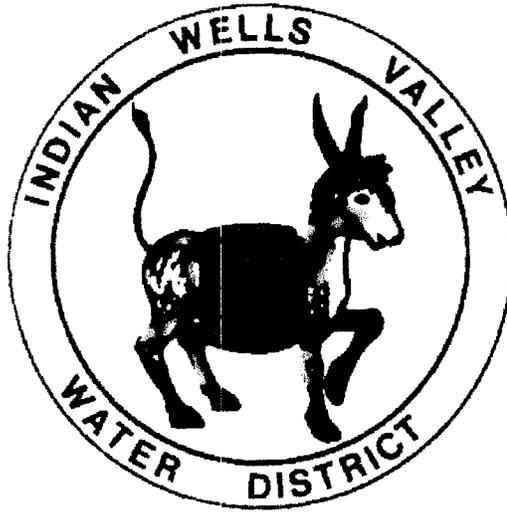


2005 URBAN WATER MANAGEMENT PLAN



Prepared By:
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ADOPTED: October 11, 2005

For Submission To:
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2005 URBAN WATER MANAGEMENT PLAN
CONTACT SHEET

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The Water supplier is a: **Water District**

The Water supplier is a: **Retailer**

Utility services provided by the water supplier include: **Water Supply**

Is This Agency a Bureau of Reclamation Contractor? **No**

Is This Agency a State Water Project Contractor? **No**

SECTION 1 – AGENCY COORDINATION

Water Code Section 10620

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

General Information

The Indian Wells Valley Water District (IWWVD, or the District) has actively encouraged community participation in its urban water management planning efforts since the first plan was developed in 1985, and adopted an updated version of same in 1990 and 1995. The 2000 Plan superseded the 1995 Plan and reflected then current conditions within the District's boundaries, including projected water requirements. The 2005 Plan, as presented here, supersedes the 2000 Plan. It also presents measures necessary to meet the District's conservation goals in the face of current conditions, and fulfills the requirements of the Urban Water Management Planning Act as amended. Public meetings were held on the 1985, 1990, 1995, 2000 and 2005 plans.

On October 11, 2005, the District held a Public Hearing to receive comments on its draft 2005 Urban Water Management Plan. All comments received prior to and during the Public Hearing were taken into consideration in the preparation of the final report. Comments submitted and IWWVD's responses to them are incorporated into Appendix B.

Plan Adoption

The Indian Wells Valley Water District prepared this update of its Urban Water Management Plan during Spring 2005. This updated plan was adopted by the Board of Directors in October, 2005 and submitted to the California Department of Water Resources within 30 days of Board approval. Attached to the cover letter addressed to the Department of Water Resources, and as presented in Appendix C, is a copy of the signed Resolution of Plan Adoption. This plan includes all information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning).

Coordination with Appropriate Agencies

IWVWD's service area includes the service area of the City of Ridgecrest. IWVWD is also a signatory to the Indian Wells Valley Cooperative Groundwater Management Group (IWVCGMG). Staff of the Indian Wells Valley Water District coordinated the development of this plan with the IWVCGMG.

Table 1 summarizes the efforts IWVWD has taken to include various agencies and citizens in its planning process.

Table 1. Coordination with Appropriate Agencies

Entities	Participated in UWMP Development	Commented On Draft	Attended Public Meetings	Contacted For Assistance	Received Copy of Draft	Sent Notice Of Intention To Adopt	Not Involved/ No Information
City of Ridgecrest	✓			✓	✓		
Eastern Kern County RCD					✓		
Indian Wells Valley Airport District					✓		
Inyokern CSD					✓		
Kern Council of Governments	✓			✓			
Kern County				✓	✓	✓	
Kern County Water Agency				✓	✓		
Quist Farms					✓		
Naval Air Weapons Station China Lake					✓		
San Bernardino County					✓	✓	
Searles Valley Minerals					✓		
United States Bureau of Land Management					✓		
General Public			✓		✓	✓	

SECTION 2 – CONTENTS OF URBAN WATER MANAGEMENT PLAN

Step 1 – Appropriate Level of Planning for Size of Agency

Water Code Section 10630

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

Formation and Purpose

The District was organized in 1953 in accordance with State of California County Water District Law (Water Code Section 30000 et seq.) for the purpose of providing domestic water supplies. The District is empowered to manage water resources and to construct, operate, maintain, repair, and replace water system facilities as needed to provide water service in compliance with applicable standards and regulations. The District routinely constructs new facilities, maintains them, and replaces them as necessary to sustain adequate, reliable, and safe water service to its customers.

Step 2 – Service Area Information with 20 Year Projections

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

Service Area

The District is situated in the Indian Wells Valley, which lies in the northerly portion of the Mojave Desert, southeast of the Sierra Nevada, and south of the Owens Valley. As the primary purveyor of public water supplies in the Ridgecrest area of Kern and San Bernardino Counties (see Figure 1, the Vicinity Map, and Figure 2, the District Boundary Map), the District has a significant portion of the responsibility for managing the area's

limited water supply. In order to effectively and efficiently accomplish the management of water supplies, the District has prepared this Urban Water Management Plan (Plan), which includes background information regarding groundwater supply and historic water use within the District's service area, as well as measures which will enable the District and area residents to make maximum use of the limited available resources.

The District has long been reliant upon groundwater as its sole source of water supply for serving the needs of its customers. The District overlies a large supply of high quality groundwater; however, the region's arid environment limits the extent to which the groundwater basin is recharged. In recent years, the annual quantity of water extracted from the groundwater basin has exceeded the estimated amount of recharge. Demands for groundwater have increased and have exceeded the natural recharge to the groundwater basin. As a result, areas of the Indian Wells Valley have experienced water levels that exhibit a downward trend through time without recovery.

Overdraft can lead to greater depth to groundwater, resulting in increased groundwater production costs and related water service rate increases. The Plan places an emphasis on the implementation of conservation measures and on making the most efficient possible use of existing supplies.

The District encompasses about 38 square miles of the 360 square mile floor of the Indian Wells Valley; see Figure 2, the District Boundary Map. Ground surface elevations within the District range from approximately 2,250 feet to 3,200 feet above sea level. The District currently serves a population of more than 27,000 people through approximately 11,500 service connections.

Population

Historic and projected populations are set forth in Table 2. As shown therein, the Service Area population is projected to increase from approximately 27,000 in 2000 to approximately 34,100 by 2020. Population estimates and projections are based on the following: The 2005, 2010, 2015, 2020, 2025 and 2030 estimates are based on the Kern Council of Governments (KCOG) 1990 and 2000 Census projections that assume the District's population equals 100% of 2000 Census Tract boundaries 54.01, 54.02, 54.03,

and 54.08 with 1.8% growth per year through 2020. For each of the following five-year periods, an approximate projected growth rate of 2.5% is used.

Table 2 shows the population total for the District from 2005, with projections to 2030.

Table 2. Population – Current and Projected

	2005	2010	2015	2020	2025	2030
Service Area Population	27,920	30,500	33,300	36,400	37,300	38,200

Climate

Temperatures often exceed 100°F during summer months (the longest hot spell on record is 85 consecutive days from June 17, 1994 through September 9, 1994) and average about 55°F during winter months. Average annual daily temperature is approximately 80°F. Annual rainfall averages less than 5 inches, with most rainfall occurring between October and March; however thundershowers occur during the summer monsoons.

The Indian Wells Valley watershed contains approximately 860 square miles, nearly 500 square miles in the mountains and hills and about 360 square miles in the Valley floor. Average precipitation within the watershed ranges between 5 inches and 10 inches per year, from less than 5 inches per year in the Ridgecrest/China Lake area, to nearly 5 inches per year in the El Paso Mountains to the south, to about 6 inches per year in the Argus Mountains to the east and the Coso Mountains to the north, and to almost 10 inches per year in the Sierra Nevada to the west.

Approximately 200,000 AF of precipitation falls on the mountains and hills, which surround the Indian Wells Valley, and an estimated 100,000 AF of precipitation falls on the Valley floor. Of 300,000 AF of annual precipitation, annual groundwater replenishment is estimated to be about 11,000 AF/Yr, with replenishment of only about 7,000 AF/Yr where most production occurs.

Table 3. Climate

	Jan	Feb	Mar	Apr	May	June
Standard Monthly Average Eto*	1.86	2.80	4.65	6.00	8.06	9.00
Average Rainfall (inches)	0.70	0.71	0.51	0.14	0.12	0.02
Average Temperature (Fahrenheit)	44.3	49.7	55.0	63.4	70.9	79.7

***Evapotranspiration**

Table 3. Climate (Continued)

	July	Aug	Sept	Oct	Nov	Dec	Annual
Standard Monthly Average Eto	9.92	8.68	6.60	4.34	2.70	1.86	66.47
Average Rainfall (inches)	0.13	0.21	0.26	0.14	0.36	0.49	3.79
Average Temperature (Fahrenheit)	86.4	84.2	77.6	66.1	52.9	44.9	64.6

Housing density is increasing at the present time and is expected to continue because of the potential increase in population due to the adjacent military installation. In May, the Secretary of Defense made a recommendation to the Base Realignment and Closure (BRAC) Commission concerning a possible increase in new positions at the adjacent military installation. The BRAC process is not finalized as this is being written, and potentially could remain undecided through the adoption process of this plan. Future commercial development is anticipated to meet the demands of the potential influx of new residents to the Indian Wells Valley, with the building of establishments such as a Super Wal-Mart.

Step 3: Water Sources

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management

conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Water Supply Sources

The sole source of potable water supply in the Indian Wells Valley is groundwater. In a report entitled Hydrogeologic Conditions in Indian Wells and Vicinity (February 1989) that was prepared on behalf of the California Department of Water Resources, consulting geologist Robert Bean stated that "recent hydrologic balances on the ground water body of the [Indian Wells] Valley all indicate a condition of overdraft. The estimate of this report is that the annual overdraft under 1985 conditions was about 15,900 AF". However, safe yield has not been determined. Current annual groundwater extractions within the Indian Wells Valley total about 30,000 AF; said extractions are partially offset by estimated annual recharge of between 6,000 and 11,000 AF.

Groundwater levels are generally declining at a rate of 0.5 to 1.5 feet per year depending on the geographic area. In an effort to better manage the Basin, the District has relocated two of its wells to a well field in the western portion of the Valley. The well field will reduce the concentration of groundwater extractions in the Basin, thus moderating localized depressions in the water table. The District is active and interested in protecting and extending the available groundwater supply, especially since water quantity and water quality vary significantly throughout the Valley.

The U.S. Bureau of Reclamation (USBR) published an extensive investigation of ground water conditions in the Indian Wells Valley. The results of said investigation, which were published as a two-volume report entitled Indian Wells Valley Groundwater Project in December 1993, will be referred to throughout this chapter and is available for review at the District's offices (it should be noted that the projections on which the report's conclusions are based may have changed since the research was conducted). The

investigation consisted of the construction of ten monitoring wells within the Valley, which were used to determine the volume of groundwater in storage, groundwater gradients, and water quality conditions. Each monitoring well was constructed to a depth of approximately 2,000 feet and equipped with multi-piezometer monitoring tubes; said tubes were gravel packed and grout seals were placed between the monitored zones.

In addition, the District has interconnections to the water supply of the Naval Air Weapons Station China Lake (NAWS) and Searles Valley Minerals (SVM). This enables the District to obtain water from these other local supplies in emergencies.

Groundwater

The groundwater body, from which the District and all other Valley water producers extract water, has been labeled the “Indian Wells Valley Basin” (Basin) by the California Department of Water Resources (see CDWR Bulletin 118, Update 2003). Most reports that are specific to the Basin identify three primary geographic areas of groundwater supply: the Intermediate Area, which lies between the City of Ridgecrest and the community of Inyokern; the Southwest Area, which lies to the southwest of Ridgecrest and south of Inyokern; and the Northwest Area, which lies to the northwest of Ridgecrest and north of Inyokern. (Note: When addressed jointly, the Southwest Area and Northwest Area will be referred to throughout the remainder of the Plan as the West Valley.)

The Indian Wells Valley Cooperative Groundwater Management Plan was adopted in 1995 by the Indian Wells Valley Cooperative Groundwater Management Group, of which the Indian Wells Valley Water District is a signatory. The Indian Wells Valley Cooperative Groundwater Management Plan is an agreement among the major water producers and consumers within the Valley to evaluate the area’s groundwater resources, and to serve as a general planning guideline to extend the useful life of available supplies. The Plan sets forth a number of concerns regarding groundwater supplies, followed by a number of objectives and guidelines regarding future water production and existing and potential future water supplies. The Plan also provides that the signatories will specifically analyze and consider: water management; water conservation; increasing the life of the aquifer through blending, importation, and treatment; and other issues of

concern with respect to the groundwater basin. A copy of this document is included as Figure 3.

The Intermediate Area is the portion of the Basin from which most water is currently produced for the District's domestic purposes. The Southwest Area is being developed by the Indian Wells Valley Water District, which currently has two wells with a third well planned. The USBR found while preparing the Indian Wells Valley Groundwater Project that it contains a significant quantity of high quality water. Water in the Northwest Area is of generally poorer quality and may not be usable for domestic production purposes unless it receives significant amounts of treatment or is blended with good quality water. For the most part, water produced from the Northwest Area has been used for agricultural purposes. The District is currently conducting a study of the feasibility of treating water from that area for future domestic use.

Groundwater quantity and quality vary significantly within the Basin. Various opinions which can basically be divided into two groups, with one group espousing a "closed basin" concept with recharge resulting from infiltration/percolation and discharge through groundwater extraction and some evapotranspiration, and the other group espousing a "regional flow system" with groundwater moving under the basin at depth from the Sierra Nevada and continuing under the Argus and El Paso Mountains. Groundwater replenishment is insufficient to maintain stable groundwater levels, which continue to decline throughout all areas that are subject to groundwater production.

The results of the USBR investigation indicate that there is sufficient water in storage to sustain continued production for over 160 years if the resource is effectively managed, which includes implementation of various measures (namely blending good quality and poorer quality waters, expanding pumping to new areas, and treating poorer quality water). It is particularly important to note that the preparers of the Indian Wells Valley Groundwater Project concluded that there is more extractable good quality water available in the Southwest Area than there is in any other portion of the Valley. The quantities available in the West Valley give added impetus to the District's intention to spread production facilities into that region also.

Between 1921 and 1988, the Basin declined about 80 feet in the Intermediate Area and has apparently been lowered below the China Lake playa, resulting in a hydraulic gradient reversal and which may cause the flow of saline water from the China Lake playa toward the Intermediate Area's pumping zone. Although degradation has not been detected within the Intermediate Area and water quality therein is still excellent (e.g. about 250 ppm TDS), a continuing decline of the water table will increase the threat of saline water intrusion. If groundwater extractions are increased in the Intermediate Area, the severity of the hydraulic gradient reversal will increase and the potential for mineral contamination of the potable groundwater supply will also increase.

TDS concentrations in water produced by two District wells in Ridgecrest (which are east of the Intermediate Area and southwest of the Playa) increased from around 250 ppm in the 1950s to about 500 ppm in the 1970s. Water produced by another District well in Ridgecrest increased in TDS from nearly 250 ppm in the 1950s to approximately 350 ppm in 1983; in one SVM well, TDS concentrations increased to about 800 ppm in 1986 and are now estimated to be almost 1,000 ppm. Because of the apparent hydraulic gradient reversal and the corresponding deterioration in groundwater quality, the District has been relocating pumping from Ridgecrest and Intermediate Area wells, to the southwest.

The Indian Wells Valley Groundwater Project report states that the currently available groundwater supply will last for 50 years or less if existing pumping patterns are maintained and no efforts are made to manage available groundwater supplies. If existing pumping patterns are changed so that pumping is dispersed throughout the Valley, and poorer quality waters are blended and/or treated, the report concludes that the available groundwater supply could sustain production for over 160 years. The available groundwater supply will therefore permit the District and other Valley interests to pursue the development of improved management practices to make full use of available groundwater supplies, and to explore and develop imported or supplemental water supplies to augment the Valley's available groundwater supply.

The District has identified the West Valley (Southwest Well Field, SWWF) as its source of immediate additional water supplies, and has developed a source of water supply in

that region. Development of wells in the West Valley has reduced the District's dependence upon Intermediate Area wells. Since wells in the West Valley have augmented the District's water supply, groundwater conditions in the Intermediate Area are expected to improve. In fact, in one of the District's Ridgecrest wells, the water level has recovered 45 feet as a result of the District relocating pumping to the Southwest Well Field.

Table 4. Amount of Groundwater Pumped – AF/Yr

Basin Name	2000	2001	2002	2003	2004
Indian Wells Valley	8330.50	8447.19	8864.67	8604.71	8992.27
% of Total Water Supply	100	100	100	100	100

Table 5. Amount of Groundwater Projected to be Pumped – AF/Yr

Basin Name	2010	2015	2020	2025	2030
Indian Wells Valley	10,567	11,881	12,976	13,318	13,631
% of Total Water Supply	100	100	100	100	100

Step 4 – Reliability of Supply

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

- (1) An average water year.
- (2) A single dry water year.
- (3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

Reliability

Factors that can cause water supply shortages are earthquakes, chemical spills, and energy outages at treatment and pumping facilities. IWVWD includes the probability of catastrophic outages when using the reliability planning approach.

Reliability planning requires information about: (1) the expected frequency and severity of shortages; (2) how additional water management measures are likely to affect the frequency and severity of shortages; (3) how available contingency measures can reduce the impact of shortages when they occur.

The District does not have an immediate concern or problem with supply reliability. According to the estimates found in the USBR's Indian Wells Valley Groundwater Project, the available groundwater supply is limited, but may last as long as 160 years with the aforementioned appropriate management measures. In addition, the District has successfully eliminated an historic shortage of emergency production capacity, making the following circumstances and response unlikely to be repeated. During a period of high demand in August 1988, one of the District's major wells failed. It took several days to repair the well which caused the District's production capacity to become insufficient for meeting demands. Through media broadcasts, the District appealed to its customers to reduce water use; the customers responded positively and reduced demands by about 30%, and the District was able to meet the reduced demands without rationing.

Since 1988, the District has constructed three additional production wells, and has entered into interconnection agreements (and constructed emergency interconnections) with the NAWS and SVM to ensure that an adequate supply is available should any of its supply facilities fail. In addition, the development of water from the SWWF provides the District with additional production capacity, and now allows production within the Basin to be dispersed to an extent that is expected to reduce the localized depressions that have affected the Intermediate Area.

IWVWD's goal is to provide its customers with adequate and reliable supplies of high-quality water, which meet present and future needs in an environmentally and economically responsible manner.

Table 6. Supply Reliability – AF/Yr

Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
8,900	8,900	8,900	8,900	8,900	8,900
% of Normal	100	100	100	100	100

Frequency and Magnitude of Supply Deficiencies

Although Southern California has experienced serious droughts during the past twenty years, IWVWD has not experienced an actual supply deficiency because our sole source of supply is groundwater, which is not affected by short term changes in climactic conditions.

The current and future supply projections through 2030 are shown in Table 6.

Plans to Assure a Reliable Water Supply

In the future, the District will continue to be reliant on local groundwater supplies. The District has emergency inter-ties with NAWS and SVM to provide lifeline water service in the case of catastrophic outages.

Three Year Minimum Water Supply

Since the District relies exclusively on groundwater as its source of supply, and is therefore not subject to short term shortages caused by periodic drought, the following projections focus on equipment failure and disaster. Figure 4 shows the production capability for each of the District's production wells.

As shown in Figure 4, the District's pumping plant capacity is now capable of providing for the highest demand day experienced in 2004. Even with one of the three largest pumping plants out of service (a production capacity reduction of about 10%), this condition would leave a reserve water production capacity of about 12% of maximum day demand.

If two of the three largest pumping plants were out of service (a production capacity reduction of about 3,744,000 gallons per day or about 20% of total capacity), the District would have to rely upon water supplied from the emergency interconnections to make up

the shortfall (92,000 gpd) for the predicted peak demand day. Furthermore, the construction of the emergency interconnections has allowed the system to provide for the highest day demand even for 2005 with the three largest pumping plants out of service (a production capacity reduction of about 30%).

Failures would have to occur during the June-through-September time frame for a three-plant failure to be serious enough to require deliveries from the emergency interconnections. Such multiple plant failures could take up to three weeks to repair. The District keeps spare motors available for most of its large pumping plants, and has historically been able to return pumping plants to service within two weeks.

The District is prepared for any shortage from supply or pumping plant failure of up to 40% of production capacity. The District has an Emergency Action Plan, which outlines the actions to be taken in the event of major catastrophe. This Plan has been reviewed by the Indian Wells Valley Emergency Services Council and all of its participating parties. The District's Emergency Action Plan is incorporated herein by reference and is available for review at the District's offices.

The Indian Wells Valley Water District plans to add an additional well and pumping plant and is reviewing the need for additional reserve capacity. There is also a study in progress to determine the feasibility for the construction of a desalination plant to process brackish water within the Indian Wells Valley. Quantification of the supply from desalination will be determined by the results of the feasibility study.

Step 5 – Transfer and Exchange Opportunities

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

Water Transfers

The District currently maintains emergency inter-ties with NAWs and SVM, but does not have agreements for importation or infrastructure that would enable importation of water from outside the local area. Consequently, opportunities for water transfers or exchanges to increase imported water supplies are not currently available to the District.

The District has had discussions with Kern County Water Agency regarding short-term and long-term water acquisition, exchanges and transfers. The sources would involve state water projects and other sources. At this time, no definite quantity or agreements have been discussed.

Step 6: Water Use by Customer Type – Past, Current, and Future

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.
- (B) Multifamily.
- (C) Commercial.
- (D) Industrial.
- (E) Institutional and governmental.
- (F) Landscape.
- (G) Sales to other agencies.
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
- (I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

Past, Current and Projected Water Use

The District's present service area has about 27,920 residents, a small commercial and industrial sector, and no agricultural activity. About 92% of the water produced by the District is used by single and multi-family residential services. Table 7 shows the total number of customers served by the District, and is arranged by customer type.

Projected water use was calculated at a rate of approximately 1.8% increase per year. The District anticipates adding new connections at a rate of about 1.8% per year, but because of a conservation-based rate structure, new plumbing efficiency standards, voluntary landscape guidelines, and other conservation programs, the water demand growth rate has been less than the connection growth rate.

Residential Sector

Single-family residential customers are estimated to average 3.1 persons per connection, with an average consumption rate of 174 gallons per capita per day (gpcd). Multi-family residential customers are estimated to average about 2.3 persons per housing unit and seven units per multi-family complex, with an average consumption rate of 88 gpcd. Total residential water use averages 161 gpcd. Water efficiency improvements appear to be reducing per capita water use.

