classified as Highly Erodible Lands (HEL) by the NRCS. In order to avoid or minimize soil erosion, land management measures would be implemented on all fields undergoing a period of non-irrigation under the proposed Program.

Based on the inclusion of these land management measures in the proposed Program, no substantial soil erosion or loss of topsoil would occur with Program implementation. Hence, less-than-significant impacts to soil erosion or loss of topsoil would occur, and no mitigation would be required.

ES-4.3 Air Quality

The Palo Verde Valley encompasses portions of the Mojave Desert and Salton Sea air basins, each of which is in non-attainment with federal and/or state standards for particulate matter equal to or less than ten microns in diameter (PM_{10}), ozone or both. The proposed Program would result in a minor decrease in ozone emissions, and would result in similar or reduced PM_{10} emissions in comparison to active agricultural production. This assessment reflects that the proposed Program would cause a reduction in farming activity with an associated reduction in vehicle trips and farm equipment use. Additionally, the land management measures included in the proposed Program would minimize wind erosion of soils, which can be a source of PM_{10} emissions, to levels comparable to or lower than those associated with active farming of fields. Accordingly, the proposed Program would neither conflict with adopted air

quality management plans nor degrade air quality, and Program air quality impacts would be less than significant.

Because the proposed Program would result in no impact or less-than-significant impacts with regard to air quality, no mitigation would be required.

ES-4.4 Hydrology And Water Quality

The proposed Program would reduce agricultural irrigation within the California portion of the Palo Verde Valley by up to 29 percent, with an associated reduction in net water use (diversion less return) by up to 111,000 acre-feet per Program contract year. An amount of water equal to this reduction in net water use would be made available to Metropolitan at Lake Havasu for diversion through its Whitsett Intake Pumping Plant to the Colorado River Aqueduct. Releases from Parker Dam (at the base of Lake Havasu) and flows in the Colorado River between Parker Dam and the Palo Verde Diversion Dam (where PVID diverts water for irrigation) would be reduced by the same amount.

Each contract year that the proposed Program is implemented, PVID would reduce its diversions from the Colorado River by an amount corresponding to the amount of water that otherwise would have been applied to non-irrigated Program fields. Because water savings under the proposed Program would be calculated using the diversion-less-return methodology, the reduction in diversions by PVID would exceed the amount of water saved under the proposed Program. More specifically, the reduction in PVID's diversions could reach up to 206,000 acre-feet per Program contract year, including the up to 111,000 acre-feet of water that would be saved by the proposed Program and 95,000 acre-feet that would have been diverted for irrigation but returned unused to the Colorado River through PVID's drains or as groundwater.

The reduction in diversions and associated reduction in irrigation within the Palo Verde Valley would affect groundwater levels under the valley as well as the volume and quality of return water in PVID's drains. Groundwater levels would be projected to decrease by approximately one to two feet, which would constitute a less-than-significant hydrology impact. This minor decrease in groundwater levels would not affect beneficial uses of the groundwater table and, in fact, could be a beneficial effect in locations within the Palo Verde Valley where shallow groundwater is a problem.

As less water is applied to PVID's fields, less water would be returned through PVID's drains, and the water level in PVID's Outfall Drain also may decrease by one to two feet. Because irrigation return water dilutes the saline groundwater entering PVID's drains, reducing the amount of return water present in the drains would increase the concentration of salts (total dissolved solids [TDS]) within drain water. Although salt concentrations would increase, the tonnage of salts carried through PVID's drains to the Colorado River would decrease. This reduction in volume would result because as less water is applied to fields within the Palo Verde Valley, less salt would be flushed from the soil into PVID's drains and carried to the river. Based on these factors, implementing the proposed Program would not cause the exceedance of applicable state water quality objectives and/or federal water quality standards for PVID's

drains, the Colorado River or other local water bodies. Thus, impacts to water quality would be less than significant.

With regard to Colorado River hydrology, U.S. Geological Survey (USGS) data indicate that annual flows in the Colorado River below Parker Dam for the ten-year period from 1987 to 1999 and excluding 1992 through 1994 averaged 7,908,800 acre-feet. (The period from 1992 through 1994 is excluded from this average because a Test Program during those years influenced releases from Parker Dam and diversions by PVID.) In comparison to the 7,908,800-acre-foot annual average flow referenced above, an 111,000-acre-foot reduction in releases from Parker Dam and the corresponding reduction in flow from Parker Dam to Palo Verde Diversion Dam would represent an approximately 1.4 percent change.

As a result of Bureau of Reclamation operating procedures (described in Section 4.4), the maximum release rate from Parker Dam generally reflects the mechanical operating constraints of the dam's generators, and the minimum release rate is typically set at 2,000 cubic feet per second. The proposed Program would not change the magnitude of dam's maximum or minimum release rates, although the amount of time that water is released at the maximum rate may be reduced. Because the proposed Program would not change the magnitude of the dam's maximum or minimum release rates, it would not affect the range of Colorado River surface water elevation fluctuations below Parker Dam, which can be up to five feet in the summer and 2.5 feet in the winter. However, because the amount of time that water is released at the maximum rate may be reduced, the period of time during which the river below Parker Dam is at its highest surface water elevations could be reduced, as would average water surface elevations. Based on Bureau of Reclamation calculations, the decrease in average water surface elevations between Parker Dam and the Palo Verde Diversion Dam would be less than 1.8 inches (Bureau of Reclamation 2000a). These minor changes in the river's hydrology would constitute a less-than-significant hydrological impact.

As described above, implementation of the proposed Program would reduce Colorado River flow between Parker Dam and Palo Verde Diversion Dam by up to 111,000 acre-feet per Program contract year, while diversions from the Palo Verde Diversion Dam to the Palo Verde Valley could be reduced by up to 206,000 acre-feet per contract year. Because the reduction in diversions at Palo Verde Diversion Dam would be greater than the reduction river flows upstream from the dam, the amount of water flowing undiverted past the dam would increase. More specifically, up to 95,000 acre-feet of water that would have been diverted at Palo Verde Diversion Dam and returned unused to the Colorado River would instead simply remain in the Colorado River. This would increase average water surface elevations below Palo Verde Diversion Dam by up to approximately one inch, a less-than-significant hydrology impact.

Below the mouth of PVID's Outfall Drain, the proposed Program would have no effect on the Colorado River. The increase in flows past the Palo Verde Diversion Dam would be offset by a reduction in return flows—below the mouth PVID's Outfall Drain, the net effect on Colorado River hydrology would be zero.

Because hydrology and water quality impacts would be less than significant, no mitigation would be required.

ES-4.5 Biological Resources

The proposed Program would not cause any direct impacts to biological resources, in large part because it would not require the construction of new facilities, modification of existing facilities, or any new ground-disturbing activities. Potential indirect effects could occur as a result of changes to crop rotation patterns in the Palo Verde Valley, water levels in PVID's drains and the hydrology of the Colorado River.

Agricultural Fields

Impacts to existing agricultural areas resulting from the proposed Program would entail changes in the irrigation and crop-planting regime, affecting a maximum of approximately 29 percent of valley farmlands (26,500 acres) at any one time. The non-irrigated fields would have little to no vegetation, retaining the open character that is currently present in fields that are between plantings or that otherwise have relatively little vegetative cover. The farmlands in the Palo Verde Valley have limited but important use for wildlife, primarily serving as foraging rather than breeding areas. A number of raptor species have been observed and/or have the potential to occur within the agricultural fields. Additionally, several types of seed-eating birds and mammals have been observed either in the fields or on the immediate periphery.

The changes to agricultural fields that would occur under the proposed Program would have only minor effects on the local and migratory wildlife. Because the proposed Program would not convert any agricultural lands to non-agricultural land uses, the only change would be an increase in the time between planting of various crops in the farmlands. Some wildlife species using the farmlands are undoubtedly adapted to agricultural activities such as flooding and cultivation; however, most of the species observed in the valley farmlands are generally widely adaptable given the presence of adequate open areas, of which agricultural lands are a subset. In addition, those species depending on agricultural activities would likely not be significantly affected because, at any one time, at least 71 percent of agricultural fields in the Palo Verde Valley would not be affected by the proposed Program. Similar agricultural fields also would be available across the river within the Cibola Valley Irrigation and Drainage District, and higher quality foraging habitat is present within the nearby Cibola National Wildlife Refuge. Accordingly, the proposed Program would have a less-than-significant impact on the habitat for wildlife species that forage and winter in the existing farmlands, including raptors and the greater sandhill crane.

PVID's Drains

As described above, the proposed Program would result in a projected decrease in groundwater elevation of approximately one to two feet. Similarly, water levels in PVID's drains also would decrease to controlled levels, both directly as a result of reduced irrigation levels and indirectly as a result of the lower groundwater levels. Drains would continue to receive agricultural spillage, and no drains would go

dry as a result of the proposed Program. As part of routine operational and maintenance activities, PVID installs rock weirs in drains with low water levels, limiting the extent to which drain water levels can decrease.

The reduction in the water surface elevation of PVID's drains is projected to have little to no effect on the vegetation communities along the sides of the drains (e.g., arrowweed, atriplex and salt cedar scrub communities). These are not obligate wetland vegetation communities (i.e., they are not dependent on surface water), and they would be expected to fill in down the sides of drains as water surface elevations lower. As a result, these communities would remain generally the same (or possibly increase) in terms of their prevalence, and they would retain generally the same structure. Marsh habitat also would adjust to lower water levels, and any reduction in marsh vegetation associated with Program implementation would be negligible. The extent of open water habitat within the drains would be reduced—as drain water surface elevations lower, there would be corresponding reductions in both the volume and areal extent of open water in the drains. This change, which would last for the 35-year term of the proposed Program, would be less than significant in the context of overall open water habitat in PVID's drains.

These changes in vegetation communities and open water habitat would have a less-than-significant impact on wildlife because of the relatively minor level of change that would occur under the proposed Program.

Colorado River

Along the Colorado River, changes in hydrology would be even less noticeable than in PVID's drains. As described above, the amount of water released from Parker Dam would be reduced by up to 111,000 acre-feet each Program contract year, and this would cause a corresponding reduction in flow between Parker Dam and Palo Verde Diversion Dam. This reduction in flow would not affect the magnitude of water surface elevation fluctuations on the Colorado River, although the amount of time that the river is at its highest levels may be slightly reduced. Concurrently, the average water surface elevation below Parker Dam would be reduced slightly (by less than 1.8 inches). Below the Palo Verde Diversion Dam, flow in the Colorado River would increase by up to 95,000 acre-feet per year with a corresponding increase in average water surface elevations of approximately one inch, and below the mouth of PVID's Outfall Drain there would be no effect on the river (see "Hydrology and Water Quality"). Based on the minimal effect that the proposed Program would have on Colorado River hydrology, the Program's effect on biological resources along the Colorado River would also be less than significant.

Because the proposed Program would not affect the magnitude of water surface elevation fluctuations on the Colorado River, shoreline vegetation that is periodically submerged by fluctuations in the Colorado River would continue to be submerged, and no submergent vegetation that is permanently below the waterline would be exposed as a result of the proposed Program. The proposed Program may, however, reduce the amount of time that the river is at its highest levels, and this in turn would affect the amount of time that some vegetation along the shoreline is submerged. Based on a review of hydrological data from

a 1991 Bureau of Reclamation study, and including consideration of Parker Dam operating procedures, the proposed Program is projected to affect the amount of time that vegetation along the shoreline is inundated by water by less than a half-hour. For example, shoreline areas currently subjected to inundation for 12 hours daily would continue to be subjected to inundation for at least 11.5 hours daily. The amount of shoreline that would be affected by this change would vary depending on several factors, including river cross sections and distance downstream from Parker Dam. (The daily fluctuations in river flow are attenuated as flows proceed further downstream from Parker Dam.)

Where reductions in average water surface elevation would be at their greatest (less than 1.8 inches measured vertically), the amount of shoreline exposed to changes in inundation could range up to a maximum of roughly four inches (measured horizontally). As a result of this relatively minor change in average water surface elevation, riparian vegetation along the narrow band of affected shoreline may shift downward, or new vegetation may fill in. This would constitute a less-than-significant impact to vegetation along the lower Colorado River.

Over a period of several years, the proposed Program also may result in a decrease in average groundwater levels along the edge of the Colorado River between Parker Dam and Palo Verde Diversion Dam by an amount equivalent to the reduction in average surface water elevations (less than 1.8 inches). Because this decrease in average groundwater levels would occur over a period of several years, and because groundwater levels along the river's edge would continue to be influenced by daily, seasonal and annual surface water fluctuations, the effect of this change on backwaters would be less than significant.

In consideration of the minor, indirect effects that the proposed Program would have on biological resources in the Palo Verde Valley and along the Colorado River and its backwaters, impacts would be less than significant and no mitigation would be required.

ES-4.6 Consistency With Southern California Association of Governments Regional Comprehensive Plan and Guide (RCPG) Policies

In response to a request from the Southern California Association of Governments (SCAG), this Draft EIR assesses Program consistency with eight specific SCAG Regional Comprehensive Plan and Guide policies. As described in Section 4.6, the proposed Program would be consistent with the applicable policies identified by SCAG.

ES-4.7 Growth Inducement

Within the Palo Verde Valley, implementation of the proposed Program would provide a stabilizing economic effect on farm incomes; however, there may be a change in farm labor employment within the valley because fewer fields would be actively farmed (irrigated) at any given time. While some land management activities (e.g., weed abatement and wind erosion control) would require farm labor, it would be less labor than is required to plant, tend, harvest and transport crops. Accordingly, implementing the proposed Program would not induce population growth in the Palo Verde Valley or

vicinity. Although the proposed Program would include a funding mechanism for future, as yet to be determined, community improvement projects, the scope of these improvement projects is not anticipated to be such that people not otherwise planning to relocate to the Palo Verde Valley would be induced to do so.

The proposed Program would not directly or indirectly provide new water supplies to Metropolitan's service area. The proposed Program would provide one of several potential water source options for maintaining existing flows, or historically delivered water, in the Colorado River Aqueduct. The Colorado River Aqueduct is the only available aqueduct from the Colorado River to Metropolitan's service area. It is capable of diverting about 1.3 million acre-feet per year and has been operating at or near full capacity over the past 15 years. As such, the proposed Program only changes the distribution of existing Colorado River water supplies between Metropolitan and PVID. No new facilities or changes in operational activities are proposed.

Another important reason why the proposed Program would not be growth-inducing is that PVID and Metropolitan do not have the authority to regulate land use. That responsibility falls on cities and counties through their general plans, specific plans and zoning regulations. The water supplies being provided and planned for by PVID and Metropolitan are consistent with the level of growth projected by regional planning agencies and local general plans, and impacts of projected growth have been disclosed and mitigated in general plan environmental documents complying with CEQA. Hence, for the reasons stated above, the proposed Program would not be growth inducing.

ES-4.8 Cumulative Impacts

An assessment of closely related past, present and reasonably foreseeable future projects in the Palo Verde Valley and along the Colorado River indicated that the proposed Program would not incrementally contribute to significant cumulative project impacts. This assessment reflects the nature and extent of other proposed projects that would either contribute to environmental impacts in the Palo Verde Valley area and/or reduce Colorado River flows below Parker Dam. Refer to Section 6.3 for detailed analysis of the five environmental categories evaluated: agricultural resources, geology and soils, air quality, hydrology and water quality, and biological resources. The remaining discussion in this summary section focuses on hydrology and biological resources.

The assessment of cumulative effects on the Colorado River is based on a projection that reasonably foreseeable projects and programs could annually change the point of diversion of up to approximately 388,000 acre-feet of Colorado River water. Added to the approximately 111,000 acre-foot maximum annual change in point of diversion for Colorado River water that would occur under the proposed Program, the reasonably foreseeable total change in diversion would be up to 499,000 acre-feet per year. This cumulative change in diversion would not affect the magnitude of water surface elevation fluctuations below Parker Dam for the reasons described in Section ES-4.4 (and Section 4.4), and average water surface elevations would be reduced by a maximum of approximately 4.5 inches. Average groundwater levels along the edge of the river and its backwaters also may experience a decrease of up to

approximately 4.5 inches, although the decrease in average groundwater elevations along the river's edge would occur over a period of several years. The effect of river water surface elevation changes on adjacent groundwater levels is attenuated as distance from the river increases, and it also is affected by soil characteristics, underlying geologic formations, the presence of other hydrological features and the presence and extent of other groundwater sources (such as percolation of irrigation water).

These changes in average water surface elevation and groundwater levels would neither constitute a substantial alteration in the river's hydrology nor result in an adverse impact to biological resources. Riparian habitat along the shore of the river would be able to adjust to these minor changes, and the changes would not affect the ability of fish in the Colorado River to spawn. Accordingly, cumulative hydrological and biological resource impacts along the Colorado River would be less than significant.

It should be noted that more than one methodology has been used to assess potential impacts from other proposed Colorado River water conservation and transfer projects. The differences in these methodologies reflect differences in the interpretations in the applicable laws (e.g., CEQA, National Environmental Policy Act [NEPA], federal Endangered Species Act) under which the analyses were prepared by the various lead agencies and regulatory agencies and the focus (project-specific, programmatic or cumulative) of those analyses. Most notably, a Biological Assessment completed by the Bureau of Reclamation in 2000 assessed potential effects associated not only with those projects considered reasonably foreseeable under CEQA, but also included projected water uses by Lower Division States that do not reflect known, proposed or reasonably foreseeable projects (i.e., as much as 1.574 million acre-feet). Although not all parties involved in lower Colorado River water conservation and transfer projects necessarily agreed with this methodology, it was used as the basis for the Bureau of Reclamation's Biological Assessment and the associated Biological Opinion issued by the USFWS in January 2001. This methodology also was carried forward into other NEPA or joint NEPA/CEQA documents prepared with the Bureau of Reclamation as federal lead agency. Because this methodology addressed changes in flows along the entire stretch of river from Parker Dam downstream to Imperial Dam, it is not directly applicable to the proposed Program evaluated in this Draft EIR. Many of the backwaters that could be affected by other proposed water conservation and transfer projects are located below the Palo Verde Diversion Dam. As a result, the proposed Program would either incrementally help to offset reductions in river flows (from the Palo Verde Diversion Dam downstream to the mouth of PVID's Outfall Drain) or would have no net effect on flow levels (downstream from PVID's Outfall Drain).

Because the proposed Program would not incrementally contribute to significant cumulative impacts in the environmental categories examined in the Draft EIR, no mitigation would be required.

ES-4.9 Summary of Potential Environmental Impacts

Table ES-1 (following page) summarizes the potential environmental effects of the proposed Program. As indicated in the table, implementing the proposed Program would result in less-than-significant effects on the environment and would not require mitigation.

Table ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

Environmental Category	Potential Environmental Impact	Mitigation Measure	Residual Impact
Agricultural Resources	No conversion of farmland to non-agricultural use. No violation of Williamson Act contracts. Consistent with local jurisdictions' general plan guidance on agricultural resources. Less-than-significant impact resulting from reduced agricultural production compared to regional and state production levels.	None Required	Less Than Significant
Geology and Soils	As a result of mandatory land management measures that would reduce or avoid wind erosion, impacts would be less than significant. Consistent with local jurisdictions' general plan guidance on soil resources.	None Required	Less Than Significant
Air Quality	Slight reduction in emissions of ozone precursors due to reduced agricultural activity. As a result of mandatory land management measures that would reduce or avoid wind erosion and the associated generation of PM_{10}, impacts would be less than significant. Consistent with local jurisdictions' general plan guidance on air quality.	None Required	Less Than Significant
Hydrology and Water Quality	Changes in groundwater and surface water hydrology and water quality would not affect the beneficial uses of those waters and would be less than significant. Consistent with local jurisdictions' general plan guidance on hydrology and water quality.	None Required	Less Than Significant
Biological Resources	Reduction in extent of fields being actively farmed (irrigated) would have a less-than-significant impact on wildlife foraging. Effects of reduced irrigation and change in point of diversion for Colorado River water would be less than significant for vegetation along PVID's drains, the Colorado River and its backwaters. Similarly, effects on wildlife that utilize PVID's drains, the Colorado River and its backwaters would be less than significant. Consistent with local jurisdictions' general plan guidance on biological resources.	None Required	Less Than Significant
Cumulative	The proposed Program would incrementally contribute to less-than-significant cumulative impacts to hydrology, water quality and biological resources along the lower Colorado River.	None Required	Less Than Significant

ES-5 ALTERNATIVES

The proposed Program would neither result in significant environmental impacts nor contribute incrementally to significant cumulative effects on the environment. Accordingly, this Draft EIR does not identify alternatives that would avoid or minimize significant environmental impacts. Although no significant impacts on the environment would result from the proposed Program, this Draft EIR

nonetheless includes an alternatives analysis in order to provide a comparison of the relative merits of potential alternatives to the proposed Program, based on consideration of less-than-significant impacts.

In the absence of significant environmental effects that need to be avoided or minimized, this Draft EIR examines three alternatives, including the No Project Alternative (required by CEQA) and two feasible Program alternatives. These include a Reduced Non-irrigation Period Alternative and a Reduced Participation Alternative. Similar to the proposed Program, none of these three alternatives to the proposed Program would result in significant effects on the environment.

No locational alternatives were analyzed because feasible locational alternatives either would not meet the proposed Program's basic goals or would cause greater environmental impacts than the proposed Program. PVID also initially considered several other alternatives or options that were determined to (1) be infeasible, (2) not meet the basic goals of the proposed Program and/or (3) be so similar to the proposed Program as to not warrant separate evaluation. The reader is referred to Section 7.5 for details on these alternatives.

ES-6 POTENTIAL AREAS OF CONTROVERSY

Based on community and agency input, including responses to the Notice of Preparation (see Appendix A), potential areas of controversy are listed below and relevant EIR sections that discuss those concerns follow in parentheses. As indicated elsewhere in the Draft EIR, these potential areas of controversy were determined to be unfounded (e.g., loss of water rights) or to result in either no impacts or less-than-significant impacts based on substantial evidence. Under CEQA and the State CEQA Guidelines, economic or social effects, in and of themselves, are not treated as significant effects on the environment in an EIR. The State CEQA Guidelines suggest that information on economic and social effects be presented in an EIR in whatever form the Lead Agency desires (State CEQA Guidelines Section 15131). In addition, CEQA states that, "The lead agency shall determine whether a project may have a significant effect on the environment based on substantial evidence in light of the whole record" (Section 21082.2(a) of the Public Resource Code). Substantial evidence is described in CEQA thusly:

> Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment, is not substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (Section 21082.2(c) of the Public Resources Code).

Within this context, the following potential areas of controversy were identified and addressed:

- Potential effects on groundwater in the Palo Verde Valley (Section 4.4 and Appendix B)
- Potential changes to the hydrology (especially water surface elevation) of the Colorado River, and the perception of impacts to recreation and biological resources (Sections 4.4, 4.5, 9.3 and 9.13)
- Socioeconomic effects to employment and local businesses in the Blythe region (Section 9.11)

- Perception that the proposed Program would lead to the loss of permanent water rights in the Palo Verde Valley (Section 1.1.3)
- Changes to agricultural production capacity at local, regional and statewide levels (Section 4.1)

ES-7 UNRESOLVED ISSUES

This EIR provides the information necessary for PVID's Board of Trustees and Metropolitan's Board of Directors to make decisions regarding the proposed Program in compliance with CEQA and the State CEQA Guidelines. Given the environmental analyses in the EIR, as well as the discussion in the previous section (ES-6) dealing with potential areas of controversy, there are no unresolved issues associated with the proposed Program.

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CHAPTER 1.0 – INTRODUCTION

The Palo Verde Irrigation District (PVID) and The Metropolitan Water District of Southern California (Metropolitan) propose to commence a Land Management, Crop Rotation and Water Supply Program (Program) in the California portion of the Palo Verde Valley within PVID (see Figures 1-1 and 1-2). This Draft Environmental Impact Report (EIR) analyzes the environmental effects that potentially may occur should the proposed Program be implemented.

1.1 PALO VERDE IRRIGATION DISTRICT

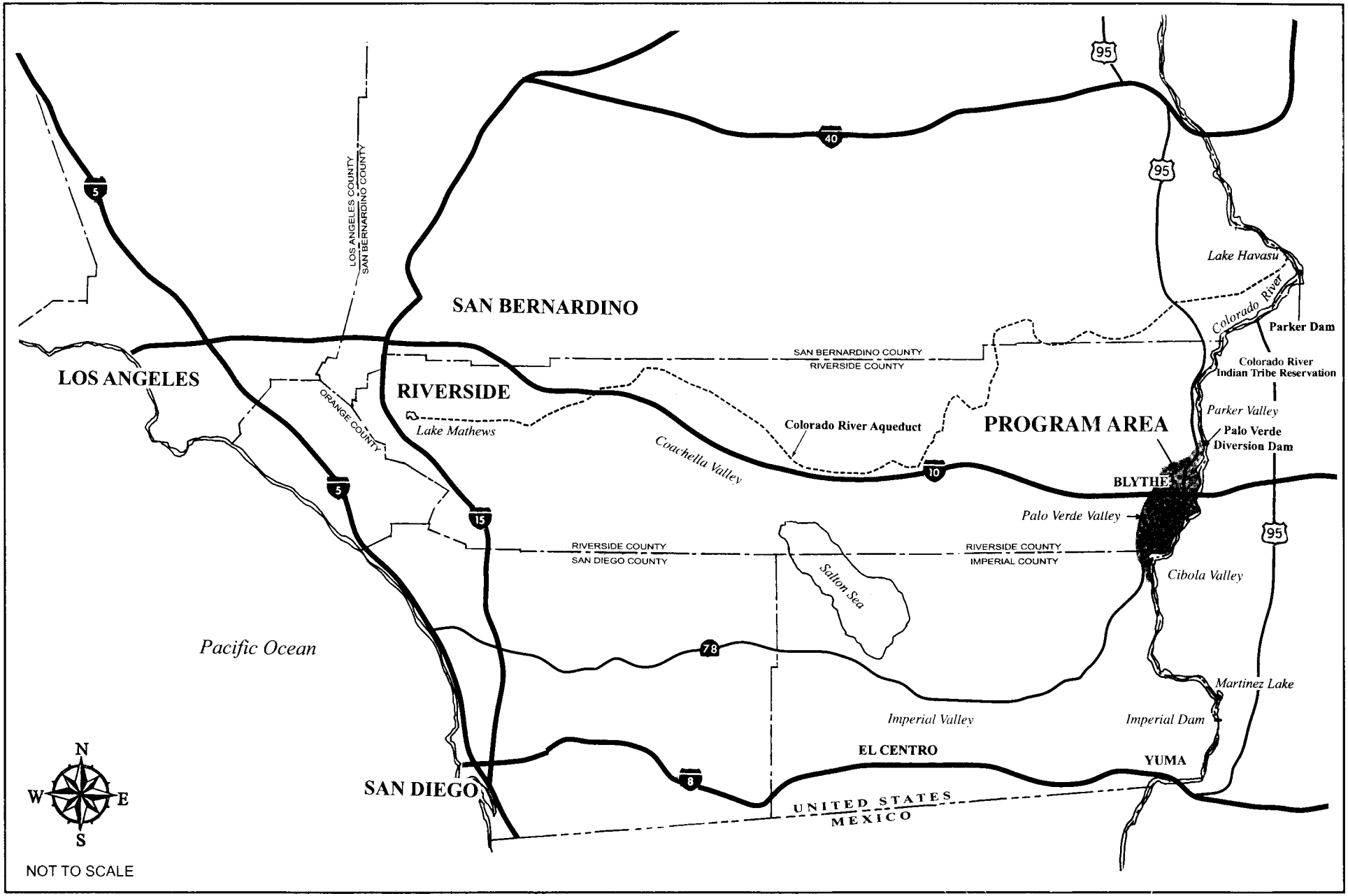
1.1.1 Overview of the Palo Verde Irrigation District

PVID diverts water from the Colorado River to the Palo Verde Valley for irrigation and provides agricultural drainage for irrigated farmlands. The diversion of river water into the valley occurs at the Palo Verde Diversion Dam, located on the Colorado River at the northern (upstream) end of the Palo Verde Valley. In addition to irrigating Palo Verde Valley farmlands, some of the water diverted into the valley is pumped up to the Palo Verde Mesa for irrigation of mesa farmlands. All water unused by PVID returns to the Colorado River.

PVID began functioning in 1925, following the passage of the Palo Verde Irrigation District Act, although diversions of Colorado River water into the valley for irrigation date to the late 1800s. Only PVID lands in the California portion of the Palo Verde Valley and below the Palo Verde Diversion Dam would be eligible to participate in the proposed Program. Major crops planted in the Palo Verde Valley include alfalfa, cotton, wheat, sudan grass, melons, lettuce and other vegetables (see Table 1-1).

PVID contains approximately 131,228 acres in Riverside and Imperial counties, 104,500 acres of which are in the Palo Verde Valley. The remaining 26,728 acres of PVID are located on the Palo Verde Mesa. An estimated 91,000 acres of PVID's valley lands below the Palo Verde Diversion Dam are irrigated, of which about 83,000 acres are in Riverside County and about 8,000 acres are in Imperial county. The Colorado River, which generally acts as the boundary between Arizona and California, forms PVID's eastern and southern boundaries. Figure 1-3 shows a satellite view of the Palo Verde Valley and surrounding lands (note that croplands are shown in red because the satellite photo is based on an infra-red image).

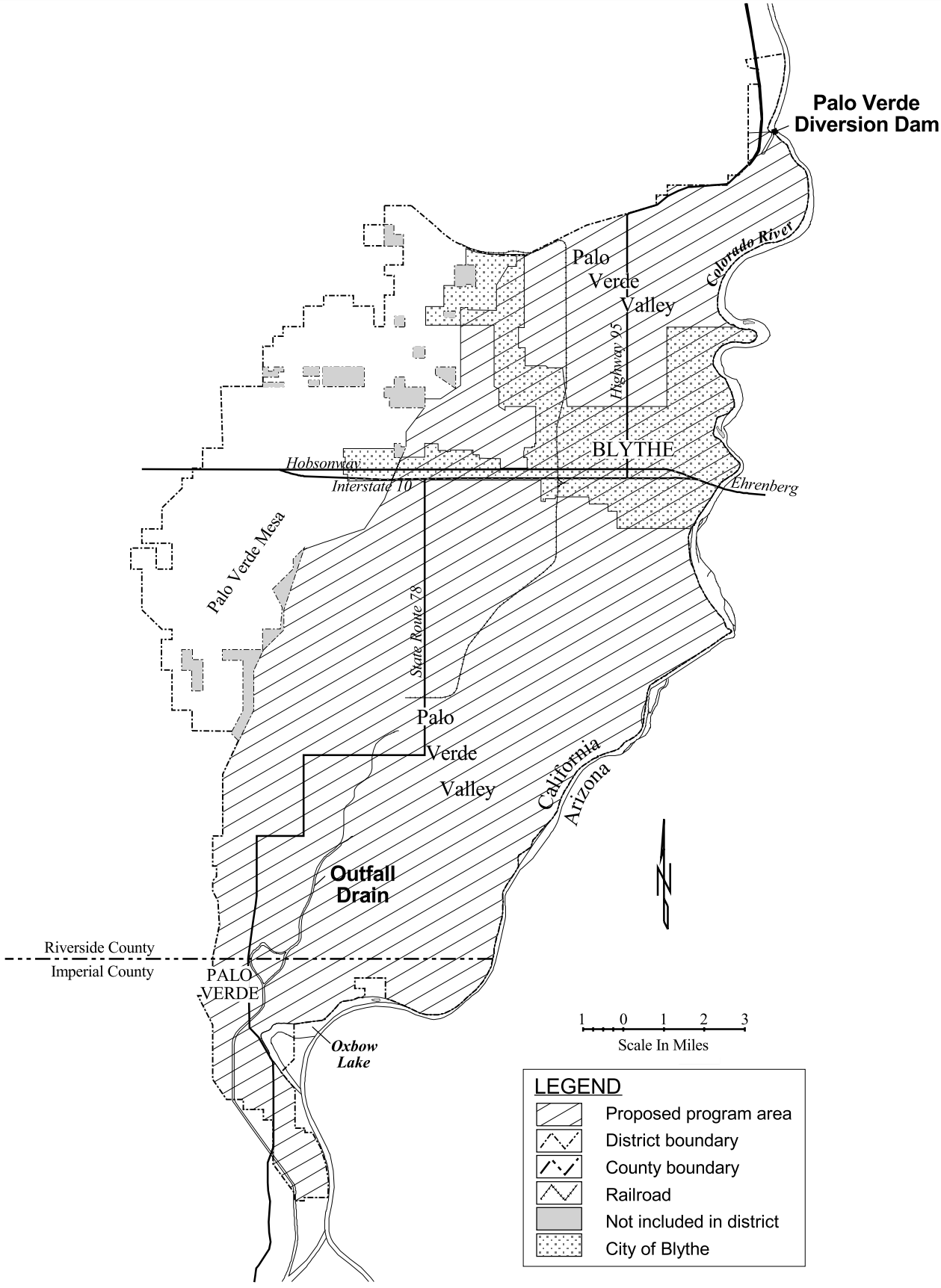
PVID operates approximately 244 miles of main and lateral canals, of which approximately 55 miles are lined. PVID lines approximately three miles of earthen canals per year—lining reduces seepage from canals and helps control the growth of aquatic weeds, thereby improving operational control and reducing maintenance requirements. Overall, PVID's canal system consists of more than 2,550 structures, including canal headings, checks, siphons, bridges, flumes, pump plants, moss racks and other miscellaneous structures.



Regional Location Map

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 1-1



Palo Verde Irrigation District

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 1-2

Table 1-1
PVID CROP ACREAGES FOR YEAR 2000

Crop	Acreage[1]	Percent of Total Cropped Acreage (%)
Alfalfa (hay, seed, etc.)	59,700	54.58
Sudan (hay, seed)	1,512	1.38
Bermuda (pasture grass seed)	2,641	2.41
Wheat and Barley	6,424	5.87
Corn	300	0.27
Oats	335	0.31
Cotton	17,498	16.00
Miscellaneous Field Crops[2]	4,655	4.26
Citrus, Orchard, Palm trees	2,713	2.48
Miscellaneous Vegetables[3]	2,343	2.14
Broccoli	1,879	1.72
Lettuce	2,362	2.16
Cantaloupes	3,686	3.37
Honeydews	518	0.47
Mixed Melons and Watermelons	1,430	1.31
Idle	1,310	1.20
Fish Ponds	72	0.07
Total	**109,378**	**100.00**

[1]Includes double-cropping and mesa acreages.
[2]Miscellaneous field crops include Klein grass, Milo, Rye grass and Timothy grass.
[3]Miscellaneous vegetables include artichokes, cabbage, carrots, tomatoes, onions, garlic, squash and others.

Water is diverted from PVID's canals to fields through canal headgates that connect to privately owned irrigation ditches. It is estimated that there are approximately 440 miles of irrigation ditches within PVID's boundaries, of which approximately 70 percent are lined.

In addition to its canal system, which provides irrigation water to its members, PVID also operates a drainage system composed of approximately 141 miles of open drainage channels carrying groundwater drainage and canal operational spill water away from farmland and back to the Colorado River. Unlike canals, drains are not lined with concrete because this would prevent them from collecting groundwater.

Source: U.S. Bureau of Reclamation 2001

Satellite Image of Palo Verde Valley

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 1-3

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PVID conducts year-round maintenance and repairs at its canals and drainage facilities. Canal maintenance activities include:

- Removing aquatic weeds that restrict flow (called "mossing")
- Building up banks that over time have become too low for safe operation
- Removing sediment to improve flow
- Adding gravel to and grading bank maintenance roads
- Adding riprap (large rocks) to canal banks at edge of water to minimize erosion damage
- Compacting soils along the water side of canal banks to pack the banks, collapse muskrat dens and avert potential breaks
- Repairing breaks in banks
- Controlling weeds on banks by spraying, burning and mowing
- Maintaining the structures that control water deliveries (e.g., headgates)

Similar maintenance actions are required for PVID's drains, which also occasionally require the removal of dams constructed by beavers that enter the drainage system from the Colorado River. Over a recent five-year period (1996–2000), PVID has averaged approximately 43 miles of drain cleaning plus an additional 20 miles of drain bank brushing (vegetation removal) per year.

Shallow groundwater underlies virtually the entire Palo Verde Valley, with observed aquifer levels ranging from 3.9 to 22.6 feet below the surface. The groundwater under the Palo Verde Valley is hydraulically connected to the Colorado River, heavily influenced by percolation of irrigation water and highly saline. Due to almost 100 years of irrigation, the northern portion of the valley's groundwater has been improved by the drains removing the saline groundwater, which is flushed out by deep percolation of better quality (less saline) irrigation water. The southwestern portion of the valley currently has groundwater with total dissolved solids in excess of 3,500 milligrams per liter (mg/L) near the surface, with salinity increasing with groundwater depth. Slowly, these salty waters near the water table surface are being flushed into the drains by irrigation activities.

Because of fluctuations in groundwater levels, PVID occasionally alters the bottom elevation of its drains to ensure that they remain effective at carrying return flows to the Colorado River. High groundwater in the Palo Verde Valley historically has been problematic in terms of its effects on crops and other human uses (e.g., high groundwater can constrain the use of septic systems). Because of the detrimental effects of high groundwater, PVID has worked to lower groundwater levels within the valley.

PVID occasionally must deepen its drains so that they continue to carry groundwater return flows to the Colorado River. These modifications typically take the form of lowering the bottom elevation of the drains so that the drain extends below the groundwater level. Most of the siphons in the drains are galvanized steel pipe and must remain submerged to minimize rust deterioration. As needed, PVID installs rock weirs downstream of pipes to keep the pipes underwater during low water level periods (such as winter, when less irrigation water is applied to fields). By design, drain pipes are placed one foot

underwater, which limits how much the surface water elevation in drains can decrease before a weir is installed.

In addition to its ongoing program of maintenance and repairs, PVID also routinely calculates water deliveries from its canals and measures return flows in drains to help track overall water use within the district boundaries of PVID. Water use within PVID includes additional water use for about one-sixth of the valley that usually is double cropped. PVID uses the diversion-less-return method of calculating water use. For the last ten years (excluding 1992 through 1994) the average annual diversion per net water toll acre has been approximately 10.3 acre-feet.[1] The years 1992 through 1994 are excluded from the ten-year average because a Test Program, described in Section 6.2.1, affected diversion levels. For the proposed Program, the actual amount of water "saved" by not irrigating farmland within the Palo Verde Valley would be determined on an annual basis by a verification committee composed of PVID, Metropolitan and the U.S. Bureau of Reclamation.

Based on PVID data, average annual diversions at the Palo Verde Diversion Dam for the ten-year period from 1987 to 1999 excluding 1992 through 1994 (when the Test Program was being implemented) were roughly 913,000 acre-feet. For that same period, average annual measured and estimated unmeasured return flows totaled approximately 513,000 acre-feet, with an average approximate water use (e.g., consumption by crops) of 400,000 acre-feet per year. Annual average flows in the Colorado River below Parker Dam for the period from 1987 to 1999 (excluding 1992 through 1994) averaged 7,908,800 acre-feet (USGS data). PVID's annual diversions from the Colorado River for that ten-year period were about 11.5 percent of the river's annual flow volume at the point of diversion, with water use (diversion-less-return) representing approximately 5.1 percent of the annual average flow volume at the point of diversion.

Most of PVID's funding is obtained by charging, on a flat basis, a water toll fee per acre of land feasible for agriculture. A slight adjustment is made to this fee if the owner must pump delivered water to a higher elevation for irrigation. Remaining funds are obtained by assessing property within PVID's boundaries, including city and town lots, and charging an annual assessment.[2] PVID does not receive state or federal funding.

1.1.2 Brief Overview of Metropolitan

Metropolitan delivers supplemental water to its member agencies situated within the coastal plain of southern California. These member agencies consist of 26 cities, municipal water districts and a county water authority that provide drinking water to more than 17 million people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura counties. Water sources for Metropolitan deliveries are the Colorado River and the State Water Project. To enhance the supply and availability of water for member agencies, Metropolitan has maintained an open dialogue with districts that utilize

[1] An "acre-foot" is enough water to cover one acre a foot deep, approximately 326,000 gallons.

[2] Non-agricultural users within PVID are charged an assessment because water pumped from private and public wells within PVID's district boundaries is pumped under the PVID water right (see Section 1.1.3), and PVID incurs expenses protecting this water right.

Colorado River water to explore mutually beneficial water savings programs. These programs have included measures such as lining canals with concrete and reducing irrigation runoff from agricultural fields through tailwater recovery systems.

In the mid-1980s, Metropolitan and PVID began discussions related to a possible water savings program in PVID. In 1991, PVID and Metropolitan agreed in principle on the structure of a two-year test land program (1992-1994 Test Program) to store in Lake Mead an amount of water equal to the amount saved from agricultural uses for later use by Metropolitan. The Test Program was successfully implemented from August 1992 through July 1994, and it serves as a basis for the currently proposed Program.

1.1.3 PVID's and Metropolitan's Colorado River Water Rights

The following discussion is a simplified overview of the two agencies' water rights in relation to the proposed Program and is not meant to be an exhaustive compendium on water rights within the State of California and The Law of the River. PVID's and Metropolitan's Colorado River water rights are important to note because without these rights, PVID would not be able to save water and have the Bureau of Reclamation make an equal amount of water available to Metropolitan. There are numerous compacts, federal laws, court decisions and decrees, contracts and regulations, and agreements that address rights to use Colorado River water, and these are collectively referenced as "The Law of the River." In 1963, the United States Supreme Court, in its decision in *Arizona v. California*, and its subsequent Decree on March 9, 1964, apportioned use of 4.4 million acre-feet of Colorado River water to California, 2.8 million acre-feet to Arizona and 0.3 million acre-feet to Nevada in a normal year. The Court permitted the Secretary of the Interior to make available the unused apportionments of the respective states (Arizona, California and Nevada) to the other respective states. The Court also apportioned the use of surplus water that may be available in excess of 7.5 million acre-feet as follows: California—50 percent, Arizona—46 percent and Nevada—4 percent of the amount available.

Under the California Seven-Party Agreement of 1931, PVID has a Priority 1 right to irrigate a gross area of 104,500 acres of Palo Verde Valley lands, as well as Priority 3 and Priority 6 rights to irrigate lands on the Lower Palo Verde Mesa (see Table 1-2). Metropolitan has Priority 4 and Priority 5 rights to Colorado River water for use on the coastal plain of southern California. With specific agreements in place, the water made available to Metropolitan under the proposed Program would come from PVID's Priority 1 water right.

Making water available to Metropolitan under the proposed Program would not affect existing rights to Colorado River water for either PVID or Metropolitan. To the contrary, the saved water would be made available to Metropolitan within the context of The Law of the River. Federal and state laws encourage water conservation and the voluntary movement of water from agricultural to urban uses. Federal and state laws also provide protections against loss of water rights by agricultural entities that undertake such programs. Under these laws, water sold by PVID to Metropolitan pursuant to the proposed Program would in no manner result in forfeiture or loss of PVID's historic water rights.

Table 1-2
PRIORITIES IN CALIFORNIA SEVEN PARTY AGREEMENT AND WATER DELIVERY CONTRACTS

Priority	Description		Acre-feet annually
1	Palo Verde Irrigation District (PVID) gross area of 104,500 acres of valley lands		
2	Yuma Project (Reservation Division) not exceeding a gross area of 25,000 acres within California		3,850,000
3(a)	Imperial Irrigation District (IID) and other lands in Imperial and Coachella valleys served by the All American Canal (AAC)		
3(b)	PVID on 16,000 acres of Lower Palo Verde Mesa lands		
4	Metropolitan for use on the coastal plain of southern California		550,000
		Subtotal	4,400,000
5(a)	Metropolitan on the coastal plain of southern California		550,000
5(b)	City and/or County of San Diego[1]		112,000
6(a)	IID and other lands in Imperial and Coachella valleys served by the AAC		300,000
6(b)	PVID on 16,000 acres of Lower Palo Verde Mesa lands		
7	Agricultural use in the Colorado River Basin in California		- - -
		Total	**5,362,000**

[1]In 1946, the city of San Diego, San Diego County Water Authority, Metropolitan and the Secretary of the Interior entered into a contract in which the right to storage and delivery of Colorado River water vested in the city of San Diego was merged with and added to the rights of Metropolitan under conditions since satisfied.

1.2 INTRODUCTION TO PROPOSED PROGRAM

The proposed Program would provide Metropolitan with a water supply option of 25,000 acre-feet up to approximately 111,000 acre-feet of Colorado River water per year for 35 years. The proposed Program would also assist in stabilizing the farm economy within the Palo Verde Valley through a one-time entry payment and bi-annual payments applicable to participants in the proposed Program and through providing a funding mechanism for future, as yet undetermined, community improvement projects. Although the exact agreement structure has not yet been arrived at, two types of agreements are contemplated: (1) a Program agreement between PVID and Metropolitan and (2) land contracts, each with a term of up to 35 years, between Metropolitan and participants in the Palo Verde Valley. Farmlands would be voluntarily committed to the proposed Program by an estimated 60 to 70 land contracts. Water saved by the proposed Program would be made available to Metropolitan to help meet the water demands within its service area. No additional water above the amount either currently diverted or historically delivered would be brought to Metropolitan's service area from the Colorado River.

As described in Section 1.1.1, PVID diverts water from the Colorado River into the Palo Verde Valley for irrigation. Metropolitan diverts water from the Colorado River for delivery to its member agencies. Water is diverted by Metropolitan at Lake Havasu, which is formed by Parker Dam approximately 58 river miles[3] upstream from the Palo Verde Valley. Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of the PVID would be saved and an equal amount of water would be made available as a water supply option to Metropolitan for ultimate use in its service area to meet water demand. The water would be saved through land management and crop rotation measures that reduce the amount of PVID farmland being irrigated (see Section 3.4). Metropolitan delivers its Colorado River water through its Colorado River Aqueduct (see Figure 1-1).

1.3 CEQA NOTICE OF PREPARATION AND DRAFT EIR CIRCULATION

Pursuant to CEQA and the State CEQA Guidelines, PVID prepared a Notice of Preparation (NOP) at the initiation of this EIR process. Copies of the NOP, along with an Initial Study and Environmental Checklist, were sent to the State Clearinghouse and filed with the County Clerks for Riverside and Imperial counties on October 26, 2001. The associated minimum 30-day review period required by CEQA for the NOP and Initial Study extended from October 29 through November 27. In addition, copies of the NOP and Initial Study were provided to several trustee and responsible agencies including Metropolitan (a Responsible Agency under CEQA), local libraries, potentially interested agencies and organizations and over 500 landowners within the Palo Verde Valley.

PVID published the Notice of Availability of the NOP in the *Imperial Valley Press* on November 7 and 8 and in the *Riverside Press Enterprise* on November 6 and 7, 2001. The *Imperial Valley Press* and *Riverside Press Enterprise* are each newspapers of general circulation in the respective Imperial and

[3] A river mile is equal to one mile along the course of a river. Because rivers often meander, distances between two points measured in river miles are often longer than the distance between those two points if measured in a straight line.

Riverside county portions of PVID. Additionally, PVID published a Notice of Availability of the NOP in the local *Palo Verde Valley Times* on October 26 and 31, 2001. In order to ensure that members of the public and agencies responding to the newspaper notices had sufficient time to prepare and provide scoping comments, PVID accepted responses to the NOP, Initial Study and Environmental Checklist through March 4, 2002. Copies of the NOP, Initial Study, Environmental Checklist and responses received are included as Appendix A.

This Draft EIR is being circulated for public review to public agencies and interested members of the general public for a period of 45 days. Comments on the adequacy of this Draft EIR must be provided to PVID by the close of the 45-day public review period (June 19, 2002) in order to be addressed in the Final EIR. Refer to the Notice of Completion filed with the Riverside and Imperial County Clerks and the State Clearinghouse regarding the closing date for the review period.

During the 45-day public review period, comments from the general public as well as organizations and agencies on the Draft EIR may be submitted to the lead agency at the following address: Mr. Ed Smith, General Manager, Palo Verde Irrigation District, 180 W. 14th Avenue, Blythe, CA 92225.

1.4 DRAFT EIR FORMAT

This Draft EIR is organized to facilitate a basic understanding of the proposed Program and the potential environmental implications of its implementation. The chapters and technical appendices to the Draft EIR are briefly highlighted below.

The Executive Summary includes a brief description of the proposed Program, a summary of the potential environmental impacts, the alternatives to the proposed Program and potential areas of controversy.

Chapter 1.0 introduces the roles and responsibilities of PVID and Metropolitan, existing water rights, and the environmental analysis process leading to the preparation of this Draft EIR. Chapter 2.0 provides an overview of the regional environmental setting and the consistency determination between the proposed Program and applicable plans.

Chapter 3.0 presents a description of the proposed Program, including the objectives of the proposed Program and the intended uses of this Draft EIR.

Chapter 4.0 describes the existing environmental conditions in the study area, existing ordinances and applicable laws, the criteria used to identify when potential impacts would be considered significant and environmental analyses discussions. As there would be no significant impacts associated with the proposed Program, no mitigation measures would be required. The environmental impact categories include agricultural resources, geology and soils, air quality, hydrology and water quality, and biological resources. In addition, there is a section in this chapter, Section 4.6, that addresses consistency with the Southern California Association of Governments' *Regional Comprehensive Plan and Guide* policies.

Chapters 5.0 and 6.0 contain other discussions required by CEQA, including growth inducing impacts and cumulative impacts, respectively.

Chapter 7.0 describes the alternatives to the proposed Program, including the No Project Alternative, and summarizes the potential effects of these alternatives. Other options/infeasible alternatives are also mentioned in this chapter.

Chapter 8.0 identifies that there are no significant irreversible environmental changes or significant unavoidable environmental effects that would result from the proposed Program.

Chapter 9.0 addresses those effects found not to be significant. These effects were first identified in the NOP. One, in particular, dealt with farm labor employment changes and noted that a study on this issue would be included as a technical appendix to the Draft EIR. Since the release of the NOP, PVID has determined that the information should be contained directly in the Draft EIR. The information is provided in Section 9.11.

Chapter 10.0 lists the public agencies, organizations and individuals consulted during the preparation of this Draft EIR, and Chapter 11.0 lists the preparers of the Draft EIR. Chapter 12.0 includes a list of citations and references to the main text of the Draft EIR. Chapter 13.0 provides a glossary of terms and acronyms and abbreviations.

Three appendices are also included as support to the Draft EIR: Appendix A (includes the NOP, Initial Study, NOP comment letters and a summary of the comments); Appendix B (Hydrology and Water Quality Technical Report); and Appendix C (Assessment of Biological Resources associated with the Palo Verde Valley Agricultural Drains).

1.5 FINAL EIR AND ACTION TAKEN ON PROGRAM

PVID will prepare responses to comments received during the public review period regarding the adequacy of the Draft EIR. The comments and responses, together with the Draft EIR and the technical reports, will comprise the Final EIR.

In arriving at a decision on whether to proceed with the proposed Program, the PVID Board of Trustees will consider, among other things, the information in the Final EIR and will determine the adequacy of the environmental documentation under CEQA. A similar process will be implemented by the Metropolitan Board of Directors in its consideration of the Final EIR and its decision on the Program as a Responsible Agency under CEQA.

1.6 MITIGATION MONITORING AND REPORTING PROGRAM

Pursuant to California Public Resources Code (Section 21081.6), a Mitigation Monitoring and Reporting Program is required when proposed mitigation measures are identified in the Final EIR to reduce

potentially significant impacts. As no significant impacts would result with the implementation of the proposed Program, no Mitigation Monitoring and Reporting Program would be required.

1.7 AGENCY APPROVALS AND PERMITS

In addition to certification of the Final EIR by PVID (as CEQA Lead Agency) and its consideration by Metropolitan (as a Responsible Agency under CEQA), other responsible agencies may utilize the Final EIR as needed. Concurrences, approvals and permits for specific elements of the proposed Program may be required from other governmental agencies, including those listed below.

- Consistency with The Law of the River – Concurrence from the U.S. Department of the Interior, Bureau of Reclamation and others for consistency between the proposed Program with Colorado River water contracts and other provisions of The Law of the River
- Required Permits – Applicable local, state and federal permits would be obtained by the Program participants for the use of herbicides, pesticides and insecticides as part of the land management measures in the proposed Program. However, this would not be substantially different from what is now occurring for farming operations within the Palo Verde Valley

CHAPTER 2.0 – PROGRAM SETTING

This chapter describes the regional environmental setting for the proposed Program and addresses the consistency of the proposed Program with applicable general and regional plans.

2.1 REGIONAL ENVIRONMENTAL SETTING

The proposed Program would be implemented at various irrigated private farmlands within PVID in the California portion of the Palo Verde Valley and below the Palo Verde Diversion Dam. PVID is located along the Colorado River in southeastern Riverside and northeastern Imperial counties, approximately 200 miles east of Los Angeles (see Figures 1-1 and 1-2).

PVID contains approximately 131,228 acres in Riverside and Imperial counties, 104,500 acres of which are in the Palo Verde Valley. The remaining 26,728 acres of PVID are located on the Palo Verde Mesa and would not be included in the proposed Program. An estimated 91,000 acres of PVID's valley lands below the Palo Verde Diversion Dam are irrigated, of which about 83,000 acres are in Riverside County and 8,000 acres are in Imperial County. The Colorado River, which generally acts as the boundary between Arizona and California, forms PVID's eastern and southern boundaries.

Palo Verde Valley lies in the Colorado River floodplain, as does Cibola Valley to the south. The Palo Verde Valley is approximately nine miles wide and 30 miles long and extends east across the Colorado River into Arizona. Palo Verde Valley is bordered on the north by the Big Maria Mountains, on the west by the Palo Verde Mesa (portions of which are in PVID) and the Mule Mountains, and on the south by Cibola Valley and the Palo Verde Mountains. The Cibola National Wildlife Refuge lies at the southern end of the Palo Verde Valley and in the Cibola Valley. The Dome Rock Mountains in Arizona form the eastern boundary of the Palo Verde Valley. The valley is relatively level, ranging in elevation from about 290 feet above sea level at its northern end to about 225 feet above sea level at its southern end. Valley soils are alluvial in nature, having been laid down in past years by Colorado River floods. These alluvial soils range in texture from fine grain clays to silty loams to light sandy soils, with the predominant soil being a sandy loam. The entire valley is underlain with permeable sand at shallow depths.

The Palo Verde Valley typically experiences a long, hot growing season that is ideal for agriculture and includes lands in agricultural production. Mild winters, with a minimum of frost, permit growing of crops year round. Major crops planted in the Palo Verde Valley include alfalfa, cotton, wheat, sudan grass, melons, lettuce and other vegetables.

The Palo Verde Valley is served by Interstate Highway 10 (I-10), U.S. Highway 95 and State Highway 78, as well as by a spur line of the Arizona and California Railroad. I-10 connects to the Coachella Valley (which includes Indio and Palm Springs) and Los Angeles to the west, and to Phoenix, Arizona to the east. U.S. Highway 95 extends north to Needles and Las Vegas, Nevada. South-bound Highway 95 runs contiguous with I-10 east to Quartzsite, Arizona and then south to Yuma, Arizona. State Highway 78 heads southwest from Blythe to California's Imperial Valley before heading west to San Diego County. The principal city in the area is Blythe, which—with its urban fringe—has a

population of about 23,550 (including more than 8,300 inmates in two state prisons west of the valley). The Colorado River Indian Tribes Reservation encompasses Palo Verde Valley lands in both California and Arizona.

2.2 CONSISTENCY DETERMINATION BETWEEN THE PROPOSED PROGRAM AND APPLICABLE GENERAL PLANS AND REGIONAL PLANS

For the reasons described in Chapter 4.0 and summarized below, the proposed Program would be consistent with local jurisdictions' general plans.

Specific farmlands within the Palo Verde Valley portion of PVID that would be included as part of the proposed Program have not been selected yet, but are located within Imperial and Riverside counties. Irrigated farmlands eligible to participate in the proposed Program are generally designated for agricultural use in Riverside and Imperial counties' general plans. The vast majority of farmlands within the Palo Verde Valley qualify as Prime Farmland or Farmland of Statewide Importance (see Section 13.1, Glossary, for definitions). Because the implementation of the proposed Program would not result in the conversion of any existing land use to a new or different use, the proposed Program would not require review for conformance with any applicable land use plan, policy or regulation.

The proposed Program also would not conflict with other adopted general plan goals, objectives or policies, such as those related to agricultural resources, air quality and water quality.

The Palo Verde Valley portion of PVID is not included within an adopted Habitat Conservation Plan or Natural Community Conservation Plan area; however, the proposed Lower Colorado River Multi-Species Conservation Program (LCR MSCP), currently under development, would include the Palo Verde Valley. The relationship of the proposed Program to the developing LCR MSCP is addressed in Section 6.2 (Related Projects).

At the request of the Southern California Association of Governments (SCAG), this Draft EIR provides an analysis of proposed Program consistency with specific SCAG *Regional Comprehensive Plan and Guide* (RCPG) policies identified by SCAG in its response letter to the NOP (included in Appendix A). An assessment of consistency with SCAG RCPG policies, provided in Section 4.6, shows that the proposed Program would not conflict with any of the noted policies.

CHAPTER 3.0 – PROGRAM DESCRIPTION

3.1 BACKGROUND

The background of the proposed Program relates to California's historical use of Colorado River water, "The Law of the River" and to the state's ongoing efforts to reduce its use of Colorado River water to within its annual, non-surplus year allocation of 4.4 million acre-feet (see Section 1.1.3).

3.2 PROGRAM LOCATION

The proposed Program would be implemented at various irrigated farmlands located within PVID, within the California portion of the Palo Verde Valley and below the Palo Verde Diversion Dam. As indicated in Figure 1-1, PVID is located along the Colorado River in southeastern Riverside and northeastern Imperial counties. Between 6,000 and 26,500 of the estimated 91,000 irrigated acres available below the Palo Verde Diversion Dam in the Palo Verde Valley portion of PVID would not be irrigated in a year under the proposed Program. The specific locations of participants' farmlands voluntarily committed to the proposed Program have not yet been identified.

As described in Section 1.1.1, PVID diverts water from the Colorado River into the Palo Verde Valley for irrigation. Metropolitan diverts water from the Colorado River for delivery to its member agencies via the Colorado River Aqueduct at its existing Whitsett Intake Pumping Plant in Lake Havasu.

3.3 PROGRAM OBJECTIVES

The proposed Program addresses the following objectives:

- Provide Metropolitan with a water supply option of from 25,000 acre-feet up to approximately 111,000 acre-feet of Colorado River water per year for 35 years
- Provide a stabilizing economic influence for participants and a funding mechanism for specific future community improvement projects

3.4 PROGRAM DESCRIPTION

The proposed Program would provide Metropolitan with a water supply option of from 25,000 acre-feet up to approximately 111,000 acre-feet of Colorado River water per year for 35 years. Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of PVID would be saved, and an equal amount of water would be made available to Metropolitan. The water would be saved through land management and crop rotation measures which are part of the proposed Program.

The proposed Program would also assist in stabilizing the farm economy within the Palo Verde Valley through a one-time entry payment and bi-annual payments applicable to participants in the proposed Program and through providing a funding mechanism for future, as yet undetermined, community

improvement projects. Although the exact agreement structure has not yet been finalized, two types of agreements are contemplated: (1) a Program agreement between PVID and Metropolitan, and (2) land contracts, each for up to 35 years, between Metropolitan and participants in the Palo Verde Valley. Farmlands would be voluntarily committed to the proposed Program through an estimated 60 to 70 land contracts. An amount of water equal to the water saved by the proposed Program would be made available to Metropolitan to help meet water demands within its service area. No additional water above the amount either currently diverted or historically delivered would be conveyed to Metropolitan's service area from the Colorado River.

3.4.1 Program Implementation and Crop Rotation Measures

Execution of contracts committing landowners to participate in the proposed Program would be voluntary. Program lands would not be irrigated beginning August 1 of each year through July 31 of the following calendar year (a contract year). At Metropolitan's request and with specific notice periods, specific portions of farmlands subject to the contracts would not be irrigated for the requested period of time. The farmlands not being irrigated would be rotated once every year up to once every five years, at the participant's option. In addition, those portions of farmlands that would not be irrigated could not be included in county, state or federal programs established to reduce or eliminate irrigated acreage (e.g., "set-aside" programs). In the event that a landowner failed to comply with his or her obligations, Metropolitan would have the right to require the non-irrigation of discrete parcels of land until compliance would be attained.

For each acre of Palo Verde Valley farmland not irrigated under the proposed Program, Metropolitan would have the ability to use an amount of water equal to the amount of water saved. It is estimated that approximately 4.2 acre-feet of Colorado River water would be used by actively farming one acre of land within the Palo Verde Valley for one year. PVID's water use is determined by the "diversion-less-return" method. The actual amount of water saved by the proposed Program would be determined on an annual basis by a verification committee composed of PVID, Metropolitan and the Bureau of Reclamation. The amount of water saved by the proposed Program would be proportional to the amount of land included in the proposed Program during a contract year.

At a minimum, a total baseload[1] area of 6,000 acres would not be irrigated each contract year of the proposed Program's 35-year term. Participants would be required to comply with Metropolitan's request to increase the non-irrigated area from 6,000 acres to a maximum of 26,500 acres. Once increased, the increased area would not be irrigated for a minimum of two years and could be decreased on a minimum one-year notice by Metropolitan.

A maximum of approximately 29 percent of any one participant's agricultural fields in the Palo Verde Valley below the Palo Verde Division Dam would not be irrigated in any one contract year under the proposed Program. However, if there was insufficient interest in the proposed Program (i.e., some

[1] Baseload area means 6,000 acres, or a lesser acreage in certain years, of Program lands designated as non-irrigated acres as agreed upon by Metropolitan and participants.

number of the estimated 60 to 70 land contracts would not be executed), then the area of an individual farm that would not be irrigated could be voluntarily increased up to a maximum of approximately 35 percent. The proposed Program's 29 and 35 percent values would be a guide—further adjustment could be necessary to recognize individual field sizes, connections to headgates and other physical characteristics of the land.

As described above, the maximum continuous period that a given field would not be irrigated is five years; however, participants may be requested to not irrigate up to approximately 29 percent (or 35 percent) of their fields for periods exceeding five years. When this occurs, the participant would be required to rotate the location of the non-irrigated fields within their farm to ensure that the period of continuous non-irrigation would not exceed five years for any specific field or portion of a field.

Up to a maximum of 24,000 acres per year in any 25-year period or 26,500 acres per year in any ten-year period during the 35-year Program would not be irrigated under the proposed Program. Assuming adequate participation in the proposed Program, Metropolitan would exercise the increases such that the average non-irrigated area over the 35 years would equal at least 12,000 acres per year (approximately 13 percent of irrigated valley lands).

Metropolitan owns approximately 9,700 acres of farmlands within the Palo Verde Valley portion of the PVID below the Palo Verde Diversion Dam. This land is currently leased to farmers under multiyear contracts. Metropolitan-owned farmlands would be subject to the same Program requirements as other Palo Verde Valley farmlands under the proposed Program.

No new construction or modification of existing facilities would be associated with the proposed Program—PVID's and Metropolitan's existing facilities are adequate to implement the proposed Program. Metropolitan would continue to divert Colorado River water available under the terms of the proposed Program at Lake Havasu. The amount of water diverted under the proposed Program is within the historic volumes currently diverted and would not constitute a change in operations or an increase in the amount diverted.

3.4.2 Program Payments and Funding

The proposed Program would have benefits to both Program participants and the larger Palo Verde Valley community, as described below.

In exchange for an agreement/contract not to irrigate certain portions of farmlands at Metropolitan's request, Metropolitan would compensate participants with both a one-time Program entry payment and bi-annual compensation during active participation in the proposed Program. The one-time entry payment would depend on the maximum number of acres not to be irrigated in a contract year under the individual land contract. In addition, Metropolitan would pay participants bi-annual payments equal to a fixed amount per acre multiplied by the acreage not irrigated in that contract year under the land contract. Each participant would be responsible for payment of property taxes, PVID water toll and assessment

fees, vegetation abatement, dust control and all other costs related to the Program lands. Metropolitan also would reimburse PVID for administrative costs associated with the proposed Program.

In addition, Metropolitan would fund specific future, as yet to be determined, community improvement projects. The funding mechanism and expenditure of such funds would be determined by a committee composed of representatives of PVID, members of the Palo Verde Valley community and Metropolitan. Special attention may be given to educational and vocational programs depending on the direction given by the committee.

This Draft EIR for the proposed Program does not evaluate the proposed community improvement projects because specific future projects have not been selected for implementation. The above-noted committee would consider and evaluate these future projects. As there is a wide range of potential projects that could be selected by the committee, it would be highly speculative and therefore not feasible to assess the environmental effects of these future projects at this time. When the committee ultimately selects specific community improvement projects for funding and implementation, PVID or another lead agency, as applicable, would be required to evaluate what CEQA review and other related technical documentation, if any, would be required for those projects.

3.4.3 Land Management Measures

Land management measures used to control weed growth and wind erosion would be an integral part of the proposed Program, as described below. Requirements to implement these land management measures would be included in the participants' respective agreements/contracts with Metropolitan. Because these management measures are an integral part of the proposed Program, they are not mitigation measures.

These Program-related land management measures would not preempt other measures required by federal, state or local agencies for farmlands within their jurisdiction, but would be implemented in conjunction with any other required measures. For example, the Imperial County Air Pollution Control District (ICAPCD) indicated in its response to the NOP for the proposed Program that it is considering adoption of control measures for open area wind erosion from agricultural land (see Appendix A). Accordingly, Program participants in the Imperial County portion of the Palo Verde Valley eventually may be required to implement ICAPCD-mandated measures in addition to the Program land management measures identified below. Similarly, Program participants that are obligated to implement Farm Service Agency Conservation Plans in accordance with Williamson Act contracts may be required to implement erosion control measures above and beyond those listed below. (See Draft EIR Section 4.1 for a description of Farm Service Agency Conservation Plans and the Williamson Act.)

Weed Control

Weed and invasive plant growth on non-irrigated fields due to rainfall or water seepage from canals or from neighboring irrigated farmland (especially along the outside borders of non-irrigated fields) would be controlled by the participants. Control measures would be undertaken by the participants to prevent the spread of these plants, their consumptive use of water and associated issues concerning the spread of plant disease, insects and other pests. Weeds and other invasive plants would be controlled using measures of each participant's choice, including chemical, biological or mechanical methods.

Only chemicals approved for use by the California Department of Food and Agriculture would be allowed to be used for controlling weeds. As with all farm-related activities in the PVID, proper local, state and federal permits would need to be obtained by the participants for the use of herbicides, pesticides and insecticides. Also, compliance with applicable regulations that pertain to solid waste management and air quality would be required when handling or disposing of farm residues and trash.

Erosion Control

To protect soil resources within the Palo Verde Valley and to maintain Program participants' eligibility for U.S. Department of Agriculture (USDA) benefits (excluding existing programs that fund the reduction or elimination of production of any agricultural crops), erosion control measures would be required for non-irrigated fields. These measures also would provide another beneficial effect associated with the proposed Program, i.e., a reduction in particulate matter equal to or less than ten microns in diameter (PM_{10}) (see Section 4.3). The erosion control measures incorporated into the proposed Program would be focused on wind erosion rather than water erosion because the low precipitation levels and relatively level ground of the Palo Verde Valley minimize water erosion hazards but leave the valley susceptible to wind erosion.

Wind Erosion Processes

Wind erosion results when wind speeds across a field are sufficiently high to detach and then transport soil particles by one of three processes:

- *Surface creep* occurs when the wind stream pushes soil particles along the surface. Surface creep typically occurs with larger soil particles (over 0.5 millimeter in diameter)
- *Saltation* occurs when soil particles are picked up by the wind, carried a short distance and then dropped back to the ground. (The impact of these fallen particles can cause other soil particles to detach and also become subject to wind erosion.) Saltation typically affects soil particles in the 0.05 millimeter to 0.5 millimeter diameter range
- *Suspension* occurs when small soils particles (less than 0.05 millimeter in diameter) are picked up and carried by the winds

Controlling Wind Erosion

Measures to minimize or eliminate the hazards of wind erosion on potentially susceptible soil types would be provided by Program participants. The proposed Program's wind erosion control measures would utilize two basic approaches: (1) reducing wind speeds at the soil surface and/or (2) increasing the resistance of soil particles to detachment. Wind erosion control measures that utilize one or both of these approaches may include providing stubble or sod remnants or implementing clod plowing.

Stubble Residue and Sod Remnants

Leaving non-irrigated fields with stubble residue or sod remnants both lowers the wind speed at the soil surface and provides a root system to help hold soil in place and minimize wind erosion. As stated in the U.S. Environmental Protection Agency's (EPA's) draft *National Management Measures to Control Nonpoint Source Pollution from Agriculture*:

> Crop residues (e.g., straw) or living vegetative cover (e.g., grasses) on the soil surface protect against detachment… A layer of plant material also creates a thick layer of still air next to the soil to buffer against wind erosion. **Keeping sufficient cover on the soil is therefore a key erosion control practice** (emphasis theirs; EPA 2000:4C-92).

The effectiveness of stubble residue and sod remnants has long been documented. For example, a 1939 U.S. Forest Service study of farmlands in Missouri found that fields covered with sod lost soil at a rate of less than one percent the rate of barren fields. The implementation of management systems that conserve crop residue is credited with reducing wind erosion damage during the Great Plains drought of the 1950s (Chepil et al. 1963). More recently, a study of farm plots planted with a cover crop of ryegrass and then left unirrigated for two-year periods found that the cover crop reduced erosion to levels considered acceptable by the Natural Resources Conservation Service (NRCS) (McGregor et al. 2001).

Leaving standing (as opposed to flattened) stubble residue can increase the residue's effectiveness, both by further decreasing wind speeds at the soil surface and by slowing the rate of stubble residue decay (Steiner et al. 1997).

Clod Plowing

For crops that would not leave an adequate stubble residue (such as cotton and many vegetable or melon crops), clod plowing could be implemented. The term clod plowing refers to the practice of tilling a field when it is wet so that large, damp clumps of soil are produced. These wet clumps break down into clods of soil that have a low susceptibility to wind erosion because they contain a relatively hard crust that minimizes detachment of soil particles. As stated in a USDA-sponsored study:

> If there is sufficient soil water, a lister[2] will leave an extremely rough, cloddy soil surface, and wind erosion will not be a problem until sufficient rain is received to break down the surface clods leaving a layer of loose sand grains on the surface (Fryrear 1984:445).

Although there is little research that can directly relate crust properties to specific erosion levels, some studies have suggested that crusted soils have approximately one-sixth the erosion rate of non-crusted soils (Chepil 1958). Unless clod plowing can be implemented using natural precipitation, it requires more water than the use of stubble or sod remnants for erosion control.

Cloddy soil remains effective only as long as a hard crust remains on the clods. As indicated above, rain can cause wear on soil crusts, reducing their effectiveness. During episodes of wind erosion, transported soil particles also can abrade soil crusts. Accordingly, clod plowing must occasionally be repeated in order for this management measure to continue to minimize wind erosion from non-irrigated fields. For participants in the proposed Program, the maximum continuous period that a single episode of clod plowing could be used as an erosion control measure on a given field would be three years. After three years, one of the following would need to occur:

- the non-irrigated field would be subjected to a new round of clod plowing conducted when the soil has adequate moisture to allow development of new clods (and therefore new soil crusts)
- a cover crop would be established (as described below under the heading "Remedial Actions")
- the subject field would be returned to active (irrigated) production and a different field within the participating farm would not be irrigated

Limiting the period of clod plowing to three years also would help ensure Program participants' compliance with Farm Service Agency Conservation Plans developed by the NRCS for farms in the Palo Verde Valley (see Section 4.1 regarding Farm Service Agency Conservation Plans).

For soil types classified as Highly Erodible Land (HEL) by the NRCS, implementation of other specific measures may be required in order to maintain Program participants' eligibility for certain USDA benefits (see Section 4.1, Agricultural Resources, for a list of Palo Verde Valley soils types classified as HEL and a discussion of applicable USDA benefit programs). The non-irrigation of fields classified as HEL would be conducted in accordance with the Farm Service Agency Conservation Plans developed for those fields by the NRCS. For HEL fields in which stubble or sod remnants are not present, clod plowing would need to incorporate the addition of mulch or other small grain equivalent (SGE) material to the soil prior to tilling. (The residue helps hold clods together, much in the manner of straw added to adobe bricks in order to help the bricks maintain their strength after they have been dried.) At least 1,000 pounds of SGE residue per acre would need to be present in the clods during the windy season of March through May.

[2] A "lister" (also called a "lister plow") is a type of plow used to prepare the ground for planting by producing furrows and ridges. Other appropriately fitted plows may also be used for clod plowing.

Monitoring Non-Irrigated Fields

Monitoring Actions

In order to ensure that Program land management measures are being effectively implemented, Metropolitan would monitor non-irrigated fields throughout the 35-year term of the proposed Program. When Metropolitan requires that enrolled Program participants not irrigate a portion of their fields, Metropolitan would inspect the non-irrigated fields at the start of the Program contract year to ensure that the fields would not be in agricultural production and that appropriate land management measures have been implemented. Inspections would continue on a year-round basis to document that weed abatement and erosion control measures are adequate and to ensure that crops would not grow on non-irrigated fields. In particular, Metropolitan would assess erosion control measures during the Spring windy season (March through May).

Remedial Measures

Should noticeable wind erosion be observed during inspections, additional erosion control measures (remedial measures) would be implemented at the participant's cost. These additional measures would be enforceable through the participant's contract/agreement with Metropolitan. "Noticeable wind erosion" includes evidence of wind-borne soil deposition (such as deposits of fine material adjacent to wind barriers), lack of soil crusts on clods or the visible transport of topsoil by the wind. Additional erosion control measures that could be implemented include the following:

- Spreading mulch or manure over eroding soils
- Seeding a cover crop to reestablish a root system, provided that only shallow rooted cover crops are used and provided that the cover crop is not removed. (Alfalfa shall not be planted as a cover crop to reestablish a root system once a farm has entered a period of non-irrigation under the proposed Program.) If feasible, natural precipitation would be used to help establish the cover crop; however, should precipitation not be adequate for this purpose, some level of irrigation might be required
- Conducting additional clod plowing to reestablish a thick crust on clods within the affected area (this measure could be combined with the addition of mulch to improve effectiveness). Because clod plowing requires wet soil, this measure would either need to be applied following sufficient precipitation or, if that is not feasible given precipitation levels and/or timing constraints, some level of irrigation may be required

The application of these measures could be limited to only those portions of a field exhibiting noticeable wind erosion.

Program participants would be encouraged to take advantage of natural precipitation to help maintain cover crops or reestablish cloddy soils through clod plowing. If necessary, however, irrigation water

could be applied to fields that otherwise are not being irrigated pursuant to Program contracts. The use of irrigation water during a "non-irrigation" contract year would affect both Program payments and the amount of saved water made available in an equal amount of water to Metropolitan.

Where irrigation water is required in order to reestablish a cover crop or to allow for additional clod plowing, participants essentially would purchase the necessary water from Metropolitan. More specifically, water applied to fields during periods of "non-irrigation" would reduce Metropolitan's annual payment(s) to the respective Program participant, as applicable. The use of water for this purpose also would factor into the diversion-less-return calculation of how much water would be saved by the proposed Program and made available for use by Metropolitan. (Although the irrigation of fields prior to a period of non-irrigation also would affect the amount of saved water made available to Metropolitan, it would not affect Program payments. In fact, the irrigation of fields prior to the start of a contract year and prior to those fields entering a period of non-irrigation would be necessary in many instances to ensure that land management measures are implemented in a timely and efficient manner.)

3.4.4 Restrictions on Conversion/Transfer of Committed Farmlands

Restrictions on Conversions to Non-agricultural Use

The 29 percent commitment level for participants' agricultural fields would apply to the amount of the participants' fields originally enrolled in the proposed Program. For example, if a participant with 1,000 acres of agricultural fields enrolled in the proposed Program, the participant could be required to not irrigate up to 290 acres (29 percent) of the Program fields at any one time. If the participant later converted 100 of those 1,000 acres to non-agricultural use, the participant would still be obligated to not irrigate up to 290 acres of the remaining 900 acres of agricultural fields at Metropolitan's request.

The minimum amount of a participant's land that must be kept as agricultural fields in order to meet Program commitments would equal 1.2 times the level of the participant's commitment. Thus, Program participants committing to not irrigate up to 29 percent of their land at Metropolitan's request would be required to keep at least 35 percent of their land as agricultural fields for the 35-year term of the proposed Program. Maintaining this amount of Program land as agricultural fields would ensure that participants could meet the 29-percent non-irrigation requirement, with sufficient additional agricultural land available for rotating into non-irrigation as necessary to avoid not irrigating a given field more than five years in a row. Similarly, participants committing to not irrigate up to 35 percent of their land at any one time would need to ensure that at least 42 percent of their Program land remains as agricultural fields.

Based on these factors, participants enrolling in the proposed Program would be in essence guaranteeing that they would not convert more than 65 percent of their agricultural lands (or 58 percent, as applicable) to non-agricultural uses over the next 35 years. Note that the requirement to maintain at least 35 percent (or 42 percent, as applicable) of participants' farmlands as agricultural fields represents the minimum necessary to meet Program commitments. In practice, PVID anticipates that most participants would maintain the vast majority or all of their existing farmlands in agricultural use.

Transfer of Property

Should farmlands committed to the proposed Program be sold or transferred through other means (such as inheritance), the new owner would be obligated to maintain the original owner's commitment to the proposed Program. This requirement would be included as a component of the proposed agreements or contracts between Metropolitan and Program participants, probably taking the form of an easement or deed restriction.

3.5 INTENDED USES OF THE EIR

PVID is the CEQA Lead Agency for this proposed Program, and the PVID Board of Trustees will consider the Final EIR and certify whether it has been prepared in accordance with CEQA and the State CEQA Guidelines when determining whether to approve the proposed Program. As a Responsible Agency under CEQA, the Metropolitan Board of Directors also will consider the Final EIR in its decision on whether to approve the proposed Program.

The EIR may also be used to support other concurrences, approvals, and permits by other responsible and trustee agencies, as needed, in conjunction with the proposed Program (see Section 1.7).

CHAPTER 4.0 – ENVIRONMENTAL ANALYSIS

This chapter of the Draft EIR assesses the potential environmental effects of the proposed Program. Five topics are explored within this chapter:

- Agricultural Resources
- Geology and Soils
- Air Quality
- Hydrology and Water Quality
- Biological Resources

For each of these topics the discussion addresses the following items: existing conditions of the Program area particularly relevant to that topic; a brief description of the significance criteria against which potential impacts are assessed; any adverse impacts that could occur as a result of Program implementation; identification of feasible mitigation measures, as appropriate; and an assessment of the CEQA level of significance after mitigation. Where applicable, consistency with relevant general plan measures is addressed within the respective sections of this chapter (e.g., general plan agricultural resource policies are addressed in Section 4.1, Agricultural Resources). Southern California Association of Governments (SCAG) *Regional Comprehensive Plan and Guide* (RCPG) policies are addressed separately in Section 4.6 because many of the RCPG policies are relevant to several different topics (see also the SCAG response letter to the Notice of Preparation, Appendix A).

The proposed Program may have potential environmental effects in the Palo Verde Valley area, where the Program agreements would be implemented, and along the Colorado River between Lake Havasu/Parker Dam and the Palo Verde Valley. As applicable, these two geographic areas are addressed in the impact analyses contained in this chapter of the Draft EIR. For some topics (i.e., agricultural resources, geology and soils, air quality), only the Palo Verde Valley is discussed because there would be no Program effects on these resources elsewhere along the Colorado River.

Because the proposed Program would reduce the level of farming activity within the Palo Verde Valley, it may affect the local economy. Under CEQA and the State CEQA Guidelines, economic or social effects are not treated as significant effects on the environment in an EIR. The State CEQA Guidelines suggest that information on economic and social effects be presented in an EIR in whatever form the Lead Agency desires (State CEQA Guidelines Section 15131). As such, a discussion of potential effects relating to housing, population and employment is presented in Section 9.11.

No new construction or modification of existing facilities would be associated with the proposed Program—PVID's and Metropolitan's existing facilities would be adequate to implement the proposed Program. Metropolitan would continue to divert Colorado River water available under the terms of the proposed Program at Lake Havasu. The amount of water diverted under the proposed Program is within the historic volumes currently diverted, and would not constitute a change in operations or an increase in the amount diverted. Since no Program-related effects would occur within Metropolitan's service area,

no project-specific impacts to Metropolitan's service area are discussed in the following topic-by-topic analysis of impacts.

4.1 AGRICULTURAL RESOURCES

4.1.1 Existing Conditions

The Palo Verde Valley portion of PVID contains approximately 91,000 acres of irrigated farmland below the Palo Verde Diversion Dam, the vast majority of which is classified as Prime Farmland or Farmland of Statewide Importance (see Figure 4-1). Major crops planted in the Palo Verde Valley include alfalfa, cotton, wheat, sudan grass, melons, lettuce and other vegetables (see Table 1-1). The Palo Verde Valley typically experiences a long, hot growing season that is ideal for agriculture. Mild winters, with a minimum of frost, permit growing of crops year round.