Commercial Sector

The District has a complex mix of commercial customers, ranging from family restaurants, insurance offices, beauty shops, and gas stations to hotels and motels, shopping centers, and high-volume restaurants and other facilities that serve the non-resident population. The sector is growing steadily each year, and some growth is expected to continue to occur over the next several years.

Industrial Sector

The District serves a very small industrial sector, primarily centered on light manufacturing. The industrial sector has not grown much in the last decade or so, and is not expected to increase significantly in the next five to ten years. The District combines its industrial customers with commercial customers (See Table 7). The District estimates the number of industrial customers to be less than ten at this time.

Institutional/Governmental Sector

The District has a stable institutional/governmental sector, primarily local government, parks, schools, and other types of public facilities. This sector is not expected to increase significantly over the next 20 years.

Landscape/Recreational Sector

Landscape and recreational customer demand is expected to increase by about 2% per year for the next 20 years, due to continued growth in visitor-serving facilities. Increased efficiency and landscape conversions at existing parks and the cemetery should help offset new demand resulting from projected increases in this sector.

Values for the past, current, and projected water deliveries featured in Table 7 were based on the following assumptions:

1. Landscape meters were divided between multi-family residential and commercial customer types since there is not a category for landscape meters.
2. Multi-family meters were assessed 1.84 acre-feet per year, which was computed from the meter readings taken in the 2000 calendar year.
3. Institutional/Government meters were assessed 6.75 acre-feet per year, which was computed from the meter readings taken in the 2000 calendar year.

Table 7. Past, Current and Projected Water Deliveries

Year	Water Use Sectors	Single Family	Multi-Family	Com-mercial	Indus-trial	Instit/Gov	Land-scape	Agric	Total
2000 Metered	# of accounts	9,378	335	442	0	84	40	0	10,275
	Deliveries AF/Yr	6790	630	575	0	568	27	0	8590
2000 Un-metered	# of accounts	0	0	0	0	0	0	0	0
	Deliveries AF/Yr	0	0	0	0	0	0	0	0
2005 Metered	# of accounts	10,800	321	465	0	93	40	0	11,719
	Deliveries AF/Yr	8,100	603	605	0	629	30	0	9,967
2005 Un-metered	# of accounts	0	0	0	0	0	0	0	0
	Deliveries AF/Yr	0	0	0	0	0	0	0	0
2010 Metered	# of accounts	11,807	350	508	0	98	43	0	12,806
	Deliveries AF/Yr	8,555	658	660	0	662	32	0	10,569
2010 Un-metered	# of accounts	0	0	0	0	0	0	0	0
	Deliveries AF/Yr	0	0	0	0	0	0	0	0
2015 Metered	# of accounts	12,910	383	556	0	107	47	0	14,003
	Deliveries AF/Yr	9,680	720	723	0	723	35	0	11,881
2015	# of accounts	0	0	0	0	0	0	0	0

Un-metered	Deliveries AF/Yr	0	0	0	0	0	0	0	0
2020	# of accounts	14,100	420	608	0	116	51	0	15,238
Metered	Deliveries AF/Yr	10,575	790	790	0	783	38	0	12,976
2020	# of accounts	0	0	0	0	0	0	0	0
Un-metered	Deliveries AF/Yr	0	0	0	0	0	0	0	0
2025	# of accounts	14,450	430	623	0	120	60	0	15,679
Metered	Deliveries AF/Yr	10,840	808	810	0	818	42	0	13,318
2025	# of accounts	0	0	0	0	0	0	0	0
Un-metered	Deliveries AF/Yr	0	0	0	0	0	0	0	0
2030	# of accounts	14,810	440	638	0	123	60	0	16,071
Metered	Deliveries AF/Yr	11,100	827	829	0	830	45	0	13,631
2030	# of accounts	0	0	0	0	0	0	0	0
Un-metered	Deliveries AF/Yr	0	0	0	0	0	0	0	0

Table 8. Additional Water Uses and Losses – AF/Yr

Water Use	2000	2005	2010	2015	2020	2025	2030
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
Raw water	0	0	0	0	0	0	0
Recycled	0	0	0	0	0	0	0
Bioflushing	0	7.42	8.11	8.87	9.69	9.94	10.18
Unaccounted-for system Losses	80	80	80	80	80	80	80
Total	80	87.42	88.11	88.87	89.69	89.94	90.18

Table 9. Total Water Use – AF/Yr

Water Use	2000	2005	2010	2015	2020	2025	2030
Sum of Tables 12 and 14	8,670	10,054	10,655	11,970	13,066	13,408	13,721

Step 7: Demand Management Measures

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

- (A) Water survey programs for single-family residential and multifamily residential customers.
- (B) Residential plumbing retrofit.
- (C) System water audits, leak detection, and repair.
- (D) Metering with commodity rates for all new connections and retrofit of existing connections.
- (E) Large landscape conservation programs and incentives.
- (F) High-efficiency washing machine rebate programs.
- (G) Public information programs.
- (H) School education programs.
- (I) Conservation programs for commercial, industrial, and institutional accounts.
- (J) Wholesale agency programs.
- (K) Conservation pricing.
- (L) Water conservation coordinator.
- (M) Water waste prohibition.
- (N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

- (1) Take into account economic and non-economic factors, including environmental, social, health, customer impact, and technological factors.
- (2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(j) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

Background

IWVWD is committed to implementing water conservation and water recycling programs. This section discusses water conservation and is organized according to the 14 Best Management Practices (BMPs) of the California Urban Water Conservation Council (CUWCC). Descriptions of IWVWD's

water conservation programs are provided on the following pages. Each of the BMP Activity Reports can be retrieved from the CUWCC web site.

California Urban Water Conservation Council BMP Activity Reports

Water Supply & Use

Reporting Unit: **Indian Wells Valley Water District** Year: **2004**

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Well #7	.89	Groundwater
Well #8	341.09	Groundwater
Well #9A	930.87	Groundwater
Well #10	998.87	Groundwater
Well #11	574.89	Groundwater
Well #13	257.21	Groundwater
Well #17	800.5	Groundwater
Well #18	665.51	Groundwater
Well #19	265.98	Groundwater
Well #30	1485.13	Groundwater
Well #31	1317.54	Groundwater
Well #33	1353.72	Groundwater

Total AF: 8992.2

Accounts & Water Use

Reporting Unit Name: **Indian Wells Valley Water District** Submitted to CUWCC: **02/23/2005** Year: **2004**

A. Service Area Population Information

1. Total service area population 30000

B. Usage of Accounts and Water Delivered (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	10891	6880.41	0	0
2. Multi-Family	373	720.14	0	0
3. Commercial	490	591.354	0	0
4. Industrial	0	0	0	0
5. Institutional	0	0	0	0

6. Dedicated Irrigation	0	0	0	0
7. Recycled Water	0	0	0	0
8. Other	90	555.429	0	0
9. Unaccounted	NA	0	NA	0
Total	11844	8747.333	0	0
	Metered		Unmetered	

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit: Indian Wells Valley Water District
BMP Form Status: 100% Complete
Year: 2004

A. Implementation

- | | |
|---|------------|
| 1. Based on your signed MOU date, 11/18/1991, your Agency STRATEGY DUE DATE is: | 11/17/1993 |
| 2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys? | no |
| a. If YES, when was it implemented? | N/A |
| 3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys? | no |
| a. If YES, when was it implemented? | N/A |

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	560	0
2. Number of surveys completed:	507	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary	yes	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no

7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	no
a. If yes, in what form are surveys tracked?		manual activity
b. Describe how your agency tracks this information.	Surveys are returned (by the SEEP Program Administrator) to the District office once completed and are kept on file.	

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	8500	8500
2. Actual Expenditures	8403	

D. "At Least as Effective as"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

None.

Detail

In concert with the Sand Canyon Environmental Education Program (SEEP), IWVWD provides any support possible to local water users for conducting water audits. Approximately 650 water audit kits are distributed on an annual basis through SEEP and results are collected and stored at IWVWD. While IWVWD has no method to quantify the savings of this audit process, it believes that this program is in the public's interest. IWVWD's role in this BMP is to facilitate implementation by SEEP. The budget for all BMPs is included in IWVWD's annual conservation budget of approximately \$57,000.

BMP 02 Residential Plumbing Retrofit

Reporting Unit:
**Indian Wells Valley Water
 District**

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no
- a. If YES, list local jurisdictions in your service area and code or ordinance in each:
 N/A
2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: 35%
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: 50%
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.
 N/A

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes
- a. If YES, when did your agency begin implementing this strategy? 01/01/1999
- b. Describe your targeting/ marketing strategy.
 Radio and print ads, fair booth and public events, distribution directly to customers at our office.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	2500	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	1500	0
6. Does your agency track the distribution and cost of low-flow devices? yes		
a. If YES, in what format are low-flow devices tracked? Manual Activity		
b. If yes, describe your tracking and distribution system: Based on orders to our conservation product company.		

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	6500	7000

2. Actual Expenditures

6321.13

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

E. Comments

None.

Detail

The District cooperates and coordinates with its customers and the City to encourage retrofit of existing industrial, commercial, and residential connections with water saving devices, such as ULF toilets, LF showerheads, and faucet aerators. Other measures may also be encouraged, such as insulating hot water heaters upon replacement and limiting sale of appliances within City limits to water efficient models. IWVWD will continue to implement this BMP. IWVWD will cooperate with the City of Ridgecrest to encourage increased rate of retrofitting of water efficient devices, and will urge the City to establish an ordinance, which requires retrofitting of same.

IWVWD considers this method to be moderately effective based on the conservation savings listed as follows: ULF Toilets save an estimated 9 gals/day/toilet, LF Showerheads save an estimated 11 gals/day/shower, faucet aerators save an estimated 0.5 gals/day/faucet, and water-saving appliances save an estimated 12.5 gals/day. This measure is hoped to conserve about 9,000 AF over 20 years. The budget for all BMPs is included in the District's annual conservation budget. This measure is relatively inexpensive and represents 1% of the total budget. Unless a rebate program is implemented, there is little cost to the District.

BMP ID: System Water Audit, Leak Detection, and Repair

Reporting Unit:
**Indian Wells Valley Water
District**

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year? yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:
- | | |
|--|----------|
| a. Determine metered sales (AF) | 8747.333 |
| b. Determine other system verifiable uses (AF) | 11.226 |
| c. Determine total supply into the system (AF) | 8992.2 |
| d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. | 0.97 |
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production? yes
4. Did your agency complete a full-scale audit during this report year? no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit? no
6. Does your agency operate a system leak detection program? no
- a. If yes, describe the leak detection program:
N/A

B. Survey Data

- | | |
|--|-----|
| 1. Total number of miles of distribution system line. | 200 |
| 2. Number of miles of distribution system line surveyed. | 0 |

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? yes

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

Aggressive mainline replacement program of approximately 2 miles of pipeline annually. Facilities are replaced before their integrity is compromised. When leaks are detected, response is immediate on a 24-hour basis. Automated telemetry pressure sensing stations provide early alerts for any water leakage.

E. Comments

None.

Detail

The District has enhanced its water audit and leak detection programs through the expansion of its computer system (hardware and software), and now has the ability to

accurately monitor water consumption. The District has also implemented a meter calibration program so that actual water losses are more accurately identified. In addition, the District has completed the acquisition of three private, flat rate water systems that had distribution systems in very poor condition and had numerous leaks. The District has reconstructed these systems and installed water meters.

IWVWD monitors/audits its distribution system on a monthly basis to accurately quantify water losses and to isolate, to the extent possible, the locations of water losses. Based on the results of its audits, the District conducts a visual leak detection survey of the distribution system to locate and repair leaks. The District is also continuing its pipeline replacement program, as well as its valve exercising program; the replacement program has been particularly successful and will be continued. The secondary benefits associated with this program are decreased water production expenses (due to decreased water losses and more accurate measurement of the quantities of water produced and delivered) and improved knowledge of the water system; the latter allows the District to more accurately model the system, which in turn allows better management of peak flows and pumping operations.

This measure is having beneficial environmental effects. Reduced and more efficient water use will slow the rate of increases in perceived overdraft of the Basin, and also helps to slow declines in water quality caused by pumping depressions and possible resultant groundwater gradient reversals. The District will save the current corresponding unit cost for production and distribution for each acre-foot prevented from leakage.

BMP 10: Metering and Billing Based on Volume of Use

Reporting Unit:	BMP Form Status:	Year:
Indian Wells Valley Water District	100% Complete	2004

A. Implementation

- | | |
|---|-----|
| 1. Does your agency require meters for all new connections and bill by volume-of-use? | yes |
| 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? | no |

- a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? N/A
- b. Describe the program:
We do not have unmetered accounts, other than for bulk water haulers.
3. Number of previously unmetered accounts fitted with meters during report year. 0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no

a. If YES, when was the feasibility study conducted? (mm/dd/yy) N/A

b. Describe the feasibility study:
N/A

2. Number of CII accounts with mixed-use meters. 90
3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."
N/A

E. Comments

None.

Detail

All deliveries by IWVWD are metered deliveries, using commodity rate components.

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit: Indian Wells Valley Water District
BMP Form Status: 100% Complete
Year: 2004

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts: 0
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets: 0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF): 0

4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF): 0
5. Does your agency provide water use notices to accounts with budgets each billing cycle? no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys? no
- a. If YES, when did your agency begin implementing this strategy? N/A
- b. Description of marketing / targeting strategy: N/A
2. Number of Surveys Offered. 0
3. Number of Surveys Completed. 0
4. Indicate which of the following Landscape Elements are part of your survey:
- a. Irrigation System Check no
 - b. Distribution Uniformity Analysis no
 - c. Review / Develop Irrigation Schedules no
 - d. Measure Landscape Area no
 - e. Measure Total Irrigable Area no
 - f. Provide Customer Report / Information no
5. Do you track survey offers and results? no
6. Does your agency provide follow-up surveys for previously completed surveys? no
- a. If YES, describe below: N/A

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets? no
2. Number of CII mixed-use accounts with landscape budgets. 0
3. Do you offer landscape irrigation training? yes
4. Does your agency offer financial incentives to improve landscape water use efficiency? yes
- | Type of Financial Incentive: | Budget (Dollars/ Year) | Number Awarded to Customers | Total Amount Awarded |
|------------------------------|------------------------|-----------------------------|----------------------|
| a. Rebates | 0 | 0 | 0 |
| b. Loans | 0 | 0 | 0 |
| c. Grants | 10000 | 0 | 0 |
5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes
- a. If YES, describe below:
A new publication called, "Landscape Watering by the Numbers", as well as outdoor conservation materials and information.
6. Do you have irrigated landscaping at your facilities? yes
- a. If yes, is it water-efficient? yes

- b. If yes, does it have dedicated irrigation metering? no
7. Do you provide customer notices at the start of the irrigation season? no
8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	28000	25000
2. Actual Expenditures	22200	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."
N/A

F. Comments

None.

Detail

The City of Ridgecrest has adopted a low water consumption ordinance; said ordinance, includes the following measures:

- Review of landscape and irrigation system designs for major commercial, government, and industrial projects to ensure the use of water efficient planting and irrigation practices.
- Implementation and enforcement of a sprinkler overspray control program for private and public lands to prevent discharge to impermeable surfaces. Corrective measures consist of verbal requests to individual operators, followed by a fine for failure to correct.
- A reporting system to limit instances of water running to waste in streets. Corrective measures consist of verbal requests to individual operators, followed by a fine for failure to correct.

In the past, the District has assisted the City in enforcing the low water consumption ordinance, particularly by responding to reported or observed violations and educating and assisting the user in corrective action. At present, the City no longer has funds available for enforcement of this ordinance.

The City periodically forwards landscape drawings to the District for review during the permit process. The District will continue to review landscape drawings for compliance with landscape standards. The District will coordinate with the City to further define this management activity, and will also assist in modifying ordinance language. This measure is considered to be moderately effective, and has minimal impact upon District customers. Overall maintenance and watering costs will be less. IWVWD believes that this program is in the public's interest, and this measure is hoped to conserve about 7,500 AF over 20 years.

The District also has a Demonstration Garden Assistance Policy for promoting the use of drought-tolerant landscape for large landscapes. Since 2000, the District has been offering a financial incentive for these sites on an annual basis. The District is able to provide a limited amount of assistance and must be able to refer to the garden as a demonstration project. This is an effective method to show the public how attractive and affordable using drought-tolerant plants can be. To date, the District has funded three demonstration gardens and has two more in progress. In addition, the District is currently investigating the possible implementation of a "Cash for Grass" program modeled after the City of Las Vegas, and Victor Valley Water District.

BMP 05: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: Indian Wells Valley Water District	BMP Form Status: 100% Complete	Year: 2004
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A. Implementation

1. Do any energy service providers or wastewater utilities in your service area offer rebates for high-efficiency washers? yes
- a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

Pacific Gas & Electric for energy star appliances. The City of Ridgecrest is the wastewater utility provider.

2. Does your agency offer rebates for high-efficiency washers? no
3. What is the level of the rebate? 0
4. Number of rebates awarded. 0

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	
C. "At Least As Effective As"		
1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?		no
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."		
N/A		
D. Comments		
None.		

Detail

IWVWD will support local, state and federal legislation to improve efficiency standards for washing machines.

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
Indian Wells Valley Water District	100% Complete	2004

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes
 - a. If YES, describe the program and how it's organized.
Limited radio and print advertising, a quarterly newsletter, and misc. community events such as fairs and Home & Leisure Shows.
2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	2
b. Public Service Announcement	no	0
c. Bill Inserts / Newsletters / Brochures	yes	3
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	3
f. Special Events, Media Events	yes	1
g. Speaker's Bureau	no	0
h. Program to coordinate with other	yes	

government agencies, industry and public interest groups and media

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	25000	25000
2. Actual Expenditures	25000	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

None.

Detail

The District participates in and conducts programs to educate residential and commercial customers of ways they can conserve and better manage water. Program implementation entails the following:

- Preparation of a Xeriscape Demonstration Garden guide for distribution, available to customers at the District office.
- Promotion of water conservation by speaking to public groups regarding the importance of water conservation. The District also sponsors meetings of general community interest on environmental matters pertaining to community development, including endangered species and groundwater supply. The Board of Directors holds public workshops on all major policy issues, and community participation is encouraged in the decision-making process. In addition, the District has published conservation advertisements in the local print media occasionally that stress the importance of water conservation and identify specific water conservation measures.
- Modification of water bills to show water use for the same month during the previous year. The consumption information is indicated in both gallons and acre-feet. In addition, the District telephones customers with significant water consumption to alert them to possible water waste or excessive consumption.

- Distribution of pamphlets and brochures, which include specific conservation practices, facts concerning state, local, residential, and individual water consumption statistics, and waste statistics. This includes IWVWD's recent publication of a booklet entitled *Landscape Plants for the California High Desert*, which was a collaborative effort with five other high desert water providers, spearheaded by IWVWD. This 36-page booklet contains over 170 full-color photos of low-water use plants that are readily available to customers and suitable for IWVWD's service area climate and soils.
- Issuing an annual water quality report that includes suggested conservation practices and water waste statistics.
- Publishing a quarterly newsletter entitled, "The Water Line", which is comprised of general public information from IWVWD as well as conservation articles and suggestions.
- Sponsoring a periodic Xeriscape Workshop in IWVWD's service area, in conjunction with other public agencies including the City of Ridgecrest, NAWS China Lake, Eastern Kern County Resource Conservation District, Indian Wells Valley Airport District, and local private landscaping companies. The 2005 Xeriscape Workshop was held on April 23, 2005 and featured speakers discussing low-water use plants, native plant selection, conversion of traditional landscapes to Xeriscape, and proper irrigation. Vendors and exhibitors providing landscape services and materials, reference materials, and yard accessories participated in the event. Approximately 2,000 citizens attended the 2005 event.
- Participating in the Indian Wells Valley Cooperative Groundwater Management Group, a voluntary group consisting of governmental and private concerns which prompts water management.

The objective of the program is to encourage the District's customers to conserve water and to provide a means by which customers can measure the effectiveness of water conservation efforts. IWVWD will track the commentary regarding the information provided. IWVWD has no method to quantify the savings of this BMP but believes that this program is in the public's interest.

BMP 08: School Education Programs

Reporting Unit:
**Indian Wells Valley Water
 District**

BMP Form Status:
100% Complete

Year:
2004

A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	no	0	0	0
Grades 4th-6th	yes	30	600	0
Grades 7th-8th	no	0	0	0
High School	no	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 01/01/1997

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	8500	8500
2. Actual Expenditures	8500	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."
 N/A

D. Comments

Our program is targeted at the 5th grade level, with only sporadic presentations made by staff to the junior high and high school levels.

Detail

District staff has prepared informative programs on water conservation and facility operations, and presents them to community groups and schools. The District is also one of the partners of the Sand Canyon Environmental Education Program (SEEP), which

teaches elementary school children the importance of water in the Ridgecrest area's environment; SEEP is organized and run by staff of the United States Bureau of Land Management – Ridgecrest Office, and various community volunteers. In addition, the District has participated in sponsoring water conservation contests (i.e. posters and photography) in schools throughout the area. In 2001, the District purchased a groundwater model, which has been used in classroom demonstrations and presentations at local fairs and events.

IWVWD will continue to implement this BMP on an annual basis. IWVWD will track the commentary regarding the information provided, and will review home water audit tests which are returned from each school at the end of each SEEP Program season. While there currently is not a method to quantify the savings of this BMP, IWVWD believes that this program is in the public's interest.

BMP 09: Conservation Programs for CII Accounts

**Reporting Unit:
Indian Wells Valley
Water District**

**BMP Form Status:
100% Complete**

**Year:
2004**

A. Implementation

- | | |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use? | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use? | yes |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | no |

Option A: CII Water Use Survey and Customer Incentives Program

- | | |
|---|----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | no |
|---|----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0

d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0
CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no
Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

"At Least as Effective as"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	
	N/A

None.

Detail

IWVWD has relatively light commercial and industrial water use within its boundaries. Local schools and churches within our distributing agencies' areas would qualify as institutional accounts. IWVWD considers this BMP to be covered under the general conservation effort. With the cooperation of the City, IWVWD will respond on request to commercial, industrial and institutional accounts with information and assistance regarding water conservation.

BMP 09: CII ULFT Water Savings

Reporting Unit: **Indian Wells Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? No
If No, please explain why on Line B. 10.

A Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.
a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.
a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B Documentation

- 1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)
- 2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?
- 3. What is the total number of customer accounts participating in the program during the last year?

4. CII Subsector	Number of Toilets Replaced			
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices				
b. Retail /Wholesale				

- c. Hotels
- d. Health
- e. Industrial
- f. Schools: K to 12
- g. Eating
- h. Government
- i. Churches
- j. Other

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- a. Disruption to business
- b. Inadequate payback
- c. Inadequate ULFT performance
- d. Lack of funding
- e. American's with Disabilities Act
- f. Permitting
- g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

The District believed that the ULFT program was not cost-effective.

6.2015-2016 Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		

f. Total 0 0

2. CII ULFT Program: Annual Cost Sharing

- a. Wholesale agency contribution
- b. State agency contribution
- c. Federal agency contribution
- d. Other contribution
- e. Total 0

D. Comments

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form	Year:
Indian Wells Valley Water District	Status:	2004
	100% Complete	

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

- a. Water Rate Structure Increasing Block
- b. Sewer Rate Structure Service Not Provided
- c. Total Revenue from Volumetric Rates \$3158447.47
- d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources \$2362126.74

2. Commercial

- a. Water Rate Structure Increasing Block
- b. Sewer Rate Structure Service Not Provided
- c. Total Revenue from Volumetric Rates \$263940.32
- d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources \$182527.27

3. Industrial

- a. Water Rate Structure Service Not Provided
- b. Sewer Rate Structure Service Not Provided
- c. Total Revenue from Volumetric Rates \$0
- d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources \$0

Detail

IWVWD meters all of its production and retail deliveries. IWVWD has billed for water use on an ascending rate schedule since 1979 in order to discourage excessive consumption.

BMP 12: Conservation Coordinator

Reporting Unit: **Indian Wells Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Implementation

- 1. Does your Agency have a conservation coordinator? yes
- 2. Is this a full-time position? no
- 3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? no
- 4. Partner agency's name: N/A
- 5. If your agency supplies the conservation coordinator:
 - a. What percent is this conservation coordinator's position? 20%
 - b. Coordinator's Name Amber Lewis
 - c. Coordinator's Title Executive Assistant
 - d. Coordinator's Experience and Number of Years 5 years
 - e. Date Coordinator's position was created (mm/dd/yyyy) 07/01/1999
- 6. Number of conservation staff, including Conservation Coordinator. 1

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	16000	16000
2. Actual Expenditures	16000	

C. At Least as Effective As?

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
 - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."
N/A

D. Comments

None.

Detail

IWVWD has designated the Executive Assistant as the District's water conservation coordinator. This is not a full-time position but time is devoted to coordination and oversight of conservation programs and public education.

BMP 13: Water Waste Prohibition

Reporting Unit: **Indian Wells Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Requirements for Documenting BMP Implementation

- 1. Is a water waste prohibition ordinance in effect in your service area? no
 - a. If YES, describe the ordinance:
N/A
- 2. Is a copy of the most current ordinance(s) on file with CUWCC? no
 - a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:
N/A N/A

B. Implementation

- 1. Indicate which of the water uses listed below are prohibited by your agency or service area.
 - a. Gutter flooding no
 - b. Single-pass cooling systems for new connections no
 - c. Non-recirculating systems in all new conveyor or car wash systems no
 - d. Non-recirculating systems in all new commercial laundry systems no
 - e. Non-recirculating systems in all new decorative fountains no
 - f. Other, please name no
N/A
- 2. Describe measures that prohibit water uses listed above:
N/A

Water Softeners:

- 3. Indicate which of the following measures your agency has supported in developing state law:
 - a. Allow the sale of more efficient, demand-initiated regenerating DIR models. no
 - b. Develop minimum appliance efficiency standards that:
 - i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. no
 - ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. no
 - c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site no

regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply.

4. Does your agency include water softener checks in home water audit programs? no
5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. At Least As Effective As

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
- a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."
N/A

E. Comments

At this time, we only have a DRAFT "No Waste Ordinance."

BMP 1A Residential ULFT Replacement Programs

Reporting Unit: **Indian Wells Valley Water District** BMP Form Status: **100% Complete** Year: **2004**

A. Agency Toilet

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no
Number of Toilets Replaced by Agency Program During Report Year		
Replacement Method	SF Accounts	MF Units
2. Rebate	0	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	0	0

6. Describe your agency's ULFT program for single-family residences.
N/A

7. Describe your agency's ULFT program for multi-family residences.

N/A

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

N/A

N/A

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective" Variant

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

N/A

D. Comments

None.

Detail

IWVWD cooperates and coordinates with its customers, and the City to encourage retrofit of existing industrial, commercial, and residential connections with water saving devices, such as ULF toilets, LF showerheads, and faucet aerators. Other measures may also be encouraged, such as insulating hot water heaters upon replacement and limiting sale of appliances within County limits to water efficient models. IWVWD is currently investigating the cost-effectiveness of an ULF Toilet Replacement Program.

Step 8: Evaluation of DMMs Not Implemented

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and non-economic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

The Indian Wells Valley Water District sought exemption from requirements to employ Best Management Practices 1, 6, 9 (b-d), 10, 13, and 14. The information that follows is the actual request for exemptions submitted to the CUWCC in November of 2004, and contains the cost-benefit analysis for each BMP/DMM.

INDIAN WELLS VALLEY WATER DISTRICT

BOARD OF DIRECTORS

Don J. McKernan, *President*
Pierre Saint-Amand, *Vice President*
Peter Brown
Judith A. Decker
Harold W. Manning

Thomas F. Mulvihill
General Manager
Krieger & Stewart, Incorporated
Engineers
McMurtrey, Hartssock & Worth
Attorneys-at-Law

November 30, 2004

Ms. Beth Ernsberger
California Urban Water Conservation Council
455 Capitol Mall, Suite 703
Sacramento, California 95814

Dear Ms. Ernsberger:

The Indian Wells Valley Water District is seeking exemption from requirements to employ Best Management Practices 1, 6, 9(b-d), 10, 13 and 14.

BMP 1 – Residential Surveys

The cost to the District to perform residential water surveys for at least 15% of the District's residential customers, as required by BMP 1, is not cost effective for the Agency or Society.

Despite supporting an efficient use of District personnel, the survey process for the field is relatively labor intensive (2.5 hours/ Single Family Residence and approximately 4 hours for a Multi-Family Residence.) Administrative costs are also high primarily due to the extensive clerical support that is necessary to contact 20% of the District's residential customers, schedule surveys and follow up visits, and for report preparation. Together, these personnel costs cause the Agency's annual program costs to exceed \$32,000 while the benefits total less than \$1,100.

For Society, living in the Mojave Desert has made customers aware of the scarcity of water. The potential savings for irrigation are not as high as one might expect since conservation is already a focus for the local community. The program benefits for Society are about \$11,500, still not enough to justify the cost of the program.

Please refer to the attached worksheets for assumption values. Publicity costs are calculated as a fraction of the District's total publicity budget.

BMP 6 – High Efficiency Washing Machine Rebate Program

The cost to the District to provide rebates to customers purchasing high efficiency washing machines, as required by BMP 6, is not found to be cost effective for the Agency.

Administrative costs are relatively low, just \$1,700 annually, however the cost of the \$50 rebate is \$9,000 per year. Together, these costs cause the Agency's annual program costs to exceed \$14,000 while the benefits total less than \$2,200.

For Society, the program benefits are noteworthy; however, the cost of this program, which benefits a small segment of the District's customer base, would be spread over the entire customer base. This cost to all to benefit a few is not permitted by the District's bylaws.

Please refer to the attached worksheets for assumption values. Publicity costs are calculated as a fraction of the District's total publicity budget.

BMP 9 – Conservation Programs for Commercial, Industrial and Institutional Accounts

The cost to the District to implement a 3-year ULFT Program and a Water-Use Survey and Customer Incentive Program or to achieve Conservation Performance Targets, as required by BMP 9(b-d), is found to be not cost effective for either the Agency or Society.

500 West Ridgecrest Boulevard - Mailing Address: P.O. Box 1329, Ridgecrest, California 93556-1329
(760) 375-5086 FAX (760) 375-3969
www.iwvwd.com E-mail: iwvwd@iwvwd.com

Despite supporting an efficient use of District personnel, the survey process in the field is labor intensive (approximately 18 hours/survey.) Administrative costs are also high primarily due to the extensive clerical support that is necessary to contact 10% of the District's commercial customers, schedule surveys and follow up visits, and for report preparation. Together, these personnel costs cause the Agency's annual program costs to exceed \$15,000 while the benefits total less than \$10,000.

For Society, the cost of the program plus the customers' investment in ULF toilets and installation, total more than \$32,700. The program benefits for Society are about \$12,400. This does not justify the cost of the program.

Please refer to the attached worksheets for assumption values. Publicity costs are calculated as a fraction of the District's total publicity budget.

BMP 10 - Wholesale Agency Assistance Programs

The District's Ordinance Number 85, Water Sales and Service Policy, specifically states "Water that has been sold by the District shall not be resold, unless the customer is a local water purveyor or water system, and then only in case of an emergency water shortage, and only with written consent of the Board of Directors of the District." There are no wholesale water suppliers in the area to which this program could provide assistance.

BMP 13 - Water Waste Prohibition

While the Indian Wells Valley Water District has drafted a "No Waste Ordinance," the Board of Directors has not taken action on it in deference to the City of Ridgecrest. The City has a Nuisance Abatement Officer position. It is the City's intention that this officer work with the citizens of the city to remedy instances of water nuisance (water waste) peacefully and without penalty.

BMP 14 - Residential ULFT Replacement Programs

The cost for the District to provide rebates for residential ULFT replacements for all customers who replace pre-1980 toilets (approximately 4%/year,) as required by BMP 14, is found to be not cost effective for either the Agency or Society.

Administrative costs are relatively low, just under \$3,000 annually, however the cost of the \$100 rebate is estimated to be over \$12,500 per year. Together, these costs cause the Agency's annual program costs to approach \$18,000 while the benefits total just over \$500.

For Society, the program benefits are minimal, only \$700. However, the cost of the program and the toilets is \$35,000.

Please refer to the attached worksheets for assumption values. Publicity costs are calculated as a fraction of the District's total publicity budget.

Sincerely,


Thomas F. Mulvihill
General Manager

Enclosures (5)

BMP 01 Residential Surveys - Annual Program Cost Worksheet

Instructions: Fill in all green cells.

Administration Costs

1. Staff hours to administer the survey program 300.00 hrs/yr
2. Staff hourly rate, including overhead \$ 38.00 /hr
3. Administration costs (Line 1 x Line 2) \$ 11,400.00 /yr

Field Labor Costs

- | | Single Family
Surveys | Multi Family
Surveys |
|--|--------------------------|-------------------------|
| 4. Field labor hours | <u>392.00</u> hrs/yr | <u>21.00</u> hrs/yr |
| 5. Field labor hourly rate, including overhead | \$ <u>34.25</u> /hr | \$ <u>34.25</u> /hr |
| 6. Field labor cost (Line 4 x Line 5) | \$ <u>13,426.00</u> /yr | \$ <u>719.25</u> /yr |

Materials Costs

- | | Single Family
Surveys | Multi Family
Surveys |
|---|--------------------------|-------------------------|
| 7. Unit cost of materials (e.g., retrofit kits, lawn kits, nozzles) | \$ <u>24.03</u> /unit | \$ <u>24.03</u> /unit |
| 8. Number of surveys | <u>157.00</u> /yr | <u>5.00</u> /yr |
| 9. Total materials cost (Line 7 x Line 8) | \$ <u>3,772.71</u> /yr | \$ <u>120.15</u> /yr |

Publicity Costs

10. Marketing collateral cost (e.g., brochure design, printing, web services) \$ - /yr
11. Advertising cost (i.e. newspaper, radio, TV, web) \$ 1,780.00 /yr
12. Total publicity costs (Line 10 + Line 11) \$ 1,780.00 /yr

Evaluation and Followup Costs

13. Labor & Consultant costs \$ 1,450.00 /yr
14. Total Costs (Line 3 + Line 6 + Line 9 + Line 12 + Line 13) \$ 32,668.11 /yr

Program Cost Sharing

15. Cost Share from Others (e.g., other agencies, grants, in-kind contrib.) \$ - /yr
16. Net Agency Cost (Line 14 - Line 15) \$ 32,668.11 /yr

BMP 01 Residential Surveys - Water Savings Worksheet

Instructions: Fill in all green cells.

	Single Family Surveys	Multi Family Surveys
1. Reduction in Avg. Use (gallons per day per residential unit)	34.04 gpd	34.04 gpd
2. Savings Decay	33.30 %/yr	33.30 %/yr
3. Number of Surveys (from STEP 2 Line 8)	157.00	5.00
4. Lifetime Savings	17.97 AF	0.57 AF

Acre-Foot Conversions

Use the calculator below if you need to convert water volume into acre-feet.

43,560.00 CF = 1.00 AF

BMP 01 Residential Surveys - Agency Benefits Worksheet

Instructions: Fill in all green cells that apply

Avoided Supply Acquisition Costs (include future avoided capital costs as appropriate)

- 1. Marginal Source of Supply (List name) _____
- 2. Avoidable Supply Acquisition Cost \$ _____ 0 /AF

Avoided Treatment & Distribution Capacity Costs

- 3. Avoided capacity expansion costs (dollars per AF of water saved by conservation) \$ _____ 0 /AF

Avoided Wastewater Capacity Costs (if service provided by agency)

- 4. Avoided capacity expansion costs (dollars per AF of water saved by conservation) \$ _____ 0 /AF

Avoided Treatment & Distribution Variable Costs (include wastewater services if provided by agency)

Avoided chemical costs

- 5. Total annual chemical costs \$ 75,000.00 /yr
- 6. Annual fixed costs for chemicals \$ _____ /yr
- 7. Annual chemical costs not related to water production \$ _____ /yr
- 8. Avoidable chemical costs (Line 5 - Line 6 - Line 7) \$ 75,000.00 /yr
- 9. Average annual treated water use 9182 AF
- 10. Unit Cost of Chemicals (Line 8 + Line 9) \$ 8.16 /AF

Avoided energy costs

- 11. Annual energy costs \$ 497,832.00 /yr
- 12. Annual fixed costs \$ _____ /yr
- 13. Annual energy costs not related to water production (e.g., lighting, heating/cooling) \$ _____ /yr
- 14. Avoidable energy costs (Line 11 - Line 12 - Line 13) \$ 497,832.00 /yr
- 15. Average annual water use (from Line 9 above) 9,192.00 AF
- 16. Unit Cost of Energy (Line 14 + Line 15) \$ 54.16 /AF
- 17. Avoided Treatment & Distribution Variable (Line 10 + Line 16) \$ 62.32 /AF
- 18. Total Supply & Wastewater Benefits (Line 2 + Line 3 + Line 4 + Line 17) \$ 62.32 /AF

Environmental Benefits

- 19. Environmental benefit per AF saved \$ _____ 0 /AF
(e.g. value of instream flow, improved water quality, avoided environmental mitigation for supply development or wastewater disposal)

Acres-Foot Conversions
Use the calculator below if you need to convert water volume into acre-feet.

325,900.00 = 7.48 AF

BMP 01 Residential Surveys - Other Benefits and Costs Worksheet

Instructions: Fill in all green cells.

OTHER BENEFITS

Avoided Customer Energy Costs	Single Family Surveys	Multi Family Surveys
1. Hot water use as a percent of meter water savings	30 %	30 %
2. Percent of residential hot water heated with gas (can get estimate from local utility or CEC)	80	80 %
3. Marginal cost per therm	\$ 0.91 /therm	
4. Marginal cost per KWh	\$ 0.12 /KWh	
5. Customer Energy Benefit	\$ 559.71 /AF	\$ 559.71 /AF

Avoided Wastewater Utility Variable Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

6. Avoided energy & chemical costs \$ 0 /AF of conserved water

Avoided Wastewater Utility Capacity Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

7. Avoided wastewater capacity expa \$ 0 /AF of conserved water

OTHER COSTS

Customer participation costs	Single Family Surveys	Multi Family Surveys
8. Average customer expenditures per survey (e.g., change landscaping, appliances, etc)	\$ 0 /Survey	\$ 0 /Survey
9. Number of surveys (from Line 8 of STEP 1)	157.00 /yr	5.00 /yr
10. Total customer costs (Line 8 x Line 9)	\$ - /yr	\$ - /yr

Acre-Foot Conversions
 Use the calculator below if you need to convert water volume into acre-feet.

325,800.00 CF - Cubic Feet = 7.48 AF

BMP 01 Residential Surveys - Discounting Information

Discount Rates (required)

1. Agency Discount Rate 3.0 %
2. Social Discount Rate - %

Annual Escalation Rates (optional)

3. Avoided cost of water and wastewater - %/yr
4. Environmental benefits - %/yr
5. Energy cost - %/yr

BMP 01 Residential Surveys - Summary of Costs & Benefits

<u>Program Present Value Costs</u>	<u>Agency Perspective</u>	<u>Perspectiv e</u>
1. Total surveys	162	162
2. Total water savings	18.5 AF	18.5 AF
3. Agency program costs	\$32,668	\$32,668
4. Customer program costs	NA	\$0
5. Cost share	\$0	NA
6. Net Program Cost	<u>\$32,668</u>	<u>\$32,668</u>
 <u>Program Present Value Benefits</u>		
7. Agency supply & wastewater benefits	\$1,092	\$1,156
8. Environmental benefits	\$0	\$0
9. Customer program benefits	NA	\$10,380
10. Other utility benefits	NA	\$0
11. Total benefits	<u>\$1,092</u>	<u>\$11,536</u>
12. Net Present Value (Line 11 - Line 6)	(\$31,576)	(\$21,132)
13. Benefit-Cost Ratio (Line 11 ÷ Line 6)	0.03	0.35
14. Simple Unit Supply Cost (Line 6 ÷ Line 2)	\$1,761 /AF	\$1,761 /AF
15. Discounted Unit Supply Cost (Line 6 ÷ discounted water savings)	\$1,864 /AF	\$1,761 /AF

*This BMP is not cost-effective to implement from the Agency Perspective
This BMP is not cost-effective to implement from the Society Perspective*

BMP 06 High Efficiency Washing Machine Rebate Programs - Annual Program Cost Worksheet

Instructions: Fill in all green cells.

Administration Costs

- | | |
|---|--------------|
| 1. Staff hours to administer the rebate program | 51 hrs/yr |
| 2. Staff hourly rate, including overhead | \$ 34.04 /hr |
| 3. Administration costs
(Line 1 x Line 2) | \$ 1,736 /yr |

Washing Machine Rebate Costs

- | | |
|---|---------------|
| 4. Rebate (or utility incentive cost) | \$ 50 /rebate |
| 5. Number of rebates distributed | 180 /yr |
| 6. Total rebate cost
(Line 4 x Line 5) | \$ 9,000 /yr |

Rebate Processing Costs

- | | |
|--|--------------|
| 7. Average rebate processing cost (if not included in Adm) | \$ 1 /rebate |
| 8. Total rebate processing cost
(Line 5 x Line 7) | \$ 180 /yr |

Publicity Costs

- | | |
|---|--------------|
| 9. Marketing collateral cost
(e.g., brochure design, printing, web services) | \$ 1,179 /yr |
| 10. Advertising cost
(i.e. newspaper, radio, TV, web) | \$ /yr |
| 11. Total publicity costs
(Line 9 + Line 10) | \$ 1,179 /yr |

Evaluation and Followup Costs

- | | |
|---|---------------|
| 12. Labor & Consultant costs | \$ 1,924 /yr |
| 13. Total Costs
(Line 3 + Line 6 + Line 8 + Line 11 + Line 12) | \$ 14,019 /yr |

Program Cost Sharing

- | | |
|--|---------------|
| 14. Cost Share from Others
(e.g., other agencies, grants, in-kind contrib.) | \$ /yr |
| 15. Net Agency Cost
(Line 13 - Line 14) | \$ 14,019 /yr |

BMP 06 High Efficiency Washing Machine Rebate Programs - Water Savings Worksheet

Instructions: Fill in all green cells.

	High-Efficiency Washing Machines	
1. Savings per machine (gallons per year per machine)	<u>5,250.00</u> gpy/machine	<input checked="" type="radio"/> Use CUWCC Reliable Savings Estimate <input type="radio"/> Use Own Estimate
2. Useful Life	<u>15.0</u> yrs	
3. Number of Rebates Distributed (from STEP 1 Line 5)	<u>180</u>	
4. Percent Free-riders	<u> </u> %/yr	
5. Lifetime Savings	<u>43.49</u> AF	

Acre-Foot Conversions
Use the calculator below if you need to convert water volume into acre-feet.

Gallons = 9,191.84 AF

BMP 06 High Efficiency Wash Machine Rebate Programs - Agency Benefits Worksheet

Instructions: Fill in all green cells that apply.

Avoided Supply Acquisition Costs (include future avoided capital costs as appropriate)

- 1. Marginal Source of Supply _____
(List name)
- 2. Avoidable Supply Acquisition Cost \$ _____ /AF

Avoided Treatment & Distribution Capacity Costs

- 3. Avoided capacity expansion costs \$ _____ /AF
(dollars per AF of water saved by conservation)

Avoided Wastewater Capacity Costs (if service provided by agency)

- 4. Avoided capacity expansion costs \$ _____ /AF
(dollars per AF of water saved by conservation)

Avoided Treatment & Distribution Variable Costs (include wastewater services if provided by agency)

Avoided chemical costs

- 5. Total annual chemical costs \$ 75,000.00 /yr 75000
- 6. Annual fixed costs for chemicals \$ _____ /yr
- 7. Annual chemical costs not related to water production \$ _____ /yr
- 8. Avoidable chemical costs \$ 75,000.00 /yr
(Line 5 - Line 6 - Line.7)
- 9. Average annual treated water use 9192 AF
- 10. Unit Cost of Chemicals \$ 8.16 /AF
(Line 8 - Line 9)

Avoided energy costs

- 11. Annual energy costs \$ 497,832.00 /yr
- 12. Annual fixed costs \$ _____ /yr
- 13. Annual energy costs not related to water production (e.g., lighting, heating/cooling) \$ _____ /yr
- 14. Avoidable energy costs \$ 497,832.00 /yr
(Line 11 - Line 12 - Line 13)
- 15. Average annual water use 9,192.00 AF
(from Line 9 above)
- 16. Unit Cost of Energy \$ 54.16 /AF
(Line 14 + Line 15)
- 17. Avoided Treatment & Distribution Variat \$ 62.32 /AF
(Line 10 + Line 16)
- 18. Total Supply & Wastewater Benefits \$ 62.32 /AF
(Line 2 + Line 3 + Line 4 + Line 17)

Environmental Benefits

- 19. Environmental benefit per AF saved \$ _____ /AF
(e.g. value of instream flow, improved water quality, avoided environmental mitigation for supply development or wastewater disposal)

BMP 06 High Efficiency Washing Machine Rebate Programs - Other Benefits and Costs Worksheet

Instructions: Fill in all green cells.