Zoning and General Plan Designations

Lands zoned for agricultural use in the Program area include lands zoned for light and heavy agriculture by the county of Riverside (Riverside County Code Chapter 17, Sections 120–128), lands zoned for general agriculture by the county of Imperial (Imperial County Land Use Ordinance Section 90508) and lands zoned for agriculture by the city of Blythe (city of Blythe Zoning Ordinance). General plan designations for Palo Verde Valley farmlands also support the agricultural use of those lands.

In general, these zoning classifications and general plan designations are aimed at minimizing or avoiding the conversion of agricultural lands to non-agricultural land uses such as residential, commercial or (non-farm-related) industrial uses. None of the agricultural zoning classifications or general plan land use designations addresses crop rotation periods (i.e., how long a field may be left non-irrigated between crops).

Williamson Act Farmlands

The California Land Conservation Act of 1965 (the Williamson Act, California Government Code Sections 51200–51297.4) provides that local governments may enter into contracts with private landowners that effectively restrict parcels of land to agricultural or related open space use. Because contracted lands are limited to agricultural or open space land uses, they are assessed at a lower property tax rate (California Revenue and Taxation Code Sections 421–430.5). Through the Open Space Subvention Act of 1971, local governments are reimbursed for lost property tax income through annual subventions (payments) from the state. Approximately 23,300 acres of Williamson Act contract lands are within the Riverside County portion of Palo Verde Valley (Riverside County 2001). One Williamson Act contract, totaling just over 1,000 acres, is located within the Imperial County portion of the valley (Imperial County 2001).

Farm Service Agency Conservation Plans

The USDA implements a number of programs that provide assistance to farmers, including low interest loans, loan guarantees and other benefit programs. Pursuant to the Food Security Act of 1985 (also

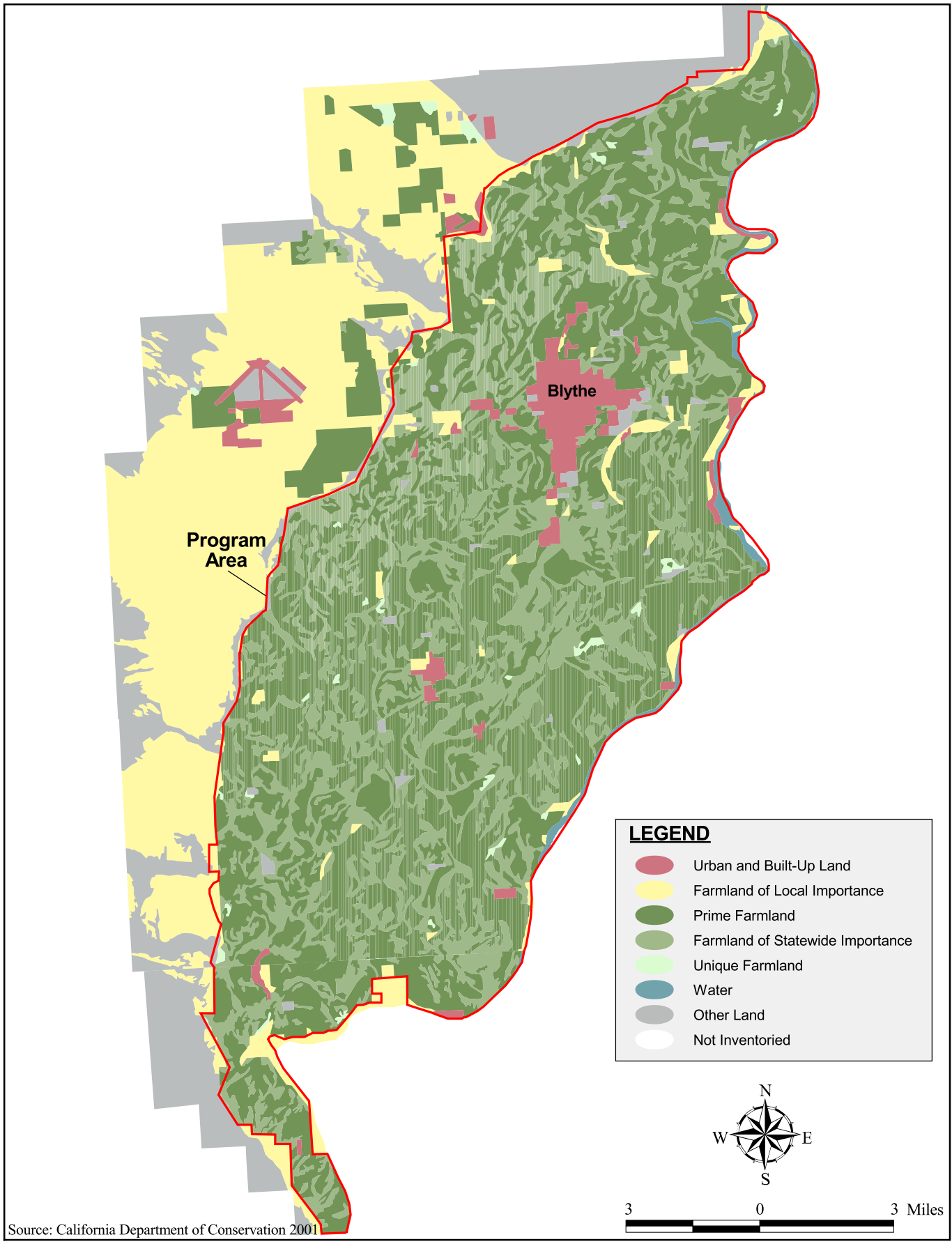
known as the 1985 Farm Bill) and the 1990 Food, Agriculture and Conservation Trade Act, the implementation of conservation practices is required as a prerequisite to participation in almost any of these USDA assistance programs. Many of the USDA's assistance programs are overseen by the Farm Services Agency or the Rural Development Service. The local offices of these two USDA agencies are in Indio (approximately 90 miles west of the Palo Verde Valley). In 2000, Blythe-area farmers received approximately $3.2 million in USDA farming subsidies, including approximately $1.2 million from production flexibility contracts, $1.4 million in market loss assistance and $450,000 in marketing loan gains. Approximately $80,000 in disaster aid payments also was provided in 2000 (Environmental Working Group 2002).

There are currently no county, state, or federal subsidies being paid to farmers in the Program area to reduce or eliminate irrigated acreage (e.g., "set-aside" programs). Should these types of set-aside programs be implemented in the Program area in the future, those portions of farmlands that would not be irrigated under the proposed Program could not also be included in set-aside programs. In other words, participants in the proposed Program would not be able to receive both payments from Metropolitan to not irrigate a portion of their land and enroll that same portion of their land in a set-aside program.

The primary method for ensuring the implementation of conservation practices by farmers participating in USDA benefit programs is through the use of Farm Services Agency Conservation Plans. These plans, prepared for free by the NRCS (also a USDA agency), identify measures that reduce erosion of Highly Erodible Land (HEL) soils to a rate at which soil loss does not threaten the sustained productivity of the subject field. The NRCS office serving the Palo Verde Valley is located in Blythe. Palo Verde Valley soils classified as HEL by the NRCS are listed in Table 4-1; a field is designated as HEL if at least one-third of the field contains HEL soils. Section 4.2, Geology and Soils, provides additional discussion of soil erosion and soil classifications in the Program area. Of the 154,500 acres mapped in the *Soil Survey of Palo Verde Area, California* (SCS 1974), approximately 58.1 percent are classified as HEL. The mapped area includes the Palo Verde Valley and portions of the Palo Verde Mesa (acreages for HEL soils within the boundaries of the Program area are not available).

General Plan Guidance on Agriculture Resources

The Program area encompasses portions of Riverside County, Imperial County and the city of Blythe. Each of these jurisdictions has prepared a general plan containing a separate agriculture element (as opposed to simply incorporating agriculture-related goals, objectives and policies into other general plan elements such as land use or open space/conservation).



Farmland Mapping Designations

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 4-1

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Table 4-1
HIGHLY ERODIBLE SOILS IN THE PALO VERDE VALLEY AREA

Aco gravelly loamy sand	Aco sandy loam
Carrizo gravelly sand	Chuckwalla very gravelly silt loam
Orita fine sand	Cibola fine sandy loam
Orita gravelly loamy sand	Gilman fine sandy loam
Rositas fine sand, 0 to 2 percent slopes	Holtville fine sandy loam
Rositas fine sand, 2 to 9 percent slopes	Imperial fine sandy loam
Rositas fine sand, wet, 0 to 2 percent slopes	Indio very fine sandy loam
Rositas gravelly loamy sand, 0 to 2 percent slopes	Meloland fine sandy loam
	Orita gravelly fine sandy loam
	Ripley very fine sandy loam

Soils in the right-hand column can be exempt from the Highly Erodible Lands (HEL) designation if they are being double-cropped (farmed with at least two crops per year) because the moisture associated with crop irrigation minimizes the potential for erosion.

Source: NRCS 2001

Riverside County

The *Riverside County Comprehensive General Plan* Agriculture Element (Riverside County 1994:377) notes that:

> Within Riverside County, agricultural production is the largest industry in terms of dollar value and provides employment for a significant portion of County residents…. Those areas remaining in productive agriculture represent a significant resource.

The main focus of the Agriculture Element is the protection of agricultural lands from incompatible development, such as expanding urban uses. The Agriculture Element does not contain goals, objectives or policies that address the non-irrigation of agricultural fields on a rotating basis.

Imperial County

The *County of Imperial General Plan Agricultural Element* identifies agriculture as "the single most important economic activity of Imperial County throughout the 1900s" (Imperial County 1993a:7). The Agricultural Element lists "water conservation and transfer programs and the availability of adequate quantities of irrigation water" as one of the trends/issues affecting Imperial County's agricultural community, and it further states that "non-voluntary irrigation reduction policies would be regarded as a potential threat to long-term agricultural production and the County's economy" (ibid.:22).

The "Goals and Objectives" section of the Agricultural Element serves as the Imperial County Board of Supervisors' primary policy statement for implementing development policies for agricultural land use in the county. The "Goals and Objectives" section also notes that:

> The Goals and Objectives, therefore, are important guidelines for agricultural land use decision making. It is recognized, however, that other social, economic, environmental, and legal considerations are involved in land use decisions and that these Goals and Objectives, and those of other General Plan Elements, should be used as guidelines not doctrines (1993a:34).

There are 11 goals identified in the "Goals and Objectives" section of the Agricultural Element, and each goal is followed by several more specific objectives related to that goal. Goals potentially relevant to the proposed Program include Goal 1, Preservation of Important Farmland, and Goal 4, Water Availability and Conservation. Within these goals, objectives relevant to the analysis of the proposed Program include:

- Objective 1.2 Encourage the continuation of irrigation on Important Farmland (ibid.:34)
- Objective 4.1 The County must favor efforts to ensure adequate irrigation water for agricultural areas (ibid.:37)
- Objective 4.4 Protest any development of non-voluntary water conservation legislation, which would risk removing land from production and impacting the local economy (ibid.:37)

Following the discussion of goals and objectives, the Agricultural Element contains an "Implementation Programs and Policies" section. The programs and policies contained in this section, however, are not applicable to the proposed non-irrigation of farmlands on a rotating basis. With regard to Objective 1.2, virtually all of the approximately 8,000 acres of Palo Verde Valley farmland within Imperial County that may be eligible for the proposed Program are defined as "Important Farmland."

City of Blythe

The Agricultural Resources Element of the *City of Blythe Comprehensive General Plan* (1989a), which notes that the Palo Verde Valley is the third largest agricultural area in Riverside County, contains a single agricultural resources goal:

> Maintain, protect and enhance the viability of the agricultural resources of the Palo Verde Valley, while providing for increasing urbanization within the City, Sphere [of Influence] and Study Area (1989a:IV-29).

The policies identified in the Agricultural Resources Element generally address the preservation of area agricultural lands while still allowing for urbanization of some lands as part of the city's future expansion. None of these policies specifically addresses the non-irrigation of agricultural fields on a rotating basis.

Relationship of Palo Verde Valley to Statewide and Regional Agricultural Resources

California's *Agricultural Statistical Review* indicates that, as of 1999, the state encompassed approximately 27,800,000 acres of farmland[1] (California Department of Food and Agriculture 2000). The approximately 91,000 acres of irrigated farmland within the Palo Verde Valley portion of the PVID below the Palo Verde Diversion Dam constitute approximately 0.3 percent of the state total. On a regional level, Riverside County encompassed 501,738 acres of farmland in 2000 and Imperial County encompassed 554,889 acres, for a total of 1,056,627 acres of farmland (California Department of Conservation 2002). The Riverside County total does not include an additional 134,599 acres of grazing land (no grazing land was recorded in Imperial County). The Palo Verde Valley farmlands in the PVID and below the Palo Verde Diversion Dam comprise approximately 8.6 percent of the two-county farmland total.

In terms of production value, Riverside County ranked 9th and Imperial County ranked 11th statewide (California Department of Food and Agriculture 2000). Riverside County produced $1,197,362,000 in agricultural products in 1999. Leading agricultural products included milk, table grapes, nursery stock, eggs and lemons. Imperial County produced $1,045,092,000 in agricultural products in 1999. Leading agricultural products included cattle and calves, alfalfa, head lettuce, carrots and sugar beets.

With regard to the conversion of farmlands to non-agricultural use, the 1999 state farmland total represents an approximately 19 percent decrease from 1975 when agricultural lands totaled approximately 34,300,000 acres (California Department of Food and Agriculture 2000). Additionally, the *Farmland Conversion Report 1996-1998* (California Department of Conservation 2000) reported an 11 percent increase statewide in the amount of land reported as committed to future non-agricultural use in 1998[2]. More recent (2000) data on farmland conversion are available for Riverside and Imperial counties. Between 1998 and 2000, there was a net loss of approximately 16,917 acres of farmland in Riverside County and an approximately 74-acre net loss in Imperial County (California Department of Conservation 2002).

4.1.2 Significance Criteria

The proposed Program would have significant impacts under CEQA if it would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use; or
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract; or
3. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

[1] California Department of Food and Agriculture definition of a farm: places with annual sales of agricultural products of $1,000 or more.
[2] California Department of Conservation definition of Land Committed to Nonagricultural Use: existing farmland and grazing land, and vacant areas, which have a permanent commitment to development.

4.1.3 Impacts

Conversion of Farmlands

The proposed Program would not convert any farmland (Prime, Unique, Important or otherwise) to non-agricultural uses. The proposed Program would entail a reduction in the amount of Palo Verde Valley farmland that is being irrigated at any one time; however, under the agreements or contracts between Metropolitan and participants, the longest period that a given field could be left non-irrigated is five years. After five years, the non-irrigated field would be returned to active farming in order to remain eligible for continued inclusion in the proposed Program. Only the time between growing crops would be changed.

Because the maximum portion of a participant's farmland that would not be irrigated under the proposed Program is 29 to 35 percent, the majority of agricultural fields in the Program area could remain in irrigated production throughout the 35-year term of the proposed Program. Requirements for the non-irrigation of farmlands in the Palo Verde Valley would end in 35 years when the agreements expire between Metropolitan and Program participants.

Not only would the proposed Program not cause the conversion of farmland to non-agricultural use, but as described in Section 3.4.4, participants in the proposed Program would be required to maintain at least 35 to 42 percent of their farmlands as agricultural fields in order to meet their commitments. These numbers represent a theoretical minimum. In practice, PVID anticipates that much higher percentages of each farm committed to the proposed Program would remain in agricultural production.

As noted in Section 3.4.1, in the event that a landowner failed to comply with his or her obligations, Metropolitan would have the right to require the non-irrigation of discrete parcels of land until compliance would be attained. Metropolitan would work with landowners in a good faith effort to ensure that both parties understood their obligations associated with the contracts, so as to minimize this possible contractual noncompliance. During the 1992-1994 Test Program, there was no instance of non-compliance by a landowner irrigating farmlands or raising crops on non-irrigated acres. It is too speculative to predict how many, if any, landowners would be in non-compliance with their obligations associated with the proposed Program. It would also be highly speculative to determine the number and location of acres in which enforcement actions, such as continued non-irrigation of discrete parcels of land, would occur until compliance was attained. As noted in Section 15145 of the State CEQA Guidelines, "If, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact."

Based on the factors listed above, no farmland conversion would occur as a result of Program implementation, and therefore no impact would occur with regard to farmland conversion.

Consistency with Zoning and Land Use Designations

Given the nature of the proposed Program, the Program agreements would be implemented on farmlands zoned for agricultural use. For the reasons described above, the proposed Program would not convert farmlands (regardless of zoning classification) to non-agricultural use. The applicable zoning codes and general plan designations for the Palo Verde Valley address the types of land uses that are allowed in agricultural areas, but they do not govern irrigation or crop rotation schedules. Accordingly, implementing the proposed Program would neither conflict with nor impact existing zoning for agricultural use, and no impacts with regard to zoning or general plan consistency would occur.

Williamson Act Contract Lands

Conversion of Williamson Act Contract Lands to Non-agricultural Use

As noted above, the proposed Program would not convert any farmlands to non-agricultural uses. This would include farmlands currently under Williamson Act Land Conservation Contracts.

Approximately 24,300 acres of farmland within the Palo Verde Valley have been entered into Land Conservation Contracts pursuant to the Williamson Act. As with all farmlands in the Palo Verde Valley section of the PVID, the Williamson Act farmlands potentially would be eligible to participate in the proposed Program. Participation in the proposed Program would not violate the terms of Williamson Act Land Conservation Contracts because it would not entail the conversion of the Program's non-irrigated land to a non-agricultural use. The maximum amount of any single farm that would be not irrigated under the proposed Program would be 29 to 35 percent. Accordingly, the majority of each Program participant's farm could remain in active production.

Furthermore, as described in Section 3.4.4, participants would be required to maintain, at a minimum, 35 to 42 percent of their farms as agricultural fields in order to meet their contractual commitments to the proposed Program. The stabilizing economic effect of Program payments to participants also may help reduce financial pressures to convert farms to non-agricultural uses. Thus, contrary to converting agricultural lands to non-agricultural use, the proposed Program could help preserve Palo Verde Valley farmlands as agricultural fields.

Williamson Act Payments to Local Jurisdictions

Currently, local governments receive $5 per acre for prime agricultural lands that are under Williamson Act contracts and $1 per acre for other Williamson Act contract farmlands. Implementing the proposed Program may affect the state payment of Williamson Act subventions to local governments (i.e., Riverside and Imperial counties) because the per-acre amount of Williamson Act subventions depends on whether contracted farmlands qualify as "prime agricultural lands." Depending on soil types, some fields in the Palo Verde Valley may only qualify as "prime agricultural lands" if they have returned an annual gross value of at least $200 per acre from the production of unprocessed agricultural plant products for

three of the previous five years (California Government Code Section 51201). Fields that have Class I or Class II NRCS land use capability classifications also qualify as "prime agricultural lands" regardless of whether they are in agricultural production.

Some farms, however, may fail to meet the criteria for "prime agricultural lands" as a result of Program implementation. Such farms could be reclassified from "prime agricultural lands" to "open-space uses of statewide significance," pursuant to California Government Code Section 16143. The specific farmlands that would be committed to the proposed Program, however, are not known at this time. Similarly, it is not feasible to determine the specific types and values of crops that would be grown by participants in the proposed Program or the soil classifications for fields that may be committed to the proposed Program. Accordingly, it is not feasible to quantify the exact amount of farmland that might, as a result of the proposed Program, no longer qualify as "prime agricultural land."

Although the changing crop rotation patterns could affect state subventions to local governments, it would not alter the agricultural status of the lands and thus would not conflict with Williamson Act contracts. The financial effect of the proposed Program on local government revenues is not considered an effect on the physical environment under CEQA. Accordingly, implementing the proposed Program would not conflict with, nor impact, a Williamson Act contract.

Farm Service Agency Conservation Plans

The proposed Program incorporates land management measures to minimize soil erosion during periods of non-irrigation. These measures specifically include a requirement that for HEL soils, either (1) stubble residue or sod remnants would be provided to minimize soil erosion or (2) clod plowing would be implemented and include the incorporation of plant residue sufficient to provide 1,000 pounds small grain equivalent (SGE) material per acre. These requirements are consistent with the guidance contained in the *National Handbook of Conservation Practices*: Job Sheet 329B-1, "Residue Management, Mulch Till," and Job Sheet 328, "Crop Rotation Conservation" (NRCS 1999 and 2000, respectively), and they are similar to requirements established in Farm Service Agency Conservation Plans prepared by the NRCS for Palo Verde Valley participants in the 1992–1994 Test Program.

Depending on future NRCS guidance, Program participants committed to implementing Farm Service Agency Conservation Plans also may be required to implement other erosion control measures. As described in Section 3.4.3, Program-related land management measures would not preempt other measures required by federal, state or local agencies for farmlands within those agencies' jurisdictions.

USDA Economic Benefit Programs

The proposed Program would not substantially affect participants' eligibility for USDA programs that provide economic benefits to farmers. However, those portions of farmlands that would not be irrigated could not be included in county, state, or federal programs established to reduce or eliminate irrigated acreage (e.g., set-aside programs). As described above, the proposed Program has been designed to be

compatible with Farm Service Agency Conservation Plan requirements. Additionally, pursuant to the 1996 Federal Agricultural Improvement Reform Act (P.L. 104-127), as modified by the 2000 Agricultural Market Transition Act (7 U.S.C. Sections 7201–7318), farmers do not need to keep all of their acreage in production in order to participate in production flexibility contracts (see 7 U.S.C. 7211). Participation in some government assistance programs would, however, be reduced as a result of Program implementation. For example, participants would not need to obtain crop insurance or low interest seed-purchase loans for fields that are temporarily not being irrigated under the proposed Program. Alternatively, participants in the proposed Program would remain eligible for those applicable USDA economic benefit programs involving a change in cropping patterns on land under continued irrigation. With this analysis, the proposed Program would not affect eligibility for USDA programs (excluding existing programs that fund the reduction or elimination of production of any agricultural crops), and no impact would occur.

Compliance with General Plans' Agricultural Resource Guidance

As described above, local jurisdictions' general plan goals, objectives and policies related to agriculture generally focus on protecting agricultural lands and avoiding or minimizing the encroachment of incompatible land uses into agricultural areas. The vast majority of local jurisdictions' general plan policies are not applicable to a proposed Program that would change crop rotation patterns but not convert any farmland to non-agricultural use. The Agricultural Element of the *Imperial County General Plan*, however, does contain three objectives (listed in Section 4.1.1) that warrant discussion in this impact analysis.

Agricultural Element Objective 1.2 encourages the continuation of irrigation on Important Farmland. While the proposed Program could temporarily reduce irrigation by up to 29 percent within 8,000 acres of the Palo Verde Valley in Imperial County, no farmland would be permanently removed from irrigation as part of the proposed Program. More specifically, irrigation would not be permanently discontinued on Program farmland; therefore, no conflict with Objective 1.2 resulting from the proposed Program would occur.

Objective 4.1 requires that the county favor efforts to ensure adequate irrigation water for agricultural areas. As described in Section 1.1.3, the proposed Program would not affect PVID's Priority 1 right to Colorado River water. Therefore, the proposed Program would not conflict with Objective 4.1.

Objective 4.4 calls for Imperial County to protest any development of non-voluntary water conservation legislation. Because participation in the proposed Program would be voluntary, it would not conflict with Imperial County Agricultural Element Objective 4.4.

Because the proposed Program would not conflict with these or other general plan agriculture policies, no impact would occur under CEQA.

Relationship to Statewide and Regional Agricultural Resources

As described above, the proposed Program would not convert farmland to non-agricultural use. Accordingly, it would not contribute to statewide or regional trends regarding this type of land use conversion. The up to 26,500 acres of Palo Verde Valley agricultural fields that would not be irrigated under the proposed Program represent less than one-tenth of one percent of California's farmlands and approximately 2.5 percent of the farmlands (excluding grazing lands) in Riverside and Imperial counties. Based on the small percentage of farmland affected and the fact the proposed Program would not convert farmlands to non-agricultural use, the 35-year reduction in farm production would result in a less-than-significant agricultural resources impact.

Summary of Impacts to Agricultural Resources

For the reasons described above and when assessed against the significance criteria identified in Section 4.1.2, the proposed Program would have a less-than-significant impact on agricultural resources.

4.1.4 Mitigation Measures

Because less-than-significant impacts would occur to agricultural resources, no mitigation measures are required.

4.1.5 CEQA Level of Significance After Mitigation

Since no mitigation is required, the CEQA level of significance would remain the same, i.e., less-than-significant impacts to agricultural resources.

4.2 GEOLOGY AND SOILS

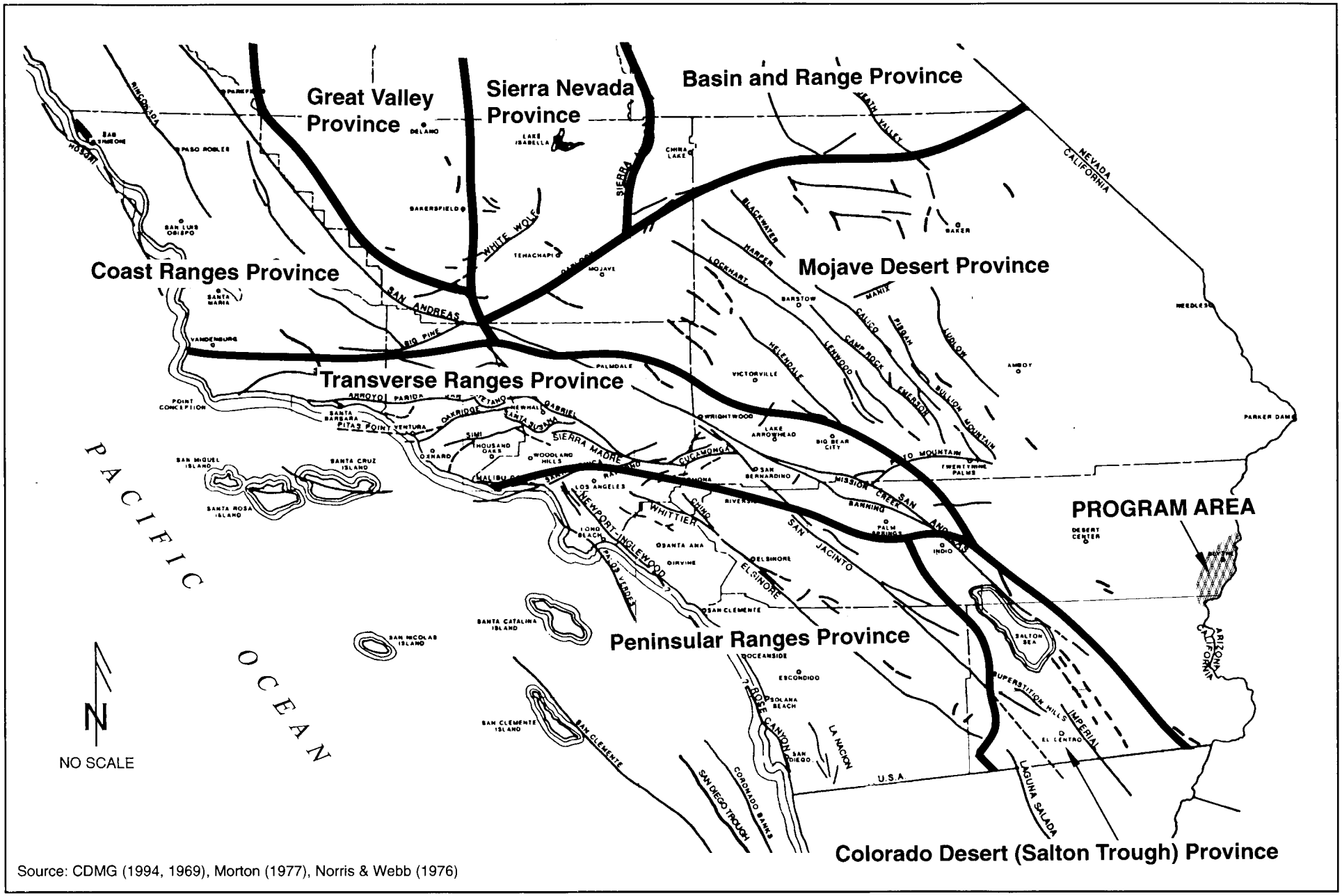
This assessment of geology and soils is based on data obtained from review of available literature, agency contacts, Program design information and field reconnaissance. These data were compiled and evaluated to produce a summary of existing geologic and soil conditions and associated Program impacts. As noted at the start of this chapter, this Draft EIR provides a focused evaluation of potential Program impacts for specific issues, based on analyses conducted in the proposed Program's NOP/Initial Study (see also Chapter 9.0, Effects Found Not to be Significant, and the NOP in Appendix A). For the assessment of geology and soils, the analysis focuses on soil erosion (particularly wind erosion) and loss of topsoil.

4.2.1 Existing Conditions

Geologic Setting

The Program area is located within the Colorado Desert Physiographic province of the Sonoran Desert, a region generally characterized by low isolated mountain ranges separated by alluvial desert valleys. The Colorado Desert has been described as both a province separate from, and a subprovince of, the Mojave Desert Province to the north, with these two areas sharing many geologic and geomorphic characteristics. The Colorado Desert Province is bounded on the east by the Colorado River, on the west by the San Andreas Fault System (which separates it from the Peninsular and Transverse Ranges provinces), on the north by portions of the Transverse Ranges and Mojave Desert provinces and on the south by the Mexican border (Figure 4-2). The eastern and southern boundaries are based on geographic features and are somewhat arbitrary in nature, with similar geologic and geomorphic characteristics extending into western Arizona and northern Mexico, respectively. The most prominent structural features in the Colorado Desert Province are the northwest-southeast trending San Andreas Fault System and a related "structural trough" in portions of the province (including the Program area). This trough has resulted from dip-slip (vertical) movement along portions of the larger northwest-southeast trending fault and related deposition from the Colorado River and other sources. Drainage in much of the province is internal (as evidenced by numerous large playas), although the eastern-most areas (including the Program area) are within the current Colorado River watershed.

The Program area is within the Palo Verde Valley, a north-south trending alluvial valley associated with the adjacent Colorado River. Palo Verde Valley is approximately 30 miles long and nine miles wide, and is generally level, with surface elevations ranging from approximately 225 to 290 feet above mean sea level (AMSL). The valley is flanked by alluvial benches (e.g., Palo Verde Mesa) and upland areas of the Palo Verde, Mule, McCoy and Big Maria mountains. The surrounding mountains are generally low, with maximum elevations of approximately 2,700 feet AMSL.



Source: CDMG (1994, 1969), Morton (1977), Norris & Webb (1976)

Generalized Location of Physiographic Provinces in Southern California

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 4-2

Stratigraphy

The Palo Verde Valley and adjacent areas (including Palo Verde Mesa, Cibola and Parker valleys, and additional areas to the east) encompass a depositional/erosional floodplain environment associated with the Colorado River. These areas typically exhibit a thick sequence of marine and non-marine sediments and sedimentary rocks deposited in a structural trough, with numerous unconformities representing erosional episodes. The principal surficial and underlying materials in the Program area and vicinity include recent topsoils, Quaternary Eolian (wind derived) deposits, Tertiary/Quaternary alluvium, the Tertiary Bouse Formation and an unnamed Tertiary fanglomerate, with these materials described below in order of decreasing age. The entire Program area is also likely underlain at depth by undifferentiated Tertiary volcanic and/or Precambrian granitic and metamorphic rocks. These Tertiary and/or Precambrian deposits are not further described in this report due to their apparent depth and lack of hydraulic connection with near surface stratigraphic units (United States Geological Survey [USGS] 1973).

Tertiary Fanglomerate

The fanglomerate deposits are likely Miocene in age (between approximately five and 25 million years old), and consist primarily of cemented gravels derived from local basement rocks with minor local basaltic beds (USGS 1973; California Division of Mines and Geology [CDMG] 1967). Fanglomerate deposits are exposed south of the Program area in the northern Chocolate Mountains, and underlie portions of Palo Verde and Parker valleys. These deposits unconformably overlie the noted Tertiary volcanic and Precambrian granitic/metamorphic basement rocks.

Tertiary Bouse Formation

The Bouse Formation is Pliocene in age (between approximately two to five million years old), and consists of a sequence of marine to brackish water sedimentary rocks, including a basal limestone overlain by interbedded silt-, clay- and sandstones with local tufa deposits (USGS 1973). The Bouse Formation is exposed in the northern Chocolate Mountains and likely underlies the entire Program area and vicinity. These deposits unconformably overlie the previously described Miocene fanglomerates.

Tertiary/Quaternary Alluvium

Alluvial deposits in the Program area and vicinity are associated chiefly with the Colorado River and are broadly divided into younger and older alluvium. The older alluvium ranges in age from Pliocene to Pleistocene (between approximately two million and 11,000 years old) and consists of interbedded clay, silt, sand and gravel deposits. Older alluvium is locally divided into several distinct units associated with depositional events of the Colorado River and associated tributaries. These materials are exposed along the Program area perimeter and underlie most or all of the Palo Verde Valley. The older alluvium uncomformably overlies the Tertiary Bouse Formation. Younger alluvium consists primarily of interbedded silt, sand and gravel deposits, and is Holocene in age. Mapped exposures of this material also include adjacent and/or interbedded alluvial/colluvial materials from local washes and upland areas.

Younger alluvial deposits occur throughout the Program area and immediately adjacent sites, and may extend to depths of up to approximately 140 feet in the Palo Verde Valley (USGS 1973).

Quaternary Eolian Deposits

Relatively minor deposits of wind-derived sheet and dune sands are located in areas east and west of the Program area, with more extensive deposits farther to the northeast (i.e., on the La Posa Plain). Eolian materials are typically Holocene in age and are limited to surficial deposits.

Recent Topsoils

Topsoils within the Program area and vicinity have been mapped by the NRCS (formerly the U.S. Soil Conservation Service [SCS]), with mapping and descriptive soil data provided in the *Soil Survey of Palo Verde Area, California* (SCS 1974). A total of 16 soil series is identified in the referenced survey, with each exhibiting similar profile characteristics and parent material(s). The 16 mapped soil series in the Palo Verde area include 32 individual soil types or equivalent categories (e.g., rock land), with most series encompassing multiple soil types. A summary description of physical and chemical characteristics for the 16 soil series is provided in Table 4-2.

As described in Section 4.1, the NRCS has identified soil types within the Palo Verde area that are considered to be HEL. The NRCS prepares Farm Services Agency Conservation Plans for farms within the Palo Verde area, the objectives of which include identifying HEL soils and determining methods to minimize erosion rates while sustaining agricultural productivity. The list of HEL soils identified for the Palo Verde area from this study is shown in Table 4-1, and these soils are also described in Table 4-2. Excluding only four series (Glenbar, badland, dune land and rock land), all identified soil series in the Palo Verde area include at least one HEL soil.

General Plan Guidance on Geology and Soils

General plan goals, objectives and policies related to geology and soils are typically contained in the plans' seismic safety, environmental resources and/or open space and resources conservation elements. Relevant guidance from these and related elements of the Riverside County, Imperial County and city of Blythe general plans is provided below. Note that, as described in Section 9.5, seismic safety impacts have been found less than significant and are not addressed in detail in this Draft EIR. Similarly, the proposed Program does not involve development of new facilities, so the following discussion does not address general plan guidance related to new development (e.g., measures to restrict development of steep slopes).

Table 4-2
SUMMARY DESCRIPTION OF PROGRAM AREA SOILS

Soil Series	Principal Characteristics	Slope	pH	Erosion Hazard[1]	HEL?[1]
Aco	Well-drained sandy loam, coarse sandy loam and gravelly loamy sand, with a sandy subsoil. Moderately rapid permeability and slow runoff.	< 1%	7.9-8.4	Slight	Yes
Badland	Areas unsuitable for agriculture due to steep, incised topography or other reasons.	9-75%	N/A	High	No
Carrizo	Excessively drained gravelly sands with a cobbly sand subsoil. Rapid permeability and slow runoff.	< 2%	7.9-8.4	Slight	Yes
Chuckawalla	Well-drained very gravelly silt loam with a cobbly to gravelly sandy subsoil. Permeability is moderate to rapid, and runoff is rapid.	< 1%	7.9-9.0	Slight	Yes
Cibola	Well-drained silty/clay to sandy loam with a fine sand subsoil. Slow to rapid permeability and very slight or no runoff.	< 1%	7.9-8.4	None	Yes
Dune Land	Eolian fine sand with no agricultural value.	9-20%	7.9-8.4	High	No
Gilman	Well-drained fine sandy to silty clay loam with a sandy subsoil. Moderate to rapid permeability and very slight or no runoff.	< 1%	7.9-9.0	None to Slight	Yes
Glenbar	Well-drained silty clay loam with loamy sand subsoil. Permeability and runoff are slow.	< 1%	7.9-8.4	None	No
Holtville	Well-drained silty clay and fine sandy loam with a sandy subsoil. Permeability is slow to rapid with slight to nonexistent runoff.	< 1%	7.9-8.4	None to Slight	Yes
Imperial	Moderately well-drained silty clay and fine sandy loam throughout profile. Very slow permeability with little or no runoff.	< 1%	7.9-9.0	None	Yes
Indio	Well-drained very fine sandy loam and silty clay loam with a sandy subsoil. Permeability is moderate with little or no runoff.	< 1%	7.9-8.4	None	Yes
Meloland	Well-drained fine sandy and silty clay loams with a sandy subsoil and locally perched groundwater.[2] Slow to moderate permeability with slight runoff.	< 1%	7.9-8.4	None	Yes
Orita	Well-drained gravelly loamy sand, sandy loam and fine sand throughout profile. Slow to moderate permeability and medium runoff.	< 1%	7.9-8.4	Slight	Yes
Ripley	Well-drained silty clay and very fine sandy loams with a sandy subsoil. Permeability is moderate to rapid with little or no runoff.	< 1%	7.9-8.4	None to Slight	Yes
Rock Land	Extensive (25 to 90%) rock outcrops with thin soil.	N/A	N/A	N/A	N/A
Rositas	Excessively well-drained fine sand, gravelly loamy sand, and silty clay loam throughout profile. Rapid permeability with little or no runoff.	0-9%	7.9-9.4	Slight	Yes

[1] Erosion hazard rating based on the *Soil Survey of Palo Verde Area, California.* Some soils are designated Highly Erodible Lands (HEL) by the Natural Resources Conservation Service despite being rated as having an erosion hazard of "slight" or "none" because agricultural operations can dramatically increase a soil's susceptibility to erosion. Some soils with "high" erosion hazards are not considered HEL because the HEL designation is applied only to soils with a potential for agricultural productivity.

[2] Perched groundwater is limited to irrigated areas.

Source: Soil Conservation Service 1974

Riverside County

Within the *Riverside County Comprehensive General Plan* (Riverside County 1994), potentially applicable guidance for the proposed Program is included in the Environmental Hazards and Resources Element. This element includes a "Wind Erosion and Blowsand" section that identifies a single objective, "Utilize control measures to minimize the effect of blowsand and other forms of wind erosion" (ibid.:313). The Environmental Hazards and Resources Element identifies potential measures that may be used to control wind erosion, including but not limited to, "windbreaks, wall, fences, vegetative groundcover, rock, other stabilizing materials, and installation of an irrigation system or other means of irrigation" (ibid.:314). It should be noted that the focus of the Wind Erosion and Blowsand section of the Environmental Hazards and Resources Element is on minimizing wind erosion associated with new developments as opposed to wind erosion from existing agricultural fields.

Imperial County

Applicable guidance from the *County of Imperial General Plan* is contained in the plan's Conservation and Open Space Element (Imperial County 1993b). This element includes several goals, one of which is the preservation of agricultural land (Goal 4). Associated with this goal is the following objective:

- Objective 4.2 Control and prevent soil erosion (ibid.: 44)

The Implementation Programs and Policies section of the Conservation and Open Space Element does not list specific measures to implement this objective.

City of Blythe

The *City of Blythe Comprehensive General Plan* (city of Blythe 1989a) includes a Wind Erosion and Blowsand Element that identifies tilled agricultural lands as one of the main sources of wind erosion in the Palo Verde Valley. This element contains a goal to "Assure the minimal impact of wind erosion and blowing sand…" (ibid.:V-7). The Slopes and Erosion Element also identifies four policies to implement this goal, one of which is potentially applicable to the proposed Program:

- Policy 2 Develop stabilization control measures to reduce or eliminate blowing dust and sand generated in conjunction with agricultural activities (ibid.:V-7).

4.2.2 Significance Criteria

The proposed Program would have significant impacts under CEQA if it would:

1. Result in substantial soil erosion or the loss of topsoil.

4.2.3 Impacts

As described above in Sections 3.4.3 and 4.1, the proposed Program incorporates land management measures to minimize soil erosion during periods of non-irrigation for HEL (and other) soils. Specifically, these measures include requirements to either incorporate stubble residue/sod remnants, or implement clod plowing with appropriate plant residue to stabilize non-irrigated soils. These requirements are consistent with applicable NRCS erosion control guidelines for agricultural operations (refer to Section 4.1), as well as requirements established for the Palo Verde area in a 1992–1994 Test Program conducted for non-irrigation of agricultural lands. These measures also are consistent with applicable general plan policies on erosion control. Based on the inclusion of the noted land management measures in the proposed Program and when assessed against the significance criteria identified in Section 4.2.2, no substantial soil erosion or loss of topsoil is anticipated from Program implementation. Hence, less-than-significant impacts to soil erosion or loss of topsoil would occur.

In addition, based on the proposed Program's land management measures to minimize erosion and the fact that no new construction would be required to implement the proposed Program, and when compared with the significance criteria in Section 4.2.2, the proposed Program would be consistent with geology and soils-related guidance provided in local jurisdictions' general plans.

4.2.4 Mitigation Measures

Because less-than-significant impacts would occur to geology and soils, no mitigation measures are required.

4.2.5 CEQA Level of Significance After Mitigation

Since no mitigation is required, the CEQA level of significance would remain the same, i.e., less-than-significant impacts to geology and soils.

4.3 AIR QUALITY

4.3.1 Existing Conditions

Existing air quality conditions within the Palo Verde Valley and vicinity are described in terms of the regulatory environment and ambient sources of pollutants. This discussion has a particular focus on particulate matter equal to or less than ten microns in diameter (PM_{10}), because PM_{10} is the air quality criterion with the highest potential to be affected by the proposed Program.

Regulatory Setting and Air Quality Standards

The California portion of the Palo Verde Valley straddles two air basins. The portion of the Palo Verde Valley located in Riverside County is within the Mojave Desert Air Basin and is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD), and the portion of the valley in Imperial County is within the Salton Sea Air Basin and is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD).

Neither MDAQMD or ICAPCD has air quality monitoring stations in the Palo Verde Valley.[3] Based on measurements at other locations, including Twentynine Palms (approximately 90 miles west/northwest of the Palo Verde Valley), the Palo Verde Valley portion of the Mojave Desert Air Basin is considered to be in attainment with or unclassified for all federal air quality standards but is designated as being in non-attainment with state standards for ozone and PM_{10}. Similarly, the Salton Sea Air Basin is in non-attainment with state and federal standards for ozone and PM_{10}. Federal and state air quality standards are shown in Table 4-3, and ozone and PM_{10} within the two proposed Program area air basins are addressed below.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and causes substantial damage to vegetation and other materials. Ozone is not emitted directly into the air but is formed by the photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases and oxides of nitrogen (NO_x), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem.

[3] Ambient air quality data have not been collected in Blythe since 1992, when a single year's worth of data was collected (Blythe Energy Project 2000). Given the limited duration for which data were collected and the fact that the data are nearly a decade old, the data collected in Blythe are not considered relevant to the description of current air quality conditions in the Palo Verde Valley area. The State CEQA Guidelines (Section 15125) maintains that the description of the environmental conditions in the vicinity of the project should be based on the conditions as they exist at the time the NOP is published.

Table 4-3

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	0.12 ppm (235 µg/m³) [8]	Same as Primary Standard	Ethylene Chemiluminescence
	8 Hour	—		0.08 ppm (157 µg/m³)		
Respirable Particulate Matter (PM_{10})	Annual Geometric Mean	30 µg/m³	Size Selective Inlet Sampler ARB Method P (8/22/85)	—	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	24 Hour	50 µg/m³		150 µg/m³		
	Annual Arithmetic Mean	—		50 µg/m³		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		65 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean			15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m³)		—		
Lead	30 days average	1.5 µg/m³	AIHL Method 54 (12/74) Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Fluorescence	0.030 ppm (80 µg/m³)	—	Pararosoaniline
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		—	—	
Visibility Reducing Particles	8 Hour (10 am to 6 pm, PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer—visibility of ten miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent. Method: ARB Method V (8/18/89).		No Federal Standards		
Sulfates	24 Hour	25 µg/m³	Turbidimetric Barium Sulfate-AIHL Method 61 (2/76)			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Cadmium Hydroxide STRactan			

Source: California Air Resources Board 1999

Continued on next page

Table 4-3 (cont.)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM 10 , and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. In addition, Section 70200.5 lists vinyl chloride (chloroethene) under "Ambient Air Quality Standards for Hazardous Substances." In 1978, the California Air Resources Board (ARB) adopted the vinyl chloride standard of 0.010 ppm (26 mg/m 3) averaged over a 24-hour period and measured by gas chromatography. The standard notes that vinyl chloride is a "known human and animal carcinogen" and that "low-level effects are undefined, but are potentially serious. Level is not a threshold level and does not necessarily protect against harm. Level specified is lowest level at which violation can be reliably detected by the method specified. Ambient concentrations at or above the standard constitute an endangerment to the health of the public."

   In 1990, the ARB identified vinyl chloride as a Toxic Air Contaminant and determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For PM 2.5 , the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. The federal 1-hour ozone standard continues to apply in areas that violated the standard. Contact U.S. EPA for further clarification and current federal policies.

PM_{10}

Particulate matter, including PM_{10}, is easily inhaled and can contribute to the aggravation of respiratory systems. Within the range of particulate matter that qualifies as PM_{10}, coarser particles are associated with such respiratory ailments as asthma, and finer particles are associated with decreased lung capacity, lung disease and other respiratory problems (EPA 1997).

Applicable Air Quality Plans

Both MDAQMD and ICAPCD have developed plans to achieve attainment with federal and state PM_{10} standards, as applicable.

MDAQMD adopted the *Final Mojave Desert Planning Area Federal Particulate Matter (PM_{10}) Attainment Plan* in 1995. The Attainment Plan identified sources of PM_{10}, described control measures to help reduce PM_{10} emissions within the Air Basin, and demonstrated how the Air Quality Management District planned to achieve attainment with the federal PM_{10} standard. As described above, the Mojave Desert Air Basin has since achieved attainment with federal but not state standards for PM_{10}.

Applicable PM_{10} plans for the Salton Sea Air Basin (Imperial County) portion of the Palo Verde Valley are the *Final State Implementation Plan for PM-10 in the Imperial Valley*, adopted in 1993, and the *Imperial County 1991 Air Quality Attainment Plan* (ICAPCD 1992). ICAPCD is currently working to update its State Implementation Plan Attainment Demonstration for PM_{10} (see letter from ICAPCD in Appendix A); however, the updated plan is not anticipated to be completed until late 2002 or 2003 (ICAPCD 2002).

Sources

PM_{10} can be created by a number of natural or anthropogenic (human-caused) processes. In desert regions such as the Program area, PM_{10} is generated by winds that pick up and transport arid desert soils, including particulate matter (e.g., dust storms). Anthropogenic sources of PM_{10} include tailpipe emissions from vehicles, dust generated by vehicles traveling on unpaved roads, construction-related grading and agricultural activities that disturb the ground, such as tilling fields. A combination of human and natural processes can also lead to PM_{10} generation, such as when winds erode topsoil from recently plowed fields. For the Palo Verde Valley area, the NRCS has identified March through May as the period with the highest occurrence of wind erosion (due to strong winds that may occur during the Spring).

The California Air Resources Board (CARB) estimates that in 2000, farming operations generated an average of approximately 7.55 tons per day of PM_{10} in the Mojave Desert Air Basin and 28.14 tons per day in the Salton Sea Air Basin (CARB 2002). Excluding dust from roads, windblown dust associated with anthropogenic sources was estimated to generate approximately 23.88 tons per day of PM_{10} in the Mojave Desert Air Basin and 175.5 tons per day in the Salton Sea Air Basin. No estimate of windblown dust from natural sources (e.g., undeveloped land) was provided by CARB.

MDAQMD's Attainment Plan estimates PM_{10} emissions for various sources within the Mojave Desert Air Basin, primarily based on CARB methodology (CARB 1993). The CARB methodology, in turn, was based in part on data and modeling from the EPA (1985). CARB estimates of PM_{10} generation by agricultural tilling (e.g., planting) operations are based on soils' silt content (assumed to be default value of 18 percent, per EPA guidelines) and the types of crop being grown. For example, tilling alfalfa is estimated to generate 5.3 pounds of PM_{10} per acre annually, tilling melons generates approximately 16.1 pounds of PM_{10} per acre, and tilling cotton generates approximately 24.1 pounds per acre (CARB 1993:Section 7.4, Table 2). It should be noted that crop rotations also affect these emissions—alfalfa may be left planted for up to four years while cotton and melon crops are planted annually. Harvesting also produces PM_{10} emissions; CARB estimates that cotton picking and cotton stalk cutting together annually produce an additional 1.2 pounds of PM_{10} per harvested acre (CARB does not provide estimated PM_{10} generation rates for melons, alfalfa or most other crops) (CARB 1997:Section 7.5).

Considerably more PM_{10} generation is associated with wind erosion than with tilling and harvesting. Based on a wind erosion equation developed by the USDA, MDAQMD estimates that wind erosion of land with little or no landscaping or vegetation generates roughly 1,170 pounds of PM_{10} per acre annually. MDAQMD estimates that farmlands in vegetable production also generate roughly 1,170 pounds of PM_{10} per acre annually; however, in practice, irrigated farmlands would be expected to generate less PM_{10} because the moisture added to the soil during irrigation reduces its susceptibility to wind erosion (MDAQMD 1995:"Emission Sources," Wind Erosion of Disturbed Areas and Wind Erosion of Agricultural Lands). In comparison to cleared land or fields planted with vegetables, land with more extensive vegetation produces substantially less wind erosion. For example, for areas currently covered with vegetation, MDAQMD estimates that mowing vegetation instead of clearing it can reduce associated PM_{10} emissions by approximately 80 percent, both because mowing causes less dust generation than clearing and because the remaining plant residue helps hold soil in place. Refer to Section 3.4.3 for further discussion of studies relating vegetative cover to substantially reduced wind erosion levels.

ICAPCD's *Final State Implementation Plan for PM-10 in the Imperial Valley* (1993) identifies "open-area wind erosion of agricultural land and unpaved roads" as one of the County's primary sources of PM_{10}. The Implementation Plan does not quantify PM_{10} emissions from agricultural fields. To the contrary, it notes that "there is a lack of speciated PM-10 data which are needed to identify the sources and their relative impacts" (ICAPCD 1993:1-4). The Implementation Plan addresses potential candidate measures to reduce PM_{10} resulting from open area wind erosion of agricultural land, including establishment of windbreaks, irrigation of barren (non-producing) fields, use of chemical stabilization on open soil areas and other abatement measures at abandoned farms (ibid.:5-3). The plan further states, however, that these would not be feasible and efficient means of reducing PM_{10} emissions from agricultural fields. In its response to the Notice of Preparation for this Draft EIR, ICAPCD noted that it is again considering the adoption of control measures for open area wind erosion from agricultural land.

The *Final State Implementation Plan for PM-10 in the Imperial Valley* also states that:

> Both the landfill site [wind measuring station] data and the historical El Centro data indicate that the prevailing winds are from the west-northwest through southwest; a secondary flow maximum from the southeast is also evident (ICAPCD 1993: 2-13).

Because the Salton Sea Air Basin is located west and/or south of the Palo Verde Valley, this suggests that PM_{10} generated by agricultural activities (or other sources) in the Program area have minimal effect on PM_{10} levels in other portions of the Salton Sea Air Basin. Wind data collected during the preparation of the *Blythe Energy Power Plant Project Application for Certification* indicate that during the summer months, winds are primarily from the southwest, while during winter months they are predominately from the northeast (California Energy Commission 2000:36).

Wind erosion of Program area farmlands is currently minimized through the implementation of Farm Service Agency Conservation Plans, which contain measures to protect topsoil (see Section 4.1.1). While the primary purpose of these conservation plans is to prevent the loss of topsoil, they also help reduce agriculture-related generation of PM_{10} because less soil is wind-eroded from fields that implement Conservation Plans.

General Plan Guidance on Air Quality

Riverside County

The Air Quality Element of the *Riverside County Comprehensive General Plan* notes that within the desert portions of the county (which include the Program area), sources of PM_{10} include soil erosion by wind. The Air Quality Element identifies several goals, including attainment of federal and state air quality standards by 2007, cooperation with other jurisdictions in attaining clean air, reducing emissions (such as through improved commuting) and making polluters responsible for the economic cost of their actions. The focus of proposed air quality improvement programs identified in the general plan is on minimizing air pollutant emissions from new development and on improving commutes/traffic circulation to reduce automobile emissions. The Air Quality Element does not contain guidance directed at PM_{10} generated by wind erosion of agricultural lands, although the general plan's Environmental Hazards and Resources Element does address Wind Erosion and Blowsand (see Section 4.2.1).

Imperial County

Imperial County's General Plan does not contain a separate air quality element; rather, air quality goals, objectives and policies are included in the Conservation and Open Space Element (Imperial County 1993b). The Conservation and Open Space Element includes a goal for Imperial County to actively seek to improve and maintain the quality of the air in the region (Goal 9), and the Conservation and Open Space Element identifies two objectives (ibid.:46) to help meet this goal:

- Objective 9.1 Ensure that all facilities shall comply with current federal and state requirements for the attainment of air quality objectives
- Objective 9.2 Cooperate with all federal and state agencies in the effort to attain air quality objectives

The Implementation Programs and Policies section of the Conservation and Open Space Element does not list specific measures to implement these objectives.

City of Blythe

The *City of Blythe Comprehensive General Plan* (city of Blythe 1989a) Air Quality Element identifies one goal, "To promote and encourage the protection and wise utilization of the region's air quality to assure long-term availability of clean and healthful air" (ibid.:IV-16). Of the seven policies identified to help achieve this goal, two are relevant to agricultural operations (ibid.:IV-17):

- Policy 4: The city shall encourage the utilization of windbreaks in agricultural areas as a means of reducing the loss of topsoil and nutrients, and to reduce the transport of these soils into urban areas
- Policy 6: Encourage County, State and Federal implementation and enforcement of codes and regulations regarding the application of pesticides, fertilizers and herbicides in conjunction with agricultural activities and landscaped areas occurring within the city's incorporated limits

4.3.2 Significance Criteria

The proposed Program would have significant impacts under CEQA if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan; or
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation; or
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The significance of potential air quality impacts also must be considered in the context of a local jurisdiction's air quality significance criteria, as applicable. The *Mojave Desert Air Quality Management District and Antelope Valley Air Pollution Control District California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (1999)* establishes MDAQMD's CEQA significance thresholds for annual emissions of ozone precursors and PM_{10}. MDAQMD's CEQA significance thresholds for ozone precursors are 25 tons per year for both NO_x and volatile organic compounds (VOC). Their significance threshold for annual PM_{10} emissions is 15 tons per year. These significance thresholds

apply to proposed projects within the Mojave Desert Air Basin that are being evaluated pursuant to CEQA. The ICAPCD has not adopted CEQA significance thresholds for the Salton Sea Air Basin.

It should be noted that this Draft EIR evaluates the proposed Program's effects in comparison with existing conditions, defined in accordance with State CEQA Guidelines (Section 15125(a)) as the conditions at the time the Notice of Preparation was published. Specifically with regard to MDAQMD's significance threshold, it is too speculative to quantify PM_{10} emissions given the variability of the crops, soils and participation levels within the proposed Program. Therefore, effects will be evaluated qualitatively in the following discussion on impacts (Section 4.3.3).

4.3.3 Impacts

Ozone

None of the components of the proposed Program would result in an increase in emissions of ozone precursors (i.e., VOC or NO_x). To the contrary, because approximately 6,000 to 26,500 fewer acres of Palo Verde Valley farmlands would be in agricultural production at any one time, there would be corresponding reductions in tailpipe emissions from tractors working fields and trucks hauling produce to market. There would be, therefore, a slight decrease in ozone precursor emissions associated with the Program-related reduction in agricultural production. Accordingly, the proposed Program would not cause an air quality impact with regard to ozone.

PM_{10}

Compared to existing levels of PM_{10} generation associated with agricultural activities, PM_{10} emissions associated with the proposed Program would remain at similar levels or decrease for the following reasons:

1. The proposed Program would reduce the level of agricultural activity in the Palo Verde Valley by up to approximately 29 percent. This would decrease tailpipe emissions and dust generated from tractors used to prepare fields, harvesting equipment, other associated farm equipment, and trucks used to haul fertilizer into and harvested crops out of the valley on paved and unpaved roads.
2. The proposed Program would reduce the extent of agricultural tillage occurring each year by up to approximately 29 percent. Tilling the soil can generate dust, a portion of which is PM_{10}. By reducing the number of fields actively being farmed at any one time, the amount of agricultural tillage and associated generation of dust also would be reduced.
3. Fields that are not irrigated as a result of the proposed Program would be subject to the land management measures described in Section 3.4.3 of this Draft EIR. These measures include the use of stubble residue, sod remnants or clod plowing. As discussed in Section 3.4.3, these measures have been shown to be effective at minimizing wind erosion from agricultural fields.

4. The proposed Program would not eliminate or reduce the use of erosion-reducing Farm Services Agency Conservation Plans by farmers that have committed to do so (e.g., most Palo Verde Valley farmers receiving USDA subsidies or entered into Williamson Act contracts).
5. The proposed Program includes field monitoring, particularly during the Spring windy season, to ensure that land management measures are implemented and, if necessary, additional remedial measures would be undertaken to minimize or avoid wind erosion (see Section 3.4.3).

PM_{10} Emissions from Land Preparation and Harvesting

Approximately 6,000 to 26,500 acres of Program area farmlands would not be actively farmed at any one time during the proposed Program, and PM_{10} emissions associated with planting, harvesting those farmlands, and transporting produce would be eliminated. As described in Section 4.3.1, these PM_{10} emissions can reach 25 pounds of PM_{10} per acre annually for crops such as cotton that involve fairly substantial tilling and harvesting activities. As described for ozone precursors, vehicle tailpipe emissions also would be reduced as a result of decreased farming activity.

Wind Erosion from Non-Irrigated Fields

It is not possible to quantify the change in wind erosion PM_{10} emissions associated with the proposed Program because it is not known which specific farms would be committed to the proposed Program, how those farms' fields would be rotated into/out of periods of non-irrigation and the types of crops that would be left as stubble residue or sod remnants. It is, however, possible to qualitatively show why the proposed Program would maintain wind erosion at levels similar to or lower than existing levels.

The extent to which the proposed Program would affect wind erosion-related PM_{10} generation would depend in part on the crops grown on Program fields prior to those fields entering a period of non-irrigation. In all cases, the proposed Program would be expected to maintain or reduce wind erosion levels because the Program incorporates land management measures specifically designed to reduce erosion (see Section 3.4.3).

The majority of farmlands entering periods of non-irrigation under the proposed Program is anticipated to consist of fields previously planted in alfalfa. This projection reflects that over half the farmlands within PVID are currently in alfalfa (see Table 1-1), and fields suitable for higher value crops (such as melons or vegetables) are comparatively less likely to be left non-irrigated for economic reasons. In compliance with mandatory erosion control measures for farmlands committed to the proposed Program, alfalfa stubble residue would be left on these fields to help hold soil in place.

As described in Section 3.4.3, studies have shown that stubble residue is an effective means of minimizing erosion. The use of crop residues is one of the methods recommended by the EPA as a "key erosion control practice" (EPA 2000:4C-92) and is recognized by several USDA agencies as an effective means of minimizing erosion. For example, the NRCS states that:

> Erosion can be significantly reduced by this practice in locations where seedbed preparation allows residue to be left on the soil surface during critical periods for protection from wind and water erosion (NRCS 1996).

Local agencies also have acknowledged the erosion-controlling benefits of vegetative cover. Harvesting alfalfa while leaving its stubble residue in place is essentially equivalent to "mowing" the alfalfa fields, a process that MDAQMD estimates results in up to 80 percent less wind erosion than clearing (MDAQMD 1995:29).

For reasons similar to those provided for alfalfa, minimal wind erosion would be expected from non-irrigated fields with wheat or barley stubble residue or sod cover.

For non-irrigated fields without stubble residue or sod cover (such as fields planted with cotton, vegetables or melons prior to a period of non-irrigation), clod plowing would be required. For non-irrigated HEL soils that do not have a cover of either stubble residue or sod, clod plowing must be accomplished with a small grain equivalent (SGE) material of at least 1,000 pounds per acre.

As stated in the USDA-sponsored study cited in Section 3.4.3, plowing soil when it is sufficiently wet creates a rough, cloddy surface, and "erosion will not be a problem until sufficient rain is received to break down the surface clods leaving a layer of loose sand grains on the surface" (Fryrear 1984:445). The proposed Program's time-limits on the use of clods (three years), coupled with monitoring and implementation of remedial measures as necessary would further ensure the effectiveness of clod plowing as a means to minimize wind erosion.

Based on the wind patterns described above, it is probable that much of the PM_{10} generated by wind erosion of Program farmlands would be carried out of the Salton Sea and Mojave Desert air basins by prevailing winds.

Summary of Air Quality Impacts

The proposed Program would result in an unquantifiable decrease in the emission of ozone precursors, dependent on the number of acres of non-irrigated farmlands per year. Additionally, the proposed Program would eliminate some PM_{10} emissions associated with tilling and harvesting. PM_{10} generation levels associated with wind erosion of farmlands would remain similar or decrease, in large part due to the erosion control measures that have been integrated into the proposed Program. For these reasons and when considered in relation to the significance criteria identified in Section 4.3.2, the proposed Program would result in no impact or a less-than-significant impact with regard to air quality. More specifically, the proposed Program would not conflict with or obstruct implementation of any air quality plan, violate any air quality standard or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the Program region is designated as non-attainment under an applicable federal or state ambient air quality standard. Similarly, the proposed Program would not cause emissions of ozone precursors or PM_{10} that exceed the CEQA

significance thresholds established by MDAQMD, and would not conflict with local jurisdictions' guidance or air quality.

4.3.4 Mitigation Measures

Because impacts to air quality would be less than significant, no mitigation measures are required.

4.3.5 CEQA Level of Significance After Mitigation

Since no mitigation is required, the CEQA level of significance would remain the same, i.e., less-than-significant impacts to air quality.

4.4 HYDROLOGY AND WATER QUALITY

The following assessment of hydrology and water quality is based on PVID's records, other available literature, agency contacts, the proposed Program's design information and field reconnaissance. Appendix B contains a water quality and hydrology technical report in support of this assessment. The described information was compiled and evaluated to produce a summary of existing hydrologic and water quality conditions and associated Program impacts. As noted at the start of this chapter, this Draft EIR provides a focused evaluation of potential Program impacts for specific issues, based on analyses conducted in the proposed Program's NOP/Initial Study (see also Chapter 9.0, Effects Found Not to be Significant, and the NOP in Appendix A). For the assessment of hydrology and water quality, these issues include effects to water quality, groundwater supplies/recharge and Colorado River hydrology.

4.4.1 Existing Conditions

Watershed and Drainage Characteristics

The Program area is within the Colorado River Hydrologic Basin, one of nine such areas designated statewide by the State Water Resources Control Board (SWRCB). The Colorado River Hydrologic Basin encompasses approximately 13 million acres (20,000 square miles) in southeastern California, including all of Imperial County and portions of Riverside, San Bernardino and San Diego counties. Guidelines for management of hydrologic resources within the Colorado River Hydrologic Basin are provided in the 1994 *Water Quality Control Plan, Colorado River Basin-Region 7* (Basin Plan), with this plan implemented by the Colorado River Basin Regional Water Quality Control Board (RWQCB). The Basin Plan was prepared in accordance with applicable legislation, including the federal Clean Water Act and the California Porter-Cologne Act.

The Colorado River Hydrologic Basin is divided into a series of planning areas and units based on hydrologic characteristics, with the Program area located in the Palo Verde Hydrologic Subunit (Palo Verde SU) of the East Colorado River Basin Planning Area (Planning Area). The Planning Area includes a portion of the Colorado River watershed approximately 200 miles long and up to 40 miles wide in portions of Riverside, Imperial and San Bernardino counties. The Palo Verde SU is a subdivision of the noted Planning Area (and the Colorado River Basin Hydrologic Unit), and includes a portion of the Colorado River watershed roughly bounded by the Big Maria Mountains on the north, the McCoy and Mule mountains to the west and the Palo Verde Mountains on the south. Surface drainage in the Palo Verde SU is primarily through the Colorado River and associated tributaries, including numerous ephemeral washes from the described nearby mountains. Annual precipitation in this area is generally in the range of three to four inches, with approximately half of this rainfall occurring during summer thunderstorms and half during weaker winter storms (RWQCB and SWRCB 1994). Average annual precipitation in the Program area vicinity was 4.06 inches for the period of 1983 through 2000, with August exhibiting the highest monthly average at 0.71 inch and June the lowest at 0.02 inch. During that same period, the highest annual precipitation recorded at the Blythe weather station (Station 040924) was 7.79 inches in 1989 and the lowest was 0.72 inch in 2000 (National Climatic Data Center 2002). These

measurements should be considered in light of the fact that 1992 data for Blythe weather station are incomplete, and measurements taken by PVID at its offices in Blythe indicate that annual precipitation in 1992 was 8.57 inches.

Although local drainage directions are somewhat variable, drainage within the Palo Verde SU outside of the Palo Verde Valley is generally east and south toward the Colorado River. Drainage for the Palo Verde Valley and the Program area is generally southwesterly. The valley slopes southwesterly away from the Colorado River such that the ground at the toe of the mesa is lower than the average water level in the river due east of it. Runoff within the Program area is minimal.

Groundwater drainage consists primarily of water percolated from agricultural irrigation. Irrigation water for the Palo Verde Valley is diverted from the Colorado River, with annual diversions averaging approximately 883,000 acre-feet from 1981 to 2000 and associated return rates averaging approximately 470,000 acre-feet per year (excluding 1992–94, during which period the Test Program affected diversions and returns, see Section 6.3.1). PVID operates an extensive network of drainage structures to accommodate the noted diversion and return waters, including approximately 244 linear miles of main canals and laterals for diversions and 141 miles of drains for return flows.

Colorado River Hydrology

Data presented in this section and in the following impact analysis address the Colorado River in terms of its flow. "Flow" represents the rate that water moves through the river, or more specifically, the volume of water carried past a set point in a given time period. Because of the relatively large size of the Colorado River and the long-term nature of the proposed Program, river flows are discussed in this Draft EIR primarily in terms of acre-feet per year. The flow of water through Parker Dam (also called the "release rate") is discussed in term of cubic feet per second (cfs). By way of comparison, a flow rate of one acre-foot per year equals 893 gallons per day or 0.0014 cfs. A flow rate of 1.0 cfs is equivalent to approximately 646,000 gallons per day or 724 acre-feet per year.

Within this Draft EIR, "peak flow" refers to the maximum amount of water that passes by a set point in the Colorado River during a given period and "low flow" refers to the minimum amount of water that passes by a set point. "Average flow" refers to the mathematic mean for a given period of time (i.e., the total volume of water that passes by a given point divided by the length of time over which the flow was measured). It should be noted that for any given time period, the flow of the Colorado River often is typically higher or lower than its average flow, similar to the way that the amount of rainfall in a given year is usually higher or lower than the long-term annual average precipitation level.

The portion of the Colorado River potentially affected by the proposed Program extends from Parker Dam at Lake Havasu downstream to the southern end of the Palo Verde Valley. Flows in this section of the Colorado River can vary dramatically, fluctuating on an annual, seasonal and even daily or hourly basis. Factors affecting flow levels include natural and human processes. Much of the flow in the lower

Colorado River is regulated by the Bureau of Reclamation, which operates a series of dams along the river, with releases based on agricultural, urban and hydroelectric power generation demands.

The USGS measures Colorado River flows below Parker Dam at stream gage 09427520. From 1990 through 1999, annual measured flows below Parker Dam averaged 7.35 million acre-feet (USGS 2000). Excluding 1992 through 1994 (when the Test Program was being implemented), flows in the Colorado River below Parker Dam for the period from 1987 to 1999 averaged 7.91 million acre-feet per year. Over the period from 1935 through 1999, flows measured downstream from Parker Dam averaged approximately 9 million acre-feet per year, with annual flows ranging from a low of approximately 5.5 million acre-feet up to a maximum of approximately 21.1 million acre-feet (USGS 2000). During the period from October 1988 through September 1999, monthly flows varied from a low of approximately 100,000 acre-feet up to a maximum of approximately one million acre-feet (USGS 2000).

Parker Dam's release rate is a major factor affecting river flow below the dam (i.e., the river segment that this Draft EIR focuses on). During storms, natural runoff also affects flow levels in this section of the Colorado River, but this is a relatively rare occurrence due to the arid environment of the region. The Bureau of Reclamation generally releases enough water from Parker Dam each day to (1) meet the needs of downstream users, which include PVID, other water and irrigation districts in southern California and Arizona and other entities with present perfected rights to Colorado River water, and (2) to meet treaty obligations with Mexico. The Bureau of Reclamation sometimes releases water from Parker Dam in excess of downstream demand to accommodate flood flows.

While the *volume* of water released by the Bureau of Reclamation each day generally is set by the amount of water needed downstream, the *timing* of water releases during the day is primarily based on two factors:

(1) The Bureau of Reclamation attempts to maximize hydroelectric power generation at Parker Dam during periods of peak electrical use, "hourly releases [from Parker Dam] are arranged so as to produce the most economic pattern of electrical power generation possible with required downstream requirements" (Bureau of Reclamation 1991:11).

(2) Releases are timed to arrive at the appropriate diversion point when needed. Water released from Parker Dam typically takes 60 hours to reach Imperial Dam 148 miles downstream. Thus, water released from Parker Dam at 8:00 p.m. would be available for diversion at Imperial Dam 2.5 days later at approximately 8:00 a.m.

Since 1980, the maximum release rate from Parker Dam was 19,500 cfs (Bureau of Reclamation 2002:3.1-10). The minimum release rate from Parker Dam is generally set by the Bureau of Reclamation at 2,000 cfs in order to keep the Colorado River continually flowing downstream of the dam.[4] Within a given month, the daily variation between maximum and minimum release rates can reach up to 11,000 cfs (ibid.:3.1-10).

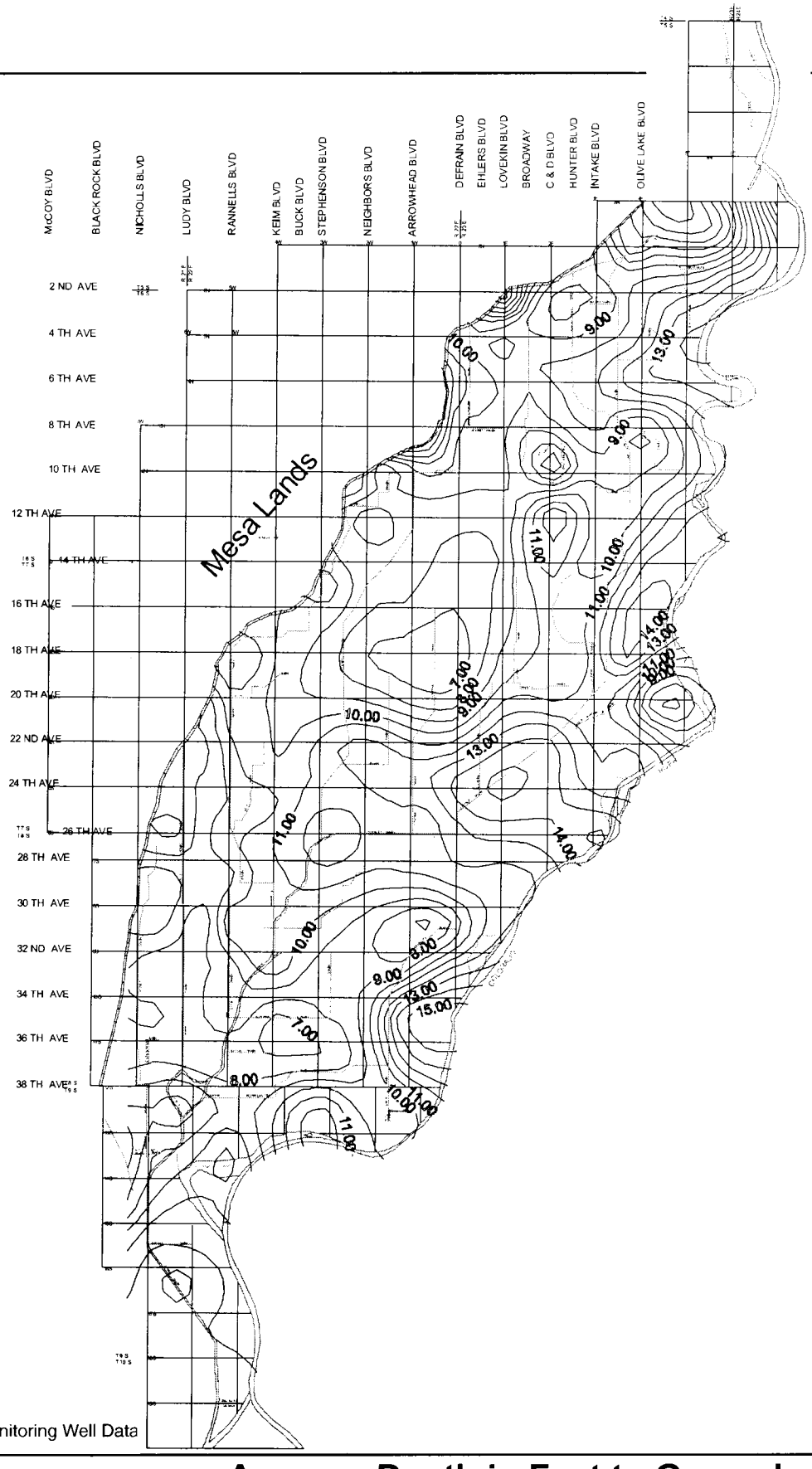
[4] The Bureau of Reclamation occasionally, and only for short periods, releases less than 2,000 cfs from Parker Dam due to operational constraints (Bureau of Reclamation 1991:13).

The amount of water flowing in the Colorado River directly affects the river's surface water elevation. Surface water levels along the lower Colorado River often vary throughout 24-hour cycles based on the amount of water released from dams along the river, with higher volumes released during the day (when power generation and irrigation demands are highest). Just downstream of Parker Dam, the typical daily variation in surface water elevations is approximately five feet during the summer, when irrigation demand is relatively high. In winter, when there is less demand for irrigation diversions, daily water level fluctuations below Parker Dam range closer to 2.5 feet. Monthly and annual changes in water surface elevation can be even greater. Between October 1988 and September 1999, monthly fluctuations on the river ranged as high as 7.1 feet.

Groundwater

The Program area is within the Colorado Hydrologic Unit Groundwater Basin, as designated in the Basin Plan. Shallow groundwater underlies virtually the entire Palo Verde Valley, with observed aquifer levels in 285 local PVID observation wells ranging from 3.9 to 22.6 feet below the surface. A contour map depicting average groundwater depths in PVID for year 2000 is shown on Figure 4-3. While the bottom depth of the local aquifer is unknown, extraction by the city of Blythe occurs from as deep as 400 feet below the surface. The local groundwater basin is hydraulically connected to the Colorado River, and is heavily influenced by percolation of irrigation water. Accordingly, aquifer levels vary by season, with groundwater gradually rising during Summer and Fall in response to increased irrigation. As previously noted, PVID maintains a series of drains to control the high groundwater by returning percolated irrigation water to the Colorado River, with approximately 50 percent of diverted water returned via these drains in an average year. Without this type of drainage system, soil salinization would occur and local groundwater potentially could rise to a level where agricultural activities would be adversely affected (i.e., from excess salts and through saturation of the root zone). The described drains are typically located 15 to 20 feet below the farmed surface, with drainage water elevations and flows monitored. The drains have lowered the groundwater in the valley to a level allowing swimming pools to be built and septic systems to operate. For those areas where the groundwater is less than eight feet below the farmland, lowering the groundwater is a benefit and goal at PVID.

As described in Section 1.1.1., much of the groundwater in the Palo Verde Valley is highly saline. However, the effect of irrigation, and the resulting percolation of irrigation water coupled with the removal of saline groundwater by PVID's drains, has been to reduce salinity levels. Groundwater under the southwestern portion of the Palo Verde Valley has TDS levels in excess of 3,500 mg/L near the surface, with salinity increasing with groundwater depth. Slowly, these salty waters near the water table surface are being flushed into the drains by irrigation activities.



Scale: 1" = 3.5 miles approx.
Source: PVID Groundwater Monitoring Well Data

Average Depth in Feet to Groundwater for 2000 Palo Verde Irrigation District

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 4-3

Water Quality

Regulatory Requirements

Regulatory requirements related to water quality in the State of California are derived primarily from the Federal Water Pollution Control Act of 1972 (as amended), commonly known as the Clean Water Act (CWA), and the State of California Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code). Water quality issues in the Program area also are influenced by the federal Colorado River Basin Salinity Control Act (as amended).

The primary objective of the CWA is to "restore and maintain the chemical, physical and biological integrity of the nation's waters to make all surface waters fishable and swimable." Applicable portions of the CWA are implemented by the State of California through the Basin Plan process, as described below. The Porter-Cologne Act (Act) establishes the state and regional water boards as the principal state agencies responsible for control of water quality. The Act requires that the quality of all waters in the state be protected, and that activities and factors which may affect water quality be regulated by the state and regional boards. The Act authorizes the boards to formulate and adopt water quality control plans for individual basins, with the Program area located within the Colorado River Basin and subject to the Basin Plan. The major regulatory requirements in the Basin Plan applicable to the proposed Program include beneficial uses and water quality objectives, as described below. The Colorado River Basin Salinity Control Act (PL 93-320, as amended) is intended to implement salinity control measures "that will allow for the necessary salinity controls on the river to… insure… compliance with numeric criteria at least through the year 2005." Per the directives of the Colorado River Basin Salinity Control Act, the Colorado River Basin Salinity Control Forum, which is made up of the seven Upper Division and Lower Division Colorado States, has adopted numeric criteria for TDS for various points along the river. These criteria include 747 mg/L TDS on the river below Parker Dam, and 879 mg/L TDS at Imperial Dam (flow-weighted annual average; RWQCB and SWRCB 1994:3-5). Participating Colorado division states produce a report every three years to review the numeric criteria, which are adopted as water quality objectives by the RWQCB and SWRCB as part of the Basin Plan.

Beneficial Uses

Beneficial uses are defined in the California Water Code (Section 13050(f)) to include "domestic, municipal, agricultural, and industrial supply; power generation; recreation; [a]esthetic enjoyment; navigation; and other aquatic uses or preserves." Identified existing and potential beneficial uses (including unauthorized uses) for surface waters in the Program area are listed on Table 4-4. Identified beneficial uses for local groundwater resources (Basin Plan: Table 2-5, p. 2-19) include municipal and domestic supply, industrial service supply and agriculture supply.

Table 4-4
BENEFICIAL USES OF LOCAL SURFACE WATERS[1]

	Colorado River and associated lakes and rivers[2]	Palo Verde Canals	Palo Verde Drains	Palo Verde Lagoon and Outfall Drain
Municipal and Domestic Supply	**X**	**P**		
Agricultural Supply	**X**	**X**		
Aquaculture	**X**	**X**		
Freshwater Replenishment	**X**			
Industrial Service Supply	**X**			
Groundwater Recharge	**X**	**X**		
Water Contact Recreation	**X**	**X**	**X**	**X**
Non-contact Water Recreation	**X**	**X**	**X**	**X**
Warm Freshwater Habitat	**X**	**X**	**X**	**X**
Cold Freshwater Habitat	**X**			
Wildlife Habitat	**X**	**X**	**X**	**X**
Hydropower Generation	**X**			
Preservation of Rare, Threatened or Endangered Species	**X**			**X**

X = Designated beneficial use.
P = Potential beneficial use.
[1] Some of these uses are unauthorized.
[2] Includes applicable water bodies in the Program area.
Source: *Water Quality Control Plan, Colorado River Basin – Region 7* (RWQCB and SWRCB 1994)

Water Quality Objectives

Water quality objectives are defined in the California Water Code (Section 13241) as the limits or levels of constituents or characteristics that will "ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses." A related objective identified in the Basin Plan states that "Whenever the existing water quality of water is better than the quality established herein as objectives, such existing quality shall be maintained unless otherwise provided for by the provisions of the State Water Resources Control Board Resolution No. 68-16 (RWQCB and SWRCB 1994:3-1)." General water quality objectives identified in the Basin Plan include qualitative measures for aesthetics, tainting substances (i.e., materials which produce undesirable flavor in edible aquatic organisms), toxicity, pesticide wastes, temperature, suspended and settleable solids, biostimulatory substances, sediment and turbidity. A number of additional general and specific quantitative water quality objectives are identified in the Basin Plan and applicable federal guidelines, with a summary of these standards provided in Table 4-5.