OTHER BENEFITS

Avoided Customer Energy Costs

High Efficiency Clothes Washer

1. Percent of residential hot water heated with gas (can get estimate from local utility or CEC)	<u>80</u> %
2. Percent of residential dryers using gas (can get estimate from local utility or CEC)	<u>80</u> %
2. Marginal cost per therm of gas	\$ <u>0.91</u> /therm
3. Marginal cost per kWh of electricity	\$ <u>0.12</u> /kWh
5. Customer Energy Benefit	\$ <u>34.68</u> /Yr

Avoided Wastewater Utility Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

6. Avoided energy & chemical costs	\$ <u>0</u> /AF of conserved water
7. Avoided wastewater capacity expansion	\$ <u>0</u> /AF of conserved water
8. Total avoided wastewater utility costs (Line 6 + Line 7)	\$ <u>-</u> /AF of conserved water

BMP 06 High Efficiency Washing Machine Rebate Programs - Discounting Information

Instructions: Fill in all green cells.

Discount Rates (required)

1. Agency Discount Rate 3.0 %
2. Social Discount Rate %

Annual Escalation Rates (optional)

3. Avoided cost of water and wastewater %/yr
4. Environmental benefits %/yr
5. Energy cost %/yr

<u>Program Present Value Costs</u>	<u>Agency Perspective</u>	<u>Society Perspective</u>
1. Total rebates distributed	180	180
3. Agency program costs	\$14,019	\$14,019
4. Customer program costs	NA	NA
5. Cost share	\$0	NA
6. Net Program Cost	<u>\$14,019</u>	<u>\$14,019</u>
 <u>Program Present Value Benefits</u>		
7. Agency supply & wastewater benefits	\$2,157	\$2,711
8. Environmental benefits	\$0	\$0
9. Customer program benefits	NA	\$93,634
10. Other utility benefits	NA	\$0
11. Total benefits	<u>\$2,157</u>	<u>\$96,345</u>
12. Net Present Value (Line 11 - Line 6)	(\$11,862)	\$82,326
13. Benefit-Cost Ratio	0.15	6.87
14. Simple Unit Supply Cost (Line 6 ÷ Line 2)	\$322 /AF	\$322 /AF
15. Discounted Unit Supply Cost (Line 6 ÷ discounted water savings)	\$405 /AF	\$322 /AF
<p><i>This BMP is not cost-effective to implement from the Agency Perspective</i> <i>This BMP is cost-effective to implement from the Society Perspective</i></p>		

Present Value Benefits - Agency Perspective

Year	Water Savings	Undiscounted Agency Benefits			Discounted Agency Benefits			Discount of Supply AF	
	Rebate Number	Water Savings AF	Supply & Wastewater	Environment	Total	Supply & Wastewater	Environment		Total
0	1800								
1		2.9	181	-	181	175	-	175	2.8
2		2.9	181	-	181	170	-	170	2.7
3		2.9	181	-	181	165	-	165	2.7
4		2.9	181	-	181	161	-	161	2.6
5		2.9	181	-	181	156	-	156	2.5
6		2.9	181	-	181	151	-	151	2.4
7		2.9	181	-	181	147	-	147	2.4
8		2.9	181	-	181	143	-	143	2.3
9		2.9	181	-	181	138	-	138	2.2
10		2.9	181	-	181	134	-	134	2.2
11		2.9	181	-	181	131	-	131	2.1
12		2.9	181	-	181	127	-	127	2.0
13		2.9	181	-	181	123	-	123	2.0
14		2.9	181	-	181	119	-	119	1.9
15		2.9	181	-	181	116	-	116	1.9
16		-	-	-	-	-	-	-	-
17		-	-	-	-	-	-	-	-
18		-	-	-	-	-	-	-	-
19		-	-	-	-	-	-	-	-
20-25		-	-	-	-	-	-	-	-
Total:	1800	43.5	2,711	-	2,711	2,157	-	2,157	34.6

Present Value Benefits - Society Perspective

Year	Water Savings	Undiscounted Program Benefits				Discounted Program Benefits				Discount of Supply AF	
	Rebate Number	Water Savings AF	Supply & Wastewater	Environment	Customer Energy Benefits	Wastewater or Utility Benefits	Supply & Wastewater	Environment	Customer Energy Benefits		Wastewater or Utility Benefits
0	1800										
1		2.9	181	-	6,242	-	181	-	6,242	-	2.9
2		2.9	181	-	6,242	-	181	-	6,242	-	2.9
3		2.9	181	-	6,242	-	181	-	6,242	-	2.9
4		2.9	181	-	6,242	-	181	-	6,242	-	2.9
5		2.9	181	-	6,242	-	181	-	6,242	-	2.9
6		2.9	181	-	6,242	-	181	-	6,242	-	2.9
7		2.9	181	-	6,242	-	181	-	6,242	-	2.9
8		2.9	181	-	6,242	-	181	-	6,242	-	2.9
9		2.9	181	-	6,242	-	181	-	6,242	-	2.9
10		2.9	181	-	6,242	-	181	-	6,242	-	2.9
11		2.9	181	-	6,242	-	181	-	6,242	-	2.9
12		2.9	181	-	6,242	-	181	-	6,242	-	2.9
13		2.9	181	-	6,242	-	181	-	6,242	-	2.9
14		2.9	181	-	6,242	-	181	-	6,242	-	2.9
15		2.9	181	-	6,242	-	181	-	6,242	-	2.9
16		-	-	-	-	-	-	-	-	-	-
17		-	-	-	-	-	-	-	-	-	-
18		-	-	-	-	-	-	-	-	-	-
19		-	-	-	-	-	-	-	-	-	-
20		-	-	-	-	0VALUE!	0VALUE!	-	-	-	-
21	0REF!	0REF!	-	-	-	-	-	0VALUE!	0VALUE!	-	0REF!
22	0REF!	0REF!	-	-	-	-	-	0VALUE!	0VALUE!	-	0REF!
23	0REF!	0REF!	-	-	-	-	-	0VALUE!	0VALUE!	-	0REF!
24	0REF!	0REF!	-	-	-	-	-	0VALUE!	0VALUE!	-	0REF!
25	0REF!	0REF!	-	-	-	-	-	0VALUE!	0VALUE!	-	0REF!
Total:											

BMP 09 CII Surveys - Annual Program Cost Worksheet

Instructions: Fill in all green cells.

	CII Surveys
Administration Costs	
1. Staff hours to administer the survey program	<u>294.00</u> hrs/yr
2. Staff hourly rate, including overhead	\$ <u>37.05</u> /hr
3. Administration costs (Line 1 x Line 2)	\$ <u>10,892.70</u> /yr
Field Labor Costs	
4. Field labor hours	<u>18.00</u> hrs/srvy
5. Field labor hourly rate, including overhead	\$ <u>34.06</u> /hr
6. Number of surveys	<u>5.00</u> /yr
7. Field labor cost (Line 4 x Line 5 x Line 6)	\$ <u>3,065.40</u> /yr
Materials/ Outside Services Costs	
8. Unit cost of materials (e.g., plumbing fixtures)	\$ <u>60.05</u> /srvy
9. Consulting Services Cost	\$ <u> </u> /srvy
10. Number of surveys (from Line 6)	<u>5</u> /yr
11. Total materials/outside services cost (Line 8 x Line 9)	\$ <u>300.25</u> /yr
Publicity Costs	
12. Marketing collateral cost (e.g., brochure design, printing, web services)	\$ <u> </u> /yr
13. Advertising cost (i.e. newspaper, radio, TV, web)	\$ <u>890.00</u> /yr
14. Total publicity costs (Line 11 + Line 12)	\$ <u>890.00</u> /yr
Evaluation and Followup Costs	
15. Labor & Consultant costs	\$ <u>341.00</u> /yr
16. Total Costs (Line 3 + Line 7 + Line 10 + Line 13 + Line 14)	\$ <u>15,489.35</u> /yr
Program Cost Sharing	
17. Cost Share from Others (e.g., other agencies, grants, in-kind contrib.)	\$ <u> </u> /yr
18. Net Agency Cost (Line 15 - Line 16)	\$ <u>15,489.35</u> /yr

BMP 09 CII Surveys - Water Savings Worksheet

Instructions: Fill in all green cells.

	CII Surveys
1. Avg. Water Savings Per Survey	<u>2,700.00</u> gpd
2. Avg. Water Savings Per Survey	<u>3.02</u> AF/yr
4. Savings Decay	<u>6.00</u> %/yr
5. Number of Surveys (from STEP 1 Line 6)	<u>5.00</u>
6. Cumulative Savings	<u>198.34</u> AF

Acre-Foot Conversions

Use the calculator below if you need to convert water volume into acre-feet.

876,000.00 = 2.69 AF

BMP 09 CII Surveys - Agency Benefits Worksheet

Instructions: Fill in all green cells that apply.

Avoided Supply Acquisition Costs (include future avoided capital costs as appropriate)

- 1. Marginal Source of Supply (List name) _____
- 2. Avoidable Supply Acquisition Cost \$ _____ 0 /AF

Avoided Treatment & Distribution Capacity Costs

- 3. Avoided capacity expansion costs (dollars per AF of water saved by conservation) \$ _____ 0 /AF

Avoided Wastewater Capacity Costs (if service provided by agency)

- 4. Avoided capacity expansion costs (dollars per AF of water saved by conservation) \$ _____ 0 /AF

Avoided Treatment & Distribution Variable Costs (include wastewater services if provided by agency)

Avoided chemical costs

- 5. Total annual chemical costs \$ 75,000.00 /yr
- 6. Annual fixed costs for chemicals \$ _____ /yr
- 7. Annual chemical costs not related to water production \$ _____ /yr
- 8. Avoidable chemical costs (Line 5 - Line 6 - Line 7) \$ 75,000.00 /yr
- 9. Average annual treated water use 9192 AF
- 10. Unit Cost of Chemicals (Line 8 ÷ Line 9) \$ 8.16 /AF

Avoided energy costs

- 11. Annual energy costs \$ 497,832.00 /yr
- 12. Annual fixed costs \$ _____ /yr
- 13. Annual energy costs not related to water production (e.g., lighting, heating/cooling) \$ _____ /yr
- 14. Avoidable energy costs (Line 11 - Line 12 - Line 13) \$ 497,832.00 /yr
- 15. Average annual water use (from Line 9 above) 9,192.00 AF
- 16. Unit Cost of Energy (Line 14 ÷ Line 15) \$ 54.16 /AF
- 17. Avoided Treatment & Distribution Variable (Line 10 + Line 16) \$ 62.32 /AF
- 18. Total Supply & Wastewater Benefits (Line 2 + Line 3 + Line 4 + Line 17) \$ 62.32 /AF

Environmental Benefits

- 19. Environmental benefit per AF saved (e.g. value of instream flow, improved water quality, avoided environmental mitigation for supply development or wastewater disposal) \$ _____ 0 /AF

Acres-Foot Conversions
 Use the calculator below if you need to convert water volume into acre-feet.

Gallons AF

BMP 09 CII Surveys - Other Benefits and Costs Worksheet

Instructions: Fill in all green cells.

OTHER BENEFITS

Avoided Wastewater Utility Variable Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

1. Avoided energy & chemical costs \$ 0 /AF of conserved water

Avoided Wastewater Utility Capacity Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

2. Avoided wastewater capacity expansion \$ 0 /AF of conserved water

Customer Energy Benefits

3. Average reduction in energy purchases \$ 0 /Srvy/yr

OTHER COSTS

Customer participation costs

CII
Surveys

4. Average customer expenditures per survey
(e.g., cooling system modifications, etc) \$ 3450 /Survey

5. Number of surveys
(from Line 8 of STEP 1) 5.00 /yr

6. Total customer costs
(Line 2 x Line 3) \$ 17,250.00 /yr

BMP 09 CII Surveys - Discounting Information

Discount Rates (required)

1. Agency Discount Rate 3.0 %
2. Social Discount Rate - %

Annual Escalation Rates (optional)

3. Avoided cost of water and wastewater - %/yr
4. Environmental benefits - %/yr
5. Energy cost - %/yr

BMP 09 CII Surveys - Summary of Costs & Benefits

<u>Program Present Value Costs</u>	<u>Agency Perspective</u>	<u>Society Perspective</u>
1. Total surveys	5	5
2. Total water savings	198.3 AF	198.3 AF
3. Agency program costs	\$15,489	\$15,489
4. Customer program costs	NA	17,250
5. Cost share	\$0	NA
6. Net Program Cost	<u>\$15,489</u>	<u>\$32,739</u>
<u>Program Present Value Benefits</u>		
7. Agency supply & wastewater benefits	\$9,687	\$12,360
8. Environmental benefits	\$0	\$0
9. Customer energy benefits	NA	\$0
10. Other utility benefits	NA	\$0
11. Total benefits	<u>\$9,687</u>	<u>\$12,360</u>
12. Net Present Value (Line 9 - Line 6)	(\$5,803)	(\$20,379)
13. Benefit-Cost Ratio (Line 9 ÷ Line 6)	0.63	0.38
14. Simple Unit Supply Cost (Line 6 ÷ Line 2)	\$78 /AF	\$165 /AF
15. Discounted Unit Supply Cost (Line 6 ÷ discounted water savings)	\$100 /AF	\$165 /AF

*This BMP is not cost-effective to implement from the Agency Perspective
This BMP is not cost-effective to implement from the Society Perspective*

Agency Perspective

Year	Undiscounted Agency Benefits				Discounted Agency Benefits		
	Water Savings Cil Surveys AF	Supply & Wastewater \$	Environmental \$	Total \$	Supply & Wastewater	Environmental	Total
0	15.12	842	-	842	842	-	842
1	14.21	886	-	886	860	-	860
2	13.36	935	-	935	785	-	785
3	12.56	783	-	783	718	-	718
4	11.80	736	-	736	664	-	664
5	11.10	692	-	692	597	-	597
6	10.43	650	-	650	544	-	544
7	9.80	611	-	611	491	-	491
8	9.22	574	-	574	453	-	453
9	8.68	540	-	540	414	-	414
10	8.14	506	-	506	378	-	378
11	7.66	477	-	477	345	-	345
12	7.20	448	-	448	315	-	315
13	6.78	422	-	422	287	-	287
14	6.38	398	-	398	262	-	262
15	5.98	372	-	372	239	-	239
16	5.62	350	-	350	218	-	218
17	5.28	329	-	329	199	-	199
18	4.96	309	-	309	182	-	182
19	4.67	291	-	291	166	-	166
20	4.39	273	-	273	151	-	151
21	4.12	257	-	257	138	-	138
22	3.88	242	-	242	126	-	126
23	3.64	227	-	227	115	-	115
24	3.42	213	-	213	106	-	106
Total	194.92	12,360	-	12,360	9,687	-	9,687

Discounted Supply AF
15.12
13.80
12.56
11.49
10.49
9.57
8.74
7.97
7.28
6.64
6.06
5.53
5.05
4.61
4.20
3.84
3.50
3.20
2.92
2.66
2.43
2.22
2.02
1.85
1.68
155.44

Society Perspective

Year	Undiscounted Program Benefits				Discounted Program Benefits							
	Water Savings Cil Surveys AF	Supply & Wastewater \$	Environmental \$	Customer Energy Benefits \$	Wastewater Utility Benefits \$	Total \$	Supply & Wastewater \$	Environmental \$	Customer Energy Benefits \$	Wastewater Utility Benefits \$	Total \$	Discounted Supply AF
0	15.12	842	-	-	-	842	842	-	-	-	842	15.12
1	14.21	886	-	-	-	886	860	-	-	-	860	14.21
2	13.36	935	-	-	-	935	833	-	-	-	833	13.36
3	12.56	783	-	-	-	783	783	-	-	-	783	12.56
4	11.80	736	-	-	-	736	736	-	-	-	736	11.80
5	11.10	692	-	-	-	692	692	-	-	-	692	11.10
6	10.43	650	-	-	-	650	650	-	-	-	650	10.43
7	9.80	611	-	-	-	611	611	-	-	-	611	9.80
8	9.22	574	-	-	-	574	574	-	-	-	574	9.22
9	8.68	540	-	-	-	540	540	-	-	-	540	8.68
10	8.14	506	-	-	-	506	506	-	-	-	506	8.14
11	7.66	477	-	-	-	477	477	-	-	-	477	7.66
12	7.20	448	-	-	-	448	448	-	-	-	448	7.20
13	6.78	422	-	-	-	422	422	-	-	-	422	6.78
14	6.38	398	-	-	-	398	398	-	-	-	398	6.38
15	5.98	372	-	-	-	372	372	-	-	-	372	5.98
16	5.62	350	-	-	-	350	350	-	-	-	350	5.62
17	5.28	329	-	-	-	329	329	-	-	-	329	5.28
18	4.96	309	-	-	-	309	309	-	-	-	309	4.96
19	4.67	291	-	-	-	291	291	-	-	-	291	4.67
20	4.39	273	-	-	-	273	273	-	-	-	273	4.39
21	4.12	257	-	-	-	257	257	-	-	-	257	4.12
22	3.88	242	-	-	-	242	242	-	-	-	242	3.88
23	3.64	227	-	-	-	227	227	-	-	-	227	3.64
24	3.42	213	-	-	-	213	213	-	-	-	213	3.42
Total	194.92	12,360	-	-	-	12,360	12,360	-	-	-	12,360	194.92

BMP 14 ULFT Replacement Programs - Annual Program Cost Worksheet

Instructions: Fill in all green cells.

Administration Costs

- 1. Staff hours to administer the rebate program 80 hrs/yr
- 2. Staff hourly rate, including overhead \$ 37.21 /hr
- 3. Administration costs (Line 1 x Line 2) \$ 2,977 /yr

ULFT Costs

- | | Single-Family | Multi-Family |
|--|----------------------|---------------------|
| 4. ULFT Cost (or incentive cost) | \$ <u>100</u> /ULFT | \$ <u>100</u> /ULFT |
| 5. Number of ULFTs (or incentives) distributed | <u>107</u> /yr | <u>19</u> /yr |
| 6. Total ULFT replacement cost (Line 4 x Line 5) | \$ <u>10,700</u> /yr | \$ <u>1,900</u> /yr |

Incentive Processing Costs

- 7. Average rebate processing cost (if not included in Adm) \$ 1 /ULFT
- 8. Total rebate processing cost (Line 5 x Line 7) \$ 126 /yr

Publicity Costs

- 9. Marketing collateral cost (e.g., brochure design, printing, web services) \$ - /yr
- 10. Advertising cost (i.e. newspaper, radio, TV, web) \$ 825 /yr
- 11. Total publicity costs (Line 9 + Line 10) \$ 825 /yr

Evaluation and Followup Costs

- 12. Labor & Consultant costs \$ 1,347 /yr
- 13. Total Costs (Line 3 + Line 6 + Line 8 + Line 11 + Line 12) \$ 17,875 /yr

Program Cost Sharing

- 14. Cost Share from Others (e.g., other agencies, grants, in-kind contrib.) \$ - /yr
- 15. Net Agency Cost (Line 13 - Line 14) \$ 17,875 /yr

BMP 14 ULFT Replacement Programs - Water Savings Worksheet

Instructions: Fill in all green cells.

	Single-Family	Multi-Family	
1. Avg. Persons Per Household	<u>2.5</u>	<u>2.5</u>	<input checked="" type="radio"/> Use CUWCC Reliable Savings Estimate <input type="radio"/> Use Own Estimate
2. Avg. Savings per ULFT (gallons per day per ULFT)	<u>21.3</u> gpd	<u>44.1</u> gpd	
3. Toilet Natural Replacement Rate	<u>4.0</u> %/yr	<u>4.0</u> %/yr	
4. Number of ULFTs Distributed (from STEP 1 Line 5)	<u>107</u>	<u>19</u>	
5. Percent Free-riders	<u>80</u> %	<u>80</u> %	
6. 25-Year Savings	<u>8.1</u> AF	<u>3.0</u> AF	

Acre-Foot Conversions
 Use the calculator below if you need to convert water volume into acre-feet.

Gallons = AF

BMP 14 ULFT Replacement Programs - Agency Benefits Worksheet

Instructions: Fill in all green cells that apply.

Avoided Supply Acquisition Costs (include future avoided capital costs as appropriate)

- 1. Marginal Source of Supply (List name) _____
- 2. Avoidable Supply Acquisition Cost \$ _____ 0 /AF

Avoided Treatment & Distribution Capacity Costs

- 3. Avoided capacity expansion costs (dollars per AF of water saved by conservation) \$ _____ 0 /AF

Avoided Wastewater Capacity Costs (if service provided by agency)

- 4. Avoided capacity expansion costs (dollars per AF of water saved by conservation) \$ _____ 0 /AF

Avoided Treatment & Distribution Variable Costs (include wastewater services if provided by agency)

Avoided chemical costs

- 5. Total annual chemical costs \$ 75,000.00 /yr
- 6. Annual fixed costs for chemicals \$ _____ /yr
- 7. Annual chemical costs not related to water production \$ _____ /yr
- 8. Avoidable chemical costs (Line 5 - Line 6 - Line 7) \$ 75,000.00 /yr
- 9. Average annual treated water use _____ 9192 AF
- 10. Unit Cost of Chemicals (Line 8 + Line 9) \$ _____ 8.16 /AF

Avoided energy costs

- 11. Annual energy costs \$ 497,832.00 /yr
- 12. Annual fixed costs \$ _____ /yr
- 13. Annual energy costs not related to water production (e.g., lighting, heating/cooling) \$ _____ /yr
- 14. Avoidable energy costs (Line 11 - Line 12 - Line 13) \$ 497,832.00 /yr
- 15. Average annual water use (from Line 9 above) _____ 9,192.00 AF
- 16. Unit Cost of Energy (Line 14 + Line 15) \$ _____ 54.16 /AF
- 17. Avoided Treatment & Distribution Variable (Line 10 + Line 16) \$ _____ 62.32 /AF
- 18. Total Supply & Wastewater Benefits (Line 2 + Line 3 + Line 4 + Line 17) \$ _____ 62.32 /AF

Environmental Benefits

- 19. Environmental benefit per AF saved (e.g. value of instream flow, improved water quality, avoided environmental mitigation for supply development or wastewater disposal) \$ _____ 0 /AF

BMP 14 ULFT Replacement Programs - Other Benefits and Costs Worksheet

Instructions: Fill in all green cells.

OTHER BENEFITS

Avoided Wastewater Utility Costs (IMPORTANT: do not include those listed in STEP 3 Agency Benefits)

- 1. Avoided energy & chemical costs \$ 0 /AF of conserved water
- 2. Avoided wastewater capacity expansion \$ 0 /AF of conserved water
- 3. Total avoided wastewater utility costs (Line 6 + Line 7) \$ - /AF of conserved water

OTHER COSTS

Customer Participation Costs

	Single Family ULFTs	Multi Family ULFTs
4. Average customer expenditures per ULFT (e.g., installation, disposal of old toilet)	\$ <u>620</u> /ULFT	\$ <u>620</u> /ULFT
5. Number of ULFTs distributed (from Line 5 of STEP 1)	<u>107</u>	<u>19</u>
6. Percent of Freeriders (from Line 5 of STEP 2)	<u>80 %</u>	<u>80 %</u>
7. Total customer costs (Line 4 x Line 5 x (1 - Line 6))	\$ <u>13,268.00</u>	\$ <u>2,356.00</u>

BMP 14 ULFT Replacement Programs - Discounting Information

Instructions: Fill in all green cells.

Discount Rates (required)

- | | |
|-------------------------|--------------|
| 1. Agency Discount Rate | <u>3.0</u> % |
| 2. Social Discount Rate | <u>-</u> % |

Annual Escalation Rates (optional)

- | | |
|---|---------------|
| 3. Avoided cost of water and wastewater | <u>-</u> %/yr |
| 4. Environmental benefits | <u>-</u> %/yr |
| 5. Energy cost | <u>-</u> %/yr |

BMP 14 ULFT Replacement Programs - Summary of Costs & Benefits

	Agency Perspective	Society Perspective
<u>Program Present Value Costs</u>		
1. Total ULFTs distributed	126	126
2. Total water savings	11.1 AF	11.1 AF
3. Agency program costs	\$17,875	\$17,875
4. Customer program costs	NA	\$15,624
5. Cost share	\$0	NA
6. Net Program Cost	<u>\$17,875</u>	<u>\$33,499</u>
<u>Program Present Value Benefits</u>		
7. Agency supply & wastewater benefits	\$514	\$695
8. Environmental benefits	\$0	\$0
9. Other utility benefits	NA	\$0
## Total benefits	<u>\$514</u>	<u>\$695</u>
## Net Present Value (Line 10 - Line 6)	(\$17,361)	(\$32,804)
## Benefit-Cost Ratio (Line 10 ÷ Line 6)	0.03	0.02
## Simple Unit Supply Cost (Line 6 ÷ Line 2)	\$1,603 /AF	\$3,005 /AF
## Discounted Unit Supply Cost (Line 6 ÷ discounted water savings)	\$2,168 /AF	\$3,005 /AF
<p><i>This BMP is not cost-effective to implement from the Agency Perspective</i> <i>This BMP is not cost-effective to implement from the Society Perspective</i></p>		

Step 9: Planned Water Supply Projects and Programs

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

The District's 1997 Water General Plan is intended to serve as a guide for system improvements during the subsequent 10 to 20 years. The plan sets forth proposed system improvements necessary to accommodate population growth of -2% per year, 0% per year and 2% per year within the District's service area. For the 2% per year growth by the year 2015, the plan provided for projected water production capacity of 12,390 AF, which amounts to an additional 3,900 AF of required capacity over the 1996 requirement. This additional production capacity was to be derived from a "type of facility to be determined at time of need and may include well pumping plants, brackish ground water treatment facilities, imported water facilities, reclaimed water facilities..."

In August 2003, the District Board of Directors adopted a Water Supply Enhancement General Plan. The purpose of the document is to set forth a plan to optimize use of existing local groundwater supplies, and to evaluate water supply projects and programs that may be undertaken to meet projected water demand. The District's long-term strategy is to have sufficient resources and options in place to ensure an adequate water supply that will meet projected water demand.

In the plan, the District discusses consideration of potential alternative sources of supplemental water from within the Indian Wells Valley, which may be provided by undeveloped source areas, groundwater blending, or from treating brackish water (see Step 10). Potential water supplies from outside the valley include developing available groundwater resources that could be conveyed to our valley (via the Los Angeles

aqueduct) and/or acquiring state project water or other water within Kern County and exchanging that water with Los Angeles through Metropolitan Water District of Southern California.

The District does not have descriptions of these longer-term planned water supply projects with greater detail because it is still in the assessment stage of estimating natural recharge and updating an existing groundwater flow model to define optimal mixing strategies of groundwater from different wells. The District has had recent discussions with consultants to explore potential proposals to develop groundwater management tools that can address the multiple concerns of water quantity and water quality in the Indian Wells Valley aquifer. The purpose of these tools and the resultant groundwater flow model would be to identify water management strategies to optimize long-term production and the occurrence of arsenic and dissolved solids levels in production wells in the Indian Wells Valley area. The District expects to select a provider for this work during the summer or fall, 2005 and to complete these studies within one to two years thereafter.

Step 10: Development of Desalinated Water

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

The District has recently commissioned a feasibility study for treatment of brackish water from the northwest part of Indian Wells Valley. The study, which is being conducted for the District by an outside consultant, will evaluate treatment alternatives and produce a preliminary design report. The District expects to have a more detailed understanding of this source of supplemental water supply, including projected quantity of annual supply with projected time lines for start and completion of the project upon completion of the study.

Step 11: Current or Projected Supply Includes Wholesale Water

Water Code Section 10631

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(k) Urban water suppliers that rely upon a wholesale agency for a source of water, shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

The Indian Wells Valley Water District is not currently receiving wholesale water nor is it in a position to project specific amounts to be received in the future. The District does have the right to purchase state project water entitlements, which are currently available in western Kern County. The District would need to take delivery of such wholesale water through an exchange involving Metropolitan Water District of Southern California and the Los Angeles Department of Water and Power. The District is not currently engaged in any discussions or negotiations involving state project water entitlements at the time of this writing.

SECTION 3 – DETERMINATION OF DMM IMPLEMENTATION

Water Code Section 10631.5

10631.5. The department shall take into consideration whether the urban water supplier is implementing or scheduled for implementation, the water demand management activities that the urban water supplier identified in its urban water management plan, pursuant to Section 10631, in evaluating applications for grants and loans made available pursuant to Section 79163. The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities.

IWVWD's 2003-2004 BMP Annual Report, which was submitted to CUWCC, is included in Section 2, Step 7, Demand Management Measures. The CUWCC Coverage Report for 2003-2004 is included below.

CUWCC Coverage Report

BMP 1 Coverage Report

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

Warning: The BMP 1 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

A Reporting Unit (RU) must meet three conditions to satisfy strict compliance for BMP 1.

Condition 1: Adopt survey targeting and marketing strategy on time

Condition 2: Offer surveys to 20% of SF accounts and 20% of MF units during report period

Condition 3: Be on track to survey 15% of SF accounts and 15% of MF units within 10 years of implementation start date.

Test for Condition 1

Indian Wells Valley Water District to Implement Targeting/Marketing Program by:

1999

Single-Family Multi-Family

Year Indian Wells Valley Water District Reported Implementing Targeting/Marketing Program:

Indian Wells Valley Water District Met Targeting/Marketing Coverage Requirement: NO NO

Test for Condition 2

			<u>Single-Family</u>	<u>Multi-Family</u>
Survey Program to Start by:	1998	Residential Survey Offers (%)	11.94%	
Reporting Period:	03-04	Survey Offers ≥ 20%	NO	NO

Test for Condition 3

	Completed Residential Surveys	
	<u>Single Family</u>	<u>Multi-Family</u>
Total Completed Surveys 1999 - 2004: Past Credit for Surveys Completed Prior to 1999 (Implementation of Reporting Database):	400	
Total + Credit	400	
Residential Accounts in Base Year	9,713	345
Indian Wells Valley Water District Survey Coverage as % of Base Year Residential Accounts	4.12%	
Coverage Requirement by Year 7 of Implementation per Exhibit 1	7.90%	7.90%
Indian Wells Valley Water District on Schedule to Meet 10-Year Coverage Requirement	NO	NO

BMP 1 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 02 Coverage: Residential Plumbing Report	
Reporting Unit: Indian Wells Valley Water District	Reporting Period: 03-04
MOU Exhibit 1 Coverage Requirement	
The minimum coverage requirement for residential plumbing is 7.90% of residential accounts by year 7 of implementation per Exhibit 1.	
The agency is not on schedule to meet the coverage requirement by year 7 of implementation.	

Warning: The BMP 2 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one of three conditions to satisfy strict compliance for BMP 2.

Condition 1: The agency has demonstrated that 75% of SF accounts and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads.

Condition 2: An enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts is in place for the agency's service area.

Condition 3: The agency has distributed or directly installed low-flow showerheads and other low-flow plumbing devices to not less than 10% of single-family accounts and 10% of multi-family units constructed prior to 1992 during the reporting period.

Test for Condition 1

<u>Report Year</u>	<u>Report Period</u>	<u>Single-Family</u>		<u>Multi-Family</u>	
		<u>Reported Saturation</u>	<u>Saturation ≥ 75%?</u>	<u>Reported Saturation</u>	<u>Saturation ≥ 75%?</u>
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04	30.00%	NO	50.00%	NO
2004	03-04	35.00%	NO	50.00%	NO

Test for Condition 2

<u>Report Year</u>	<u>Report Period</u>	<u>Indian Wells Valley Water District has ordinance requiring showerhead retrofit?</u>
1999	99-00	
2000	99-00	
2001	01-02	
2002	01-02	
2003	03-04	NO
2004	03-04	NO

Test for Condition 3

Reporting Period: 03-04

<u>1992 SF Accounts</u>	<u>Num. Showerheads Distributed to SF Accounts</u>	<u>Single-Family Coverage Ratio</u>	<u>SF Coverage Ratio ≥ 10%</u>
7,619	4,150	54.5%	YES
<u>1992 MF Accounts</u>	<u>Num. Showerheads Distributed to MF Accounts</u>	<u>Multi-Family Coverage Ratio</u>	<u>MF Coverage Ratio ≥ 10%</u>
2,465			NO

BMP 2 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 03 Coverage: System Water Audit, Leak Detection, and Repair

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirements

No description received BMP
Agency indicated it had implemented or implemented a BMP
report period?

Warning: The BMP 3 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one of two conditions to be in compliance with BMP 3:

Condition 1: Perform a prescreening audit. If the result is equal to or greater than 0.9 nothing more needs be done.

Condition 2: Perform a prescreening audit. If the result is less than 0.9, perform a full audit in accordance with AWWA's Manual of Water Supply Practices, Water Audits, and Leak Detection.

Test for Conditions 1 and 2

Report Year	Report Period	Pre-Screen Completed	Pre-Screen Result	Full Audit Indicated	Full Audit Completed
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04	YES	100.1%	No	NO
2004	03-04	YES	97.4%	No	NO

BMP 3 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 04 Coverage: Metering with Appropriately Rates for all New Connections and Retrofit of Existing

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirements

No description received BMP
Agency indicated it had implemented or implemented a BMP
report period?

Warning: The BMP 4 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must be on track to retrofit 100% of its unmetered accounts within 10 years to be in compliance with BMP 4.

Test for Compliance

Total Meter Retrofits Reported through 2004	
No. of Unmetered Accounts in Base Year	
Meter Retrofit Coverage as % of Base Year Unmetered Accounts	
Coverage Requirement by Year 6 of Implementation per Exhibit 1	42.0%
RU on Schedule to meet 10 Year Coverage Requirement	YES

BMP 4 COVERAGE STATUS SUMMARY:
Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit: Indian Wells Valley Water District **Reporting Period:** 03-04

MOU Exhibit 1 Coverage Requirement:

No. of irrigation accounts with dedicated landscape meters: _____

Agency has met at least as effective as implemented during report period:

Warning: The BMP 5 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet three conditions to comply with BMP 5.

Condition 1: Develop water budgets for 90% of its dedicated landscape meter accounts within four years of the date implementation is to start.

Condition 2: (a) Offer landscape surveys to at least 20% of its CII accounts with mixed use meters each report cycle and be on track to survey at least 15% of its CII accounts with mixed use meters within 10 years of the date implementation is to start OR (b) Implement a dedicated landscape meter retrofit program for CII accounts with mixed use meters or assign landscape budgets to mixed use meters.

Condition 3: Implement and maintain customer incentive program(s) for irrigation equipment retrofits.

Test for Condition 1

<u>Year</u>	<u>Report Period</u>	<u>BMP 5 Implementation Year</u>	<u>No. of Irrigation Meter Accounts</u>	<u>No. of Irrigation Accounts with Budgets</u>	<u>Budget Coverage Ratio</u>	<u>90% Coverage Met by Year 4</u>
1999	99-00	1				NA
2000	99-00	2				NA
2001	01-02	3				NA
2002	01-02	4				No
2003	03-04	5				No
2004	03-04	6				No

Test for Condition 2a (survey offers)

Select Reporting Period: 03-04
 Large Landscape Survey Offers as % of Mixed Use
 Meter CII Accounts
 Survey Offers Equal or Exceed 20% Coverage
 Requirement NO

Test for Condition 2a (surveys completed)

Total Completed Landscape Surveys Reported through
 Credit for Surveys Completed Prior to Implementation of
 Reporting Database
 Total + Credit 487
 CII Accounts in Base Year
 RU Survey Coverage as a % of Base Year CII Accounts
 Coverage Requirement by Year of Implementation per
 Exhibit 1 6.3%
 RU on Schedule to Meet 10 Year Coverage
 Requirement NO

Test for Condition 2b (mixed use budget or meter retrofit program)

<u>Report Year</u>	<u>Report Period</u>	<u>BMP 5 Implementation Year</u>	<u>Agency has mix-use budget program</u>	<u>No. of mixed-use budgets</u>
1999	99-00	1		
2000	99-00	2		
2001	01-02	3		
2002	01-02	4		
2003	03-04	5	NO	
2004	03-04	6	NO	
<u>Report Year</u>	<u>Report Period</u>	<u>BMP 4 Implementation Year</u>	<u>No. of mixed use CII accounts</u>	<u>No. of mixed use CII accounts fitted with irrig. meters</u>
1999	99-00	1		
2000	99-00	2		
2001	01-02	3		
2002	01-02	4		
2003	03-04	5	90	
2004	03-04	6	90	

Test for Condition 3

<u>Report Year</u>	<u>Report Period</u>	<u>BMP 5 Implementation Year</u>	<u>RU offers financial incentives?</u>	<u>No. of Loans</u>	<u>Total Amt. Loans</u>
1999	99-00	1			
2000	99-00	2			
2001	01-02	3			
2002	01-02	4			
2003	03-04	5	YES		

<u>Report Year</u>	<u>Report Period</u>	<u>No. of Grants</u>	<u>Total Amt. Grants</u>	<u>No. of rebates</u>	<u>Total Amt. Rebates</u>
2004	03-04	6	YES		
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04	2	5,000		
2004	03-04				

BMP 5 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 06 Coverage: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

Warning: The BMP 6 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one condition to comply with BMP 6.

Condition 1: Offer a cost-effective financial incentive for high-efficiency washers if one or more energy service providers in service area offer financial incentives for high-efficiency washers.

Test for Condition 1

<u>Year</u>	<u>Report Period</u>	<u>BMP 6 Implementation Year</u>	<u>Rebate Offered by ESP?</u>	<u>Rebate Offered by RU?</u>	<u>Rebate Amount</u>
1999	99-00	1			
2000	99-00	2			
2001	01-02	3			
2002	01-02	4			
2003	03-04	5	YES	NO	
2004	03-04	6	YES	NO	

<u>Year</u>	<u>Report Period</u>	<u>BMP 6 Implementation Year</u>	<u>No. Rebates Awarded</u>	<u>Coverage Met?</u>
1999	99-00	1		
2000	99-00	2		
2001	01-02	3		
2002	01-02	4		

2003	03-04	5	NO
2004	03-04	6	NO

BMP 6 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 07 Coverage: Public Information Programs

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirement

Agency must meet at least one condition as implemented during report period.

Warning: The BMP 7 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one condition to comply with BMP 7.

Condition 1: Implement and maintain a public information program consistent with BMP 7's definition.

Test for Condition 1

<u>Year</u>	<u>Report Period</u>	<u>BMP 7 Implementation Year</u>	<u>RU Has Public Information Program?</u>
1999	99-00	2	
2000	99-00	3	
2001	01-02	4	
2002	01-02	5	
2003	03-04	6	YES
2004	03-04	7	YES

BMP 7 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 08 Coverage: School Education Programs

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirement

Agency must meet at least one condition as implemented during report period.

Warning: The BMP 8 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one condition to comply with BMP 8.

Condition 1: Implement and maintain a school education program consistent with BMP 8's definition.

Test for Condition 1

<u>Year</u>	<u>Report Period</u>	<u>BMP 8 Implementation Year</u>	<u>RU Has School Education Program?</u>
1999	99-00	2	
2000	99-00	3	
2001	01-02	4	
2002	01-02	5	
2003	03-04	6	YES
2004	03-04	7	YES

BMP 8 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 9 Coverage: Conservation Programs for CII Accounts

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

BMP 9 Coverage Requirement

Agency is on track to meet the implementation during report period?

No

Warning: The BMP 9 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet three conditions to comply with BMP 9.

Condition 1: Agency has identified and ranked by use commercial, industrial, and institutional accounts.

Condition 2(a): Agency is on track to survey 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of date implementation to commence.

OR

Condition 2(b): Agency is on track to reduce CII water use by an amount equal to 10% of baseline use within 10 years of date implementation to commence.

OR

Condition 2(c): Agency is on track to meet the combined target as described in Exhibit 1 BMP 9 documentation.

Test for Condition 1

<u>Year</u>	<u>Report Period</u>	<u>BMP 9 Implementation Year</u>	<u>Ranked Com. Use</u>	<u>Ranked Ind. Use</u>	<u>Ranked Inst. Use</u>
1999	99-00	1			
2000	99-00	2			
2001	01-02	3			

2002	01-02	4			
2003	03-04	5	YES	YES	NO
2004	03-04	6	YES	YES	NO

Test for Condition 2a

	Commercial	Industrial	Institutional
Total Completed Surveys Reported through 2004			
Credit for Surveys Completed Prior to Implementation of Reporting Databases			
Total + Credit			
CII Accounts in Base Year	487		
RU Survey Coverage as % of Base Year CII Accounts			
Coverage Requirement by Year 6 of Implementation per Exhibit 1	4.2%	4.2%	4.2%
RU on Schedule to Meet 10 Year Coverage Requirement	NO	NO	NO

Test for Condition 2a

Year	Report Period	BMP 9 Implementation Year	Performance Target Savings (AF/yr)	Performance Target Savings Coverage	Performance Target Savings Coverage Requirement	Coverage Requirement Met
1999	99-00	1			0.5%	NO
2000	99-00	2			1.0%	NO
2001	01-02	3			1.7%	NO
2002	01-02	4			2.4%	NO
2003	03-04	5			3.3%	NO
2004	03-04	6			4.2%	NO

Test for Condition 2c

Total BMP 9 Surveys + Credit	
BMP 9 Survey Coverage	
BMP 9 Performance Target Coverage	
BMP 9 Survey + Performance Target Coverage	
Combined Coverage Equals or Exceeds Coverage Requirement?	NO

BMP 9 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 11 Coverage: Conservation Pricing

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirement

Agency responsible for meeting this requirement during
Report Period:

No

An agency must meet one condition to comply with BMP 11.

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing. Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates); rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges.

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service; and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates); seasonal rates or excess-use surcharges to reduce peak demands during summer months; rates based upon the long-run marginal cost or the cost of adding the next unit of capacity to the system.

Test for Condition 1

<u>Year</u>	<u>Report Period</u>	<u>RU Employed Non Conserving Rate Structure</u>	<u>RU Meets BMP 11 Coverage Requirement</u>
1999	99-00	NO	YES
2000	99-00	NO	YES
2001	01-02	NO	YES
2002	01-02	NO	YES
2003	03-04	NO	YES
2004	03-04	NO	YES

BMP 11 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

BMP 12 Coverage: Conservation Coordinator

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirement

Is the agency or service area in compliance with the MOU representation during report period? No

Warning: The BMP 12 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary.

Test for Compliance

Report Year	Report Period	Conservation Coordinator Position Staffed?	Total Staff on Team (incl. CC)
1999	99-00		
2000	99-00		
2001	01-02		
2002	01-02		
2003	03-04	YES	1
2004	03-04	YES	1

BMP 12 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 13 Coverage: Water Waste Prohibition

Reporting Unit:
Indian Wells Valley Water District

Reporting Period:
03-04

MOU Exhibit 1 Coverage Requirement

Is the agency or service area in compliance with the MOU representation during report period? No

Warning: The BMP 13 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one condition to comply with BMP 13.

Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash and commercial laundry systems, and non-recycling decorative water fountains.

Test for Condition 1

Agency or service area prohibits:

Year	Gutter Flooding	Single-Pass Cooling Systems	Single-Pass Car Wash	Single-Pass Laundry	Single-Pass Fountains	Other	RU has ordinance that meets coverage requirement

1999							
2000							
2001							
2002							
2003	no						
2004	no						

BMP 13 COVERAGE STATUS SUMMARY:

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

BMP 14 Coverage: Residential ULFT Replacement Program

Reporting Unit: Indian Wells Valley Water District

BMP 14 Coverage Requirements

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

Condition 1: Retrofit-on-resale (ROR) ordinance in effect in service area.

Condition 2: Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement. An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

Status: Water supplier has not met one or more coverage requirements for this BMP. as of 2004

<u>Coverage Year</u>	<u>BMP 14 Data Submitted to CUWCC</u>	<u>Exemption Filed with CUWCC</u>	<u>ROR Ordinance in Effect</u>	<u>Exhibit 6 Coverage Req'mt (AF)</u>	<u>Toilet Replacement Program Water Savings* (AF)</u>
1998	Yes			382.64	
1999	No	Yes	No	761.28	
2000	No	Yes	No	1125.33	
2001	No	No	No	1474.92	
2002	No	No	No	1810.60	
2003	Yes	No	No	2132.91	
2004	Yes	No	No	2442.40	
2005	No	No	No	2739.58	
2006	No	No	No	3024.92	
2007	No	No	No	3298.91	

*NOTE: Program water savings listed are net of the plumbing code. Savings are cumulative (not annual) between 1991 and the given year. Residential ULFT count data from unsubmitted forms are NOT included in the calculation.

BMP 14 COVERAGE STATUS SUMMARY:

Water supplier has not met one or more coverage requirements for this BMP.

BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit: Indian Wells Valley Water District

BMP 14 Paying Calculation Details Replacement (ROR) Original Water Savings

	Single Family	Multi-Family
1992 Housing Stock		
Average rate of natural replacement (% of remaining stock)	.04	.04
Average rate of housing demolition (% of remaining stock)	.005	.005
Estimated Housing Units with 3.5+ gpf Toilets in 1997	6218.80	2011.99
Average resale rate	.988	.94
Average persons per unit		
Average toilets per unit		
Average savings per home (gpd; from Exhibit 6)	41.9	53

Single Family Housing Units

Coverage Year	Unretrofitted Houses	Houses Sold	Houses Unsold	Sold and Retrofitted	Sold and Already Retrofitted	Unsold and Retrofitted	Gross ROR Savings (AFY)	Nat'l Replacement Only Savings (AFY)	Net ROR Savings (AFY)
1998	102.38	6113.45	74.25	6113.45		2.97	352.73	77.32	275.41
1999	1.69	6082.88	73.88	100.84	5982.24	0.05	357.46	88.47	268.98
2000	0.03	6052.47	73.51	1.66	6050.81	0.00	357.54	99.18	258.35
2001	0.00	6022.21	73.14	0.03	6022.18	0.00	357.54	109.47	248.07
2002	0.00	5992.10	72.78	0.00	5992.10	0.00	357.54	119.34	238.20
2003	0.00	5962.14	72.41	0.00	5962.14	0.00	357.54	128.82	228.72
2004	0.00	5932.33	72.05	0.00	5932.33	0.00	357.54	137.92	219.61
2005	0.00	5902.66	71.69	0.00	5902.66		357.54	146.66	210.87
2006		5873.15	71.33	0.00	5873.15		357.54	155.06	202.48
2007		5843.79	70.98		5843.79		357.54	163.11	194.42

Multi Family Housing Units

Coverage Year	Unretrofitted Houses	Houses Sold	Houses Unsold	Sold and Retrofitted	Sold and Already Retrofitted	Unsold and Retrofitted	Gross ROR Savings (AFY)	Nat'l Replacement Only Savings (AFY)	Net ROR Savings (AFY)
1998	125.37	1881.81	120.12	1881.81		4.80	138.88	31.64	107.23
1999	7.81	1872.40	119.52	117.26	1755.14	0.30	145.86	36.21	109.65
2000	0.49	1863.04	118.92	7.31	1855.73	0.02	146.29	40.59	105.70
2001	0.03	1853.73	118.32	0.46	1853.27	0.00	146.32	44.80	101.52
2002	0.00	1844.46	117.73	0.03	1844.43	0.00	146.32	48.84	97.48

2003	0.00	1835.24	117.14	0.00	1835.23	0.00	146.32	52.72	93.60
2004	0.00	1826.06	116.56	0.00	1826.06	0.00	146.32	56.44	89.88
2005	0.00	1816.93	115.97	0.00	1816.93	0.00	146.32	60.02	86.30
2006	0.00	1807.84	115.39	0.00	1807.84	0.00	146.32	63.46	82.86
2007	0.00	1798.81	114.82	0.00	1798.81	0.00	146.32	66.75	79.57

SECTION 4 – WATER SHORTAGE CONTINGENCY PLAN

Water Code Section 10632

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

Step 1: Stages of Action

The District is within an arid high desert region. Since the District relies exclusively on groundwater as its source of supply, and is therefore not subject to short term shortages caused by periodic drought, the following projections focus on equipment failure and disaster. In the past five years, the District has equipped seven of its twelve wells with emergency engine generators that enable the District to produce approximately 85% of its maximum day demands in the event of a regional power outage from the local service provider. The District has developed a Water Shortage Contingency Plan (Resolution 92-08, adopted April 27, 1992), which is incorporated in the IWVWD Emergency Action Plan.

The District has also developed a four-stage plan for implementing conservation measures in response to a water shortage, as defined above. The District's plan includes voluntary and mandatory stages. Triggering levels and allotments for each stage are described in the plan and summarize the actions IWVWD will take during a water supply catastrophe.

The District's current rate structure as provided in Ordinance No. 86 includes implementation provisions for the water shortage contingency measures described herein and is available for review at the District's office.

Rationing Stages and Reduction Goals

The District has developed a four-stage rationing plan (see Table 10) to invoke during declared water shortages. The rationing plan includes voluntary and mandatory rationing, depending on the causes, severity, and anticipated duration of the water supply shortage.

During any declared Water Shortage Emergency, a customer who exceeds the established allotment will pay a surcharge of two times the highest rate tier per hundred cubic feet (ccf) of water for excess water delivered during the first or second billing period, and a surcharge of four times the highest rate tier per ccf for excess water delivered during the third and subsequent consecutive billing periods.

Shortage Condition	Stage	Customer Reduction Goal	Type of Rationing Program
25 – 40%	1	15%	Voluntary
40 – 50%	2	25%	Voluntary
50 – 60%	3	30%	Mandatory
60% +	4	40%	Mandatory

Priority by Use

The District's priorities for use of available water during a water shortage are:

- A. Fire protection, health, and welfare emergency uses.
- B. Domestic - interior uses only (residential).
- C. Public buildings, schools - interior uses only.
- D. Commercial and Industrial - interior uses only.
- E. Commercial and Industrial - other uses (not including landscape watering or other nonessential use).
- F. Domestic - other uses (including exterior residential use).

Health and Safety Requirements

Based on commonly accepted estimates of interior residential water use in the United States, Table A indicates per capita health and safety water requirements. In Stage 1 and Stage 2 shortages, customers may adjust either interior or outdoor water use (or both), in order to meet the voluntary water reduction goal.

However, under Stage 3 and Stage 4 mandatory rationing programs, the District has established a health and safety allotment of 68 gallons per capita per day (gpcd) (which translates to 33 HCF per person per year), because that amount of water is sufficient for

essential interior water with no habit or plumbing fixture changes. If customers wish to change water use habits or plumbing fixtures, 68 gpcd is sufficient to provide for limited non-essential (i.e. outdoor) uses.

Stage IV mandatory rationing, which is likely to be declared only as the result of a prolonged water shortage or as a result of a disaster, would require that customers make changes in their interior water use habits (for instance, not flushing toilets unless "necessary" or taking less frequent showers).

Table A Per Capita Health and Safety Water Quantity Calculations						
Non-Conserving Fixtures	Habit		Habit Changes 1		Conserving Fixtures 2	
Toilets	5 flushes x 5.5 gpf	27.5	3 flushes x 5.5 gpf	16.5	5 flushes x 1.6 gpf	8.0
Shower	5 min x 4.0 gpm	20.0	4 min x 3.0 gpm	12.0	5 min x 2.0	10.0
Washer	12.5 gpcd	12.5	11.5 gpcd	11.5	11.5 gpcd	11.5
Kitchen	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Other	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Total (gpcd)		68.0		48.0		37.5
HCF per capita per year		33.0		23.0		18.0
1 Reduced shower use results from shorter and reduced flow. Reduced washer use results from fuller loads.						
2 Fixtures include ULF 1.6 gpf toilets, 2.0 gpm showerheads and efficient clothes washers.						

Water Shortage Stages and Triggering Mechanisms

The District has a civic and legal responsibility to provide for the water-related health and safety needs of the community. In order to minimize the social and economic impact of water shortages, the District will prudently manage water supplies. The Plan is designed to provide for a minimum of 50% of normal supply during a severe or extended water shortage. The rationing-program triggering levels outlined below ensure that these policy elements are implemented.

As documented previously, the District's sole water source is groundwater. Rationing stages may be triggered by a shortage in aquifer supply, equipment failure, or catastrophe. Because the stages overlap, the triggers will automatically implement the more restrictive stage, unless the District's Board of Directors decides to implement the

less restrictive stage. Shortages may trigger a stage at any time. The specific criteria for triggering the District's rationing stages are listed in Table B.

Table B Water Shortage Stages and Triggering Mechanisms				
Percent Reduction of Supply	Stage 1 25 – 40%	Stage 2 40 – 50%	Stage 3 50 – 60%	Stage 4 60% +
Water Supply Condition				
Current Supply	Total supply is 85 – 90% of "normal." And Below "normal" year is declared. Or	Total supply is 75 – 85% of "normal." Or Below "normal" year is declared Or	Total supply is 65 – 75% of "normal." Or Fourth consecutive below "normal" year is declared. Or	Total supply is less than 65% of "normal." Or Fifth consecutive below "normal" year is declared. Or
Future Supply	Projected supply insufficient to provide 80% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 75% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 65% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 50% of "normal" deliveries for the next two years. Or
Groundwater	No excess groundwater pumping undertaken. Or	First year of excess groundwater pumping taken, must be "replaced" within four years. Or	Second year of excess groundwater pumping taken, must be "replaced" within four years. Or	No excess groundwater pumping available. Or Reduced groundwater pumping due to replenishment of previously pumped groundwater. Or
Water Quality	Contamination of 10% of water supply (exceeds primary drinking water standards)	Contamination of 20% of water supply (exceeds primary drinking water standards)	Contamination of 30% of water supply (exceeds primary drinking water standards)	Or
Disaster Loss				Disaster Loss

Water Allotment Methods

The District has established the following allocation method for each customer type. The specific levels are defined in Table 10 and Appendix D.

Single Family: Hybrid of Per-capita and Percentage Reduction (In the mandatory stages [3 and 4], the health and safety allotments are determined on a per-capita

basis; in the less restrictive voluntary stages [1 and 2], a percentage reduction is requested from each service.)

Multi-Family: Hybrid of Per-capita and Percentage Reduction

Commercial/Industrial/Institutional: Percentage Reduction

Landscaping: Percentage Reduction

New Demand: Hybrid of Per-capita and Percentage Reduction, or Percentage Reduction depending on type of service.

Individual customer allotments will be based on a five-year base period. This gives the District a more accurate view of the usual water needs of each customer and provides additional flexibility in determining allotments and reviewing appeals. However, no allotment will be greater than the amount used in the most recent year of the five-year base period.

The District's General Manager will classify each customer and calculate each customer's allotment according to the methods described in Appendix D. The allotments will reflect seasonal patterns. Each customer will be notified of their classification and allotment by mail before the effective date of the Water Shortage Emergency. New customers will be notified at the time service commences. In a disaster, prior notice of allotment may not be possible. In this case, notice will be provided by other means, such as radio, television, and newspaper. Any customer may appeal the General Manger's classification on the basis of use or the allotment on the basis of incorrect calculation; the appeals process is also set forth in Appendix D.

Step 2: Estimate of Minimum Supply for Next Three Years

Water Code Section 10632

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

The District is located in an arid high desert area and relies exclusively on groundwater as its source of supply and periodic drought does not appear to affect the groundwater levels.

Table 11. Three-Year Estimates Minimum Water Supply – AF/Yr

Source	Year 1	Year 2	Year 3	Normal
Groundwater	8,900	8,900	8,900	8,900
Total	8,900	8,900	8,900	8,900

Step 3: Catastrophic Supply Interruption Plan

Water Code Section 10632

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

The Catastrophic Supply Interruption Plan is coordinated with other emergency services including police, fire, medical services, other utilities, as well as county, state and federal agencies. The plan includes procedures for reportable emergency incidences, notifications, boil water orders, unsafe water alerts and emergency chlorination.

EMERGENCY SITUATION RESPONSE AND EVALUATION:

STEP 1: The priority response to any degree of disaster, prior to plant evaluation, is to shut and lock off the inlet and outlet valves of the Bowman #1 High-Level storage tank on West Bowman Road. This tank is one of three high-level storage tanks in A-Zone, which supply water to the District's main distribution grid. The isolation of this tank will have minimal effect on the hydraulics of the system and can be left off, pending evaluation of the distribution mains.

STEP 2: Evaluate the integrity of the District's remaining high-level storage tanks and the quantity of water still contained therein.

STEP 3: Coordinate the personnel available for use in the emergency and establish District communication. Then establish communication with other local governmental and law enforcement agencies.

STEP 4: Evaluate the damage done to the rest of the District's plant, including wells and distribution mains.

****** Mains which are damaged will be assumed to be contaminated, and therefore will not be put back into service immediately.**

If system evaluation shows a loss of capacity, then depending on the amount of capacity lost, it might be necessary to valve off additional high-level storage tanks to protect the system from loss of stored water.

The general priorities for valving off additional high-level storage are:

1	College Tank	600,000 Gallons
2	C-Zone Tank	450,000 Gallons
3	Gateway Tank	600,000 Gallons

and in a drastic situation:

4	Kendall Tank	2,000,000 Gallons
5	R/C Heights Tank	3,000,000 Gallons

As soon as the plant evaluation is complete, the District will communicate necessary information to the Police & Sheriff's Departments, and the public. If plant integrity is found to be good, any storage tanks valved off can be put back online, as needed.

Storage:

#	VOL (GALS.)	NAME	ZONE	LOCATION
1	1,000,000	GROUND	GROUND "A"	JACKS RANCH ROAD
2	2,000,000	BOWMAN # 1	A	W. BOWMAN ROAD
3	5,000,000	BOWMAN # 2	A	W. BOWMAN ROAD
4	2,000,000	KENDALL	A	KENDALL STREET
5	3,000,000	R/C HEIGHTS	B	KENDALL & BRADY
6	600,000	COLLEGE	E	EAST OF CERRO COSO CLG.

7	400,000	C-ZONE	C	FIRE OPAL STREET
8	600,000	GATEWAY	B	GATEWAY & JAVIS
9	100,000	SALISBURY	D	BELLE VISTA & RICHMOND

Table 12. Preparation Actions for a Catastrophe

Possible Catastrophe	Summary of Actions
Regional Power Outage Earthquake Any Natural Disaster	<ul style="list-style-type: none"> ▪ Emergency power generation ▪ Implement Emergency Response Plan for managing man-power, operations and equipment ▪ Mandatory conservation measures and rationing

Step 4: Prohibition, Penalties and Consumption Reduction Methods

Water Code Section 10632

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(f) Penalties or charges for excessive use, where applicable.

Mandatory Prohibitions on Water Wasting

The District's Ordinance No. 72 prohibits consumers from permitting leaks or waste of water. To further clarify this prohibition, the City of Ridgecrest also adopted a City "No Waste" Ordinance in 1990. The District's Water Shortage Contingency Plan includes prohibitions on various wasteful water uses such as lawn watering during mid-day hours, washing sidewalks and driveways with potable water, and landscape design.

See Section 4, Step 6, the "No Waste" Ordinance and Moratorium on New Connections - which details the reduction methods - regarding Table 13.

Table 13 Consumption Reduction Methods	
Examples of Consumption Reduction Methods	Stage When Method Takes Effect
Demand reduction program	All stages
Reduce pressure in water lines	
Flow restriction	4
Restrict building permits	2, 3, 4
Restrict for only priority uses	
Use prohibitions	All stages
Water shortage pricing	All stages
Per capita allotment by customer type	4
Plumbing fixture replacement	
Voluntary rationing	1
Mandatory rationing	2, 3, 4
Incentives to reduce water consumption	
Education Program	All Stages
Percentage reduction by customer type	2, 3, 4
Use non-potable water for construction purposes	All Stages
Other	

Excessive Use Penalties

The District's current rate structure is provided in Ordinance No. 86, which is incorporated herein by reference and is available for review at the District's office. During any declared Water Shortage Emergency, a customer who exceeds the established allotment will pay a surcharge of two times the highest rate tier per hundred cubic feet (ccf) of water for excess water delivered during the first or second billing period, and a surcharge of four times the highest rate tier per ccf for excess water delivered during the third and subsequent consecutive billing periods.

As used herein, "excess water" means the amount of water delivered in excess of the specific customer's established allotment during any billing period; however, if a customer's total annual usage is equal to or less than the annual allotment, any surcharge payments will be refunded to the customer. A similar adjustment will be made for each successive twelve-month period during the term of the rationing program; if the program is terminated prior to a full twelve-month term, the adjustment will be pro-rated.

If a customer exceeds the allotted usage for three consecutive billing periods, the District will install a flow restrictor at the service meter with a capacity of two gpm for meters up to one and one-half inch size, and comparatively sized restrictors for larger meters, for a

period of seven days. The customer must pay a flow restrictor installation and removal charge of \$100 before the normal service will be restored.

Service may be terminated to any customer who knowingly and willfully violates any of the provisions of the Water Shortage Plan.

Step 5: Analysis of Revenue Impacts of Reduced Sales During Shortages

Water Code Section 10632

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

The District's normal annual income from water sales is approximately \$6,400,000. Surplus revenues are placed in the District's reserve, which is used to fund emergency repairs, the mainline replacement program, and water system capital improvements. The District maintains a financial reserve that is adequate to address the costs of multiple plant repairs. The District does not project an actual impact on water sales due to shortages; and is adequately funded to respond to emergencies.

Normal Monitoring Procedure

In normal water supply conditions, production figures are recorded daily in the District's computerized database. Total production and consumption are reported monthly to District management and incorporated into the Water Supply Report. The tank levels and pumping plants are monitored on a continuous basis by telemetry at the District's headquarters, with alarms for abnormal conditions.

Stage 1 and 2 Water Shortages

During a Stage 1 or 2 water shortage, daily production figures will be reported to the Operations Superintendent, who will compare the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports will be forwarded to the General Manger.

Water Shortage Response Team

Monthly reports will be provided to the Board of Directors and to the Customer Accounts Department; the latter will serve as the District's Water Shortage Response Team. If reduction goals are not met, the Water Shortage Response Team will examine individual customer usages and corrective action will be taken.

Stage 3 and 4 Water Shortages

During a Stage 3 or 4 water shortage, the procedure listed above will be followed, with the addition of a daily production report to the General Manager.

Disaster Shortage

During a disaster shortage, production figures will be reported to the Operations Superintendent hourly, and to the General Manager and the Water Shortage Response Team daily. Reports will also be provided to the Indian Wells Valley Emergency Services Council.

Implementing a water shortage program will require the District to take the following steps:

- Revise the District's Water Sales and Service Policy Manual and authorizing ordinance - to adjust the rate structure for water sales so that customers are charged a surcharge for water usage outside of their allotments. If appropriate, penalty charges and fines can be established for excess water usage and/or waste violations.
- Add staff to classify and calculate each customer's allotment, to monitor usage and to respond to non-business hour reports and violations.
- Modify the billing system software to accommodate the water allotment rate schedule and assessment of fines according to the revised Sales and Service Manual. Enhance programming to trigger the automatic printing of customer notices/violations/reports when a customer's consumption is calculated to be outside of District-allowed parameters.
- Increase customer awareness by providing public communications in multi-media formats (including, but not limited to radio, television and newspaper.) A full-scale

publicity campaign to broadcast the water shortage contingency plan will be vital to the success of this effort.

In the event of a short-term shortage of six months or less, the District has established an emergency reserve equal to six months of operating expenses less depreciation. The use of this reserve is intended to guard the District from the temporary effects of reduced revenues and increased expenses. Should the shortage be expected to extend past six months, a change to the regular rate structure would be pursued to responsibly budget for the District's continued operations during the shortage.

Step 6: Draft Ordinance and Use Monitoring Procedure

Water Code Section 10632

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

- (h) A draft water shortage contingency resolution or ordinance.
- (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

RESOLUTION TO DECLARE A WATER SHORTAGE EMERGENCY (DRAFT)

INDIAN WELLS VALLEY WATER DISTRICT
KERN AND SAN BERNARDINO COUNTIES, CALIFORNIA
Date

The District Board of Directors of the Indian Wells Valley Water District does hereby resolve as follows:

PURSUANT to California Water Code Section 350 et seq., the Board has conducted duly noticed public hearings to establish the criteria under which a water shortage emergency may be declared.

WHEREAS, the Board finds, determines and declares as follows:

- (a) The District is the water purveyor for the property owners and inhabitants of portions of Kern and San Bernardino Counties;
- (b) The demand for water service is not expected to lessen.
- (c) When the combined total amount of water supply available to the District from all sources falls at or below the Stage 3 triggering levels described in the 2005 Urban Water Management Plan, the District will declare a water shortage emergency. The water supply would not be adequate to meet the ordinary demands and requirements of water consumers without depleting the District's water supply to

the extent that there may be insufficient water for human consumption, sanitation, fire protection, and environmental requirements. This condition is likely to exist until precipitation and inflow dramatically increases or until water system damage resulting from a disaster are repaired and normal water service is restored.

NOW, THEREFORE, BE IT RESOLVED that the District Board of Directors of the Indian Wells Valley Water District hereby directs the General Manager to find, determine, declare and conclude that a water shortage emergency condition exists that threatens the adequacy of water supply, until the District's water supply is deemed adequate. After the declaration of a water shortage emergency, the General Manager is directed to determine the appropriate Rationing Stage and implement the District's Water Shortage Emergency Response.

FURTHERMORE, the Board shall periodically conduct proceedings to determine additional restrictions and regulations which may be necessary to safeguard the adequacy of the water supply for domestic, sanitation, fire protection, and environmental requirements.

DRAFT MORATORIUM ON NEW CONNECTIONS DURING A WATER SHORTAGE

INDIAN WELLS VALLEY WATER DISTRICT
KERN AND SAN BERNARDINO COUNTIES, CALIFORNIA

Date

The District Board of Directors of the Indian Wells Valley Water District does hereby resolve as follows:

The Municipal Code of the Indian Wells Valley Water District is hereby amended to read as follows:

XX-1 MORATORIUM ON SERVICE COMMITMENTS AND CONNECTIONS

1. When the District declares a water shortage emergency, the following regulations shall become effective immediately and shall continue in full force and effect to prohibit the following while it remains in full force and effect:
 - a. The District shall not issue oral or written commitments to provide new or expanded water service, including will-serve letters.
 - b. The District shall not sell meters for water service connections, despite the prior issuance of will-serve letters or other oral or written service commitments, unless building permits have been issued.
 - c. The District shall not provide new or expanded water service connections, despite the prior issuance of will-serve letters or other oral or written service commitments and meters, unless building permits have been issued.
 - d. The District shall not provide water for use on any new plantings installed after the declaration of a Water Shortage Emergency.
 - e. The District shall not annex territory located outside the District's service boundary.

2. The following uses are exempt from the moratorium and upon application to the District shall receive necessary water service commitments and connections to receive water from the District:
 - a. Uses, including but not limited to, commercial, industrial, single and multifamily residential, for which a building permit has been issued on or before the declaration of a Water Shortage Emergency.
 - b. Uses, including but not limited to, commercial, industrial, single and multifamily residential, for which a retail meter had been purchased from the District before the declaration of a Water Shortage Emergency, as evidenced by a written receipt and for which a building permit has been issued and remains in full force and effect.
 - c. Publicly owned and operated facilities, including but not limited to schools, fire stations, police stations, and hospitals and other facilities as necessary to protect the public health, safety and welfare.

Water Shortage Contingencies Customer Allotments and Appeals Procedures

The following is the Indian Wells Valley Water District's (District) rationing allocation method (arranged by customer type and stage) and the appeals procedure. It should be noted that the allotment figures indicated in Stages 3 and 4 are given in terms of hundred cubic feet (ccf), which is the standard measurement for water deliveries and is indicated on the District's water bills and water meters; 1 ccf is equivalent to 748 gallons of water. The minimum water allotment for residential customers is based on a minimum quantity that is required for health and safety needs (e.g. drinking, personal hygiene); the District has established said minimum quantity as 68 gallons per capita per day (gpcd).

Stage 1: Minimal shortage (25 to 40 percent)

Stage 2: Moderate shortage (41 to 50 percent)

In the event that a minimal or moderate water shortage occurs, the District will implement the voluntary measures outlined below:

1. All customers will be notified of the water shortage.
2. Information will be mailed to every customer, which will explain the importance of significant water use reductions.
3. Technical information will be provided to the District's customers regarding methods for improving water use efficiency.
4. The District will conduct media campaign to remind consumers of the need to save water.
5. The District will publicize and expand appliances and fixtures efficiency programs.