Table 4-5
REGULATORY STANDARDS FOR THE COLORADO RIVER AND PVID DRAINS
In milligrams per liter (mg/L) (unless otherwise noted)

Constituent	Federal Standards and State Objectives[1]	Constituent	Federal Standards and State Objectives[1]
Arsenic	0.05	Mercury	0.002
Barium	1.0	Nitrate as N	10.0
Cadmium	0.010	pH	6.0 - 9.0 [2, 4]
Chromium	0.05	Selenium	0.01
Dissolved Oxygen	5.0-8.0 [2, 3]	Silver	0.05
Fluoride	0.6-2.4 [3]	Total Dissolved Solids	-[5]
Lead	0.05		

[1] Based on RWQCB and SWRCB 1994 (state objectives) and U.S. Environmental Protection Agency 1976 (federal standards), except where noted.

[2] State objectives only (not a federal standard).

[3] Temperature Dependent.

[4] Hydrogen Ion Concentration in Units.

[5] 747 below Parker Dam and 879 at Imperial Dam (flow-weighted annual average numeric criteria adopted by the Colorado River Basin Salinity Control Forum and also adopted as state objectives [RWQCB and SWRCB 1994:3-5]); 2,000 average and 2,500 maximum at Palo Verde Drains (RWQCB and SWRCB 1994:3-3).

Water Quality Databases

Water quality databases for numerous locations along the Colorado River are maintained by the Bureau of Reclamation and USGS. The Bureau of Reclamation database is limited to TDS, while the USGS database includes additional constituents. A summary of available data from these two sources for the periods of 1980 to 2000 (Bureau of Reclamation) and 1968 to 1992 (USGS) is provided in Tables 4-6 and 4-7. Based on these data and assessments of annual flow rates, TDS concentration in the Colorado River below the PVID discharge is estimated at approximately 660 mg/L. By comparing the data in Tables 4-6 and 4-7 with the applicable standards, it can be seen that existing water quality in the described portions of the Colorado River and the PVID drains largely conforms with adopted standards.

Table 4-7 provides results for water sample collections below Parker Dam from both the Bureau of Reclamation and USGS databases. Because of the above-referenced differences in collection periods, coupled with different sampling schedules within those time periods (e.g., time of day that samples were collected, number of samples collected each year), the results of the two sampling efforts vary. For example, the Bureau of Reclamation samples correlate with a period of comparatively higher flow in the Colorado River, with the result that average TDS levels calculated from Bureau of Reclamation data are lower than those associated with the USGS data.

Table 4-6
OBSERVED WATER QUALITY IN THE COLORADO RIVER AND PVID'S OUTFALL DRAIN

In milligrams per liter (mg/L) unless otherwise noted

		Colorado River Below Parker Dam[1]			PVID's Outfall Drain[2]
Constituent	**Standard[3]**	**Minimum**	**Average**	**Maximum**	**Average**
Alkalinity	NNS	98	127	150	N/A
Arsenic	0.05	0.0005	0.0027	0.005	N/A
Barium	1.0	0.00	0.12	0.50	N/A
Boron	NNS	0.05	0.14	0.40	N/A
Cadmium	0.010	0.000	0.004	0.013	N/A
Calcium	NNS	64	83	100	134.7
Chloride	NNS	51	90	140	282.6
Chromium	0.05	0.000	0.006	0.026	N/A
Copper	NNS	0.000	0.009	0.037	N/A
Fluoride	0.6-2.4	0.2	0.4	0.7	0.90
Hardness ($CaCO_3$)	NNS	250	329	380	345.90
Iron	NNS	0.01	0.15	0.55	N/A
Lead	0.05	0.000	0.002	0.008	N/A
Magnesium	NNS	23	30	40	46.80
Manganese	NNS	0.004	0.017	0.050	N/A
Mercury	0.002	0.000	0.000	0.001	N/A
Nitrate as N	10	0.02	0.16	0.30	0.48
pH[4]	6.0 – 9.0	7.10	7.96	8.80	7.50
Potassium	NNS	3.5	4.9	6.8	5.90
Selenium	0.01	0.001	0.003	0.008	N/A
Specific Conductance[5]	NNS	825	1,113	1,720	2,287
Silver	0.05	0.00	0.004	0.010	N/A
Sodium	NNS	69	100	120	310
Sulfate	NNS	200	296	380	526.2
Total Dissolved Solids (TDS)[6]	See Table 4-5	531	708	848	1,535
Zinc	NNS	0.00	0.024	0.310	N/A

NNS – No Numerical Standard; N/A –Not Available

1 National Stream Quality Accounting Network, U.S. Department of the Interior, Geological Survey, Colorado River. Data collected from 1968 through 1992.

2 Data obtained from U.S. Department of the Interior, Bureau of Reclamation, Boulder City, Nevada. Samples collected June–August 2001 at approximately 3.25 miles "upstream" from the mouth of PVID's Outfall Drain (just south of the Highway 78 bridge).

3 See Table 4-5 for additional detail regarding standards.

4 Hydrogen ion concentration in units.

5 Micromhos per centimeter (µmhos/cm).

6 See also Table 4-7 for additional Colorado River TDS measurements.

Table 4-7
COLORADO RIVER TOTAL DISSOLVED SOLIDS MEASUREMENTS
In milligrams/liter (mg/L)

Location	Minimum	Average	Maximum
Below Parker Dam[1]	531	708	848
Below Parker Dam[2]	535	619	716
Below Imperial Dam[2]	577	717	827

[1] National Stream Quality Accounting Network, U.S. Department of the Interior, Geological Survey, Colorado River. Samples collected from 1968 through 1992.
[2] U.S. Department of the Interior, Bureau of Reclamation. Samples collected from 1980 to 2001.

General Plan Guidance

Riverside County

The *Riverside County Comprehensive General Plan* includes a Water Quality Element, which identifies two objectives (Riverside County 1994:362):

- Objective 1 Water quality planning shall be based on accepted growth forecasts and shall be consistent with adopted regional development plans
- Objective 2 Nonpoint sources of water pollution, such as runoff from urban areas, grading, construction, and agricultural activities shall be recognized as potentially significant impacts of development

The general plan identifies several proposed programs to attain these goals, most of which address new development and land use standards. Agriculture-related programs included in the Water Quality Element focus on controlling runoff, particularly from dairy farms, and are not applicable to a proposed reduction in irrigation levels.

Imperial County

The *County of Imperial General Plan Water Element* states that its purpose "is to identify and analyze the types of water resources within Imperial County and to assure that the goals and policies are adopted that preserve and enhance resource availability and quality" (Imperial County 1993c:1). In addition to addressing water quality, the Water Element also includes specific discussion of rights to Colorado River water. This section of the Draft EIR addresses hydrology and water quality, and readers are referred to Section 1.1.3 regarding water rights. Although PVID and its service area within Imperial County are

addressed, the focus of the Water Element is on the Imperial Valley and lands served by the Imperial Irrigation District (IID).

The Water Element identifies five goals that address the provision of domestic and agricultural water supplies, protection of ground and surface water quality and coordinated water management. Of these, one goal and one corresponding objective address agricultural irrigation water supply (Imperial County 1993a:26):

- Goal 3 The County will secure the provision of safe and healthful sources and supplies of agricultural irrigation water adequate to assure the continuation of agricultural land uses as established by the County General Plan and the long-term continued availability of this essential resource
- Objective 3.1 The efficient and cost-effective utilization of local and imported water resources through the development and implementation of innovative agricultural use patterns

The Implementation Programs and Policies section of the Water Element contains programs to achieve these goals; however, these programs are not applicable to the proposed non-irrigation of agricultural fields on a rotating basis. Readers are also referred to the discussion of "General Plan Guidance on Agricultural Resources" provided in Section 4.1.1, which includes *County of Imperial General Plan Agricultural Element* policies related to water conservation and transfer programs.

City of Blythe

The *City of Blythe Comprehensive General Plan* addresses water quality and hydrology in a Water Resources Element and in a Flooding and Hydrology Element. The Flooding and Hydrology Element focuses on improving stormwater drainage and on restricting development within the 100-year floodplain. These policies would not be applicable to a proposed Program to reduce irrigation of Palo Verde Valley agricultural fields on a rotating basis. The Water Resources Element specifically addresses reductions in irrigation and diversion of Colorado River water "for consumption in urban areas" (city of Blythe 1989a:IV-13), although at the time the general plan was published the implementation of such a program did not seem very likely. The Water Resources Element identifies the following goal (ibid.:IV-14):

> To promote and encourage the protection and wise utilization of the Valley's domestic and agricultural water supplies to assure the long-term viability and availability of water resources.

Of the six water resource policies listed to help meet this objective, two policies may be applicable to the proposed Program:

- Policy 6 Monitor, coordinate and cooperate with state and federal agencies to assure the protection of the Colorado River resource from over-utilization and excessive

export of river water to protect urban and agricultural interests and to assure the health of the various biological habitats of the Colorado River

- Policy 7 Actively consult and coordinate with the Palo Verde Irrigation District and the valley farmers to assure the long-term protection and preservation of Palo Verde Valley allotted water rights

4.4.2 Significance Criteria

The proposed Program would have significant impacts under CEQA if it would:

1. Violate any water quality standards or waste discharge requirements; or
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of existing wells would decrease to a level which would not support existing land uses or planned land uses for which permits have been granted); or
3. Otherwise substantially degrade water quality; or
4. Result in a substantial rise in local groundwater levels where agricultural activities would be adversely affected (i.e., from excess salts and through saturation of the root zone).

4.4.3 Impacts

Groundwater Supplies and Recharge

The proposed Program is projected to lower groundwater elevations in the Palo Verde Valley by an average of roughly one to two feet. Overall, the following text supports the conclusion that this would result in a less-than-significant groundwater supply or recharge impact because it would not affect the viability of local groundwater wells or other beneficial uses of groundwater. To the contrary, because high groundwater has been problematic in some portions of the Palo Verde Valley, this reduction in groundwater elevation may be considered beneficial. Adjacent to the Colorado River, groundwater levels would decrease substantially less than in other areas of the valley because groundwater would continue to be affected by river flows. The effect of the Colorado River's surface elevation on adjacent groundwater levels varies depending a number of factors, including hydrological features (such as nearby streams or agricultural drains), soil characteristics, underlying geologic formations and the presence and extent of other groundwater sources (such as percolation of irrigation water).

Several factors influence the presence and elevation of groundwater. For purposes of this impact assessment, these factors are divided into two groups: static factors and dynamic factors. Static factors are those that do not change on a seasonal basis and are not expected to vary throughout the lifetime of the proposed Program. Dynamic factors are those that change on a seasonal, daily or hourly basis, and are the primary factors that cause groundwater levels to fluctuate or decrease. Static factors that affect groundwater elevations include soils properties. The elevation of drainage structures (siphons for road

crossing) generally also is considered a static factor; however, as described in Section 1.1.1, PVID does occasionally lower the bottom elevation of its drains to ensure that they remain effective at carrying return flows from the Palo Verde Valley to the Colorado River. Dynamic factors that affect groundwater elevations include:

- precipitation
- irrigation
- stage (water surface elevation) of the Colorado River

Soil properties and the elevations of the drainage structures would not change substantially during the life of the proposed Program. Soil properties also control how much the water level in the drain can decrease before the drain banks become unstable and slide into the drain. The depth of drainage structures influences the elevation of the local groundwater. Since most of the drainage structures are steel pipes installed one foot below the desired groundwater level, PVID must either keep the water level above the pipe by installing rock weirs downstream of the pipe or lower the pipe. Unless a pipe has deteriorated (rusted) beyond repair, PVID typically favors the installation of a rock weir over pipe lowering where needed. As part of routine maintenance, deteriorated pipes are replaced at an appropriate elevation based on each pipe's unique situation.

Precipitation in the area generally has a minimal impact on the groundwater elevation. Annual precipitation totals averaging roughly four inches are insignificant compared to the volume of irrigation water that is applied to the fields. Nevertheless, during periods of high precipitation, irrigation can be reduced.

Irrigation of Program area farmlands has a substantial impact on the valley's groundwater elevations. On average, over seven feet of water is placed on the farmlands annually. A substantial portion of this water percolates into the soil, although some is removed through evapo-transpiration. Accordingly, irrigation is likely to be the factor that most substantially affects groundwater elevations. In areas close to the Colorado River, the river's stage also can have a substantial impact on the elevation and flow direction of the groundwater.

As described below, the proposed Program's effect on water surface elevations in the Colorado River would be negligible, and Program-related changes in the river's stage would not noticeably affect groundwater elevations in the Palo Verde Valley. Based on these factors, review of the significance criteria in Section 4.4.2, and the fact that the proposed Program would not affect precipitation, this assessment of potential groundwater impacts focuses on Program-related changes in the amount of irrigation that would occur in the Palo Verde Valley.

The assessment of projected Program-related changes is partially based on how groundwater was affected by the Test Program implemented by PVID and Metropolitan from August 1992 through July 1994. This assessment also considers historical diversions and return flows. These topics are addressed below,

followed by a discussion of the proposed Program's projected effects on groundwater recharge and supply.

1992-1994 Test Program

During the two-year test period, approximately 20,215 acres of farmland located throughout PVID were not irrigated. One of the main purposes of the Test Program was to determine how the non-irrigation of farmlands within the Palo Verde Valley affects the local environment.

PVID monitored a network of 285 observation wells located throughout the valley to track groundwater elevations. Groundwater elevations in the Palo Verde Valley were measured before, during and after Test Program implementation. Between 1981 and 1992, prior to the Test Program, the monthly average depth to groundwater in the valley varied from 8.9 feet in summer to 10.8 feet in December. During each month of the Test Program (1992-1994), the average depth to groundwater was greater than the monthly average during the previous 12 years. (Data from the observation wells are summarized in Appendix B.) Between 1992 and 1993, the average groundwater elevation in the valley decreased by 1.25 feet. In 1994, the average elevation had recovered 0.78 feet, or 0.47 feet below 1992 levels. In each of the following four years, the groundwater elevation increased. By 1997, the elevation had surpassed the 1992 average level by more than a foot.

Historical Diversions and Return Flows

Based on PVID data, average annual diversions at the Palo Verde Diversion Dam for the ten-year period from 1987 to 1999 excluding 1992 through 1994 (when the Test Program was being implemented) were 912,886 acre-feet. For that same period, average measured return flows were 461,811 acre-feet, of which 377,159 acre-feet went out PVID's Outfall Drain, 3,336 acre-feet went out Olive Lake Drain and 81,316 acre-feet went out operational spill channels. During the Test Program (August 1992 through July 1994), the 1993 diversions were 183,066 acre-feet less than the ten-year average and the 1993 returns were 59,929 acre-feet less than the ten-year average. Annual average flows in the Colorado River below Parker Dam for the period from 1987 to 1999 (excluding 1992 through 1994) averaged 7,908,800 acre-feet, or 10,927 cubic feet per second (USGS data; 2000 not yet available). PVID's annual diversions from the Colorado River for that ten-year period were about 11.5 percent of the river's annual flow at the point of diversion.

Deducting the annual measured return, PVID's average draw from the river was 451,075 acre-feet, or 5.8 percent of the river's flow. The Bureau of Reclamation estimates the unmeasured return at 5.6 percent of the diversion or (for the ten-year average) 51,122 acre-feet, resulting in a net draw of approximately 400,000 acre-feet per year. Monthly summer diversions were over 100,000 acre-feet. The lowest diversions usually occurred in the winter, decreasing to around 30,000 acre-feet per month.

Proposed Program's Effect on Groundwater Levels

The proposed Program is anticipated to reduce groundwater levels in the Palo Verde Valley by roughly one to two feet over the 35-year term of the proposed Program. This assessment reflects the projected Program-related reduction in irrigation levels of up to 29 percent, the data gathered during the Test Program and the other (static and dynamic) factors affecting groundwater that are discussed above. Even with the maximum amount of acreage committed to the proposed Program, irrigation would result in a substantial, non-natural level of infiltration. Based on past diversion levels, approximately 707,000 acre-feet or more of water would be used to irrigate fields within PVID's boundaries if the proposed Program is implemented. Additionally, the Colorado River would continue to exert an influence on groundwater levels adjacent to the river, and this influence would be relatively unaffected by the proposed Program. Precipitation levels and soils types present in the valley would not change with Program implementation. A reduction of one to two feet would be a less-than-significant impact to the groundwater hydrology. This assessment is consistent with the following facts: (1) high groundwater levels caused by irrigation historically have been a problem in the Palo Verde Valley, affecting crops and constraining other human uses, and (2) a one- to two-foot decrease in groundwater levels would not affect the viability of water supply wells or groundwater availability within the Palo Verde Valley.

Groundwater levels immediately adjacent to the Colorado River would continue to be influenced primarily by river flows, with the groundwater level at the river's edge equal to the river level (Bureau of Reclamation 1991:28). As described below (see "Colorado River Hydrology"), the average surface water elevation of the Colorado River would change by less than two inches as a result of the proposed Program. Accordingly, the proposed Program's effect on groundwater levels immediately adjacent to the river also would be less than two inches, which would be a less-than-significant effect.

The reduction in irrigation applied to groundwater would result in less flushing of the highly saline groundwater into PVID's drains or deeper into the groundwater aquifer. Because irrigation would continue to be applied to the majority of farmlands within the Palo Verde Valley, the flushing would continue, albeit at a somewhat reduced rate. This change in flushing rates would not affect beneficial uses of groundwater and would be a less-than-significant groundwater impact.

Water Quality

The proposed Program does not involve the discharge of any wastes or other substances. The proposed Program would affect levels of diversion from the Colorado River to the Palo Verde Valley, the amount of water in PVID's drains and the quantity of return flows to the Colorado River. These changes would affect TDS levels, including salinity levels, but would result in a less-than-significant water quality impact.

The proposed Program would entail the use of herbicides to ensure that crop growth has been stopped and to control weed growth on fields entering periods of non-irrigation. Herbicide application under the proposed Program would not exceed application levels associated with active farming; accordingly, no

increase in herbicide carried in tailwater from fields would be anticipated. (As with all farm-related activities in the PVID, proper local, state and federal permits would need to be obtained by the participants for the use of herbicides, pesticides and insecticides.)

The flow-weighted annual average numeric TDS criteria (and the identical Basin Plan objectives) for the Colorado River are currently being met, as are the Basin Plan (state) objectives for TDS in PVID's Outfall Drain. (TDS in PVID's Outfall Drain is measured once each year in early January when the canal system is drained.) During the two-year Test Program, return flows to the Colorado River decreased approximately 13.5 percent in comparison to the average for a ten-year period from 1988 through 2000 excluding 1992 through 1994. During the Test Program, TDS concentrations in the January return flow sample increased; however, the overall salt loading decreased. (In other words, although the return flows were saltier, there was less water, so the total amount of salt carried by return flows was lower.)

For the January 1993 sample from return flows, TDS concentrations were greater than 1992, but were consistent with values from other years. In 1994, the January sample TDS concentrations exceeded the annual average objective of 2,000 mg/L set by the RWQCB. The concentration exceeded values from all other January samples, however the variance from average was small. During several other years, the TDS levels nearly reached the 2,000 mg/L annual average objective. PVID data (see Table 4 in Appendix B) show that the actual salt tonnage in PVID's Outfall Drain in its 1993 sample was 77.3 percent of the 1991 to 2001 average, excluding the Test Program years' data. In the 1994 sample, the actual tonnage of salt in PVID's Outfall Drain was 92.7 percent of the 1991 to 2001 average, excluding the Test Program years' data.

Because the proposed Program would entail a greater reduction in irrigation than the Test Program (up to approximately 29 percent of the Palo Verde Valley's agricultural lands), there would be a correspondingly larger decrease in flow through PVID's Outfall Drain and more saline groundwater entering the drains being diluted less by irrigation water or operational canal spillage. However, extrapolating the results of the Test Program indicates that the TDS levels of the return flows would not climb substantially, and the proposed Program would not affect the ability of PVID to meet Basin Plan (state) water quality objectives within its drains.

TDS concentrations within the Colorado River also would be affected by the proposed Program. Irrigation of farmland within the Palo Verde Valley flushes salts from the soil into the groundwater table and PVID's drains and ultimately into the Colorado River. Over time, the amount of salts flushed into this system is reduced. Under the proposed Program, the amount of irrigation would be reduced by up to approximately 29 percent at any one time. As described above, TDS levels in PVID's Outfall Drain would be at somewhat higher concentrations than under current conditions; however, because there would be less water in the drain, the total TDS loading in the drain water would be less. Because there would be less irrigation, there would be a corresponding reduction in flushing salts from the valley into the Colorado River. As a result, there would be a reduction in overall TDS levels within the Colorado River below the confluence of PVID's Outfall Drain with the river. While beneficial, this decrease would be negligible in the context of the overall lower Colorado River system.

Since the proposed Program would not (1) violate state water quality objectives, federal water quality standards or numeric criteria established for Colorado River TDS levels or (2) cause a substantial degradation in water quality, the proposed Program would result in less-than-significant water quality impacts.

Colorado River Hydrology

The proposed Program would:

1. Reduce the release of water from Parker Dam by up to 111,000 acre-feet per Program contract year,
2. Reduce the amount of Colorado River water diverted at the Palo Verde Diversion Dam for the irrigation of fields in the Palo Verde Valley portion of the PVID below the Palo Verde Diversion Dam by up to approximately 206,000 acre-feet per Program contract year,
3. Reduce the amount of water "consumed" by crops within the Palo Verde Valley portion of the PVID below the Palo Verde Diversion Dam by up to approximately 111,000 acre-feet per Program contract year,
4. Reduce the amount of irrigation water diverted to the Palo Verde Valley but unused by crops and returned to the Colorado River (as groundwater and through PVID's drains) by up to approximately 95,000 acre-feet per Program contract year, and
5. Increase the flow of water between the Palo Verde Diversion Dam and PVID's Outfall Drain by up to approximately 95,000 acre-feet per Program contract year.

These changes, illustrated in Figure 4-4 and described more fully below, would occur for the 35-year term of the proposed Program. Also as described below, there would be no Program-related change in river flow below the mouth of PVID's Outfall Drain.

Parker Dam to Palo Verde Diversion Dam

Each year that the proposed Program is implemented, the Bureau of Reclamation would release less water from Parker Dam than it would if the proposed Program were not implemented. The reduction in water releases would range from 25,000 acre-feet per year to 111,000 acre-feet per Program contract year, depending on the amount of Palo Verde Valley farmland not being irrigated under the proposed Program. Consequently, annual Colorado River flows from Parker Dam downstream to Palo Verde Diversion Dam would be correspondingly reduced.

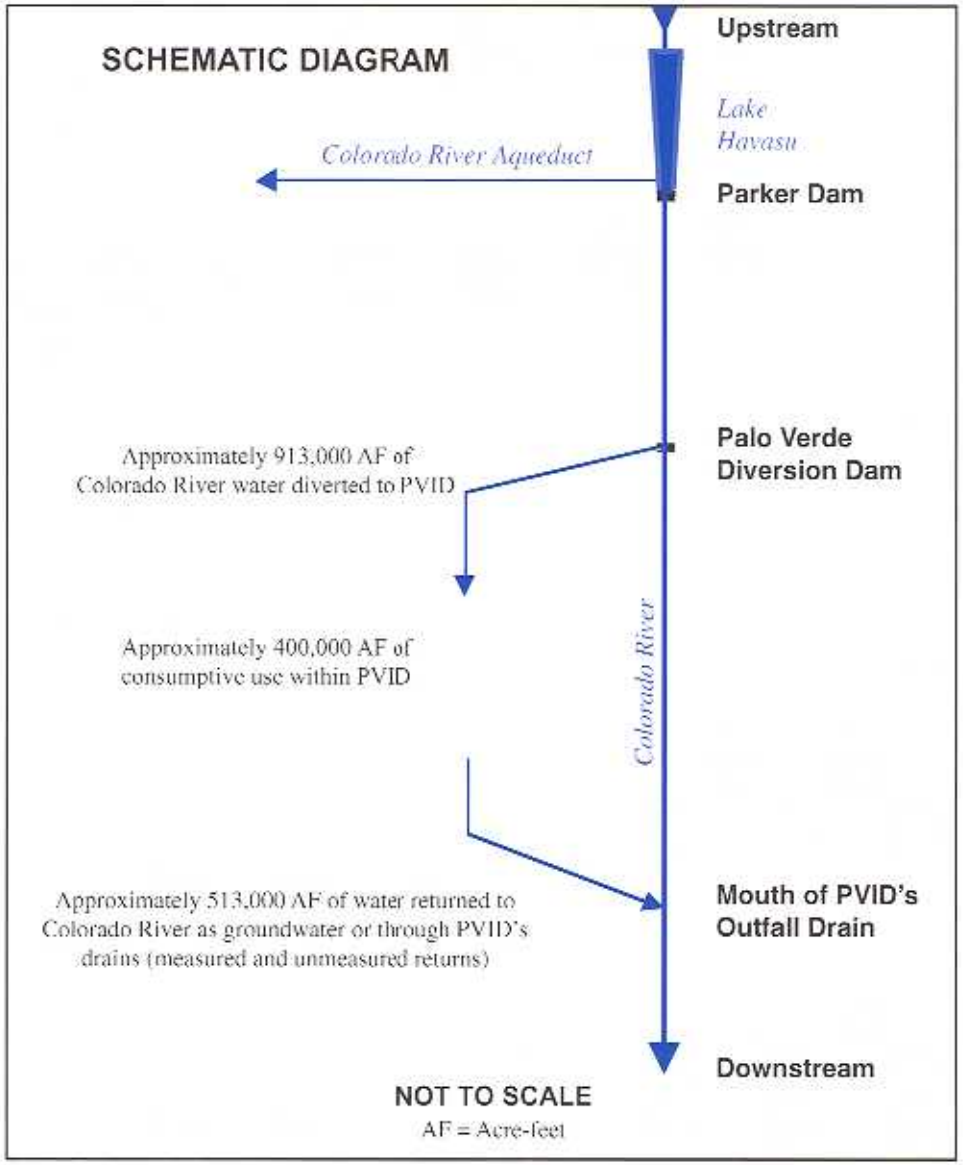
The extent to which the proposed Program's flow reduction would affect the Colorado River between Parker Dam and the Palo Verde Diversion Dam must be considered in the context of how the Bureau of Reclamation manages releases from Parker Dam. The Bureau of Reclamation generally sets daily water releases from Parker Dam based on the amount of water necessary for downstream deliveries plus water which the United States is obligated by treaty to provide to Mexico. Exceptions to this approach

are when high natural runoff causes an increase in flows, or when the amount of water necessary to meet downstream obligations is less than 2,000 cfs, the minimum release rate established by the Bureau of Reclamation for Parker Dam releases (see Section 4.4.1).

The proposed Program would not affect the maximum release rate from Parker Dam, which is based on hydroelectric power generation needs, although it may reduce the amount of time that water is released at the maximum rate. Similarly, the proposed Program would not affect the minimum release rate from Parker Dam, currently set by the Bureau of Reclamation at 2,000 cfs for most situations. Although the maximum and minimum release rates would not change, the average release rate under the proposed Program may be reduced because the amount of time during which water is released at the maximum rate may be shorter. A reduction in releases from Parker Dam of 111,000 acre-feet per Program contract year would reduce the average release rate by approximately 153 cfs.

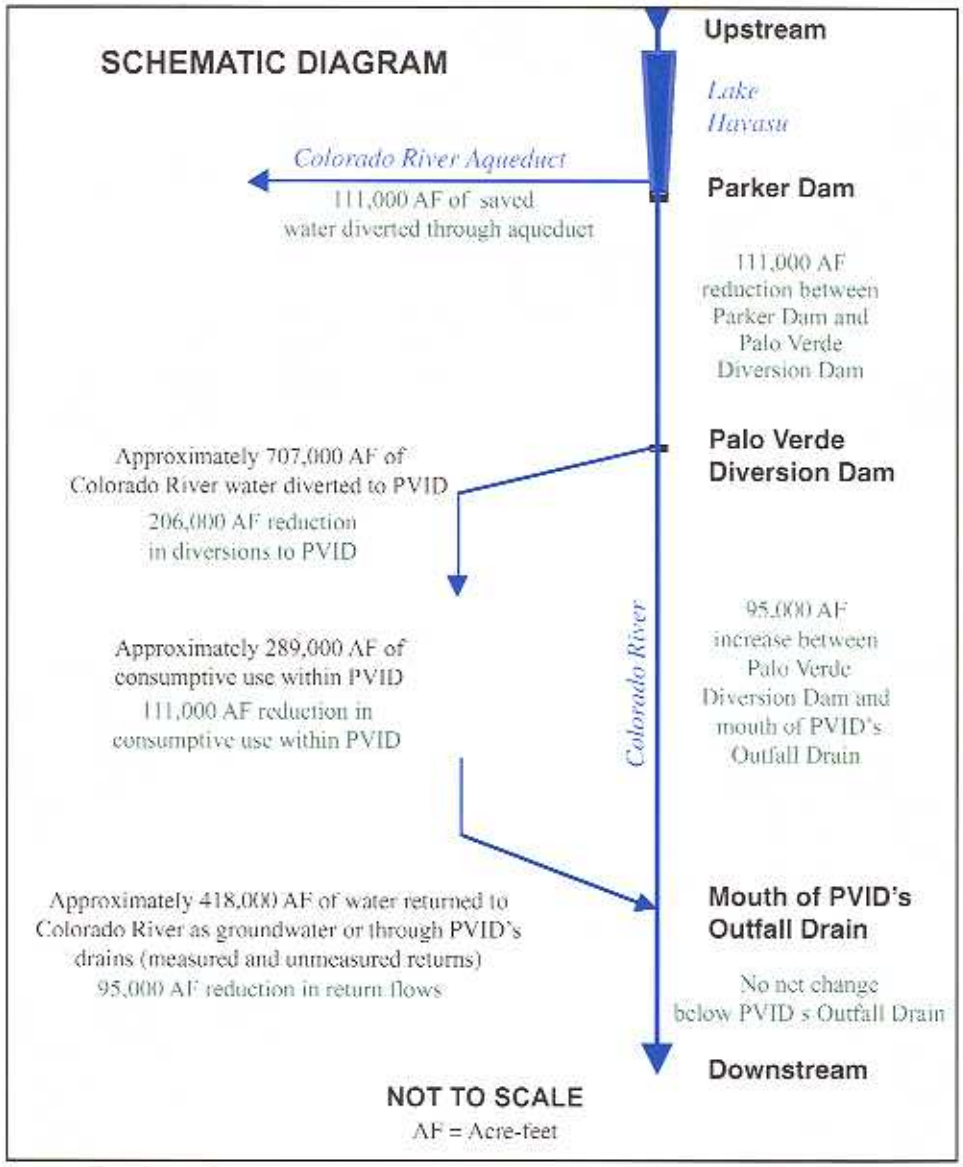
The change in river flows from Parker Dam downstream to Palo Verde Diversion Dam would be essentially the same as the change in release rates from the dam. Flows measured along this section of the Colorado River would be reduced from approximately 25,000 acre-feet per Program contract year up to approximately 111,000 acre-feet per Program contract year, depending on the amount of farmland not irrigated under the proposed Program. The water level changes associated with this reduction in flow would continue to reflect Bureau of Reclamation operating procedures at Parker Dam. Similar to existing conditions, the river's water level would continue to fluctuate daily between high and low surface elevations (which vary from season-to-season and year-to-year), but the amount of time that the river is at its highest level each day would be shorter. Figure 45 provides a schematic illustration of how the proposed Program would change the duration of water being released from Parker Dam at the maximum rate but not the magnitude of the maximum or minimum release rates.

Because the river's water level would continue to fluctuate daily between similar high and low surface elevations, no shoreline areas that are periodically submerged by existing fluctuations in the Colorado River would cease to be periodically submerged by river fluctuations if the proposed Program is implemented. Although there would be no change in the maximum and minimum surface water elevations between Parker Dam and Palo Verde Diversion Dam, there would be a reduction in the average surface water elevation. This reduction in average surface water elevation would result because the amount of time that the river is at its maximum water surface elevation each day would be shorter and because the total volume of water carried between Parker Dam and Palo Verde Diversion Dam each Program contract year would be up to approximately 111,000 acre-feet less than current conditions.



Average Annual Diversions and Return Flows - Existing Condition

(1987 through 1999, excluding 1992 to 1994)



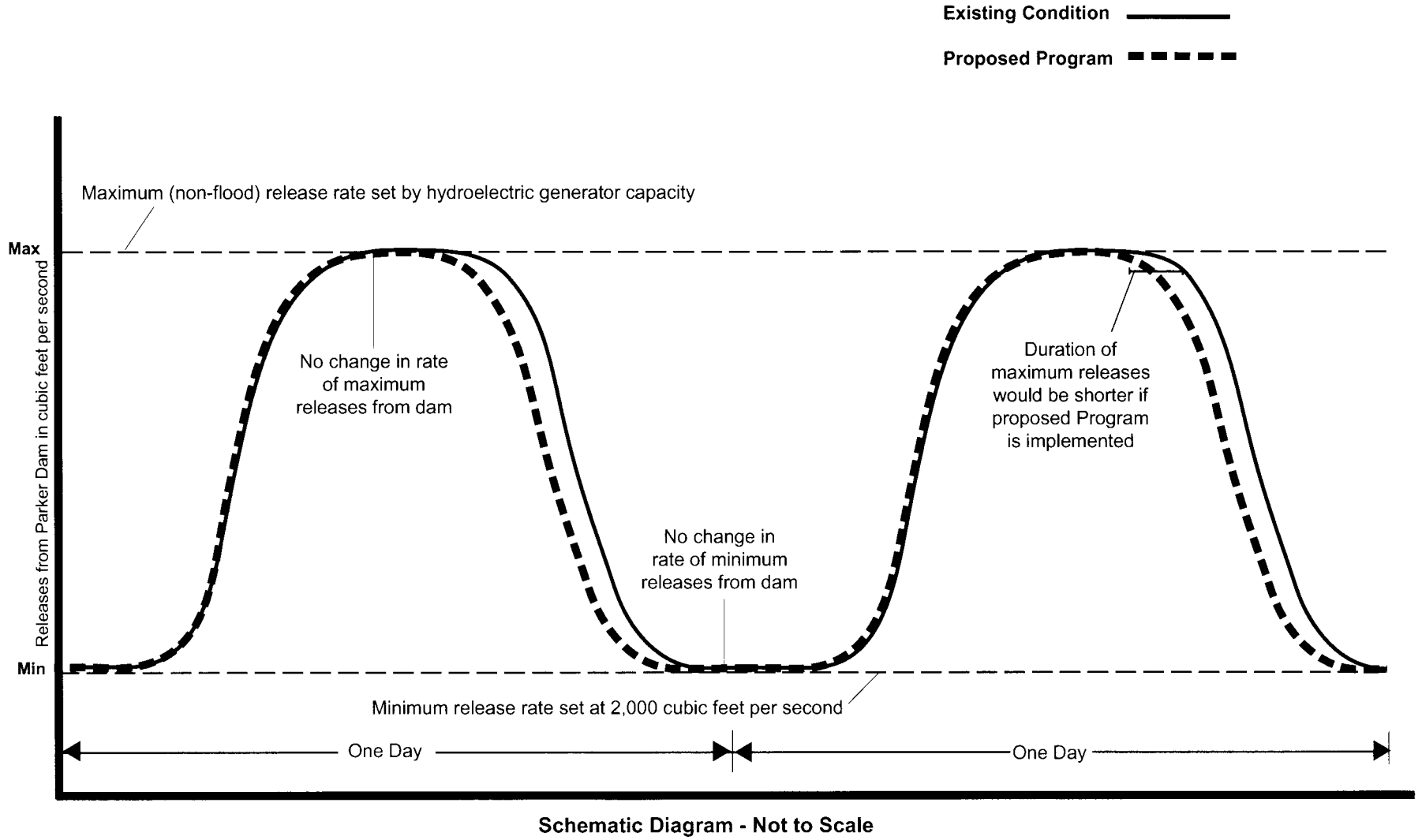
Projected Average Annual Diversions and Return Flows - With Proposed Program

(Based on maximum proposed annual reduction in irrigation and compared to average annual flows at left)

Proposed Program-related Changes in Diversions and Return Flows

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 4-4



Note: Changes in release rates may not be as distinct as shown and may overlap due to operational considerations.

Effect of Proposed Program on Releases from Parker Dam

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 4-5

Based on calculations performed by the Bureau of Reclamation (Bureau of Reclamation 2000a: Appendix A, Table A-1), a 200,000-acre-foot reduction in flows from Parker Dam would lower the average water surface elevation of the Colorado River between Parker Dam and Palo Verde Diversion Dam from 0.25 inch (at approximately two miles upstream from Palo Verde Diversion Dam) to a maximum of 1.8 inches (at approximately 34 miles upstream from Palo Verde Diversion Dam). The Bureau of Reclamation's calculations for a 200,000-acre-foot flow reduction are cited here because the Bureau of Reclamation did not calculate changes associated with flow reductions of less than this amount (such as 111,000 acre-feet).

Although the analysis of a 200,000-acre-foot annual flow reduction overstates the impacts that would occur if the proposed Program is implemented, it does show that even at this greater level of flow reduction, the resulting change in water surface elevation would be negligible compared to normal daily water level fluctuations. For example, the 2.5-foot fluctuations normally experienced below Parker Dam during the winter are more than 16 times larger than the potential 1.8-inch decrease in average water surface elevation associated with a 200,000-acre-foot flow reduction, and the five-foot water surface elevation fluctuations normally experienced during the summer are more than 33 times larger than the potential 1.8-inch average reduction.

Based on the factors discussed above (i.e., the river's water level would continue daily fluctuations similar to existing conditions and there would be less than a 1.8-inch reduction in average water surface elevation), implementing the proposed Program would have a less-than-significant impact on beneficial water uses along the Colorado River between Parker Dam and Palo Verde Diversion Dam. (See also Section 4.5, Biological Resources, regarding potential hydrologic effects to vegetation and wildlife resulting from the proposed Program.)

Palo Verde Diversion Dam to PVID's Outfall Drain

While it may seem counterintuitive, the proposed Program would actually increase the average water surface elevation between the Palo Verde Diversion Dam and PVID's Outfall Drain (i.e., the portion of the Colorado River that traverses the Palo Verde Valley). The reasons for this change are explained below.

Water diverted by PVID for irrigation includes both water that is consumed by crops (e.g, through evapo-transpiration) and unused water that ultimately returns to the Colorado River through the groundwater aquifer or PVID's drains. (The majority of this unused return water reaches the Colorado River through the mouth of PVID's Outfall Drain, near the southern end of the Palo Verde Valley.) If the proposed Program is implemented and less farmland is irrigated in the Palo Verde Valley, then PVID would reduce its diversions by an amount equal to (1) the water that would have been used by crops, plus (2) the water that would have been applied to fields as irrigation but returned unused to the Colorado River. Based on historical diversion and return levels, PVID estimates the non-irrigation of 26,500 acres of farmland would reduce the amount of water diverted to the Palo Verde Valley by approximately 206,000 acre-feet per Program contract year. This 206,000-acre-foot total consists of the approximately

111,000 acre-feet of proposed Program water savings (i.e., water that would be made available to Metropolitan at Lake Havasu) plus approximately 95,000 acre-feet of water that would have been diverted but returned unused to the Colorado River. In other words, 95,000 acre-feet of water that would have been diverted at the Palo Verde Diversion Dam and returned to the Colorado River would simply remain in the river. (If fewer than 26,500 acres are not irrigated under the proposed Program in a given contract year, then the above totals would be correspondingly reduced.)

Because up to 95,000 acre-feet of water that would have been diverted at the Palo Verde Diversion Dam would instead remain in the Colorado River each Program contract year, average annual river flows in the Colorado River between the Palo Verde Diversion Dam and the mouth of PVID's Outfall Drain would be up to 95,000 higher. Similarly, average water surface elevations would be higher by up to approximately one inch. For reasons similar to those described above for the Parker Dam to Palo Verde Diversion Dam river segment, the maximum and minimum flows and water surface elevations would not change. Instead, the amount of time that the river experiences maximum flows and maximum water surface elevations would increase.

Below PVID's Outfall Drain

Below the mouth of PVID's Outfall Drain, the proposed Program would have no effect on Colorado River flows or water surface elevations (maximum, minimum or average). This is because (1) the up to 111,000 acre-feet of water saved by the non-irrigation of farmland in the Palo Verde Valley would be offset by the similar amount of water made available to Metropolitan at Lake Havasu, and (2) the up to 95,000 acre-feet of water not diverted and returned to the Colorado River would be offset by the similar amount of water that would remain in the Colorado River from the Palo Verde Diversion Dam downstream to the mouth of PVID's Outfall Drain.

Summary of Hydrological Changes to the Colorado River

Under the proposed Program:

1. The amount of water released from Parker Dam each Program contract year would be reduced by 25,000 acre-feet to 111,000 acre-feet, with a corresponding reduction in annual Colorado River flows from Parker Dam downstream to Palo Verde Diversion Dam. This would not change the magnitude of daily water level fluctuations below Parker Dam, and it would reduce the average water surface elevation along this segment of the river by less than 1.8 inches
2. Diversions at the Palo Verde Diversion Dam would be reduced by up to 206,000 acre-feet per year (of which, up to 111,000 acre-feet represent water saved by the proposed Program)
3. River flows between Palo Verde Diversion Dam and PVID's Outfall Drain could be increased by up to approximately 95,000 acre-feet per Program contract year. This would not change maximum or minimum water surface elevations, although it would increase the average water surface elevation by approximately one inch

4. The proposed Program would have no effect on the Colorado River below the mouth of PVID's Outfall Drain

Based on these factors, and in consideration of the less-than-significant water quality effects described above, the proposed Program would have a less-than-significant impact on the hydrology of the Colorado River and its associated beneficial uses.

Compliance with General Plan Guidance

The proposed Program would not conflict with applicable Riverside County or Imperial County general plan guidance because it would neither introduce new sources of pollutants nor substantially degrade water quality. It should be noted that because the proposed Program would not entail any new developments that would consume water or discharge wastewater, many of the general plans' water resource/water quality goals, objectives and policies would not be applicable to it.

With regard to city of Blythe policies on water transfers, the proposed Program would be specifically a water supply option for Metropolitan for up to 35 years. Moreover, no additional water above the amount either currently diverted or historically delivered would be conveyed to Metropolitan's service area from the Colorado River. Thus, the proposed Program would not result in an over-utilization of Colorado River water. As described in Section 4.5, the proposed Program would have less-than-significant impacts on biological habitats along the Colorado River, and as discussed in Section 1.1.3, the proposed Program would not affect PVID's priority rights to Colorado River water as established in the California Seven-Party Agreement of 1931. Based on these factors and the significance criteria listed in Section 4.4.2, the proposed Program would not conflict with city of Blythe general plan guidance, and no impact with regard to general plan consistency would occur.

4.4.4 Mitigation Measures

Because less-than-significant impacts would occur with regard to hydrology and water quality, no mitigation measures are required.

4.4.5 CEQA Level of Significance After Mitigation

Since no mitigation is required, the CEQA level of significance would remain the same, i.e., less-than-significant impacts to hydrology and water quality.

4.5 BIOLOGICAL RESOURCES

4.5.1 Existing Conditions

Existing biological resources conditions are described with regard to vegetation and wildlife in Palo Verde Valley and adjacent areas and for the lower Colorado River between Parker Dam and Palo Verde Valley. The assessment of existing conditions included field evaluation in the Palo Verde Valley, reviews of previous environmental studies (e.g., Biological Assessments, Biological Opinions, EIRs, EISs) and database searches, including the California Natural Diversity Data Base (CNDDB) and the California Native Plant Society database. Appendix C provides additional detail on the evaluation of biological resources conducted for the proposed Program.

Prior to agricultural cultivation and urbanization, the Palo Verde Valley likely supported Sonoran desert scrub (creosote bush and white bursage) and dry desert wash woodland communities with extensive desert riparian habitat along the Colorado River. Although the majority of the Palo Verde Valley has been converted to agricultural uses and no longer supports native habitat, some areas of native vegetation remain in the Program area along the Colorado River, agricultural drains and fringes of agriculturally developed lands. The Cibola National Wildlife Refuge (CNWR) occupies a portion of the lower end of the Palo Verde Valley in the vicinity of PVID's Outfall Drain and its junction with the old Colorado River channel. This portion of the refuge is known as the California Management Unit and includes 630 acres of riparian plant communities (salt cedar, mesquite, cottonwood and willow). Water bodies on the refuge support emergent aquatic and saturated soil plants including bulrush, cattails, duckweed, smartweed and others. This area is managed for a variety of waterfowl, passerine birds, small and large mammals, raptors, amphibians and fish (USFWS and Bureau of Reclamation 1994).

The following discussion addresses existing plant and wildlife conditions as well as existing refuges and relevant biological resource management and planning efforts. The discussion focuses on vegetation communities and sensitive plant and wildlife species, the Cibola National Wildlife Refuge, the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) and specific marsh and wetland areas of interest identified by the USFWS or Bureau of Reclamation.

Vegetation Communities and Sensitive Plants

Plants, including sensitive species, found in the vicinity of Blythe are listed in Table 4-8. These plants are also likely found in suitable upland and floodplain habitats throughout the Palo Verde Valley. Exotic ornamental plants, not listed, also are found throughout the valley near residences and farm houses/structures.

Table 4-8
VASCULAR PLANT SPECIES INCLUDING SENSITIVE SPECIES OBSERVED IN THE VICINITY OF BLYTHE, CALIFORNIA

Common Name	Scientific Name	Common Name	Scientific Name
Allscale	*Atriplex polycarpa*	Honey Sweet	*Tidestromia oblongifolia*
Arrowweed	*Pluchea sericea*	Iodine Bush	*Allenrolfea occidentalis*
Brittlebush	*Encelia farinosa*	Jimsonweed	*Datura wrightii*
Buckwheat[1]	*Eriogonum* sp.	Mustard	*Sisymbium* sp.
Bulrush	*Scirpus* sp.	Ocotillo	*Fouquieria splendens*
Bush Seepweed	*Suaeda moquinii*	Palo Verde	*Cercidium floridum*
Catclaw	*Acacia greggii*	Pencil Cholla	*Opuntia ramosissima*
Cattail	*Typha* sp.	Puncture Vine	*Tribulus terrestris*
Cheesebrush	*Hymenoclea salsola*	Ratany	*Krameria grayi*
Chinch Weed	*Pectis papposa*	Rigid Spiny Herb	*Chorizanthe rigida*
Coldenia	*Tiquilia plicata*	Russian Thistle	*Salsola tragus*
Cottontop	*Echinocactus polycephalus*	Salt Cedar	*Tamarix* sp.
Cottonwood	*Populus* sp.	Saltbush	*Atriplex canescens*
Coyote Melon	*Cucurbita palmata*	Schismus	*Schismus barbatus*
Creosote Bush	*Larrea tridenta*	Smoke Tree	*Psorothamnus spinosus*
Desert Ironwood	*Olneya tesota*	Spurge	*Euphorbia* sp.
Desert Milkweed	*Asclepias erosa*	Staghorn	*Opuntia echinocarpa*
Evening Primrose	*Oenothera deltoides*	Teddy-bear Cholla	*Opuntia bigelovii*
Fluffgrass	*Erioneuron pulchellum*	Unicorn Plant	*Proboscidea althaeifolia*
Gallata	*Pleuraphis rigida*	White Bursage	*Ambrosia dumosa*
Grama Grass	*Bouteloua barbata*	Willow	*Salix* sp.
Honey Mesquite	*Prosopis glandulosa*		

Sensitive Plants

Species	Status[2]
Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*)	California Native Plant Society (CNPS) List 2
Foxtail cactus (*Coryphantha alversonii*)	CNPS List 4
Glandular ditaxis (*Ditaxis clariana*)	CNPS List 2
Coves's cassia (*Senna covesii*)	CNPS List 2
Wiggins's cholla (*Opuntia wigginsii*)	CNPS List 3
Crucifixion thorn (*Castela emoryi*)	CNPS List 2

[1] Some species of buckwheat may qualify as sensitive.

[2] CNPS Lists 2/3/4 = CNPS Inventory of Rare and Endangered Plants, Rare and Endangered Plants of California and elsewhere—List 2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing. List 3 = Distribution, endangerment, and/or taxonomic information needed. List 4 = A watchlist for species of limited distribution. Needs monitoring for changes in population status.

Sources: California Department of Corrections (CDC) 1990; Blythe Energy Project 1999; Skinner and Pavlik 1994; Blythe Energy Project 2000. See also Appendix C

Upland Plant and Floodplain Communities

The remnant natural plant community dominant outside the agricultural and residential areas consists of the Creosote bush–white bursage series. Characterized by widely spaced plants, two shrubs dominate this community: creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) (CDC 1990). The extent of this "undeveloped brush land" within the Palo Verde Valley is considered very small. The mesquite series occurs in riparian areas along the Colorado River and xeroriparian areas to the west (along washes and margins of agricultural areas). The Tamarisk series, dominated by salt cedar (*Tamarix ramossisima*) has invaded some riparian areas along canals and drains. Although not dominant in this region, other upland vegetation associations occurring in limited distribution also include the following communities (U.S. Forest Service 1998):

- *Grasslands:* Big galleta series, Indian ricegrass series

- *Shrublands:* Allscale series, Bush seepweed series, Brittlebush series, Brittlebush–white bursage series, Cat claw acacia series, Creosote bush series, Creosote bush–white bursage series, Desert-holly series, Fourwing saltbush series, Iodine bush series, Mixed saltbush series, Ocotillo series, Teddy-bear cholla series, White bursage series

- *Forests and woodlands:* Blue palo verde–ironwood–smoke tree series, Mesquite series

Riparian Plant Communities

In addition to upland habitats of the Palo Verde Valley, extensive riparian and aquatic habitats occur along the mainstem Colorado River, associated backwaters (oxbow lakes, abandoned river channel ponds, floodplain ponds, secondary river channel pools) and along agricultural drains. A recent assessment identified the majority of the land cover types within the Palo Verde Valley riparian zones between the Palo Verde Diversion Dam and the mouth of PVID's Outfall Drain as a combination of nonnative salt cedar (Tamarisk) and native riparian vegetation including the communities of cottonwood/willow, arrowweed, *Atriplex* spp. and honey mesquite (SAIC/Jones and Stokes unpublished material). Numerous stands of salt cedar were identified as occurring in the Palo Verde Valley. The Bureau of Reclamation (1996) also provided community types and acreages for riparian vegetation in the Palo Verde River Maintenance Division of the Colorado River from 1994 estimates. Acreages for each community type were: salt cedar, 3,638 acres; cottonwood willow, 46 acres; honey mesquite, 85 acres; salt cedar-screwbean mesquite, 2,606 acres; salt cedar-honey mesquite, 64 acres; *Atriplex* and arrowweed, 420 acres; and marsh, 160 acres.

The riparian plant communities most likely to be affected by the proposed Program are those located along PVID's drains. (It should be noted that PVID's irrigation canals and the privately owned irrigation ditches in the valley are kept relatively clear of vegetation, and many of these are lined with concrete. Furthermore, the canals and irrigation ditches are frequently dry when not in use, whereas drains have water year-round.) Vegetation along drains is affected by water elevations within the drains, the size

(depth and width) of the drains, their proximity to the Colorado River and PVID's ongoing maintenance and repair activities, which include removing vegetation and other obstructions from within the drains and from drain banks, re-grading drain banks and repairing drain breaks (see Section 1.1.1). The drain maintenance and repair actions limit the ability for mature riparian communities to develop along drains, favoring the establishment of vegetation types that can rapidly re-colonize disturbed areas. The recent field assessment of PVID drains that may be affected by the proposed Program indicated that there are generally five habitats (four riparian vegetation communities plus open water) supported by the agricultural drains:

1. *Arrowweed scrub*. Arrowweed historically formed dense, often monotypic stands within desert floodplains of the lower Colorado River. Wildlife use of dense stands of arrowweed is usually limited, unless there are other habitats, especially woodlands, nearby. Arrowweed was observed in most of the various agricultural drains and was especially prominent as a volunteer in recently cleared areas.

2. *Atriplex scrub*. This widely spaced scrub vegetation is mostly dominated by saltbush (*Atriplex canescens*), schismus (*Schismus barbatus*), Russian thistle (*Salsola tragus*) and allscale (*Atriplex polycarpa*). This type of vegetation persists in highly alkaline soils, usually on the slope or at the upper edge of the drains and in surrounding uplands.

3. *Salt cedar scrub*. Although salt cedar (*Tamarix* sp.) is not native, this typical habitat of disturbed riparian and floodplain zones is quite common in the Palo Verde Valley. It consists of several species of salt cedar, nearly all of which compete very effectively with native riparian species, often to the exclusion of native species. Stands of salt cedar can become monotypic under certain hydrologic and soil conditions and with sufficient time. Within the various drains, the native plant arrowweed and atriplex scrub were more prevalent than salt cedar. In these areas, salt cedar occurred as an inclusion within other plant communities.

4. *Freshwater marsh*. Marshlands are dominated by emergent vegetation in a wetland environment. The marshes located within the agricultural drains are composed primarily of cattail (*Typha* sp.) and bulrush (*Scirpus* sp.). Because the drains are subject to limited or no scouring events, these marsh areas are relatively stable and often extensive, although they tend to be quite narrow in width. Marsh communities were observed to varying extents within most of the drains, typically associated positively with the degree of open water in the drain.

5. *Open water*. Open water occurs at the bottom of each drain, resulting from groundwater seepage and agricultural runoff. Open water is considered a sensitive habitat, due to its support of wetlands habitats and because it provides habitat for many wildlife species.

Backwaters

As part of a Biological Assessment prepared by the Bureau of Reclamation in 2000, the Bureau commissioned an inventory of backwaters, consisting of open water and emergent vegetation, along the lower Colorado River (GEO/Graphics 2000). That survey used a combination of 1997 digital aerial photographs, 1993 USGS digital orthophotos and 1986 1:24,000 scale (1-inch = 2,000-foot) paper maps of backwaters between Davis Dam and the international border with Mexico. Although the 1993 USGS digital orthophotos were used as the mapping base because the 1997 images were not spatially accurate or geo-referenced (meaning that they could not accurately be imported into mapping software or used to calculate the size of the backwaters), the extent of open water and emergent vegetation was identified using the 1997 aerial images. In addition to differentiating between open water and emergent vegetation, backwaters were identified as either being directly connected to the river by open water or indirectly connected via groundwater.

The mapping effort identified 82 separate backwaters in the approximately 58.4-mile-long stretch of river between Parker Dam and Palo Verde Diversion Dam. The mapped backwaters, 73 of which are directly connected to the river, range in size from just over 0.1 acre to more than 225 acres. The total areal extent of the mapped backwaters along this stretch of river is approximately 1,395 acres, consisting of approximately 1,015 acres of emergent vegetation and 380 acres of open water. The Biological Assessment notes that in the lower Colorado River's backwaters, emergent vegetation consists primarily of cattails and rushes (Bureau of Reclamation 2000a:30).

Wildlife Resources and Sensitive Species

Upland Wildlife

The fauna associated with the creosote bush–white bursage series of the Palo Verde Valley uplands include species adapted primarily to low desert habitats and xeric (low water) conditions. However, species requiring surface water may be present in the developed agricultural areas, especially along irrigation drains. Species that have been observed in relatively natural xeric habitats in the vicinity of Blythe are listed in Table 4-9.

Upland Sensitive Wildlife Species

A comprehensive list of sensitive species possibly occurring in the Palo Verde Valley is presented in Table 4-10. The two sensitive species that are known to occur within the upland regions of the Palo Verde Valley are desert tortoise and desert bighorn sheep.

Desert tortoise is federally listed as threatened and is fairly common throughout the Mojave and Sonoran deserts. This species may occur in remnant areas of natural desert scrub, but is more than likely absent from agricultural areas which are fragmented by roadways and irrigation canals.

Table 4-9
WILDLIFE SPECIES OBSERVED IN THE VICINITY OF BLYTHE

	Common Name	Scientific Name
REPTILES	Desert horned lizard	*Phyrnosoma platyrhinos*
	Desert iguana	*Diposaurus dorsalis*
	Desert tortoise	*Gopherus agassizii*
	Long-tailed brush lizard	*Urosaurus graciosus*
	Side-blotched lizard	*Uta stansburiana*
	Sidewinder	*Crotalus cerastes*
	Western whiptail	*Cnemidophorus tigris*
	Zebra–tailed lizard	*Callisaurus draconoides*
BIRDS	Burrowing owl	*Athene cunicularia*
	Crissal thrasher	*Toxostoma crissale*
	Greater sandhill crane	*Grus canadensis tabida*
	Lesser nighthawk	*Chordeiles acutipennis*
	Loggerhead shrike	*Lanius ludovicianus*
	Mourning dove	*Zenaida macroura*
	Northern harrier	*Circus cyaneus*
	Osprey	*Pandeon haliaetus*
	Red-tailed hawk	*Buteo jamaicensis*
	Rough-winged swallow	*Stelgidopteryx ruficollis*
	Western kingbird	*Tyrannus verticalis*
	White-winged dove	*Zenaida asiatica*
MAMMALS	Black-tailed jack rabbit	*Lepus californicus*
	Bobcat	*Felis rufus*
	Coyote	*Canis latrans*
	Desert kit fox	*Vulpes macrotis arsipus*
	Desert woodrat	*Neotoma lepida*
	Round-tailed ground squirrel	*Spermophilus tereticaudus*
	Kangaroo rat	*Dipodomys* spp.
	Mule deer	*Odocoileus hemionus*
	Nelson's bighorn sheep	*Ovis canadensis nelsoni*

Source: CDC 1990; CDFG 2002a. See also Appendix C

Table 4-10
SENSITIVE WILDLIFE SPECIES OCCURRING OR POSSIBLY OCCURRING IN THE PALO VERDE VALLEY AND VICINITY

Common Name/Scientific Name	Status[1]
CALIFORNIA AND FEDERALLY LISTED AND/OR CANDIDATE SPECIES	
California brown pelican (*Pelecanus occidentalis californicus*)	FE/CE/CFP
Yuma clapper rail (*Rallus longirostris yumanensis*)	FE/CFP
Western snowy plover (*Charadrius alexandrinus nivosus*)	FT/CSC
Mountain plover (*Charadrius montanus*)	FPT/CSC
Bald eagle (*Haliaeetus leucocephalus*)	FT/CE/CFP
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE/CE
Least Bell's vireo (*Vireo bellii pusillus*)	FE/CE
Greater sandhill crane (*Grus canadensis tabida*)	CT/CFP
Desert tortoise (*Gopherus agassizi*)	FT/CT
Razorback sucker (*Xyrauchen texanus*)	FE/CE/CFP
Bonytail chub (*Gila elegans*)	FE/CE
California black rail (*Laterallus jamaicensis coturniculus*)	FSC/CFP
Golden eagle (*Aquila chrysaetos*)	CSC/CFP
American peregrine falcon (*Falco peregrinus anatum*)	CE/CFP
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis)*	CE
Gila woodpecker (*Melanerpes uropygialis*)	CE
Gilded northern flicker (*Colaptes chrysoides*)	CE
OTHER SENSITIVE SPECIES	
California leaf-nosed bat (*Macrotus californicus*)	FSC/CSC
Cave myotis (*Myotis velifer*)	FSC/CSC
Occult little brown bat (*Myotis occultus*)	FSC/CSC
Yuma myotis (*Myotis yumanensis*)	FSC
Greater western mastiff bat (*Eumops perotis californicus*)	FSC/CSC
Pale big-eared bat (*Corynorhinus townsendii pallescens*)	FSC/CSC
Pallid bat (*Antrozous pallidus*)	CSC
Spotted bat (*Euderma maculatum*)	FSC/CSC
Colorado River cotton rat (*Sigmodon arizonae plenus*)	FSC/CSC
Yuma puma (mountain lion) (*Felis concolor browni*)	FSC/CSC
Western least bittern (*Ixobrychus exilis hesperis*)	FSC/CSC
White-faced ibis (*Plegadis chihi*)	FSC/CSC
Ferruginous hawk (*Buteo regalis*)	FSC/CSC
Merlin (*Falco columbarius*)	CSC
Prairie falcon (*Falco mexicanus*)	CSC
Short-eared owl (*Asio flammeus*)	CSC
Burrowing owl (*Athene cunicularia*)	FSC/CSC
California horned lark (*Eremophila alpestris actia*)	CSC
Vermilion flycatcher (nesting) (*Pyrocephalus rubinus*)	CSC
Loggerhead shrike (*Lanius ludovicianus*)	FSC/CSC
Crissal thrasher (*Toxostoma crissale*)	CSC

continued on next page

Table 4-10 Continued

LeConte's thrasher (*Toxostoma lecontei*)	FSC/CSC
Sonoran yellow warbler (*Dendroica petechia sonorana*)	CSC
Yellow-breasted chat (*Icteria virens*)	CSC
Northern cardinal (*Cardinalis cardinalis*)	CSC
Large-billed savannah sparrow (*Passerculus sandwichensis rostratus)*	FSC/CSC
Summer tanager (*Piranga rubra*)	CSC
Chuckwalla (*Sauromalus obesus*)	FSC
Desert rosy boa (*Charina trivirgata gracia)*	FSC
Colorado river toad (*Bufo alvarius*)	CSC
Couch's spadefoot (*Scaphiopus couchii*)	CSC
Lowland leopard frog (*Rana yavapaiensis*)	FSC/CSC
California McCoy snail (*Eremarionta rowelli mccoiana*)	FSC
Cheeseweed moth lacewing (*Oliarces clara*)	FSC
Mojave Desert blister beetle (*Lytta insperata*)	FSC

[1] Status: FE = federally listed endangered; FT = federally listed threatened; FSC = federal species of special concern; FPT = federally proposed threatened; CE = California listed endangered; CSC = California species of concern; CFP = California fully protected.

Sources: CDFG 2002a; California Energy Commission and Western Area Power Administration 2000; Bureau of Reclamation 1996; USFWS 1997

Desert bighorn sheep is California-listed as threatened and a Bureau of Land Management sensitive species that may be present as transient individuals on the Palo Verde Mesa. An extant population of bighorns occurs in the Chuckwalla Mountains and may travel to the vicinity of agricultural areas for water. Their occurrence in the Palo Verde Valley is rare (CDC 1990).

Floodplain, Riparian and River Channel Sensitive Species

A variety of sensitive species occur in the floodplain and riparian communities of the lower Colorado River and its backwaters and along agricultural drains of the Palo Verde Valley. A comprehensive list of species occurring or possibly occurring in the area is presented in Table 4-10. Twelve listed or sensitive species known to occur in the Palo Verde Valley are discussed below.

Bald Eagle

The bald eagle is currently federally listed as threatened (although the USFWS is considering delisting this species) and is a California fully protected species. It is afforded additional protection by the Bald Eagle Protection Act of 1940. Bald eagles frequently visit aquatic ecosystems to prey upon the abundant fish, birds and mammals in these areas. Aquatic habitats in the vicinity of the Palo Verde Valley are no exception—bald eagles are regularly observed along the Colorado River and associated backwaters year-round between Lake Mead and Yuma, Arizona. However, no nest sites have been recorded near the Palo Verde Valley (Bureau of Reclamation 1996).

Golden Eagle

The golden eagle is a California fully protected species and a California Species of Concern. Federal laws applying to the bald eagle also apply to this species; thus, the golden eagle also is afforded additional protection by the Bald Eagle Protection Act of 1940. The golden eagle feeds mainly on rodents (e.g., ground squirrels and rabbits) and birds (e.g., cranes and owls), although it will also eat carrion. It is a rare visitor along the Colorado River in the Program area.

American Peregrine Falcon

California-listed as endangered and fully protected, the American peregrine falcon was removed from the federal endangered species list in 1999. Peregrine falcons feed almost exclusively on other birds. The historic breeding range of this species extends from Alaska and Canada south to Mexico and covers most of the continental United States, excluding the southeast. Currently, it primarily breeds in mountainous areas of western Canada and United States. Through the 1950s, peregrine falcons were known to breed near Parker Dam, but now occur within the Program area as post-breeding visitors and rare, irregular transients (Rosenberg et al. 1991).

Southwestern Willow Flycatcher

This species is federally listed as endangered, and is a California endangered species and an Arizona species of special concern. The flycatcher is not a year-round resident, but migrates every year between its wintering grounds in Mexico and breeding grounds in the United States. According to the recently drafted federal recovery plan for the species, southwestern willow flycatchers breed in "riparian habitats along rivers, streams, or other wetlands, where relatively dense growths of trees and shrubs are established, near or adjacent to surface water or underlain by saturated soil" (USFWS 2001). Among the common tree and shrub species in flycatcher breeding habitat are willows, mule fat, box elder, buttonbush, cottonwood, arrowweed, tamarisk and Russian olive.

The breeding cycle for the *extimus* subspecies of flycatcher occurs between periods of migration from May through August. Habitat used during migration is much more variable, but is still typically riparian vegetation. Migrating individuals of *extimus* and other subspecies may occur during the Spring, from April through mid-June, and in the Fall from mid-July through September. Individuals are commonly identified during breeding season surveys of the lower Colorado River. Riverside County is one of four counties in California where nesting is known to occur (USFWS 1997; California Energy Commission and Western Area Power Administration 2000); however, suitable habitat for the southwestern willow flycatcher is lacking within PVID's boundaries. The nearest known recorded territories occur east of the Program area near Ehrenberg, Arizona (USFWS 2001). Flycatchers that occur within PVID's boundaries are most likely to be transients or migrants and not breeding individuals.

Yuma Clapper Rail

Yuma clapper rails, federally listed as endangered, California-listed as threatened and fully protected, and an Arizona species of special concern, inhabit freshwater marshes and are primarily associated with dense cattail and bulrush communities. High quality rail habitat typically consists of dense, extensive stands of cattails, but may consist of some combination of bulrushes as well (Anderson and Ohmart 1985). The species also is known to inhabit even sparse marsh vegetation. Their chief food item is crayfish of various species that inhabit marsh habitats. Although not extensive in the Palo Verde Valley, marsh vegetation is present along the old channel of the Colorado River, around the periphery of backwaters and along banks of agricultural drains throughout the valley. Individuals and small populations may be present, and have been recorded during surveys in the 1990s, in the Palo Verde maintenance division designated by the Bureau of Reclamation and in the old channel of the Colorado River on the southern end of the valley (USFWS 1997).

Loggerhead Shrike

The loggerhead shrike is a federally and California-listed species of concern. Loggerhead shrike often are found near water and occupy open habitat, including grasslands, scrublands and ruderal areas with adequate perching locations. A common resident of Palo Verde Valley, eight individuals were observed along PVID's drains during surveys conducted for this Draft EIR.

Greater Sandhill Crane

A California threatened and fully protected species, the greater sandhill crane breeds in shallow marshes and wetlands and is a fall/winter visitor to the Program area. The presence of this species is thought to have increased in Palo Verde Valley in the 20th Century, largely due to agricultural practices (Rosenberg et al. 1991). They may often be found feeding in and around alfalfa or milo fields, and a large flock was observed in alfalfa fields during surveys conducted for this Draft EIR.

Crissal Thrasher

The crissal thrasher, a California species of concern, is an uncommon to rare resident of southern California desert environments. They tend to frequent open, sandy terrain with scattered shrubs. Crissal thrashers were observed in several of PVID's drains during surveys conducted for this Draft EIR, usually within the more thickly brushed areas.

Northern Harrier

The northern harrier, a California species of concern, is both an uncommon resident and a migrant that ranges from southwestern deserts northwest along the inner Coast Ranges and Sierra Nevada, as well as along the coast. In the Palo Verde Valley, the harrier is known primarily as a wintering species

(Rosenberg et al. 1991) and is presumed to have benefited from the large amount of open lands created by agriculture.

Burrowing Owl

Burrowing owls, a California species of concern, are generally restricted to grasslands and agricultural lands. They typically utilize the burrows of California ground squirrels and other squirrels. Burrowing owls feed mostly on insects but also eat small mammals, reptiles, birds and carrion. A fairly common resident in Palo Verde Valley, one individual of this species was observed along Rannell's Drain during surveys conducted for this Draft EIR.

Osprey

A California species of concern, osprey are widespread as a breeding and migrating species throughout North America. Osprey occupy habitat near water and are often associated with dead snags or wooded areas near water. A single osprey was observed within Rannell's Drain during surveys conducted for this Draft EIR.

California Black Rail

California black rail is California-listed as threatened and fully protected and is a federal species of special concern. The California black rail is restricted to the lower Colorado River drainage system within marshes where water levels are shallow and stable (Rosenberg et al. 1991). Their chief food items include several invertebrates and a few types of seeds. Black rails are especially secretive, and, while little is known about their rangewide distribution, they have potential to occur within the agricultural drains of the Palo Verde Valley due to the presence of suitable habitat.

California Brown Pelican

California brown pelican is federally and California-listed as endangered and is a California fully protected species. Within the Program area, this pelican is known as an uncommon to rare wintering bird that uses open water habitats.

Razorback Sucker

The razorback sucker is federally listed as endangered, California-listed as endangered and a fully protected species and is an Arizona species of special concern. Adult razorbacks utilize most of the available riverine habitats, but may avoid whitewater type habitats (USFWS 1997). The 100-year floodplain of the lower Colorado River between Parker Dam and Imperial Dam is designated as critical habitat for this species. This includes the river segment adjacent to the Palo Verde Valley. Designated critical habitat also includes the 100-year floodplain of the Colorado River upstream of Parker Dam to the confluence with the Paria River. Although specifics of the population numbers and demographics in the

lower Colorado River below Lake Mohave are largely unknown, this species may occur in the mainstem channel, the old river channel, and various backwaters in the vicinity of the Palo Verde Valley. CDFG staff recently observed a razorback sucker in a PVID inlet canal the observed individual is presumed to have entered the canal system from the Colorado River above the Palo Verde Diversion Dam, and it has since been released back into the river's mainstem (CDFG 2002b). Individuals also may occur, although to an even lesser extent, in sizeable drains at the southern end of the valley.

Bonytail

Bonytail (also referred to as the bonytail chub) is federally listed as threatened. Historically, the bonytail inhabited much of the lower Colorado River and associated tributaries. Currently, the bonytail is restricted to a minute number of sites and shows little to no signs of recruitment. This fish seemed to have declined in response to development of the many reservoirs along the Colorado River and the large numbers of nonnative fish species present in the Colorado River that prey on and compete for food with the bonytail (Pacey and Marsh 1988). Bonytails persist only in Lakes Mohave and Havasu.

Cibola National Wildlife Refuge

The CNWR is addressed in this section because of its proximity to the Program area—it is located about 20 miles south of Blythe, straddling the Colorado River. Established in 1964, the CNWR is located in the floodplain of the lower Colorado River and surrounded by a fringe of desert ridges and washes. The main channel of the Colorado River stretches the length of the refuge. The refuge currently occupies 16,667 acres and includes the 600-acre Cibola Lake, approximately ten miles of historic Colorado River backwaters (considered backwaters and critical habitat for the endangered Yuma clapper rail and razorback sucker), moist soil units, two historic river meanders, Three Finger Lake and Hart Mine Marsh. These backwaters provide nesting, feeding and migrational habitat for the bald eagle, osprey, southwestern willow flycatcher and other neotropical migratory birds as well as waterfowl.

The CNWR is the keystone refuge for wintering waterfowl along the lower Colorado River, wintering an average of 20,000 Canada geese, 1,000 greater sandhill cranes (45 percent of the lower Colorado River population) and an estimated 15,000 ducks. The CNWR also is home to a large population of mule deer, coyotes, bobcats and occasionally mountain lions.

The CNWR has ongoing projects to enhance wetland communities and to establish riparian and upland habitat for declining neotropical migrants. Current projects include the Hart Mine Marsh/Cibola Lake project, which is enhancing 800 acres of wetland; Three Finger Lake rehabilitation, which will result in 127 acres of wetlands including two growout facilities for endangered fish; and a Ducks Unlimited-sponsored Matching Aid to Restore States Habitat **(**M.A.R.S.H.) project on the Island Unit, which will re-establish 175 acres of wetlands and moist soil units and associated riparian habitat. The CNWR also serves as an important resource for wildlife-oriented recreation, allowing wildlife viewing, boating, fishing and hunting in designated areas.

Lower Colorado River Multi-Species Conservation Program (LCR MSCP)

The LCR MSCP is a partnership of state, federal, tribal, and other public and private stakeholders, including PVID and Metropolitan, with an interest in managing the water and related resources of the Lower Colorado River basin. The proposed LCR MSCP, which is anticipated to improve both the management and quality of biological resources along the Colorado River, is described in Section 6.2 of this Draft EIR under "Related Projects."

Specific Marsh/Wetland Areas Identified in the Vicinity of the Palo Verde Valley

The following areas have been identified by USFWS and Bureau of Reclamation (1994) as containing significant wetland and marsh areas. Wetland areas are defined as frequently saturated soils supporting obligate species (on banks, along backwaters, etc.). Marsh habitat contains shallow surface water with emergent vegetation.

Three Finger Lake

Three Finger Lake is located along the Old River Channel on the California side of the CNWR. Although renovation is underway, this area remains a very important wetland community. Three Finger Lake encompasses about 300 acres, although the wetland areas are considerably less. Water levels are dependent upon flows from PVID's Outfall Drain, river flows and groundwater levels (USFWS and Bureau of Reclamation 1994).

Old River Channel

The Old River Channel is approximately nine miles in length, located in the southern portion of the valley outside PVID and consists of excellent edges of wetland and marsh vegetation with scatterings of salt cedar and other plants. Due to the thick vegetation and contours near access points, human encroachment is limited. PVID's Outfall Drain empties into this channel, which affects groundwater levels in the adjacent area. Water levels in the new channelized river are higher than in the Old River Channel.

PVID's Outfall Drain/Pretty Water Junction

Pretty Water is the name given to that portion of the Old River Channel east of PVID's Outfall Drain over to the new levee and river channel. This wetland/marsh area is located in the vicinity of the junction of the PVID's Outfall Drain and the Old River Channel. Years ago, when the diversion of river water through the new channelized section of the Colorado River occurred, a mud bar began to build at the junction of the drain and old channel. The siltation gradually filled in the area, thereby completely changing the ecological environment—giving rise to shallow-water growing species and a diverse wetland/marsh habitat. Water levels are dependent upon flows in PVID's Outfall Drain, the Colorado River and ground water levels. Water levels in the new channelized river are higher than the water level in Pretty Water.

General Plan Guidance on Biological Resources

Riverside County

The *Riverside County Comprehensive General Plan* Open Space and Conservation, Wildlife and Vegetation elements (Riverside County 1994) contain guidance related to the county's biological resources. The Open Space and Conservation Element focuses on preserving lands that have not been developed, and this general plan element would not be applicable to the proposed Program. Objectives contained in the Wildlife Element address the protection and preservation of wildlife and their habitat, and the programs identified to achieve these objectives also focus on avoiding or mitigating impacts associated with new development. The Vegetation Element identifies a single objective: "The conservation of vegetation shall be carried out in conjunction with such actions necessary to protect rare, and endangered species of plants and sensitive plant communities" (ibid.: 391). Programs described in the general plan to help achieve this objective focus on identifying and mapping locations of sensitive plants and avoiding or mitigating development-related impacts to those plant communities.

Imperial County

The *County of Imperial General Plan Conservation and Open Space Element* (Imperial County 1993b) provides an overview of the plants, vegetation communities and wildlife located throughout the county. As indicated on Conservation and Open Space Element maps (Figures 2 and 2a), the Palo Verde Valley may provide upland habitat for desert tortoise and bighorn sheep. The element's "Goal 2" calls for preserving biological resources. Goal 2 is supported by eight objectives (ibid.:43), of which five may be relevant to the proposed Program:

- Objective 2.1 Conserve wetlands, fresh water marshes and riparian vegetation
- Objective 2.2 Protect significant fish, wildlife, plant species and their habitats
- Objective 2.3 Protect unique, rare, and endangered plants and animals and their habitats
- Objective 2.4 Use the environmental impact report process to identify, conserve and enhance unique vegetation and wildlife resources
- Objective 2.6 Attempt to identify, reduce and eliminate all forms of pollution which adversely impact vegetation and wildlife

Following the discussion of goals and objectives, the Conservation and Open Space Element contains an "Implementation Programs and Policies" section. The programs and policies contained in this section call for the preservation of open space easements in areas of high biological resource value (e.g., riparian and wetland vegetation communities, rock outcrops, wildlife corridors, habitat for sensitive species).

City of Blythe

The Biological Resources Element of the *City of Blythe Comprehensive General Plan* (1989a) identifies three main plant community types in the Palo Verde Valley: (1) creosote bush scrub associated with

undeveloped areas, (2) riparian plant communities associated with the shoreline of the Colorado River and PVID's canals and drains and (3) agricultural areas in active cultivation. This discussion notes that while agricultural areas do not constitute native habitat like creosote bush scrub or most riparian communities, agricultural areas nonetheless provide important habitat for birds. The Biological Resources Element identifies one goal:

> To preserve and protect the city and regional biological resources, especially those of sensitive, rare, threatened or endangered species of wildlife and their habitat, and to encourage a balance between nature and human development (1989a:IV-7).

Several policies are identified in the Biological Resources Element to help achieve this goal, including policies addressing coordination with state and federal agencies, provision of open space setbacks from the Colorado River and the maintenance of large blocks of cultivated agricultural land as foraging habitat for water birds and other wildlife.

4.5.2 Significance Criteria

The proposed Program would have significant impacts under CEQA if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS (see Appendix C for further description of the CDFG or USFWS listing categories); or
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS; or
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means; or
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
5. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.5.3 Impacts

Impacts are assessed with regard to effects in the Palo Verde Valley and effects on the Colorado River between Lake Havasu and the Palo Verde Diversion Dam.

Palo Verde Valley

Potential effects to biological resources in the Palo Verde Valley include effects on wildlife that utilize agricultural fields for foraging and effects that would occur along PVID's drains, including impacts to drain vegetation and to wildlife that utilize that vegetation as habitat. Because the proposed Program would not entail the construction of any new facilities, modification of existing facilities, or any new ground-disturbing activity, no direct impacts to biological resources would occur. Indirect impacts could occur as a result of the proposed Program's change in crop rotation patterns and as a result of the decrease in irrigation.

Agricultural Fields

Impacts to existing agricultural areas resulting from the proposed Program would entail changes in the irrigation and crop-planting regime, affecting a maximum of approximately 29 percent of valley farmlands (26,500 acres) at any one time. The non-irrigated fields would have little to no vegetation, retaining the open character that is currently present in fields that are between plantings or that otherwise have relatively little vegetative cover.

The farmlands in the Palo Verde Valley have limited but important use for wildlife, primarily serving as foraging rather than breeding areas. A number of raptor species were observed and/or have the potential to occur within the agricultural fields. Additionally, several types of seed-eating birds and mammals were observed either in the fields or on the immediate periphery. Alfalfa fields were in bloom at the time the survey was completed, and hundreds of orange sulfur butterflies (*Colias eurytheme*) were observed utilizing these fields. One sensitive species, the greater sandhill crane, was observed using the fields for foraging during surveys conducted for this Draft EIR. Two other species observed near fields in the Program area, loggerhead shrikes and harriers, also may utilize agricultural fields for foraging.

The changes to agricultural fields that would occur under the proposed Program would have only minor effects on the local and migratory wildlife. Because the proposed Program would not convert any agricultural lands to non-agricultural land uses, the only change would be an increase in the time between planting of various crops in the farmlands. Some wildlife species using the farmlands are undoubtedly adapted to the agricultural activities such as flooding and cultivation; however, most of the species observed in the valley farmlands are generally widely adaptable given the presence of adequate open areas, of which agricultural lands are a subset. In addition, those species depending on agricultural activities would likely not be significantly affected by the reduction in agricultural operations because at any one time, at least 71 percent of Program participants' fields would remain unaffected by the proposed Program. Additionally, agricultural land would be available across the Colorado River in the Cibola Valley Irrigation and Drainage District, and higher value native habitat would be available in the Cibola National Wildlife Refuge. Accordingly, the proposed Program would have a less-than-significant impact to the habitat for wildlife species that forage and winter in the existing farmlands, including raptors and the greater sandhill crane.

PVID Drains

As described in Section 4.3, the proposed Program would result in a maximum decrease in groundwater elevation of approximately one to two feet. PVID's monthly monitoring data for 176 drain gages and the effects of the Test Program on drain surface water elevations indicate that water levels in PVID's drains would also decrease if the proposed Program is implemented. This would occur both directly as a result of reduced irrigation levels and indirectly as a result of the lower groundwater levels. These decreases in groundwater elevation and drain surface water elevation would last for the 35-year term of the proposed Program. The amount of water surface elevation decrease in PVID's drains would be limited by PVID's routine operations and maintenance activities. As described previously, PVID installs rock weirs downstream of metal siphons to maintain water levels above the pipes (pipes exposed to air will rust). Also, all drains receiving agricultural spillage would continue to do so. For PVID's Outfall Drain, the surface water elevation near the mouth of the drain also will continue to be affected by the Colorado River. As described in Section 4.4.3, the proposed Program would not affect the water surface elevation of peak flows or low flows along this section of the Colorado River, although the average surface water elevation would increase by approximately one inch. Wetland areas supported by the Colorado River and PVID's Outfall Drain (e.g., Three Finger Lake, Old River Channel) would continue to receive flows from these sources.