Stage 3: Severe shortage (51 to 60 percent)

Stage 4: Critical shortage (60+ percent)

In the event that a severe or critical water shortage occurs, the District will establish mandatory annual allotments for each connection based on average use during a three-year base period that will supplement the voluntary measures outlined above; said base period will be selected by the Water Shortage Response Team.

1. Each single-family residential connection will receive no more than 103 ccf per year (68 gpcd minimum water requirement x 3.1 persons per household x 365 days = 76,942 gallons – 748 = 103 ccf) plus 20% of average annual usage in excess of 103 ccf.
2. Each multi-family residential connection will receive no more than 76 ccf per year (68 gpcd minimum water requirement x 2.3 persons per dwelling unit x 365 days = 57,086 gallons – 748 = 76 ccf) per dwelling unit plus 20% of average annual usage in excess of 76 ccf.
3. Each commercial, industrial, and governmental connection will receive no more than 70% of average annual usage.
4. Each account that has been identified as a landscape connection will receive 20% of average annual usage, unless the specific account has been determined by District staff to meet the District's Landscape Guidelines for Xeriscape design, irrigation, and maintenance, in which case it will receive 70% of average annual usage.
5. No meters will be installed for new accounts during the declared water shortage emergency.

Appeals Procedure

1. Any person who wishes to appeal their customer classification or allotment must do so in writing, using forms provided by the District.
2. Appeals will be reviewed by the Water Shortage Response Team; and site visits will be scheduled if required.
3. One of the conditions of approval will be that all applicable plumbing fixtures or irrigation systems be replaced or modified for maximum water conservation.
4. Increased allotments may be approved for the following:
 - a. Substantial medical requirements.

- b. Residential connections with four or more residents in a single-family household, or three or more residents per unit in a multi-family residence. These connections can receive additional allotments based upon the same calculations used for the standards applied in Stages 3 and 4 per additional person. During a Stage 4 shortage, a census may be conducted to determine the actual number of residents per dwelling unit. Additional water will be approved for permanent residents only; permanent residents are defined as people who live in the specific residence a minimum of five days per week, nine months per year.
 - c. Commercial/Industrial customers for which water supply reductions will result in unemployment or decreased production; a District water auditor must first confirm that the customer has instituted all applicable water efficiency improvements.
 - d. Non-agricultural customers can appeal for an additional allotment of 12 ccf per year per horse, cow, or other large animal, and 6 ccf per year for each efficiently irrigated mature fruit tree.
 - e. Government agencies (parks, schools, county, etc.) may have separate account allotments combined into one "agency" allotment.
5. In the event that an appeal for an additional allotment is requested for irrigation of trees or vegetation in residential categories or for any agricultural use, the District staff may use the services of a qualified consultant in determining the validity of the request.
 6. The Water Shortage Response Team will approve or deny appeals and report all appeals to the District's Board of Directors monthly.
 7. If the Water Shortage Response Team and the applicant are unable to reach agreement, the appeal will then be heard by the District's General Manager, who will make the final determination.
 8. All appeals will be reported monthly to the District's Board of Directors as a part of the Water Supply Report.

SECTION 5 – RECYCLED WATER PLAN

Step 1: Coordination

Water Code Section 10633

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area....

Table 14. Participating Agencies

Participating Agencies	Role in Plan Development
Water agencies	Was not involved in plan development.
Wastewater agencies	City of Ridgecrest is responsible for wastewater generation, collection, and treatment.
Groundwater agencies	Not applicable.
Planning Agencies	Not applicable.
Other	An agreement has been established between the City of Ridgecrest and NAWS China Lake for coordination with facilities in exchange for use of recycled water on the Navy Base.

Step 2: Wastewater Quantity, Quality and Current Uses

Water Code Section 10633

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

City of Ridgecrest

All wastewater collected is conveyed through regional wastewater conveyance facilities (trunk sewer, lift station, and force main) to the City of Ridgecrest's Regional Wastewater Treatment Plant. It is not currently possible to purvey reclaimed water within the District's boundary.

Wastewater, Collection and Treatment

The City of Ridgecrest is responsible for wastewater, collection and treatment. The wastewater treatment facility is located on the Naval Air Weapons Station, China Lake and treats in the range of 915 to 1,094 million gallons of wastewater per year. Over the past ten years, there has been a significant decrease in the amount of wastewater collected and treated, with only 924.44 million gallons of wastewater collected and treated in the 2004 calendar year.

Methods of Wastewater Disposal

In the current system, wastewater is treated through a secondary treatment process. Of the total volume of wastewater collected and treated, the United States Navy has an allotment of 243.75 million gallons per year. The Navy's actual use, however, is typically in the range of 160 million gallons of wastewater per year. The Navy then processes the secondary treated effluent through a chlorination process and uses the recycled water to irrigate a golf course located on Navy property. Sixty-two million gallons of the secondary treated effluent is sent to an alfalfa farm managed by the City of Ridgecrest. The remainder of the treated material is evaporated or percolated in the evaporation and facultative ponds. There is a requirement that an adequate amount of water remain in the evaporation ponds at all times to provide enough percolation into a nearby seep which needs to supply enough water for an endangered species of fish. During the warmer months there is only enough effluent to supply the Navy and the endangered fish.

Step 3: Potential and Projected Use, Optimization Plan with Incentives

Water Code Section 10633

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service

area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

Potential Uses of Recycled Water

The list of types of use for which reclaimed water is approved within California is continuing to grow as the value of wastewater reclamation as a reliable water resource is being more widely recognized. The California Department of Health Services which is responsible for Title 22 of the California Administrative Code and which establishes wastewater reclamation is nearing the end of a multi-year process to update the regulations. Many agencies throughout the state of California have been looking for new areas to put reclaimed water to beneficial use rather than waste it. Historically, both the regulatory agencies and the agencies operating reclaimed water systems have addressed controlled irrigation use as the primary use for reclaimed water. More recently, both have recognized the safety and benefit of industrial uses such as process water and cooling tower makeup water, commercial uses such as flushing of toilets in commercial buildings and widened irrigation uses such as for raw edible food crops and landscape irrigation under individual homeowner control.

The bulk of potential uses fall into landscape irrigation such as medians, freeway landscape, schools, cemeteries and parks. Equestrian properties may also have some potential use for recycled water. It is difficult to quantify potential uses of the recycled water due to the seasonal variations in the supply. There is not a constant source of supply beyond what is already committed to the Navy, the endangered fishponds, and the

City's alfalfa farm. Even in times where there is a temporary surplus of the recycled water supply, this would require tertiary treatment, which is not currently feasible due to financial constraints. According to the City of Ridgecrest, tertiary treatment costs are approximately \$1.25 to \$1.39 per gallon, which is apparently not a City budgeted item.

Review of the Recycled Water Plan

Although the District has the authority to accept, treat, and deliver wastewater effluent as reclaimed water, it does not have access to wastewater effluent, which is currently under the jurisdiction of the City of Ridgecrest. The District has advised the City that it may be prepared to produce and distribute reclaimed water, using the City's treated wastewater effluent as the source of supply.

Treated wastewater effluent will be available to the District only if the City is unable to adequately dispose of its treated wastewater effluent as required by the California Regional Water Quality Control Board (RWQCB) - Lahontan Region. The City and the District are each interested in reclaiming treated wastewater effluent for non-potable water supply purposes. If the City is unable to use all of its treated wastewater effluent, that which cannot be used may become available to the District. The District is ready to make use of any treated wastewater effluent that becomes available to it, provided such use is economically feasible.

SECTION 6: WATER QUALITY IMPACTS ON RELIABILITY

Water Code Section 10634

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

The Indian Wells Valley Water District currently uses groundwater as its sole source of supply. A sizeable area of the aquifer is characterized by brackish water. Concern for the infiltration of lower quality water into higher quality water areas plays highly into water management strategies due to the gradient between the areas. The location of wells and management of water production is being used as a management strategy to spread out the pumping in order to relieve any pumping depressions in such areas and thereby protect the higher quality water.

Beginning in 2006, the District expects that it will be required to treat at least 36% of its wells for arsenic reduction to meet the new standard for Maximum Contaminant Levels. This requirement has an adverse impact on supply reliability in the event of an operating failure at treatment facilities. The District intends to mitigate for this potential adverse impact through redundancy in both treatment facilities and with additional wells.

As indicated previously, the District is currently conducting a feasibility study for treatment of brackish water from the northwest part of Indian Wells Valley. The study, which is being conducted for the District by an outside consultant, will evaluate treatment alternatives and produce a preliminary design report. The District expects to have a more detailed understanding of this source of supplemental water supply, including projected quantity of annual supply with projected time lines for start and completion of the project upon completion of the study. The projected effect of treating brackish water beginning in the year 2015 would possibly reduce the use of untreated groundwater by the same amount. This is shown in Table 15 as a shift of 15% between untreated groundwater and treated brackish water.

Table 15. Current & Projected Water Supply Changes Due to Water Quality – Percentage

Water Source	2005	2010	2015	2020	2025	2030
Groundwater (Untreated)	0%	0%	-15%	-15%	-15%	-15%
Treated Brackish Water	0%	0%	15%	15%	15%	15%

SECTION 7: WATER SERVICE RELIABILITY

Step 1: Projected Normal Water Year Supply and Demand

Water Code Section 10635

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Based on the fact that the District's sole source of water supply is groundwater in storage, normal water year supply is not affected by wet or dry year climate conditions. Therefore, the District is confident that it will meet projected water demands through and beyond 2030. The following table is based on current water production facilities total combined production capacity. The number remains the same although additional facilities will be constructed as needed.

Table 16. Projected Normal Water Year Supply – AF/Yr

	2010	2015	2020	2025	2030
Supply	20,000	20,000	20,000	20,000	20,000
% of Normal Year	100%	100%	100%	100%	100%

Table 17. Projected Normal Water Year Demand – AF/Yr

	2010	2015	2020	2025	2030
Demand	10,567	11,881	12,976	13,318	13,681
% of Year 2005	106%	119%	130%	134%	137%

Table 18. Projected Normal Year Supply and Demand Comparison – AF/Yr

	2010	2015	2020	2025	2030
Supply Totals	20,000	20,000	20,000	20,000	20,000
Demand Totals	10,567	11,881	12,976	13,318	13,681
Difference (Supply minus Demand)	9,433	8,119	7,024	6,682	6,319
Difference as % of Supply	47%	41%	35%	33%	32%
Difference as % of Demand	11%	32%	45%	50%	54%

Step 2: Projected Single-Dry-Year Supply and Demand Comparison

Based on the fact that the District's normal water year supply is not affected by wet or dry year climate conditions, the District is confident that it will meet projected water demands.

Table 19. Projected Single Dry Year Water Supply – AF/Y

	2010	2015	2020	2025	2030
Supply	20,000	20,000	20,000	20,000	20,000
% of Projected Normal	100%	100%	100%	100%	100%

Table 20. Projected Single Dry Year Water Demand – AF/Y

	2010	2015	2020	2025	2030
Demand	10,567	11,881	12,976	13,318	13,681
% of Projected Normal	100%	100%	100%	100%	100%

Table 21. Projected Single Dry Year Supply and Demand Comparison – AF/Y

	2010	2015	2020	2025	2030
Supply Totals	20,000	20,000	20,000	20,000	20,000
Demand Totals	10,567	11,881	12,976	13,318	13,681
Difference (Supply minus Demand)	9,433	8,119	7,024	6,682	6,319
Difference as % of Supply	47%	41%	35%	33%	32%
Difference as % of Demand	11%	32%	45%	50%	54%

Step 3: Projected Multiple-Dry-Year Supply and Demand Comparison

Based on the fact that the District's normal water year supply is not affected by wet or dry year climate condition because the District is located in an arid high desert, the District is confident that it will meet projected water demands.

SECTION 8: ADOPTION AND IMPLEMENTATION OF UWMP

Water Code Section 10640

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

Water Code Section 10641

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

Water Code Section 10642

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

Water Code Section 10643

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

Water Code Section 10644

10644. (a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the outstanding elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

Water Code Section 10645

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Review of the Demand Management Measures Implementation Plan

The Indian Wells Valley Water District has implemented its Demand Management Measures as stated in the 2000 Urban Water Management Plan. The following Best Management Practices, however, are not currently being implemented as the District has applied for exemptions from such practices for the reasons stated in the section entitled Demand Management Measures:

- 1: Residential Surveys
- 6: High Efficiency Washing Machine Rebate Program
- 9 (b-d): Conservation Programs for Commercial, Industrial and Institutional Accounts
- 10: Wholesale Agency Assistance Programs
- 13: Water Waste Prohibition
- 14: Residential Ultra Low-Flow Toilet Replacement Programs

Draft Resolution

RESOLUTION OF THE BOARD OF DIRECTORS OF THE INDIAN WELLS VALLEY WATER DISTRICT, KERN AND SAN BERNARDINO COUNTIES, CALIFORNIA, ADOPTING THE 2005 URBAN WATER MANAGEMENT PLAN.

WHEREAS the California Legislature enacted the Urban Water Management Planning Act (Water Code Section 10610 et seq.), which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS the District is an urban supplier of water providing water to a population over 27,000, and

WHEREAS the Plan must be updated at least once every five years; and

WHEREAS the Plan must be adopted by the Board of Directors, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, District staff has, therefore, prepared and made available to the public for inspection a proposed Urban Water Management Plan dated ____ 2005, in compliance with the requirements contained in Part 2.6 of Division 6 of the Water Code of the State of California; and

WHEREAS, the aforesaid plan is entitled "Indian Wells Valley Water District 2005 Urban Water Management Plan";

WHEREAS, this Board of Directors duly called and noticed a public hearing on the aforesaid plan to be held on _____, 2005, at the hour of 7:00 PM; and

WHEREAS, Notice of Hearing has been provided in accordance with the law and a Notice of Hearing was duly published pursuant to Section 6066 of the Government Code of the State of California; and

WHEREAS, the aforesaid hearing called by the Board of Directors has been duly held and concluded.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by this Board of Directors, as follows:

Section 1. That all the foregoing is true and correct.

Section 2. That the aforesaid Indian Wells Valley Water District 2005 Urban Water Management Plan is hereby adopted.

All the foregoing being on the motion of Director _____, seconded by Director _____, and authorized by the following vote, namely:

AYES:

NOES:

ABSENT:

ABSTAIN:

I HEREBY CERTIFY that the foregoing resolution is the resolution of Indian Wells Valley Water District as duly passed and adopted by said Board of Directors at a legally convened meeting held on the ____ day of November, 2005.

WITNESS my hand and the official seal of said Board of Directors this ____ day of November, 2005.

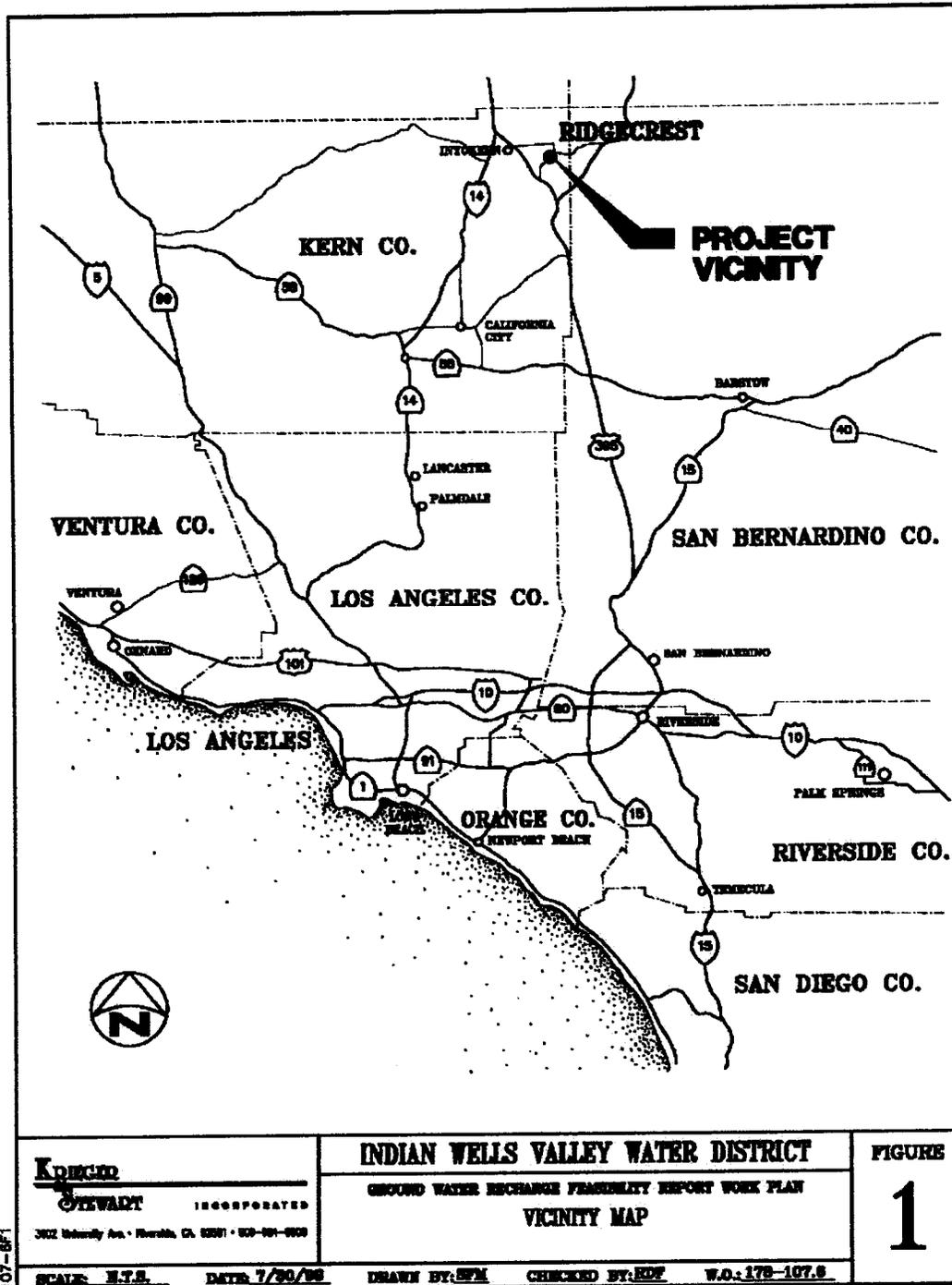
President of the Indian Wells Valley Water
District and of the Board of Directors thereof.

Secretary of the Indian Wells Valley Water
District and of the Board of Directors thereof.

(SEAL)

FIGURES

Figure 1. Vicinity Map



107-8F1

Figure 2. District Boundary Map

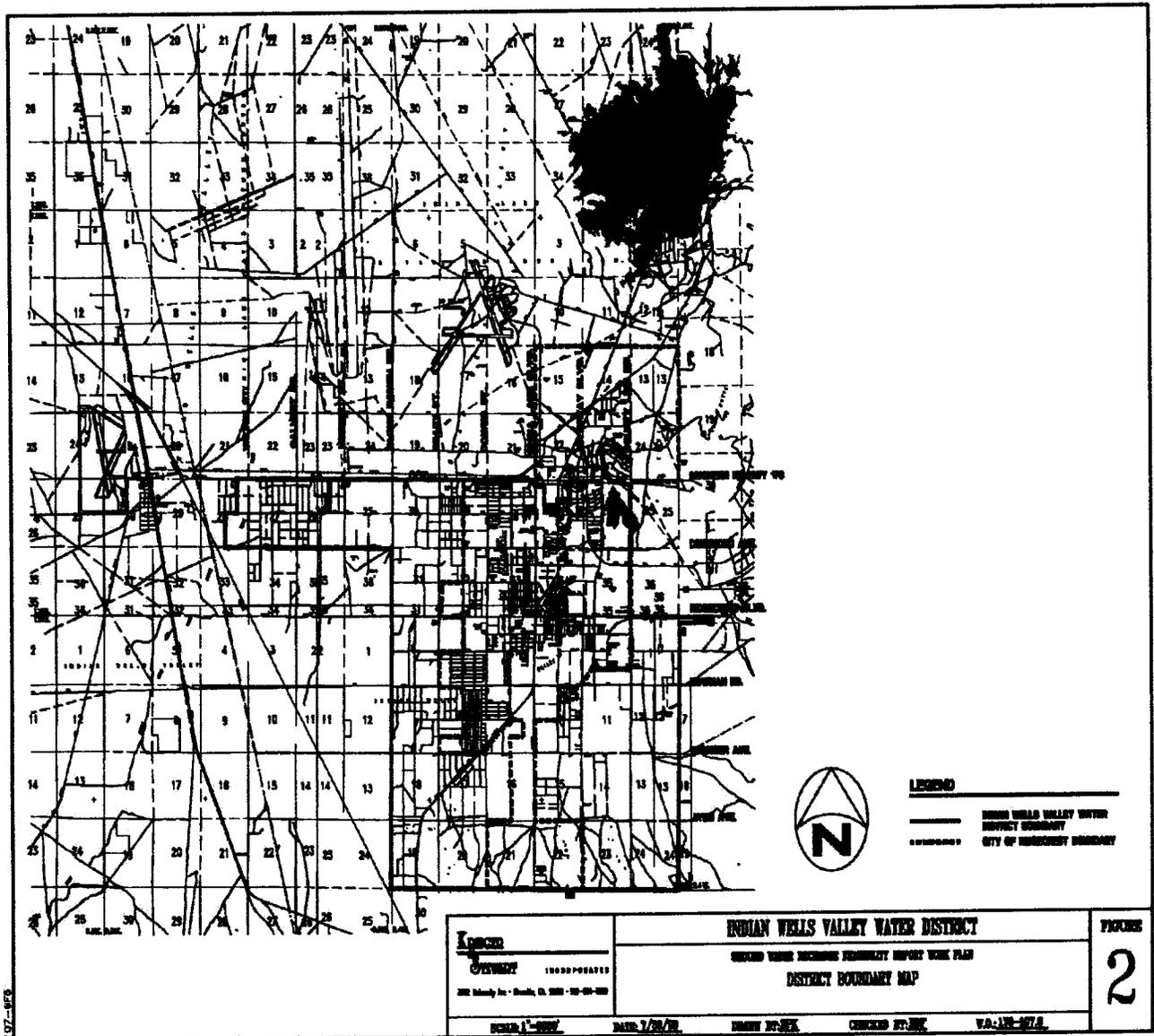


Figure 3. Indian Wells Valley Cooperative Groundwater Management Plan

Cooperative
Groundwater Management
Plan for the
Indian Wells Valley

Preamble:

The groundwater aquifer system in the Indian Wells Valley (as shown on Figure #1) is complex and the supply is limited. Substantial data is available regarding groundwater production in the Valley but only limited data exist pertaining to aquifer characteristics. While considerable data has been collected through individual and cooperative technical studies, there is still a need for additional information to further characterize the watershed and to support the management of the aquifer system in the Valley.