The reduction in the water surface elevation of PVID's drains is projected to have little to no effect on the vegetation communities along the sides of the drains (e.g., arrowweed, atriplex and salt cedar scrub communities). These are not obligate wetland vegetation communities (i.e., they are not dependent on surface water), and they would be expected to fill in down the sides of drains as water surface elevations lower. As a result, these communities would remain generally the same or possibly increase in terms of their prevalence, and they would retain generally the same structure.

Marsh habitat also would be expected to adjust to lower water levels, in large part because drains would not completely lose flows as a result of the proposed Program. If the water levels decrease, the marsh areas would simply shift farther down into the channel to accommodate the new water levels. In these cases the marsh may not reduce in extent, although there would be less open water. As described in Section 1.1.1, PVID generally adjusts drain elevations as necessary to ensure that they continue to function (i.e., carry return flows to the Colorado River). As a result, any reduction in marsh vegetation associated with Program implementation would be negligible.

The extent of open water within the drains would be reduced because, as drain water surface elevations lower, there would be corresponding reduction in both the volume of water in the drains and in the areal extent of open water habitat.

Because the vegetation communities present along PVID's drains generally would remain similar to existing conditions, a less-than-significant impact to vegetation would occur with Program implementation. The potential for the proposed Program to affect sensitive wildlife species that may

occur along the drains is addressed below for threatened or endangered species that may utilize the drains or adjacent vegetation as habitat.

Effects of Changes in Drain Vegetation on Wildlife

Southwestern Willow Flycatcher

Because suitable habitat for the southwestern willow flycatcher is lacking along PVID's drains, there would be no impact to this species by the proposed Program.

Yuma Clapper Rail

No direct impacts to the Yuma clapper rail would occur because the proposed Program would not include any ground disturbance or vegetation removal. Indirect impacts associated with Program-related changes in clapper rail habitat would be less than significant as described below.

The Yuma clapper rail's primary habitat areas consist of marsh vegetation. As described above, the proposed Program would result in a minor redistribution of marsh habitat within the Program area as marsh habitat shifts lower in PVID's drains. Because the drains are fed by groundwater as well as operational spillage, the reduction in the drains' water surface elevations would occur over a period of years, allowing time for the marsh habitat to adjust. Also, as described above, PVID ensures that drains retain some water year-round in order to prevent the drain pipes (generally buried approximately one foot below groundwater level) from rusting. The presence of water in these drains would allow for the continued survival of marsh habitat in PVID's drains. Based on these factors, the redistribution of marsh habitat would result in a negligible decline, if any, in the extent of this habitat type within the Program area. Based on the minor level of changes to marsh habitat, indirect impacts to the Yuma clapper rail, a California fully protected species, would be less than significant and would not constitute a "take" under the California Fish and Game Code.

California Black Rail

Similar to the Yuma clapper rail, the proposed Program may potentially have a less-than-significant indirect effect on the black rail due to minor marsh habitat redistribution in the Program area. Marsh habitat would not be eliminated in any of the drains, but open water may decrease in several of them. As discussed earlier, PVID maintains a flow within the drains to convey groundwater so no extensive marsh habitat or open water would be eliminated by the proposed Program. No direct impacts or take would occur to the black rail because the proposed Program would preserve water flow in the drains, and any indirect impacts to the California black rail would be less than significant for the reasons described above for the Yuma clapper rail. In addition, any potential indirect impacts to the California black rail, a California fully protected species, would be less than significant and would not constitute a "take" under the California Fish and Game Code.

Other Sensitive Bird Species

As described in Section 4.5.1, many sensitive bird species may occur in the Program area, including California fully protected species such as the California brown pelican, bald eagle, golden eagle, American Peregrine Falcon and greater sandhill crane. The proposed Program would have less-than-significant impacts to no impact on these fully protected species because no wildlife would be directly affected and indirect impacts to habitat would be minimal. The proposed Program would have negligible indirect effects on riparian vegetation and open water habitat within PVID's drains and along the Colorado River (see the discussion of impacts to riparian and aquatic vegetation along the Colorado River, below). No agricultural fields, which can provide foraging habitat, would be permanently removed from agricultural production or converted to non-agricultural use as a result of the proposed Program. Also, the Program area represents only a small fraction of potential foraging habitat for these species along the lower Colorado River and its floodplain. For these reasons, no "take" of fully protected species would occur. Similarly, the proposed Program would have less-than-significant effects on other sensitive bird species (i.e., California species of concern) that utilize that habitat in the Program area, including the loggerhead shrike, crissal thrasher, northern harrier, burrowing owl and osprey.

Razorback Sucker

The razorback sucker is being reintroduced into the Colorado River adjacent to the PVID, and the entire 100-year floodplain of the lower Colorado River between Parker Dam and Imperial Dam is designated as critical habitat for the sucker. Specifics of the razorback sucker population in the Program area and adjacent river portions are largely unknown, but the razorback sucker may occur in the main river channel, former river channels and associated backwaters of the Palo Verde Valley. As noted above, a razorback sucker was recently detected in one of PVID's canals, and there is some probability of this species occurring in drains, especially in the south end of the valley where drains are larger and closer to the Colorado River. Although little is known of the razorback sucker population within the drains, no direct Program impacts to or take of the razorback sucker would occur because water level changes associated with the proposed Program would be negligible.

Although a razorback sucker has been detected in one of PVID's canals, it should be noted that the proposed Program would not affect the water level in the vast majority of canals. As previously noted, PVID sets canal water levels at the elevations necessary to ensure that there is enough head (water pressure) to carry water from the canals through headgates to the privately owned irrigation ditches that serve the valley's agricultural fields. As a result, the surface water elevation of PVID's canals would not be changed as a result of the proposed Program. The exception to this would be for the tail end of lateral canals that serve only a few fields each. In those instances, the canals would not carry water when all the fields they serve are not being irrigated. These lateral canals are unlikely to provide habitat for the razorback sucker because they are narrow, provide little to no aquatic vegetation and are periodically dry under normal operating conditions.

While gaps in scientific knowledge exist for the razorback sucker population (including its potential occurrence within PVID's drains), no direct impacts or take is anticipated to the razorback sucker as a result of the proposed Program due to the relatively minor changes that would occur within PVID's canals and drains and because no increases in diversions would occur at the either Metropolitan's Whitsett Intake Pumping Plant at Lake Havasu or at the Palo Verde Diversion Dam. (Diversions at the Palo Verde Diversion Dam actually would be reduced by up to 206,000 acre-feet per year, as described in Section 4.4.3.) Hence, no impact to the razorback sucker would occur with Program implementation.

Bonytail

Although bonytail are not present today, the CDFG and agencies from other states bordering the Colorado River have plans to reintroduce this species to the Colorado River (Western Area Power Administration 2000). Since the proposed Program would have only a negligible effect on the Colorado River (see Section 4.4.3 and the discussion of the Colorado River below), the effect of the proposed Program on the bonytail would be less than significant and no take would occur. Similarly, the proposed Program would not affect the viability of those portions of PVID's drains that might, someday, support bonytail populations.

Colorado River

Methodology

The proposed Program would not have any direct effects on biological resources along the Colorado River because it would not entail the construction of any new facilities, modification of existing facilities, any new ground-disturbing activities or any increase in diversions of Colorado River water at Metropolitan's existing facilities compared with current and historic diversion levels. Thus, this analysis focuses on the potential for the proposed Program to cause indirect effects to vegetation and wildlife along the Colorado River as a result of changes in flow levels from Parker Dam downstream to the mouth of PVID's Outfall Drain.

As described in Section 4.4.3 under "Colorado River Hydrology," the proposed Program could annually reduce river flows between Parker Dam and Palo Verde Diversion Dam by up to 111,000 acre-feet and increase them between Palo Verde Diversion Dam and the mouth of PVID's Outfall Drain by up to 95,000 acre-feet. The following assessment of how these flow changes may indirectly affect vegetation and wildlife along the Colorado River incorporates the existing conditions information provided above, results of the hydrologic analysis provided in Section 4.4, relevant portions of analyses conducted for other proposed water conservation projects which involve making an equal amount of water available upstream for diversion (including Bureau of Reclamation 1991, 2000a, 2000b and 2002; Bureau of Reclamation and IID 2002; and CVWD et al. 2002), and a Biological Opinion published by the USFWS (2001).

It should be noted that more than one methodology has been used to assess potential impacts from such other proposed projects. The differences in these methodologies reflect differences in the interpretations in the applicable laws (e.g., CEQA, NEPA, federal Endangered Species Act) under which the analyses were prepared by the various lead agencies and regulatory agencies and the focus (project-specific, programmatic or cumulative) of those analyses. This section of the Draft EIR provides a project-specific analysis of how the proposed Program would affect vegetation and wildlife along the Colorado River. Readers are referred to Section 6.3.5 for discussion of other approaches that have been used to assess impacts along the Colorado River, with a focus on cumulative impact analyses.

Riparian and Aquatic Vegetation

For the reasons described in Section 4.4.3 under the heading "Colorado River Hydrology," the level of water fluctuation experienced by the Colorado River would remain similar to existing conditions if the proposed Program is implemented. Accordingly, shoreline vegetation that is periodically submerged by fluctuations in the Colorado River would continue to be submerged, and no submergent vegetation that is permanently below the waterline would be exposed as a result of the proposed Program. The proposed Program would, however, reduce the duration of peak flows in some areas and increase it in others. Based on a review of hydrological data from a 1991 Bureau of Reclamation study, and in consideration of Parker Dam operating procedures, the proposed Program would be projected to affect the duration of peak flows by less than a half-hour. For example, shoreline areas currently subjected to peak flows for 12 hours daily would continue to be subjected to peak flows for at least 11.5 hours daily. The amount of shoreline that would be affected by this change would vary depending on several factors, including river cross sections and distance downstream from Parker Dam. (The daily fluctuations in river flow are attenuated as flows proceed further downstream from Parker Dam.)

Where reductions in average water surface elevation would be at their greatest (less than 1.8 inches measured vertically, as based on calculations for a 200,000-acre-foot flow reduction), it is projected that the amount of shoreline exposed to changes in inundation may range up to a maximum of roughly four inches (measured horizontally). As a result of this relatively minor change in average water surface elevation, riparian vegetation along the narrow band of affected shoreline may shift downward or new vegetation may fill in.

Over a period of several years, the proposed Program also may result in a decrease in average groundwater levels along the edge of the Colorado River between Parker Dam and Palo Verde Diversion Dam by an amount equivalent to the reduction in average surface water elevations (less than 1.8 inches). Because this decrease in average groundwater levels would occur over a period of several years, and because groundwater levels along the river's edge would continue to be influenced by daily, seasonal and annual surface water fluctuations, the effect of this change would be minimal.

From Palo Verde Diversion Dam downstream to the mouth of PVID's Outfall Drain (i.e., the river segment traversing Palo Verde Valley), flows in the Colorado River would increase by up to approximately 95,000 acre-feet annually. For the reasons described in Section 4.4.3 under the heading

"Colorado River Hydrology," the magnitude of water fluctuations experienced by this section of the Colorado River would be similar to existing conditions if the proposed Program is implemented, although the proposed Program would increase the average water surface elevation by approximately one inch. Accordingly, approximately one-inch of shoreline (measured vertically) along the Palo Verde Valley portion of the Colorado River would experience a slight increase in the duration of inundation by peak flows. This would affect approximately two inches measured horizontally. In comparison to daily, seasonal and annual water level fluctuations that occur along this section of the Colorado River, this change would not be measurable and would have a negligible effect on vegetation and wildlife along the river and its backwaters (including the Goose Flats backwater, located along the Colorado River approximately three miles south of I-10). Over a period of several years, riparian vegetation along this section of river might adjust upward by approximately one inch on average.

Downstream from the confluence of PVID's Outfall Drain with the Colorado River, the proposed Program would not affect river flows or water levels, and therefore would have no effect on vegetation communities along this segment of the river.

Backwaters

The segment of the Colorado River extending from Parker Dam downstream to Palo Verde Diversion Dam includes approximately 1,395 acres of backwaters (1,015 acres of emergent vegetation and 380 acres of open water) (GEO/Graphics 2000). Because the proposed Program would not affect the water surface elevation of peak flows, none of the backwaters directly connected to the river would be isolated as a result of Program-related changes in river flows. That is, backwaters currently connected to the mainstem of the river by open water would maintain their connections. Similar to the river's mainstem, backwaters between Parker Dam and Palo Verde Diversion Dam would experience a decrease in average surface water elevations of less than 1.8 inches.

Reductions in average groundwater levels along these backwaters also would be similar to those experienced along the river's mainstem (i.e., a maximum reduction of less than 1.8 inches). This decrease in average groundwater elevation would gradually occur over a period of several years. For isolated backwaters, which are influenced primarily by groundwater levels, average waters surface elevations also would decrease an average of less than 1.8 inches.

For reasons similar to those described above, the proposed Program would have less-than-significant impacts on riparian and aquatic vegetation in and along backwaters. Vegetation that is currently inundated as a result of river level fluctuations would continue to be inundated if the proposed Program is implemented, although for a shorter period of time. The emergent vegetation within these backwaters consists predominately of cattails and rushes, which would be able to adjust to a gradual decrease in average water surface elevation of less than 1.8 inches, as would riparian vegetation along the backwaters' edges.

Because magnitude of daily, seasonal or year-to-year fluctuations in water surface elevation would not change, and because changes in average groundwater levels would be minor and would gradually occur over a period of several years, the effect of the proposed Program on backwater riparian and aquatic vegetation would be less than significant.

Fish and Wildlife

For the reasons described above, the proposed Program would not directly affect riparian and aquatic vegetation along the Colorado River, its backwaters and other wetland areas supported by the river and PVID's Outfall Drain, and the proposed Program would have only negligible indirect effects on this vegetation. As a result, the proposed Program would have a less-than-significant impact on wildlife that utilize the vegetation as habitat.

A Bureau of Reclamation study on the effects of reducing lower Colorado River flows by up to 480,000 acre-feet annually found that, even at this magnitude of flow reduction, lower average water levels would not adversely affect fish species present in the river (Bureau of Reclamation 1991:30-31). In particular, the study found that fish spawning would not be affected because of the relatively minor changes in water surface elevations that would result, the period of time over which changes occur and Colorado River fish spawning habits (e.g., depth of spawning, time for eggs to hatch).

Based on these factors (negligible effects on habitat, no impact on fish spawning), the proposed Program would have less-than-significant effects on fish and wildlife in and along the Colorado River.

Consistency with General Plan Guidance on Biological Resources

For the reasons described above and in consideration of the significance criteria listed in Section 4.5.2, the proposed Program would have a less-than-significant impact on sensitive plant communities and the wildlife that utilize those communities as habitat. The proposed Program would, therefore, be consistent with Riverside County, Imperial County and city of Blythe general plan policies that call for the preservation and protection of sensitive plant communities, habitat and wildlife.

As previously mentioned, one *City of Blythe Comprehensive General Plan* policy calls for the maintenance of large blocks of cultivated agricultural lands. If the proposed Program is implemented, non-irrigated (and therefore non-cultivated) agricultural fields would be dispersed relatively evenly throughout the Palo Verde Valley below the Palo Verde Diversion Dam, as is the situation for existing crop rotation practices. The remaining active farmlands would still provide large blocks of cultivated agricultural lands, consistent with the referenced general plan policy. Also, the non-irrigated farmlands would be rotated back into cultivation every five years or sooner. During that period, the non-irrigated fields would not be developed; rather, they would be left in an open state. As described above, the non-irrigated fields would retain foraging value for birds. Furthermore, because of crop rotation, the non-irrigated fields would not cause the kind of habitat fragmentation that could result from the conversion of fields to non-agricultural uses such as residential, commercial or active recreational

developments. The absence of new development or high levels of human activity at non-irrigated fields makes it improbable that those fields would adversely affect birds' ability to forage on nearby cultivated farmlands. Therefore, the proposed Program would be consistent with the intent of this particular Blythe general plan policy, and no general plan consistency impacts would occur with regard to biological resources.

4.5.4 Mitigation Measures

Because less-than-significant impacts would occur to biological resources, no mitigation measures are required.

4.5.5 CEQA Level of Significance After Mitigation

Since no mitigation is required, the CEQA level of significance would remain the same, i.e., less-than-significant impacts to biological resources.

4.6 CONSISTENCY WITH SCAG REGIONAL COMPREHENSIVE PLAN AND GUIDE (RCPG) POLICIES

In response to the Notice of Preparation for the proposed Program (see Appendix A), SCAG requested that the Draft EIR address the proposed Program's consistency with eight specific RPCG policies (listed below in *italics*). Because some of these policies address more than one environmental topic, the requested consistency analysis is included in this separate Draft EIR section as opposed to being incorporated into the topic-by-topic assessments provided in Sections 4.1 through 4.5. The policy numbers below reflect SCAG's numbering system.

4.6.1 Consistency with Regional Comprehensive Plan and Guide Policies

3.03 The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.

The proposed Program is designed to provide a water supply option that could help meet water demand within Metropolitan's service area, much of which overlaps with the jurisdictions that form SCAG (see Chapter 5.0, Growth Inducing Impacts). No new public facilities, utility systems or transportation systems would be constructed under the proposed Program. Accordingly, the proposed Program would not conflict with SCAG Growth Management Chapter (GMC) Policy 3.03.

4.6.2 GMC Policies Related to the RCPG Goal to Improve the Regional Standard of Living

3.09 Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.

The proposed Program does not include the construction of any new infrastructure or the expansion of service delivery areas. Similarly, the proposed Program would not affect funding sources for the provision of services. Accordingly, this policy is not applicable to the proposed Program.

4.6.3 GMC Policies Related to the RCPG Goal to Improve the Regional Quality of Life

3.20 Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.

The proposed Program does not entail any development, construction, modifications to existing facilities, or any new ground disturbing activities, and would not directly affect wetlands, woodlands or lands containing unique or endangered plants or animals. Impacts to biological resources resulting from reduced irrigation levels would be less than significant for the reasons discussed in Section 4.5.3. As described in Section 4.4, the proposed Program would reduce groundwater levels in the Palo Verde Valley by approximately one to two feet. This would not adversely affect groundwater extraction in the valley and, in some areas plagued by high groundwater, would be considered a beneficial effect. No

production lands (i.e., lands in agricultural production) would be converted to non-agricultural use by the proposed Program. Based on these factors, the proposed Program would not conflict with Policy 3.20.

3.22 Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.

The proposed Program does not entail any new development or construction. Thus, the proposed SCAG Policy 3.22 would not be applicable to the proposed Program.

4.6.4 Air Quality Chapter Core Actions

5.11 Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.

The proposed Program would not conflict with or obstruct implementation of any air quality plan, violate any air quality standard or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated as non-attainment under an applicable federal or state ambient air quality standard (see Section 4.3). Similarly, the proposed Program would not result in the conversion of any existing land use to a new or different use. Because implementation of the proposed Program would not involve any new development or construction, require additional personnel or result in population increases, the proposed Program would neither generate traffic nor conflict with any transportation plans (see Section 9.14). Effects of the proposed Program on population and housing are discussed in Section 9.11. Because the Draft EIR and its appendices consider the topics listed in Policy 5.11, and because the proposed Program would not result in any significant environmental impacts, the proposed Program is consistent with this policy.

4.6.5 Water Quality Chapter Recommendations and Policy Options

11.06 Clean up the contamination in the region's major groundwater aquifers since its water supply is critical to the long-term economic and environmental health of the region. The financing of such clean-ups should leverage state and federal resources and minimize significant impacts on the local economy.

The proposed Program would neither "clean up" nor contaminate any aquifers, nor would it affect the financing for any aquifer clean up operations. Accordingly, SCAG Policy 11.06 is not applicable to the proposed Program.

4.6.6 Open Space Chapter Ancillary Goals

Resource Production

9.07 Maintain adequate viable resource production lands, particularly lands devoted to commercial agriculture and mining operations.

As described in Section 4.3, the proposed Program would not convert any agricultural lands to non-agricultural uses. Furthermore, the payments made to Program participants may help stabilize their incomes and reduce economic pressure to convert commercial agricultural lands to non-agricultural use. The proposed Program also would not result in any change in the availability of a known or important mineral resource (see Section 9.9). Accordingly, the proposed Program would be consistent with Policy 9.07.

Resource Protection

9.08 Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.

Implementation of the proposed Program would not result in any direct impacts to biological resources, including habitats of rare, threatened or endangered species (see Section 4.5.3). Indirect impacts of the proposed Program include effects on wildlife that utilize agricultural fields for foraging and effects that would occur along PVID's drains, including impacts to drain vegetation and to wildlife that utilize that vegetation as habitat. As described in Section 4.5.3, these indirect impacts would be less than significant. In addition, the proposed Program would incrementally contribute to a less-than-significant cumulative biological resources impact along the Colorado River (see Section 6.3.5). Additionally, implementing the proposed Program would not affect the development of well-managed viable ecosystems. Based on these factors, the proposed Program would not conflict with Policy 9.08.

CHAPTER 5.0 – GROWTH INDUCING IMPACTS

CEQA requires that the Draft EIR address the potential by the proposed Program to result in growth-inducing impacts. Specifically, Section 15126.2(d) of the State CEQA Guidelines requires a discussion of the potential for a proposed project to:

> foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth . . ..

The following discussion assesses the proposed Program's potential to result in growth-inducing effects using the above CEQA definition and criteria.

5.1 PALO VERDE VALLEY

Within the Palo Verde Valley, implementation of the proposed Program would provide a stabilizing economic effect on farm incomes; however, there may be changes in farm labor employment opportunities within the valley because fewer fields would be actively farmed (irrigated) at any given time. While some land management activities (e.g., weed abatement and wind erosion control) would require farm labor, it would be less labor than is required to plant, tend, harvest and transport crops. Accordingly, implementing the proposed Program would not induce population growth in the Palo Verde Valley or vicinity. Although the proposed Program would include a funding mechanism for future, as yet to be determined, community improvement projects, the scope of these improvement projects is not anticipated to be such that people not otherwise planning to relocate to the Palo Verde Valley would be induced to do so.

5.2 METROPOLITAN'S SERVICE AREA

5.2.1 Overview of How the Proposed Program Would Not Result in Growth-inducing Impacts

The proposed Program would provide one of several potential water source options for maintaining existing flows, or historically delivered water, in the Colorado River Aqueduct, but would not directly or indirectly provide new water supplies to Metropolitan's service area (See Section 6.2, Related Projects, regarding other projects, plans and programs that may be used to help maintain existing flows within the aqueduct.) The Colorado River Aqueduct is the only aqueduct from the Colorado River to Metropolitan's service area. It is capable of diverting about 1.3 million acre-feet per year and has been operating at or near full capacity over the past 15 years. As such, the proposed Program only changes the distribution of existing Colorado River water supplies between Metropolitan and PVID. No new facilities or changes in operational activities are proposed.

Local jurisdictions within Metropolitan's service area (i.e., cities and counties) are the primary agencies responsible for regulating land use through the planning process (e.g., general and specific plans and zoning regulations). The water supply being provided and planned by Metropolitan is consistent with the

level of growth projected by the applicable regional planning agencies (e.g., SCAG) and local general plans. Regional effects and strategies for meeting projected growth have been addressed in general CEQA documents and in Metropolitan's *Regional Urban Water Management Plan*.

5.2.2 Proposed Program Would Not Foster Economic or Population Growth or Construction

The population of the Metropolitan service area continues to grow. The proposed Program would not involve additions or expansions to Metropolitan's water delivery and storage system. Metropolitan estimates that water demand within its service area was between 3.3 and 3.9 million acre-feet per year during the period of 1990 to 1999 (3.8 million acre-feet in 1999). Projected future demand, based on SCAG population projections, is 4.9 million acre-feet in 2020. The proposed Program would not require a change to the assumptions upon which SCAG has based its population projections for the region. Metropolitan's *Regional Urban Water Management Plan* describes strategies for meeting this projected demand. This plan is consistent with growth projections developed by SCAG. Hence, the proposed Program would not provide additional water that would foster economic or population growth within Metropolitan's service area. Also, no new construction or modification to existing facilities would be part of the proposed Program.

5.2.3 Proposed Program Would Not Remove Obstacles to Population Growth

The proposed Program would not remove an obstacle to growth in Metropolitan's service area. Instead, the proposed Program would serve as a water supply option for providing supplies either currently diverted or historically delivered to Metropolitan's service area from the Colorado River. Without the proposed Program, Metropolitan would still need to implement other methods or options to meet the water demands of the service area. These methods or options would include increased water conservation through implementation of urban water management Best Management Practices; water recycling undertaken by wastewater treatment plants in the region for groundwater recharge, saltwater intrusion barrier, industrial and irrigation uses; increased storm water conservation through increased levels of groundwater replenishment; enhanced local groundwater recovery (and associated treatment); desalination; regional surface reservoir storage; and water marketing from other sources such as the State Water Project (including spot transfers, option transfers, storage transfers and exchange agreements). Other options are discussed in Section 7.5.2.

5.2.4 Proposed Program Would Not Require Construction of Additional Community Service Facilities

Projected increases in population within Metropolitan's service area could require substantial investments in new public facilities and infrastructure over the next decades, including among other things, roads and transportation facilities, water and sewer treatment facilities, fire and police stations and schools. Construction of these public facilities and infrastructure would not be dependent on the proposed Program, and would proceed regardless with appropriate CEQA review. No new delivery or treatment systems are proposed by, nor are necessary to, operations of PVID or Metropolitan as a result of the

proposed Program. Hence, the proposed Program would not require construction of additional community service facilities within Metropolitan's service area.

5.2.5 Proposed Program Would Not Encourage and Facilitate Other Activities that Would Significantly Affect the Environment

The proposed Program would not facilitate or encourage other activities that would significantly affect the environment (see Chapters 4.0 and 6.0). The proposed Program would rely on existing facilities and would use this potential water supply option to assist in Metropolitan meeting water demand within its service area.

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CHAPTER 6.0 – CUMULATIVE IMPACTS

6.1 INTRODUCTION

CEQA and the State CEQA Guidelines require an assessment of a proposed project's cumulative effects, defined to include:

> the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines Section 15355).

This chapter describes related projects (Section 6.2) and then provides a topic-by-topic assessment of cumulative impacts.

6.2 RELATED PROJECTS

The effects of ongoing and past projects on the Program area's environment are reflected in the discussion of existing conditions contained in Chapter 4.0. Accordingly, this description of related projects focuses on recently implemented or planned new projects that could affect resources that also would be affected by the proposed Program (i.e., resources in the Palo Verde Valley or along the Colorado River between Lake Havasu and the Palo Verde Diversion Dam). One past project that is described is the 1992–1994 Test Program, which was similar to the currently proposed Program in terms of how it was implemented and the water savings that it achieved, although it was shorter in duration. Assuming that the proposed Program would achieve the maximum water diversion of approximately 111,000 acre-feet, then the Test Program also was slightly smaller in scale.

6.2.1 1992–1994 Test Program

The Test Program in the Palo Verde Valley, conducted during 1992–1994, resulted in the non-irrigation of 20,215 acres of agricultural land within PVID. The amount of water saved as a result of participants not irrigating a portion of their lands (approximately 93,000 acre-feet of Colorado River water per year) was stored in Lake Mead for future use by Metropolitan within its service area. Voluntary participants who entered into individual agreements with Metropolitan were compensated for their involvement and were required to follow a mandatory land management plan of their choosing including wind erosion, dust and weed control measures. Each non-irrigated area was, at minimum, 18 contiguous acres in size. No more than 25 percent of irrigated, farmed land within the Palo Verde Valley portion of PVID below the Palo Verde Diversion Dam was permitted to participate in the Test Program. Metropolitan administered and monitored the overall program with assistance from PVID, and PVID was reimbursed by Metropolitan for costs incurred under the Test Program. An amount of water equal to the amount saved was subsequently released from Lake Mead for flood control purposes.

6.2.2 Palo Verde Valley Area Projects

Staff at the county of Riverside, county of Imperial and city of Blythe were contacted to assist in the identification of new or planned development projects that, with the proposed Program, may contribute to cumulative environmental effects. The city of Blythe identified a number of planned projects within the city's boundaries, including new residential neighborhoods and other developments ranging from commercial facilities to infrastructure improvements to a cemetery expansion (city of Blythe 2001a). No planned projects above and beyond those identified by the city were identified by either county's planning staff. In addition to contacting local jurisdictions' planning staff, environmental compliance documents for planned projects in the area were reviewed to assess ongoing or reasonably foreseeable projects' potential to contribute to cumulative impacts. The planned projects identified as a result of this effort are presented in Table 6-1. (See also Section 6.2.3 regarding related projects along the Colorado River.)

Table 6-1
PROJECTS PLANNED OR UNDER DEVELOPMENT WITHIN THE PALO VERDE VALLEY AREA

RESIDENTIAL

- Bob King (50± Single-family Residence [SFR] Lots)
- Mesa Bluffs Villas (60 SFR Lots)
- River Walk (21 SFR Lots)
- River Bend (99 SFR Lots)
- Mark Lee Subdivision (70 SFR Lots)
- Mike Watts Subdivision (40 SFR Lots)
- Palo Verde Oasis – Phase III (40± SFR Lots)
- Windsor's Mobile Home Park (109 Spaces)
- Coachella Valley Housing Coalition (34 SFR Lots)

OTHER

- Sleep Inn Motel (73 Units)
- 11,000-square-foot Riverside County Mental Health Building
- Bud Walnoha – Commercial Facility Expansion No. 2
- Mesa Campus Project of the Palo Verde Community College District
- United Parcel Service – New Commercial Facility
- Palo Verde Cemetery Expansion
- Rolo's Commercial Facility Expansion
- Blythe Energy Power Plant Project
- Hobsonway Waterline Extension
- Sanitary Sewer Extension Project (Hobsonway North on DeFrain Boulevard to Municipal Golf Course area)
- Hobsonway Corridor Design
- Municipal Water Pumping and Storage Facility

Sources: City of Blythe 2001a; Blythe Energy Project 2000; California State Lands Commission 2000; California State Lands Commission and Federal Energy Regulatory Commission 2001; Palo Verde Community College District 1997a and 1997b

Brief descriptions of some of these planned projects are provided below, with a focus on those projects that have the highest potential to affect resources similar to those that may be affected by the proposed Program. These include projects that would affect the amount of Palo Verde Valley area lands in agricultural production, projects that could affect water resources and projects that would traverse the Palo Verde Valley and its associated PVID facilities during their construction (such as pipeline or fiber optic projects). Although only some of the projects listed in Table 6-1 are described below, the combined effects of all the projects listed in Table 6-1 were considered in the topic-by-topic cumulative impacts analysis provided in Section 6.3, as are all of the Colorado River-related projects described in Section 6.2.3.

Blythe Energy Power Plant Project

The Blythe Energy Power Plant Project, currently under construction, includes a 520-megawatt natural gas-fired combined cycle power plant as well as a 0.8-mile and/or an 11.5-mile natural gas connecting line (California Energy Commission and Western Area Power Administration 2000). The plant site is located on land recently annexed by the city of Blythe, just north of I-10 and just east of Blythe Airport on the Palo Verde Mesa. The plant will include two combustion turbines, two heat recovery steam generators, one steam turbine and supporting equipment. The 0.8-mile connecting line would connect to a Southern California Gas Company pipeline south of the proposed site. The 11.5-mile line would connect to the El Paso Gas facility in Ehrenberg, Arizona, which would require boring under the Colorado River.

The Blythe Energy Power Plant Project has a water requirement of up to 3,300 gallons per minute at full operation (from approximately 2.4 to 3.0 million gallons per day), and is proposed to be supplied by three new wells being drilled on site. Development of the Blythe Energy Power Plant Project site did not directly affect agricultural resources because the plant site was not in agricultural production. Specifically, water for the Blythe Energy Power Plant Project is to be offset through a water conservation offset program involving some Palo Verde Mesa farmlands which have not been irrigated for over a decade (city of Blythe 2001b).

In February 2002, an application for certification for the second phase of the Blythe Energy Power Plant Project was submitted to the California Energy Commission (Caithness Blythe II, LLC 2002). This second phase would involve two 170-megawatt combustion turbine generators, one 180-megawatt steam turbine generator, and supporting equipment and extensions to utilities. This phase requires no offsite linear facilities and is located entirely within the existing project area. Water to operate the facility will be supplied by one additional groundwater well having the capacity to pump up to 3,000 gallons per minute. Supply and wastewater treatment systems being constructed as part of the approved project will be duplicated. A third evaporation pond will be added as well (Caithness Blythe II, LLC 2002).

Mesa Campus Project of the Palo Verde Community College District

The Palo Verde Community College District recently opened a new campus on Palo Verde Mesa. The campus site includes approximately 200 acres, of which approximately 132 acres ultimately will be developed. The recently opened campus facilities encompass roughly one quarter of the site. Although portions of the 200-acre site historically have been used for agriculture, the site was not in agricultural production at the time the campus was developed. The proposed campus master plan includes the development of an approximately 40-acre "campus farm" in association with the college's agricultural sciences department. The Palo Verde Community College District estimates that, based on the types of crops planned for the campus farm, approximately 200 acre-feet of water may be required annually for agricultural use, plus an additional 74.6 acre-feet to support non-agricultural (other campus) uses.

North Baja Pipeline Project

As described in the Draft EIS/EIR for the proposed pipeline project (California State Lands Commission and Federal Energy Regulatory Commission 2001), North Baja Pipeline, LLC proposes to construct and operate a new natural gas transmission pipeline system in Arizona and California. The new system would have the capacity to transport 500 million cubic feet per day of natural gas from a proposed interconnect with an existing El Paso Natural Gas Company pipeline in Ehrenberg, Arizona to the United States/Mexico border. The North Baja Pipeline Project would involve the construction and operation of approximately 80 miles of 36- and 30-inch-diameter pipeline, a new 18,810- to 21,600-horsepower compressor station, two new meter stations and related facilities. A portion of this pipeline would pass through Palo Verde Valley and the city of Blythe.

The North Baja Pipeline Project could result in adverse impacts, most of which would occur during the construction phase of the project, but these would be reduced to less-than-significant levels by mitigation. Of particular relevance to the cumulative impacts analysis of the proposed Program, construction of the pipeline could expose soils to erosional forces, compact soils, affect soil fertility, facilitate the dispersal and establishment of weeds and result in the permanent loss of soil identified as prime farmland or farmland of statewide importance. The North Baja Pipeline Project also could result in shallow aquifers in the Palo Verde Valley experiencing minor impacts from changes in overland flow and recharge caused by clearing and grading of the construction right-of-way (California State Lands Commission and Federal Energy Regulatory Commission 2001).

AT&T NEXGEN/CORE Colorado River to Los Angeles Fiber Optic Project

The proposed project includes approximately 372 miles of fiber optic conduit system with cable, which would be buried within existing rights-of-way (California State Lands Commission 2000). Also included are necessary manholes and optical amplification stations. In the California portion of the Palo Verde Valley, the proposed fiber optic cable would cross under the following PVID facilities:

- 9 drain crossings
- 17 canal crossings

Because these drains/canals would be traversed using directional drilling, no direct impacts to PVID facilities are anticipated. Similarly, because the fiber optic cable would be buried within existing rights-of-way, the project would not directly impact agricultural fields.

6.2.3 Colorado River Projects

Determination of Reasonably Foreseeable Colorado River Projects

The proposed Program would affect the Colorado River by causing a reduction in flows between Parker Dam and the Palo Verde Diversion Dam. In addition to related past and ongoing projects (that are part of the baseline), projects considered in this cumulative impacts analysis include other reasonably foreseeable proposed water conservation and transfer/acquisition projects/programs that could affect river flows below Parker Dam, as well as reasonably foreseeable projects/programs proposed to improve the river's natural resource value (e.g., improvements to water quality and habitat along the river). The discussion of these types of related projects in this Draft EIR is limited to projects considered reasonably foreseeable pursuant to CEQA and the State CEQA Guidelines. Based on the CEQA standard for reasonably foreseeable projects, PVID estimates that related future projects may result in a change in the point of diversion for up to approximately 388,000 acre-feet of Colorado River water from Imperial Dam (downstream of Palo Verde Valley) to Lake Havasu/Parker Dam. These reasonably foreseeable future projects are described below. In consideration of the proposed Program addressed in this Draft EIR, the cumulative reduction in Colorado River flows from Parker Dam to Palo Verde Diversion Dam would be up to approximately 499,000 acre-feet annually (proposed Program reduction of 111,000 acre-feet plus 388,000 acre-feet of reduction from other reasonably foreseeable projects).

Other Assessments of Cumulative Impacts on the Lower Colorado River

There are a number of planned projects that could affect flows in the Colorado River below Parker Dam, and most of these fall under the purview of CEQA and/or NEPA, as well as the federal Endangered Species Act. Some of these other lower Colorado River projects' cumulative impact assessments address a wider range of potential future projects than is addressed in this Draft EIR. An example of differences in methodologies associated with Colorado River activities is highlighted below.

Coachella Valley Water District (CVWD), Imperial Irrigation District (IID), Metropolitan and San Diego County Water Authority (SDCWA) are joint lead agencies for the *Draft Program Environmental Impact Report for Implementation of the Colorado River Quantification Settlement Agreement.* There is additional discussion of this agreement that provides more detail under the subsection "Descriptions of Reasonably Foreseeable Colorado River Projects" that follows. In addition, the Bureau of Reclamation prepared both a Biological Assessment (pursuant to the federal Endangered Species Act) and a Draft EIS (pursuant to NEPA) for proposed water transfers/acquisitions potentially affecting the Colorado River that are subject to Secretarial decisions. Each of these environmental documents included a cumulative impact assessment.

Most notably, the Biological Assessment completed by the Bureau of Reclamation in 2000 assessed potential effects associated with not only those projects that would be considered reasonably foreseeable under CEQA, but also included projected water uses by the Bureau of Reclamation (Bureau of Reclamation 2000a:39) that do not reflect known, proposed or reasonably foreseeable projects. Using this approach, and using an estimate generated during the development of the LCR MSCP, the Bureau of Reclamation projected that the total reduction in flows below Parker Dam might be as much as 1.574 million acre-feet. The effects of this change were modeled to assess cumulative impacts on the river in the Biological Assessment.

In comparison, Table 4.2-2, "Projected Flows of the Lower Portion of the Colorado River, Baseline for Cumulative Analysis vs. Cumulative Analysis" in the Bureau of Reclamation's *Draft Environmental Impact Statement, Implementation Agreement, Inadvertent Overrun and Payback Policy, and Related Federal Actions*, notes that between Parker Dam and Palo Verde Diversion Dam, from a cumulative standpoint, "Flows would be as much as 499 KAF [499,000 acre-feet] less" (Bureau of Reclamation 2002:4-14).

Although the Biological Assessment modeled the effects of an annual 1.574 million-acre-foot flow reduction, the Endangered Species Act Section 7 Consultation for which the Biological Assessment was prepared addressed a roughly 400,000-acre-foot flow reduction. To assess the potential effects on federally listed threatened and endangered species along the river, the Bureau of Reclamation assumed that impacts from a 400,000-acre-foot flow reduction would be linearly proportional to impact from a 1.574 million-acre-foot flow reduction. In other words, because 400,000 equals 25.4 percent of 1.574 million, the Biological Assessment assumes that a 400,000-acre-foot flow reduction would cause 25.4 percent of the impacts that a 1.574 million-acre-foot flow reduction would cause. Although not all parties involved in lower Colorado River water conservation and transfer/acquisition projects necessarily agreed with this methodology, it was used as the basis for the Bureau of Reclamation's Biological Assessment and the associated Biological Opinion issued by the USFWS in January 2001. This methodology also was carried forward into other NEPA or joint NEPA/CEQA documents prepared with the Bureau of Reclamation as federal lead agency (e.g., Bureau of Reclamation 2002, Bureau of Reclamation and IID 2002).

Because the Biological Assessment and Biological Opinion addressed changes in flows along the entire stretch of river from Parker Dam downstream to Imperial Dam, these documents are not directly applicable to the proposed Program evaluated in this Draft EIR. Many of the backwaters that could be affected by other proposed water conservation and transfer/acquisition projects are located below the Palo Verde Diversion Dam. As a result, the proposed Program would either incrementally help to offset reductions in river flows (from the Palo Verde Diversion Dam downstream to the mouth of PVID's Outfall Drain) or would have no net effect on flow levels (downstream from PVID's Outfall Drain).

It should be noted that the Bureau of Reclamation also previously prepared an assessment of cumulative effects on the lower Colorado River that evaluated a 480,000-acre-foot change in points of diversion (Bureau of Reclamation 1991). This 480,000-acre-foot total is similar to the 499,000-acre-foot total

considered reasonably foreseeable in this Draft EIR. The 1991 study assessed a considerably lower level of impact than the "linearly proportional" methodology used for the Bureau of Reclamation's 2000 Biological Assessment.

Descriptions of Reasonably Foreseeable Colorado River Projects

California's Colorado River Water Use Plan

Although California's Colorado River Water Use Plan is, as its name implies, a "plan" and not a proposed project or program, it is discussed in this Draft EIR section because it provides an overall framework and context for some of the proposed water conservation and transfer/acquisition projects that could affect the lower Colorado River. California, for the first time, is faced with deliveries of Colorado River water limited to its basic (non-surplus year) apportionment in the future. Over the last ten years, California's use of Colorado River water has varied from 4.5 to 5.2 million acre-feet per year. In contrast, California's annual basic apportionment of Colorado River water is 4.4 million acre-feet. In surplus years, California has an additional apportionment of 50 percent of the surplus water made available to the three Lower Division states—California, Arizona and Nevada. The historic and current water use of up to 5.2 million acre-feet per year stems from the occurrence of surplus conditions and the availability of water apportioned to, but unused by, Arizona and Nevada. As a result of the other Lower Division States increasing the use of their apportionments, California will no longer be assured of the availability of water apportioned to, but unused by, Arizona and Nevada or the availability of surplus water under its surplus water apportionment in every year.

In response to the need for California to reduce use of Colorado River water to its basic apportionment when necessary, the Colorado River Board of California has developed the draft California's Colorado River Water Use Plan (Plan). The Plan provides the framework for coordination between California water agencies with rights to Colorado River water, and also provides a framework for planning future Colorado River water-related resource and financial investments. The Plan includes policies, programs, projects, actions, and other activities that deal with safeguarding, protecting, and optimizing California's Colorado River resources. The Plan also addresses actions, such as water reuse and other local projects, that do not directly involve the Colorado River but do affect those California water agencies with rights to Colorado River supplies.

The proposed Program is identified in the Plan as one of several cooperative water conservation/transfer/acquisition projects and exchanges. Collectively, the cooperative water conservation/transfer/acquisition projects and exchanges, which are described as a "linchpin" component of the Plan, provide for the transfer of between 400,000 and 500,000 acre-feet per year from agricultural use to principally urban use for up to 75 years.

The Colorado River Board of California (2000) has prepared a working draft of the Plan. As stated in the working draft of the Plan, it will be subject to further revisions based on additional information, comments received and ongoing associated reviews of Plan components.

Implementation of the Colorado River Quantification Settlement Agreement

The Quantification Settlement Agreement quantifies the amount of Colorado River water that will be available to IID, CVWD, SDCWA and Metropolitan. Because the Quantification Settlement Agreement addresses the use of Colorado River water, it is an important component of California's Colorado River Water Use Plan. As described in Section 1.1.3 and shown on Table 1-2, up to 3.85 million acre-feet per year have been available to the users of the first three priorities of California's annual Colorado River water apportionment. Use of water on PVID valley lands has first priority; the Yuma Project, Reservation Division land has second priority; and the third priority is shared among lands in IID, CVWD and PVID, the latter being for 16,000 acres of the adjoining lower Palo Verde Mesa lands. Without further quantification of the third priority, it would be difficult to develop and implement water conservation and exchange programs, including several of the "linchpin" programs included in California's Colorado River Water Use Plan. The Quantification Settlement Agreement would quantify third priority water rights, interests and uses to allow for the further development of cooperative water supply programs; water conservation, transfer and exchange programs; and improved resource management.

Released in January 2002, the Draft Program EIR identifies the proposed agreement's objectives (CVWD et al. 2002:2-2) as follows:

- to settle, by consensual agreement, longstanding disputes regarding the priority, use and transferability of Colorado River water
- to agree upon a plan for the future distribution of Colorado River water among CVWD, IID, Metropolitan and SDCWA for up to 75 years, based upon agreed-to Colorado River water budgets for CVWD, IID, Metropolitan and SDCWA
- to facilitate agreements and actions which, when implemented, would ensure the certainty and/or reliability of Colorado River water supplies available to CVWD, IID, Metropolitan and SDCWA
- to assist these agencies in meeting their water demands without exceeding California's apportionment of Colorado River water
- to identify agreed-upon terms and conditions for the conservation and transfer of specific amounts of Colorado River water within California
- to provide incentives to promote conservation of Colorado River water

The *Draft Program Environmental Impact Report for Implementation of the Colorado River Quantification Settlement Agreement* addresses 17 proposed Quantification Settlement Agreement components that together could result in a net change in diversion of up to 388,000 acre-feet of Colorado River water from Imperial Dam to Parker Dam. This change in point of diversion could reduce the average surface water elevation between Parker Dam and Imperial Dam by up to a maximum of approximately 4.4 inches.

The Draft Program EIR states that execution of the proposed Quantification Settlement Agreement and implementation of its component projects would have a significant but mitigable impact on aquatic, marsh and riparian habitat along the lower Colorado River and its backwaters. Similarly, the proposed Quantification Settlement Agreement could result in significant but mitigable effects on amphibians, reptiles, birds and mammals that use the potentially affected habitat. Habitat restoration actions along the lower Colorado River would mitigate these potential effects. To avoid significant cumulative impacts, potential short-term water quality impacts associated with installation/construction of habitat restoration projects along the river would be mitigated through standard construction practices. Similarly, project-specific measures would be developed to ensure that habitat restoration activities do not indirectly cause other cumulative impacts to biological resources in the short term. The proposed Quantification Settlement Agreement's incremental contribution to long-term biological resource impacts along the lower Colorado River would be offset by the project-specific habitat mitigation described in the Draft Program EIR.

Implementation Agreement, Inadvertent Overrun and Payback Policy and Related Federal Actions (Biological Conservation Measures)

In January 2002, the Bureau of Reclamation released the *Draft Environmental Impact Statement, Implementation Agreement, Inadvertent Overrun and Payback Policy and Related Federal Actions* (Bureau of Reclamation 2002). The Draft EIS evaluates:

- execution of a proposed Implementation Agreement by the Secretary of the Interior (Secretary) that would allow changes in the amount and/or location of deliveries of Colorado River water necessary to implement the proposed Quantification Settlement Agreement
- adoption of a proposed Inadvertent Overrun and Payback Policy establishing requirements for paybacks of inadvertent overuse of Colorado River water by water users along the lower Colorado River
- implementation of proposed biological conservation measures to offset potential effects to federally protected fish and wildlife species that could occur as a result of the Implementation Agreement and Inadvertent Overrun and Payback Policy

Implementation Agreement

The Quantification Settlement Agreement measures that would be allowed by the Implementation Agreement are described above.

Inadvertent Overrun and Payback Policy

The Inadvertent Overrun and Payback Policy would establish methods to identify inadvertent overruns of Colorado River water—defined in the Draft EIS as "Colorado River water that is diverted, pumped or received by an entitlement holder in excess of that water user's entitlement for that year" (Bureau of

Reclamation 2002:2-22). When an inadvertent overrun is identified, payback would be required starting the following year. The proposed Inadvertent Overrun and Payback Policy also requires that:

> Payback must be made only from water management measures that are above and beyond the normal consumptive use of water; actions must be taken to conserve water that otherwise would not return to the mainstem of the Colorado River and be available for beneficial consumptive use in the United States or to satisfy the U.S.–Mexico Water Treaty obligation (ibid. 2-22, 23).

Under the proposed policy, the requirement for water users to make paybacks for accumulated overruns would be forgiven in years in which the Secretary makes a flood control release or makes a space-building release from Lake Mead. (A space-building release is a release of water in order to make storage room available for anticipated flood control needs.)

When inadvertent overruns occur, there would be correspondingly higher flow levels in the lower Colorado River between Lake Mead and the location where the inadvertent overrun occurs. When the payback occurs, there would be a corresponding net reduction in flows. (This may seem counterintuitive because it would seem that a "payback" would increase flows in the river. In practice, water users making paybacks would conserve water and simply divert or pump less water from the Colorado River. Because flows released from Lake Mead and Lake Havasu are often based on planned downstream diversions plus flows required by treaty to be provided to Mexico, lower flows may be released during payback periods.) In terms of net flows, the effect of the Inadvertent Overrun and Payback Policy would be negligible.

Biological Conservation Measures

In addition to its NEPA analysis of Colorado River-related water projects, the Bureau of Reclamation also conducted a formal consultation with the USFWS pursuant to Section 7 of the Endangered Species Act. The Section 7 Consultation included the Bureau of Reclamation's preparation and submittal of a "Biological Assessment for Interim Surplus Criteria, Secretarial Implementation Agreements, Water Administration, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary" (Bureau of Reclamation 2000a). (As noted above, this Biological Assessment based the assessment of impacts on the assumption that the effects of a 400,000-acre-foot reduction in flows would be linearly proportional to the impacts associated with a 1.574 million-acre-foot reduction in flow.) On January 12, 2001, the USFWS concluded the Section 7 Consultation with the issuance of the "Biological Opinion for Interim Surplus Criteria, Secretarial Implementation Agreements, Water Administration, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary, Arizona, California and Nevada" (USFWS 2001).

Conservation measures identified in the USFWS Biological Opinion include the following:

- Stocking 20,000 razorback suckers, 25 centimeters or greater in length, into the Colorado River between Parker Dam and Imperial Dam

- Creating 44 acres of backwaters along the Colorado River between Parker Dam and Imperial Dam
- Providing $50,000 in funding for capture of wild-born or first generation bonytails from Lake Mohave to be incorporated into the broodstock for this species and/or to support hatchery rearing efforts
- Implementing a two-tiered willow flycatcher habitat monitoring and restoration program that would entail the restoration/maintenance of at least 372 acres and up to 1,116 acres of willow flycatcher habitat, with the actual amount of restoration/maintenance dependent on monitoring results and guidelines established in the Biological Opinion

As described in the Bureau of Reclamation's Draft EIS, the implementation of these conservation measures could have a minor effect on lower Colorado River flows. These measures, particularly willow flycatcher habitat creation, also could result in short-term disruptions to vegetation and wildlife along the river. In the long term, the proposed conservation measures would increase the biological resource value of the lower Colorado River.

Interim Surplus Guidelines

In January 2001, the Bureau of Reclamation adopted the Interim Surplus Guidelines (ISG) (formerly referenced as Interim Surplus Criteria). The ISG identify when the Secretary of the Interior may make Colorado River water available for delivery to the states of Arizona, California and Nevada in excess of the normal 7.5 million acre-feet per year apportionment for a period of 15 years. The ISG were adopted pursuant to Article III(3)(b) of the Criteria for Coordinated Long-Range Operation of the Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968 (Long-Range Operating Criteria [LROC]) and are consistent with the 1964 Decree entered by the United States Supreme Court in *Arizona v. California*. The ISG will remain in effect for determinations made through 2015 regarding the availability and volume of surplus water through 2016, subject to five-year reviews conducted concurrently with LROC reviews, and will be applied each year as part of the Annual Operating Plan.

A Final EIS was released for the ISG in 2000 (Bureau of Reclamation 2000b), and a Record of Decision was issued by the Bureau of Reclamation in January 2001 (*Federal Register*, Vol. 66, No. 17, January 25, 2001, Notices). In the Final EIS, the Bureau of Reclamation determined that environmental resources would not be significantly affected. No specific mitigation measures were required to reduce or eliminate less-than-significant effects because small changes in the probabilities of occurrence of flows that would affect resources areas are within the Bureau of Reclamation's current operational regime and authorities under applicable law.

All-American Canal (AAC) and Coachella Canal Lining Projects

These two canal-lining projects would reduce water loss in the AAC and Coachella canals by lining earthen sections of the canals, thereby reducing the seepage of water through canal banks. Both of these canal-lining projects were authorized by Public Law (P.L.) 100-675 and funds for construction were appropriated by California Water Code Section 12560 et seq. Together, the proposed canal-lining projects would conserve approximately 98,550 acre-feet of water annually. Water conserved by the proposed canal-lining projects would be used for three purposes: (1) to help the Federal Government meet its obligations under the San Luis Rey Indian Water Rights Settlement Act, (2) to provide water for mitigation to help offset the loss of canal-seepage dependent vegetation that would be affected by the Coachella Canal Lining Project and (3) to help southern California water agencies with existing rights to Colorado River water meet water demand within their service areas.

The water that would be conserved by these two canal-lining projects is currently diverted from the Colorado River at Imperial Dam (downstream from the Palo Verde Diversion Dam). The majority of water conserved by the proposed projects ultimately would be diverted by Metropolitan at its intake facilities in Lake Havasu.

The AAC Lining Project entails the construction of a new concrete-lined canal parallel to 23 miles of the earthen AAC. The Final EIS/EIR for the AAC Lining Project (Bureau of Reclamation and IID 1994) estimated that this project will conserve approximately 67,700 acre-feet of water annually. The Bureau of Reclamation issued a Record of Decision for the AAC Lining Project in 1994.

The Coachella Canal Lining Project would line approximately 33 miles of earthen canal in Riverside and Imperial counties, east of the Salton Sea. The Coachella Canal Lining Project would conserve approximately 30,850 acre-feet annually of water presently being lost as seepage. The Final EIS/EIR for this project was certified by the Coachella Valley Water District in May 2001, and the Bureau of Reclamation issued its Record of Decision in April 2002.

IID Water Conservation and Transfer Project and Habitat Conservation Plan (HCP)

In January 2002, the Bureau of Reclamation and IID released a Draft EIS/EIR that addresses a proposed water conservation and transfer/acquisition project that, if approved and implemented, would provide for the conservation of water within IID and the transfer or acquisition of that water by up to three other southern California water agencies with existing rights to Colorado River water—SDCWA, CVWD and Metropolitan.

The proposed IID project covers a 75-year period and would conserve and transfer up to 300,000 acre-feet of Colorado River water per year (Bureau of Reclamation and IID 2002). If the Quantification Settlement Agreement described above is implemented, 130,000 to 200,000 acre-feet of water per year would be conserved and transferred to SDCWA. In addition, CVWD would have the option of acquiring up to 100,000 acre-feet of conserved Colorado River water per year (in two increments of 50,000 acre-

feet) for use within its service area. Metropolitan would have the option to acquire this water if CVWD chooses not to exercise its option.

To conserve up to 300,000 acre-feet of Colorado River water annually, IID would select water conservation measures to be implemented within its service area (which consists of approximately 500,000 acres located in the Imperial Valley). As described in Section 2.2.3.1 of the Draft EIS/EIR, the potential conservation measures include:

- on-farm irrigation system improvements, including on-farm irrigation management techniques, that would be implemented by landowners and tenants within IID's water service area
- water improvements by IID to its water delivery system
- fallowing measures to conserve water, to be implemented by landowners and tenants within IID's water service area and/or IID, subject to certain contractual limitations set forth in a transfer agreement between IID and SDCWA

The proposed IID Water Conservation and Transfer Project also includes an HCP, prepared in compliance with the federal and state Endangered Species Acts, to minimize and mitigate impacts to threatened and endangered species and to support issuance of incidental take permits for covered species as necessary.

Although the proposed IID Water Conservation and Transfer Project is not associated with the proposed Program evaluated in this Draft EIR, it is similar in that both would reduce water diversions at locations below Parker Dam and thus permit diversions to be maintained from Lake Havasu to the southern California coastal plain. Transfers to SDCWA and (if applicable) Metropolitan implemented as part of the IID Water Conservation and Transfer Project would change the point of diversion for an amount of water equal to the amount conserved from Imperial Dam (where water is diverted to IID via the All American Canal) to Lake Havasu (where water is diverted into Metropolitan's Colorado River Aqueduct). Because CVWD also obtains its allotment of Colorado River water via the All American Canal, there would be no change in diversion for water conserved by IID and acquired by CVWD.

Lower Colorado River Multi-Species Conservation Program (LCR MSCP)

The LCR MSCP is a partnership of state, federal, tribal, and other public and private stakeholders, including PVID and Metropolitan, with an interest in managing the water and related resources of the Lower Colorado River. The purposes of the LCR MSCP are to:

- Conserve habitat and work toward the recovery of "covered species" within the historic floodplain of the Lower Colorado River, pursuant to the Endangered Species Act and to reduce the likelihood of additional species listings under the Endangered Species Act
- Accommodate current water diversions and power production and optimize opportunities for future water and power development

- Provide the basis for federal Endangered Species Act and California Endangered Species Act compliance via incidental take authorizations

The LCR MSCP covers the mainstem of the lower Colorado River from Lake Mead to the Southerly International Boundary with Mexico. The program areas include the historic floodplain and reservoir full-pool elevations. Potential conservation measures focus on the lower Colorado River from Lake Mead to the Southerly International Boundary, but cooperative conservation efforts with the Glen Canyon Dam Adaptive Management Work Group may be considered.

Approximately 57 federal or state-listed, candidate, and sensitive species and their associated habitats, ranging from aquatic, wetland and riparian habitats, to upland areas would be addressed. The program would address the biological needs of mammals, birds, fish, amphibians and reptiles, as well as invertebrates and plants.

The comprehensive program is planned to be implemented over a 50-year period and would address future federal agency consultation needs under the federal Endangered Species Act's Section 7 and non-federal agency needs for endangered species incidental take authorization under the Act's Section 10.

Potential conservation measures or strategies currently under consideration for various fish species and their habitats may include evaluating the use of backwaters by native and non-native species, managing to minimize conflicts between native and non-native aquatic species by constructing isolated native fish refuges, restoring floodplain connections and ephemeral backwaters in an effort to restore floodplain functions, augmenting native fish populations through stocking and additional rearing capacity, implementing a genetic management plan for native fish populations and managing to minimize take.

Potential conservation measures or strategies currently under consideration to benefit various bird species and their habitats include protecting and restoring habitat; protecting existing habitat through activities such as managing access, maintaining hydrologic conditions, fire management using prescribed fires/fire planning and post-fire rehabilitation; converting agricultural land to habitat (acquiring land and water rights from willing sellers); managing large mammal problems (e.g., burro grazing and trampling); controlling threats from other species through measures such as cowbird trapping; and vegetation management. Additional conservation measures or alternatives may be identified during the scoping process, described below.

Over the five-year planning program for the development of a comprehensive program, interim conservation measures have been implemented to address the immediate critical needs of certain endangered species. Interim measures have addressed the endangered razorback sucker, bonytail (chub), southwestern willow flycatcher, Yuma clapper rail and various species of bats, and their respective habitats.

The LCR MSCP has identified and evaluated numerous potential conservation opportunity areas along the Colorado River between Lake Mead and the Southerly International Boundary. The MSCP has

categorized conservation opportunities that are currently sufficiently defined, practicable and available for implementation within the first ten to 15 years as Phase I conservation areas. The MSCP has included over 30 areas in the Phase I initiative, of which two proposed areas would occur within the PVID.

Colorado River Basin Salinity Control Program

The Colorado River Basin Salinity Control Forum has determined that 1,477,700 tons of salt must be removed or prevented from entering the Colorado River system annually to maintain the following numeric criteria established for the Colorado River through 2015:

Location	**TDS Criteria**[1]
Below Hoover Dam	723 mg/L
Below Parker Dam	747 mg/L
At Imperial Dam	879 mg/L

[1] Flow-weighted annual average value

The 1974 Colorado River Basin Salinity Control Act (P.L. 93-320, as amended) provides for the construction, operation and maintenance of projects in the Colorado River Basin to control the salinity of water delivered in the United States and to Mexico. A wide range of salinity control actions has been undertaken in the Colorado River basin as part of this program. These actions include construction of a desalting plant at Yuma, Arizona, development of a protective well field along the US/Mexico border, a salinity control program on Bureau of Land Management land, a voluntary on-farm salinity control program by USDA, other specific Bureau of Reclamation salinity control projects, and a Bureau of Reclamation program for funding salinity control measures basin-wide through competitive bid. This action is implemented by a variety of stakeholders, and actions are coordinated by an interagency group, the Colorado River Basin Salinity Control Forum.

6.3 CUMULATIVE IMPACTS ANALYSIS

Cumulative impacts are addressed in the same order and for the same topics as in Chapter 4.0.

6.3.1 Agricultural Resources

As described in Section 4.1, the proposed Program would not convert any farmland to non-agricultural use, nor would it indirectly cause the conversion of farmland to non-agricultural use. In addition, the proposed Program would not cause any violations of Williamson Act contracts. Thus, while some of the proposed projects discussed above could entail the development of farmlands or the permanent retirement of fields, the proposed Program would not incrementally contribute to those effects. Accordingly, the proposed Program would not incrementally contribute to a cumulative impact to a loss of agricultural resources.

6.3.2 Geology and Soils

The projects listed in Table 6-1 would entail construction in the Palo Verde Valley or surrounding area (e.g., Palo Verde Mesa), with corresponding ground-disturbing activities such as grading. These projects could cause soil erosion. As described in Section 4.2.3, the proposed Program is not anticipated to increase soil erosion in the Palo Verde Valley area because the Program includes land management measures that would limit erosion to levels similar to (or less than) those associated with ongoing typical agricultural activities. The proposed Program would not incrementally contribute to other projects' grading-related geology or soil impacts because the proposed Program does not involve the construction of new facilities. Accordingly, the proposed Program would not incrementally contribute to a cumulative impact to geology or soil resources.

6.3.3 Air Quality

As described in Section 4.3, the proposed Program would not increase emissions of PM_{10} or any other criteria air pollutant. No increase in PM_{10} is anticipated because the proposed Program incorporates land management (erosion control) measures that would maintain wind erosion at levels similar to or below existing levels associated with active farming. The proposed Program incrementally would reduce emissions from vehicle tailpipes and dust generated on the fields or on unpaved roads because fewer vehicles would be in operation as a result of the decrease in the number of fields that would be actively farmed at any one time. Also, the proposed Program would not involve new construction. Thus, even though many of the planned projects discussed in Section 6.2 could result in increased emissions (e.g., from power plant smokestacks, residents' vehicles, site grading), the proposed Program would not contribute to those emissions. Accordingly, the proposed Program would not incrementally contribute to a cumulative impact to air quality.

6.3.4 Hydrology and Water Quality

Palo Verde Valley and Palo Verde Mesa: Groundwater Issues

Many of the proposed projects discussed above could require the use of water from PVID's Priority 1 (Palo Verde Valley) or Priority 3 (Palo Verde Mesa) water rights. Two of the projects with potentially relatively higher water needs would be the Blythe Energy Power Plant Project and the Palo Verde Community College District's Mesa Campus.

Many of the projects identified by the city of Blythe would draw water from the city's water supply. The addition of these new developments, including a combined total of 523± new residential units (single-family residences and mobile home units), would increase the amount of water pumped by the city of Blythe and the corresponding draw on the aquifer. As described in Section 4.4, the proposed Program would reduce the amount of irrigation water infiltrating to the groundwater supply. This effect, however, would not reduce groundwater to below well levels for the city of Blythe or other public or private well users. Groundwater levels in the Palo Verde Valley would remain relatively shallow due to the influence

of the Colorado River and because irrigation of area fields would continue (a maximum of approximately 29 percent of valley farmlands would not be irrigated at any one time under the proposed Program and only for a period of 35 years). Accordingly, even in consideration of planned and ongoing projects in the area, the cumulative impact to groundwater hydrology would be less than significant.

The planned projects described in Section 6.2.2 would not affect water levels in PVID drains because they would not result in less irrigation of farmlands within the PVID, except for the Blythe Energy Power Plant Project. That project involves some Palo Verde Mesa farmlands that are not in agricultural production. Therefore, no additional cumulative impacts to the PVID drains regarding hydrology would occur.

Colorado River: Surface Water Issues

Many of the planned projects and programs described in Section 6.2.3 could affect the hydrology and/or water quality of the Colorado River downstream from Parker Dam. The extent to which these projects would result in cumulative impacts on the Colorado River depends on which water conservation and transfer/acquisition projects are approved and implemented. How these planned projects would be implemented also affects the potential for cumulative impacts. For example, the proposed Program evaluated in this Draft EIR would result in a change in diversion of up to approximately 111,000 acre-feet of water annually, but during any given year, the amount of water saved by the proposed Program and the equal amount delivered through Metropolitan's existing facilities could be considerably less.

As another example, the proposed IID Water Conservation and Transfer Project includes two 50,000-acre-foot water conservation and acquisition options, under which water would be conserved annually by IID and acquired either by CVWD or Metropolitan. Water conserved by IID and acquired by CVWD would have essentially no effect on the Colorado River because both of these water districts divert Colorado River at the same location—Imperial Dam. Should CVWD decline to acquire water available under these options, then an amount of water equal to the amount conserved would be made available to Metropolitan. In this scenario, the point of diversion for up to 50,000 or 100,000 acre-feet of water annually could be changed from Imperial Dam to Lake Havasu.

For the purposes of providing a conservative cumulative impacts analysis, PVID projects that the point of diversion may change for approximately 499,000 acre-feet per year. This would include the Program-related change in diversion of up to 111,000 acre-feet annually from the Palo Verde Diversion Dam to Lake Havasu and the Colorado River Aqueduct plus an additional 388,000-acre-foot change in point of diversion from Imperial Dam to Lake Havasu resulting from related Colorado River projects.

Although several related Colorado River projects would affect the Colorado River from Parker Dam all the way downstream to Imperial Dam, the proposed Program would only incrementally contribute to impacts from Parker Dam downstream to Palo Verde Diversion Dam. This assessment reflects that the proposed Program would cause a decrease in flows from Parker Dam downstream to Palo Verde Diversion Dam, but would actually cause an incremental increase in Colorado River flows through the

Palo Verde Valley (see Section 4.4.3). Downstream from the mouth of PVID's Outfall Drain, the proposed Program would not affect Colorado River flow levels or water surface elevations.

Based on a projection that the point of diversion would change for roughly 499,000 acre-feet of water, the cumulative effect of these changes would represent a reduction of approximately 6.3 percent of flows below Parker Dam, based on annual average flows in the Colorado River below Parker Dam for the period from 1987 to 1999 (excluding 1992 through 1994), which averaged 7,908,800 acre-feet (see Section 1.1.1). As described in Section 4.4.1, the Colorado River exhibits considerably higher percentage changes in flows from year to year than would be caused by the cumulative effect of these water transfers/acquisitions. Accordingly, the cumulative effect on the Colorado River would be less than significant from a hydrology standpoint.

With regard to surface water elevations, the Bureau of Reclamation has calculated potential effects of water transfers/acquisitions on the average surface water elevation of the lower Colorado River for various amounts of transfers/acquisitions (Bureau of Reclamation 2000a: Appendix A, Table A-1). Based on these calculations, a 500,000-acre-foot reduction in flows from Parker Dam would lower the average water surface elevation of the Colorado River between Parker Dam and Palo Verde Diversion Dam from 0.5 inch (at approximately two miles upstream from Palo Verde Diversion Dam) to a maximum of 4.5 inches (at approximately 34 miles upstream from Palo Verde Diversion Dam). Given the fluctuations that occur on a daily, seasonal and annual basis along the lower Colorado River, this reduction would constitute a less-than-significant cumulative hydrologic impact.

6.3.5 Biological Resources

Palo Verde Valley

The proposed Program's effects on biological resources in the Palo Verde Valley would be limited to effects on species that utilize agricultural fields and/or PVID drains as habitat. As described in Section 4.5.1, agricultural fields may provide foraging habitat for some species. In comparison to native vegetation, however, these fields provide relatively low quality habitat due to the absence of species diversity (i.e., mono-cropping) and due to the relatively high level of disturbance associated with active farming. Additionally, the effect of the proposed Program on these fields' suitability as foraging habitat would be negligible because the fields would be left in an open state.

Habitat along PVID's drains may be affected because groundwater elevations would decrease by up to roughly one to two feet if the proposed Program is implemented. As described above, other planned projects in the valley would not noticeably affect water elevations in PVID's drains, even when considered from a cumulative standpoint. Thus, these projects would not incrementally contribute to the proposed Program's effects on biological resources in the Palo Verde Valley.

Colorado River

The proposed Program's incremental contribution to cumulative biological resource effects on the Colorado River would be directly related to the extent to which the proposed Program and related projects affect the hydrology of the river. As described above, cumulative changes to the hydrology of the Colorado River would be minor, reflecting an approximately 6.3 percent reduction in average river flows and causing reductions in average water surface elevations ranging from approximately 0.5 inch to a maximum of approximately 4.5 inches. For the reasons described in Section 4.4.3, the reductions in flow would not affect the water surface elevation of either peak flows or low flows because these are a factor of Parker Dam operating procedures, which would not change as a result of the proposed Program or other reasonably foreseeable projects. Instead, the duration of peak flows between Parker Dam and Palo Verde Diversion Dam would be shorter. Shoreline vegetation that is currently periodically submerged by fluctuations in the Colorado River would continue to be submerged periodically, and no aquatic vegetation that is permanently below the waterline would be exposed as a result of the cumulative changes in flows.

Changes in water surface elevations and groundwater levels also can affect backwaters along the river, including natural backwaters (e.g., oxbow lakes, abandoned river channel ponds, floodplain ponds and secondary river channel pools) and man-made backwaters that are connected to the river by inlet pipes. Backwaters often provide valuable habitat for aquatic and riparian species; accordingly, impacts to backwaters could lead to indirect impacts to fish and wildlife species that utilize them. Specifically, if a project or combination of projects causes the water surface elevation of a river to decrease low enough that the river and the backwater are no longer connected, the isolated backwater loses much of its biological resource value. Because backwaters also are influenced by groundwater, they retain some biological resource value even when isolated from the river. As described in Section 4.4.3, average groundwater levels along the edge of the river would be projected to decline in an amount equivalent to that of average water surface elevations (0.5 inch to 4.5 inches when considered cumulatively). As with surface water elevations, groundwater elevations would continue to be influenced by daily, seasonal and annual fluctuations in the river's flow.

Because the water surface elevation of peak and low flows in the river would not be reduced, and in consideration of the relatively minor nature of the reduction in average surface and groundwater elevations along the river, no backwaters would be isolated from the lower Colorado River between Parker Dam and Palo Verde Diversion Dam as a result of the cumulative reduction in river flows.

As described above, the Bureau of Reclamation conducted a separate analysis of how changes in points of diversion may cumulatively affect resources along the river. The Bureau of Reclamation's 1991 study addresses the potential changes of a 480,000-acre-foot reduction in flows below Parker Dam, which is similar (within four percent) to the flow reduction considered reasonably foreseeable in this Draft EIR. Also, the 1991 study evaluates the effects of a maximum average flow reduction of approximately four inches, similar to the 4.5-inch maximum decrease in average flow levels projected to occur should flow reductions between Parker Dam and Imperial Dam be reduced by 499,000 acre-feet annually.

The Bureau of Reclamation study (1991:2) found that:

1. A four-inch reduction in water level during normal flow would reduce the surface area of the river and backwaters along the lower river by 30 acres at most, less than one percent of the total, during normal flow conditions, against a background of greater changes in the area caused by fluctuations of the river.
2. Riparian and marsh vegetation would adapt to the minor shift in average bank line.
3. Fish spawning would not be impacted.

Although the Bureau of Reclamation's assessment reflects a slightly smaller reduction in flow than is addressed in this cumulative impacts analysis, its assessment actually overstates the cumulative effects that would result from the proposed Program and other reasonably foreseeable Colorado River projects because it assumes that the reduction in river flows would occur along the entire length of the Colorado River between Parker Dam and Imperial Dam. By comparison, the proposed Program addressed in this Draft EIR would incrementally contribute only to impacts between Parker Dam and Palo Verde Diversion Dam. The Bureau of Reclamation's study further states "In the Parker, Palo Verde, and Cibola Divisions, there should be little or no measurable impact to the riparian vegetation found along the river" (ibid. 29). These three divisions of the lower Colorado River encompass the entire segment of the river that would be affected by the proposed Program.

Based on the minor level of the changes described above, the cumulative biological resources impact of these projects on the Colorado River would be less than significant under CEQA and, therefore, would not require mitigation under CEQA.

CHAPTER 7.0 – ALTERNATIVES

7.1 INTRODUCTION

Pursuant to Section 15126.6 of the State CEQA Guidelines, an EIR must address:

> …a range of reasonable alternatives to the project, or to the location of the project, which would reasonably attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

For the reasons described in Chapters 4.0 and 6.0, the proposed Program would neither result in significant environmental impacts nor contribute incrementally to significant cumulative effects on the environment. Accordingly, this Draft EIR does not identify alternatives that would avoid or minimize significant environmental impacts. Although no significant impacts on the environment would result from the proposed Program, this Draft EIR nonetheless includes an alternatives analysis in order to provide a comparison of the relative merits of alternatives to the proposed Program as relating to less-than-significant effects. This chapter also describes why some alternatives initially considered by PVID would not be feasible.

7.2 DEVELOPMENT OF ALTERNATIVES

Although there was an absence of significant environmental effects requiring avoidance or minimization with respect to the proposed Program, the development of alternatives for analysis in this Draft EIR included the No Project Alternative (specifically required by CEQA), and two other feasible alternatives, which may address other concerns of interested members of the public or resource agencies. These include a Reduced Non-irrigation Period Alternative and a Reduced Participation Alternative. The purpose of analyzing the Reduced Participation Alternative is to provide decision-makers and the public with an analysis of effects that may result if there is insufficient participation in the proposed Program to achieve all of its goals. These three alternatives are assessed in Section 7.3, the environmentally superior alternative is dscussed in Section 7.4 and alternatives considered but not carried forward for detailed evaluation are addressed in Section 7.5.

7.3 EVALUATION OF ALTERNATIVES

7.3.1 No Project Alternative

Under the No Project Alternative, the proposed Program would not be implemented. Metropolitan would not enter into agreements with PVID or participating farmers in the Palo Verde Valley. The rotation of crops within the Palo Verde Valley would not be altered by non-irrigation agreements, but would continue to be affected by other factors such as variable market conditions.

Under the No Project Alternative, agricultural resources would continue to be used within the Palo Verde Valley much in the manner that they are currently. It is possible, however, that the conversion of agricultural land to non-agricultural uses may be greater over the next 35 years under the No Project Alternative than under the proposed Program. This assessment reflects that under the proposed Program, a number of area farms are projected to be committed to 35-year agreements with Metropolitan that would limit the conversion of the contracted farms to non-agricultural uses (see Section 3.4.4). Although it is difficult to predict economic and development trends for a 35-year period, California's historical development patterns suggest that over time, agricultural fields, especially those near cities (e.g., Blythe) or near recreational areas (e.g., the Colorado River) tend to face increasing pressure for non-agricultural development. Under the No Project Alternative, there would not be any farms committed to the proposed Program and thereby subjected to its limitations on non-agricultural land uses, as noted in Section 3.4.4.

With regard to soils and wind erosion, the No Project Alternative would result in generally similar levels of soil loss as would occur under the proposed Program. As described in Sections 4.2 and 4.3, the proposed Program is projected to result in wind erosion levels that are similar to those that occur with active farming and dust generated from moving vehicles, which would continue under the No Project Alternative. Tailpipe emissions (including PM_{10} and ozone precursors) would be higher under the No Project Alternative than under the proposed Program because there would be more vehicle use associated with the higher level of agricultural activity.

The No Project Alternative would avoid the projected (less-than-significant) one- to two-foot decrease in groundwater levels and the minor changes in Colorado River hydrology that would occur under the proposed Program.

As described in Section 4.5, biological resource conditions in the Palo Verde Valley would be similar regardless of whether the proposed Program is implemented. In addition, the No Project Alternative would not result in the incremental contribution to less-than-significant cumulative impacts on the biological resources of the lower Colorado River discussed in Section 6.3.5.

In addition to not avoiding the proposed Program's less-than-significant impacts, the No Project Alternative also would not meet the proposed Program objective of obtaining an optional water supply for Metropolitan of up to 111,000 acre-feet annually for 35 years. To the extent that the proposed Program would not be available, there could be other sources and projects, including some of the projects that would result from the plans and policies described in Section 6.2.3 of this Draft EIR, that may provide other water supply opportunities.

7.3.2 Reduced Non-irrigation Period (Three-Year Maximum) Alternative

Under this alternative, the maximum period that a given field would not be irrigated would be three years (as opposed to the currently proposed five years). This would not affect the overall amount of water that could be saved each contract year (assuming participants are in compliance with the proposed Program and an adequate number of participants in the Palo Verde Valley volunteer for the proposed Program).

This alternative could reduce the extent to which additional erosion control measures are required, as described in Section 3.4.3 under the heading "Monitoring Non-irrigated Fields." For example, the basic principle behind clod plowing as a means to reduce wind erosion is that plowing a field when it is wet produces clods with a relatively thick crust, and this soil crust helps minimize erosion. Over time, as the clods dry out and the crust is abraded by airborne particles, resistance of clods to erosion lessens. This is why, under the proposed Program, the longest continuous period that clod plowing would be allowed as an erosion control method is three years. After three years, clod plowing would need to be repeated on sufficiently wet fields to reestablish erosion-resistant clods or a cover crop would need to be established. Under the Reduced Non-irrigation Period Alternative, this particular proposed Program restriction would be irrelevant because no Program fields would be left non-irrigated for more than three years. (It should be noted, however, that some fields in the proposed Program may or would be left non-irrigated for three years or less anyway.)

Thus, this alternative would be less likely to require that participants implement additional erosion control measures, some of which could entail the use of Colorado River water for irrigation. The use of irrigation water for this purpose would reduce the amount water saved by the proposed Program and the equal amount of water made available to Metropolitan, and it also would decrease the level of compensation provided to participants by Metropolitan.

Because the total amount of water saved and the amount of farmland non-irrigated each contract year would be similar to the water saved under the proposed Program, and in light of the proposed Program's monitoring and erosion control requirements, the potential environmental effects of this alternative would be similar to those of the proposed Program. This alternative would, however, provide less flexibility to Program participants in terms of how they manage their agricultural operations.

7.3.3 Reduced Participation Alternative

The Reduced Participation Alternative reflects the potential that not enough participants may volunteer for enrollment in the proposed Program. Given that the maximum amount of any one farm that would not be irrigated under the proposed Program is 35 percent, farms encompassing a combined total of approximately 75,700 acres of Palo Verde Valley farmland must be committed to the proposed Program in order to achieve 26,500 acres of non-irrigation at any one time.

If only half of the Palo Verde Valley's approximately 91,000 irrigated acres below the Palo Verde Diversion Dam are committed to the proposed Program, then the maximum amount of land that could not be irrigated under the proposed Program would be 15,925 acres. (Half of 91,000 acres is 45,500 acres, and 35 percent of that amount is 15,925 acres.) Assuming that approximately 4.2 acre-feet of water are saved per non-irrigated acre, this alternative would save up to a maximum of roughly 67,000 acre-feet of water annually.

Reducing the amount of water saved under the proposed Program proportionally would reduce the proposed Program's environmental effects; however, as described in Chapters 4.0 and 6.0, less-than-

significant impacts would occur should the proposed Program be implemented. Under the Reduced Participation Alternative, there would be even fewer less-than-significant changes in the day-to-day operations of Palo Verde Valley farmers, with a corresponding incremental lessening in the extent to which the proposed Program would produce any indirect effects. For example, water elevation changes in PVID's drains would be less under a Reduced Participation Alternative than they would under the proposed Program. Similarly, the Reduced Participation Alternative would have a proportionally smaller incremental impact on the Colorado River between Parker Dam and the Palo Verde Diversion Dam than would the proposed Program.

The Reduced Participation Alternative would not assist Metropolitan in achieving its objective of obtaining an optional water supply of up to 111,000 acre-feet annually for 35 years. Nevertheless, to the extent that the proposed Program would not be available, there could be other sources and projects, including some of the projects that would result from the plans and policies described in Section 6.2.3 of this Draft EIR, that may provide other water supply opportunities.

7.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

None of the alternatives, including the proposed Program, would result in or incrementally contribute to cumulatively significant effects on the environment. Based on the relatively minor environmental effects that would result from these alternatives, it is difficult to select one of the alternatives as clearly environmentally superior to the other. To the extent that potential Program impacts correspond to the acreage of fields not being irrigated and an amount of water equal to the amount saved being made available to Metropolitan, the environmentally superior alternative would be the one with the least amount of non-irrigated fields and the lowest volume of water savings. Thus, the No Project Alternative could be assessed as the environmentally superior alternative, and the Reduced Participation Alternative could be assessed as the environmentally superior of the remaining alternatives, although neither would meet all of the objectives of the proposed Program, as described in Section 3.3.

7.5 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED EVALUATION

In addition to the alternatives analyzed above, PVID initially considered a number of other scenarios, including locational alternatives and alternatives suggested by agencies and the public in response to the Draft EIR Notice of Preparation. As described below, several of these alternatives would not attain the most basic objectives of the proposed Program, were considered infeasible, or both, and therefore were not carried forward to detailed evaluation.

7.5.1 Locational Alternatives

No locational alternatives that would help reduce environmental effects were considered feasible because of three substantial constraints described below.

First, the proposed Program must be implemented in California. The non-irrigation of farmlands outside California would not provide for the use by Metropolitan of an amount of water equal to the amount saved under The Law of the River. Thus, although there also are irrigated farmlands in the Arizona portion of the Palo Verde Valley and on the Arizona side of the river in other locations, these do not represent a feasible location for the proposed Program.

Second, a primary objective of the proposed Program is to provide Metropolitan with a water supply option of saved Colorado River water. Because PVID has a Priority 1 water right to irrigate a specified area of the Palo Verde Valley (see Section 1.1.3), the proposed Program represents a viable option. There are no other areas in California designated as having a Priority 1 right to Colorado River water.

Third, relocating the proposed Program further upstream, closer to Lake Havasu and Parker Dam, was considered. Although this would reduce the stretch of river affected by lower flows, there are no locations between Parker Dam and Palo Verde Diversion Dam that currently divert enough water to accommodate the proposed Program.

While it would be feasible to implement a land management, crop rotation and water supply program further downstream, such as in the Coachella or Imperial valleys, this would affect a longer segment of the Colorado River than the proposed Program and would provide no further reduction in the proposed Program's less-than-significant environmental impacts.

7.5.2 Other Alternatives Considered Infeasible or Unachievable

Additional alternatives initially considered but determined to be infeasible or not able to achieve basic project goals are summarized below.

Non-agricultural (Urban) Water Conservation

Several agencies/members of the public have suggested that, in lieu of the proposed Program, Metropolitan could achieve its water supply option objective through conservation measures within its service area. Both PVID and Metropolitan concur that water conservation measures within Metropolitan's service area are a critical component in managing and distributing water supplies; however, this approach is already represented by ongoing Metropolitan programs and therefore does not constitute an alternative to the proposed Program addressed in this Draft EIR. Some of Metropolitan's ongoing water conservation efforts are described below.

Metropolitan is active in a variety of conservation efforts throughout its service area (Metropolitan 2000, 2002), and Metropolitan estimates that it achieved a savings of 66,000 acre-feet through active conservation in 2001 (excluding large landscape conservation savings). Additionally, passive conservation programs (such as water pricing and adherence to governmental policies) provide even greater water savings. Metropolitan's conservation efforts include funding conservation programs,

providing conservation education and training, providing research and support and establishing water pricing that encourage conservation.

Metropolitan provides funding for several water conservation programs. For example, the Conservation Credits Program, established in 1988, provides financial support to member agency conservation programs by paying up to $154 per acre-foot of water conserved, including financial incentives for conversion to water-efficient toilets, showerheads, washing machines and various commercial fixtures. Metropolitan-funded grants have been used for programs involving conversion to water-efficient equipment and conservation education (i.e., Residential Washer Rebate Program, Bilingual Landscape Course Development). Continued funding for the Commercial, Industrial & Institutional Regionwide Program provides financial incentives for the replacement of specific equipment with more water-efficient models. The Innovative Conservation Program is a competitive grant program that identifies new technologies, different market sectors and more effective ways of implementing existing conservation programs. The Hotel Laundry Reduction Program's goal is to reduce the amount of water used in hotel laundering. Additionally, Metropolitan provides technical and financial support for member agencies to implement urban water conservation Best Management Practices (BMPs), developed by the California Urban Water Conservation Council.

Metropolitan also is active in developing and hosting conservation-geared educational programs. Metropolitan hosts technical workshops for member agency conservation coordinators, providing updates on new conservation devices, pilot projects, research projects and new program approaches. Metropolitan has developed conservation educational programs, geared for a variety of audiences, including continued school and adult community programs, Protector del Agua Training (water-wise landscaping and irrigation classes) and School Education Programs.

Research and reporting conducted by Metropolitan targets many conservation issues (e.g., water efficient fixtures and irrigation controllers, new technology, landscape water use requirements and application techniques, Residential Water-Use Efficiency Survey Program). For example, Metropolitan maintains nine California Irrigation Management Information System stations in support of various landscape programs. Metropolitan also provides support for conservation research, providing technical guidance involving the quantification and valuation of water savings.

Since the 1920s, Metropolitan and other agencies within Metropolitan's service area have been active in a variety of water recycling efforts, which involve the collection of wastewater that is currently discharged within the service area, treating that water to a suitable standard for specific uses and using the recycled water in lieu of potable supplies (Metropolitan 2000). Metropolitan has supported the use of recycled water for landscape and agricultural irrigation, other industrial and municipal purposes and groundwater replenishment, including the use of recycled water as a barrier against saltwater intrusion in groundwater aquifers (Metropolitan 2002). Currently more than half of the water recycling in California occurs in Metropolitan's service area (Metropolitan 2000). Through its various programs, Metropolitan estimates that a recycled water savings of 190,000 acre-feet occurred within its service area in 2001 (Metropolitan 2002).

Metropolitan supports water recycling efforts through direct funding of water recycling projects and participation in recycled water studies. Through February 2002, Metropolitan has provided funds totaling approximately $85 million to water recycling projects throughout its service area. Metropolitan has funding agreements for 53 water recycling projects, 37 of which were in operation during 2001, producing about 67,000 acre-feet of recycled water annually (Metropolitan 2002). The Local Resources Program, established in June 1998, is one means for recycled water and groundwater recovery projects to obtain funding, wherein member agencies submit project proposals for committee review and selection. The Southern California Comprehensive Water Reclamation and Reuse Study, a nonfederal partnership of seven local water agencies (including Metropolitan) and the State of California, was initiated in 1993 to identify regional water recycling systems (i.e., to match regional recycled water needs with available resources, including methods for conveying water). Preliminary conclusions from the study identified 34 short-term implementation projects with a potential to produce about 450,000 acre-feet per year of new recycled water supply (Metropolitan 2000, 2002).

Thus, while PVID and Metropolitan recognize the importance of conservation, it is considered an ongoing activity within Metropolitan's service area and not a feasible alternative to the proposed Program.

More Efficient Water Use on Farms within PVID

By using water more efficiently, PVID's water users theoretically could reduce their water use and still maintain current levels of agricultural production. For example, the use of drip irrigation could reduce the amount of water diverted from the Colorado River and applied to agricultural fields in the Palo Verde Valley.

This approach is not considered a feasible means of achieving the Program's objectives for two reasons. First, PVID's water use is calculated on the diversion-less-return method. The vast majority of water that is applied to fields but unused by crops returns to the Colorado River either through PVID's drains or via the groundwater aquifer. Thus, although the use of drip irrigation systems would reduce diversions, it would also reduce returns, for a negligible net decrease in water use using the diversion-less-return methodology employed by the Bureau of Reclamation. Secondly, The Law of the River provides PVID with a Priority 1 water right to irrigate 104,500 acres of Palo Verde Valley lands. Because PVID's Priority 1 water right is tied to number of acres being irrigated, not the amount of water applied to each of those acres, reducing the amount of water applied to each acre through the use of drip irrigation would not result in "saved" water. In other words, reducing the amount of farmland that is being irrigated at any one time (i.e., during a Program contract year) is a necessary component of achieving water savings. Thus, using more efficient irrigation methods without reducing the number or acres being irrigated is not considered a feasible project alternative and was not carried forward for detailed evaluation.

Retirement of Poorer Quality Lands

This alternative was recommended for analysis by the California Department of Food and Agriculture (see this agency's response to the Notice of Preparation, included in Appendix A). Under this alternative,

instead of altering crop rotation patterns to reduce irrigation levels, farmland would be retired for the 35-year term of the proposed Program.

This alternative would necessitate an approach different from that of the proposed Program to select fields for non-irrigation. First, an analysis of farmland quality in the Palo Verde Valley would be conducted prior to selecting which members of PVID would participate. This analysis would be based on input from potential Program participants and the NRCS (which has produced soils maps for the entire valley). The Program incentives (payments) would be structured with the intent of retiring fields with poorest soils from agricultural production. It should be noted that although some fields within the Palo Verde Valley have comparatively poorer soils than others, the vast majority of valley farmlands are rated as either Prime Farmland or Farmland of Statewide Importance (see Figure 4-1). Retired farmlands could not be converted to developed uses that consume water (e.g., residential, commercial or irrigated recreational fields) because this would offset the water savings associated with farmland retirement.

The effects of this alternative on agricultural resources would be similar to those associated with the proposed Program in terms of acres not being irrigated; however, because this alternative would specifically focus on poor quality fields, the lands remaining in agricultural production might be more productive than under the proposed Program. Even in the absence of specific incentives to do so, Program participants are already expected to rotate their poorer quality fields through the period of non-irrigation because these fields generally require the most work and produce the lowest returns. Over the long term, retiring poorer quality farmland would make it more difficult to resume current levels of agricultural production once the 35-year Program agreements expire.

With regard to controlling wind erosion, this alternative would require a different approach that reflects the long-term nature of land retirement. Because the retired land would not be subject to farming, the loss of soils associated with wind erosion would be considered more of an air quality impact than a soil resources impact. Establishment of vegetation would be required on the retired fields. (Theoretically, the field could be clod plowed every three years to control erosion, but this would be a much less efficient way to control erosion than the establishment of vegetation.) Revegetation with native habitat would be preferred; however, due to salt buildup on the fields, this may not be practical. The presence of vegetation would help reduce but would not eliminate wind erosion and the associated generation of PM_{10}.

Hydrological and water quality effects would be similar to those occurring under the proposed Program, except that reductions in groundwater and drain surface water elevations would be focused in specific areas as opposed to shifting throughout the valley in response to changing locations of fields not being irrigated. The retirement of fields for 35 years might lead to the abandonment of some smaller PVID drains serving only those fields. This alternative would not affect the Colorado River differently from the proposed Program because the same amount of water would be saved and an equal amount of water diverted at Lake Havasu instead of at Palo Verde Diversion Dam.

To the extent that this alternative might result in some PVID drains being taken out of service, it could result in a greater impact on wetland and riparian vegetation than the proposed Program (which would not remove any drains from service and which would have negligible effects on drain vegetation). The retired farmland could, however, potentially be used to reestablish native upland habitat (depending on the salt levels in the soil). While this could provide a biological resources benefit, it would diminish the probability that after 35 years the retired lands could be returned to active farming, resulting in a potentially significant impact related to conversion of farmland to non-agricultural uses. Because impacts related to biological and agricultural resources could be increased relative to the proposed Program, this option was not carried forward for detailed evaluation.

Shorter-term Agreement

Depending on the specific time frame selected, the use of a shorter-term agreement (i.e., less than 35 years) might not achieve the goal of providing a long-term water supply option for Metropolitan. Also, although this alternative would reduce the duration of Program-related effects, it would not reduce either their intensity or areal extent. Accordingly, a shorter-term agreement alternative was not carried forward for detailed evaluation.

Reduce Land Management Burden on Participants

This alternative, suggested by the California Department of Food and Agriculture, would entail additional financial assistance for participants to help implement required land management measures (e.g., weed control). This alternative would not change the environmental effects of the proposed Program and, pursuant to Section 15131 of the State CEQA Guidelines, social and economic effects are specifically excluded from being defined as effects on the environment. Additionally, the bi-annual payments to Program participants would be sufficient to cover costs associated with implementing the mandatory land management measures. Farmers concerned that these payments would not be adequate are under no obligation to participate in the proposed Program.

Subsidized Enhancement of Remaining Agricultural Land in PVID

The California Department of Food and Agriculture also suggested that the Draft EIR evaluate subsidizing enhancements of the productivity of remaining agricultural land, including better water pricing, enhanced water right guarantees and cost-sharing the implementation of water conservation BMPs. PVID and Metropolitan anticipate that some of the Program entry payments and bi-annual participation payments may be used to help increase productivity on other agricultural lands in the area. As described in Section 1.1.3, PVID already has a reliable right to Colorado River water. Given California's historical use of Colorado River water at amounts greater than the state's non-surplus year apportionment, obtaining increased or enhanced rights to Colorado River water for PVID is considered unachievable.

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CHAPTER 8.0 – SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES AND SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

Sections 15126.2(b) and (c) of the State CEQA Guidelines require discussion of (1) significant environmental effects that cannot be avoided if the proposed project is implemented and (2) significant irreversible environmental changes that would be caused by the proposed project should it be implemented, respectively. Where there are significant impacts that cannot be alleviated without imposing an alternate design, their implications and the reasons why the project is being proposed, notwithstanding the effect, should be described. Irreversible commitments of resources may include large commitments of nonrenewable resources and commitment of future generations to similar uses.

8.1 SIGNIFICANT ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED PROGRAM SHOULD IT BE IMPLEMENTED

The proposed Program would not significantly change the environment. As described in Chapters 3.0 and 4.0, the proposed Program would alter crop rotation patterns in the Palo Verde Valley, such that up to 29 percent of valley farmlands may not be irrigated under the proposed Program during any given contract year. This change would not be significant or cause significant environmental effects. Fields that are non-irrigated under the proposed Program would be returned to irrigation after a maximum continuous non-irrigation period of five years, and the proposed Program would not convert any farmlands to non-agricultural uses.

8.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROGRAM IS IMPLEMENTED

As described in Chapters 4.0 and 6.0, the proposed Program would not result in significant effects on the environment, nor would it incrementally contribute to significant environmental impacts.

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CHAPTER 9.0 – EFFECTS FOUND NOT TO BE SIGNIFICANT

A Lead Agency preparing a Draft EIR may use an Initial Study and Environmental Checklist to identify effects determined not to be significant and focus the Draft EIR on effects determined to be (potentially) significant (State CEQA Guidelines Section 15063(c)(3)). The State CEQA Guidelines require that the Draft EIR "contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR" (Section 15128).

In October 2001, PVID filed and circulated a Notice of Preparation for this Draft EIR (see Appendix A). The Notice of Preparation was accompanied by an Initial Study and Environmental Checklist that evaluated the proposed Program and identified several environmental issue/resource areas for which the proposed Program would have either no impact or a less-than-significant impact. This chapter briefly describes these environmental issue/resource areas and the reasons that the proposed Program was assessed as having no, or a less-than-significant, impact on them.

9.1 AESTHETICS

Scenic Vista

Vistas of the Palo Verde Valley are provided from surrounding elevated topography, such as the Palo Verde Mesa and the Big Maria, Mule and Dome Rock mountains. For example, golfers at the Blythe Golf Course, located on the Palo Verde Mesa, have intermittent views to the Palo Verde Valley during course play. From these elevated locations, vistas of the valley encompass the urban center of Blythe, agricultural fields, the Colorado River and the surrounding, relatively barren mountains. The appearance of fields within the Palo Verde Valley varies depending on the type of crops being grown and the fields' crop rotation patterns—fields with crops being actively irrigated appear various shades of green while non-irrigated fields appear brown. As an example of crop rotation patterns within the Palo Verde Valley, about 60,000 acres of alfalfa are rotated every three to five years into other vegetable or field crops. Under current conditions, actively farmed fields may be between crops for as little as three weeks or for months at a time.

The only noticeable physical change resulting from implementation of the proposed Program would be associated with alterations in crop rotation patterns. At any given time, there would be more fields visible that are not being irrigated than is the case under the current condition. Based on the results of a 1992–1994 Test Program, non-irrigated fields in that test program were fairly evenly spread throughout the valley (Metropolitan 1995). Because a maximum of 29 percent of the Palo Verde Valley farmlands would not be irrigated under the proposed Program at any one time, the overall appearance of the valley would remain that of an active agricultural area, and the proposed Program would have less-than-significant impacts on scenic vistas.

Scenic Resources within a State Scenic Highway

None of the highways traversing the Palo Verde Valley (i.e., I-10, U.S. Highway 95, State Highway 78) is designated as a state scenic highway within sight of the valley, and there are no other state-designated scenic highways that have views to the valley (Caltrans 2001). Accordingly, implementing the proposed Program would not affect scenic resources within a state scenic highway.

Visual Character or Quality

As described above, the overall appearance of the Palo Verde Valley would remain that of an active agricultural area if the proposed Program were implemented. Accordingly, implementing the proposed Program would not substantially degrade the existing visual character of the Palo Verde Valley or its surroundings.

Light or Glare

Implementing the proposed Program would not entail the installation or construction of any new sources of light or glare because no new facilities would be required to implement the proposed Program. Similarly, the Program-related decrease in irrigation within the valley would not cause new sources of light or glare.

9.2 AIR QUALITY

Odors

Implementing the proposed Program would not result in any odors because the contracts or agreements would not require the construction of any facilities that generate odors or the use of materials that emit odors. Because the proposed Program would result in fewer Palo Verde Valley lands being actively farmed at any given time, there would be corresponding reductions in the use of fertilizer within the valley, reducing the noticeable odor sometimes associated with fertilizer applications.

9.3 BIOLOGICAL RESOURCES

Local Policies or Ordinances

Implementing the proposed Program would not require tree removal or other ground-disturbing activities. Current PVID operating procedures, which include periodic maintenance and clearing of vegetation from canals and drains, would continue. Because the proposed Program would not require tree removal or new ground-disturbing activities, its implementation would not conflict with local policies or ordinances protecting biological resources (including Riverside County Ordinance No. 559 regulating the removal of trees or Imperial County's General Plan policy calling for the preservation of trees that contribute to community character or provide wildlife habitat) (Riverside County 1976, as amended; Imperial County 1993b).

9.4 CULTURAL RESOURCES

Historical Resources

Because implementation of the proposed Program would involve neither the construction of new facilities nor the expansion of farming activities, there would be no impacts to structures, and there would be no new ground-disturbing activities (which can affect buried historic resources such as archaeological and paleontologic sites). Accordingly, there would be no effect on any historical resources that may be present in the Palo Verde Valley.

Archaeological Resources

As described for "Historical Resources," above, implementation of the proposed Program would not involve any new ground disturbance. Agricultural operations would continue within the existing footprints of active, irrigated farms, but at a reduced level. The Program-related reduction in the level of agricultural operations within the Palo Verde Valley would not cause a change in any archaeological resources that may be located in the valley.

Unique Paleontologic Resource or Geologic Feature

Implementation of the proposed Program does not include any new ground disturbance that could affect paleontologic resources or unique geologic resources.

Human Remains

Because implementation of the proposed Program would not cause new ground-disturbing activity, no impacts would occur to buried human remains.

9.5 GEOLOGY AND SOILS

Fault Rupture

No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to fault rupture.

Seismic Ground Shaking

No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to strong seismic ground shaking.

Seismic-related Ground Failure, Including Liquefaction

No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to seismic-related ground failure. To the extent that groundwater levels may be slightly lower, there may a corresponding reduction in the potential for liquefaction in the Palo Verde Valley. This would be a minor but beneficial impact.

Landslides

No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to landslides.

Unstable Geologic Unit or Soil

Implementation of the proposed Program would not involve the construction of any new structures or expansion of any ground disturbing activities. Accordingly, the implementation of the proposed Program would neither affect nor be affected by the presence of unstable soils.

Expansive Soil

Implementation of the proposed Program would not involve the construction of any new structures or expansion of any ground disturbing activities. Accordingly, the implementation of the proposed Program would neither affect nor be affected by the presence of expansive soils.

Soils Incapable of Supporting Use of Septic Tanks/Alternative Disposal System

No septic tanks or alternative wastewater disposal systems would be required to implement the proposed Program. Accordingly, no adverse effects would occur related to soils incapable of supporting septic or alternative disposal systems.

9.6 HAZARDS AND HAZARDOUS MATERIALS

Transport, Use or Disposal of Hazardous Materials

The Program contracts or agreements between Metropolitan and participants would require that the participants implement weed control measures of their choice, including chemical, biological or mechanical methods in order to prevent the spread of weeds, their consumptive use of water and associated issues concerning the spread of plant disease, insects and other pests. Chemicals are currently employed for weed control throughout the Palo Verde Valley, and Program use would not differ much from existing agricultural practices. Weed control procedures implemented as part of the proposed Program would comply with local, state and federal regulations related to the use of herbicides, pesticides

and insecticides. The transportation, storage and use of these substances would be similar to existing conditions (i.e., current operating procedures) within the Palo Verde Valley.

Reasonably Foreseeable Upset and Accident Conditions

As described in "Transport, Use or Disposal of Hazardous Materials," above, the only use of hazardous materials associated with implementation of the proposed Program would be through chemical weed control, and this use would not differ substantially from existing safe agricultural practices.

Hazardous Materials within One-half Mile of Schools

By existing regulation, no spraying of certain controlled chemicals can be done within one-half mile of a school while children are present. Six schools are within one-half of a mile of farmland that might be in the Program area: Felix J. Appleby, Margaret White, and Ruth Brown elementary schools; Blythe Middle School, Palo Verde High School and Zion Lutheran School. Palo Verde Community College also is within one-half mile of agricultural fields. As described in "Transport, Use or Disposal of Hazardous Materials," above, the only use of hazardous materials associated with implementation of the Program agreements would be through chemical weed control, and this use would not differ from existing agricultural practices. Weed control procedures would comply with local, state and federal regulations related to the use of herbicides and pesticides. Thus, the implementation of the proposed Program would not result in hazardous materials emissions or the disposal of hazardous wastes near schools.

Listed Hazardous Material Sites

Implementation of the proposed Program would not require any new ground disturbance or the construction of any new facilities; accordingly, implementing the proposed Program would not create a hazard to the public or the environment through the development or disturbance of a hazardous materials site.

Airport Land Use Plan or within Two Miles of Public Airport

The Blythe Municipal Airport lies within PVID on the Palo Verde Mesa (seven miles west of the downtown area of the city of Blythe); however, implementing the proposed Program to temporarily not irrigate some agricultural lands within the valley would not result in an aviation safety hazard.

Vicinity of Public Airport or Private Airstrip

Implementation of the proposed Program would not require the construction of any new facilities or employ additional personnel; accordingly, implementing the proposed Program would not create a safety hazard related to people working or residing near public airports or private airstrips.

Emergency Response Plan or Emergency Evacuation Plan

Because the proposed Program would involve the temporary non-irrigation of agricultural fields rather than the construction, relocation, removal or obstruction of any structures or access routes, carrying out the proposed Program would not impair implementation of or physically interfere with any adopted emergency plans.

Wildland Fires

Implementation of the proposed Program would not require the construction of any new facilities or employ additional personnel; accordingly, implementing the proposed Program would not expose people or structures to risk of wildland fires. Although fields involved in the proposed Program would be non-irrigated, vegetation on these fields would either be removed or reduced to stubble, thus reducing the risk of spread of fire.

9.7 HYDROLOGY AND WATER QUALITY

Alteration of Existing Drainage Pattern Resulting in Erosion or Siltation

No courses of streams or rivers would be altered due to implementation of the proposed Program. Implementing the proposed Program would reduce the amount of water diverted from the Colorado River into the Palo Verde Valley for irrigation, with a corresponding reduction in the amount of water returned to the river through PVID drains. These changes would not require any physical alterations to PVID's system of canals and drains above and beyond those that occur as part of regular PVID maintenance activities (e.g., using rock weirs to maintain saturated conditions in drains). Because there would be no physical change to the Palo Verde Valley's drainage system and because the amount of water in this system would be reduced, there would be no increase in erosion or siltation off site.

Alteration of Existing Drainage Pattern Resulting in Flooding

As described above, implementing the proposed Program would not require any physical changes to PVID's system of canals and drains above and beyond those that occur as part of regular PVID maintenance activities. Implementing the proposed Program also would not affect the amount of natural runoff (i.e., stormwater runoff) in the Palo Verde Valley. The amount of irrigation runoff entering drains and returning to the Colorado River would be reduced because less river water would be diverted into the valley for irrigation purposes. Accordingly, implementing the proposed Program would lessen, rather than contribute to, the chance of flooding.

Stormwater Drainage Systems

As described above for "Alteration of Existing Drainage Pattern Resulting in Erosion or Siltation" and "Alteration of Existing Drainage Pattern Resulting in Flooding," implementing the proposed Program would not adversely affect drainage systems or stormwater runoff.

Housing within 100-year Flood Hazard

Implementation of the proposed Program would not involve the construction of any structures (housing or otherwise); therefore, no impacts to housing within a 100-year flood hazard area would occur with implementation of the proposed Program.

Structures within 100-year Flood Hazard

Implementation of the proposed Program would not involve the construction of any structures. Accordingly, implementing the proposed Program would not place structures that could impede or redirect flood flows within a 100-year flood hazard area.

Flooding

Implementation of the proposed Program would not involve the construction of any structures or the relocation of people; therefore, implementing the proposed Program would not expose people to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. Potential changes to the hydrology along the Colorado River associated with the proposed Program would be negligible and would not affect flood hazard levels.

Inundation

Implementation of the proposed Program would not expose people or structures to inundation by seiche, tsunami or mudflow.

9.8 LAND USE PLANNING

Division of an Established Community

Implementation of the proposed Program would rely on the use of existing facilities; thus, implementation of the proposed Program would not physically divide an established community.

Conflict with an Environmental Plan, Policy or Regulation

Implementation of the proposed Program would not result in the conversion of any existing land use to a new or different use. Accordingly, implementation of the proposed Program would not require review for

conformance with any applicable land use plan, policy or regulation. Nonetheless, relevant general plan guidance related to agricultural resources, soils, air quality, hydrology/water quality and biological resources is provided in Sections 4.1 through 4.5, respectively. Section 4.6 provides an assessment of the proposed Program's consistency with the Southern California Association of Governments' *Regional Comprehensive Plan Guide*.

Conflict with Habitat Conservation Plan or Natural Community Conservation Plan

The Palo Verde Valley portion of the PVID is not encompassed by an adopted Habitat Conservation Plan or Natural Community Conservation Plan (CDFG 2001); accordingly, implementing the proposed Program would have no impact on adopted Habitat Conservation Plans and Natural Community Conservation Plans. The relationship between the proposed Program and the proposed Lower Colorado River Multi-Species Conservation Program is described in Section 6.2.3 (Related Projects) of this Draft EIR.

9.9 MINERAL RESOURCES

Known and Locally Important Mineral Resources

Implementation of the proposed Program would require neither new ground disturbance/development, nor any new properties that may contain mineral resources to be set-aside for agricultural uses. Thus, implementation of the proposed Program would not result in any change in the availability of a known or important mineral resource.

9.10 NOISE

Noise Levels in Excess of Established Standards

Implementation of the proposed Program would not involve any new noise sources or elevated noise levels. Agricultural operations would continue on existing farms within the Palo Verde Valley, but at a reduced level, with an associated reduction in the duration of noise produced by farming activities. For example, because fewer fields would be in agricultural production, there would be less farm equipment use, with a corresponding reduction in the duration of engine noise. Accordingly, implementing the proposed Program would not expose people to, or generate noise levels in excess of, established standards.

Groundborne Vibration or Noise

Implementation of the proposed Program would not involve any new sources of noise or groundborne vibrations. Agricultural operations would continue on existing farms within the Palo Verde Valley, albeit at a reduced level. Accordingly, implementation of the proposed Program would neither generate, nor expose people to, excessive groundborne vibration or groundborne noise levels.

Permanent Increase in Ambient Noise Levels

Implementation of the proposed Program would not involve any increases in ambient noise levels in the Palo Verde Valley or vicinity. Land management practices implemented under the proposed Program, such as clod plowing, would not represent an increase over noise levels generated by other, similar agricultural operations such as tilling fields or harvesting crops.

Temporary or Periodic Increase in Ambient Noise Levels

Compared to current conditions, implementation of the proposed Program would not involve temporary or periodic increases in ambient noise levels in the Palo Verde Valley or vicinity. In fact, implementation of the proposed Program may result in temporary, localized decreases in ambient noise levels in the vicinity of non-irrigated fields due to the corresponding reduction in agricultural activity.

Noise Within Two Miles of Public Airport or Private Airstrip

Implementation of the proposed Program would not entail the construction of new facilities near a public airport or private airstrip (or anywhere else) or the resulting exposure of people to airport noise at anything over existing exposure levels.

9.11 POPULATION AND HOUSING

Existing Population, Housing and Employment Conditions

The Program area is situated within southeastern Riverside and northeastern Imperial counties. The city of Blythe contains the only sizable population concentration within the Program area. Table 9-1 provides a summary of selected population and housing data for the Program area, while Table 9-2 provides data for the two counties containing the Program area.

Population

According to the U. S. Census of 2000, the population of the incorporated city of Blythe and the neighboring unincorporated East Blythe community (much of which was annexed in 1998) was 20,463, of which 8,308 were institutionalized individuals within the two nearby prisons. Excluding institutionalized persons, the Blythe community grew from 9,939 to 12,158 persons during the 1990 to 2000 decade, a growth of 22.3 percent. Most of this growth was due to annexation of adjacent developed county areas. Within the entire Program area, the population remained relatively constant, decreasing slightly from 15,426 in 1990 to 15,242 in 2000, exclusive of the institutionalized population at the two prisons. SCAG projects that by 2010, the population of Blythe will grow to approximately 22,300 and

Table 9-1
POPULATION AND HOUSING – PROPOSED PROGRAM AREA

POPULATION		**1990**	**2000**
Project Area - Riverside County Portion			
Census Tract 458 - Block Group 3		3,278[1]	8,308[2]
Census Tract 459		1,732	1,951
Census Tract 460		1,691	1,613
Census Tract 461.01			2,854
Census Tract 461.02		9,181	2,247
Census Tract 461.03			2,619
Census Tract 462		1,253	3,335
Total		17,135	22,927
Project Area - Imperial County Portion[3]			
Census Tract 124 - Block Groups 1 & 2[4]		664	623
TOTAL PROJECT AREA POPULATION		**17,799**	**23,550**
Communities Within Project Area			
City of Blythe and East Blythe[5] (combined)		9,939	12,158[6]
Palo Verde		264	236
HOUSING UNITS	***1990***	***2000***	
Project Area - Riverside County Portion	***Total Units***	***Total Units***	***Vacant Units***
Census Tract 458 - Block Group 3	395	7	7
Census Tract 459	667	702	78
Census Tract 460	872	914	275
Census Tract 461.01		1,182	168
Census Tract 461.02	3,160	754	69
Census Tract 461.03		939	60
Census Tract 462	502	1,230	155
Total	5,596	5,728	812
Project Area - Imperial County Portion[3]			
Census Tract 124 - Block Groups 1 & 2[4]	626	544	232
TOTAL PROJECT AREA HOUSING UNITS	**6,222**	**6,272**	**1,044**
Communities Within Project Area			
City of Blythe and East Blythe[5] (combined)	3,489	4,893	788
Palo Verde	256	218	88

Source: U. S. Census 2000

Notes: 1-Includes 2,373 institutionalized persons.

2-Consists of 8,308 institutionalized persons.

3-Although Block Group geographic boundaries extend beyond the actual Imperial County boundaries of PVID; most of the population and housing shown in the table is within the PVID service area.

4-Block Group boundaries were changed between the 1990 and 2000 census; therefore, Block Groups 1 and 2 apply to 1990 data, while only the Block Group 2 designation applies to 2000 data.

5-East Blythe consists of unincorporated area contiguous to the city of Blythe; most of the populated area of East Blythe was annexed to the city between 1990 and 2000.

6-City of Blythe data exclude prison population (8,308 institutionalized persons) within the incorporated "island" approximately 16 miles west of Blythe.

Table 9-2
POPULATION AND HOUSING - RIVERSIDE AND IMPERIAL COUNTIES

POPULATION	**1990**	**2000**	**Growth**
Riverside County	1,170,413	1,545,387	32.0%
Imperial County	109,303	142,361	30.2%
Total	1,279,716	1,687,748	31.9%
HOUSING UNITS			
Riverside County	483,847	584,674	20.8%
Imperial County	36,559	43,891	20.1%
Total	520,406	628,565	20.8%
OCCUPIED HOUSING UNITS			
Riverside County	402,067	506,218	25.9%
Imperial County	32,842	39,384	19.9%
Total	434,909	545,602	25.5%

that by 2025 it will grow to approximately 22,400 (SCAG 2002). However, estimates of current and projected population numbers are debated. For example, the California Department of Finance (2001) estimated that the January 1, 2001 population for Blythe was 29,950. It is important to note that the California Department of Finance estimates are notably higher than the census data or SCAG projections because the state holds the position that the U.S. Census undercounted California's population by more than 500,000 people.

The Chuckwalla and Ironwood State Correctional Facilities are located approximately 16 miles west of the center of Blythe within an island incorporated by the city of Blythe. Occupancy began in 1988 and the U.S. Census indicates that by 1990, 2,373 persons were institutionalized at that location. By 2000, that figure had grown to 8,308 persons.

During the same ten-year period, Riverside County grew from 1,170,413 to 1,545,387 persons, a growth rate of 32.0 percent. Similarly, Imperial County grew from 109,303 to 142,361 persons, a growth rate of 30.2 percent. SCAG projects that, compared to 2000 populations, Riverside County will grow 40 percent by 2010 and 82 percent by 2025, while Imperial County is projected to grow approximately 36 percent by 2010 and 102 percent by 2025 (SCAG 2001).

Housing

The inventory of housing units within the Program area has grown only slightly over the period from 1990 to 2000. In 1990, the U.S. Census counted 6,222 housing units within the Program area; this figure

had grown to 6,272 by 2000. Within the city of Blythe and the unincorporated East Blythe, however, housing units grew substantially from 3,489 in 1990 to 4,893 by 2000, or 40.2 percent. As with population growth, most of this increase was due to annexations of adjacent developed county areas.

Riverside County as a whole, on the other hand, experienced significant housing growth during the 1990 – 2000 period. According to the 1990 census, the total housing unit count amounted to 483,847, of which 402,067 were occupied (83 percent). By 2000, the total had risen to 584,674, an increase of nearly 21 percent. Of those, 506,218 were occupied, an occupancy rate of nearly 87 percent.

In Imperial County, the housing unit inventory grew from 36,559 to 43,891 units during the same ten-year period, an increase of 20 percent. Occupied housing units grew from 32,842 to 39,384, also an increase of 20 percent. The county's housing unit occupancy rate remained constant at 90 percent.

Employment

The economy of the proposed Program's area is based primarily on agriculture, services and government sectors. While agriculture historically has been the largest sector of employment, growth in the services and government sectors has been substantial. Tourism services include the numerous motels, restaurants, campgrounds and other Colorado River-related recreational features of the area. In addition, Blythe is the second largest port-of-entry to California with over one million motor vehicles entering the state annually on I-10. The motels and restaurants of the Program area serve the needs of these travelers as well.

Program area employment within the agricultural sector is estimated at approximately 900 persons (City of Blythe and Blythe Chamber of Commerce 1998), supported by a services sector comprised of suppliers of equipment, seed, fertilizer, pesticides, transportation and other services. Agriculture also is supported by the manufacturing sector through various food processing companies.

The completion and occupancy of the Chuckwalla and Ironwood State Correctional Facilities to the west of central Blythe has been a large factor in the non-agricultural sector of the local economy. According to the city of Blythe and the Blythe Chamber of Commerce, employment at the two facilities totals over 1,900 persons, but not all live in Blythe.

Table 9-3 provides a list of the major employers in the city of Blythe and covers both manufacturing and non-manufacturing sectors.

Table 9-3
LARGEST EMPLOYERS IN THE BLYTHE AREA

Name of Employer	No. of Employees	Products/Services
Ironwood State Correctional Facility	1,130	Level III Prison
Chuckwalla State Correctional Facility	789	Level II Prison
Palo Verde Unified School District	420	Public School System
Morgan Corporation	232	Manufacturing
Palo Verde Hospital	135	Medical
County of Riverside	120	Public Administration
K-Mart	120	Retail
City of Blythe	102	Municipality
Albertsons	90	Retail
Palo Verde Irrigation District	82	Public Utility
Palo Verde Community College District	60	Community College

Source: city of Blythe 2001c

Displacement of Housing

Implementing the proposed Program would not cause the displacement of any houses because no construction or other physical changes to PVID's facilities or to participating farms would be required. No farmers' or workers' homes would be displaced as part of the proposed Program, and the Program's payments to participants would help stabilize the participants' incomes. Based on the scope of the proposed Program, it would not affect the local housing market.

Displacement of People

Pursuant to Section 15131 of the State CEQA Guidelines, social and economic effects are specifically excluded from being defined as effects on the environment. The potential for the proposed Program to affect farm labor employment within the Palo Verde Valley, however, has been examined. Although some farm labor would be required to implement land management measures mandated under the proposed Program, this would represent less farm labor than is required to prepare fields, plant crops, tend crops, harvest them and transport the agricultural products to market. Accordingly, PVID projects that less farm labor would be required if the proposed Program is implemented when compared to baseline conditions. No farm workers or others would be physically displaced by the proposed Program; however, it is probable that some farm workers experiencing reduced work opportunities as a result of the proposed Program would seek other employment opportunities, some of which might be outside of the Program area. Thus, it is possible that some local farm workers might move from the Palo Verde Valley area to other locations. It is also possible that migratory farm workers that formerly sought employment opportunities in the Program area may elect to seek seasonal employment in other locations. Based on the anticipated changes in employment opportunities, any farm worker relocations (which might include

migratory workers) due to implementation of the proposed Program would not result in the construction of replacement housing elsewhere.

9.12 PUBLIC SERVICES

Fire Protection

No new development would result from implementation of the proposed Program. Although non-irrigated fields would be drier than irrigated fields, plant material (potential fuel for fires) would be minimal, consisting of stubble residue. Per the mandatory land management measures to be carried out by participants of the proposed Program, weed growth would be managed during periods of non-irrigation. Thus, implementation of the proposed Program would not require additional or modified fire personnel, services or facilities, nor would its implementation affect emergency access to facilities.

Local fire-fighters access canal waters as necessary for fire-fighting activities. Canal water levels would, for the most part, remain the same under the proposed Program as under current conditions. PVID sets canal water levels at the elevations necessary to ensure that there is enough head (water pressure) to carry water from the canals through headgates to the privately owned irrigation ditches that serve the valley's agricultural fields. As a result, the surface water elevation of PVID's canals generally would not be changed as a result of the proposed Program. The exception to this would be for the tail end of lateral canals that serve only a few fields each. In those instances, the canals would not carry water when the fields they serve are not being irrigated. If fire-fighters needed water within a dry canal, PVID could quickly fill the dry channel with water. Because the vast majority of canals would remain unaffected in terms of water level, the proposed Program would have a less-than-significant impact on local fire department use of canals as a source of water for fire-fighting activity.

Police Services

No new development would result from the implementation of the proposed Program. Thus, implementation of the proposed Program would not increase demand for or place additional requirements on police protective services.

Schools

No new development or increase in population would result from implementation of the proposed Program. Thus, implementation of the proposed Program would not increase demand for or place additional requirements on schools in the Palo Verde Unified School District. Accordingly, although there may be changes in the local population during the implementation of the proposed Program, there would be a less-than-significant effect by the proposed Program on local school district enrollment patterns.

Parks

No new development or increase in population would result from the implementation of the proposed Program. Thus, implementation of the proposed Program would not adversely impact or require additional or modified park services.

Other Public Facilities

No new development or increase in population would result from the implementation of the proposed Program. Thus, implementation of the proposed Program would not adversely impact or require additional public services or facilities.

9.13 RECREATION

Effects on the Colorado River

For the reasons described in Section 4.4, the proposed Program would have only a minor effect on water surface elevations in the Colorado River. Maximum and minimum water surface elevations between Parker Dam and Palo Verde Diversion Dam would not be reduced, although the duration of peak flows would be shorter by less than one-half hour. The average water surface elevation between Parker Dam and Palo Verde Diversion Dam would be reduced by less than 1.8 inches. Between Palo Verde Diversion Dam and the mouth of PVID's Outfall Drain, average water surface elevations actually would increase by approximately one inch. Below the mouth of PVID's Outfall Drain, the proposed Program would have no net effect on river flows or water surface elevations. Accordingly, the proposed Program would not affect the viability of any existing or proposed recreational facilities (such as boat docks) along the lower Colorado River or its backwaters, nor would changes in river flow noticeably affect recreational activities such as boating, swimming or fishing.

Fishing in PVID's Canals and Drains

Canal water levels would, for the most part, remain the same under the proposed Program as under current conditions. PVID sets canal water levels at the elevations necessary to ensure that there is enough head (water pressure) to carry water from the canals through headgates to the privately owned irrigation ditches that serve the valley's agricultural fields. As a result, the surface water elevation of PVID's canals generally would not be changed as a result of the proposed Program. The exception to this would be for the tail end of lateral canals that serve only a few fields each. In those instances, the canals would not carry water when the fields they serve are not being irrigated. These lateral canals are often dry under normal operating conditions and would provide sub-par fishing even if the proposed Program would not be implemented.

Larger drains, such as PVID's Outfall Drain, would continue to carry substantial return flows to the Colorado River, and smaller drains (which present fewer fishing opportunities) also would retain some

level of flow year-round. PVID would maintain water levels upstream from drain siphons at or near current levels in order to allow the siphons to continue to function. Based on these factors, the proposed Program would affect fishing at PVID's canals and drains to a less-than-significant level.

Increased Use or Construction of Recreational Facilities

No new development would result from implementing the proposed Program. As described in Chapter 5.0 (Growth Inducing Impacts), the proposed Program would not induce population growth. Accordingly, implementing the proposed Program would not increase the use of existing neighborhood and regional parks or other recreational facilities. The proposed Program would not require any changes to the level of irrigation provided at valley parks and recreational facilities. Similarly, it would not include the construction or expansion of recreational facilities. Hence, there would be no impact by the proposed Program on/to such facilities.

9.14 TRANSPORTATION/TRAFFIC

Increase in Traffic

Implementation of the proposed Program would not involve any new development, require additional personnel or result in population increases. Thus, implementation of the proposed Program would not cause an increase in traffic that is substantial in relation to existing traffic loads and street capacities.

Level of Service Standard

As noted above, implementation of the proposed Program would not generate traffic and, therefore, would not cause established level of service standards for designated roads or highways to be exceeded.

Air Traffic Patterns

With the implementation of the proposed Program, agricultural operations would continue on existing farms within the Palo Verde Valley. There would probably be a moderate reduction in the number or duration of small aircraft flights over the Palo Verde Valley for the aerial application of pesticides (crop dusting) because fewer fields would be in agricultural production at any one time. This would not change the general location of these flights, and the decrease in flights would not constitute a safety risk.

Design Hazard

Implementation of the proposed Program would not require any modifications to the existing transportation system. The Palo Verde Valley is an agricultural area, and the use of farm equipment on public roads is routine, expected and accommodated. Thus, implementation of the proposed Program would not cause an increase in hazards due to a design feature or incompatible uses.

Emergency Access

Implementation of the proposed Program would reduce the amount of farmland within the Palo Verde Valley under irrigation at any one time; a reduction in irrigated farmland along with the slight reduction of the use of mobile farm equipment would not affect existing roadways or access routes. Thus, implementation of the proposed Program would not result in inadequate emergency access.

Parking Capacity

Implementation of the proposed Program would reduce the amount of farmland within the Palo Verde Valley under irrigation at any one time. Because implementing the proposed Program would not require additional personnel or result in population increases, it would not create demand for new parking or result in inadequate parking capacity.

Alternative Transportation

Reducing the amount of farmland under irrigation in the Palo Verde Valley would not conflict with adopted policies, plans, or programs supporting alternative transportation.

9.15 UTILITIES AND SERVICE SYSTEMS

Water and Wastewater Treatment and Storm Water Drainage

Implementation of the proposed Program would not produce or utilize wastewater. Thus, implementation of the proposed Program would not be subject to regional wastewater treatment requirements. In addition, implementation of the proposed Program would not result in the construction of new water or wastewater treatment facilities, construction of new storm water drainage facilities or expansion of existing facilities.

Sufficient Water Supplies

Implementation of the proposed Program would not require additional water supplies. To the contrary, the proposed Program would rely on the contractual non-irrigation of fields to save water, which would help Metropolitan meet water demand within its service area.

Wastewater

Implementation of the proposed Program would not generate wastewater; accordingly, no impact would occur.

Solid Waste

The non-irrigation of certain farmlands within the Palo Verde Valley would not create solid waste; accordingly, implementation of the proposed Program would not have an effect on landfills or result in any substantial changes to existing solid waste programs within the Palo Verde Valley.

Hydroelectric Power Generation

The proposed Program would reduce flows at two facilities that generate hydroelectric power on the lower Colorado River: Parker Dam and Headgate Rock Dam. (Palo Verde Diversion Dam does not generate hydroelectric power.) The amount of electricity generated at Parker Dam and Headgate Rock Dam varies annually. Parker Dam's hydroelectric powerplant has a rated capacity of 120,000 kilowatts, and the rated powerplant capacity at Headgate Rock Dam is 19,500 kilowatts (Bureau of Reclamation and CVWD 2001:3-157). Based on previous Bureau of Reclamation assessments of how flow reductions would affect hydroelectric power generation (Bureau of Reclamation and CVWD 2001; Bureau of Reclamation 2002), the proposed Program would result in an approximately 1.5 percent reduction in power generation at Parker Dam and approximately 0.4 percent at Headgate Rock Dam. These reductions would be within the normal range of annual fluctuations in power generation at both facilities and would represent a less-than-significant utilities impact.

CHAPTER 10.0 – AGENCIES AND ORGANIZATIONS CONSULTED

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CHAPTER 13.0 – GLOSSARY OF TERMS AND ACRONYMS/ABBREVIATIONS

13.1 GLOSSARY OF TERMS

acre-foot. An acre-foot is equivalent to the amount of water that would cover one acre to a depth of one foot (approximately 326,000 gallons). It is estimated that an average southern California family of four consumes about one-half an acre-foot of water a year for all of the family's water uses in and around the house.

alluvial. Pertaining to alluvium; recent unconsolidated sediments.

aquifer. Stratum or zone below the surface of the earth capable of producing water as from a well.

backwater. Body of water of the same trend as a river and fed from it at the lower end by a back flow, i.e., oxbow lakes, abandoned river channel ponds, floodplain ponds and secondary river channel pools. Usually in the plural. Some man-made backwaters are connected to the river by inlet pipes.

basaltic beds. Discrete layer of material, a seam or deposit, comprised of basalt; a fine-grained, dark-colored igneous rock (rock formed by solidification of hot mobile material/magma).

baseload area. For the proposed Program, refers to 6,000 acres, or a lesser acreage in certain years, of Program lands designated as non-irrigated acres as agreed upon by Metropolitan and participants.

basic apportionment. Non-surplus year apportionment or allocation of water.

bench. A strip of relatively level earth or rock, raised and narrow, or a small terrace or level platform breaking the continuity of a slope.

brushing. Vegetation removal, used to clear drain banks.

cemented gravels. Gravel consolidated or bound together by a chemically precipitated material (cement).

cleaning. As opposed to "brushing," drain cleaning entails the removal of deposited sediment and weed growth and restoration of the designed drain bank shape.

clod plowing. Erosion control measure, whereby a field is tilled while it is wet, producing large, damp clumps of soil. These wet clods of soil retain a relatively hard crust when dry and are less susceptible to erosion.

contract year. For the proposed Program, the period extending from August 1 of one calendar year through July 31 of the following calendar year.

critical habitat. As defined under the federal Endangered Species Act, critical habitat is a specific geographic area(s) that is essential for the conservation of a federally threatened or endangered species and that may require special management and protection.

crop rotation. The practice of farming the same ground with different crops in sequence and/or not actively farming a field temporarily, to achieve various benefits (e.g., higher yields, improved soil quality).

dip-slip. Movement along earthquake faults in the vertical direction, as opposed to strike-slip or movement in the horizontal direction.

diversion. As used in this Draft EIR, the redirection of water from the Colorado River into a water conveyance system such as an aqueduct or canal.

diversion-less-return. Method for calculating water use for the purpose of complying with the United States Supreme Court 1964 decree in *Arizona v. California*, in which consumptive use is defined to be equal to the amount of water diverted from the source (e.g., Colorado River) minus the amount of surface and subsurface water returned to the source.

double cropping. The practice of growing/farming two or more crops on the same ground within one year.

edaphic. Influenced by the soil rather than by the climate.

eolian. Wind derived.

ephemeral. Lasting for a very brief time. With regard to streams, rivers and washes, carrying water only after precipitation.

fanglomerate. Material composed of heterogeneous materials that were originally deposited in an alluvial fan but have, since deposition, been cemented into solid rock.

Farmland of Statewide Importance. Farmland designation/classification assigned protective legal requirements by the U.S. Department of Agriculture. See also Prime Farmland and Unique Farmland.

floodplain. The portion of a river valley, adjacent to the river channel, which is built of sediments during the present regimen of the stream and which is covered with water when the river overflows its banks at flood stages.

granitic rocks. Rocks composed of granite or granite-like rock; igneous rocks (rocks formed by solidification of hot mobile material/magma) that contain coarse- and medium-sized grains.

Highly Erodible Lands (HEL). Highly Erodible Lands is a classification of soil types by the Natural Resource Conservation Service. Fields consisting of over two-thirds HEL soils require Farm Service Agency Conservation Plans under some U.S. Department of Agriculture economic benefit programs.

Law of the River, The. Collection of compacts, federal laws, international treaty, court decisions and decrees, contracts and regulations, and agreements that address rights to use Colorado River water.

lister. A type of plow used to prepare the ground for planting by producing furrows and ridges.

Lower Division States. California, Arizona and Nevada. (The "Lower Division" also includes small portions of Utah and New Mexico that drain into the Colorado River system below Lee Ferry.)

metamorphic rocks. Rocks that have formed in the solid state in response to pronounced changes of temperature, pressure and chemical environment.

mossing. Removing aquatic weeds, which restrict flow, from canals.

net water toll acres. Area charged for using irrigation water—includes area in private ditches, field borders, and private roads adjacent to or within the irrigated area. "Net" is used to distinguish area from gross water toll acres, which includes multiple cropping acreages during calendar year. For example, 40 total-owned acres could have 38 net water toll acres, 37 crop growing acres, and if it all grows lettuce, broccoli and melons during a single calendar year, then it would have 114 gross water toll acres.

non-irrigation. Temporary condition whereby farmland is not irrigated for a period of time.

operational spill water. Water diverted from the Colorado River but not used and returned to drainage channels or to the River.

orthophoto. An aerial photograph corrected to remove distortion caused by parallax (which results from the curvature of a camera lens) and variations in terrain elevation.

playa. The shallow central basin of a desert plain, in which water gathers after a rain and is evaporated.

PM_{10}. Particulate matter equal to or less than ten microns in diameter.

Prime Farmland. Farmland designation/classification assigned protective legal requirements by the U.S. Department of Agriculture. See also Unique Farmland and Farmland of Statewide Importance.

proposed Program area. As used in this Draft EIR—lands in the Palo Verde Valley below the Palo Verde Diversion Dam that are within California portion of the Palo Verde Irrigation District, consisting of approximately 91,000 acres of irrigated agricultural fields.

refugia. Plural for a biological refuge. An area that has escaped ecological changes occurring elsewhere and so provides a suitable habitat for relict/remnant species.

residue. Mulch or other small grain equivalent material added to soils before tilling to help hold clods together. May also refer to stubble, as in stubble residue. Increases effectiveness of "clod plowing."

rip rap. Large rocks used within waterways to minimize erosion damage.

riparian. Of or pertaining to the bank of a river, as in habitat.

river mile. One mile along the course of a river. Because rivers often meander, distances between two points measured in river miles are often longer than the distance between those two points if measured in a straight line.

saltation. Wind erosional process wherein soil particles are picked up by the wind, carried a short distance, and then dropped back to the ground. (The impact of these fallen particles can cause other soil particles to detach and also become subject to wind erosion.) Saltation typically affects soil particles in the 0.05 millimeter to 0.5 millimeter diameter range.

sedimentary. Describing rock formed of sediment, including rocks formed by fragments deposited in water or by precipitation from solution or from secretions of organisms.

siphon. Pipe placed in canal or drain carrying flow from one side to the other. Usually required for a road or canal to cross canal or drain. Pipe is usually submerged to get the longest useable life out of the pipe.

small grain equivalent material. Relates to the type, amount and orientation of residue to its equivalent in pounds per acre of small grain residue or growing crop in a reference condition.

sod remnants. Remnants of a grass crop, left in place on an agricultural field.

space building release. Release of water to make storage space available in a reservoir for anticipated flood control needs. As used in the Inadvertent Overrun and Payback Policy, the term applies specifically to Lake Mead.

stage. Surface water elevation as measured against a reference point.

State Water Project. A state-operated water storage and delivery system in California that consists of reservoirs, aqueducts, powerplants and pumping plants to store water and distribute it to 29 urban and agricultural water suppliers in northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast and southern California.

stubble residue. Crop roots and stalks left in place after the respective crop has been harvested.

subvention. Payment or subsidy.

surface creep. Wind erosional process wherein the wind stream pushes soil particles along the surface. Surface creep typically occurs with larger soil particles (over 0.5 millimeter in diameter).

suspension. Wind erosional process wherein small soil particles (less than 0.05 millimeter in diameter) are picked up and carried by the wind.

tailwater. Water contained in the area below a dam or other waterway obstruction. For PVID, it also refers to excess irrigation water that accumulates at the end of the field during or after an irrigation or heavy rain event.

topsoil. Fertile, dark-colored surface layer of soil, often containing a substantial seed bank.

Unique Farmland. Farmland designation/classification assigned protective legal requirements by the U.S. Department of Agriculture. See also Prime Farmland and Farmland of Statewide Importance.

upland. With reference to habitat, areas not associated with water.

volcanic rocks. Igneous rocks (rocks formed by solidification of hot mobile material/magma) that have been poured out or ejected at or near the earth's surface.

water toll fee. Flat fee per water toll acre of land charged for participation in an irrigation system/district.

Williamson Act. California Land Conservation Act of 1965 (California Government Code Sections 51200–51297.4), which provides for lowered property taxes for lands maintained in agricultural and certain open space uses. The Williamson Act is implemented by regional governments through contracts with individual landowners.

windy season. For the Palo Verde Valley, March through May.

xeric. Low water use.

13.2 ACRONYMS AND ABBREVIATIONS

AAC	All American Canal
AGR	agriculture supply (with reference to beneficial uses of water)
AMSL	above mean sea level
AQUA	aquaculture (with reference to beneficial uses of water)
Basin Plan	*1994 Water Quality Control Plan, Colorado River Basin- Region 7*
BLM	U.S. Department of the Interior, Bureau of Land Management
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDC	California Department of Corrections
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CE	California listed Endangered
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFP	California Fully Protected
CNPS	California Native Plant Society
CNPS L1B	CNPS ranking, indicating "Rare, threatened or endangered in California and elsewhere. Eligible for state listing."
CNPS L2	CNPS ranking, indicating "Rare, threatened or endangered in California but more common elsewhere. Eligible for state listing."
CNPS L3	CNPS ranking, indicating "Distribution, endangerment and/or taxonomic information needed."
CNWR	Cibola National Wildlife Refuge
COLD	cold freshwater habitat (with reference to beneficial uses of water)
CP	California Protected, permit required for take by CDFG
CSC	California Species of Concern
csf	cubic feet per second
CT	California listed Threatened
CVWD	Coachella Valley Water District
CWA	Clean Water Act
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FE	Federally listed Endangered
FPD	Federally Proposed Delisting
FPT	Federally Proposed Threatened
FSC	Federal Species of Special Concern
FT	Federally listed Threatened
GMC	SCAG's Growth Management Chapter
GWR	groundwater recharge (with reference to beneficial uses of water)

HCP	Habitat Conservation Plan
HEL	Highly Erodible Lands
ICAPCD	Imperial County Air Pollution Control District
IID	Imperial Irrigation District
IND	industrial service supply (with reference to beneficial uses of water)
ISG	Interim Surplus Guidelines (formerly referenced as Interim Surplus Criteria)
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
LROC	Long-Range Operating Criteria
M.A.R.S.H.	Matching Aid to Restore States Habitat (a Ducks Unlimited-sponsored program)
MDAQMD	Mojave District Air Quality Management District
Metropolitan	The Metropolitan Water District of Southern California
mg/L	milligrams per liter
MUN	municipal and domestic supply (with reference to beneficial uses of water)
NEPA	National Environmental Policy Act
NNS	no numerical standard
NOP	Notice of Preparation
NO_x	oxides of nitrogen
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
P.L.	Public Law
PM_{10} or PM-10	particulate matter equal to or less than 10 microns in diameter
ppm	parts per million (usually interchangeable with mg/L)
POW	hydropower generation (with reference to beneficial uses of water)
Program	Land Management, Crop Rotation and Water Supply Program
PVID	Palo Verde Irrigation District
RARE	preservation of rare, threatened or endangered species (with reference to beneficial uses of water)
RCPG	SCAG's Regional Comprehensive Plan and Guide
REC I	contact water recreation (with reference to beneficial uses of water)
REC II	non-contact water recreation (with reference to beneficial uses of water)
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SCH	(California Office of Planning and Research) State Clearinghouse
SCS	U.S. Soil Conservation Service (now known as NRCS)
SDCWA	San Diego County Water Authority
Secretary	Secretary of the Interior
SGE	small grain equivalent
SU	subunit
SWRCB	State Water Resources Control Board
TDS	total dissolved solids

U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Department of the Interior, Fish and Wildlife Service
USGS	U.S. Department of the Interior, Geological Survey
WARM	warm freshwater habitat (with reference to beneficial uses of water)
WILD	wildlife habitat (with reference to beneficial uses of water)

Palo Verde Irrigation District
Land Management, Crop Rotation and Water Supply Program
Draft Environmental Impact Report

APPENDICES

APPENDIX A	Notice of Preparation and Responses Received
APPENDIX B	Hydrology and Water Quality Technical Report
APPENDIX C	Assessment of Biological Resources Associated with Palo Verde Valley Agricultural Drains

APPENDIX A

Notice of Preparation and Responses Received

APPENDIX B

Hydrology and Water Quality Technical Report

APPENDIX C

Assessment of Biological Resources Associated with Palo Verde Valley Agricultural Drains

APPENDIX A

PREFACE

This appendix includes the Notice of Preparation (NOP) along with the Initial Study and Environmental Checklist. These are followed by a table summarizing comments received in response to the NOP and copies of the letters received. The NOP, Initial Study and Environmental Checklist follow the same page numbering system used when these documents originally were distributed to the public. The table summarizing comments received in response to the NOP and copies of the letters received are numbered A-1, A-2, A-3, etc. See Section 1.3 of the Draft EIR regarding the NOP filing process, publication of public notices and distribution of the NOP, Initial Study and Environmental Checklist to agencies and members of the public.

INITIAL STUDY AND ENVIRONMENTAL CHECKLIST

BACKGROUND DATA

1. Project title: PVID Land Management, Crop Rotation and Water Supply Program

2. Lead agency name and address: Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

3. Contact person and phone number: Ed Smith, General Manager
Palo Verde Irrigation District
(760) 922-3144

4. Project location: The proposed Land Management, Crop Rotation and Water Supply Program (Program) would be implemented at various irrigated farmlands within the California portion of the Palo Verde Valley and below the Palo Verde Diversion Dam lying within the Palo Verde Irrigation District (PVID). PVID is located along the Colorado River in southeastern Riverside and northeastern Imperial counties (approximately 200 miles east of Los Angeles). Between 6,000 and 26,500 of the estimated 91,000 irrigated acres in the Palo Verde Valley portion of PVID would not be irrigated in a year under the proposed Program. Lands on the Palo Verde Mesa serviced by PVID would not be included as part of the proposed Program.

5. Project sponsor's name and address: Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

6. General plan designation: Specific farmlands within the Palo Verde Valley portion of PVID that would be included as part of the proposed Program have not been selected yet. Irrigated farmlands eligible to participate in the proposed Program are generally designated for agricultural use in Riverside and Imperial counties' general plans.

7. Zoning: Specific farmlands within the Palo Verde Valley portion of PVID that would be included as part of the proposed Program have not been selected yet. Irrigated farmlands eligible to participate in the proposed Program are generally zoned for agricultural use by Riverside and Imperial counties.

INTRODUCTION, REGIONAL SETTING AND DESCRIPTION OF THE PALO VERDE IRRIGATION DISTRICT

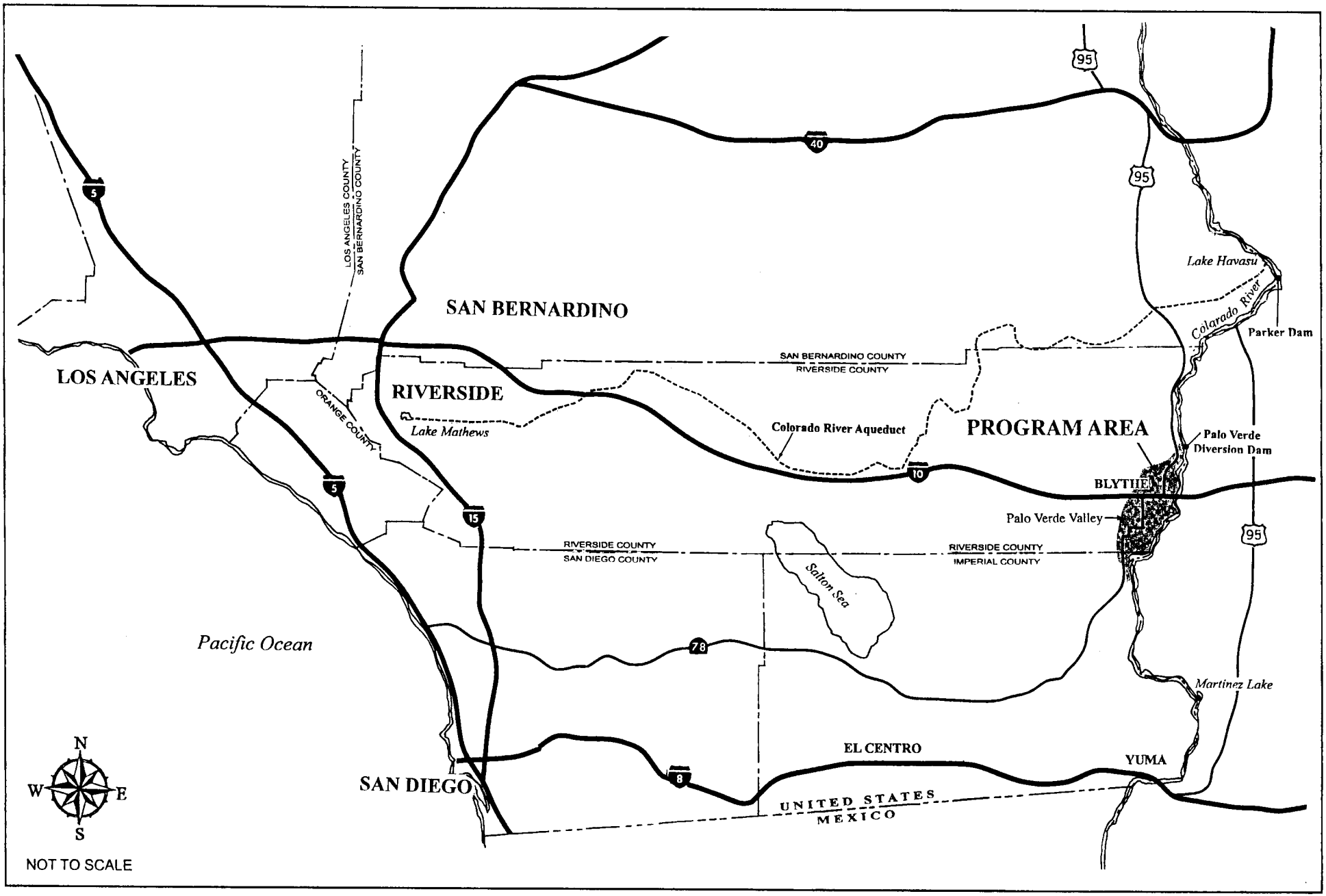
PVID and The Metropolitan Water District of Southern California (Metropolitan) propose to commence a Land Management, Crop Rotation and Water Supply Program (Program) in the California portion of the Palo Verde Valley within PVID (see Figures 1 and 2). The proposed Program is planned to develop a flexible and reliable water supply for Metropolitan of 25,000 acre-feet[1] up to approximately 111,000 acre-feet of Colorado River water per year for 35 years. The proposed Program will also assist in stabilizing the farm economy within the Palo Verde Valley through a one-time entry payment and bi-annual payments applicable to participants in the proposed Program and through providing a funding mechanism for future, as yet undetermined, community improvement projects. Although the exact agreement structure has not yet been arrived at, two types of agreements are contemplated: (1) a Program agreement between PVID and Metropolitan, and (2) land contracts, each with a term of 35 years, between Metropolitan and participants in the Palo Verde Valley. Farmlands would be voluntarily committed to the proposed Program by an estimated 60 to 70 land contracts. Water 'saved' by the proposed Program would be made available to Metropolitan to help meet existing water demands within its service area.

PVID contains approximately 130,360 acres in Riverside and Imperial counties, 103,632 acres of which are in the Palo Verde Valley. The remaining 26,728 acres of PVID are located on the Palo Verde Mesa and would not be included in the proposed Program. An estimated 91,000 acres of PVID's valley lands are irrigated. Only valley lands in PVID below the Palo Verde Diversion Dam would be eligible to participate in the proposed Program. Major crops planted in the Palo Verde Valley include alfalfa, cotton, wheat, sudan grass, melons, lettuce and other vegetables. The Colorado River, which acts as the boundary between Arizona and California, forms PVID's eastern and southern boundaries.

The Palo Verde Valley is approximately 9 miles wide and 30 miles long. The valley is relatively level, ranging in elevation from about 290 feet above sea level at its northern end to about 220 feet above sea level at its southern end. Valley soils are alluvial in nature, having been laid down in past years by Colorado River floods. These alluvial soils range in texture from fine grain clays to silty loams to light sandy soils, with the predominant soil being a sandy loam. The entire valley is underlain with permeable sand at shallow depths.

The Palo Verde Valley typically experiences a long, hot growing season that is ideal for agriculture. Mild winters, with a minimum of frost, permit growing of crops year round.

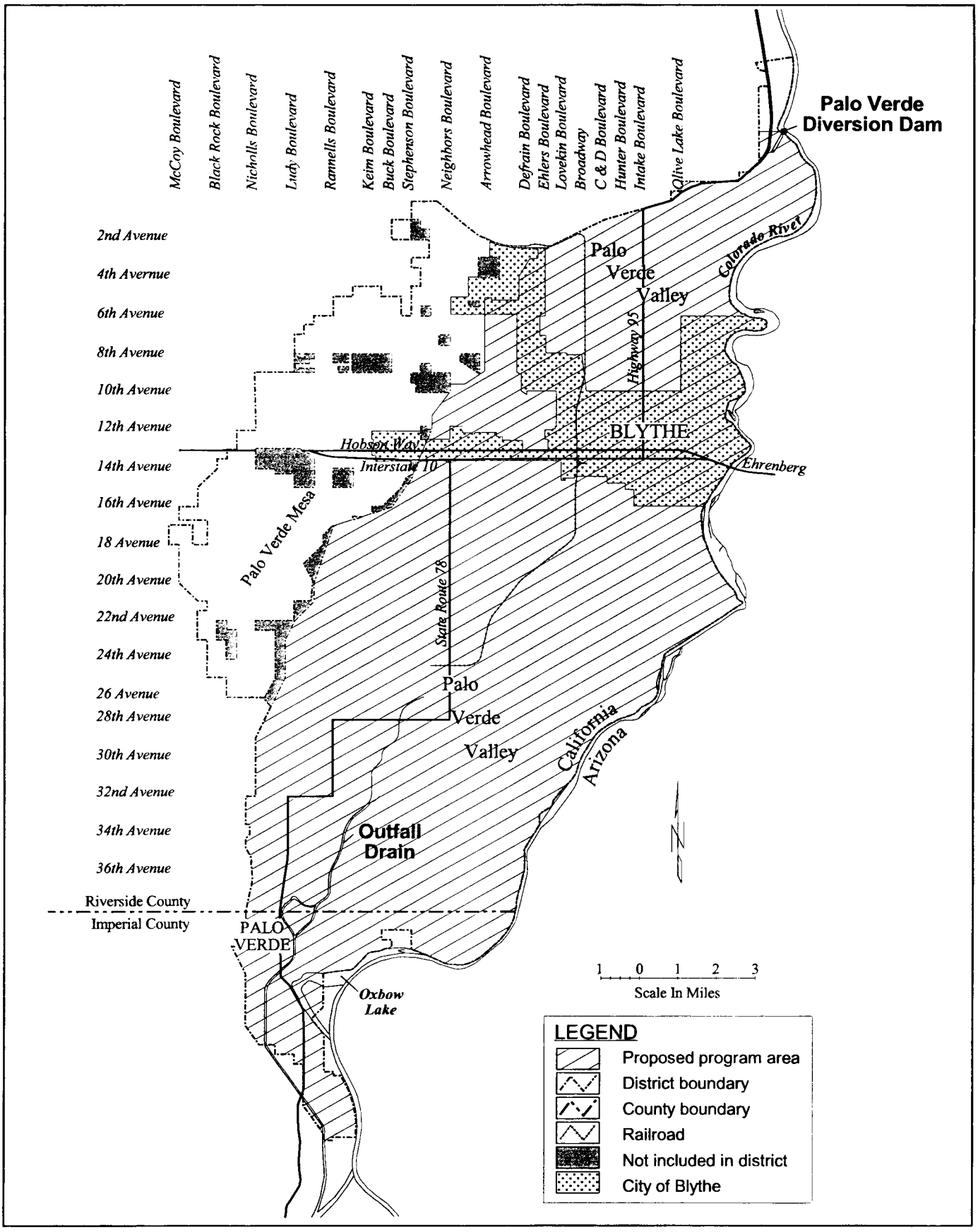
[1] An acre-foot is equivalent to the amount of water that would cover one acre to a depth of one foot (approximately 326,000 gallons). Metropolitan estimates that an average southern California family of four consumes about one-half an acre-foot of water a year for all of the family's water uses in and around the house.



Regional Location Map

LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 1



Palo Verde Irrigation District

LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 2

The Palo Verde Valley is served by Interstate Highway 10 (I-10), U.S. Highway 95 and State Highway 78, as well as by a spur line of the Arizona and California Railroad. I-10 connects to the Coachella Valley (including Indio and Palm Springs) and Los Angeles to the west, and to Phoenix, Arizona to the east. U.S. Highway 95 runs north to Needles and Las Vegas, Nevada. South-bound Highway 95 runs contiguous with I-10 east to Quartzsite, Arizona and then south to Yuma, Arizona. State Highway 78 heads southwest from Blythe to California's Imperial Valley before heading west to San Diego County. The principal city in the area is Blythe, which—with its urban fringe—has a population of about 21,800 (including more than 8,000 inmates in two state prisons).

OBJECTIVES OF PROPOSED PROGRAM

The proposed Program addresses the following objectives:

- Provide a flexible and reliable supply for Metropolitan of 25,000 acre-feet up to approximately 111,000 acre-feet of Colorado River water per year for 35 years, including years when California is required to remain within its annual allocation of 4.4 million acre-feet of Colorado River water.
- Provide a stabilizing economic influence for participants and a funding mechanism for specific future community improvement projects.

DESCRIPTION OF PROPOSED PROGRAM

Program Overview

PVID diverts water from the Colorado River into the Palo Verde Valley for irrigation. The diversion of river water into the valley occurs at the Palo Verde Diversion Dam, located on the Colorado River at the northern (upstream) end of the Palo Verde Valley. In addition to irrigating Palo Verde Valley farmlands, some of the water diverted into the valley is pumped up to the Palo Verde Mesa for irrigation of mesa farmlands. All water unused by PVID returns to the Colorado River. PVID maintains a system of open gravity drains to control shallow groundwater under the valley. The valley-wide average depth to groundwater is about 10 feet.

Metropolitan diverts water from the Colorado River for delivery to its member agencies— 26 cities and water districts that provide drinking water to more than 17 million people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura counties. Water is diverted by Metropolitan at Lake Havasu, which is formed by Parker Dam approximately 44 river miles[2] upstream from the Palo Verde Valley (Source 10). PVID's and Metropolitan's rights to use Colorado River water are based on what is known as 'The Law of the River' (see PVID's and Metropolitan's Colorado River Water Rights Positions, below).

[2] A river mile is equal to one mile along the course of a river. Because rivers often meander, distances between two points measured in river miles are often longer than the shortest distance between those two points if measured in a straight line.

Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of the PVID would be 'saved' and made available to Metropolitan for use in its service area to meet existing water demand. The water would be 'saved' through land management and crop rotation measures that reduce the amount of PVID farmland being irrigated (see below). Metropolitan diverts its Colorado River water through its Colorado River Aqueduct (see Figure 1).

PVID's and Metropolitan's Colorado River Water Rights Positions

PVID's and Metropolitan's Colorado River water rights positions are an important element of the proposed Program because without these rights, PVID would not be able to 'save' Colorado River water and have it made available to Metropolitan. There are numerous compacts, federal laws, court decisions and decrees, contracts and regulations, and agreements that address rights to use Colorado River water, and these are collectively referenced to as the 'Law of the River.' In 1963, the United States Supreme Court, in its decision in *Arizona v. California*, and its subsequent Decree on March 9, 1964, apportioned use of 4.4 million acre-feet of Colorado River water to California, 2.8 million acre-feet to Arizona, and 0.3 million acre-feet to Nevada. The Court permitted the Secretary of the Interior to make available the unused apportionments of the respective states to the other respective states. The Court also apportioned the use of surplus water that may be available in excess of 7.5 million acre-feet as follows: California—50 percent, Arizona—46 percent, and Nevada—4 percent of the amount available.

The California Seven-Party Agreement of 1931 recommended priorities for use of Colorado River water in California. Delivery of water is provided through contracts entered into with the Secretary of the Interior pursuant to Section 5 of the Boulder Canyon Project Act, which incorporated these priorities. Lower priority numbers reflect stronger water rights positions. For example, if not enough Colorado River water is available to meet all of California's needs after satisfying present perfected rights during a shortage, Priority 1 users have first rights to the available Colorado River water. If allocations to Priority 1 users are met, Priority 2 users would then be able to receive their allocated supply of water, then Priority 3 users and so on.

Under the California Seven-Party Agreement of 1931, PVID has a Priority 1 right to irrigate a gross area of 104,500 acres of Palo Verde Valley lands, as well as Priority 3 and Priority 6 rights to irrigate lands on the Lower Palo Verde Mesa. Metropolitan has Priority 4 and Priority 5 rights to Colorado River water for use on the coastal plain of Southern California. With specific agreements in place, the water made available to Metropolitan under the proposed Program would come from PVID's Priority 1 water right.

Program Implementation

Execution of contracts committing landowners to participate in the proposed Program would be voluntary. At Metropolitan's request and with specific notice periods, specific portions of farmlands subject to the contracts would not be irrigated for the requested period of time. Non-irrigation of farmlands would be rotated once every year up to once every five years, at the participant's option. In the event that a landowner fails to comply with its obligations, Metropolitan would have the right to require

the non-irrigation of discrete parcels of land until compliance is attained. Program lands would not be irrigated beginning August 1 of each year through July 31 of the following year (a 'contract year'). For each acre of Palo Verde Valley farmland not irrigated under the proposed Program, Metropolitan would have a right to an amount of water equal to the amount of water 'saved.' It is estimated that approximately 4.2 acre-feet of Colorado River water are used by actively farming one acre of land within the Palo Verde Valley for one year. PVID's water use is determined by the 'diversion less return' method. The actual amount of water saved by the proposed Program would be determined on an annual basis by a verification committee composed of PVID, Metropolitan and the U.S. Bureau of Reclamation. The amount of water saved by the proposed Program would be proportional to the amount of land included in the proposed Program during a contract year.

At a minimum, a total baseload area of 6,000 acres would not be irrigated each contract year of the proposed Program's 35 years. Participants would be required to comply with Metropolitan's request to increase the non-irrigated area from 6,000 acres to a maximum of 26,500 acres. Once increased, the increased area would not be irrigated for a minimum of two years and could be decreased on a minimum one-year notice by Metropolitan.

A maximum of approximately 29 percent of any one participant's land in the Palo Verde Valley would not be irrigated in any one contract year under the proposed Program, unless there is insufficient interest in the proposed Program, in which case the area of an individual farm that is not irrigated could be voluntarily increased up to a maximum of approximately 35 percent. (The Program's 29 and 35 percent values would be a guide—further adjustment could be necessary to recognize individual field sizes, connections to headgates, etc.)

Up to a maximum of 24,000 acres in any 25-year period or 26,500 acres in any 10-year period during the 35-year Program could not be irrigated under the proposed Program. Metropolitan would exercise the increases such that the average non-irrigated area over the 35 years would equal at least 12,000 acres per year (approximately 13 percent of irrigated valley lands).

No new construction would be associated with the proposed Program—PVID's and Metropolitan's existing facilities are adequate to implement the proposed Program.

Program Payments and Funding

The proposed Program would have benefits to both Program participants and the larger Palo Verde Valley community, as described below.

In exchange for an agreement/contract not to irrigate certain portions of farmlands at Metropolitan's request, Metropolitan would compensate participants with both a one-time Program entry payment and bi-annual compensation during active participation in the Program. The one-time entry payment would depend on the maximum number of acres not to be irrigated in a contract year under the individual land contract. In addition, Metropolitan would pay participants an annual payment per acre multiplied by the

acreage not irrigated in that contract year under the land contract. Each participant would be responsible for payment of property taxes, PVID water toll and assessment fees, vegetation abatement, dust control and all other costs related to the Program lands. Metropolitan would also reimburse PVID for administrative costs associated with the proposed Program.

In addition, Metropolitan would fund specific future, as yet to be determined, community improvement projects. The funding mechanism and expenditure of such funds would be determined by a committee composed of representatives of PVID, members of the Palo Verde Valley community selected by PVID, and Metropolitan. Special attention may be given to educational and vocational programs. The EIR for the proposed Program will not evaluate the proposed community improvements projects because specific future projects have not been selected for implementation. In fact, the committee that will select these future projects has not yet been formed. Furthermore, there is a wide range of potential projects that could be selected by the committee, and it would be highly speculative and therefore not feasible to assess the environmental effects of these future projects at this time. When the committee ultimately selects specific community improvement projects for funding and implementation, PVID or another lead agency, as applicable, will be required to evaluate what CEQA review and documentation, if any, will be required for those projects.

Land Management Measures

Land management measures used to control weed growth and wind erosion would be an integral part of the proposed Program, as described below. Requirements to implement these land management measures would be included in the participants' respective agreements/contracts with Metropolitan.

Weed Control. Weed growth on non-irrigated fields due to rainfall or due to water seepage from canals or from neighboring irrigated farmland, especially along the outside borders of non-irrigated fields, shall be controlled by the participants. Control measures would be undertaken by the participants to prevent the spread of these plants, their consumptive use of water and associated issues concerning the spread of plant disease, insects and other pests. Weeds would be controlled using measures of each participant's choice, including chemical, biological or mechanical methods.

Only chemicals approved for use by the California Department of Food and Agriculture would be allowed to be used for controlling weeds. As with all farm-related activities in the PVID, proper local, state and federal permits would need to be obtained by the participants for the use of herbicides, pesticides and insecticides. Also, compliance with applicable regulations that pertain to solid waste management and air quality would be required when handling or disposing of farm residues and trash.

Erosion Control. Based on the average prevailing wind conditions and the various types of soils in the Palo Verde Valley, and in consideration of the results of a 1992–94 Test Program, wind erosion is not projected to pose a serious constraint to the proposed Program (Sources 6, 8). Wind erosion control measures would be implemented, however, because a few soil types (as identified by the "Soil Survey for

the Palo Verde Area, California," Source 12) might be subject to less-than-significant wind erosion hazards.

Measures to minimize or eliminate the hazards of wind erosion on potentially susceptible soil types would be provided for by the participants. Wind erosion control measures may include adopting appropriate practices such as providing stubble, sod remnants or 'clod plowing.' Providing stubble or sod remnants would leave non-irrigated fields with a root system to help hold soil in place and minimize wind erosion. For crops that would not leave an adequate stubble residue (such as many vegetable or melon crops), clod plowing could be implemented. The term 'clod plowing' refers to the practice of tilling a field when it is wet so that large, damp clumps of soil are produced. These wet clumps break down into clods of soil that have a low susceptibility to wind erosion. For some soil types classified as Highly Erodible Land (HEL) soils by the Natural Resource Conservation Service, mulch or similar material would be integrated into the clods to further strengthen their resistance to wind erosion.

SURROUNDING LAND USES AND SETTING

Palo Verde Valley lies in the Colorado River floodplain, as does Cibola Valley to the south. Palo Verde Valley is surrounded on the north by the Big Maria Mountains, on the west by the Palo Verde Mesa (portions of which are in PVID) and the Mule Mountains, and on the south by Cibola Valley and the Palo Verde Mountains. The Cibola National Wildlife Refuge lies at the southern end of the Palo Verde Valley and in the Cibola Valley.

The Palo Verde Valley extends east across the Colorado River into Arizona. The Arizona portion of the valley also includes lands in agricultural production. The Colorado River Indian Tribes Reservation includes Palo Verde Valley lands in both California and Arizona. The Dome Rock Mountains in Arizona form the eastern boundary of the Palo Verde Valley.

CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

With this Notice of Preparation and Initial Study and Environmental Checklist, PVID is initiating environmental review of the proposed Program pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. Under CEQA, PVID is the Lead Agency, and Metropolitan is a Responsible Agency. Although PVID has already made a determination to prepare an Environmental Impact Report (EIR) for the proposed Program, this Notice of Preparation and Initial Study and Environmental Checklist will focus the EIR analysis on impacts that may be potentially significant. Those environmental issues that will not be impacted by the proposed Program will not be discussed in the EIR, unless otherwise noted in the Notice of Preparation and Initial Study and Environmental Checklist.

OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED

In addition to certification of the proposed Program's EIR by PVID (as CEQA Lead Agency) and Metropolitan (as a Responsible Agency under CEQA), the following approvals, consultations, and permits for specific elements of the proposed Program may be required from other governmental agencies such as:

- U.S. Department of the Interior, Bureau of Reclamation – Approval from the Bureau of Reclamation will be required prior to implementing the proposed Program.
- U.S. Department of the Interior, Fish and Wildlife Service (USFWS) – Consultation with the USFWS pursuant to the federal Endangered Species Act may be required, pending PVID's assessment as to whether the proposed Program may affect sensitive species under the federal Endangered Species Act.
- California Department of Fish and Game (CDFG) – Consultation with the CDFG may be required, pending PVID's assessment as to whether the proposed Program may affect species protected under the California Endangered Species Act (California Fish and Game Code Sections 2050 et seq.). The proposed Program would not have effects subject to CDFG jurisdiction under California Fish and Game Code Sections 1600 et seq. (that is, no Streambed Alteration Agreement would be necessary for proposed Program implementation).
- Other Agencies – Applicable local, state and federal permits would be obtained by the proposed Program participants for the use of herbicides, pesticides and insecticides as part of the land management measures in the proposed Program.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one effect that is a "Potentially Significant Impact" as indicated by the following checklist and as discussed in the Explanations of Environmental Impacts, later in this document.

○ Aesthetics	○ Agricultural Resources	○ Air Quality
✓ Biological Resources	○ Cultural Resources	○ Geology/Soils
○ Hazards & Hazardous Materials	○ Hydrology/Water Quality	○ Land Use/Planning
○ Mineral Resources	○ Noise	○ Population/Housing
○ Public Services	○ Recreation	○ Transportation/Traffic
○ Utilities/Service Systems	✓ Mandatory Findings of Significance	

DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared. ○

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. **A MITIGATED NEGATIVE DECLARATION** will be prepared**.** ○

I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. ✓

I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed. ○

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE **DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. ○

Signature — Date

Ed Smith, General Manager — **Palo Verde Irrigation District**

Printed Name — For

ENVIRONMENTAL IMPACT CHECKLIST

This section provides a summary of the Initial Study evaluation of environmental impacts, based on the evaluation criteria set forth in the State CEQA Guidelines, as amended. Explanations of each checklist response are provided in the section that immediately follows this checklist.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	○	○	○	✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	○	○	○	✓
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	○	○	○	✓
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	○	○	○	✓
II. AGRICULTURAL RESOURCES				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	○	○	○	✓
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	○	○	○	✓

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	○	○	○	✓
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	○	○	✓	○
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	○	○	✓	○
d) Expose sensitive receptors to substantial pollutant concentrations?	○	○	○	✓
e) Create objectionable odors affecting a substantial number of people?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	✔	○	○	○
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	✔	○	○	○
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	○	○	✔	○
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	○	○	✔	○
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	○	○	○	✔
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	○	○	○	✔

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	○	○	○	✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	○	○	○	✓
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	○	○	○	✓
d) Disturb any human remains, including those interred outside of formal cemeteries?	○	○	○	✓
VI. GEOLOGY AND SOILS				
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	○	○	○	✓
ii) Strong seismic ground shaking?	○	○	○	✓
iii) Seismic-related ground failure, including liquefaction?	○	○	○	✓
iv) Landslides?	○	○	○	✓
b) Result in substantial soil erosion or the loss of topsoil?	○	○	✓	○

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	○	○	○	✓
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	○	○	○	✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	○	○	○	✓

VII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	○	○	✓	○
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	○	○	✓	○
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	○	○	✓	○
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	○	○	○	✓
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	○	○	○	✓
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	○	○	○	✓
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	○	○	○	✓

VIII. HYDROLOGY AND WATER QUALITY

Would the project:

a) Violate any water quality standards or waste discharge requirements?	○	○	○	✓
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	○	○	✓	○
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	○	○	○	✓
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	○	○	○	✓
f) Otherwise substantially degrade water quality?	○	○	○	✓
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	○	○	○	✓
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	○	○	○	✓
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	○	○	○	✓
j) Expose people or structures to inundation by seiche, tsunami, or mudflow?	○	○	○	✓

IX. LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?	○	○	○	✓
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	○	○	○	✓

X. MINERAL RESOURCES

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	○	○	○	✓
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	○	○	○	✓

XI. NOISE

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	○	○	○	✓
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	○	○	○	✓
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	○	○	○	✓
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	○	○	○	✓
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	○	○	○	✓

XII. POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	○	○	✓	○
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	○	○	○	✓
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	○	○	✓	○

XIII. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES (continued)				
Police protection?	○	○	○	✓
Schools?	○	○	○	✓
Parks?	○	○	○	✓
Other public facilities?	○	○	○	✓
XIV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	○	○	○	✓
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	○	○	○	✓
XV.TRANSPORTATION/TRAFFIC				
Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	○	○	○	✓
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	○	○	○	✓
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	○	○	○	✓
e) Result in inadequate emergency access?	○	○	○	✓
f) Result in inadequate parking capacity?	○	○	○	✓
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	○	○	○	✓

XVI. UTILITIES AND SERVICE SYSTEMS

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	○	○	○	✓
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	○	○	○	✓
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	○	○	○	✓
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	○	○	○	✓
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	○	○	○	✓

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	○	○	○	✓
g) Comply with federal, state, and local statutes and regulations related to solid waste?	○	○	○	✓

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	✓	○	○	○
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	✓	○	○	○
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	○	○	○	✓

EXPLANATIONS OF ENVIRONMENTAL IMPACT CHECKLIST RESPONSES

As described previously, the proposed Program includes the non-irrigation of farmlands within the Palo Verde Valley to 'save' water for use by Metropolitan, payments to PVID and participants, and a funding mechanism for future, as yet undetermined, community improvement projects. The checklist responses and associated explanations do not address the as yet undetermined future projects that would be selected for implementation by a committee composed of PVID, members of the Palo Verde Valley community selected by PVID, and Metropolitan. This committee has yet to be formed. Because of the wide range of potential community improvement projects that could be selected for implementation, evaluation of such projects would be highly speculative and therefore cannot be addressed at the current time. CEQA compliance that may be required for future community improvement projects will be addressed in a subsequent environmental review by the applicable Lead Agency.

References to numbered sources are defined immediately following this explanation section.

I. AESTHETICS

a. **No Impact.** Vistas of the Palo Verde Valley are provided from surrounding elevated topography, such as the Palo Verde Mesa and the Big Maria, Mule and Dome Rock Mountains. For example, golfers at the Blythe Golf Course, located on the Palo Verde Mesa, have intermittent views to the Palo Verde Valley during course play. From these elevated locations, vistas of the valley encompass the urban center of Blythe, agricultural fields, the Colorado River and the surrounding, relatively barren mountains. The appearance of fields within the Palo Verde Valley varies depending on the type of crops being grown and depending on the fields' crop rotation patterns—fields with crops that are being actively irrigated appear various shades of green while non-irrigated fields appear brown. As an example of crop rotation patterns within the Palo Verde Valley, about 60,000 acres of alfalfa are rotated every three to five years into other vegetable or field crops. Under current conditions, actively farmed fields may be between crops for as little as three weeks or as long as four months. The only noticeable physical change resulting from implementation of the proposed Program would be associated with alterations in crop rotation patterns. At any given time, there would be more fields visible that are not being irrigated than is the case under the current condition. Because a maximum of 29 percent of the Palo Verde Valley farmlands would not be irrigated under the proposed Program at any one time, the overall appearance of the valley would remain that of an active agricultural area, and the proposed Program would not have a substantial adverse effect on a scenic vista. Based on the results of a 1992–1994 Test Program, non-irrigated fields in that program were fairly evenly spread throughout the valley (Source 6).

b. **No Impact.** None of the highways traversing the Palo Verde Valley (i.e., I-10, U.S. Highway 95, State Highway 78) is designated as a state scenic highway within sight of the valley, and there are no other state-designated scenic highways that have views to the valley. Accordingly, implementing the proposed Program would not affect scenic resources within a state scenic highway. (Source: 3)

c. **No Impact.** As described above (I.a), the overall appearance of the Palo Verde Valley would remain that of an active agricultural area if the proposed Program were implemented. Accordingly, implementing the proposed Program would not substantially degrade the existing visual character of the Palo Verde Valley or its surroundings.

d. **No Impact**. Implementing the proposed Program would not entail the installation or construction of any new sources of light or glare because no new facilities would be required to implement the proposed Program. Similarly, the proposed Program-related decrease in irrigation within the valley would not cause new sources of light or glare.

II. AGRICULTURAL RESOURCES

NOTE: As indicated in the checklist and as described below, no significant effects to agricultural resources are expected to result from the proposed Program. However, because the proposed Program directly involves agricultural resources, the EIR will include a chapter addressing these resources to ensure full public disclosure of the proposed Program's potential effects.

a. **No Impact.** The proposed Program would not convert any farmland (Prime, Unique, Important or otherwise) to non-agricultural uses. The proposed Program would entail a reduction in the amount of Palo Verde Valley farmland that is being irrigated at any one time by an average of at least 13 percent; however, under the agreements/contracts between Metropolitan and participants, the longest period that a given field would be left unirrigated is five years. After five years, the unirrigated field would be returned to active farming in order to remain eligible for continued inclusion in the proposed Program. Only the time between growing crops is being changed.

b. **No Impact.** The proposed Program would not convert any farmlands, including land zoned for agricultural use or farmlands currently under Williamson Act Land Conservation Contracts, to non-agricultural uses. Given the nature of the proposed Program, it is anticipated that virtually all of the farmlands would be zoned for agricultural use. PVID has identified approximately 24,300 acres of farmland within the Palo Verde Valley that have been entered into Land Conservation Contracts pursuant to the Williamson Act (California Government Code Sections 51200–51207). As with all farmlands in the Palo Verde Valley section of the PVID, the Williamson Act farmlands potentially would be eligible to participate in the proposed Program. Participation in the proposed Program would not violate zoning codes or the terms of Williamson Act Land Conservation Contracts because it would not entail the conversion of the unirrigated land to a non-agricultural use. In fact, farmlands converted to non-agricultural uses would not be eligible for inclusion in the proposed Program. (Sources: 1, 11)

c. **No Impact.** As noted in II.a and II.b above, a temporary reduction in irrigation amounts would not result in the conversion of farmland to non-agricultural uses.

III. AIR QUALITY

NOTE: As indicated in the checklist and as described below, no significant effects to air quality are expected to result from the proposed Program. However, because of previous concerns regarding air quality as it relates to crop rotation and the associated potential for increased wind erosion, the EIR will include a chapter addressing air quality to ensure full public disclosure of the proposed Program's potential effects.

a. **No Impact.** Program would not conflict with or obstruct implementation of existing applicable air quality plans.

b. **Less-Than-Significant Impact.** The Palo Verde Valley is located in the Mojave Desert Air Basin and is under the jurisdiction of the Mojave Desert Air Quality Management District. The Palo Verde Valley portion of the Air Basin is in attainment with or unclassified for all federal air quality standards. The valley is in non-attainment with state standards for ozone and particulate matter equal to or less than ten microns in diameter (PM_{10}). The "Mojave Desert Air Quality Management District and Antelope Valley Air Pollution Control District California Environmental Quality Act (CEQA) and Federal Conformity Guidelines" (1999) establishes a CEQA significance threshold for annual PM_{10} emissions of 15 tons per year. As described earlier in this Initial Study, (Land Management Measures, Erosion Control section) the proposed Program includes land management measures that would minimize wind erosion. Leaving a field in a managed, unirrigated state for one to five years would not increase its dust and PM_{10} emissions over the amount of emissions associated with normal farming activities (including tilling the soil and harvesting crops). Additionally, a reduction in the amount of land being actively farmed at any one time would also reduce the amount of associated vehicle tailpipe emissions (such as emissions from tractors working the fields, trucks hauling produce to market and commuter vehicles bringing farm laborers to work). Accordingly, implementing the proposed Program would not increase any pollutant emission levels in the valley, nor would it conflict with or obstruct the implementation of an applicable air quality plan. (Sources: 4, 7)

c. **Less-Than-Significant Impact.** For the reasons described above (III.b), implementing the proposed Program (including its land management/erosion control measures) would not result in increased emissions. Because there would not be an increase in emissions, there would not be a cumulatively considerable net increase of any criteria pollutant for which the Mojave Desert Air Basin is in non-attainment for federal or state ambient air quality standards. (Sources: 4, 7)

d. **No Impact**. Implementing the proposed Program would not expose sensitive receptors to substantial pollutant concentrations for the reasons described above (see III.b). (Sources: 4, 7)

e. **No Impact**. Implementing the proposed Program would not result in any odors because the contracts/agreements would not require the construction of any facilities that generate odors or the use of materials that emit odors. Because the proposed Program would result in fewer Palo Verde Valley lands being actively farmed at any given time, there would be corresponding reduction in

the use of fertilizer within the valley, reducing the noticeable odor sometimes associated with fertilizer applications.

IV. BIOLOGICAL RESOURCES

a. **Potentially Significant Impact.** Implementing the proposed Program may have an adverse effect on habitat utilized by sensitive species. This issue will be further assessed in the EIR and, if applicable, appropriate mitigation will be recommended.

b. **Potentially Significant Impact.** Implementing the proposed Program may have an adverse effect on riparian habitat or other sensitive natural communities. This issue will be further assessed in the EIR and, if applicable, appropriate mitigation will be recommended. (Source: 13)

c. **Less-Than Significant Impact.** An evaluation will be carried out in the EIR to determine if the proposed Program may have an effect on federally protected wetlands.

d. **Less-Than Significant Impact.** An evaluation will be carried out in the EIR to determine if the proposed Program may have an effect on the movement, use of established corridors, or the use of nursery sites by any native resident or migratory fish or wildlife species.

e. **No Impact**. Implementing the proposed Program would not require tree removal or other ground-disturbing activities. Current PVID operating procedures, which include periodic maintenance and clearing of vegetation from canals and drains, would continue. Because the proposed Program would not require tree removal or new ground-disturbing activities, its implementation would not conflict with local policies or ordinances protecting biological resources (including Riverside County Ordinance No. 559 regulating the removal of trees or Imperial County's General Plan policy calling for the preservation of trees that contribute to community character or provide wildlife habitat). (Sources: 5, 9)

f. **No Impact.** The Palo Verde Valley portion of the PVID is not encompassed by an adopted Habitat Conservation Plan or Natural Community Conservation Plan. In 1995, agreements were formalized between the U.S. Department of the Interior and the states of Arizona, California and Nevada to develop the Lower Colorado River Multiple Species Conservation Program (LCRMSCP). A proposed LCRMSCP is currently under development, and it would encompass the Colorado River section traversing the Palo Verde Valley. The proposed LCRMSCP represents a partnership of state, federal, tribal and other public and private stakeholders interested in managing the biological and other related resources of the lower Colorado River Basin. Both PVID and Metropolitan are active participants and stakeholders in this ongoing process. The EIR for the proposed Program will address at a general level, and to the extent feasible, the relationship between the proposed Program and the proposed LCRMSCP. In particular, the EIR will address how the proposed Program would affect water levels in the Colorado River between Lake Havasu (where an amount of water equal to the amount 'saved' could be diverted) and the Palo Verde Diversion Dam (where

water is currently diverted for irrigation uses in the Palo Verde Valley), and the potential effects of these water level changes on habitat along the river. Although the LCRMSCP has not been adopted (and is not expected to be adopted prior to completion of the CEQA evaluation of this proposed Program), PVID and Metropolitan will coordinate with the LCRMSCP stakeholders to ensure that the proposed Program does not conflict with the provisions of the LCRMSCP. The EIR will address the proposed Program as related to the draft LCRMSCP goals and policies, as available. (Sources: 2, 13)

V. CULTURAL RESOURCES

a. **No Impact**. Because implementation of the proposed Program would not involve the construction of new facilities, nor result in the expansion of farming activities, there would be no impacts to structures, and there would be no new ground-disturbing activities (which can affect buried historic resources such as archaeological and paleontological sites). Accordingly, there would be no effect on any historical resources that may be present in the Palo Verde Valley.

b. **No Impact**. As described for V.a, above, implementation of the proposed Program would not involve any new ground disturbance. Agricultural operations would continue within the existing footprints of active, irrigated farms, but at a reduced level. The proposed Program-related reduction in the level of agricultural operations within the Palo Verde Valley would not cause a substantial change in any archaeological resources that may be located in the valley.

c. **No Impact**. Implementation of the proposed Program does not include any new ground disturbance that could affect paleontological resources or unique geologic resources.

d. **No Impact**. Because implementation of the proposed Program would not cause new ground-disturbing activity, no impacts would occur to buried human remains.

VI. GEOLOGY AND SOILS

NOTE: As indicated in the checklist and as described below, no significant geology or soils impacts are expected to result from the proposed Program. However, because of previous concerns regarding wind erosion as it relates to crop rotation, the EIR will address wind erosion to ensure full public disclosure of the proposed Program's potential effects.

a.(i). **No Impact**. No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to fault rupture.

a.(ii). **No Impact**. No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to strong seismic ground shaking.

a.(iii). No Impact. No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to seismic-related ground failure.

a.(iv). No Impact. No new development would be associated with implementing the proposed Program; accordingly, its implementation would not expose people or structures to landslides.

b. Less-Than-Significant Impact. A few soil types within the Palo Verde Valley might be subject to some degree of wind erosion hazards; however, the proposed Program would require that participants implement wind erosion control measures. Wind erosion control measures may include adopting appropriate practices such as providing stubble, sod remnants or 'clod plowing,' as described in the "Land Management Measures" section of the proposed Program description, above. These measures were shown to provide adequate results in a Test Program conducted from 1992 to 1994 within the Palo Verde Valley. Although less-than-significant impacts are anticipated, this topic will be evaluated in the EIR due to the contribution of soil resources in farming within the Palo Verde Valley. (Sources: 6, 8, 12)

c. No Impact. Implementation of the proposed Program would not involve the construction of any new structures or expansion of any ground disturbing activities. Accordingly, the implementation of proposed Program would not affect nor be affected by the presence of unstable soils.

d. No Impact. Implementation of the proposed Program would not involve the construction of any new structures or expansion of any ground disturbing activities. Accordingly, the implementation of the proposed Program would not affect or be affected by the presence of expansive soils.

e. No Impact. No septic tanks or alternative waste water disposal systems would be required to implement the proposed Program.

VII. HAZARDS AND HAZARDOUS MATERIALS

a. Less-Than-Significant Impact. The proposed Program contracts/agreements between Metropolitan and participants would require that the participants implement weed control measures of their choice, including chemical, biological or mechanical methods, as described in the "Land Management Measures" section of the proposed Program description, above. Chemicals are currently employed for weed control throughout the Palo Verde Valley, and Program use is not expected to differ much from existing agricultural practices. Weed control procedures implemented as part of the proposed Program would comply with local, state and federal regulations related to the use of herbicides and pesticides. The transportation, storage and use of these substances would be similar to existing conditions (i.e., current operating procedures) within the Palo Verde Valley.

b. **Less-Than-Significant Impact**. As described in VII.a, above, the only use of hazardous materials associated with implementation of the proposed Program would be through chemical weed control, and this use is not expected to differ substantially from existing safe agricultural practices.

c. **Less-Than-Significant Impact**. As described in VII.a., above, the only use of hazardous materials associated with implementation of the proposed Program agreements would be through chemical weed control, and this use is not expected to differ much from existing agricultural practices. Weed control procedures would comply with local, state and federal regulations related to the use of herbicides and pesticides. Thus, the implementation of the proposed Program would not result in hazardous materials emissions or the disposal of hazardous wastes near schools. By existing regulation, no spraying can be done within one-half mile of a school while children are present. Six schools are within one-half of a mile of farmland that might be in the proposed Program: Felix J. Appleby, Margaret White, and Ruth Brown Elementary Schools; Blythe Middle School, Palo Verde High School and Zion Lutheran School.

d. **No Impact**. Implementation of the proposed Program would not require any new ground disturbance or the construction of any new facilities; accordingly, implementing the proposed Program would not create a hazard to the public or the environment through the development or disturbance of a hazardous materials site.

e. **No Impact**. The Blythe Municipal Airport lies within PVID on the Palo Verde Mesa (seven miles west of the downtown area of the City of Blythe); however, implementing the proposed Program to temporarily not irrigate some agricultural lands within the valley would not result in an aviation safety hazard.

f. **No Impact**. Implementation of the proposed Program would not require the construction of any new facilities or employ additional personnel; accordingly, implementing the proposed Program would not create a safety hazard related to people working or residing near private airstrips.

g. **No Impact**. Because the proposed Program would involve the temporary non-irrigation of agricultural fields rather than the construction, relocation, removal or obstruction of any structures or access routes, carrying out the proposed Program would not impair implementation of or physically interfere with any adopted emergency plans.

h. **No Impact**. Implementation of the proposed Program would not require the construction of any new facilities or employ additional personnel; accordingly, implementing the proposed Program would not expose people or structures to risk of wildland fires. Although fields involved in the proposed Program would be non-irrigated, vegetation on these fields would either be removed or reduced to stubble, thus reducing the risk of spread of fire.

VIII. HYDROLOGY AND WATER QUALITY

NOTE: As indicated in the checklist and as described below, no significant effects to hydrology or water quality are expected to result from the proposed Program. However, because the proposed Program integrally involves water resources, the EIR will include a chapter addressing water quality and hydrology to ensure full public disclosure of the proposed Program's potential effects.

a. **No Impact.** Implementing the proposed Program would not cause any new discharges of water or waste. The amount of water diverted from the Colorado River into the Palo Verde Valley would be reduced, with a corresponding reduction in the amount of return water draining from the Valley back to the river, thus reducing the salt loading to the river.

b. **Less-Than-Significant Impact.** Groundwater levels within the Palo Verde Valley are currently at artificially high levels (that is, at higher levels than would occur without human intervention) due to the infiltration of irrigation water through fields into the groundwater, and recharging by canals and by the Colorado River. The average depth to groundwater within PVID, based on data from over 200 observation wells, is approximately 10 feet. High groundwater adversely affects farming by saturating soils and killing roots of crops that are not suited for wet soils. All of PVID's drains return flows to the Colorado River and have been designed with channel bottom elevations below groundwater depth to draw groundwater into the drains and alleviate the artificially high groundwater levels. Based on these factors and results of the 1992-1994 Test Program, reducing the amount of farmlands under irrigation at any one time by an average of approximately 13 percent up to a maximum of 29 percent would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. To the contrary, increasing the depth to groundwater (i.e., lowering groundwater elevations) could have a positive effect on agricultural production. Although it is anticipated that effects on groundwater levels would be less than significant and potentially even beneficial, PVID has determined that it will evaluate this issue in an EIR due to the complexity of assessing effects on groundwater levels.

c. **No Impact**. No courses of streams or rivers would be altered due to implementation of the proposed Program. Implementing the proposed Program would reduce the amount of water diverted from the Colorado River into the Palo Verde Valley for irrigation, with a corresponding reduction in the amount of water returned to the river through PVID drains. These changes would not require any physical alterations to PVID's system of canals and drains. Because there would be no physical change to the Palo Verde Valley's drainage system and because the amount of water in this system would be reduced, there would be no increase in erosion or siltation off-site.

d. **No Impact**. As described above (VIII.c), implementing the proposed Program would not require any physical changes to PVID's system of canals and drains. Implementing the proposed Program also would not affect the amount of natural runoff (i.e., stormwater runoff) in the Palo Verde Valley. The amount of irrigation runoff entering drains and returning to the Colorado River would

be reduced because less river water would be diverted into the valley for irrigation purposes. Accordingly, implementing the proposed Program would be expected to lower, rather than contribute to, the chance of flooding.

e. **No Impact**. As described above in checklist explanations VIII.c and VIII.d, implementing the proposed Program would not adversely affect drainage systems or stormwater runoff.

f. **No Impact.** Implementing the proposed Program would not result in any new discharges of water or waste. Existing drainage patterns would be altered in that less water would be diverted from the Colorado River at the Palo Verde Diversion Dam, causing a correspondingly lower amount of water to be returned to the river via PVID's drains. Also, because water saved by the proposed Program would be diverted at Lake Havasu as opposed to at the Palo Verde Diversion Dam, a section of the Colorado River would have a maximum of 111,000 fewer acre-feet of water per year than would occur absent the proposed Program. From 1979 to 1991 and from 1995 to 1999, the annual amount of water released from Parker Dam ranged from a low of 6,367,000 acre-feet in 1982 to a high of 20,349,000 acre-feet in 1984. (The years 1992 through 1994 are excluded from the above discussion because releases from Parker Dam during that period were affected by the Test Program. Sources: 6, 8). If the 1982 river flow were reduced by 111,000 acre-feet that would have caused a 1.74% decrease in that annual river flow.

g. **No Impact**. Implementation of the proposed Program would not involve the construction of any structures (housing or otherwise); therefore, no impacts to housing within a 100-year flood hazard area would occur.

h. **No Impact**. Implementation of the proposed Program would not involve the construction of any structures. Accordingly, implementing the proposed Program would not place structures that could impede or redirect flood flows within a 100-year flood hazard area.

i. **No Impact**. Implementation of the proposed Program would not involve the construction of any structures or the relocation of people; therefore, implementing the proposed Program would not expose people to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

j. **No Impact**. Implementation of the proposed Program would not expose people or structures to inundation by seiche, tsunami or mudflow.

IX. LAND USE PLANNING

a. **No Impact**. Implementation of the proposed Program would rely on the use of existing facilities; thus, implementation of the proposed Program would not physically divide an established community.

b. **No Impact**. Implementation of the proposed Program would not result in the conversion of any existing land use to a new or different use. Accordingly, implementation of the proposed Program would not require review for conformance with any applicable land use plan, policy or regulation.

c. **No Impact.** Implementing the proposed Program would have no impact on adopted Habitat Conservation Plans and Natural Community Conservation Plans (see IV.f).

X. MINERAL RESOURCES

a. **No Impact**. Implementation of the proposed Program would not require any new ground disturbance or development, nor require any new properties, which may contain mineral resources, to be set aside for agricultural uses. Thus, implementation of the proposed Program would not result in any change in the availability of a known or important mineral resource.

b. **No Impact**. See checklist explanation response X.a, above.

XI. NOISE

a. **No Impact**. Implementation of the proposed Program would not involve any new noise sources or elevated noise levels. Agricultural operations would continue on existing farms within the Palo Verde Valley, but at a reduced level, with an associated reduction in the duration of noise produced by farming activities. For example, because fewer fields would be in agricultural production, there would be less farm equipment use, with a corresponding reduction in the duration of engine noise. Accordingly, implementing the proposed Program would not expose people to, or generate noise levels in excess of, established standards.

b. **No Impact**. Implementation of the proposed Program would not involve any new sources of noise or groundborne vibrations. Agricultural operations would continue on existing farms within the Palo Verde Valley, albeit at a reduced level. Accordingly, implementation of the proposed Program would not expose people to or generate excessive groundborne vibration or groundborne noise levels.

c. **No Impact**. Implementation of the proposed Program would not involve any increases in ambient noise levels in the Palo Verde Valley or vicinity. Land management practices implemented under the proposed Program, such as clod plowing, would not represent an increase over noise levels generated by other, similar agricultural operations such as tilling fields or harvesting crops.

d. **No Impact**. Compared to current conditions, implementation of the proposed Program would not involve temporary or periodic increases in ambient noise levels in the Palo Verde Valley or vicinity. In fact, implementation of the proposed Program may result in temporary, localized decreases in ambient noise levels in the vicinity of non-irrigated fields due to the corresponding reduction in agricultural activity.

e. **No Impact**. Implementation of the proposed Program would not entail the construction of new facilities near an airport (or anywhere else) or the exposure of people to airport noise at anything over existing exposure levels.

f. **No Impact**. Implementation of the proposed Program would not entail the construction of new facilities near an airstrip (or anywhere else) or the exposure of people to aircraft noise at anything over existing exposure levels.

XII. POPULATION AND HOUSING

a. **Less-Than-Significant Impact.** Implementation of the proposed Program would be expected to provide a stabilizing economic effect on farm incomes within the Palo Verde Valley; however, there may be an associated reduction in farm laborer employment within the valley because fewer fields will be actively farmed (irrigated) at any given time. Accordingly, implementing the proposed Program would not be expected to induce population growth in the Palo Verde Valley or vicinity. Although the proposed Program includes a funding mechanism for future, as yet to be determined, community improvement projects, the scope of these improvement projects is not anticipated to be such that people not otherwise planning to relocate to the Palo Verde Valley would be induced to do so.

The EIR for the proposed Program will describe how water 'saved' by the proposed Program would help California reduce its use of Colorado River water to within the state's basic annual apportionment when required. An amount of water equal to the amount 'saved' could be used by Metropolitan to assist in maintaining its existing level of diversions from the Colorado River, and this water would not induce growth within Metropolitan's service area. The only available aqueduct from the Colorado River to Metropolitan's service area is the Colorado River Aqueduct. The Colorado River Aqueduct is capable of diverting about 1.25 million acre-feet per year and has been operating at or near full capacity over the past 15 years. No additional water above the amount either currently diverted or diverted in the past would be brought to Metropolitan's service area from the Colorado River; therefore, growth-inducing impacts would not occur.

b. **No Impact**. Implementing the proposed Program would not cause the displacement of any houses because no construction or other physical changes to PVID's facilities or to participating farms would be required. No farmers' or workers' homes would be displaced, and the proposed Program's payments to participants would help stabilize their incomes.

c. **Less-Than-Significant Impact.** The potential for the proposed Program to result in a decrease in farm laborer employment within the Palo Verde Valley will be evaluated in a study that will be included as a technical appendix to the EIR for the proposed Program. The potential decrease in the need for farm laborers (which might include migratory workers) due to implementation of the proposed Program would not result in the construction of replacement housing elsewhere. The

funding mechanism for the future community improvement projects could be utilized in part to support vocational and education training for displaced laborers.

XIII. PUBLIC SERVICES

a. **Fire Protection – No Impact**. No new development would result from implementation of the proposed Program. Although non-irrigated fields would be drier than irrigated fields, plant material (potential fuel for fires) would be minimal, consisting of stubble residue. Per the mandatory land management measures to be carried out by participants of the proposed Program, weed growth would be managed during periods of non-irrigation. Thus, implementation of the proposed Program would not require additional or modified fire personnel, services or facilities, nor would its implementation affect emergency access to facilities.

Police Protection – No Impact. No new development would result from the implementation of the proposed Program. Thus, implementation of the proposed Program would not increase demand for or place additional requirements on police protective services.

Schools – No Impact. No new development or increase in population would result from implementation of the proposed Program. Thus, implementation of the proposed Program would not increase demand for or place additional requirements on schools in the Palo Verde Unified School District.

Parks – No Impact. No new development or increase in population would result from the implementation of the proposed Program. Thus, implementation of the proposed Program would not adversely impact or require additional or modified park services.

Other Public Facilities – No Impact. No new development or increase in population would result from the implementation of the proposed Program. Thus, implementation of the proposed Program would not adversely impact or require additional public services or facilities.

XIV. RECREATION

a. **No Impact**. No new development would result from implementing the proposed Program. As described in checklist explanation response XII.a, above, the proposed Program is not expected to induce population growth. Accordingly, implementing the proposed Program would not increase the use of existing neighborhood and regional parks or other recreational facilities. The proposed Program would not require any changes to the existing level of irrigation provided at valley parks and recreational facilities.

b. **No Impact**. The proposed Program would not include the construction or expansion of recreational facilities. Hence, there will be no impact by the proposed Program from such facilities.

XV. TRANSPORTATION/TRAFFIC

a. **No Impact**. Implementation of the proposed Program would not involve any new development, require additional personnel or result in population increases. Thus, implementation of the proposed Program would not cause an increase in traffic that is substantial in relation to existing traffic loads and street capacities.

b. **No Impact**. As noted in checklist explanation XV.a above, implementation of the proposed Program would not generate traffic and, therefore, would not cause established level of service standards for designated roads or highways to be exceeded.

c. **No Impact**. With the implementation of the proposed Program, agricultural operations would continue on existing farms within the Palo Verde Valley. There would probably be a moderate reduction in the number of small aircraft flights over the Palo Verde Valley for the aerial application of pesticides (crop dusting) because fewer fields would be in agricultural production at any one time. This would not change the general location of these flights, and the decrease in flights would not constitute a safety risk.

d. **No Impact**. Implementation of the proposed Program would not require any modifications to the existing transportation system. The Palo Verde Valley is an agricultural area, and the use of farm equipment on public roads is routine, expected and accommodated. Thus, implementation of the proposed Program would not cause an increase in hazards due to a design feature or incompatible uses.

e. **No Impact**. Implementation of the proposed Program would reduce the amount of farmland within the Palo Verde Valley under irrigation at any one time; a reduction in irrigated farmland along with the slight reduction of the use of mobile farm equipment would not affect existing roadways or access routes. Thus, implementation of the proposed Program would not result in inadequate emergency access.

f. **No Impact**. Implementation of the proposed Program would reduce the amount of farmland within the Palo Verde Valley under irrigation at any one time. Because implementing the proposed Program would not require additional personnel or result in population increases, it would not create demand for new parking or result in inadequate parking capacity.

g. **No Impact**. Reducing the amount of farmland under irrigation in the Palo Verde Valley would not conflict with adopted policies, plans, or programs supporting alternative transportation.

XVI. UTILITIES AND SERVICE SYSTEMS

a. **No Impact**. Implementation of the proposed Program would not produce or utilize wastewater. Thus, implementation of the proposed Program would not be subject to regional wastewater treatment requirements.

b. **No Impact**. Implementation of the proposed Program would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.

c. **No Impact**. Implementation of the proposed Program would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities.

d. **No Impact**. Implementation of the proposed Program would not require additional water supplies. To the contrary, the proposed Program would rely on the contractual non-irrigation of fields to 'save' water, which would help Metropolitan meet existing demand within its service area.

e. **No Impact**. Implementation of the proposed Program would not generate wastewater; accordingly, no impact is assessed.

f. **No Impact**. The non-irrigation of certain farmlands within the Palo Verde Valley would not create solid waste; accordingly, implementation of the proposed Program would not have an effect on landfills.

g. **No Impact**. Implementation of the proposed Program would not result in any substantial changes to existing solid waste programs within the Palo Verde Valley.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

a. **Potentially Significant Impact.** Implementation of the proposed Program may have an adverse effect on habitat utilized by sensitive species. This issue will be further assessed in the EIR and, if applicable, appropriate mitigation will be recommended. As described above, implementation of the proposed Program would have no effect on important examples of the major periods of California history or prehistory (see explanations V.a through V.d above).

b. **Potentially Significant Impact.** Several other projects or programs are proposed or underway that involve water diversions in the lower Colorado River region. These activities will be identified and discussed further in the EIR. The cumulative effects of these projects combined with the proposed Program will be assessed in the EIR with respect to biological resources. Cumulative impacts analysis of the proposed Program with other proposed programs and projects in the Palo Verde Valley and vicinity will also be conducted to determine if such activities are cumulatively considerable with respect to other environmental factors.

c. **No Impact**. None of the proposed Program's environmental effects would cause a substantial adverse effect on humans. Although not required by CEQA, PVID plans to conduct an analysis of the proposed Program's potential socioeconomic effects on the local community. This study will be included as a technical appendix to the EIR being prepared for the proposed Program.

SOURCES

The following list of references has been directly cited or has otherwise provided a source of information during preparation of this Initial Study and Environmental Checklist.

1. California Department of Conservation, Land Resources Division. Personal communication from Mr. Dennis O'Bryant, Program Manager, regarding proposed Land Management, Crop Rotation and Water Supply Program as it relates to Williamson Act contracts. October 11, 2001.

2. California Department of Fish and Game. Subregional Conservation Plans. *http://www.dfg.ca.gov/nccp/nccp_subregional_plans.html*. September 19, 2001.

3. California Department of Transportation (Caltrans). California Scenic Highway Mapping System. *http://www.dot.ca.gov/hy/LandArch/scenic_highways*. September 15, 2001.

4. De Salvio, Alan, Mojave Desert Air Quality Management District. Personal communication to Michael Schwerin, HELIX Environmental Planning, Inc., regarding dust and PM_{10} emissions from unirrigated fields. August 8, 2001.

5. Imperial, County of. General Plan Conservation and Open Space Element. 1993.

6. Metropolitan Water District of Southern California. "Palo Verde Land Fallowing Program, August 1, 1992 – July 31, 1994, Final Report (Volume 1: Main Report)." Prepared by Great Western Research, Inc. August 1995.

7. Mojave Desert Air Quality Management District and Antelope Valley Pollution Control District. "Mojave Desert Air Quality Management District and Antelope Valley Air Pollution Control District California Environmental Quality Act (CEQA) and Federal Conformity Guidelines." December 1999.

8. Palo Verde Irrigation District. "Initial Study/Mitigated Negative Declaration for a Temporary Test Land Fallowing Program in the Palo Verde Valley." Prepared by Great Western Research, Inc. March 1992.

9. Riverside, County of. Ordinance No. 559 - An Ordinance of the County of Riverside Amending Regulating the Removal of Trees. December 7, 1976. As amended.

10. U.S. Bureau of Reclamation. "Description and Assessment of Operations, Maintenance and Sensitive Species on the Lower Colorado River. Final Biological Assessment Prepared for U.S. Fish and Wildlife Service and Lower Colorado River Multiple-Species Conservation Program." August 1996.

11. U.S. Department of Agriculture, Natural Resources Conservation Service. Unpublished maps of Williamson Act parcels within the PVID. Provided to the PVID by Raul Alvarado, District Conservationalist, Blythe. August 20, 2001.

12. U.S. Department of Agriculture, Soil Conservation Service (now the Natural Resource Conservation Service) in cooperation with the University of California Agricultural Experiment Station. *Soil Survey for the Palo Verde Area, California*. 1974.

13. U.S. Fish and Wildlife Service. "Biological Opinion for Interim Surplus Criteria, Secretarial Implementation Agreements, Water Administration, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary, Arizona, California and Nevada." Issued to the U.S. Bureau of Reclamation. January 12, 2001.

Appendix A
LETTERS RECEIVED IN RESPONSE TO NOTICE OF PREPARATION AND INITIAL STUDY

TABLE OF CONTENTS

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Responses Received to the Notice of Preparation for the Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program Draft Environmental Impact Report

This table summarizes the responses received to the Notice of Preparation. Numbers used in the "Issue" column correspond to the numbers used in the respective Notice of Preparation response letters. The column on the right indicates the locations in the Draft EIR that address topics raised in the NOP response letters, as applicable. Notes referenced in the right-hand column are listed immediately following this table (see Page A-10), followed by copies of the letters received in response to the Notice of Preparation.

Responder	Topic/Issue	Location in Draft EIR
Bill V. Kontilis	Point of contact information provided	N/A (see Note 1)
Harvey Jackson and Betty Henderson	Interest in joining program	N/A (see Note 1)
Betty Henderson	Interest in joining program	N/A (see Note 1)
Triple-Will Farms	Recommends utilization of shallow-rooted cover crops as part of erosion control program Recommends retaining five-year crop rotation program	Section 3.4.3 Section 3.4
National Fish and Wildlife Foundation	Comments to be provided later	N/A (see Note 1)
Southern California Association of Governments (SCAG)	Draft EIR should discuss proposed Program consistency with SCAG Regional Comprehensive Plan and Guide policies	Section 4.6
Mary D. Hoskins	Responder unclear on response requested by PVID	N/A (see Note 1)
California Department of Fish and Game (CDFG)	Issues recommended for inclusion in Draft EIR analysis: 1. Effects of reduced water flows on the Colorado River between Parker Dam and Palo Verde Diversion Dam 2. Impacts to riparian vegetation resulting from lower groundwater levels, reduced median flows and water diversion 3. Impacts to wetland vegetation resulting from lower groundwater levels, reduced median flows and water diversion 4. Effects of reduced waterways on fish and wildlife and their habitat	 Sections 4.4 , 4.5, 6.3.4 & 6.3.5; Appendices B & C Section 4.5; Appendix C Section 4.5; Appendix C Section 4.5

Responder	Topic/Issue	Location in Draft EIR
CDFG (continued)	5. Effects on instream uses of the Colorado River, connectivity to backwaters and water quality	Sections 4.4 , 4.5, 6.3.4 & 6.3.5; Appendices B & C
	6. Analysis of the change in land use on agricultural lands to wildlife	Section 4.5
	7. Analysis of effects of project on the Goose Flats Wildlife Area	Section 4.5
	8. Assessment of plant and animal species within the project area and effects of project upon said species, with emphasis on sensitive, threatened and endangered species and habitats	Section 4.5; Appendix C
	9. Analysis of direct, indirect and cumulative impacts on biological resources as well as discussion of mitigation measures to reduce said impacts	Sections 4.5 & 6.3.5; Appendix C
	10. Analysis of a range of alternatives to the proposed project which minimize impacts to biological resources	Chapter 7.0
	11. A California Endangered Species Act permit must be obtained if the project will result in take of species listed under the California Endangered Species Act	Section 4.5
	12 (a & b). CDFG opposes elimination, channelization or conversion to subsurface drains of watercourses. Address runoff, erosion and pollution	Sections 4.4, 4.5, 6.3.4 & 6.3.5; Appendices B & C
	12 (c). CDFG is operating under a writ of mandate for Section 1601 and 1603 Streambed Alteration Agreements	Sections 4.4 & 4.5
Marilee Harkinson	Displacement of people and resulting economic trickle-down effect on local economy should be assessed as significant	Section 9.12 (see Note 14)
	Trickle-down effect on public schools resulting on fewer students and related products and services should be assessed as significant	Section 9.12 (see Note 14)
	Suggests implementation of water conservation in Metropolitan rather than proposed project	Section 7.5.2
Coachella Valley Water District (CVWD)	Project requires compliance with NEPA and preparation of a EA, FONSI or EIS	Section 1.7
	Failure to list parties to the Seven Party Agreement among the public agencies whose approval of the project is required	Section 1.1.3

Responder	Topic/Issue	Location in Draft EIR
CVWD (continued)	Impacts resulting from the change in water delivery point should be analyzed in Draft EIR	Chapter 4.0
California Department of Food and Agriculture (CDFA)	Impacts to agriculture should be assessed as significant	Section 4.1 (see Note 2)
	Further project description and agricultural setting information should be provided in the Draft EIR regarding:	
	1. Agricultural uses of the project site and regional setting	Section 4.1
	2. Acreage and current use of cropland to be converted to non-agricultural use each year	Table 1-1; Section 4.1
	3. Nature of water rights in affected area	Section 1.1.3
	4. Method to be used to determine "saved" water and how this could be changed from year to year	Section 3.4
	5. Nature of the proposed rotation	Section 3.4.1
	6. Quality of affected agricultural land	Section 4.1.1
	7. Land values of irrigated crop land and idle land	Section 4.1.1 (see Note 14)
	Additional environmental impact analysis should be provided in the Draft EIR regarding:	
	1. Loss of agricultural land and production capacity relative to existing resource base	Section 4.1
	2. Degradation of air quality	Section 4.3
	3. Water quality and supply	Sections 1.1.3 & 4.4
	Additional indirect impact analysis should be provided in the Draft EIR regarding:	
	1. Impacts on sustainability of local agricultural land uses and effects of agricultural runoff on wildlife refuge	Sections 4.1, 4.4 & 4.5
	Additional growth inducement analysis should be provided in the Draft EIR regarding:	
	1. Potential for agricultural land conversion as a result of the proposed project	Sections 3.4.4 & 4.1; Chapter 5.0
	2. Urban growth pressures in the Palo Verde Valley and Mesa that could result in agricultural land conversion as a result of the proposed project	Sections 3.4.4 & 4.1; Chapter 5.0

Responder	Topic/Issue	Location in Draft EIR
CDFA (continued)	Additional cumulative impact analysis should be provided in the Draft EIR regarding:	
	1. Agricultural land retirement or fallowing as a result of non-agricultural water use?	Sections 3.4.4 & 4.1; Chapters 5.0 & 6.0
	2. Agricultural land conversion in Riverside and Imperial County as well as statewide	Sections 3.4.4 & 4.1; Chapter 6.0
	Additional discussion of mitigation and alternatives should be provided in the Draft EIR regarding:	
	1. mitigation measures that will lessen or minimize impacts on loss of agricultural production capacity	Sections 3.4.3, 3.4.4 & 4.1 (see Note 3)
	2. Discussion and assessment of alternatives to the proposed project that would avoid or reduce adverse impacts to agricultural land and water resources	Chapter 7.0
California Regional Water Quality Control Board (RWQCB)	Project would require acquisition of a NPDES permit prior to application of chemicals as part of weed-control program	Section 1.7
City of Blythe	City of Blythe intends to participate in the assessment of cumulative impacts and is concerned with substantial or potentially substantial changes in the physical condition of the Palo Verde Valley and social and/or economic impacts of the proposed Program. The city requests that the following be evaluated for cumulative effects:	
	1. Agricultural resources	Sections 4.1 & 6.3.1 (see Note 2)
	2. Air quality	Sections 4.3 & 6.3.3
	3. Biological resources	Sections 4.5 & 6.3.5
	4. Hydrology and water quality	Sections 4.4 & 6.3.4
	5. Population and housing	Section 9.11
	6. Recreation	Section 9.13
	7. Mandatory findings of significance	Chapters 4.0 & 8.0 (see Note 4)
Blythe Area Chamber of Commerce	The Draft EIR should address the economic set-backs that individuals and the community as a whole will experience as a result of the proposed project	See Note 14
	The mitigation funding is inadequate to off-set the economic effects of the project	See Note 14

Responder	Topic/Issue	Location in Draft EIR
Blythe Area Chamber of Commerce (continued)	What types of alternative industry will be available to people displaced by the project?	See Note 14
	The community (Blythe) should be compensated adequately for economic downfall resulting from the project	See Note 14
	Further analysis and information should be provided regarding the following issues:	
	The effectiveness of clod plowing over a period of several years should be addressed	Sections 3.4.3 & 4.3 (see Note 2)
	The new community college campus should be added to the list of area schools	Section 9.6
	Potential groundwater reductions and effects on groundwater use should be addressed in detail for the 35-year life of the proposed Program	Section 4.4
	Changes in river flows and potential secondary effects to tourism (recreation) should be addressed	Sections 4.4 & 9.13
	Relocation of families may result from unemployment and Draft EIR should address urban sprawl	Section 9.11; Chapter 5.0
	Draft EIR should assess effects of river hydrology change on Colorado River boating and recreation, with analysis of associated tourism impacts	Section 9.13
	Cumulative effects to Colorado River resources, including effects on a new river park, should be addressed	Section 4.4; Chapter 6.0
City of Blythe, Development Services Department	Define how the air quality mitigation monitoring will occur and who will administer the monitoring	Sections 1.5, 3.4.3 & 4.3
	Further analysis of long term impacts accruing in the Palo Verde Valley from the removal of groundwater should be addressed	Section 4.4; Chapter 6.0; Appendix B.
The Gas Company	N/A	N/A (see Note 1)
Imperial County Planning/Building Department	How can the public and other affected jurisdictional/agencies be assured of a proper environmental analysis since Metropolitan, PVID and local farmers are the beneficiaries?	See Note 5
	1. Why is Imperial County not identified as a "responsible agency" for the proposed Program since a portion of the proposed Program area is in Imperial County?	Section 1.7

Responder	Topic/Issue	Location in Draft EIR
Imperial County Planning/Building Department (continued)	1 (continued). Project description should identify who in Imperial County or the community of Palo Verde has been contacted, or is involved, in the proposed program regarding chemical use and air quality	Chapter 10
	2. Analysis of economic effects resulting from the loss of 29 percent of farmland within the Blythe/Palo Verde Valley area should be done to assess impacts to communities within the project area as well as those in the vicinity	See Note 14
	3. Address how changes in the river level may affect residential, environmental and recreational resources	Sections 4.4 & 9.13 (see Note 6)
	4. Address how a reduction in river flows may affect habitat, including upstream and downstream from the proposed Program area	Section 4.5; Appendix C
	5. How will water be "saved" and what are the water rights implications of the proposed Program	Sections 1.1.3 & 3.4
	6. Further analysis of impacts resulting from land rotation is needed. How will accurate analysis be done when land rotation may vary between one and five-year periods?	Section 3.4; Chapter 4.0 (see Note 7)
	7. Further explanation, information, and analysis of the failure to comply statement (page 6 and 7) that address the respondent's concerns should be provided	Section 3.4
	8. An explanation of how the amount of water used for irrigation was derived should be included	Sections 3.4 & 4.4
	9. Why is the project not being analyzed under the National Environmental Protection Act? Address U.S. Fish and Wildlife Service consultation	Section 1.7 (see Note 8)
	10a. The technical studies should include analysis of third-party impacts with a focus on opportunities for those displaced by the proposed project	See Note 14
	10b. Further explanation of Metropolitan's financial commitment to the community and analysis of the economic impacts of the proposed project should be provided	See Note 14
	10c. Who is the lead agency for future community improvement projects?	Section 3.4.2
	10d. The proposed community improvements sound more like on-the-ground projects that worker re-training and re-employment strategies	Section 3.4.2

Responder	Topic/Issue	Location in Draft EIR
Imperial County Planning/Building Department (continued)	11. The two-year crop rotation test program is inadequate to be used as support for a five-year crop rotation period	See Note 9
	12. Responder disagrees with conclusions and/or methods regarding aesthetics	Section 9.1 (see Note 2)
	13. Responder disagrees with conclusions and/or methods regarding conversion of prime farmland, unique farmland, or farmland of statewide importance	Section 4.1 (see Note 2)
	14. Responder disagrees with conclusions and/or methods regarding Williamson Act farmlands	Section 4.1 (see Note 2)
	15. Discuss consultation with Imperial County Air Pollution Control District	Section 4.3; Chapter 10
	16. Responder disagrees with conclusions and/or methods regarding air quality and incorporation of land management measures as part of proposed Program instead of being mitigation measures	Section 4.3 (see Notes 2 & 9)
	17. Address loss of habitat and changes in water on biological resources	Section 4.5; Appendix C
	18. Study should address geology and soils and potential affects associated with change in groundwater.	Sections 4.2 & 9.5
	19. Address use of pesticides and potential effects of their use.	Sections 3.4.3 & 9.6
	20. Address groundwater with focus on recharging the Colorado River and effects on fish and wildlife habitats	Sections 4.4, 4.5, 6.3.4 & 6.3.5
	21. Address effects on Oxbow Lake and Palo Verde Lagoon	Sections 4.4, 4.5, 6.3.4 & 6.3.5
	22. Address effects on canal operations	See Note 10
	23. Address how reduction in drainage will affect water quality and biological resources	Sections 4.4 & 4.5; Appendices B & C
	24. Address land use plans and Riverside and Imperial counties' regulations	Chapter 4.0; Section 9.8
	25. Address conflicts with Imperial County General Plan, Land Use Ordinance and Agricultural Element	Sections 4.1 & 9.8
	26. Responder disagrees with conclusions and/or methods regarding displacement of homes	See Note 11

Responder	Topic/Issue	Location in Draft EIR
Imperial County Planning/Building Department (continued)	27. Address school attendance and ability of fire department use of canals as a water source	Section 9.12
	28. Responder disagrees with conclusions and/or methods regarding impacts to recreation opportunities	Section 9.13
	29. Responder disagrees with conclusions and/or methods regarding mandatory findings of significance, particularly with regard to effects on humans	Section 9.11 (see Note 12).
	30. Address Imperial County ordinances and planning guidelines	Chapter 4.0
Palo Verde College Small Business Economic Development Center (SBEDC)	Responder concerned with use of "boilerplate" CEQA checklist questions	See Note 13
	Responder is concerned with total long-term impacts of Metropolitan's proposed diversion of water from agricultural uses on the landscape	Sections 1.1.3; Chapters 4.0 & 6.0
	The Principles of Agreement fails to consider the third-party impact resulting from the proposed project on the citizens of Blythe	See Note 14
	The Initial Study fails to identify pertinent economic questions.	See Note 14
	Discuss necessary federal approvals and National Environmental Policy Act requirements	Section 1.6
	Study should identify and quantify third-party costs and develop a framework for mitigation programs	See Note 14
	Address impacts on recreation opportunities and associated economic impacts	Section 9.13
	Impacts on social services, police, and schools should be addressed given an altered level of service	Section 9.12
	Address potentially significant cumulative impacts on economics, local economy output, income, jobs, housing and population	See Note 14
	Mitigation in the form of community improvement projects should bear a direct relationship between the proposed program and the economic harm and socioeconomic distress which it may cause	See Note 14

Responder	Topic/Issue	Location in Draft EIR
Skip Crane	Providing point of contact information	N/A (see Note 1)
Dorothy J. Proctor	Metropolitan should formulate a different approach to provide enough water, such as conservation	Section 7.5.2
Cibola National Wildlife Refuge. U.S Department of the Interior, Fish and Wildlife Service (USFWS)	Responder is concerned about decrease in water volume in both Old River Channel and Colorado River below the confluence and resulting effects on federally listed species and other wildlife, surrounding water table, cattail inundation and riparian habitat Recommend contacting USFWS Carlsbad Office and Phoenix Field Office for more information on listed species	Sections 4.4 & 4,5; Appendices B & C N/A (see Note 1)
Imperial County Air Pollution Control District	1. Responder expressed concerns with conclusions found as "not significant" in the Air Quality section of the Initial Study which should be "potentially significant." A portion of the proposed project area is within the jurisdictional area of the Imperial County Air Pollution Control District, which is designated as a PM_{10} non-attainment area. Mitigation measures to control wind erosion and resulting increased PM_{10} need to be addressed. 2. and 3. Responder expressed concerns with conclusions found as "not significant" in the Air Quality section of the Initial Study which should be "potentially significant." The EIR should assess the daily and annual PM_{10} emissions that would be generated due to implementation of the proposed program.	Sections 3.4.3 & 4.3 (see Note 2) Section 4.3 (see Note 2)
Milk Producers Council	The EIR must fully analyze the direct, indirect, and cumulative impacts to the dairy industry as a result of the proposed program including: Potential reduction in alfalfa production within the proposed Program area Potential reduction in manure use in the Palo Verde Valley Effect of reduced alfalfa production within the region (i.e., California and the greater western region) and the corresponding price increase of alfalfa Effect of reduced agricultural production acreage within the region (i.e., California and the greater western region) and the corresponding decreased demand for manure	 See Note 14 See Note 14 See Note 14 Section 4.1 (see Note 14)

Responder	Topic/Issue	Location in Draft EIR
Milk Producers Council (continued)	Provide an explanation of the beneficial use of water not used for irrigation when sold or transferred	Section 1.1.3 (see also Section 3.4.3 regarding land management measures that are an integral part of the proposed Program)
U.S. Fish and Wildlife Service (USFWS)	Address cumulative effects of water transfer projects that will impact the lower Colorado River	Chapter 6.0
	Discuss federally listed species that utilize the lower Colorado River	Sections 4.5 & 6.3.5
	Reduced flows in drains could affect habitat for the Yuma clapper rail and California black rail	Section 4.5; Appendix C
	Reduction in the amount of irrigated farmland could affect foraging habitat for migratory birds	Section 4.5
	Responder states that impacts to wetlands and migration corridors may be potentially significant	Section 4.5 (see Note 2)

NOTES:

(1) Comment does not address the scope of the Draft EIR; therefore, no reference to a corresponding chapter, section or appendix to the Draft EIR is provided.

(2) Topic is addressed in the referenced section of the Draft EIR. For the reasons described in the Draft EIR, PVID respectfully disagrees with respondents statement that the referenced impact would be significant.

(3) As discussed in Chapters 4.0 and 6.0, no mitigation measures are necessary because the proposed Program would not result in significant environmental impacts. See also Section 3.4.3 regarding land management measures that have been incorporated into the proposed Program.

(4) Chapter 4.0 of the Draft EIR addresses potential project impacts and their significance, and Chapter 8.0 addresses significant irreversible environmental changes and significant unavoidable environmental effects. The CEQA Initial Study distributed with the Notice of Preparation included a discussion of "mandatory findings of significance" pursuant to the State CEQA Guidelines.

(5) As both the proposed Program's proponent and the CEQA lead agency, PVID is required by law (CEQA and the State CEQA Guidelines) to provide a thorough environmental analysis of the proposed Program. This is similar to situations in which the county of Imperial acts as both a project proponent and the CEQA lead agency.

(6) The county of Imperial's comment letter misstates the Initial Study. In the county's letter, the phrase "…used by PVID" should be replaced with "…unused by PVID."

(7) The Draft EIR analysis is based on projected percentage of proposed Program area that would not be irrigated under the proposed Program each year and on "worst case" analysis of fields being not irrigated for a full five years, as applicable.

(8) The county's letter references the "National Environmental Protection Act." This is assumed to refer to the federal "National Environmental Policy Act." Refer to Section 1.7 in the Draft EIR for a discussion of possible federal involvement.

(9) The results of the 1992 – 1994 Test Program represent only a portion of the information used to assess the potential effects of the proposed Program.

(10) Canal water levels would, for the most part, remain the same under the proposed Program as under current conditions. PVID sets canal water levels at the elevations necessary to ensure that there is enough head (water pressure) to carry water from the canals through headgates to the privately owned irrigation ditches that serve the valley's agricultural fields. As a result, the surface water elevation of PVID's canals generally would not be changed as a result of the proposed Program. The exception to this would be for the tail end of lateral canals that serve only a few fields each. In those instances, the canals would not carry water when the fields they serve are not being irrigated. These lateral canals also are often dry under existing operating procedures. PVID would remain responsible for maintenance of its canals if the proposed Program is implemented.

(11) Pursuant to CEQA and the State CEQA Guidelines, the Initial Study Checklist and this Draft EIR focus on changes to the environment, not social or economic effects. The statement that there would be no displacement of homes refers to the fact that the proposed Program would not entail any physical changes to residences. The term "stabilize their incomes" has been clarified to indicate that this phrase is referring only to participants (i.e., those receiving payments from Metropolitan).

(12) State CEQA Guidelines Section 15131 states that "Economic or social effects of a project shall not be treated as significant effects on the environment." In accordance with the State CEQA Guidelines, the Mandatory Findings of Significance statements in the Initial Study refer to physical effects, not social or economic effects.

(13) The Environmental Checklist questions included in the Initial Study for the proposed Program are based on Appendix G to the State CEQA Guidelines. PVID does not concur that the use of these Environmental Checklist questions is contrary to either the letter or intent of CEQA and the State CEQA Guidelines, particularly in light of State CEQA Guidelines Section 15063(f), which states that the Appendix G Environmental Checklist can be used to meet the requirements for an Initial Study.

(14) State CEQA Guidelines Section 15131 states that "Economic or social effects of a project shall not be treated as significant effects on the environment." Accordingly, social and economic impacts are not addressed in the Initial Study, and are not considered "effects on the environment" in this Draft EIR.

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Mr. Ed Smith
General Manager
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, CA, 92225

November 5, 2001

Hello Ed,

I will serve as the point of contact during the environmental review of the PVID Land Management Crop Rotation and Water Supply Program.

Bill V. Kontilis
7400 Petris Ave.
Bakersfield, CA, 93308
661-393-8821

2639 Prospect
Riverside Ca 92507
Nov 7- 2001

Dear Sirs
We are interested in joining the programs for PVID Land Management Crop Rotation and Water Supply program".
The water tax roll number is 81490

Harvey Jackson
Betty Henderson

958 High Park Dr.
Riverside, Ca 92506
Nov 7- 2001

Dear Sirs:

I am interested in joining the program for "PVID Land Management Crop Rotation & Water Supply Program."
My water tax roll number is 011311.
If necessary this acreage could be added to the 21 across the freeway.
That tax roll number is 811490

Thank You
Betty Henderson

Triple-Will Farms

10970 Williams Avenue Blythe, Ca 92225

Alfalfa Hay

Ben Williams

Jill Johnson

(760) 922-2278

Fax (760) 921-3740

tripwill@msn.com

November 9, 2001

RECEIVED
NOV 13 2001
PALO VERDE
IRRIGATION DISTRICT

Mr. Ed Smith
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, CA 92225

Re: Request for input regarding scope and content of environmental information to be included in the EIR. (Notice of Preparation of a Draft Environmental Impact Report)

Under Land Management Measures (p.8), we would like the utilization of a shallow-rooted cover crop to be included in any erosion control program.

In the past, the Palo Verde Valley has had some very wet winters. In those years of ample rainfall, it would be beneficial to the soil and help to reduce wind erosion if a shallow-rooted cover crop could be grown. Rainfall would be the sole source of moisture for the crop. A cover crop could also provide food and cover in the winter months for earthworms, soil microbes and wildlife. Lacking moisture, the cover crop would die in the spring.

Under Program Implementation (p.6), the "non-irrigation of farmlands would be rotated once every year up to once every five years, at the participant's option. We hope the "once every five years" rotation will continue to be an integral part of the program. Shortening the maximum period for rotation would only serve to decrease the participant's flexibility.

Sincerely,

Ben Williams

NATIONAL FISH AND WILDLIFE FOUNDATION
1120 CONNECTICUT AVENUE, NW
SUITE 900
WASHINGTON, DC 20036

Dear 2002 PTI Applicant:

Thank you for your proposal. We will notify you of your status, the latest, by April 1, 2002. Thank you for your patience during our review process.

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

Main Office
818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

t (213) 236-1800
f (213) 236-1825

www.scag.ca.gov

November 16, 2001

Mr. Ed Smith
General Manager
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, CA 92225

RE: **Comments on the Notice of Preparation for a Draft Environmental Impact Report for the PVID Land Management, Crop Rotation and Water Supply Program – SCAG No. I 20010609**

Dear Mr. Smith:

Thank you for submitting the **Notice of Preparation for a Draft Environmental Impact Report for the PVID Land Management, Crop Rotation and Water Supply Program** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

In addition, The California Environmental Quality Act requires that EIRs discuss any inconsistencies between the proposed project and the applicable general plans and **regional plans (Section 15125 [d])**. If there are inconsistencies, an explanation and rationalization for such inconsistencies should be provided.

Policies of SCAG's Regional Comprehensive Plan and Guide and Regional Transportation Plan, which may be applicable to your project, are outlined in the attachment. **We expect the Draft EIR to specifically cite the appropriate SCAG policies and address the manner in which the Project is consistent with applicable core policies or supportive of applicable ancillary policies. Please use our policy numbers to refer to them in your Draft EIR. Also, we would encourage you to use a side-by-side comparison of SCAG policies with a discussion of the consistency or support of the policy with the Proposed Project.**

Please provide a minimum of 45 days for SCAG to review the Draft EIR when this document is available. If you have any questions regarding the attached comments, please contact me at (213) 236-1867. Thank you.

Sincerely,

JEFFREY M. SMITH, AICP
Senior Planner
Intergovernmental Review

COMMENTS ON THE PROPOSAL TO DEVELOP A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM SCAG NO. I 20010609

PROJECT DESCRIPTION

The proposed Project considers initiation and implementation of a program, planned to develop a flexible and reliable water supply for the Metropolitan Water District, of 25,000 acre-feet up to approximately 111,000 acre-feet of Colorado River water per year for 35 years.

CONSISTENCY WITH REGIONAL COMPREHENSIVE PLAN AND GUIDE POLICIES

The **Growth Management Chapter (GMC)** of the Regional Comprehensive Plan and Guide (RCPG) contains the following policies that are particularly applicable and should be addressed in the Draft EIR for the PVID Land Management, Crop Rotation and Water Supply Program.

3.03 The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL STANDARD OF LIVING

The Growth Management goals to develop urban forms that enable individuals to spend less income on housing cost, that minimize public and private development costs, and that enable firms to be more competitive, strengthen the regional strategic goal to stimulate the regional economy. The evaluation of the proposed project in relation to the following policies would be intended to guide efforts toward achievement of such goals and does not infer regional interference with local land use powers.

3.09 Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL QUALITY OF LIFE

The Growth Management goals to attain mobility and clean air goals and to develop urban forms that enhance quality of life, that accommodate a diversity of life styles, that preserve open space and natural resources, and that are aesthetically pleasing and preserve the character of communities, enhance the regional strategic goal of maintaining the regional quality of life. The evaluation of the proposed project in relation to the following policies would be intended to provide direction for plan implementation, and does not allude to regional mandates.

3.20 Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.

3.22 Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.

AIR QUALITY CHAPTER CORE ACTIONS

The **Air Quality Chapter** core actions related to the proposed project includes:

5.11 Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.

WATER QUALITY CHAPTER RECOMMENDATIONS AND POLICY OPTIONS

The **Water Quality Chapter** core recommendations and policy options relate to the two water quality goals: to restore and maintain the chemical, physical and biological integrity of the nation's water; and, to achieve and maintain water quality objectives that are necessary to protect all beneficial uses of all waters.

11.06 Clean up the contamination in the region's major groundwater aquifers since its water supply is critical to the long-term economic and environmental health of the region. The financing of such clean-ups should leverage state and federal resources and minimize significant impacts on the local economy.

OPEN SPACE CHAPTER ANCILLARY GOALS

Resource Production

9.07 Maintain adequate viable resource production lands, particularly lands devoted to commercial agriculture and mining operations.

Resource Protection

9.08 Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.

CONCLUSIONS

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA.

ENDNOTE

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Roles and Authorities

THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG) is a ***Joint Powers Agency*** established under California Government Code Section 6502 ET seq. Under federal and state law, SCAG is designated as a Council of Governments (COG), a Regional Transportation Planning Agency (RTPA), and a Metropolitan Planning Organization (MPO). SCAG's mandated roles and responsibilities include the following:

SCAG is designated by the federal government as the Region's ***Metropolitan Planning Organization*** and mandated to maintain a continuing, cooperative, and comprehensive transportation planning process resulting in a Regional Transportation Plan and a Regional Transportation Improvement Program pursuant to 23 U.S.C. '134, 49 U.S.C. '5301 et seq., 23 C.F.R. '450, and 49 C.F.R. '613. SCAG is also the designated ***Regional Transportation Planning Agency***, and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) under California Government Code Section 65080 and 65082 respectively.

SCAG is responsible for developing the demographic projections and the integrated land use, housing, employment, and transportation programs, measures, and strategies portions of the ***South Coast Air Quality Management Plan***, pursuant to California Health and Safety Code Section 40460(b)-(c). SCAG is also designated under 42 U.S.C. '7504(a) as a ***Co-Lead Agency*** for air quality planning for the Central Coast and Southeast Desert Air Basin District.

SCAG is responsible under the Federal Clean Air Act for determining ***Conformity*** of Projects, Plans and Programs to the State Implementation Plan, pursuant to 42 U.S.C. '7506.

Pursuant to California Government Code Section 65089.2, SCAG is responsible for ***reviewing all Congestion Management Plans (CMPs) for consistency with regional transportation plans*** required by Section 65080 of the Government Code. SCAG must also evaluate the consistency and compatibility of such programs within the region.

SCAG is the authorized regional agency for ***Inter-Governmental Review*** of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12,372 (replacing A-95 Review).

SCAG reviews, pursuant to Public Resources Code Sections 21083 and 21087, Environmental Impacts Reports of projects of regional significance for consistency with regional plans [California Environmental Quality Act Guidelines Sections 15206 and 15125(b)].

Pursuant to 33 U.S.C. '1288(a)(2) (Section 208 of the Federal Water Pollution Control Act), SCAG is the authorized ***Areawide Waste Treatment Management Planning Agency***.

SCAG is responsible for preparation of the ***Regional Housing Needs Assessment***, pursuant to California Government Code Section 65584(a).

SCAG is responsible (with the Association of Bay Area Governments, the Sacramento Area Council of Governments, and the Association of Monterey Bay Area Governments) for preparing the ***Southern California Hazardous Waste Management Plan*** pursuant to California Health and Safety Code Section 25135.3.

Revised July 2001

November 13, 2001

Ed Smith, General Manager
PVID
180 W. 14th Ave.
Blythe, CA 92225

Dear Mr. Smith:

I have received the Initial Study for an EIR prepared by PVID in connection with the proposed Land Management, Crop Rotation, and Water Supply (should not this word be "Restriction"?) Program of the Metropolitan Water District. Your communication indicates that I must respond within 30 days, but does not state what type of response is needed.

You have also asked for the name and address of the person who will serve as my point of contact during the environmental review process. The information is as follows:

Michael Jimenez
Jimenez Farms
17060 S. DeFrain
Blythe, CA 92225
Phone: 760-922-6314

I would appreciate your keeping Mr. Jimenez informed of developments that may affect my property.

Yours very truly,

Mary D. Hoskins

Mary D. Hoskins
1221 Claremont, No. 18
Lake Havasu City, AZ 86406

copy to Michael Jimenez

DEPARTMENT OF FISH AND GAME
4775 Bird Farm Rd.
Chino, California 91710
(909) 597-9823

November 20, 2001

Mr. Ed Smith
Palo Verde Irrigation District
180 West 14th Avenue
Blythe CA, 92225

Re: Notice of Preparation (NOP) for the Palo Verde Irrigation District (PVID) Land Management, Crop Rotation and Water Supply Program (SCH# 2001101149)

Dear Mr. Smith:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the above-referenced project, relative to impacts to biological resources. The proposed project addresses the following objectives: 1) provide a flexible and reliable supply for Metropolitan of 25,000 acre-feet up to approximately 111,000 acre-feet of Colorado River water per year for 35 years, including years when California is required to remain within its annual allocation of 4.4 million acre-feet of Colorado River water; and 2) provide a stabilizing economic influence for participants and a funding mechanism for specific future community improvement projects.

The proposed project has the potential to affect the flow regime, habitat, and water quality on the Colorado River, primarily the river reach and associated backwaters between Parker Dam and 44 miles south to the Palo Verde Diversion Dam. The proposed project also has the potential to impact the biological resources in and around the Palo Verde Valley. This reach of the river and the Palo Verde Valley supports valuable habitat for resident fish, wildlife, and plant species. Numerous federally and state listed species inhabit the Lower Colorado River basin, including western-yellow billed cuckoo *(Melanerpes uropygialis)*, southwestern willow flycatcher *(Empidonax traillii extimus)*, least Bell's vireo *(Vireo bellii pusillus)*, gilded flicker (*Colaptes chrysoides*), gila woodpecker (*Melanerpes uropygialis*), Yuma clapper rail *(Rallus longirostris yumanensis)*, burrowing owl (*Athene cunicularia hypugaea*), California black rail (*Laterallus jamaicensis coturniculus*), great blue heron (*Ardes herodias*), greater sandhill crane (*Grus canadensis tabida*), California leaf-nosed bat (*Macrotis californicus*), California mastiff bat (*Eumops perotis californicus*), razorback sucker *(Xyrauchen texanus*), and bonytail chub *(Gila elegans)*.

The Department is responsible for protecting, preserving, and enhancing all natural resources of the state, and as a public agency must represent the interests of all our stakeholders. As such, operations which negatively affect the natural communities of California, or recreational opportunities are of concern to the Department. Having established the goal of protection and enhancement of threatened and endangered species, the Department recognizes and supports recreation, hunting, fishing, birding, boating, and public access elements being incorporated into any successful long-term planning and implementation effort along the Colorado River.

To enable Department staff to adequately review and comment on the proposed project, we recommend the following information be included in the draft EIR prepared for the proposed project:

1. The affect of a change in point of diversion will result in a reduction of flows of up to 111,000 acre-feet in the reach of river between Parker Dam and 44 miles south to the Palo Verde Diversion Dam. A thorough analysis of how the reduction in flows will affect groundwater elevations, aquatic and terrestrial vegetation, river and backwater surface acreage, river and backwater depth, seeps/spring, and water quality.

2. The Department has a "no net loss" policy for riparian habitat. An analysis of the impacts to riparian vegetation resulting from lowered groundwater levels, reduced median flows, and water diversion, needs to be included. This analysis also needs to include the potential for these changes to favor encroachment by invasive exotic plant species such as salt cedar.

3. The Department has a "no net loss" policy for wetlands. An analysis of the impacts to wetland vegetation resulting from lowered groundwater levels, reduced median flows, and water diversion, needs to be included. This analysis should include a discussion of the change in the rate of succession and loss of wetland habitat to upland terrestrial habitat.

4. An analysis of the loss of surface acreage in the affected river reach and associated backwaters, along with a reduction of median flows, water depth, and volume and how this loss will impact fish and wildlife. This will include reducing the available habitat and condensing the fish into smaller areas, increasing predation and competition for existing resources. The Department is of the opinion that less water will be detrimental to fish, wildlife, and their habitat.

5. This project could have a negative impact to recreation such as angling and hunting opportunities. Instream flows produce numerous direct benefits to the public such as recreation, and aesthetic enjoyment. An analysis of how reduced water depth will increase navigational hazards along the river such as sandbars, gravel bars, unstable riverbanks, floating or submerged debris, or other unfamiliar obstacles needs to be included, as well as how access to backwaters from the river for fish and boats will be compromised by the reduction in river depth; how decreased water volume, flushing rates, and flushing volumes for the river and associated backwaters may reduce water quality and increase

salinity and selenium concentrations; and how launch ramps, docks, and recreational facilities within the project area may be negatively affected by the reduction in river depth.

6. A thorough analysis of the loss of agricultural lands through changes in land use practices and its affect on wildlife dependent on these habitats, including, but not limited to great blue heron, and greater sandhill crane. Agricultural and grassland areas are of seasonal importance to several species of raptors. Species of raptors which are listed as species of Special Concern (SSC) may be observed during both the spring and winter months. Observation can include golden eagles (*Aquila chrysaetos*), ferruginous hawks (*Buteo regalis*), merlins (*Falco columbarius*), and rough-legged hawks (*Buteo lagopus*). Wintering raptors migrate from their breeding grounds in the northern latitudes to southern California and beyond. Grasslands, agricultural areas and wetlands provide important, if not vital, staging and wintering habitats. Other annual resident raptors that forage or nest in the area include the burrowing owl, northern harrier (*Circus cyaneus*), prairie falcons (*Falco mexicanus*), American kestrels (*Falco sparverius*), and red-tailed hawks *(Buteo jamaicensis).*

7. Goose Flats Wildlife Area supports habitat for both recreational fishing and the listed razorback sucker. The effects of the water diversion on Goose Flats Wildlife Area needs to be thoroughly analyzed.

8. A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.

   a. A thorough assessment of rare plants and rare natural communities, following the Department's May 1984 Guidelines for Assessing Impacts to Rare Plants and Rare Natural Communities.

   b. A complete assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

   c. Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, § 15380). A list of species to be addressed, should be developed in collaboration with the Department and the U.S. Fish and Wildlife Service.

   d. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitats, including Significant Natural Areas

identified under Chapter 12 of the Fish and Game Code.

9. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely effect biological resources, with specific measures to offset such impacts.

   a. CEQA Guidelines, § 15125(a), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

   b. Project impacts should be analyzed relative to their effects on off-site habitats. Specifically, this should include nearby public lands, open space, adjacent natural habitats, and riparian ecosystems. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided.

   c. The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

   d. A cumulative effects analysis should be developed as described under CEQA Guideline, § 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

   e. The document should include an analysis of the effect that the project may have on completion and implementation of regional and/or subregional conservation programs such as the Lower Colorado River Multi-species Conservation Plan.

10. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives which avoid or otherwise minimize impacts to sensitive biological resource should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

    a. Mitigation measures for project impacts to sensitive plants, animals, and habitats should emphasize evaluation and selection of alternatives which avoid or otherwise minimize project impacts. Off-site compensation for unavoidable impacts through acquisition and protection of suitable habitat elsewhere should be addressed.

    b. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts.

    c. The Department generally does not support the use of relocation, salvage, and /or

transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

11. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to the proposed project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:

    a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

    b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

12. The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.

    a. The Department has direct authority under Fish and Game code § 1600 et seq. In regard to any proposed activity which would divert, obstruct, or affect the natural flow or change the bed, channel, or bank of any river, stream, or lake.

    b. A discussion of potential adverse impacts from any increased runoff, sedimentation, soil erosion, and/or pollutants on streams and watercourses on or near the project site, with mitigation measures proposed to alleviate such impacts must be included.

    c. The Department is in the process of complying with a writ of mandate issued by the Superior Court of California (Mendocino Environmental Center vs California Department of Fish and Game, Respondents, Bruce Choder, River Rat Salvage, et. al. Real Parties). The writ of mandate states:

        > A writ of mandate shall issue ordering the California Department of Fish and Game on or before May 1, 1999, to prepare and implement a program or process that will incorporate a CEQA review into the Fish and Game

Section 1603 process. The writ of mandate shall further order the California Department of Fish and Game to cease and desist entering into Section 1603 agreements after May 1, 1999, unless such agreements have been subject to a CEQA review.

The writ of mandate clearly spells out what the Department's responsibilities are under CEQA with respect to all SAA's (1601 and 1603). In this regard, the Department is emphasizing in comment letters on projects that impacts to lakes or streambeds, alternatives and mitigation measures must be addressed in CEQA-certified documents prior to submittal of an application of a SAA. Any information which is supplied to the Department after the CEQA process is complete will not have been subject to the public review requirements of CEQA. In this instance, the Department has three choices: 1) refuse to issue the SAA; 2) not file the Notification because CEQA has not been complied with and return the package to the lead agency for further CEQA action; or 3) become the lead agency.

In order for the Department to process a SAA agreement, the CEQA-certified documents must include an analysis of the impacts of the proposed project on the lake or streambed, an analysis of the biological resources present on the site, copies of biological studies conducted on the site, biological survey methodology, and a discussion of any alternative measures, avoidance measures, mitigation measures which will reduce the impacts of the proposed development to a level of insignificance.

The Department appreciates the opportunity to comment on this project. Questions regarding this letter should be directed to Mr. Arturo Delgado, Environmental Scientist, at (760) 921-3265.

Sincerely,

Chris Hayes
Senior Environmental Scientist
Eastern Sierra-Inland Deserts

cc: State Clearing House

Marilee Harkinson
11011 10th Ave.
Blythe, CA 92225

November 6, 2001

Mr. Ed Smith, General Manager
Palo Verde Irrigation District
180 West 14th Ave.
Blythe, CA 92225

Dear Mr. Smith:

I read with interest the Initial Study and Environmental Checklist prepared and distributed by your agency. I would like to comment on several of the items.

XII. Population and Housing. You indicate that the proposed non irrigation of approximately 30% of the Palo Verde Valley's farmland would have a less than significant impact regarding the displacement of people. I disagree with your assessment. Fallowing 30% of the valley will have a significant impact on the population. Farmers will use 30% less labor; require 30% less services, such as crop dusting and equipment repair; and purchase 30% less chemicals, seed and equipment. Once the farmers scale back their operations, the local economy will experience a trickle down effect. What will be the effect on local businesses when their sales are reduced by 30%? In turn, city revenues will be reduced as businesses close down. People will simply leave the valley to make a living elsewhere. A 30% reduction in irrigated farmland must be considered significant.

XIII. Public Services. You indicate that the proposed Program would have no impact on the local schools. If the population decreases due to the factors I listed above, the schools will lose students. This in turn will lead to the need for fewer teachers, maintenance workers, bus drivers, etc. The trickle down effect will continue and the end result will be significant.

The Metropolitan Water District needs a reliable water source for the Los Angeles basin; however, given their track record, let them find it elsewhere. Perhaps a mandatory water conservation plan or water rationing would lessen their need for additional water. Implementing this program will make some of the local farmers quite rich, but will also accelerate the decline in living standards for many other residents of the Palo Verde Valley.

Thank you for the opportunity to voice my opinion.

Sincerely,

Marilee Harkinson

STATE OF CALIFORNIA — GRAY DAVIS, Governor

DEPARTMENT OF FOOD AND AGRICULTURE — WILLIAM (BILL) J. LYONS, JR., Secretary

1220 N Street, Room 452
Sacramento, CA 95814
(916) 657-4956
Fax: (916) 657-5017
sshaffer@cdfa.ca.gov

November 27, 2001

Mr. Ed Smith, General Manager
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, CA 92225

Dear Mr. Ed Smith:

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program - SCH #2001101149

California Department of Food and Agriculture (Department) has reviewed the NOP for the referenced water diversion project and believes that the project has the potential to cause significant environmental impacts on agricultural land and water resources. The Department's mission is the protection and promotion of agriculture in California. Towards that end, we offer the following recommendations for the project's DEIR.

The NOP indicates that the DEIR will address the project's environmental impacts, but, prior to the full analysis of the DEIR, concludes that "no significant effects to agricultural resources are expected." We respectfully disagree with this conclusion. The long-term nature of the proposed agreement and the constant fallowing of a significant acreage of otherwise productive agricultural land constitute a long-term impairment of agricultural land. Therefore, we recommend that the DEIR includes the following information.

Project Description and Agricultural Setting

1. Agricultural uses of the project site and regional setting, including:
   a. Acreage and types of crops grown, including percent of statewide production of each crop; and,
   b. Farmgate sales value of crops grown at the site, including the application of multipliers.
2. Acreage and current use of cropland to be converted to non-agricultural use each year.
3. Nature of water rights in the affected agricultural area.
4. PVID uses "diversion less return" to measure its water right on a per acre basis. The agreement allows the actual amount of water saved to be determined by PVID, the Metropolitan Water District and the U.S. Bureau of Reclamation. The DEIR should clarify the exact method to be used to determine "saved" water and how this could be changed from year to year.

5. Nature of the proposed rotation:
   a. Proposed rotation compared with current crop rotations, both in terms of nature of fallow and acreage;
   b. Frequency of rotation; and,
   c. Duration of rotation.
6. Quality of affected agricultural land (e.g., USDA Land Capability Classification, Williamson Act class, crop potential, California Department of Conservation Farmland Mapping and Monitoring Program class, etc.).
7. Land values of irrigated cropland and idle land.

Environmental Impacts

1. Loss of agricultural land and production capacity relative to existing resource base.
2. Degradation of air quality due to:
   a. Increases in dust from fallow fields;
   b. Increases in pesticide and herbicide use to control weeds and pests from fallow fields; and,
   c. Loss of carbon dioxide sequestering capacity.
3. Water quality and supply, including:
   a. Effects of diversion on groundwater recharge;
   b. Ramifications of agreement on agricultural users' water rights (for example, will appropriative water rights, which are based on use, be impaired if current users forego use for 35-years?);
   c. Potential impacts of the uncertainty of water supply and rights on the agricultural uses of downstream users due to the proposed methodology for calculating "saved" water for diversion to municipals users under the agreement (see Item 4 under Project Description, above);
   d. Effects on the priority of water rights of PVID (currently priority 1 in the Palo Verde Valley) agricultural users from diverting the "saved" water to municipal uses. (In particular, could a change in water use priorities affect the future availability of water to PVID agricultural water users in the event of a tightening water supplies that restricts water allocation to top priority users only?);
   e. How will loss of the diverted water from agricultural use affect the ability of PVID to serve future agricultural users; i.e., will the 35-year loss of agricultural water limit future agricultural expansion in the district?

Indirect Environmental Impacts

1. Impacts on the sustainability of local agricultural land uses:
   a. Describe how the proposed rolling fallow of producing agricultural land could affect the critical mass of agricultural acreage necessary to support local agricultural infrastructure, e.g. crop shipping and processing plants, and fertilizer, seed and irrigation suppliers; and,
   b. Describe how a loss of critical support industries could adversely affect the profitability and use of the remaining agricultural lands in the Valley.

c. Will there be impacts on the nearby wildlife refuge from the reduction of agri cultural runoff to the refuge due to the diversion proposed?

Growth-Inducing Impacts

1. What is the potential for agricultural land conversion in the area of proposed water delivery? In other words, will the delivery of this new supply of water for municipal uses remove a barrier to growth that will lead to the conversion of agricultural land? If so, what are the potential future sources of water to support the new growth beyond the 35-year term of the proposed agreement?
2. Are there urban growth pressures in the Palo Verde Valley and Mesa that could result in agricultural land conversion if agricultural land values drop due to the project?

Cumulative Impacts

1. Will this project contribute to a pattern of agricultural land retirement or fallowing for the purposes of water diversion to non-agricultural uses in the project area? The DEIR should characterize the cumulative acreage of agricultural land retired by past, in-the-pipeline, and foreseeable water diversion projects in the project area and Riverside and Imperial Counties. Similarly, the DEIR should document the statewide trend in water transfers away from agricultural uses. For example, the Central Valley Project Improvement Act, the Bay-Delta Accord and the CalFed Implementation Plan all have the potential to idle significant agricultural acreage. How would this project contribute to this potentially significant cumulative land resource impact?
2. Related to the preceding cumulative impact is the cumulative agricultural land conversion impact. The DEIR should document this impact in the project area, Riverside and Imperial Counties, and statewide.

The California Department of Conservation's Farmland Conversion Reports provide good information with respect to conversion from urban uses and may be of help in determining conversion due to water transfers or sales. California Department of Food and Agriculture crop statistics may also be useful in describing production impacts of land retirement and conversion.

1. If agricultural land will be converted in the proposed delivery area, the cumulative impacts of agricultural land conversion to urban uses in the service area should also be discussed.

Mitigation Measures and Alternatives

1. Mitigation measures that will lessen or eliminate the project's impacts on the loss of agricultural production capacity, particularly the loss of reliable water supply and of agricultural land must be discussed in the DEIR. Examples of measures that could be considered include:

   a. Greater certainty with regard to how water "saved" and diverted is calculated from year-to-year, including the use of successive short-term imbedded agreements (e.g., five years) that stipulate the amount of water diversions during the term of the short-term agreement;

b. Cover crops to reduce soil erosion and pest/weed propagation on fallowed agricultural land;

c. Limit the amount of land fallowed to a locally agreed upon level that will not impair the agricultural support infrastructure in the Palo Verde Valley and Mesa.

d. Purchase of agricultural land conservation easements, as necessary to prevent the future conversion of agricultural land in both the Palo Verde Valley and Mesa and in the water delivery area. Easements should also be considered to off-set the unavoidable conversion of agricultural land in both the water source and delivery areas of the project.

2. Alternatives to the project that would avoid or reduce adverse impacts on agricultural land and water resources should be assessed. Examples of project alternatives that might be considered include:

a. A shorter agreement term in order to protect appropriative rights and provide greater certainty to agricultural users in an uncertain water market;

b. Reduce the fallowed land management burden on agricultural producers (e.g., biocide application and other permits, water and air quality impact regulatory liabilities, cost of managing weed and other crop pests, etc.);

c. Subsidize enhancements of the productivity of the remaining agricultural land through better water pricing, enhanced water right guarantees in the Palo Verde Valley and Mesa, cost-share the implementation of water conservation best management practices, etc.;

d. An analysis of the availability alternative, non-agricultural sources of municipal water supplies including conservation, recycling and reuse, groundwater recharge and desalinization;

e Preferential retirement of poorer quality lands in the PVID; or,

f. A combination of water conservation by ongoing agricultural users and a reduction of land fallowed.

Thank you for the opportunity to review and comment on the NOP for this project. If you have questions on our comments, or require information or assistance in responding to them, please call me at (916) 657-4956.

Sincerely,

Steve Shaffer, Director
Agriculture and Environmental Policy

ESTABLISHED IN 1918 AS A PUBLIC AGENCY

COACHELLA VALLEY WATER DISTRICT

POST OFFICE BOX 1058 • COACHELLA, CALIFORNIA 92236 • TELEPHONE (760) 398-2651

November 27, 2001

RECEIVED
NOV 30 2001
PALO VERDE
IRRIGATION DISTRICT

Ed Smith, General Manager
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, California 92225

Dear Mr. Smith:

Subject: PVID Land Management, Crop Rotation and Water Supply Program

The following are suggested comments on the Notice of Intention to Prepare an Environmental Impact Report for the PVID Land Management, Crop Rotation and Water Supply Program.

1. Approval of the proposed project by the Bureau of Reclamation will require that agency to comply with the National Environmental Policy Act. Approval of the proposed project would appear to be a major federal agency action requiring preparation of an Environmental Assessment, and either a Finding of No Significant Impact or an Environmental Impact Statement.

2. Although the cascading nature of the priority system established by the Seven Party Agreement is noted, the consent of the parties to that agreement for the transfer will be required to pass the water through to The Metropolitan Water District of Southern California. The notice fails to list the parties to the Seven Party Agreement among the public agencies whose approval is required. The EIR should correct this omission.

3. Unless the proposed Quantification Settlement Agreement is executed and remains in effect throughout the period of the proposed project, or intervening priority holders give their consent to the transfer, an intervening priority holder, Coachella Valley Water District will have rights to use the water under the Seven Party Agreement and is likely to exercise those rights in order to satisfy its water supply requirements before The Metropolitan Water District of Southern California may take the water. The delivery of the water to Coachella Valley Water District will occur at Imperial Dam. The environmental impacts of the change in delivery point should be analyzed.

If you have any questions, please call me.

Yours very truly,

Tom Levy
General Manager-Chief Engineer

TEL:sl\ltrs\aov\smith2

TRUE CONSERVATION
USE WATER WISELY

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov •
73-720 Fred Waring Drive, Suite 100, Palm Desert, California 92260
Phone (760) 346-7491 • FAX (760) 341-6820

Gray Davis
Governor

RECEIVED
NOV 28 2001
PALO VERDE
IRRIGATION DISTRICT

November 26, 2001

Ed Smith
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, CA 92225

RE: PALO VERDE IRRIGATION DISTRICT (PVID) LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM SCH# 2001101149

The California Regional Water Quality Control Board (Regional Board) staff received and reviewed the above referenced report.

The Regional Board staff appreciates the opportunity to provide comments on this proposed project.

The Regional Board staff noticed, on page 8, under the subheading, "Land Management Measures", that you proposed to control weed growth on non-irrigated fields and neighboring farmlands by using some methods including chemical methods by applying for proper, local, state and federal permits.

Due to intent to apply chemical methods, you are requested to apply for the New Aquatic Herbicides NPDES permit from the Regional Board. This new general permit covers the uses of properly registered pesticides and applied aquatic pesticides as well.

If you have any questions, please call me at (760) 776-8986.

KOLA OLATUNBOSUN
Water Resources Control Engineer

KO/kg

cc: Scott Morgan, Project Analyst, State Clearinghouse

File: ER IMP ED

TO: Palo Verde Irrigation District

FROM: City of Blythe, City Manager's Office

SUBJECT: Response to Initial Study on PVID Land Management, Crop Rotation and Water Supply Program

DATE: November 29, 2001

The project is a proposed 35 year Land Fallowing Program, with phased fallowing to include up to 29% of the agricultural land in the Palo Verde Valley. According to the California Environmental Quality Act (CEQA), a project will normally have a significant effect on the environment if it includes the followings:

1. Substantially affect a rare or endangered species of animal or plant or the habitat of the species;

2. Interfere substantially with the movement of a resident or migratory fish or wildlife species;

3. Interfere substantially with ground water recharge;

4. Displace a large number of people.

5. Cause substantial erosion or siltation.

6. Substantially diminish habitat for fish, wildlife or plants;

7. Conflict with established recreational uses of the areas;

8. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation;

9. Convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land.

The City of Blythe fully intends to participate in the assessment of the cumulative impacts associated with the 35 year Land Fallowing project. In particular, the City of Blythe is concerned with substantial or potentially substantial changes in the physical condition of the Palo Verde Valley (i.e. land, air and water), and also social and economic and/or physical deterioration that might result from the project's economic impact on the City's Business Community.

In reviewing the PVID prepared Environmental Impact checklist, the City of Blythe would request the following categories be evaluated for cumulative environmental effects:

II. AGRICULTURAL RESOURCES

A 35 year Land Fallowing Program certainly has significant impact to the agriculture of the valley, although ultimately with appropriate scientific and empirical analysis there may be a finding that the necessity for the project out weights the agricultural impacts. A statement of "No Impact" is inadequate analysis.

II AIR QUALITY

Concern centers on toxic substances (e.g. pesticides, herbicides, insecticides) and PM 10 that potentially will be emitted into the air causing adverse health impacts. At a minimum the analysis of the program's cumulative impacts on air quality should detail proposed mitigation measures that would reduce the project's impacts to a level of less than significant impact, and elaborate as to responsibility for ongoing monitoring for the PM 10 emissions.

IV. BIOLOGICAL RESOURCES

Diversion of water from the Palo Verde Valley creates the potential for loss of wildlife habitat and damage to sensitive wetlands. Category is especially sensitive requiring a cumulative impact analysis.

VIII. HYDROLOGY AND WATER QUALITY

Substantial or potentially substantial change in groundwater supplies through over drafting is a potentially significant impact relative to maintaining a quality environment for the residents of the Palo Verde Valley.

XII. POPULATION AND HOUSING

Fallowing 29% of the agricultural area in the Palo Verde Valley will certainly displace farm labor and other employment, and the resulting job loss and cumulative economic impacts may contribute to the physical deterioration of the City's Business District. The City understands an economic or social change by itself shall not be considered a significant effect on the environment, but a social or economic change related to fallowing should be considered in determining whether the potential fallowing of extensive agricultural land is significant.

XIV. RECREATION

Project could potentially conflict with established recreational uses on the Colorado River, and reducing the recreational attractiveness will have an adverse economic impact on the City of Blythe.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

The cumulative effects of the Project certainly have the potential to have adverse effects on the residents of the Palo Verde Valley, and the City of Blythe understands a socioeconomic analysis will be included as an appendix to the EIR.

Les Nelson
City Manager

Blythe Area Chamber of Commerce – Board of Directors

Response to Initial Study and Environmental Checklist for proposed Land Management, Crop Rotation and Water Supply Program

This Program will generate economic benefits for participating farmers, PVID, and MWD. As has been the case with any transfer and has been suggested by the California State Legislative Analysts Office, there are a number of third party impacts that must be considered. The Program will impact farm workers, the selling and buying communities, railway service, tourism and employment both positively and negatively. Farm workers will be adversely affected through the loss of non-farm jobs and the decrease in the need for temporary workers from both the valley and areas in adjacent farming communities that share workers. The selling community in turn, may experience negative effects from the loss of employment in farm-related business, but may also benefit from the use of program payments by the farmers to pay off debts. Unfortunately, much of this debt is carried in loans from large banks or credit institutions that will carry the compensation out of the area. The railroad spur currently servicing the valley cannot survive a loss in farming freight. The impacts on tourism could be substantial and the community must learn to accept and find some way to replace the consequences of the loss of water. Employment will also be impacted in farm support services and non-farm related employment unless money contributed to the community for the direct use of replacing lost industry with new business opportunities within and outside of the agricultural industry.

The announced mitigation fund of $6 million or $170,000 per year seems a paltry amount when the study of the August 1992 through July 1994 conducted by M. Cubed showed a net decrease of $4 million per year in farm input purchases and a net reduction in overall revenue of $8.6 million over the 2 year period or another $4.3 million per year. It has been suggested that a separate fund be set up that would deal directly with the loss of employment and employment opportunities. Suggested use of vocational training is a noble cause. However, even with training, where will workers go to secure jobs if no new industry is attracted into town?

All things considered, the Program seems to a great extent, to be beneficial to the individual farmers, PVID and MWD. When you look at the numbers, the community seems to come out on the short end in every way. Local business should not be held responsible for an agreement they were not involved in from the beginning. For the Program to be a success and for MWD to be able to sell it to other communities to help with their water shortages (overuse of allotment), it is felt this small farming community and city must be compensated to help with enticing some replacement industry here in the near future. If not, the community faces being seriously impacted before the end of the Program in 2036.

III) AIR QUALITY

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

A study should be done ensuring that the practice of "clod plowing" when exposed to temperature extremes of below freezing to over 125°F. for up to 5 years, will not cause enough contraction and expansion to result in a breakdown resulting in an increase in PM-10 dust particles being breathed in by the general population. Wouldn't a guaranteed ground cover or stubble program create a healthier environment for valley residents?

Who will be the monitoring agency checking these results over each 5 year period? Will the increase in dust particles treated for years with herbicides, pesticides and fungicides cause an increase in lung problems? SUGGEST CHANGE TO LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

VII) HAZARDS AND HAZARDOUS MATERIALS

c) The only use of hazardous materials associated with implementation of the proposed Program agreements would be through chemical weed control, and this use is not expected to differ much from existing agricultural practice. Weed control procedures would comply with local, state and federal regulations related to the use of herbicides and pesticides. Thus, the implementation of the proposed Program would not result in hazardous materials emissions or the disposal of hazardous wastes near schools. By existing regulation, no spraying can be done within one-half mile of a school while children are present. Six schools are within one-half of a mile of farmland that might be in the proposed Program: Felix J. Appleby, Margaret White, and Ruth Brown Elementary Schools; Blythe Middle School, Palo Verde High School and Zion Lutheran School.

Due to the new location of the Palo Verde Valley College on the mesa just above the 6th Ave. agricultural fields, this area should be added to the list. NO CHANGE NECESSARY.

VIII) HYDROLOGY AND WATER QUALITY

Would the project:

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The 1992 – 1993 Initial Study and Land Management Plans failed to consider changes in groundwater levels, quality and quantity of return flows, and the effects of these changes on the hydrology of the lower Colorado River. Great Western (1995) notes that groundwater levels declined approximately 1.5 feet during the two-year program. Running averages for ground water levels in PVID remained relatively constant from 1981 to 1992, but experienced a drop concurrent with the initiation of the Program (Pacific Institute 1996). If groundwater levels decreased by 1.5 feet in two years, a study needs to be done to estimate the effect 35 years will have on the valley.

Many of the rural residents in the valley rely on sand-point wells to supply their homes with water. A 1.5-foot drop may cause problems for many of these. A drop any more significant than this will cause problems for many more. SUGGEST CHANGE TO POTENTIALLY SIGNIFICANT IMPACT.

Implementing the proposed Program would not result in any new discharges of water or waste. Existing drainage patterns would be altered in that less water would be diverted from the Colorado River at the Palo Verde Diversion Dam, causing a correspondingly lower amount of water to be returned to the river via PVID's drains. Also, because water saved by the proposed Program would be diverted at Lake Havasu as opposed to at the Palo Verde Diversion Dam, a section of the Colorado River would have a maximum of 111,000 fewer acre-feet of water per year than would occur absent the proposed Program.

f) From 1979 to 1991 and from 1995 to 1999, the annual amount of water released from Parker Dam ranged from a low of 6,367,000 acre feet in 1982 to a high of 20,349,000 acre-feet in 1984. The years 1992 through 1994 are excluded from the above discussion because releases from Parker Dam during that period were affected by the Test Program. If the 1982 river flow were reduced by 111,000 acre-feet that would have caused a 1.74% decrease in that annual river flow.

An important second industry to the Palo Verde Valley is tourism from river use. The area from the Palo Verde Diversion Dam and below will not be affected by the decrease in river height. However, above the Diversion Dam will be impacted by the drop in water height. This could mean a substantial drop preventing many tourists from taking their boats out of the water except in the mornings. Will weekenders travel from coastal Southern California for what may amount to 1½ days of recreation?

The above section goes back to a low in 1982 of 6,367,000 acre-feet in 1982 but omits the actual heights in 1992 – 1994. The actual heights provided by the Bureau of Reclamation were: 1992 = 5,985,800 acre-feet 1993 = 5,534,000 acre-feet 1994 = 6,885,600 acre-feet. 1993 was the only complete year of fallowing the 22% of the valley. 1992 & 1994 amounts were increased by the lack of fallowing during the first part of 1992 and during the last part of 1994. The difference between the lowest year of 6,367,000 in 1982 and the actual for 1993 was actually 13.08%. Can these differences be explained? What will happen when the Program actually goes to 29%?

Also, please explain when this water will be saved. Will it be when the canals are at their maximum cap or will it be when there is less demand for water and the river is already down and what will happen to water level when California is forced into meeting the 4.4 MAF plan in 2016? As this is planned, it must be considered in the cumulative impact area. SUGGEST CHANGE TO POTENTIALLY SIGNIFICANT IMPACT.

XII) POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

An initial attempt at assessing the farm labor impacts of the Program was made by MWD through a survey of the participating farmers.

The survey found that 26 full-time farm workers lost their jobs as a result of the transfer and that there was no change in either regular part-time or seasonal labor (Great Western 1995). This is probably a reasonable estimate of the loss of full-time agricultural employment as farmers hire these workers directly and, in the short-run have an incentive to keep experienced permanent workers on staff even if workload is reduced. However, since farmers do not directly hire most seasonal workers it is unlikely they would include declines in temporary labor in the surveys. The survey, then, provides only a partial view of total farm labor impacts.

An alternative way to determine the change in seasonal labor is to calculate implied labor losses according to planned fallowed acreage. We assumed that the crops that were actually fallowed were as stated in the initial fallowing agreement. Then we multiplied these crop acreages by labor coefficients (hours of labor required per acre of crop harvested) obtained from EDD. This analysis shows that the fallowing of 10 percent (2,000 acres) of vegetable and melon crops could have caused a decrease of the equivalent of almost 150 full-time workers per year. This figure is about 2 percent of the total regional labor force and 14 percent of the region's agricultural workers (City of Blythe 1994). Thus, we find that there might indeed have been an appreciable impact on seasonal labor in the Valley (Pacific Institute 1996).

Had the situation for alfalfa not improved, up to 10 percent of the fallowed acreage would have been in labor-intensive crops. Had the alfalfa prices gone even lower, then there may have been more than a 10 percent fallow of vegetable and melon crops (Pacific Institute 1996).

In general, the fallowing of labor-intensive crops like lettuce and melons can cause significant labor impacts, as the above calculation shows. This has significance in any agricultural community. In Palo Verde, there are about 2,500 agricultural workers, of which 1,700 are employed during the harvest season. Undoubtedly, future policy needs to consider that water transfers potentially affect not only laborers living in a selling community, but also migrant workers from other regions (Pacific Institute 1996).

The CEQA Report is supposed to take into effect any adverse effects on the area. Why is this initial report only looking at "substantial population growth"? SUGGEST CHANGE TO POTENTIALLY SIGNIGICANT IMPACT.

XIII) PUBLIC SERVICES

b) Would the project result in substantial adverse physical impacts associated with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Schools?

This report looks again at the need for new development or increase in population. CEQA Report is supposed to take into effect any adverse effects on the area. The above unemployment impact without the creation of new employment opportunities within the Valley will probably result in the relocation of many families with children. State support for the local school systems is based on enrollment. A reduction of this enrollment will have a serious economic impact on the Palo Verde Unified School District. SUGGEST CHANGE TO LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED or higher.

Parks?

This report looks again at the need for new development or increase in population. This is a subject that should be discussed at the receiving end of the water transfer.

Will it result in increased urban sprawl? CEQA Report is supposed to take into effect any adverse effects on the area. The above unemployment impact without the creation of new employment opportunities within the Valley will probably result in the relocation of many families with children. RECOMMEND LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED or higher.

XIV) RECREATION

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

This report looks again at the need for new development or increase in population. This is a subject that should be discussed at the receiving end of the water transfer. Will it result in increased urban sprawl? RECOMMEND LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED or higher.

CEQA Report is supposed to take into effect any adverse effects on the area. The above unemployment impact without the creation of new employment opportunities within the Valley will probably result in the relocation of many families with children.

Where in the report does it look at the impact of loss of Colorado River recreation facilities for recreation? Lower water levels will result in increased accidents and loss of tourism for the community. SUGGEST CHANGE TO LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED or higher.

XVII) MANDATORY FINDINGS OF SIGNIFICANCE

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of the project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

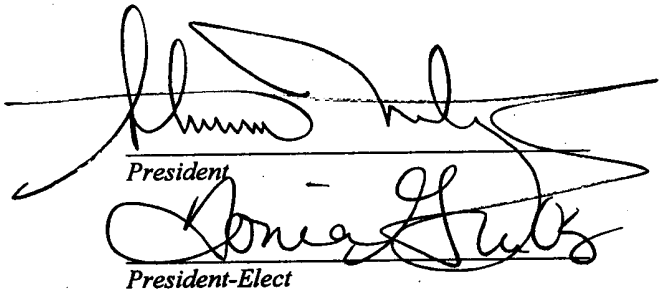
Loss of water recreational areas will be important to the City of Blythe and the Palo Verde Valley. As discussed above, this is Blythe's second largest industry. This is where a large portion of the residents relax and play during their off hours. A large group of residents of San Diego, Orange, Los Angeles and western Riverside Counties also come here to get away from the "stress of the city". However, there are approximately 1300 permanent residents and over 4200 weekend visitors who enjoy the river use from Lost Lake to the Palo Verde Diversion Dam. With the cumulative effects of the IID/SDWCA, IID/COACHELLA and the PVID/MWD agreements, these residents will most likely see water levels dropping as much as 10 to 15 percent during the summer months. With the proper mitigation measures, this can be managed using ideas of the PVVEDC.

A new city-operated river park is in the permitting stages with Riverside County at this time.

Blythe Area Chamber of Commerce – Board of Directors

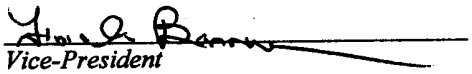
How will the loss of water effect the lagoon facilities at this park and what kind of permits will be required to expand this lagoon and proposed launch ramp if water levels fall. All of these are considered environmental effects that will directly or indirectly affect human beings. SUGGEST POTENTIALLY SIGNIGICANT IMPACT.

Submitted by the Blythe Area Chamber of Commerce for inclusion in the EIR Report for the proposed Land Management, Crop Rotation and Water Supply Program

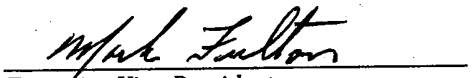


President — 11/28/01 *Date*

President-Elect — 11/28/01 *Date*



Vice-President — 11/28/01 *Date*



Executive Vice-President — 11-28-01 *Date*

TO: Palo Verde Irrigation District

FROM: City of Blythe, Development Services Department

SUBJECT: Response to Initial Study on PVID Land Management, Crop Rotation and Water Supply Program

DATE: November 29, 2001

Regarding the Environmental Initial Study for the PVID Land Management Crop Rotation and Water Supply program, the City of Blythe Development Services Department submits the following comments.

III. Air Quality

The fallowing of land could potentially result in an increase in PM10 emissions even though the Palo Verde Valley is in non-attainment for particulates. Although the Initial Study describes the proposed land management measures to mitigate PM10 emissions from fallowing of the land, it is yet unclear about who will monitor such measures. The first and second years that land remains fallow may be easily controlled in terms of erosion, dust, etc. It is the situation where certain lands may be fallowed for as long as five (5) years that is of concern. How the mitigation monitoring will occur and who will administer the monitoring needs to be defined in order to protect the air quality from the subject parcels being fallowed.

VIII. Hydrology and Water Quality

Diversion of water from the Palo Verde Valley to the coastal areas as proposed will result in a lowering of the groundwater table. As the Initial Study describes, such lowering is considered less than significant based on the reasons cited in said Initial Study. The Development Services Department concurs in this respect. However, other factors need to be evaluated regarding groundwater table drawdown, i.e. Blythe Energy Plant, once operational. Such evaluation should not however be limited to the losses accruing from the energy plant but should be regional. As such it should consider the long term impacts accruing to the Palo Verde Valley from the removal of groundwater by activities from both upstream and downstream of the Palo Verde Valley itself.

The Gas Company

A Sempra Energy company

Southern California
Gas Company
1981 W. Lugonia Avenue
Redlands, CA 92374-9720

Mailing Address:
PO Box 3003
Redlands, CA 92373-0306

November 16, 2001

Gas Co. Ref. No. 01-503 OR

Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

Attention: Ed Smith

Re: Draft EIR – PVID Land Management, Crop Rotation and Water Supply Program.

Thank you for the opportunity to respond to the above-referenced project. Please note that Southern California Gas Company has facilities in the area where the above named project is proposed. Gas service to the project could be provided without any significant impact on the environment. The service would be in accordance with the Company's policies and extension rules on file with the California Public Utilities Commission at the time contractual arrangements are made.

You should be aware that this letter is not to be interpreted as a contractual commitment to serve the proposed project, but only as an informational service. The availability of natural gas service, as set forth in this letter, is based upon present conditions of gas supply and regulatory policies. As a public utility, The Southern California Gas Company is under the jurisdiction of the California Public Utilities Commission. We can also be affected by actions of federal regulatory agencies. Should these agencies take any action, which affects gas supply, or the conditions under which service is available, gas service will be provided in accordance with revised conditions.

Typical demand use for:

a. Residential (System Area Average/Use Per Meter) Yearly

Single Family	799 therms/year dwelling unit
Multi-Family 4 or less units	482 therms/year dwelling unit
Multi-Family 5 or more units	483 therms/year dwelling unit

These averages are based on total gas consumption in residential units served by Southern California Gas Company, and it should not be implied that any particular home, apartment or tract of homes will use these amounts of energy.

b. Commercial

Due to the fact that construction varies so widely (a glass building vs. a heavily insulated building) and there is such a wide variation in types of materials and equipment used, a typical demand figure is not available for this type of construction. Calculations would need to be made after the building has been designed.

We have Demand Side Management programs available to commercial/industrial customers to provide assistance in selecting the most effective applications of energy conservation techniques for a particular project. If you desire further information on any of our energy conservation programs, please contact our Commercial/Industrial Support Center at 1-800-GAS-2000.

Sincerely,

Steve Dunivin
Technical Supervisor

PLANNING/BUILDING DEPARTMENT
IMPERIAL COUNTY

PLANNING / BUILDING INSPECTION / PLANNING COMMISSION / A.L.U.C.

JURG HEUBERGER, AICP,CEP
PLANNING/BUILDING DIRECTOR

CERTIFIED MAIL # 7000 1670 0011 5374 4413

November 30, 2001

RECEIVED
DEC - 3 2001
PALO VERDE
IRRIGATION DISTRICT

Mr. Ed Smith, General Manager
Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

Subject: **Response to Notice of Preparation for Palo Verde Irrigation District's Land Management, Crop Rotation and Water Supply Program.**

Dear Mr. Smith:

Imperial County on November 2, 2001, received the Notice of Preparation for the Land Management, Crop Rotation and Water Supply Program for the above referenced Palo Verde Irrigation District (PVID), Metropolitan Water District of Southern California (MWD) project that includes a of portion Imperial County. It is our understanding that the project would result in the transfer of water supply from agricultural fields to urban uses through the process of "land fallowing" in the Blythe/Palo Verde Valley area.

This response meets your deadline for public comment, *"not later than 30 days after receipt of this notice,"* which is on or before December 2, 2001.

According to your document PVID is the designated California Environmental Quality Act (CEQA) "Lead Agency" for the project, which include both Imperial County and Riverside County, while MWD would be a "Responsible Agency." Additionally, within the NOP document MWD and PVID are the proponents of the project, which could eliminate any non-bias or arms-length analysis typically expected in the preparation of an environmental document of this magnitude. Since MWD, PVID, and local farmers are the beneficiaries, how can the general public or other affected jurisdictions/agencies be assured of a proper environmental analysis?

939 MAIN STREET, SUITE B-1, EL CENTRO, CA 92243 - 2856 (760) 482-4236 FAX (760) 353-8338
E-MAIL planning@imperialcounty.net plan98@imperialcounty.net *(AN EQUAL OPPORTUNITY EMPLOYER)*

Imperial County, takes its responsibility under CEQA in its capacity as either "lead or responsible agency" quite seriously. In reviewing your November 2001 NOP, Imperial County has a number of concerns regarding the environmental review and the projects impacts on agriculture, biology, aesthetics, air quality, recreation, groundwater, and economics.

1. Why is the Imperial County not identified as a "Responsible Agency" for the proposed program since a portion of the project is in the Palo Verde area? The project description does not identify who in Imperial County or community of Palo Verde, have been contacted, or who is involved in/or participated in this proposed program, e.g. the County Agricultural Commissioner regarding the use of herbicides, pesticides, and insecticides for weed abatement when fallowing occurs, or for air quality impacts within the Air Pollution Control District's jurisdiction relating to "PM-10 emissions".

2. The Program calls for the non-irrigation (fallowing) of "29 percent" of the existing farmland in the Blythe/Palo Verde Valley area over a 35-year period, with the water being diverted/transferred to MWD for use by the coastal urban areas. With nearly a third of all farming activity being eliminated the primary and secondary economic impacts on the community would be severe. Rural farming communities have a fragile economy, typically overly dependent on ever-changing markets. Unemployment is typically higher than in urban areas. Imperial County in particular has historically had one of the highest unemployment rates in the State. Any change in farmable lands could have a devastating effect on a farming community with direct impacts on laid-off farm laborers, seed, pesticide, and farm implement sellers, and indirect impacts on commercial, housing and educational institutions. Additionally, farming communities tend to be interdependent, so impacts on one community could be felt by a number of surrounding communities. Taking nearly a third of the farmable land, while not providing any quantified benefit may destroy the economy and have a "ripple effect" on the surrounding communities.

3. Page 5, states that currently *"...All water used by PVID returns to the Colorado River..."* The NOP does not give any quantified amount of recharge into the Colorado River currently gets from PVID but implies that the Program would eliminate most of this return. This will result in a significant impact on downstream properties. A reduction on the return will result in a lowering of the Colorado, which in turn will adversely impact residential, environmental, and recreational resources, downstream of the project area. How will this be addressed? What will PVID and MWD use to study the economic and environmental impacts?

4. The reduction in water may greatly impact the river's habitat. The NOP does not identify what type of studies or when the studies will be conducted to address the river habitat both upstream and downstream. When it comes to habitat studies, time of the year is crucial. How will this be addressed? What will PVID and MWD use to study the environmental impacts on these fish and wildlife habitats?

5. Page 6 states *"...Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of the PVID would be 'saved' and made available to Metropolitan for use in its service area to meet existing water demand..."* The question is 'saved' from what? The agricultural crop farming usage, the habitat along the river, or the residential and recreational usage downstream, i.e. what is being saved? This statement implies that PVID and MWD find urban water usage as a primary and better use than that of farming or environmental habitat, which they intend to 'save' the water from. This is contrary to the California Seven-Party Agreement of 1931 and the Boulder Canyon Project Act, which created the water-right priorities and making farming in Palo Verde a "Priority 1", while MWD water had a "Priority 4." Does the transferring of water allocated for farming change the priority of the water? What happens in a "drought year," when there is not enough water to go around and MWD is demanding its agreed upon allotment? Who ultimately has priority? How does this Program change laws? Who ultimately has the rights? Additionally, when the 35-year agreement expires and the MWD has taken its transfer of "29 percent" of the water, does the priority revert back to PVID or is it now MWD's?

6. Page 6 and elsewhere in the document states *"...Non-irrigation of farmlands would be rotated once every year up to once every five years, at the participant's option..."* How do you propose to properly analyze the impacts on the land with such a wide variable in years a particular parcel of land is fallowed? There is no mechanism that requires the crop rotation of less than five-year intervals. This could ultimately result in the entire "29 percent" of land rotating on a five-year basis as opposed to a one-year basis as the document implies. What are the impacts of such an event on air quality, biology, water, economics, etc...?

7. Page 6 and 7 states that *"...In the event that a landowner fails to comply with its obligations, Metropolitan would have the right to require the non-irrigation of discrete parcels of land until compliance is attained..."* What does this statement mean? Where is the local or private control over the land? How does MWD select the "discrete parcels"? What are the impacts of this?

8. Page 7 – Where is the statistical data to back up the statement *"...It is estimated that approximately 4.2 acre-feet of Colorado River water are*

used by actively farming one acre of land within the Palo Verde Valley for one year..."? Local sources estimate 6+ acre-feet per acre for alfalfa, and other variations for different types of vegetables. Where is the crop water usage breakdown analysis? Without quantifiable statistical data, the amount of water used and ultimately diverted to MWD is unknown.

9. The U.S. Bureau of Reclamation is identified as being a participant to assist MWD and PVID as follows: *"...The actual amount of water 'saved' by the proposed Program would be determined on an annual basis by a verification committee composed of PVID, Metropolitan and the U.S. Bureau of Reclamation..."* and on page 10, it states that the *"...U.S. Department of the Interior, Bureau of Reclamation -- Approval from the Bureau of Reclamation will be required prior to implementing the proposed Program..."* If the federal government through the Bureau of Reclamation must approve the proposed "Program", the U.S. Fish and Wildlife Service may be involved for consultation on sensitive species under the federal Endangered Species Act, why isn't the environmental document a joint "Environmental Impact Statement/Environmental Impact Report (EIS/EIR) instead of just an "EIR"? Where is the National Environmental Protection Act (NEPA) analysis?

10. The project description, on (page 3), states that *"...Metropolitan would fund specific future, as yet to be determined, community improvement projects...Special attention may be given to educational and vocational programs. The EIR will not evaluate the proposed community improvement projects because specific future projects have not been selected for implementation. In fact, the committee that will select these future projects has not yet been formed...and it would be highly speculative and therefore not feasible to assess the environmental effects of these future projects at this time. When the committee ultimately selects specific community improvement projects for funding and implementation, PVID or another lead agency, as applicable, will be required to evaluate what CEQA review and documentation, if any, will be required for those projects..."*.

    a). This is to be a study that will be prepared as a "*technical appendix to the EIR*" for the decrease in farm laborer employment within the Palo Verde Valley. This study should include the "socio-economic" impacts of a reduction of "29 percent" of existing farmland that will be fallowed. The "only issue areas" that are identified in the NOP are "*...agricultural resources, air quality, biological resources, geology/soils and hydrology/water quality..."* The study should also include any third-party impacts and should focus on what "educational and vocational programs" could be started at the P.V. Junior College for the re-training of agricultural/non-agricultural workers and new employment

opportunities for those farm laborers who may lose their jobs due to this proposed Program.

b). What is the financial commitment that MWD is proposing? How can you analyze the environment impacts of a project on a community without providing quantified mechanism that addresses the economic impacts? Stating that a committee will be formed to address these issues at a future date does not meet the CEQA definition of a "Project." The action taken by this Program has a direct impact on the economic viability of the community and must be a part of this analysis. Where is the analysis on loss of primary and secondary jobs, loss of property values on other economic issues addressed? Where is the baseline data on the current economic situation, the Program's impacts and the mitigations? If re-training, or other mechanism is needed, then it must be identified in the EIR or if fails to address the "Whole of the Project" under CEQA.

c). Who is going to be the *"...lead agency..."* that the NOP identifies that is to *"..evaluate what CEQA review and documentation...will be required for those projects..."?*

d). In the "Introduction", (page 2), it states that *"...The proposed Program will also assist in stabilizing the farm economy within the Palo Verde Valley through a one-time entry payment and bi-annual payments applicable to participants in the proposed Program and through providing a funding mechanism for future, as yet undetermined, community improvement projects..."* The proposed money transfers to farm owners and possible "speculative" future projects proposed as mitigation sound more like "on-the-ground" community improvements instead of agricultural worker re-training and re-employment strategies.

11. According to page 8 of the NOP, a "Test Program" from 1992-1994 was done on erosion control stating that *"...wind erosion is not projected to pose a serious constraint to the proposed program (Sources 6, 8)..."* This, however, does not take into account the fact that *"...Non-irrigation of farmlands would be rotated once every year up to once every five years, at the participant's option..."* (page 6). With no mechanism requiring the limitation of crop rotation to two years or less, the "Test Program" is inadequate in its assumptions. At a minimum, a five-year test must be done to at the least show the true affects of the Program parameters.

The Environmental Checklist

12. I. Aesthetics c) "Substantially degrade the existing visual character or quality of the site and its surroundings" is marked No Impact. The explanation on (page 24) denotes the appearance of fields within the Palo

Verde Valley as a distinctive vista and part of the aesthetics. In a climate where crop rotation and fallowing is the exception to the rule having nearly a third of the farmland fallowed will result in an alteration of the existing aesthetic vistas. Large patches of bare land created due to fallowing will certainly create an impact in otherwise agricultural areas and degrade the visual character of the area. Therefore, there are indeed some measurable impacts on the aesthetic character of the Valley.

13. II. Agricultural Resources a) "Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance...to non-agricultural use" is marked No Impact. The Imperial County Important Farmland 1996 Map prepared by the Department of Conservation identifies the subject area as both "Prime Farmland" and "Farmland of Statewide Importance", and therefore the fallowing of land in this area would have an impact, especially fallowing for extended periods of time (5 years) as stated in the NOP.

14. II. Agricultural Resources b) "Conflict with existing zoning for agricultural use, or a Williamson Act Contract" is marked No Impact. The conversion of land in agricultural areas from agriculture to non-agriculture through fallowing will have an impact on both the agricultural zoning designations as well as the Williamson Act contracts within Imperial County. The Williamson Act (Government Code Section 51200-51282) defines "Agricultural preserve" means an area devoted to agricultural use, recreational use, or open-space use, or any combination of those uses.

a). "Agricultural use" means use of land for the purpose of producing an agricultural commodity for commercial purposes; and,

b). "Recreational use" is the use of land in its agricultural or natural state by the public, with or without charge, for any of the following: walking, hiking, picnicking, camping, swimming, boating, fishing, hunting, or other outdoor games or sports for which facilities are provided for public participation...; and,

c). "Open-space use" is the use or maintenance of land in a manner that preserves its natural characteristics, beauty, or openness for the benefit and enjoyment of the public, to provide essential habitat for wildlife...

Under the Williamson Act, the California Legislature (Section 51220) found *"...That the preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the state's economic resources, and is necessary not only to the maintenance of the agricultural economy of the state, but also for the assurance of adequate, healthful and nutritious food for future residents of this state and nation..."* At no point dothe definitions or the Legislative findings identify "fallowing" as a

primary agricultural use let alone the fallowing of a given field for up to five-years.

Additionally, in the Williamson Act, in terms of farm labor and housing the California Legislature found *"...That the agricultural work force is vital to sustaining agricultural productivity; that this work force has the lowest average income of any occupational group in this state; that there exists a need to house this work force of crisis proportions which requires including among agricultural uses the housing of agricultural laborers; and that such use of agricultural land is in the public interest and in conformity with the state's Farm Worker Housing Assistance Plan..."* How does this Program impact the farm labor workforce and the housing issues, neither are addressed in this NOD nor are they proposed for the EIR beyond the vague statement about MWD providing some kind of yet-to-be-determined assistance.

The Program impacts the County's agricultural resources and is not consistent with the intent of the Williamson Act. There needs to be a full analysis of the impacts on the agricultural resources of the Valley by the diverting of water. The Williamson Act sees agriculture use as a "commodity", not vacant land. The Act finds that effective stewardship of our agricultural and natural resources are paramount for the future.

15. III. Air Quality b), the NOP mentions the *"Mojave Desert Air Quality Management District"* and the *"Antelope Valley Air Pollution Control District"* but does not mention the Imperial County Air Pollution Control District and the EIR should include the ICAPCD and its jurisdictional area in Palo Verde. Have they even been noticed on this project?

16. III. Air Quality b) and c) are marked Less Than Significant Impact. Additionally, the "Land Management Measures" and "Explanation of Checklist Responses" portion of the Initial Study describe land management techniques that will be used in order to minimize erosion and reduction of air quality, thus implying that these impacts have already been mitigated. The checklist should be amended to reflect that mitigation measures will be employed to reduce potentially significant impacts, and that these impacts to air quality are potentially significant without mitigation. Also, this is being based on the two-year "Test Program" and needs to be re-analyzed to reflect the five-year fallowing allowed on a given parcel.

17. IV. Biological Resources c) and d) are marked Less Than Significant Impact needs to be checked as Potentially Significant Impact and be part of the proposed analysis addressing the concerns of IV Biological Resources a) and b). Also, there is no mention of what will be "further

assessed" in the EIR. As noted earlier, the biological resources of the Colorado River area and its multitude of fish and wildlife habitats are fragile and require a complete analysis on the potential impacts caused by this diverting of 111,000 acre feet of water. The impact of fallowing "29 percent" of the existing cultivated agricultural lands will also be an impact on number of species including those that may be on the endangered species list, which use the fields as their primary food source. Theses studies must be done at the right time of year for all represented species to be analyzed. This may mean multiple study times throughout the year to get the needed data. There are two primary concerns with the biological resources loss of habitat due to the reduction of water in the Colorado River both up and downstream and the loss of agricultural food sources. It is critical that they are adequately addressed and that proper mitigation is identified.

18. VII. Geology and Soils b) is marked Less Than Significant Impact. The checklist should be amended to reflect that mitigation measures will be employed to reduce potentially significant impacts, and that these impacts to air quality are "Potentially Significant Without Mitigation." Additionally, reduction of groundwater could affect the geology and soil of the area, and have unknown impacts on seismic and flood events. A study of the geology and soil make-up and the impacts of less groundwater should be done to address these concerns.

19. VII. Hazards and Hazardous Material a), b) and c) are marked Less Than Significant Impact. Please identify the issues on chemicals employed for weed control and other herbicides and pesticides used on the land. The Program leaves it up to the property owner to handle the abatement of weeds and the erosion control. However, it does not take into account the cumulative effects of pesticides over the long term (5-years or more) nor does it provide any guidelines for abatement and erosion control, or the monitoring of said abatement.

20. VIII. Hydrology and Water Quality b) is marked Less Than Significant Impact, but again uses the two-year "Test Program" as the analysis. There needs to be a current and complete groundwater analysis on the entire project with special attention given to the recharging of the Colorado River to accurately identify the impacts. There also needs to be a mechanism for on-going monitoring and provisions for stopping or reducing the water transfer if it impacts the fish and wildlife habitats.

21. VIII. Hydrology and Water Quality c) is marked No Impact, but it fails to identify impacts to Oxbow Lake, or the Palo Verde Lagoon (drain) from the reduction of water downstream. There would be a measurable impact to the residential, recreational, and environmental habitat of these areas from

a reduction of water. These areas need to be included in the water analysis.

22. VIII. Hydrology and Water Quality d) is marked No Impact, stating that *"...the proposed Program would not require any physical changes to PVID's system of canals and drains...also would not affect the amount of natural runoff (i.e., storm water runoff) in the Palo Verde Valley..."* The statement does not appear to address the reduction in the water in the canals and drains. The system is a gravity-flow system that for decades has been accustomed to a specific flow rate with little interruption. The reduction of a flow rate of 111,000 acre feet of water, may result in pooling and flow problems that have not been addressed. Some fields currently getting gravity-flow may need to have pumps installed to get the proper flow amount, while other canal areas may result in pooling, creating stagnation and mosquito problems. The Program does not address the impacts this water transfer will have on the canal system or any mechanisms to fix the problems; and if they should arise, who is responsible for this, the property owner, MWD, or PVID? Where would the funding come from should these problems arise?

23. VIII. Hydrology and Water Quality f) is marked No Impact, stating that *"...The proposed Program would not result in any new discharge of water or waste. Existing drainage patters would be altered in that less water would be diverted from the Colorado River at the Palo Verde Diversion Dam, causing a corresponding lower amount of water to be returned to the river via PVID's drains..."* That sounds reasonable, but it does not address the dilution factor. With the reduction of water there is a reduction in dilution of herbicides, pesticides and other dissolved solids typically found in agricultural runoff. What are the projected impacts of this on the Colorado River and its downstream fish and wildlife habitats and its users?

24. IX. Land Use and Planning a) is marked Less Than Significant Impact, acknowledging the loss of farm labor employment, but it fails short of the impacts to secondary uses and the community vitality as a whole. If also fails to acknowledge impacts to existing land use plans of the area such as Imperial County's "Palo Verde Community Area Plan," and the projected economic and growth build-out of the area. The EIR needs to address Imperial County's regulations as well as Riverside County. There is only the provision for an undisclosed amount of funding by the MWD to presumably assist in cleaning up the economic mess created by the proposed water transfer through some community improvement projects.

25. IX. Land Use and Planning b) "Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect" is marked No Impact. This proposed

project, the fallowing of up to 26,500 acres of irrigated farmland for periods up to 5 years conflicts with the Imperial County General Plan, Land Use Ordinance, and Agricultural Element with regard to the protection of agricultural resources in Imperial County.

26. XII. Population and Housing b), it states that *"...Implementing the proposed Program would not cause displacement...No farmers' or workers' homes would be displaced, and the proposed Program's payments to participants would help stabilize their incomes..."* It is unclear from this statement how payments to the farm owners could or even would "trickle down" to the farm laborers and thus "stabilize their incomes". Will the farmers somehow pay their farm laborers when they are out of work for up to "five years" in order to "stabilize their incomes"? This statement should be clarified in the "technical appendix" to the draft EIR.

27. XIII. Public Service a), Schools, the statement is made that the *"...implementation of the proposed Program would not increase demand for or place additional requirements on schools in the Palo Verde Unified School District..."* In the event the result of the water transfer is a significant reduction of agricultural lands being farmed and therefore resulting in a loss of farm laborer jobs, this may also result in the possible significant reduction in school attendance. The "technical appendix" regarding the decrease in farm laborer employment in the School District should address this possibility. Additionally, there is no discussion on how the reduction of water will impact the fire protection services in the rural areas. In Imperial County part of the fire protection system, relies on the availability to pump from the canals when needed to put out rural fires (residential and other). With the loss of 111,000 acre feet of water, the availably of water in a given canal at the needed time is suspect. What measures if any are going to be put in place to alleviate this concern?

28. XIV. Recreation a) and b) are marked No Impact, stating that *"...No new development would result from implementing the proposed Program..."* This is a true statement; there would likely be a reduction in employment opportunities, a loss of property values and a gradual reduction in population, so the project most likely would not necessitate the creation of new recreational facilities. However, the impacts to the existing recreation in the area would be immeasurable, from the loss of hunting afforded by the local and migratory birds due to the loss of a food source, the loss of fishing and recreational boating on the Colorado River, Oxbow lake, and Palo Verde Lagoon due to the lowering of the water level, along with camping and other outdoor leisure activities currently enjoyed by local citizens and tourists. Of course this would also create secondary impacts to local businesses dependent on the recreational dollars.

29. XVIII. Mandatory Findings of Significance c) "Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly" is marked No Impact. The statement is made, *"...None of the proposed Program's environmental effects would cause a substantial adverse effect on humans. Although not required by CEQA, PVID plans to conduct an analysis of the proposed Program's potential socioeconomic effects on the local community..."*. Without the analysis referred to above, we are unable to determine whether a ""29 percent" " loss of the existing farmland, farm laborer jobs and third-party impacts is not a "substantial adverse effect on humans..." The proposed project will indeed have a direct adverse impact not only on farm workers who will lose their jobs due to the reduction of farmland and be forced to either relocate or find other means of employment. Additionally, the proposed project will have indirect impacts on the residents of the community through the reduction of irrigated farmland and loss of farming jobs and third party impacts.

30. The "Sources" portion (page 39) of the Initial Study it mentions the "Imperial, County of. General Plan Conservation and Open Space Element". On page 1, under "General Plan Designation" and "Zoning" it discusses the "Imperial Counties' general plans" and *"...Irrigated farmlands eligible to participate in the proposed Program are generally designated for agricultural use...are generally zoned for agricultural use by Riverside and Imperial counties..."* However, there is no mention of the Imperial County's Land Use Ordinance, the Agricultural Element, the Water Element, and the Land Use Element/Palo Verde Community Area Plan that have goals, policies and objectives relating to agricultural lands and possible conversion of agricultural lands to non-agricultural uses in the future.

We thank you for the opportunity to comment on this important project. We feel that there are a number of un-addressed issues that must be identified and property analyzed in the EIR in order for a proper determination on the project can be made. It is paramount that the "Whole of the Project" be analyzed for the sake of the current and future residents of Blythe/Palo Verde Valley area. MWD's desire to get additional water resources for its ever-growing urban clients is understood, but not at the expense of an ill prepared plan and lack of proper environmental and economic mitigation measures. The California Seven-Party Agreement of 1931 found that farming was "Priority 1", and never has that been truer than now. In an increasingly uncertain world, the Imperial County along with all other jurisdictions, special districts, or affected agencies, must ensure that its current and future community and economic growth be ensured and protected.

If you have any questions on the above, please contact Darrell Gardner, Assistant Planning Director at (760) 482-4236, ext. 4279, or at darrellgardner@imperialcounty.net.

Sincerely,

Darrell Gardner
Assistant Planning Director

Attachments

cc: Board of Supervisors
Ann K. Capela, County Administrative Officer
Ralph Cordova, County Counsel
Joanne L. Yeager, Asst. County Counsel
Jurg Heuberger, AICP,CEP, Planning Director
Tim Jones, Public Works Director
Steve Birdsall, Ag. Commissioner/APCO
Joe Buzo, County Fire/OES
Tom Wolf, Environmental Health Services
Palo Verde Irrigation District/MWD Water Transfer File
10.105

F:Word/PaloVerdeIrrigationDistrictNOP

PALO VERDE COLLEGE

Small Business Economic Development Center
145 North Spring Street, Blythe, California 92225
Telephone: (760) 921-3804 FAX: (760) 921-8233 E-Mail: Qhanson01@cs.com

November 30, 2001

Ed Smith, General Manager
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, California 92225

Subject: Response to Notice of Preparation of Draft Environmental Impact Report
PVID Land Management, Crop Rotation and Water Supply Program

Dear Mr. Smith:

This letter is a response to the **Notice of Preparation (NOP)** and **Initial Study for the Palo Verde Irrigation District (PVID) Land Management, Crop Rotation and Water Supply Program (Program).** The response is submitted on behalf of the **Palo Verde College Small Business Economic Development Center.**

Introduction

The **Palo Verde College Small Business Economic Development Center (SBEDC)** has been in operation since 1998 and serves a 75-mile wide area along the Colorado River from Imperial County on the south to the Nevada Border on the north. The SBEDC works in partnership with the City of Blythe, the City of Needles, the Blythe Area Chamber of Commerce and the Needles Area Chamber of Commerce. The SBEDC provides the information, coordination and services needed to insure enhancement of the business environment for existing businesses, as well as potential new business enterprises.

These comments are submitted by the SBEDC because of its role in providing services to enhance economic development in the Colorado River area. We feel that it is imperative that the economic impacts of the proposed program, especially on third parties, be carefully and comprehensively evaluated, and that necessary mitigation programs be identified on the basis of the quantified economic analysis.

Bruce Babbitt, former Secretary of the Interior, while speaking in Colorado on Water Rights is quoted as stating:

> Water is a natural resource with no fixed address, any water use inevitably affects many other uses, both upstream and down stream. That means that all stakeholders have a stake in every decision, and that in turn requires that they be included in the decision making process.

Furthermore, the State Water Resources Control Board, Division of Water Rights, A Guide to Water Transfers, July 1999, specifically states:

> The term "third-party impacts" is not defined in the Water Code. Third-party impacts cover a host of issues related to parties other than the party conducting the transfer and the party receiving the transferred water. They include concerns related to downstream water rights, adjacent groundwater users, fish and wildlife, recreation, economic impacts, etc. These third-party impacts typically involve economic impacts in the area from which the water is proposed to be transferred.

Areas of Concern

There is great concern on my part when I read the **Initial Study and Environmental Checklist.** This is the initial document which is to set the guidelines for the formal Environmental Impact Report (EIR) for the water transfer plan. If this initial effort to implement the **California Environmental Quality Act (CEQA)** and the State CEQA Guidelines is accepted as the process to be followed, we are indeed in deep trouble. The preparation of this report wherein its author has simply taken boilerplate questions and stated that they apply to this unique situation makes a mockery of the entire CEQA process.

I do not believe it was the intention of the California State Legislature when they established the CEQA guidelines that only the boilerplate questions would be used. Simple common sense and wisdom would seem to indicate that unique transactions must in fact have their own unique questions. One size cannot, and does not fit all. The author of the **Initial Study and Environmental Checklist** has simply limited his inquiry to the boilerplate questions within the 17 areas which are to be addressed by CEQA. He has failed to address the central and critical pertinent issues and problems which this environmentally sensitive water transfer transaction will potentially cause within the Palo Verde Valley region.

I am reminded by the attached article entitled **"Dry Lake To Have Water For First Time in 80 Years"** from the November 18, 2001 issue of the San Bernardino County Sun of the seriousness of the issue we are dealing with and the cavalier attitude of the Los Angeles

Department of Water and Power in the treatment of businesses and residents of Owens Valley ninety years ago. After "Los Angeles officials surreptitiously acquired water rights through property purchases along the Sierra-fed river that flowed into the lake." in just sixteen short years, Owens Lake, which had continuously contained water for at least 800,000 years, was a dust bowl lending itself to toxic air pollution.

Fast forward to 2001, to the small agriculture community of Blythe, California in the heart of the Palo Verde Valley which lies along the Colorado River and has first rights to water from that river. Another deal is in the works, this one for at least 35 years, between local farmers, facilitated by **Palo Verde Irrigation District (PVID)** and **The Metropolitan Water District of Southern California (Metropolitan)** to transfer local water to thirsty metropolitan areas. The new "kinder and gentler" Metropolitan has made a "generous" offer to the local farmers who own the water rights, providing substantial cash up front, and semi-annual payments for the next 35 years if they will simply agree to fallow up to 29% of their land. Furthermore, let us not be concerned with the fact that within the past month, Metropolitan has acquired 16,000 acres of land near Blythe, along with the attached water rights, 9,700 of which are within the PVID. Thus they have become one of the biggest land holders within the Palo Verde Valley. Gee, does this sound like history repeating itself?

I apologize for sounding a little sarcastic and incredulous. However, even through this is a different L.A. water entity than the one which raped Owens Valley during the early part of this century, the terms of the deal as outlined in the **Principles of Agreement**, ratified by the boards of each entity, non-the-less **fail to consider in any way, shape, or form, the third party impact which this long term contract will have on the local citizens of this small town.**

The **Initial Study and Environmental Checklist,** is simply page after page of non-relevant questions which do not pertain to this Program, to which "No Impact" or "Less Than Significant Impact" has been determined. Note that the **Initial Study and Environmental Checklist,** does mention on page 34 at the bottom that in a technical appendix to the EIR for the proposed Program, the effect on the farm laborer will be examined. However, no where does this document state the specific economic questions which will be addressed, nor give any indication if the full effects upon third party businesses and citizens of the Palo Verde Valley will be studied.

I SAY IT HERE, RIGHT NOW. IF THIS PROJECT IS ALLOWED TO PROCEED WITHOUT A DETAILED STUDY OF THE SOCIAL AND ECONOMIC IMPACT UPON THE BUSINESSES AND CITIZENS OF PALO VERDE VALLEY, THEN WE ONLY HAVE OURSELVES TO BLAME. THE ECONOMIC FUTURE OF EACH AND EVERY CITIZEN OF THIS VALLEY IS AT STAKE AND THERE SHOULD NOT BE ANY SHORTCUTS IN THE REVIEW PROCESS, ESPECIALLY IN PREPARATION OF THE INITIAL ENVIRONMENTAL IMPACT REPORT.

Specific Areas of Concern

The **Palo Verde College Small Business Economic Development Center** has identified a number of areas of concern regarding the program, including the federal government role, potentially significant impacts, and the mitigation program.

Does the program constitute a major federal action? While the program will be implemented by local agencies, including the PVID and the Metropolitan Water District (MWD), approval and consultation with a number of federal agencies is inherent in project implementation. Federal agencies with responsibilities include the Bureau of Land Management (approval required); the U.S. Fish and Wildlife Service (consultation required); and potentially additional federal agencies. If the program is a major federal action, compliance with the National Environmental Policy Act (NEPA) would be required. (See 40 CFR Section 1508.18 (a))

Initial study and environmental checklist. We have the following specific concerns regarding the initial study and environmental checklist.

- Population and housing and third party impacts. The proposed program will have a profound impact on the agricultural economy of the Palo Verde Valley, and by implication, on the entire economy. The costs to so-called third parties, who are not involved in the negotiations, can be substantial and cumulative, affecting rural communities, the tax base and employment. An attempt must be made to identify and quantify such third-party costs and if they indeed do exist, a framework and standard for mitigation programs must be established.

- **Recreation.** The proposed program may result in a lowering of Colorado River levels by as much as one foot or more south of Parker Dam. What will be the impacts of this lowering on recreational boating, fishing, hunting, aquatics, wildlife viewing and other recreational activities? What is the economic importance of such activities, and how do they support additional economic development in the Palo Verde Valley?

- **Public services.** While the proposed program will result in no physical construction, increased and/or changed levels of public services may be required if significant economic distress in the community is indirectly engendered by the project. In this regard, impacts on social services, police and crime prevention, and schools should be addressed.

- **Mandatory findings of significance.** PVID has indicated the potentially significant impacts in the quality of the environment (including fish, wildlife and

plants); potentially significant cumulative impacts. There is also a need to convert such impacts into economic terms, addressing local economy output, income, jobs, housing and population.

- **Community improvement projects.** The initial study states that the funding of specific community improvement projects will not be identified in the EIR. Such mitigation in the form of the community improvement projects is a key component of the proposed program and should be specifically addressed as part of the EIR project. Mitigation should bear a direct relationship between the proposed program and the economic harm and socioeconomic distress which it may cause. A framework and standards for the mitigation programs needs to be established as part of the EIR, in order to demonstrate that impacts have indeed been reduced to a less than significant level.

Conclusions

While the proposed program may be very beneficial to the MWD and may be economically beneficial to individual farmers, focusing solely on such benefits fails to address the overall social costs of the project to the larger Palo Verde Valley community. Given the significance of this potential transaction, and its long-term impacts, it is essential that all economic and social costs be addressed, and that a specific mitigation framework and standard be structured within the environmental review process according to the impacts caused. Further consideration must be given to the question to see if NEPA should be required, in addition to or instead of CEQA.

Thank you for the opportunity to submit these comments. The **Small Business Economic Development Center** looks forward to reviewing the environmental documents and participating in the ongoing process. Please call me if you have any questions.

Respectfully yours,

Quenton E. Hanson, CPA
Executive Director

CALIF

IN BRIEF

SACRAMENTO

$1 million Navigant consulting pact ended

The California Power Authority terminated a $1 million contract with an energy consulting firm following questions of a potential conflict.

The agency halted the contract Friday with Navigant Consulting Co., said Laura Doll, the authority's executive director.

Navigant originally had a $4 million contract proposal with the Power Authority. Last month, that contract was cut to $1 million over 60 days. On Friday it was eliminated entirely.

The action came two days after it was reported that Navigant had advised another state agency, the Department of Water Resources, on about $35 billion in power contracts while at the same time representing the energy companies that received the contracts.

SAN FRANCISCO

Prominent peace activist dies at 96

Alice Sachs Hamburg, a prominent peace activist in the Bay Area for the past five decades who also worked with international peace groups, has died. She was 96.

Hamburg had been organizing protests against the current war in Afghanistan.

Hamburg died Monday at her Berkeley home. Her autobiography, "Grass Roots: From Prairie to Politics," will be out Dec. 1.

LA PUENTE

Suspected carjacker gives up after standoff

A suspected carjacker surrendered to authorities without incident following a standoff of more than five hours at a La Puente apartment building early Saturday, a sheriff's deputy said.

Gilbert Solano of La Puente, who was unarmed, gave up.

— From News Services

Assemblyman Cardc

By BRIAN MELLEY
The Associated Press

MODESTO — Assemblyman Dennis Cardoza, the top Democratic rival for Rep. Gary Condit's congressional seat, has built a six-year record in the Legislature as a skilled insider who helped elect the current speaker and his successor.

But with the record, according to associates and campaign finance documents, comes a complaint of drafting questionable legislation and a reputation for spending campaign money on casino trips and taking junkets paid for in part by campaign contributions from industries he oversees.

As chairman of the Assembly Rules Committee, the Atwater Democrat muscled through a bill that would benefit a company represented by his campaign consultant, according to legislative analyses and campaign records.

Cardoza's campaign finance reports indicate he spent more than $10,800 on trips to the Kentucky Derby, the Del Mar race track near San Diego, Lake Tahoe and Las Vegas last year.

"The Abraham Lincol don't take junkets to the by," said Larry Makinson, with the nonpartisan Cent sive Politics in Washingto you're talking about gam and race tracks, it might fl if nobody's watching, bu junket would be noticed in

Because Cardoza can he's an attractive Democrat Washington.

Cardoza helped lure R sign a budget deal by incluc for farmers and grants for r partments.

His efforts at a budget cc cluded a scene out of a l action thriller. Cardoza ar Democrats in suits boarde tracked down Assembl Briggs, R-Clovis, on his hou Sacramento River one aftern

"I try to work behind t don't like the limelight." C

Dry lake to have water for first time in 80 years

The Associated Press

KEELER — For the first time in more than 80 years, Los Angeles water began pouring Saturday into the dust-dry Owens Lake to control toxic air pollution.

The Los Angeles Department of Water and Power is saturating several miles of the desert bed as part of a $200 million-plus plan to have the area meet federal clean air standards by 2006.

By year's end, as many as 10 miles of the Inyo County lake could be soaked. There might even be a few inches of water covering the lake, which was sucked dry after growing and thirsty Los Angeles began diverting water from the Owens River in 1910 for an aqueduct built in 1913.

The lake, set in a scenic valley 230 miles north of Los Angeles, is near the Sierra Nevada. Fed by the Owens River, it held water continuously for at least 800,000 years. Although it gradually dried up, at about 18 miles long and 10 wide, it was still so deep in the 1800s that steamboats used it to haul ore from mines in the nearby Inyo Mountains.

By 1905, Owens Valley farmers had diverted much of the water. Los Angeles sealed the lake's fate — and earned the longstanding enmity of locals — by beginning its own diversions.

In a now-notorious scheme, Los Angeles officials surreptitiously acquired water rights through property purchases along the Sierra-fed river that flowed into the lake.

With no fresh water entering Owens Lake, it eventually dried up and left a caked bed laden with a mixture of arsenic, cadmium and other carcinogens.

By 1926, though, the 110-mile lake bed was dry. In the decades that followed, the bed produced nothing but dust — an estimated 100,000 to 400,000 tons of it each year.

November 30, 2001
Mr. Ed Smith
General Manager
Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

RE: Spokesperson
EIR Crop Rotation and Water Supply Program

Dear Mr. Smith:

Please send any notices and communications for the property vested in Crane, Henry & Othella & Ryan S., Tax Roll #111422 to:

Skip Crane
1793 Merrywood Lane
Corona, CA 92882

Home Phone: 909-273-1720
Day Phone: 909-390-8635 ext. 3470

Thank you,

Skip Crane

SC/no

fc:ltr31824.doc

December 22, 2001

Mr. Ed Smith, General Manager
Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

Dear Mr. Smith:

I have read the "draft environmental impact report." And, although this response is past the 30 days specified in your letter, I would like to express my concern about the nature of this program.

I live in Los Angeles County, one of the six counties served by the MWD. In the past few years there have been only minimal references to the fact that we are living in drought conditions and should conserve water. Whereas there are many public service messages that caution, for example, 'conserve energy,' 'don't drink and drive,' and 'seek health care', I have yet to see even one that reminds people of the necessity and responsibility of conserving water. And so, we continue living our lives ignorantly and irresponsibly, oblivious to the impact of our behavior. I believe it is the MWD that is not taking appropriate responsibility to sufficiently educate their customers. Due to their size and influence, I also believe they have the greater responsibility.

Because the MWD does not have enough water it is attempting to remedy that situation by asking another sector of population to agree to "save" their water and thereby make it available to the MWD and their customers. The absence of any attempt to stress water conservation makes the proposed 35-year program dangerously deficient since it only addresses part of their problem. It is like a Band-Aid that covers a deadly infection.

Not one of us can live for long without water and each one of us must realize that use of our natural resources is a privilege, not a God-given right. We do not have the luxury of time. There must be a plan in place to address this now.

I believe there is more that can and must be done. If we are not serious about water conservation we only fool ourselves.

Who is responsible? Or, should I ask, "Who will TAKE the responsibility to address this issue?

We must recognize we have all reached our credit limit. There will be no more extensions, either of money or time. The bottom line is: we are all responsible. Therefore, the question becomes: when will the MWD behave responsibly, fill this vacuum and lead the way?

RECEIVED
DEC 27 2001
PALO VERDE
IRRIGATION DISTRICT

Sincerely,

Dorothy J. Proctor

Dorothy J. Proctor
2095 N. Grand Oaks Avenue
Altadena, CA 91001

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
CIBOLA NATIONAL WILDLIFE REFUGE

ROUTE 2, BOX 138
CIBOLA, AZ 85328
928/857-3253, FAX 928/857-3420

28 December 2001

Mr. Ed Smith
Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, California 92225

Dear Mr. Smith:

This letter is in reference to your Notice of Preparation of a Draft Environmental Impact Report regarding the Palo Verde Irrigation District (PVID) Land Management, Crop Rotation and Water Supply Program. We appreciate the opportunity to review and provide input into this proposed project.

Our primary concern will be the resulting decrease in the amount of water in the Old River Channel as well as the main Colorado River below the confluence. We are concerned not only with direct impacts to federally listed species and other wildlife, but with the potential effects a reduction of water entering the river will have on the surrounding water table, cattail inundation, and the effects on riparian habitat.

We look forward to future information on this proposed project. Additionally, we recommend that you contact the U.S. Fish and Wildlife Service's Carlsbad Field Office as well as the Phoenix Field Office for information on potential effects this project may have on federally listed species. Their addresses are:

U.S. Fish and Wildlife Service
Carlsbad Ecological Services Office
2730 Loker Avenue West
Carlsbad, CA 92008

U.S. Fish and Wildlife Service
Pheonix Ecological Services Office
2321 W. Royal Palm Rd., Suite 103
Phoenix, AZ 85021

Please contact me at the above address or telephone number (ext. 103) if you have any questions.

Sincerely,

Michael M. Hawkes

Michael M. Hawkes
Refuge Manager

cc: USFWS, Phoenix Ecological Services Office
USFWS, Carlsbad Ecological Services Office

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (760) 482-4606
FAX: (760) 353-9904

AIR POLLUTION CONTROL DISTRICT

January 2, 2002

RECEIVED
JAN 03 2002
PALO VERDE
IRRIGATION DISTRICT

Mr. Ed Smith, General Manager
Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

Re: Imperial County Air Pollution Control District (ICAPCD) Comments on Palo Verde Irrigation District's Land Management, Crop Rotation and Water Supply Program.

Palo Verde Irrigation District (PVID) and Metropolitan Water District proposes to commence a Land Management, Crop Rotation and Water Supply Program in the California portion of the Palo Verde Valley. Under the proposed program, water normally used to irrigate farmland within the Palo Verde Valley portion of the PVID would be saved and made available to Metropolitan Water District. Metropolitan customers include 26 cities and water districts that provide drinking water to more than 17 million people in parts of Los Angeles, Orange, Sand Diego, Riverside, Sand Bernardino and Ventura counties. The proposed program is planned to develop a flexible and reliable water supply for Metropolitan of 25,000 acre-feet up to approximately 11,000 acre-feet of Colorado River water per year for 35 years. At a minimum, a total base load area of 6,000 acres to a maximum of 26,500 acres would not be irrigated each contract year of the proposed program's 35 years.

Based on our preliminary review and analysis of the Notice of Preparation of a Draft Environmental Impact Report (EIR) for the Proposed PVID Land Management, Crop Rotation and Water Supply Program, the ICAPCD suggests the following issues should be addressed in the Notice of Preparation and EIR documents:

The Environmental Checklist

1. III. Air Quality a) is marked No Impact. The NOP mention that this Program would not obstruct the implementation of existing applicable air quality plans.

   Please be advised, that one portion of the Palo Verde Valley is located in the Imperial County and is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). The Imperial Valley is designated as a moderate non-attainment area with the National Ambient Air Quality Standard for PM10. The Imperial County is currently updating its PM10 State Implementation Plan (SIP) Attainment Demonstration. According to the District's emission inventory, wind erosion from open areas such as agricultural land is by far the largest sources of PM10 emissions in Imperial County. Therefore, the District's

update SIP Attainment Demonstration will include control measures for open area wind erosion from agricultural land.

Non-irrigation of farming land during the periods proposed in this water conservation program will create a large amount of PM10 emission that will have a significant impact on the District's Air Quality Plan if these emissions are not mitigated. Please amend the checklist accordingly.

2. III. Air Quality b) and c) are marked Less than Significant Impact. The NOP mention an insignificant impact of this Program to violate any air quality standard and insignificant cumulative net increase on any criteria pollutant for which the project region is non-attainment.

As mentioned above, the Imperial County is a moderate non-attainment area for PM10. Non irrigation of farming land as proposed in this Program will contribute to the generation of PM10 which could contribute to a violation of the PM10 air quality standard if these emissions are not mitigated.

In order to make a realistic impact analysis of the level of significance of these PM10 emissions, the EIR should make an assessment which includes the daily and annual PM10 emission that will be generated due to implementation of the Program. Additionally, the EIR should list the mitigation measures that will be applied to reduce PM10 emissions. An air quality model should be used to demonstrate the Project will not cause an exceedance of the federal and/or state ambient air quality standards.

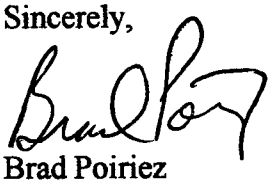
Please amend the checklist point b) and c) to read Potentially Significant Impact.

3. III. Air Quality d) is marked No Impact.

As per point 2, please amend checklist point d) to read Potentially Significant Impact.

If you have any questions regarding this letter, please contact myself or Reyes Romero at (760) 482-4606.

Sincerely,



Brad Poiriez
Senior Manager

MPC

MILK PRODUCERS COUNCIL

"Serving the Dairy Industry for Over 50 Years"

January 4, 2002

Mr. Ed Smith, General Manager
Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, CA 92225

Re: PVID Land Management, Crop Rotation and Water Supply Program; Notice of Preparation of a Draft Environmental Impact Report

Dear Mr. Smith:

Milk Producers Council, a trade association of dairy farmers located primarily in Southern California, has reviewed the Notice of Preparation for the above-referenced project and provides the following comments. Milk Producers Council thanks you for your gracious extension of time in which to respond to the Notice of Preparation, and understands that these comments will be part of the administrative record for this project.

The project proposes to take at least six thousand acres of irrigated farmland out of production. The irrigated farmland in the district is identified as having crops including alfalfa, cotton, wheat, sudan grass, melons, lettuce and other vegetables. Since the specific lands taken out of production each year have not been identified, one can only speculate as to which crops would be affected.

The majority of the land in the district is planted in alfalfa. The economic importance of alfalfa to farms and ranches throughout the United States is well known in the agricultural sector with a direct value of over $7 billion annually. Alfalfa especially plays a vital role in the dairy and livestock industries. Many nutritionists value the highly digestible fiber and high protein in dairy and livestock rations. (Contributions of alfalfa to wildlife and the Environment, Dan Putnam, 1998).

In light of the significance of alfalfa, clearly there are direct, indirect and cumulative impacts that will result from the proposed project, which have not been identified in the Notice of Preparation. It is important to fully analyze these impacts of the project (CEQA guidelines §15126(a)). Specifically, the indirect impacts to the dairy industry alone could be staggering, and must be analyzed in the Environmental Impact Report. For example, farms in the Palo Verde Irrigation District are currently a destination of compost produced on Southern California dairies. To the extent farmland is fallowed, compost must be delivered to other locations which could result in traffic impacts and certainly economic impacts if new markets for such compost cannot be found.

13545 Euclid Ave - Ontario, CA 91761 - Phone: 909-628-6018 Fax: 909-591-7328
Email: milkproducerscouncil@juno.com

Additionally, we are unaware of any new land going into crop production, and the project proposes to take farmland out of production. In terms of your cumulative impact analysis, other land fallowing programs must be analyzed. For instance, thousands of acres of farmland, which grew alfalfa, were idled in the Klamath Valley this past year due to reallocation of irrigation water away from agriculture. The result was a direct reduction of alfalfa production, causing dairy producers to look to other regions for supplies. This decrease in supply has raised the price of alfalfa significantly, resulting in economic impacts. Additionally, permanent land fallowing programs are being presented and considered in the Imperial, Coachella and San Joaquin Valley. Taken together, all of these actions stand to significantly reduce the amount of California land in alfalfa hay production. It also reduces the amount of land available for compost from California dairies.

Concerning the project description, we understand that the land reclamation project of the Palo Verde Valley allocated each acre's share of water based on a beneficial use or demand basis, either implied or determined. If true, we would appreciate an explanation of your view of the beneficial use of that water for the assigned acres when sold or transferred if the water is transferred and not applied to the designated acres.

Milk Producers Council understands the importance of this project to the future of Southern California. We thank you in advance for your serious consideration of our concerns, and welcome any dialog regarding the same.

Very truly yours,

Robert P. Feenstra
General Manager

cc: Ronald Galstelum, General Manager MWDSC
David R. Albers, Esq.
Roger Henning
MPC Directors

DRA | 011102 | 1446
H | DRA | MPC-General | Ed Smith ltr.wpd

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, California 92008

In Reply Refer to: FWS-RIV- CEQA-2449.1

Mr. Ed Smith, General Manager
Palo Verde Irrigation District
180 W. 14th Avenue
Blythe, California 92225

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Palo Verde Irrigation District (PVID) Land Management, Crop Rotation and Water Supply Program

Dear Mr. Smith:

The Fish and Wildlife Service has reviewed the above-mentioned NOP for the preparation of a draft EIR, and we have the following comments that we would like to be addressed in the draft EIR. We apologize for the delay in forwarding these comments to you. Of critical importance in this EIR is the consideration of cumulative effects. Several water transfer programs have already been approved or are in development that will impact the lower Colorado River. The impacts of this project should be considered in the context of losses that have or will occur as a result of those programs.

The proposed project could result in reduced flows in the lower Colorado River between Parker Dam and the Palo Verde Diversion Dam. Several federally listed species may occur in this reach of the river and should be considered in the analysis of the impacts of reduced flows in this river reach. This includes the southwestern willow flycatcher (*Empidonax traillii extimus*), the Yuma clapper rail (*Rallus longirostris yumanensis*), the razorback sucker (*Xyrauchen texanus*), and the bonytailed chub (*Gila elegans*). The federal candidate yellow-billed cuckoo (*Coccyzus americanus*) may also be affected by this action. The analysis in the draft EIR should include discussions of each of these species. A related topic is the reduction of return flows to the lower Colorado River and how this may impact species in the river below PVID. Many of the same species could be impacted by this change and should be considered in the analysis.

Reduced flows in the drains could result in impacts to the Yuma clapper rail and possibly the state listed California black rail (*Laterallus jamaicensis coturniculus*). Both of these species may use emergent vegetation in the drains and so could be impacted by a reduction in drain flows.

The program calls for up to 26,500 acres to be taken out of production to provide water for the Metropolitan Water District. As a result, these acres may no longer be available for foraging for

several species of migratory birds. The loss of this foraging resource to species such as the white-faced ibis (*Plegadis chihi*), the long-billed curlew (*Numenius americanus*), and the sandhill crane (*Grus canadensis*) should be evaluated as part of the analysis in the draft EIR.

The conclusion that impacts to wetlands and migration corridors (IV. Biological Resources items c and d) are less than significant would appear to be premature. The loss of flows has the potential to impact habitat for several species including the southwestern willow flycatcher, the Yuma clapper rail, and the razorback sucker. Given that the analysis has not been completed, these categories would more appropriately fall into the "potentially significant impact" category.

We would appreciate the opportunity to work with you to develop measures to avoid, minimize and mitigate the effects of the proposed project on listed and other sensitive species and address any impacts that may result from ongoing operations and maintenance activities within the District's drains and other facilities. This office's jurisdiction covers the California service area of Palo Verde Irrigation District; impacts of the proposed project on resources of the lower Colorado River and/or within Arizona should be brought to the attention of the Phoenix Fish and Wildlife Office. Their address is:

U.S. Fish and Wildlife Service
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021

We look forward to the opportunity to review the upcoming draft EIR. Please contact Carol Roberts of my staff at (760) 431-9440 if you have any questions regarding our comments.

Sincerely,

for Nancy Gilbert
Assistant Field Supervisor

APPENDIX B

Hydrology and Water Quality Technical Report

for the

Palo Verde Irrigation District
Land Management, Crop Rotation and Water Supply Program

April 2002

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1.0 DESCRIPTION OF PROPOSED PROGRAM

The Palo Verde Irrigation District (PVID) and The Metropolitan Water District of Southern California (Metropolitan) propose to commence a Land Management, Crop Rotation and Water Supply Program (Program) in the PVID portion of the Palo Verde Valley below the Palo Verde Diversion Dam. The proposed Program would provide Metropolitan with a water supply option of from 25,000 to approximately 111,000 acre-feet of Colorado River water per year for 35 years. Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of PVID would be "saved" and an equal amount of water would be made available to Metropolitan. The water would be saved through land management and crop rotation measures which are part of the proposed Program.

The total irrigated acreage in the valley below the Palo Verde Division Dam is estimated at 91,000 acres. In this voluntary program, participants would not irrigate a portion of their farmland for a minimum of a one-year term and a maximum of a five-year term at each participant's option. A minimum of 6,000 acres (i.e., Baseload Acres[1]) would not be irrigated each year, and Metropolitan would have the option to increase the area to a maximum of 26,500 acres. Program lands would not be irrigated beginning August 1 of each year through July 31 of the following year.

The water normally used to irrigate farmland within the Palo Verde Valley portion of PVID would be saved and an equal amount of water would be made available to Metropolitan. The water would be saved through land management and crop rotation measures which are part of the proposed Program. Metropolitan would then divert an amount equal to the amount of saved water from the Colorado River for delivery to its member agencies via the Colorado River Aqueduct at its existing Whittset Intake in Lake Havasu. (See Chapter 3.0 of the Draft EIR for additional discussion of the proposed Program.)

[1] For the proposed Program, references to 6,000 acres, or a lesser acreage in certain years, of Program lands designated as non-irrigated acres as agreed upon by Metropolitan and participants.

2.0 PURPOSE OF THIS STUDY

The purpose of this study is to provide a technical background on water quality, hydrology and groundwater levels in the Palo Verde Valley area associated with the proposed Program. The impact analysis can be found in Sections 4.4.2 and 4.4.3 of the Draft EIR.

3.0 DESCRIPTION OF LOCAL CLIMATE AND GEOGRAPHY

The area's climate is characterized as hot and dry. Average high temperatures during summer months exceed 100 degrees Fahrenheit. Annual precipitation totals average about four inches per year. Most rainfall occurs between the months of August and January. Summer storms originating in Baja California often release substantial amounts of rain in short periods. Table 1 shows the average monthly high and low temperatures and precipitation totals for data taken at Blythe Airport and within the city of Blythe. Average annual precipitation in the Program area vicinity was 4.06 inches for the period of 1983 through 2000, with August exhibiting the highest monthly average at 0.71 inch and June the lowest at 0.02 inch. During that same period, the highest annual precipitation recorded at the Blythe weather station (Station 040924) was 7.79 inches in 1989 and the lowest was 0.72 inch in 2000 (National Climatic Data Center 2002). The 1989 maximum should be considered in light of the fact that 1992 data for Blythe weather station are incomplete, and measurements taken by PVID at its offices in Blythe indicate that annual precipitation in 1992 was 8.57 inches.

Generally, PVID's eastern boundary is the Colorado River, while its western boundary lies up to 15 miles west of the Colorado River. Towns and cities encompassed by PVID include Blythe, Ripley and Palo Verde. The majority of PVID lies within Riverside County; however, the southern portion extends into Imperial County. The proposed Program would be implemented in the Palo Verde Valley portion of PVID below the Palo Verde Diversion Dam, entirely within the State of California. Of the estimated 91,000 irrigated acres of PVID's valley lands below the Palo Verde Diversion Dam, about 83,000 acres are in Riverside County and about 8,000 acres are in Imperial County. A vicinity map showing the general location of PVID in southern California is provided in Figure 1.

Figure 1. Vicinity Map of Palo Verde Irrigation District

Table 1 Climate summary for PVID area

BLYTHE, CALIFORNIA
Period of Record Monthly Climate Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	67.5	72.8	79.3	87.4	95.5	103.8	108.4	106.7	101.9	90.5	76.4	67.6	88.1
Average Min. Temperature (F)	38.1	42.4	46.9	53.2	60.4	67.5	76.2	75.8	68.1	56	44.1	38.4	55.6
Average Total Precipitation (in.)	0.47	0.46	0.36	0.13	0.03	0.03	0.18	0.72	0.42	0.27	0.25	0.53	3.86

Period of Record : 1/ 1/1931 to 12/31/2000
Percent of possible observations for period of record.
Max. Temp.: 97.3% Min. Temp.: 97.2% Precipitation: 97.4%

BLYTHE AIRPORT, CALIFORNIA
Period of Record Monthly Climate Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	66.5	72.1	78.3	86.5	94.9	104.4	108.3	106.6	101.3	89.8	75.7	66.7	87.6
Average Min. Temperature (F)	41.4	45.5	50	56.6	64.2	72.6	80.8	80.2	73.1	60.8	48.4	41.3	59.6
Average Total Precipitation (in.)	0.48	0.4	0.34	0.18	0.02	0.02	0.27	0.68	0.38	0.26	0.19	0.44	3.65

Period of Record : 7/ 1/1948 to 12/31/2000
Percent of possible observations for period of record.
Max. Temp.: 98.4% Min. Temp.: 98.5% Precipitation: 98.5%

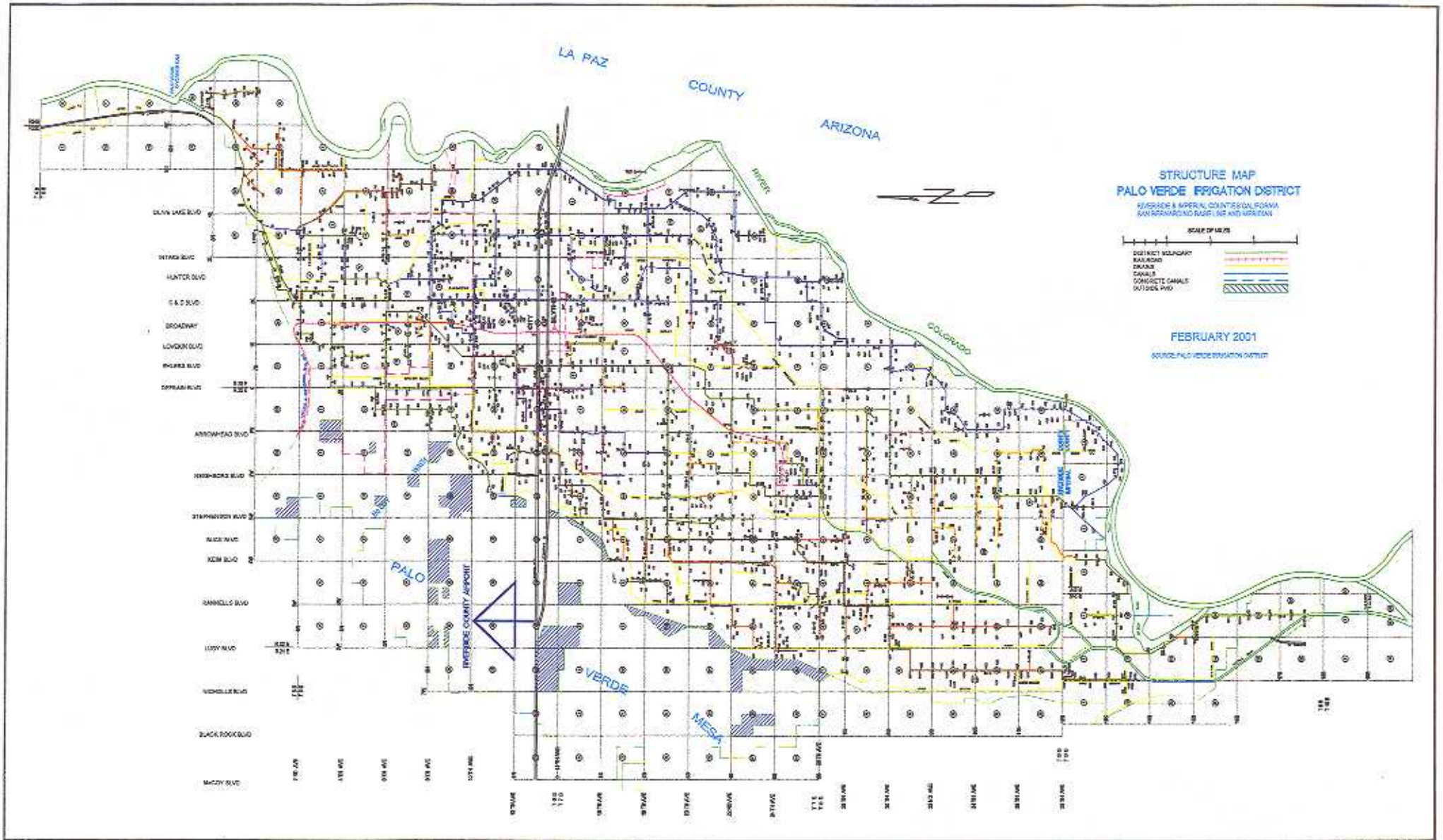
Source: Desert Research Institute

Area soils are the result of deposits from the Colorado River. In general, surface soils are sandy loams and silty clay loams. Approximately one foot beneath the surface, the soil type changes to very fine sandy loams and clay loams to depths of 35 to 40 inches. Beneath this layer, the predominant soil type is mainly fine sand. Soil salinity ranges from slight to moderate (Soil Conservation Service 1974).

4.0 DESCRIPTION OF EXISTING IRRIGATION AND DRAINAGE INFRASTRUCTURE

Irrigated agriculture first began in the area in the late 1800s in the north part of the valley, diverting water from the Colorado River. The Palo Verde Water Company made infrastructure improvements to the irrigation and drainage system in the early 1900s. In 1917, the Palo Verde Levee District was formed to control flooding. In 1921, the Palo Verde Drainage District was formed and work began to develop a drainage system in the valley after groundwater levels had risen significantly. In 1923, these three valley agencies were combined into the one district, PVID, by a special act of the California legislature. PVID took over their facilities and began functioning in 1925.

Today, there are approximately 244 miles of main and lateral canals operated by PVID and approximately 440 miles of irrigation ditches that are owned and operated by the water users. Water is diverted at the Palo Verde Diversion Dam at the northern end of the Palo Verde Valley, and water flows in a southwesterly direction through irrigated farmland. PVID also operates roughly 140 miles of drainage channels. Internal drains receive operational spillage from canals. Drains also remove groundwater from under the local farmlands to prevent groundwater from rising and interfering with crops. Water drained from the district collects in PVID's Olive Lake and Outfall Drains and flows to the Colorado River. Figure 2 shows the drainage and irrigation infrastructures of PVID.



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DESIGNER: JFD PROJ. MGR: SRL

NOLTE
BEYOND ENGINEERING

FIGURE 2 STRUCTURE MAP
PALO VERDE IRRIGATION DISTRICT

PREPARED FOR: HELIX ENVIRONMENTAL PLANNING, INC.

DATE SUBMITTED: JAN 2002

SHEET NUMBER 1 OF 1 SHEETS

JOB NUMBER SD088000

Figure 2. Structure Map of the Palo Verde Irrigation District

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5.0 HISTORICAL GROUNDWATER LEVELS

As noted in Section 4.0, irrigated agriculture in this area began in the 1800s. As the area of irrigated farmland increased, so did the elevation of the groundwater table. In 1921, bonds were issued to begin construction of a drainage network to prevent groundwater levels from reaching the ground surface. During the 1950s, the groundwater depth was typically between five and ten feet below the surface. Approximately ten percent of the irrigated land had groundwater levels fewer than five feet below the surface. In 1960, PVID began a construction program to enlarge and deepen the early drains. That program also included construction of new drains where they had not previously existed.

Several factors influence the presence and elevation of groundwater. For purposes of this study, these factors are divided into two groups: static factors and dynamic factors. Static factors are those that do not change on a seasonal basis and are not expected to vary throughout the lifetime of the proposed Program. Dynamic factors are those that change on a seasonal, daily or hourly basis. The dynamic factors are the primary factors that cause groundwater levels to fluctuate or decrease.

Static factors that affect groundwater elevations include:

- Soil properties
- Elevation and expanse of drainage structures (siphons for road crossings)

Dynamic factors that affect groundwater elevations are:

- Precipitation
- Irrigation
- Stage (water surface elevation) of the Colorado River

STATIC FACTORS

Soil properties that influence the groundwater include transmissivity and porosity. Soil properties also control how much the water level in the drains can decrease before the drain banks become unstable and slide into the drains.

The depth of the drainage structures influences the elevation of the local groundwater. These drainage structures are usually a steel pipe typically placed approximately one foot below desired groundwater level. Because most of these pipes are constructed of galvanized steel, they must remain submerged in water in order to prevent excessive rusting. Accordingly, where needed, PVID maintains water levels in the drains by constructing rock weirs downstream of the drain pipes or, in the event that the pipe is too deteriorated to save, installing a new, lower pipe. Rusted pipes are replaced as part of routine maintenance at appropriate elevations based on each pipe's unique situation.

DYNAMIC FACTORS

Precipitation in the area generally has a minimal impact on the groundwater elevation. Annual precipitation totals of four inches are minimal compared to the volume of irrigation water that is applied to the fields. Nevertheless, during periods of high precipitation, irrigation can be reduced.

Irrigation of Program area farmlands has a substantial impact on the valley's groundwater elevations. On average, over seven feet of water is placed on the farmlands annually. The majority of this water percolates into the soil, although some of the water is removed through evaporation. Irrigation is the factor that most directly affects groundwater elevations.

In areas close to the Colorado River, the river's stage can have a substantial impact on the elevation of the groundwater and the direction of its flow. Because of the development of dams along the Colorado River, fluctuations in the stage have diminished and can be more controlled. Variations in flow are generally seasonal, with peak flows occurring in late spring and early summer and low flows during the winter months. Refer to Section 6.0 of the Draft EIR for additional discussion of Colorado River flows.

6.0 COLORADO RIVER FLOWS

River flows are discussed in this technical report primarily in terms of acre-feet per year. The flow of water through Parker Dam (also called the "release rate") is discussed in terms of cubic feet per second (cfs). By way of comparison, a flow rate of one acre-foot per year equals 893 gallons per day or 0.0014 cfs. A flow rate of 1.0 cfs is equivalent to approximately 646,000 gallons per day or 724 acre-feet per year.

The portion of the Colorado River potentially affected by the proposed Program extends from Parker Dam at Lake Havasu downstream to the southern end of the Palo Verde Valley. Flows in this section of the Colorado River can vary dramatically, fluctuating on annual, seasonal and even daily or hourly bases. Factors affecting flow levels include natural and human processes. Much of the flow in the lower Colorado River is regulated by the Bureau of Reclamation, which operates a series of dams along the river, with releases based on agricultural, urban and hydroelectric power generation demands.

The USGS measures Colorado River flows below Parker Dam at stream gage 09427520. From 1990 through 1999, annual measured flows below Parker Dam averaged 7.35 million acre-feet (USGS 2000). Excluding 1992 through 1994, flows in the Colorado River below Parker Dam for the period from 1987 to 1999 averaged 7.91 million acre-feet per year. (The annual diversions from 1992 through 1994 are excluded from the ten-year average because the Test Program, described in Section 7.0 of this technical study, affected diversion levels during those years.) Over the period from 1935 through 1999, flows measured downstream from Parker Dam averaged approximately 9 million acre-feet per year, with annual flows ranging from a low of approximately 5.5 million acre-feet up to a maximum of approximately 21.1 million acre-feet (USGS 2000). During the period from October 1988 through September 1999, monthly flows varied from a low of approximately 100,000 acre-feet up to a maximum of approximately one million acre-feet (USGS 2000).

Parker Dam's release rate is a major factor affecting river flows below the dam (i.e., the river segment that this study focuses on). During storms, natural runoff also affects flow levels in this section of the Colorado River, but this is a relatively rare occurrence due to the arid environment of the region. The Bureau of Reclamation generally releases enough water from Parker Dam each day to (1) meet the needs of downstream users, which include PVID, other water and irrigation districts in southern California and Arizona and other entities with present perfected rights to Colorado River water, and (2) to meet treaty obligations with Mexico. The Bureau of Reclamation sometimes releases water from Parker Dam in excess of downstream demand to accommodate flood flows.

While the *volume* of water released by the Bureau of Reclamation each day generally is set by the amount of water needed downstream, the *timing* of water releases during the day is primarily based on two factors:

(1) The Bureau of Reclamation attempts to maximize hydroelectric power generation at Parker Dam during periods of peak electrical use, "hourly releases [from Parker Dam]

are arranged so as to produce the most economic pattern of electrical power generation possible with required downstream requirements" (Bureau of Reclamation 1991:11).

(2) Releases are timed to arrive at the appropriate diversion point when needed. Water released from Parker Dam typically takes 60 hours to reach Imperial Dam 148 miles downstream. Thus, water released from Parker Dam at 8:00 p.m. would be available for diversion at Imperial Dam 2.5 days later at approximately 8:00 a.m.

Since 1980, the maximum release rate from Parker Dam has been 19,500 cfs (Bureau of Reclamation 2002:3.1-10). The minimum release rate from Parker Dam is generally set by the Bureau of Reclamation at 2,000 cfs in order to keep the Colorado River continually flowing downstream of the dam.[2] Within a given month, the daily variation between maximum and minimum release rates can reach up to 11,000 cfs (ibid.:3.1-10).

The amount of water flowing in the Colorado River directly affects the river's surface water elevation. Surface water levels along the lower Colorado River often vary throughout 24-hour cycles based on the amount of water released from dams along the river, with higher volumes released during the day (when power generation and irrigation demands are highest). Just downstream of Parker Dam, the typical daily variation in surface water elevations is approximately 5 feet during the summer, when irrigation demand is relatively high. In winter, when there is less demand for irrigation diversions, daily water level fluctuations below Parker Dam range closer to 2.5 feet. Monthly and annual changes in water surface elevation can be even greater. Between October 1988 and September 1999, monthly fluctuations on the river ranged as high as 7.1 feet.

[2] The Bureau of Reclamation occasionally, and only for short periods, releases less than 2,000 cfs from Parker Dam due to operational constraints (Bureau of Reclamation 1991:13).

7.0 THE 1992-1994 TEST PROGRAM

PVID and Metropolitan undertook a participatory pilot test program between August 1992 and July 1994. During that period, approximately 20,215 acres of farmland scattered throughout the PVID were not irrigated. This was a short-term pilot study to help identify impacts associated with potential, future long-term programs, such as the proposed Program addressed in this technical study and the Draft EIR. Potential impacts examined as part of the Test Program included groundwater level effects and related fluctuations.

PVID monitored a network of 285 observation wells located throughout the valley to track groundwater elevations. Between 1981 and 1992, prior to the test program, the monthly average depth to groundwater in the valley varied from 8.9 feet in summer to 10.8 feet in December. During each month of the test program (1992-1994), the average depth to groundwater was greater than the monthly average during the previous 12 years.

Data from the observation wells are summarized in Table 2. Between 1992 and 1993, the average groundwater elevation in the valley decreased by 1.25 feet. In 1994, the average elevation had recovered 0.78 feet, to 0.47 feet below 1992 levels. In each of the following four years, the groundwater elevation increased. By 1997, the elevation had surpassed the 1992 average level by more than a foot.

Table 2 Observation Well Groundwater Data (1992- 2000)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000
Number of wells counted	285	285	285	285	285	285	285	269	269
Average ground elevation (feet)	256.18	256.21	256.21	256.21	256.20	256.19	256.19	257.03	257.03
Average water elevation (feet)	245.97	244.72	245.50	246.36	246.83	247.03	246.75	247.46	247.51
Average depth to water (feet)	10.21	11.49	10.71	9.85	9.37	9.16	9.44	9.57	9.52
Average elevation change from previous year (feet)	-	-1.28	0.78	0.86	0.48	0.21	-0.28	-0.13	0.05

Source: PVID

8.0 HISTORICAL DIVERSIONS AND RETURN FLOWS

PVID's data indicate that average annual diversions at the Palo Verde Diversion Dam for a ten-year period from 1987 to 1999, excluding 1992 through 1994, were 912,886 acre-feet. (The annual diversions from 1992 through 1994 are excluded from the ten-year average because the Test Program affected diversion levels during those years. This period compares PVID data with USGS Colorado River flow data in Section 6.0, and 1999 is used as the end date for this comparison because the USGS has not yet published 2000 data.) For the same ten-year period, average measured return flows were 461,811 acre-feet. Of the return flows, 377,159 acre-feet were discharged through PVID's Outfall Drain, 3,336 acre-feet were discharged from the Olive Lake Drain, and 81,316 acre-feet were discharged from operational spill channels. During the two-year Test Program, which extended from August 1992 through July 1994, the 1993 diversions were 183,066 acre-feet less than the ten-year average and the 1993 returns were 59,929 acre-feet less than the ten-year average. Diversion flows were highest during the hot summer months. Monthly summer diversions were over 100,000 acre-feet. The lowest diversions usually occurred in the winter months, decreasing to around 30,000 acre-feet.

As described in Section 6.0, annual flows in the Colorado River below Parker Dam for the ten-year period from 1987 to 1999 (excluding 1992 through 1994) averaged 7,908,800 acre-feet. PVID's annual diversions from the Colorado River for that ten-year period are about 11.5 percent of the river's annual flow. Using the annual measured return for that ten-year period, PVID's average draw from the river is 451,075 acre-feet, or 5.8 percent of the river's flow, at the point of diversion.

The Bureau of Reclamation estimates the unmeasured return at 5.6 percent of the diversion. Thus, for the ten-year period from 1987 to 1999 (excluding 1992 through 1994), unmeasured returns are estimated by the Bureau of Reclamation at 51,122 acre-feet. Adding the Bureau of Reclamation's estimated unmeasured returns to the measured returns results in an average total return flow of 512,923 acre-feet. Based on the Bureau of Reclamation's estimate for unmeasured returns, PVID's net annual draw was roughly 400,000 acre-feet, or 5.1 percent of the Colorado River's flow at the point of diversion, during the referenced ten-year period.

9.0 DISCHARGE AND WATER QUALITY REQUIREMENTS AND OBJECTIVES

Regulatory requirements related to water quality in the State of California are derived primarily from the Federal Water Pollution Control Act of 1972 (as amended), commonly known as the Clean Water Act (CWA), and the State of California Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code). Water quality issues in the Program area also are influenced by the federal Colorado River Basin Salinity Control Act (as amended).

The primary objective of the CWA is to "restore and maintain the chemical, physical and biological integrity of the nation's waters to make all surface waters fishable and swimable." Applicable portions of the CWA are implemented by the State of California through the Basin Plan process, as described In Section 10.0 of this report. The Porter-Cologne Act (Act) establishes the state and regional water boards as the principal state agencies responsible for control of water quality. The Act requires that the quality of all waters in the state be protected, and that activities and factors which may affect water quality be regulated by the state and regional boards.

The California Regional Water Quality Control Board (RWQCB) does not require a permit from PVID for PVID's discharges into the Colorado River because the discharges are considered a non-point source. However, the RWQCB has identified several water quality issues within the Lower Colorado River Watershed in the Strategic Planning Chapter of its Watershed Management Initiative of 2001. The Watershed Management Initiative, Overview of Water Quality Issues (2001:21) states that:

> Water quality issues within the Lower Colorado River Watershed include:
>
> - Bacterial impairment of the Palo Verde [PVID's] Outfall Drain
> - Potential agricultural pollution of the PVID drainage system
> - Perchlorate, bacteria, arsenic and salt pollution in the Lower Colorado River

PVID does not necessarily concur with the RWQCB's assessment that all of the above are water quality issues in PVID's system.

The RWQCB and the State Water Resources Control Board (SWRCB) have listed objectives for the total dissolved solids (TDS) concentrations in the Colorado River and PVID's Outfall Drain. Table 3 shows the TDS objectives for the Colorado River below Parker Dam and Imperial Dam and PVID's Outfall Drain in milligrams per liter (mg/L)[3]. The Colorado River TDS objectives adopted by the RWQCB and SWRCB are identical to numeric criteria adopted by the River Basin Salinity Control Forum, per the directives of Colorado River Basin Salinity Control Act. (The Colorado River Basin Salinity Control Forum is made up of the seven Upper Division and Lower Division Colorado States.) Table 3 also shows the maximum, average and minimum TDS concentrations in the Colorado River for the 20-year period extending through 2001. The TDS objectives for the Colorado River currently are being met, and the

[3] Milligrams per liter (mg/L) is equivalent to parts per million (ppm).

Table 3
TOTAL DISSOLVED SOLIDS (TDS) OBJECTIVES AND MEASUREMENTS
In milligrams/liter (mg/L)

Location	Minimum	Average	Maximum
Below Parker Dam			
State Objective[1]	N/A	747	N/A
Measured TDS Level[2]	531	708	848
Measured TDS Level[3]	535	619	716
Below Imperial Dam			
State Objective[1]	N/A	879	N/A
Measured TDS Level[3]	577	717	827
PVID's Outfall Drain			
State Objective[4]	N/A	2,000	2,500
Measured TDS Level[5]	1,736	1,888	2,071

N/A Not Applicable.

1 State Objectives contained in the *Water Quality Control Plan, Colorado River Basin – Region 7* (RWQCB and SWRCB 1994:3-5) for Colorado River TDS; these are identical to the flow-weighted annual average numeric criteria adopted by the Colorado River Basin Salinity Control Forum.

2 National Stream Quality Accounting Network, U.S. Department of the Interior, Geological Survey, Colorado River. Samples collected from 1968 through 1992.

3 U.S. Department of the Interior, Bureau of Reclamation. Samples collected from 1980 to 2001.

4 State Objectives contained in the *Water Quality Control Plan, Colorado River Basin – Region 7* (RWQCB and SWRCB 1994:3-3). Note that the "Average" objective refers to an annual average, although only one measurement per year historically has been used to determine TDS levels. In this regard, the average objective actually serves as a *de facto* maximum objective.

5 U.S. Bureau of Reclamation laboratory analysis conducted as part of the Colorado River Salinity Forum. Samples collected in January when PVID's canals are drained. Sample location is approximately 3.25 miles "upstream" of the mouth of PVID's Outfall Drain (just south of the Highway 78 bridge). Data from 1991 to 2001 (see also Figure 3 and Table 4, below). The "Average" measured TDS level refers to the average over the 11-year collection period, and is not directly applicable to the annual average objective of 2,000 mg/L.

maximum TDS values for the Colorado River over the last 20 years are lower than the goals. Note that Table 3 provides results for water sample collections below Parker Dam from both Bureau of Reclamation and USGS databases. Because of the differences in collection periods described in the table notes, coupled with different sampling schedules within those time periods (e.g., time of day that samples were collected, number of samples collected each year), the results of the two sampling efforts vary. For example, the Bureau of Reclamation samples correlate with a period of comparatively higher flow in the Colorado River, with the result that average TDS levels calculated from Bureau of Reclamation data are lower than those associated with the USGS data.

TDS concentrations in PVID's Outfall Drain are measured once each year in January when the canal system is drained. This sample represents an undiluted (or worst quality scenario) groundwater quality sample. Drain samples taken during the rest of year were not used since the groundwater is being diluted by operational spillage and deep percolation of irrigation water. As shown in Table 3 and on Figure 3, the TDS objectives for PVID's Outfall Drain also are being met.

During the two-year Test Program, return flows to the Colorado decreased approximately 13.5 percent in comparison to the average for a ten-year period from 1988 through 2000 (excluding 1992 through 1994). During the Test Program, TDS concentrations in the January return flow sample increased; however, the overall salt loading decreased. (In other words, although the return flows were saltier, there was less water, so that the total amount of salt carried by return flows was lower.)

For the January 1993 sample from return flows, TDS concentrations were greater than 1992, but were consistent with values from other years. In 1994, the January sample TDS concentrations exceeded the annual average objective of 2,000 mg/L set by the RWQCB. The concentration exceeded values from all other January samples, however the variance from average was small. During several other years, the TDS levels nearly reached the 2,000 mg/L annual average objective. Table 4 shows measured January sampling data for PVID's Outfall Drain from 1991 through 2001, and Table 5 compares data and calculations for non-Test Program and Test Program years. Figure 4 shows the return flows between 1991 and 2001 for the January sampling day.

Table 4. PVID's Outfall Drain Water January Sample Data

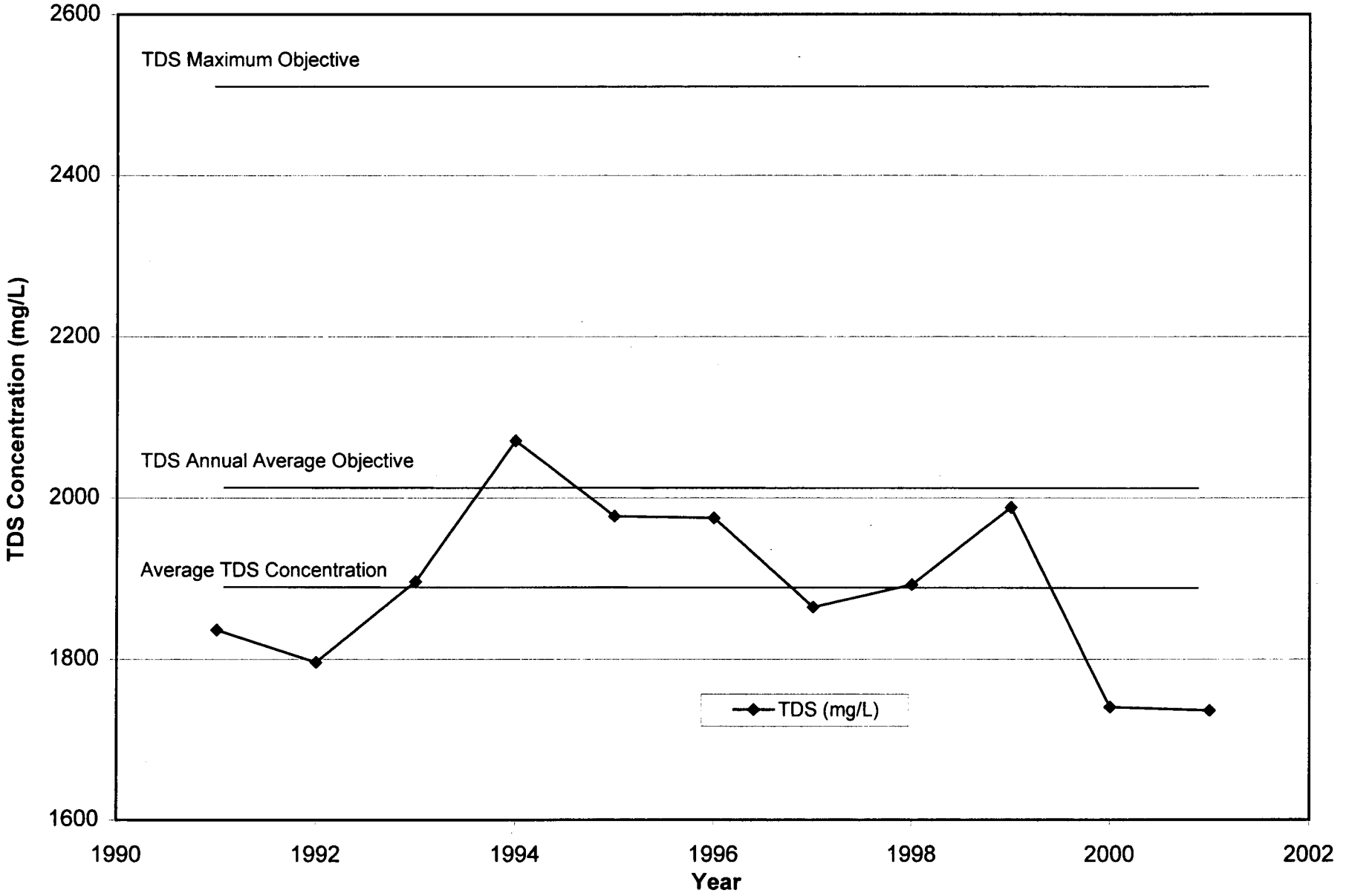
Sample Year[1]	Flow (cfs)	EC (µS/cm)	TDS (mg/L)	Tons per second
1991	346	2,710	1,836	0.01983
1992	334	2,660	1,796	0.01873
1993	246	2,870	1,896	0.01456
1994	270	3,060	2,071	0.01746
1995	324	2,840	1,977	0.02000
1996	332	2,720	1,975	0.02047
1997	304	2,800	1,864	0.01769
1998	348	2,740	1,892	0.02056
1999	282	2,590	1,988	0.01750
2000	323	2,660	1,740	0.01755
2001	310	2,625	1,736	0.01680

cfs - cubic feet per second
EC - Electroconductivity
µS/cm - micromhos per centimeter
mg/L - milligrams per liter

[1] Samples collected in January when PVID's canals are drained. Sample location is approximately 3.25 miles "upstream" of the mouth of PVID's Outfall Drain (just south of the Highway 78 bridge).

Source: U.S. Bureau of Reclamation laboratory analysis

Figure 3 Outfall Drain TDS Concentrations



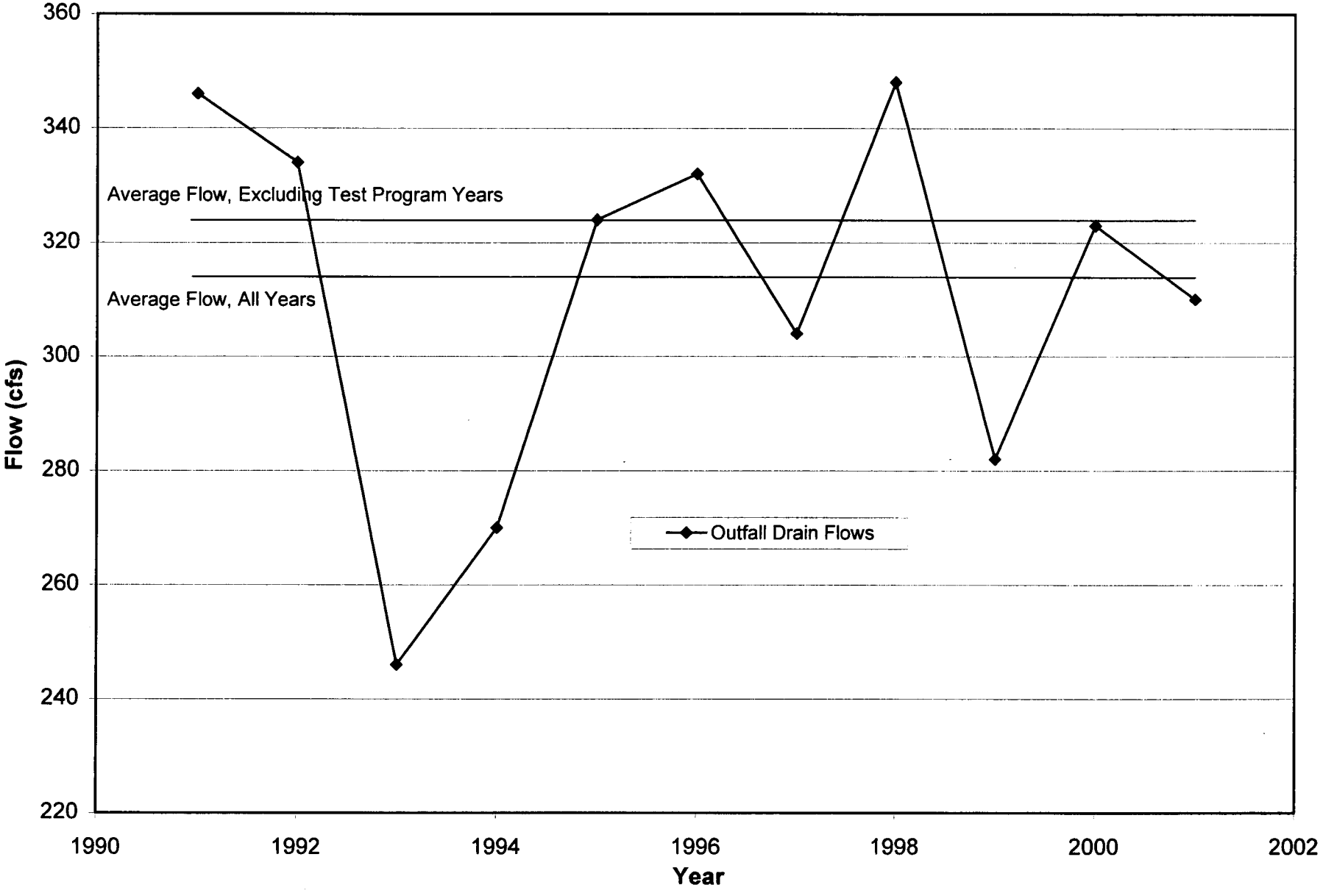
Sources: U.S. Bureau of Reclamation
Palo Verde Irrigation District

Table 5. Comparison of PVID's Outfall Drain Data and Calculated Salt Loads on Sampling Day

Flow	Electroconductivity	Total Dissolved Solids	Tons per second
1991-2001 average, excluding 1993 and 1994			
323 cfs	2,705 µS/cm	1,867 mg/L	.01883
1993 as percent of average			
76%	106%	102%	77.3%
1994 as percent of average			
84%	113%	111%	92.7%

cfs - cubic feet per second
µS/cm - micromhos per centimeter
mg/L - milligrams per liter

Figure 4 Outfall Drain January Flows



Sources: U.S. Bureau of Reclamation
Palo Verde Irrigation District

10.0 WATER QUALITY CONTROL PLAN, COLORADO RIVER BASIN – REGION 7 (BASIN PLAN)

As described in Section 9.0, the Porter-Cologne Act established the state and regional water boards as the principal state agencies responsible for control of water quality. The Act authorized the boards to formulate and adopt water quality control plans for individual basins, with the Program area located within the Colorado River Basin and subject to the Basin Plan. The major regulatory requirements in the Basin Plan applicable to the proposed Program include beneficial uses and water quality objectives, as described below.

BENEFICIAL USES

Beneficial uses are defined in the California Water Code (Section 13050(f)) to include "domestic, municipal, agricultural, and industrial supply; power generation; recreation; [a]esthetic enjoyment; navigation; and other aquatic uses or preserves." Identified existing and potential beneficial uses (including unauthorized uses) for surface waters in the Program area are listed on Table 6. Identified Basin Plan beneficial uses for local groundwater resources (RWQCB and SWRCB 1994:Table 2-5, p. 2-19) include municipal and domestic supply, industrial service supply and agriculture supply.

Table 6
BENEFICIAL USES OF LOCAL SURFACE WATERS[1]

	Colorado River and associated lakes and rivers[2]	Palo Verde Canals	Palo Verde Drains	Palo Verde Lagoon and Outfall Drain
Municipal and Domestic Supply	X	P		
Agricultural Supply	X	X		
Aquaculture	X	X		
Freshwater Replenishment	X			
Industrial Service Supply	X			
Groundwater Recharge	X	X		
Water Contact Recreation	X	X	X	X
Non-contact Water Recreation	X	X	X	X
Warm Freshwater Habitat	X	X	X	X
Cold Freshwater Habitat	X			
Wildlife Habitat	X	X	X	X
Hydropower Generation	X			
Preservation of Rare, Threatened or Endangered Species	X			X

X = Designated beneficial use.
P = Potential beneficial use.
[1] Some of these uses are unauthorized.
[2] Includes applicable water bodies in the Program area.
Source: *Water Quality Control Plan, Colorado River Basin – Region 7* (RWQCB and SWRCB 1994)

11.0 LIST OF PREPARERS

The following persons participated in preparation of the this Hydrology and Water Quality Technical Report:

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APPENDIX C

Assessment of Biological Resources Associated with Palo Verde Valley Agricultural Drains

for the

Palo Verde Irrigation District
Land Management, Crop Rotation and Water Supply Program

March 2002

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SUMMARY

This report consists of an analysis of the biological resources observed and potentially present in several agricultural drains within lands administered by the Palo Verde Irrigation District (PVID). The study has been prepared to provide information on the biological baseline conditions associated with the Land Management, Crop Rotation and Water Supply Program (Program) proposed by PVID and The Metropolitan Water District of Southern California (Metropolitan) for the California portion of the Palo Verde Valley below the Palo Verde Diversion Dam. The proposed Program would provide Metropolitan with a water supply option of from 25,000 acre-feet (30,837,250 cubic meters) up to approximately 111,000 acre-feet (136,917,390 cubic meters) of Colorado River water per year for 35 years. Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of PVID would be "saved" and an equal amount of water would be made available to Metropolitan. The water would provide an optional supply that Metropolitan could use to meet the water demands within its service area. Information gathered for this technical study addresses aquatic and terrestrial biological resources and endangered, threatened and sensitive species.

The Palo Verde Valley is an alluvial valley of the Colorado River that has little variety in elevation, ranging from 290 feet (88 meters) above sea level (ASL) in the north to 225 feet (68 meters) ASL in the south end of the valley. Climate in the Palo Verde Valley is hot and dry for most of the year, with average summer temperatures at or greater than 100°F (38°C). The Palo Verde Valley has been almost entirely converted to farmland and other developed uses, and agriculture dominates the valley floor.

The remaining native vegetation is almost entirely restricted to surrounding hills and mesas and is generally typical of the Colorado Desert with a dominance of saltbush (*Atriplex* sp.) and mesquite (*Prosopis* sp.) in the uplands and various riparian and floodplain communities in the lowlands. Salt cedar (*Tamarix* sp.), an invasive exotic plant species, is prevalent in many areas of the valley. The agricultural drains support four primary vegetation communities, including arrow weed scrub, tamarisk scrub, freshwater marsh and saltbush scrub. In addition there are disturbed and developed areas. Surrounding land uses primarily consist of agricultural fields but sometimes include native vegetation, especially along the western side of the valley. During surveys conducted for the proposed Program, a total of 20 plant and 62 animal taxa was recorded in the drains, with six sensitive wildlife species observed.

Wildlife distribution in the drains is limited because the drains are cleared periodically, and consequently the vegetation is of low diversity. Regardless, the drains have potential to support some sensitive species, including the federally listed endangered/California fully protected Yuma clapper rail (*Rallus longirostris yumaensis*).

1.0 INTRODUCTION

This technical report presents the results from biological surveys conducted on agricultural drains administered by PVID, in conjunction with a future program proposed by PVID and Metropolitan. That proposed program, the Land Management, Crop Rotation and Water Supply Program (Program), would occur within the California portion of the Palo Verde Valley within PVID-administered lands below the Palo Verde Diversion Dam. The proposed Program would provide Metropolitan with a water supply option of from 25,000 acre-feet (30,837,250 cubic meters) up to approximately 111,000 acre-feet (136,917,390 cubic meters) of Colorado River water per year for 35 years. Under the proposed Program, water normally used to irrigate farmland within the Palo Verde Valley portion of PVID would be "saved" and an equal amount of water would be made available to Metropolitan. The water would provide an optional supply that Metropolitan could use to meet the water demands within its service area. Information gathered for this technical study addresses aquatic and terrestrial biological resources and endangered, threatened and sensitive species. See Chapter 3.0 of the Draft EIR for a detailed description of the proposed Program.

The Program area is not part of an adopted Habitat Conservation Plan or Natural Community Conservation Plan area; however, the proposed Lower Colorado River Multi-Species Conservation Program (LCR MSCP), currently under development, would include the Palo Verde Valley. The LCR MSCP is proposed to cover 57 federal- or state-listed, candidate and sensitive species and their associated habitats, ranging from aquatic, wetland and riparian habitats to upland areas. The program would address the biological needs of mammals, birds, fish, amphibians and reptiles, as well as invertebrates and plants.

2.0 STUDY AREA

The Palo Verde Valley is located along the Colorado River approximately 48 miles north of the Southerly International Boundary between the U.S. and Mexico (Figure 1-1). The study area for this report encompasses the lands within the Palo Verde Valley administered by PVID. These lands encompass about 91,000 irrigated acres on the California side of the Colorado River, occurring within portions of both Imperial and Riverside counties.

2.1 PHYSIOGRAPHY AND LAND USE

Palo Verde Valley lies in the Colorado River floodplain, encompassing both the California and Arizona sides of the river. The valley is geographically defined by several surrounding hill and mountain ranges. Palo Verde Valley is surrounded on the north by the Big Maria Mountains, on the east by the Dome Rock Mountains in Arizona, on the west by the Palo Verde Mesa (portions of which are in PVID) and the Mule Mountains, and on the south by Cibola Valley and the Palo Verde Mountains.

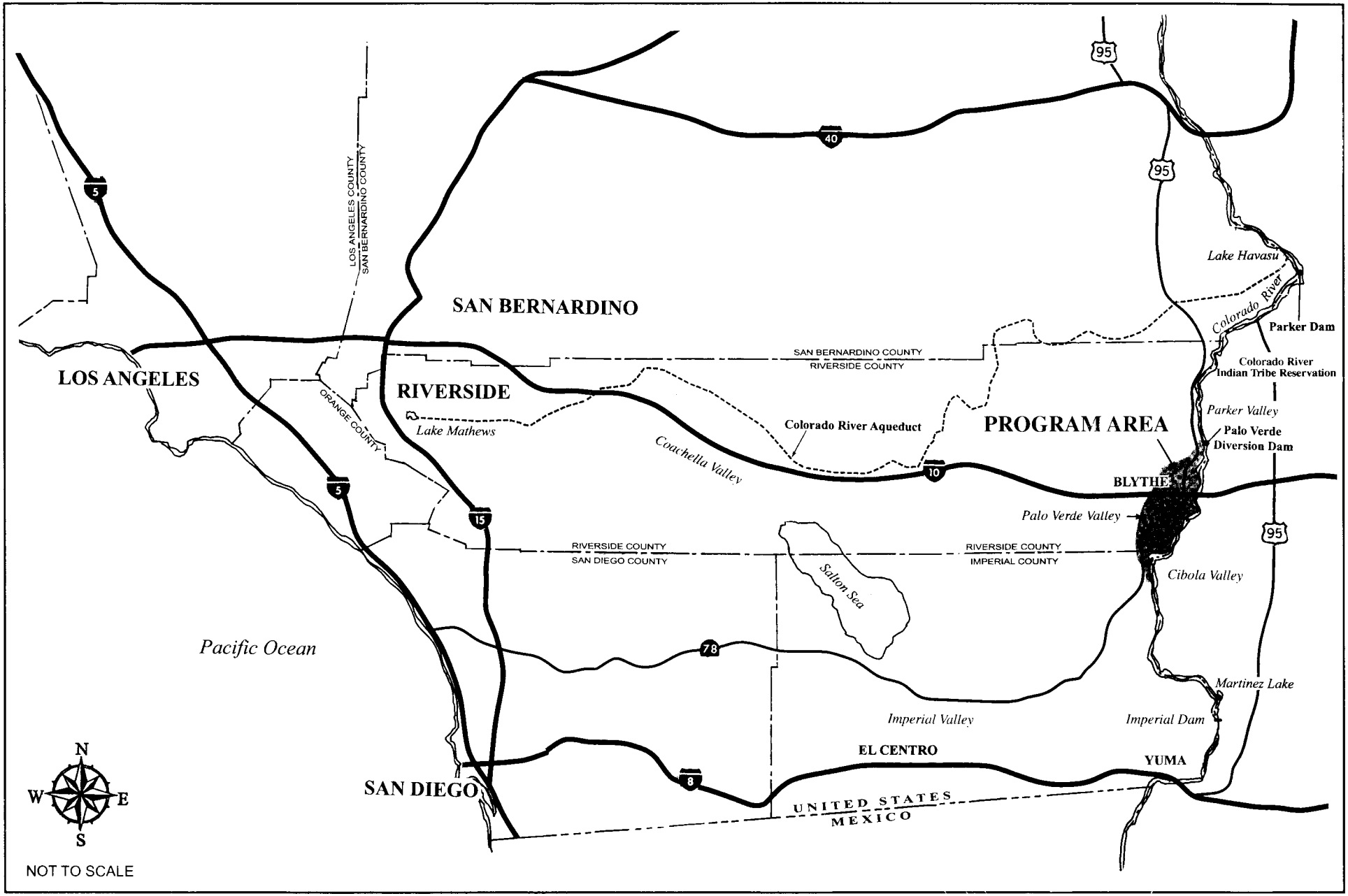
Land uses in the Palo Verde Valley are predominantly agricultural, but other present uses include commercial and industrial urban developments, residential areas, water diversion networks, roads and various utility corridors. Agricultural crops produced within the Palo Verde Valley consist primarily of alfalfa, cotton, wheat, hay and various vegetable and melon crops. The Cibola National Wildlife Refuge lies at the southern end of the Palo Verde Valley and in the adjacent Cibola Valley.

2.2 GEOLOGY AND SOILS

The Program area supports soil types from 16 different soil series, as defined in the soil survey of the Palo Verde Valley (Soil Conservation Service 1974). In many locations, native soil layers within and adjacent to the agricultural drains have been disturbed or altered due to agricultural and developed land uses.

2.3 VEGETATION AND ENVIRONMENTAL SETTING

Historically, the majority of the Palo Verde Valley was likely comprised of largely differing forms of floodplain vegetation with mesquite or desert scrub occurring in the more upland portions. Today, agriculture is the most prominent land use in the valley. It is typical of the many converted agricultural areas within the Colorado Desert, with associated water diversion and drain systems supporting the agriculture. The native vegetation is primarily restricted to surrounding hills and areas immediately adjacent to the Colorado River. The agricultural drains, although they are a man-made feature, support native plant components similar to those observed within wetland and floodplain areas remaining along the Colorado River. It should be noted that PVID's irrigation canals and the privately owned irrigation ditches in the Palo Verde Valley are kept relatively clear of vegetation, and many of these are lined with concrete. Furthermore, the canals and irrigation ditches are frequently dry when not in use, whereas the drains have water year-round. Vegetation along drains is affected by water elevations within the drains, the size (depth and width) of the drains, their proximity to the Colorado River, and PVID's ongoing maintenance and repair activities, which include removing vegetation and other obstructions from within the drains and from drain banks, re-grading drain banks and repairing drain breaks (see Section 1.1.1 of the Draft EIR). The drain maintenance and repair actions limit the ability for mature riparian communities to develop along drains, favoring the establishment of vegetation types that can rapidly re-colonize disturbed areas.



Regional Location Map

PVID LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

Figure 1-1

The changes in land use and associated decline of native vegetation within the Palo Verde Valley have had some major effects on the local wildlife use. The most notable change has been a substantial increase in open water, marshland and open farmland and consequent decrease in desert/floodplain scrub. Disturbances associated with agriculture have undoubtedly limited animal use of much of the low-lying areas of the valley.

From an avifaunal perspective, as a result of the changes, the Palo Verde Valley has been subject to a decrease in native bird species that breed in riparian woodland and scrub and an increase in wading birds, shorebirds and raptors that favor marshes, open water and open lands in general. Although many of these species were present historically, birds using open water habitats apparently were not as prevalent as they are today (Grinnell 1914; Rosenberg et al. 1991). Some native species that breed in marsh situations, such as the Yuma clapper rail, have been able to extend their distribution due to the habitat increase.

3.0 METHODS

Surveys of the Program area were conducted on October 23, 24 and 25, 2001, by W. Larry Sward and Scott I. Taylor of HELIX Environmental Planning, Inc. (HELIX). The focus of these surveys was to assess the biological resources existing within the drains, including vegetation types, animal and plant species present, and potentially occurring sensitive species. A search of the California Natural Diversity Data Base (CNDDB) was conducted prior to conducting field work. The CNDDB search was conducted by HELIX using Rarefind 2 (CDFG 2001a) by searching for sensitive species recorded on each U.S. Geological Survey (USGS) quadrangle that occurs within the Program area. The California Native Plant Society (CNPS) database also was consulted for the Program area quadrangle maps.

Due to the large size of the Program area and the extent of PVID's drainage system, the survey area was limited to representative locations within Palo Verde Valley. It would not be practical to survey the estimated 141 miles of drains operated by PVID and all other areas that may be affected by the proposed Program. For this reason, the survey area included a representative sample of PVID's primary drains and other, smaller drains within the Palo Verde Valley portion of PVID. All of the drains specifically surveyed for the proposed Program are listed in Table 1.

Table 1
SURVEY AREA BY DATE

Date	Drains Surveyed
October 23, 2001	Outfall Drain Hodges Drain Palo Verde Drain
October 24, 2001	Olive Lake Drain North End Drain East Side Drain Township Drain Central Drain Lovekin Drain Hauser Drain West Side Drain Fisher Drain Upper Westside Drain
October 25, 2001	Rannells Drain Upper Borrow Pit Drain Outfall Drain

Most of these drains were surveyed by car and on foot a short distance from the car. Field observations were aided by binoculars (7 x 36 power). Access roads along the drains were used where feasible. Access to the drains was via public roads and roads or cleared areas occurring directly adjacent to the PVID agricultural drains and canals. A mileage log was kept for each drain surveyed. Photographs were taken of the various drains. Photograph locations and other notable features, including changes in vegetation or junctions with other drains, were noted in a mileage log kept for each drain.

All sensitive wildlife were mapped on topographical USGS maps using a hand-held Global Positioning System (GPS) unit. Generally, GPS readings were taken within close proximity of an observed animal's location, rather than directly where they were observed. A general wildlife list was made during each field survey, based on direct observation or detection of sign. The types of wildlife signs noted included tracks, skeletal remains, burrows and scat. No U.S. Fish and Wildlife Service (USFWS) protocol surveys for threatened or endangered species were conducted.

A plant species list also was compiled during the surveys for the drains. These surveys included a search for potential sensitive plant species, but the time of year when the survey was done was outside the flowering period for most annual species.

Scientific nomenclature for this report is from the following standard reference sources: plant communities, Holland (1986); flora, Hickman (1993) and Munz (1974); common plant names, Jaeger (1969); reptiles, Collins (1997); birds, American Ornithologist's Union (1998); and mammals, Jones (1997).

4.0 RESULTS

4.1 VEGETATION

4.1.1 Palo Verde Valley Agricultural Drains

Four vegetation communities were found to be common within agricultural drains in the Program area, including salt cedar scrub, arrowweed scrub, atriplex scrub and freshwater marsh. The structure of habitats within the agricultural drains typically consisted of salt cedar scrub, arrowweed scrub and atriplex scrub on the sides and open water or freshwater marsh in the channel bottom. Portions of the drains supported open water with little to no emergent vegetation and other areas were cleared very recently and showed no vegetation.

Vegetation along drains is affected by water elevations within the drains, the size (depth and width) of the drains, their proximity to the Colorado River and PVID's ongoing maintenance and repair activities, which include removing vegetation and other obstructions from within the drains and from drain banks, re-grading drain banks and repairing drain breaks. The necessary drain maintenance and repair actions limit the ability for mature riparian communities to develop along drains, favoring the establishment of vegetation types that can rapidly re-colonize disturbed areas.

Salt Cedar Scrub

This typical habitat of disturbed riparian and floodplain zones is quite common in the Palo Verde Valley. It consists of several species of salt cedar (*Tamarix* sp.), nearly all of which compete very effectively with native riparian species, often to the exclusion of native species. Stands of salt cedar can become monotypic under certain hydrologic and edaphic conditions and with sufficient time. Within the various drains, the native plants arrowweed (*Pluchea sericea*) and big saltbrush (*Atriplex lentiformis* ssp. *lentiformis*) were more prevalent than salt cedar. In these areas, salt cedar occurred as an inclusion within other plant communities.

Arrowweed Scrub

Arrowweed historically formed dense, often monotypic stands within desert floodplains of the lower Colorado River. Wildlife use of dense stands of arrowweed is usually limited, unless there are other habitats, especially woodlands, nearby. Arrowweed was observed in most of the various agricultural drains, and was especially prominent as a volunteer in recently cleared areas.

Atriplex Scrub

This widely spaced scrub vegetation is mostly dominated by saltbush (*Atriplex canescens*), schismus (*Schismus barbatus*), Russian thistle (*Salsola tragus*) and allscale (*Atriplex polycarpa*). This type of vegetation persists in highly alkaline soils, usually on the slope or at the upper edge of the drains and in surrounding uplands.

Freshwater Marsh

Marshlands are dominated by emergent vegetation in a wetland environment. The marshes located within the agricultural drains are composed primarily of cattail (*Typha* sp.) and bull rush (*Scirpus* sp.). Because the drains are subject to limited or no scouring events, these marsh areas are relatively stable

and often extensive, although they tend to be quite narrow in width. Marsh communities were observed to varying extents within most of the drains, typically associated positively with the degree of open water in the drain.

4.1.2 Palo Verde Valley Farmlands

The extent to which agriculture dominates the Palo Verde Valley is well documented. Within the farmlands, there are three dominant habitat types, including agricultural fields, cleared areas and developed areas.

Agriculture

Types of agriculture present in the valley include alfalfa, cotton, wheat, hay and various vegetable and melon crops. In most cases, agricultural lands abutted the agricultural drains with little to no buffer between them except for dirt access roads.

Cleared Areas

Cleared areas are common throughout the Program area, usually associated with mechanical clearing in and near various agricultural fields. This category also includes dirt roads and areas kept clear of vegetation, such as hay stacking areas. In general these areas lack vegetation, but in a few cases they supported a small amount of weedy vegetation.

Developed Areas

Areas that are developed within the Program area include rural residential housing, paved roads, concrete-lined irrigation canals and commercial or industrial developments associated with various towns.

4.2 SENSITIVE PLANTS

No plant species considered threatened or endangered by the USFWS or CDFG were observed in any of the agricultural drains or adjacent farmlands. Exhibit C-1 lists plants by both common and scientific names. Exhibit C-3 lists four sensitive plant species that are not expected to be present in the Program area but that have a potential for occurrence.

4.3 SENSITIVE ANIMALS

Six sensitive animal species, the greater sandhill crane (*Grus canadensis tabida*), loggerhead shrike (*Lanius ludovicianus*), crissal thrasher (*Toxostoma crissale*), northern harrier (*Circus cyaneus*), burrowing owl (*Athene cunicularia*) and osprey (*Pandion haliaetus*), were detected during the surveys within the Program area (Exhibit C-2). Exhibit C-3 lists sensitive animal species with a potential for occurrence in the Program area.

5.0 LIST OF PREPARERS

This study was prepared for PVID by HELIX Environmental Planning, Inc. Key HELIX staff include:

- W. Larry Sward, Botanist
- Scott Taylor, Wildlife Biologist

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EXHIBIT C-1 - COMPLETE FLORA AND FAUNA LIST

FLORA

*** - Exotic species**

CLASS

SUB-CLASS

Family Name

Scientific Name	**Common Name**
ANGIOSPERMAE	
DICOTYLEDONAE	
Asteraceae	**Sunflower Family**
Pluchea odorata	Salt marsh fleabane
Pluchea sericea	Arrow weed
Boraginaceae	**Borage Family**
Heliotropum curassavicum	Heliotrope
Chenopodiaceae	**Goosefoot Family**
Atriplex canescens	Quail bush
Atriplex lentiformis ssp. *lentiformis*	Big saltbush
Allenrolfea occidentalis	Iodine bush
*Salsola tragus**	Russian thistle
Suaeda moquinii	Bush seepweed
Frankeniaceae	**Frankenia Family**
Frankenia sp.	Frankenia
Polygonaceae	**Buckwheat Family**
Polygonum lapathifolium	Willow weed

Salicaceae	**Willow Family**
Populus sp.	Cottonwood
Salix goodingii	Black willow
Tamaricaceae	**Caltrop Family**
*Tamarix parviflora**	Tamarisk
*Tamarix aphylla**	Athel

MONOCOTYLEDINAE

Cyperaceae	**Sedge Family**
Scirpus sp.	Bullrush
Poaceae	**Grass Family**
*Arundo donax**	Giant reed
Distichlis spicata	Saltgrass
Eriochloa sp.	Cup grass
Typhaceae	**Cattail Family**
Typha sp.	Cattail

FAUNA

† - Sensitive species

INVERTEBRATES

Phylum

Class

Order

Family Name

Scientific Name	**Common Name**
Arthropoda - Insects and Their Relatives	
Insecta - Insects	
Coleoptera - Beetles	
Tenebrionidae	"Darkling beetles"
Hymenoptera	
Formicidae	"Ants"
Apidae - Honey Bees, Bumble Bees	
Apis mellifera	European honey bee
Lepidoptera	
Pieridae - Whites and Sulfurs (butterflies)	
Colias eurytheme	Orange sulfur
Nymphalidae - Brush-footed butterflies	
Vanessa cardui	Painted lady
Danaus gilippus	Queen

VERTEBRATES

Reptilia - Reptiles

Squamata

Phrynosomatidae - Horned Lizards, Spiny Lizards and Sand Lizards

Uta stanisburiana	Side-blotched lizard

Teiidae - Whiptails and Relatives

Cnemidophorus tigris	Western whiptail

Aves - Birds

Ciconiiformes

Ardeidae - Herons

Casmerodius albus	Great egret
Ardea herodias	Great blue heron
B*utorides virescens*	Green heron
Nycticorax nyticorax	Black-crowned night-heron
Egretta thula	Snowy egret
Bubulcus ibis	Cattle egret

Charadriiformes

Charadriidae - Plovers

Charadrius vociferans	Killdeer

Falconiformes

Accipitridae - Hawks, Old World Vultures, and Harriers

Buteo jamaicensis	Red-tailed hawk
Circus cyaneus†	Northern harrier
Pandion haliaetus†	Osprey

Cathartidae - New world vultures

Cathartes aura	Turkey vulture

Falconidae - Caracaras and Falcons

Falco sparvarius	American kestrel

Galliformes

Phasianidae - Quails, Pheasants, and Relatives

Callipepla gambelii	Gambel's quail

Gruiformes

Aramidae - Mud hens

Fulica americana	American coot
Gallinula chloropus	Common moorhen

Gruidae - Cranes

Grus canadensis tabida†	Greater sandhill crane

Columbiformes

Columbidae - Pigeons and Doves

Zenaida macroura	Mourning dove
Columbina passerina	Common ground dove

Cuculiformes

Cuculidae - Typical Cuckoos

Geococcyx californianus	Greater roadrunner

Strigiformes

Strigidae - Owls

Athene cunicularia†	Burrowing owl

Passeriformes

Tyrannidae - Tyrant Flycatchers

Sayornis saya	Say's phoebe
Sayornis nigricans	Black phoebe

Alaudidae - Larks

Eremophila alpestris ssp.	Horned lark

Alcedinidae - Kingfishers	
Ceryle alcyon	Belted kingfisher
Corvidae - Jays, Magpies, and Crows	
Corvus corax	Common raven
Hirundinidae - Swallows	
Hirundo rustica	Barn swallow
Tachycineta bicolor	Tree swallow
Remizidae - Verdin	
Auriparus flaviceps	Verdin
Mimidae - Mockingbirds and Thrashers	
Mimus polyglottus	Northern mockingbird
Toxostoma crissale†	Crissal thrasher
Laniidae - Shrikes	
Lanius ludovicianus†	Loggerhead shrike
Ptilogonatidae - Silky flycatchers	
Phainopepla nitens	Phainopepla
Picidae - Woodpeckers	
Colaptes auratus	Northern flicker
Sturnidae - Starlings	
Sturnus vulgaris	European starling
Troglodytidae - Wrens	
Cistothorus palustris	Marsh wren

Emberizidae - Warblers, Sparrows, Blackbirds, and Relatives

Dendroica coronata	Yellow-rumped warbler
Sturnella neglecta	Western meadowlark
Agelaius phoeniceus	Red-winged blackbird
Euphagus cyanocephalus	Brewer's blackbird
Melospiza melodia	Song sparrow
Molothrus ater	Brown-headed cowbird
Pipilo maculatus	Spotted towhee
Pipilo aberti	Abert's towhee
Zonotrichia leucophrys	White-crowned sparrow

Icteridae - Icterids

Quiscalus mexicanus	Great-tailed grackle

Fringillidae - Finches

Carpodacus purpureus	Purple finch
Carpodacus mexicanus	House finch
Carduelis psaltria	Lesser goldfinch

Pelicaniformes

Phalocrocoracidae - Cormorants

Phalocrocorax auritus	Double-crested cormorant

Podicipediiformes

Podicipedidae - Grebes

Podilymbus podiceps	Pied-billed grebe

Mammalia

Carnivora

Canidae - Foxes, Wolves, and Relatives

Canis latrans	Coyote

Felidae - Cats

Felis rufus	Bobcat

Rodentia

Sciuridae - Squirrels

Citellus tereticaudus	Roundtail ground squirrel

Lagomorpha

Leporidae - Rabbits and Hares

Sylvilagus audubonii	Desert cottontail

EXHIBIT C-2 - SENSITIVE SPECIES SUMMARY

No sensitive plants were identified during the surveys. Six sensitive birds were observed during the surveys. The northern harriers and osprey may or may not be noted as sensitive animals depending on the circumstances in which they were observed (i.e. migrating/wintering - not sensitive versus nesting - sensitive). Below is an expanded discussion of each sensitive species. This discussion provides additional information on their listing and conservation status, distribution, habitat requirements, natural history and status onsite. The following information is taken from Zeiner (1990) and Erlich (1988), and listing status is taken from CDFG (2001b). An explanation of listing status can be found in Exhibit C-4.

Greater sandhill crane (*Grus canadensis tabida*)
Listing: Nesting and Wintering—CDFG CT; Fully Protected
Distribution: North America from central Canada southward.
Habitat: Breeds in shallow marshes and wetlands. In winter, found in plains and valleys, usually near ponded water (Grinnel and Miller 1944). Rare to uncommon in the deserts where they occur primarily during the spring.
Conservation Status: Decline almost to extirpation due to drainage of breeding habitats since the 1950s.
Discussion: This species builds its nests out of large piles of sticks and other materials. They are often observed "dancing" during the late winter and early spring before they return to their breeding grounds. Their diet is very opportunistic, consisting of several aquatic and terrestrial foods. In the Palo Verde Valley, this species increased during the 20th century, largely due to agricultural practices (Rosenberg *et al.* 1991). They may often be found feeding in and around alfalfa or milo fields.
Status On Site: A large flock of sandhill cranes was observed in an alfalfa field in the northeast part of the Program area, within a mile of the Colorado River banks. These birds were fall/winter visitors to the area.

Loggerhead shrike (*Lanius ludovicianus*)
Listing: USFWS FSC/CDFG CSC
Distribution: Widespread, but declining, throughout North America. Winters south to Central America.
Habitat: Occupies open habitats, including grasslands, scrublands, and ruderal areas with adequate perching locations. They are often found near water.
Conservation Status: A significant number of these birds are preserved and protected within existing open space preserves, and a significant number receive partial protection on statewide military installations (Marine Corps Air Station Miramar, Marine Corps Base Camp Pendleton, Camp Elliot).

Discussion: This bird stores its prey by impaling it on sharp objects or wedging it between crevices in rocks or tree trunks. The males have strong fidelity to their breeding territory. During winter, the sexes establish separate territories. In the Palo Verde Valley, this bird is a common resident (Rosenberg *et al.* 1991).

Status On Site: Eight individuals were observed along the agricultural drains. Drains where these species were observed included Rannells, East Side, West Side, Hodges and Upper Borrow Pit drains.

Crissal thrasher (*Toxostoma crissale*)

Listing: CDFG CSC

Distribution: An uncommon or rare resident in deserts of Southern California from Inyo County to Mexico and in the southern and western San Joaquin Valley.

Habitat: They occur in desert washes, open desert scrub, Joshua tree woodland, alkali desert scrub, and desert succulent scrub habitats. They tend to frequent open, sandy terrain with scattered shrubs.

Conservation Status: The numbers of this species have declined in more recent decades, probably largely due to off-road activity and agricultural conversion of habitat. They are reclusive and wary of the presence of man.

Discussion: These thrashers are territorial all year long. They breed from late January to early June with a peak activity period between March and June. Their nests are placed in spiny shrubs or cacti, often in desert wash situations. Favorite food items include arthropods, seeds, small lizards, and other small vertebrates.

Status On Site: These thrashers were found in several of the drains, usually within more thickly brushed areas.

Northern harrier (*Circus cyaneus*)

Listing: Breeding—CDFG CSC

Distribution: An uncommon, permanent resident and migrant that ranges from southwestern deserts northwest along the inner Coast Ranges and Sierra Nevada, and along the coast.

Habitat: Prairies, savannahs, sloughs, wet meadows, shallow marshes, or agricultural fields.

Conservation Status: There had been reported cases in the 1970s of eggshell thinning from DDE (a metabolite of DDT). They are declining from loss of habitat and extensive open areas in several portions of the state.

Discussion: This raptor species nests on the ground, typically, or in slightly elevated areas with thick vegetation. It is known to eat a wide variety of foods, including voles, birds, snakes, frogs, insects, and, sometimes, carrion. In the Palo Verde Valley, the harrier is known primarily as a wintering species (Rosenberg *et al.* 1991). It is presumed to have benefited from the large amount of open lands created by agriculture.

Status On Site: Individuals were seen throughout the Program area. Seven harriers were recorded either in or directly adjacent to agricultural drains. Drains where they were observed included Upper Borrow Pit, Hodges, East Side, Lovekin, Rannells and West Side drains.

Burrowing owl (*Athene cunicularia*)

Listing: USFWS FSC/Nest site—CDFG CSC

Distribution: Burrowing owls are generally restricted to grasslands and agricultural lands. Significant portions of these areas have been converted to urban uses and are no longer suitable burrowing owl habitat. Distribution includes lower British Columbia to Manitoba, Canada and the central and western U.S. south to northern Mexico and Baja California.

Habitat: They inhabit open dry grassland and desert habitats, using the burrows of California ground squirrel (*Spermophilus beecheyi*) and other ground squirrels for nest sites.

Conservation Status: Conversion of habitat, habitat destruction, and poisoning of ground squirrels have contributed to the decline of this species. Collisions with autos may be a major cause of mortality as well.

Discussion: This owl occupies a home range of anywhere from 0.1 to 4 acres and their territory size varies depending on the proximity of the nearest neighboring owl. Breeding from March to August, their peak of breeding activity is April and May. They feed mostly on insects but also small mammals, reptiles, birds, and carrion. In the Palo Verde Valley, the owl is a fairly common resident (Rosenberg *et al.* 1991).

Status On Site: One individual of this species was observed near a berm along the Rannells Drain.

Osprey (*Pandeon haliaetus*)

Listing: CDFG CSC

Distribution: Widespread as a breeding and migrating species throughout North America. Breeds sporadically across the northern U.S. and Canada and along the coast of Baja California and the Sea of Cortez.

Habitat: Occupies habitats near water, often associated with dead snags or wooded areas near water.

Conservation Status: The osprey suffered a serious decline beginning in the 1940s due to eggshell thinning from PCB and other pesticides. It has been reintroduced to many parts of its range. Eggshell thinning has largely been reduced, but the presence of DDT and its metabolites, especially in Central America, still poses a threat.

Discussion: This bird exhibits courtship feeding, primarily by the male to the female, which often continues through the nesting cycle. Females do most of the brooding and rearing of young. Sometimes this bird's nests fall victim to predation by bald eagles or other large birds of prey.

Status On Site: A single individual was observed within Rannells Drain.

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EXHIBIT C-3
SENSITIVE PLANT AND ANIMAL SPECIES WITH POTENTIAL TO OCCUR IN THE PROGRAM AREA

SPECIES	LISTING OR SENSITIVITY*	POTENTIAL TO OCCUR IN THE PROGRAM AREA
Plants		
Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*)	CNPS List 2 R-E-D 2-2-1	None due to lack of habitat. Desert dune species.
Angel trumpets (*Acleisanthes longiflora*)	CNPS List 2 R-E-D 3-1-1	Not expected. Occurs on carbonate substrates within Sonoran Desert scrub habitats.
Saguaro (*Carnegiea gigantea*)	CNPS List 2 R-E-D 3-2-1	Not expected. Occurs on rocky areas within Sonoran desert scrub habitats.
Las Animas colubrina (*Colubrina californica*)	CNPS List 2 R-E-D 1-1-2	Not expected. Occurs in Mojavean and Sonoran desert scrub habitats.
Wiggin's cholla (*Opuntia wigginsi*)	CNPS List 3 R-E-D 3-1-2	Not expected. Occurs on sandy areas within Sonoran desert scrub habitats.
Animals		
Invertebrates		
MacNeil's sooty skipper (*Pholisora gracielae*)	FSC	Moderate. This species has been recorded in the vicinity of Blythe (Emmel and Emmel 1973). Its foodplant, *Atriplex lentiformis*, occurs within the agricultural drains.
Cheeseweed owlfly (*Oliarches clara*)	FSC	Unknown.
California McCoy snail (*Eremarionta rowelli mccoiana*)	FS	Unknown.
Mojave desert blister beetle (*Lytta insperata*)	FS	Unknown. This beetle is a predator on solitary bees, which are likely present in the Program area.
Vertebrates		
Razorback sucker (*Xrauchen texanus*)	FE/CE/CFP	Moderate. Juvenile fish have been observed sometimes within agricultural canals and adults are observed within the reach of the Colorado River that runs through the Palo Verde Valley.
California brown pelican (*Pelicanus occidentalis*)	FE/CE/CFP	Low. Within the Program area, this pelican is known as an uncommon to rare wintering bird that uses open water habitats.
Yuma clapper rail (*Rallus longirostris yumanensis*)	FE/CFP	Moderate. This species can be observed in agricultural drains with marsh vegetation. It also occurs in breeding populations at Cibola National Wildlife Refuge and at points along the Colorado River.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE/CE	Not expected as a breeder. Flycatchers nest in dense riparian vegetation approximately four to seven meters high and often with high percentage of canopy cover and over water, habitat which is not present within the agricultural drains. Migrating individuals may occur in the PVID area but breeding is not expected.
Desert tortoise (*Gopherus agassizii*)	FT/CT	Not expected. The tortoise generally is not found in areas with extensive agriculture.
Western snowy plover (*Charadrius alexandrinus nivosus*)	FT/CSC	Low. This plover breeds at the Salton Sea but is only rarely sighted elsewhere in the Lower Colorado River Valley.
Bonytail (*Gila elegans*)	FE/CE	Not expected. The Bonytail is considered to be extirpated from much of the Colorado River, although there are ongoing efforts to reintroduce them to the lower reaches.
Mountain plover (*Charadrius montanus*)	FPT/CSC	Moderate. This species occurs in agricultural fields fairly regularly, but only during the fall and winter seasons.
Bald eagle (*Haliaeetus leucocephalus*)	FT/CE/CFP	Low. The bald eagle usually prefers open water habitats such as lakes, reservoirs or the ocean. The Program area supports to small an extent of open water for this bird, but an occasional individual could be observed flying over the area or roosting within the area.

SPECIES	LISTING OR SENSITIVITY*	POTENTIAL TO OCCUR IN PROGRAM AREA
Animals (cont.)		
Vertebrates (cont.)		
Arizona least Bell's vireo (*Vireo bellii arizonae*)	CE	Low. This vireo is most commonly found in willow scrub habitats, and not in purely tamarisk.
American peregrine falcon (*Falco peregrinum*)	CE/CFP	Low. This falcon occurs only as a post-breeding visitor and transient.
Gila woodpecker (*Melanerpes uropygialis*)	CE	High. This woodpecker is often found in any area with tall trees, including non-native trees.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	CE	Not expected. Cuckoos use mature, well-developed riparian communities almost exclusively. The habitats occurring within the Program area are largely too sparse or limited in extent to support this bird.
Gilded northern flicker (*Colaptes chrysoides*)	CE	Not expected. This flicker is not known from within the Program area, but is present at Cibola National Wildlife Refuge to the south.
California black rail (*Laterallus jamaicensis coturniculus*)	FSC/CFP	Moderate. Black rails are known to use many of the same habitats as the Yuma clapper rail.
Lowland leopard frog (*Rana yavapaiensis*)	FSC/CSC	Not expected. Formerly recorded from many parts of the Colorado River, but appears to have been extirpated.
Large-billed savannah sparrow (*Passerculus sandwichensis rostratus*)	FSC/CSC	Moderate. This sparrow is a fairly common winter visitor to agricultural fields in the Palo Verde Valley.
Ferruginous hawk (*Buteo regalis*)	FSC/CSC	Low. Ferruginous hawks are uncommon winter and fall season visitors to the lower Colorado River areas.
White-faced ibis (*Plegadis chihi*)	FSC/CSC	Moderate. An uncommon to common transient in spring and fall, but rare at other times.
Western least bittern (*Ixobrychus exilis hesperis*)	FSC/CSC	Low. A common but very localized breeding bird that is only found in extensive marshlands.
Yuma puma (mountain lion) (*Felis concolor browni*)	FSC/CSC	Low. The distribution and habits of this lion has not been well-studied. It is likely that the disturbances present within the Program area (agriculture and human settlements) restrict the lion's use of the area.
Colorado River cotton rat (*Sigmodon arizonae plenus*)	FSC/CSC	Low. This rat is only recorded from areas directly adjacent to the Colorado River, where the habitat is moist.
Spotted bat (*Euderma maculatum*)	FSC/CSC	Low. This bat occurs in several arid climates and habitats, but is uncommon everywhere.
Pale big-eared bat (*Corynorhinus townsendii pallescens*)	FSC/CSC	Moderate. This bat could be present in roosting areas in surrounding mountain ranges, but its use of the Program area would largely be limited to foraging area.
Greater western mastiff bat (*Eumops perotis californicus*)	FSC/CSC	Moderate. Mastiff bats are most common in rocky, rugged cliff areas, which are not prevalent within the Program area.
Yuma myotis (*Myotis yumaensis*)	FSC	Moderate. The Yuma bat prefers to roost and forage in areas that are in close proximity to open water.
Occult little brown bat (*Myotis lucifugus occultus*)	FSC/CSC	Moderate to High. This bat is one of the more common bat species in North America and has wide distribution (Harvey *et al.* 1999).
Cave myotis (*Myotis velifer*)	FSC/CSC	Moderate. This species roosts in caves, mines, and sometimes buildings, and it forages over desert floodplains and rocky areas. Habitat occurs within the Program area.
California leaf-nosed bat (*Macrotus californicus*)	FSC/CSC	Moderate. This bat roosts in several types of areas from rock shelters to various structures and forages over lowland desert habitat. Habitat occurs within the Program area.
Desert rosy boa (*Charina trivirgata gracia*)	FSC	Low. A common snake of desert mountain ranges such as those surrounding the Palo Verde Valley and Palo Verde Mesa. Not as common in lowland areas such as the majority of the Program area.
Chuckwalla (*Sauromalus obesus*)	FSC	Not expected. This lizard occurs in very rocky areas such as the mountain ranges surrounding the Palo Verde Valley, but is not common in floodplain areas.
Couch's spadefoot (*Scaphiophus couchii*)	CSC	Moderate. An uncommon species that requires temporary pools to breed, but is not generally associated with permanent water areas.
Colorado River toad (*Bufo alvarius*)	CSC	Not expected. Formerly a common toad in California, it has not been observed there since the 1980s.
Summer tanager (*Piranga rubra*)	CSC	Low. An uncommon breeder that uses tall cottonwood-willow forests.

SPECIES	LISTING OR SENSITIVITY*	POTENTIAL TO OCCUR IN PROGRAM AREA
Animals (cont.)		
Vertebrates (cont.)		
Northern cardinal (*Cardinalis cardinalis*)	CSC	Not expected. A rare resident to densely shrubby areas along the Colorado River.
Yellow-breasted chat (*Icteria virens*)	CSC	Low to Moderate. A common species within its preferred habitat type, dense brush and wooded areas.
Sonoran yellow warbler (*Dendroica petechia sonorana*)	CSC	Low. An uncommon transient species usually observed from late spring to early fall in dense riparian vegetation.
LeConte's thrasher (*Toxostoma lecontei*)	FSC/CSC	Not expected. A rare transient species that is more common in desert wash habitat than the floodplain habitats in the Palo Verde Valley.
Vermilion flycatcher (*Pyrocephalus rubinus*)	CSC	Low. A rare and local resident that is more often seen, but still uncommon, in winter.
California horned lark (*Eremophila alpestris actia*)	CSC	High. A fairly common species year-round that is often associated with agricultural fields.
Short-eared owl (*Asio flammeus*)	CSC	Low. An uncommon winter visitor that prefers open habitats, including agricultural fields.
Prairie falcon (*Falco mexicanus*)	CSC	Low. An uncommon to rare visitor to many portions of the Lower Colorado River basin and uses open areas such as agricultural fields.
Merlin (*Falco columbarius*)	CSC	Low. A rare visitor to the lower Colorado River Valley from late fall to early spring. Uses agricultural fields where trees and other brushy or wooded areas are nearby.
Golden eagle (*Aquila chrysaetos*)	CSC/CFP	Low. A rare visitor along this section of the Colorado River.
Pallid bat (*Antrozus pallidus*)	CSC	High. This bat is common in desert areas with rocky outcroppings, especially near water, and roosts in rock crevices and buildings. Habitat is common in the Program area.

*See Exhibit C-4 for listing status explanation

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Exhibit C-4

EXPLANATION OF STATUS CODES FOR PLANTS AND ANIMALS

U.S. FISH AND WILDLIFE SERVICE (USFWS)

FE	Federal-listed endangered
FT	Federal-listed threatened
FPE	Federal-proposed endangered
FPT	Federal-proposed threatened
FPD	Federal-proposed for delisting
FC	Federal candidate species (former Category 1 candidates)
FSC	Federal special concern species (a "term of art" for former Category 2 candidates)
MBTA	Migratory Bird Treaty Act

CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG)

CE	California-listed endangered
CR	California-listed rare
CT	California-listed threatened
CCE	California candidate for listing as endangered
CCT	California candidate for listing as threatened
CSC	California special concern species
CFP	California fully protected (species may not be taken or possessed without a permit from the Fish and Game Commission and/or the Department of Fish and Game)

WATCH LIST

The Watch List (compiled by the Audubon Society and partners in Flight) identifies species that are faced with population decline, limited geographic range, and/or threats such as habitat loss on their breeding and wintering grounds serving as an early warning system that focuses attention on at-risk bird species before they become endangered.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Under CEQA, impacts associated with a proposed project or program are assessed with regard to significance criteria determined by the CEQA Lead Agency and pursuant to CEQA and the State CEQA Guidelines. As a result, plants with no current federal or state legal standing may contribute to a significant impact under CEQA, with associated mitigation requirements, if the proposed project or program would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations; have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS; have a substantial adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption or other means; interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

CALIFORNIA NATIVE PLANT SOCIETY (CNPS)

LISTS

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, and/or taxonomic information needed.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status.

R-E-D CODE

R (Rarity)

1 = Rare but found in sufficient numbers and distributed widely enough that potential for extinction is low at this time.
2 = Occurrence confined to several populations or to one extended population.
3 = Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

E (Endangerment)

1 = Not endangered
2 = Endangered in a portion of its range
3 = Endangered throughout its range

D (Distribution)

1 = More or less widespread outside California
2 = Rare outside California
3 = Endemic to California