A large scale cooperative groundwater technical study was recently completed in the Indian Wells Valley. The results of this effort contributed valuable insights to the nature of the Valley's groundwater reserves. Based on the results of this study, the major participants in the study (the Indian Wells Valley Water District, Naval Air Weapons Station/China Lake, North American Chemical Company) and the other Parties have concluded that it is in their individual best interests to participate in the development of this Cooperative Groundwater Management Plan (the "Plan") to extend the useful life of the groundwater reserves to meet current and foreseeable user needs in the Valley.

Purpose:

The purpose of this Plan is to:

- 1) set forth guidelines and management principles for the production, distribution, and use of groundwater within the purview of the participants;
- 2) further develop (cooperatively or individually) the technical data and analytical capabilities to better understand the nature and characteristics of the watershed and aquifer system,

3) apply these guidelines toward sound management practices to extend the useful life of the groundwater resource to meet current and foreseeable future demands;

4) coordinate interested local agencies and water producers into a cooperative planning effort to share information and management practices to maintain the life of the resource.

The Parties agree that, within the framework established by this Plan, the Parties themselves are best able to determine how to meet their respective future water supply needs and assure the availability of a long-term, high quality water supply.

The Parties recognize the varied beneficial uses of water within the Valley, including residential, agricultural, industrial, municipal, commercial and public. In addition, North American Chemical Company currently exports water from the Valley. Groundwater planning for the Valley must take these existing uses into account.

This Plan is not intended to alter or affect any existing water rights, and no Party, by executing this Plan, waives any of its rights.

This Plan is intended to be a flexible document. As more groundwater information becomes available through technical studies, data collection and analysis, and experience in interpreting the effects of pumping pattern changes it is expected, and agreed, that this Plan will be modified accordingly.

Planning Concerns:

The following concerns have provided the incentive to the Parties for participating in a cooperative planning effort in the Indian Wells Valley.

- 1) Water levels have declined in areas within the Valley.
- 2) As depth to groundwater increases, production and distribution costs will increase.
- 3) As depth to groundwater increases, the potential exists for poorer quality water to mix with and degrade higher quality water.
- 4) Some portion of the recharge to the Valley from the Sierra Nevada Mountains may be lost to evaporation in the China Lake Playa.
- 5) Our understanding of the complex hydrology of the Valley is based on groundwater quantity and quality data available from current production areas. The recharge and discharge characteristics of the

aquifer are not fully understood. Adequacy of the known groundwater reserves to meet future demands remains unclear.

Planning Objectives /Groundwater Management Guidelines:

In an effort to successfully address the aforementioned concerns, the Parties' actions will be directed toward the following groundwater management objectives:

Planning Objective #1: Limit additional large scale pumping in areas that appear to be adversely impacted.

No Party will increase its annual production of water from the groundwater depression identified in Figure #2 (applies to extractions greater than 5 AF/yr.). The Parties' long-term goal is to limit new and reduce existing production in this area to the fullest extent possible over an economically reasonable time frame.

Planning Objective #2: Distribute new groundwater extraction within the Valley in a manner that will minimize adverse effects to existing groundwater conditions (levels and quality), and maximize the long-term supply within the Valley.

Future groundwater development by the Parties will be distributed within the Valley in a manner that is designed in accordance with aquifer characteristics. The Parties will consider developing, to the fullest extent possible, individually or as a cooperating group, wells in the outlying areas of the Valley. Areas such as Indian Wells Valley Water District's proposed southwest field should be considered as should wells designed to capture recharge from the Coso and Argus Mountains. An objective in locating wells will be to attempt to capture recharge which would otherwise be lost to evaporation in the playas and to prevent migration of poorer quality water from the playas to the wells. As a general planning guideline, new production wells (excluding domestic wells) should be spaced no closer than one mile apart and should be limited to 1,200 (plus or minus 300) gallons per minute unless it can be established through aquifer testing that local aquifer and drawdown characteristics can support closer well spacing.

Each of the Parties will plan the location and size of its new wells so as not to unreasonably interfere with existing wells.

Planning Objective #3: Aggressively pursue the development and implementation of water conservation policy and education programs.

The Parties will develop (individually or collectively) a written policy regarding water conservation and develop, to the extent practicable, water conservation guidelines and education programs.

Planning Objective #4: Encourage the use of treated water, reclaimed water, recycled, gray and lower quality water where appropriate and economically feasible.

The Parties will consider, individually or collectively, use of non-potable water, such as treated sewage effluent or poorer quality sources, for appropriate re-use applications. The Parties will consider constructing, individually or collectively, recharge facilities including spreading basins and other types of facilities to capture and conserve storm water flows to augment efforts to replenish groundwater reserves. Water treatment and blending of different quality waters should be pursued to extend the useful life of the groundwater resource.

Planning Objective #5: Explore the potential for other types of water management programs that are beneficial to the Valley.

The Parties will consider, individually or collectively, projects such as water transfers, water banking, water importation, groundwater replenishment, and other programs that will enhance or prolong the groundwater reserves in the Valley. The Parties may consider joint acquisition, use, and operation of such projects and/or programs.

The Parties will coordinate with, and provide input to, land-use planning authorities regarding water-intensive development activities within the Valley.

The Parties will review any new proposed export of water from the Valley with respect to its effect on groundwater resources, and make appropriate response, including but not limited to participation in the environmental review and planning process.

Planning Objective #6: Continue cooperative efforts to develop information and data which contributes to further defining and better understanding the groundwater resource in the Indian Wells Valley.

The Parties will continue to cooperate, to the fullest extent possible, in data gathering and analysis projects focusing on groundwater recharge, discharge, storage, quality, quantity, transmissivity and storativity as it pertains to the groundwater resources of the Indian Wells Valley.

Planning Objective #7: Develop an interagency management framework to implement and enforce the objectives of this Plan.

The following entities have been invited to be the initial signatories on this Plan: Brown Road Farming Company, Eastern Kern County Resources Conservation District, Indian Wells Valley Airport District, Indian Wells Valley Water District, Indian Wells Valley Well Owners Association, Inyokern Community Services District, Kern County Water Agency, Naval Air Weapons Station–China Lake, North American Chemical Company, and the City of Ridgecrest.

The Parties will develop a cooperative agreement which defines the roles, responsibilities, rights and obligations of all participants, affords opportunities to enlist new members and provides the administrative framework for implementing and enforcing applicable elements of this Plan. Such agreement shall establish a Steering Committee with representatives from each signing entity that will coordinate each signing entity's groundwater management actions in conformity to the Plan.

Signing this Plan does not create any financial obligations. Future financial obligations will be determined in the agreement developed to implement this Plan.

Severability:

If any part of this Plan is declared invalid by a court of law, the remaining provisions of the Plan shall continue in full force and effect.

Changes:

It is understood and agreed that this Plan contains all the provisions agreed upon by the Parties thereto. This Plan may be amended at any time by mutual written consent of the Parties. Notice of proposed changes must be submitted to the other Parties at least thirty (30) days in advance of the proposed change.

Effective Date, Termination and Withdrawal:

This Plan is effective when signed, and will remain in effect until amended or terminated by mutual written agreement. Any Party may withdraw from this Plan by giving the other Parties six months' written notice

Executed this 21st day of September, 1995, at Ridgecrest, California

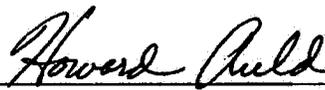
NAVAL AIR WEAPONS STATION
CHINA LAKE

By  _____

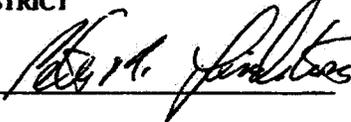
KERN COUNTY WATER AGENCY

By  _____

CITY OF RIDGECREST

By  _____
for Curtis V. Bryan
Mayor

INYOKERN COMMUNITY SERVICES
DISTRICT

By  _____

INDIAN WELLS VALLEY WATER
DISTRICT

By Leroy J. Covert

NORTH AMERICAN CHEMICAL
COMPANY

By Carl H. ...

EASTERN KERN COUNTY RESOURCES
CONSERVATION DISTRICT

By Terry M. ...

INDIAN WELLS VALLEY AIRPORT
DISTRICT

By Jack R. ...

**ADDENDUM TO THE SIGNATORIES TO THE COOPERATIVE GROUNDWATER
MANAGEMENT PLAN FOR THE INDIAN WELLS VALLEY**

**RIDGECREST RESOURCE AREA
BUREAU OF LAND MANAGEMENT**

By *Joe Delaney*

Date *April 18, 1996*

**ADDENDUM #2 TO THE SIGNATORIES TO THE COOPERATIVE GROUNDWATER
MANAGEMENT PLAN FOR THE INDIAN WELLS VALLEY**

QUIST FARMS

By *Dwight Quist*
Robert A. Quist

Date *3/17/97*
3/19/98

**ADDENDUM #3 TO THE SIGNATORIES TO THE COOPERATIVE GROUNDWATER
MANAGEMENT PLAN FOR THE INDIAN WELLS VALLEY**

KERN COUNTY

By 

Date 9/18/03

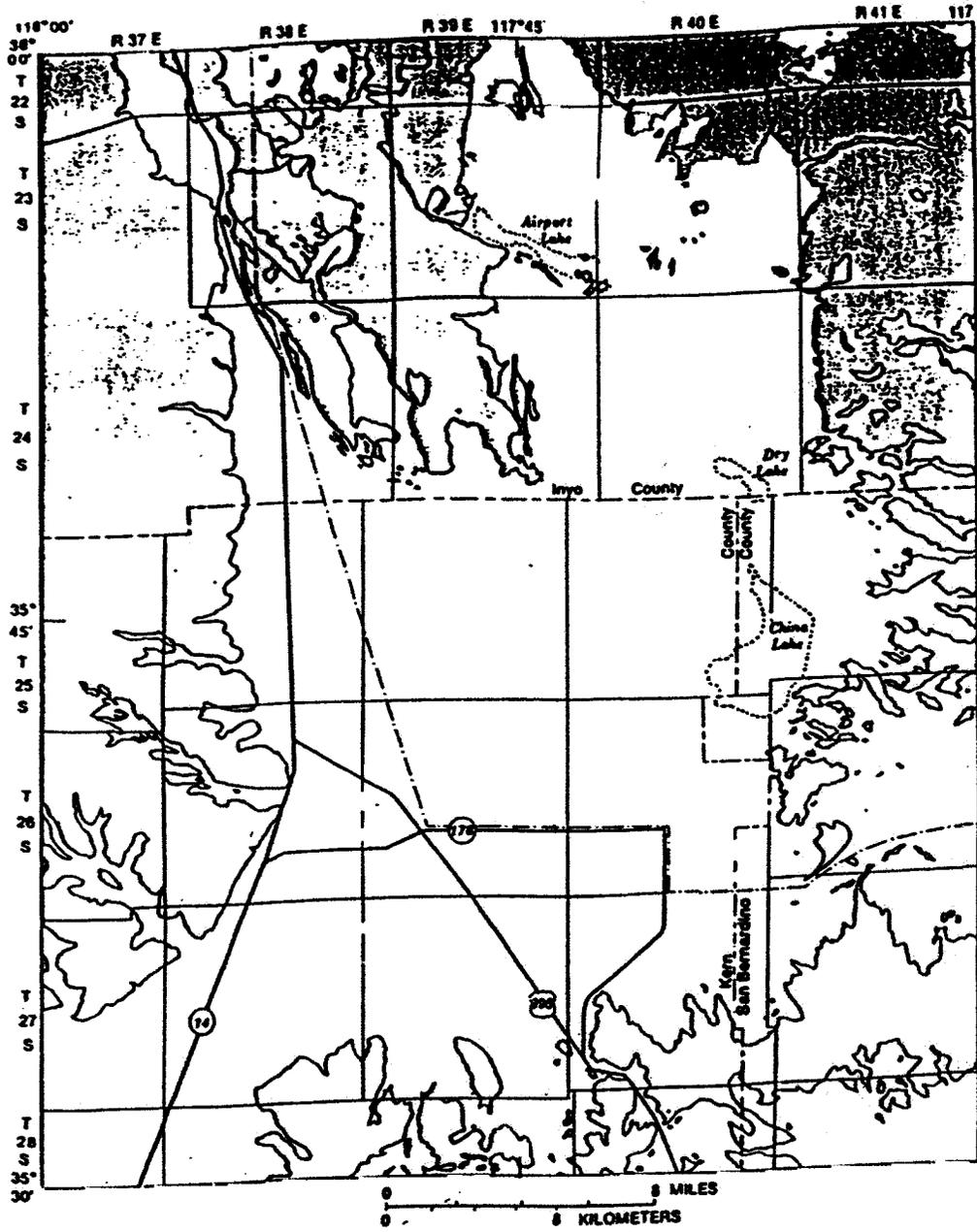


FIGURE 1 Indian Wells Valley Groundwater (Surface Recharge) Aquifer System

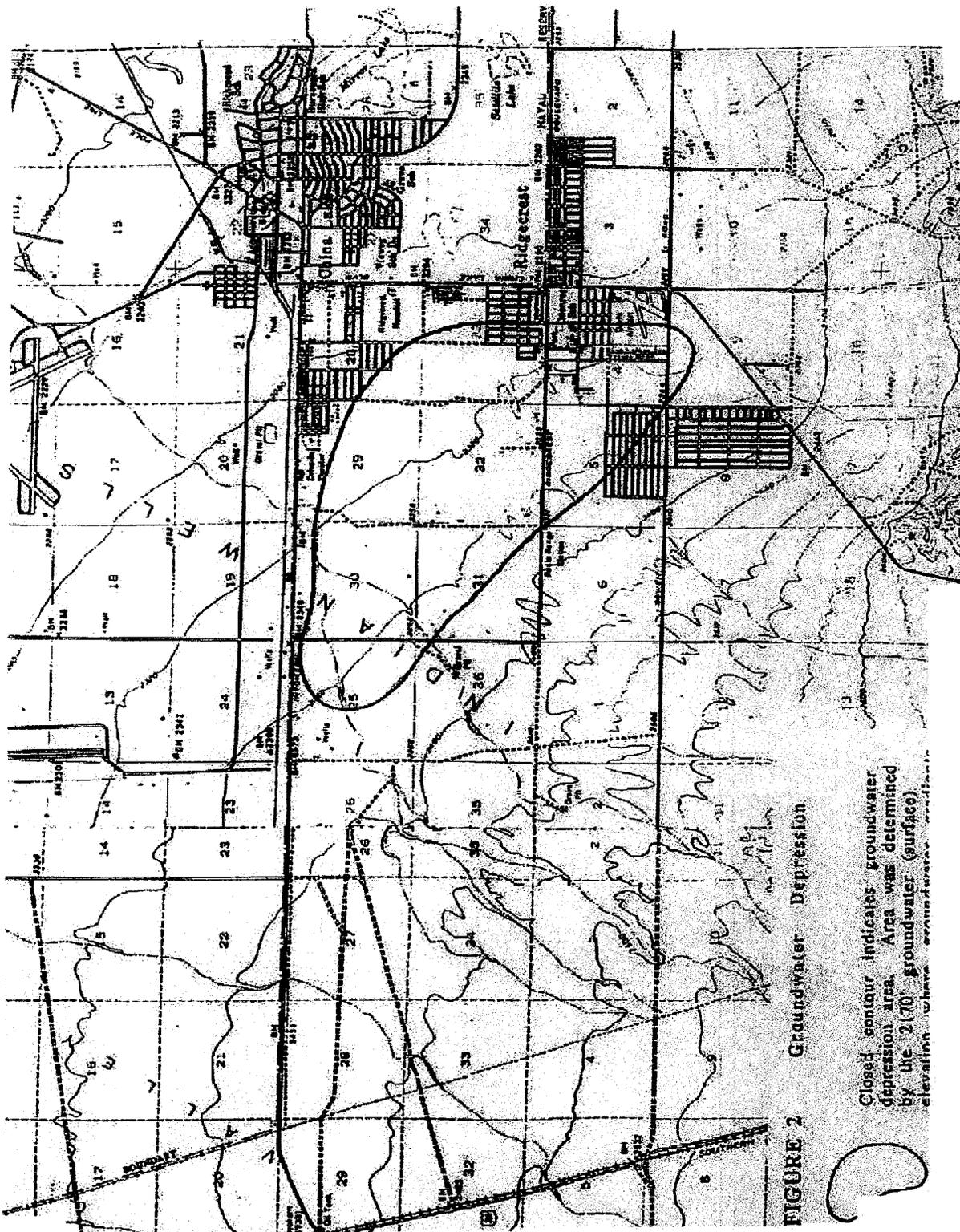


FIGURE 2 Groundwater Depression

Closed contour indicates groundwater depression area. Area was determined by the 270' groundwater (surface) elevation.

Figure 4. Supply Sources Production Capability

WELL NO.	ACTUAL PRODUCTION (GPM)	ACTUAL POSSIBLE (GPD)
7	150	216,000
8	1,100	1,584,000
9A	1,100	1,584,000
10	1,200	1,728,000
11	1,100	1,584,000
13	1,200	1,728,000
17	1,300	1,872,000
18	1,200	1,728,000
19	500	720,000
30	1,300	1,872,000
31	1,200	1,728,000
33	1,300	1,872,000
TOTAL:	12,650	18,216,000

Actual Production Capacity Per Day	18,216,000 GPD
Maximum Day Demand (2004)	14,564,000 GPD
Reserve Capacity	3,652,000 GPD

Appendix A
Urban Water Management Planning Act

Urban Water Management Planning Act

Established: AB 797, Klehs, 1983

Amended: AB 2661, Klehs, 1990

AB 11X, Filante, 1991

AB 1869, Speier, 1991

AB 892, Frazee, 1993

SB 1017, McCorquodale, 1994

AB 2853, Cortese, 1994

AB 1845, Cortese, 1995

SB 1011, Polanco, 1995

SB 553, Kelley, 2000

CALIFORNIA WATER CODE DIVISION 6 PART 2.6. URBAN WATER MANAGEMENT PLANNING CHAPTER 1. GENERAL DECLARATION AND POLICY

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. The Legislature finds and declares as follows:

- (a) The waters of the state are a limited and renewable resource subject to ever increasing demands.
- (b) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (c) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (d) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- (e) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet the needs of both existing customers and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

CHAPTER 2. DEFINITIONS

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 7 (commencing with Section 4010) of Part 1 of Division 5 of the Health and Safety Code.

CHAPTER 3. URBAN WATER MANAGEMENT PLANS

Article 1. General Provisions

10620.

(a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier after December 31, 1984, shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that

would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d)

(1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

10621.

(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a).

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year.

(2) A single dry water year.

(3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

- (e)
- (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:
 - (A) Single-family residential.
 - (B) Multifamily.
 - (C) Commercial.
 - (D) Industrial.
 - (E) Institutional and governmental.
 - (F) Landscape.
 - (G) Sales to other agencies.
 - (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
 - (I) Agricultural.
 - (2) The water use projections shall be in the same five-year increments as described in subdivision (a).
- (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
- (1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:
 - (A) Water survey programs for single-family residential and multi family residential customers.
 - (B) Residential plumbing retrofit.
 - (C) System water audits, leak detection, and repair.
 - (D) Metering with commodity rates for all new connections and retrofit of existing connections.
 - (E) Large landscape conservation programs and incentives.
 - (F) High-efficiency washing machine rebate programs.
 - (G) Public information programs.
 - (H) School education programs.
 - (I) Conservation programs for commercial, industrial, and institutional accounts.
 - (J) Wholesale agency programs.
 - (K) Conservation pricing.
 - (L) Water conservation coordinator.
 - (M) Water waste prohibition.
 - (N) Residential ultra-low-flush toilet replacement programs.
 - (2) A schedule of implementation for all water demand management measures proposed or described in the plan.
 - (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of such savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, which offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to the council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(f) Penalties or charges for excessive use, where applicable.

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions

(a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(h) A draft water shortage contingency resolution or ordinance.

(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. To the extent practicable, the preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(c) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(d) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years.

(e) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(f) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems and to promote recirculating uses.

Article 2.5 Water Service Reliability

10635.

(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies within 60 days of the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any future, potential customers.

Article 3. Adoption and Implementation of Plans

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644.

(a) An urban water supplier shall file with the department a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be filed with the department within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the outstanding elements of individual plans. The department shall provide a copy of the report to each urban water supplier that has filed its plan with the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

CHAPTER 4. MISCELLANEOUS PROVISIONS

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

- (a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive drought assistance from the state until the urban water management plan is submitted pursuant to Article 3 (commencing with Section 10640) of Chapter 3.

SEC. 2. No appropriation is made and no reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution or Section 2231 or 2234 of the Revenue and Taxation Code because the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act.

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Appendix B
Public Comments to the Draft Plan and Responses

Appendix B

There were no comments received during the public comment period or at the Public Hearing held on Tuesday, October 11, 2005.

Appendix C
Resolution to Adopt the Urban Water Management Plan

RESOLUTION NO. 05-12

RESOLUTION OF THE BOARD OF DIRECTORS OF THE
INDIAN WELLS VALLEY WATER DISTRICT, KERN AND
SAN BERNARDINO COUNTIES, CALIFORNIA, ADOPTING
THE 2005 URBAN WATER MANAGEMENT PLAN.

WHEREAS the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS the District is an urban supplier of water providing water to a population over 27,900, and

WHEREAS the Plan shall be periodically reviewed at least once every five years, and that the District shall make any amendments or changes to its plan which are indicated by the review; and

WHEREAS the Plan must be adopted by the Board of Directors, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, District staff has, therefore, prepared and made available to the public for inspection a proposed Urban Water Management Plan dated August 8th, 2005, in compliance with the requirements contained in Part 2.6 of Division 6 of the Water Code of the State of California; and

WHEREAS, the aforesaid plan is entitled "Indian Wells Valley Water District 2005 Urban Water Management Plan";

WHEREAS, this Board of Directors duly called and noticed a public hearing on the aforesaid plan to be held on October 11, 2005, at the hour of 7:00 PM; and

WHEREAS, a Notice of Hearing was duly published pursuant to Section 6066 of the Government Code of the State of California; and

WHEREAS, the aforesaid hearing called by the Board of Directors has been duly held and concluded; and

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by this Board of Directors, as follows:

Section 1. That all the foregoing is true and correct.

Section 2. That the aforesaid Indian Wells Valley Water District 2005 Urban Water Management Plan is hereby adopted.

All the foregoing being on the motion of Director Corlett, seconded by Vice-President Brown, and authorized by the following vote, namely:

AYES: Director Corlett
Director Cortichiato
Director Manning
Vice-President Brown
President Saint-Amand

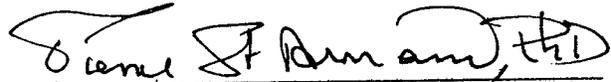
NOES: None

ABSENT: None

ABSTAIN: None

I HEREBY CERTIFY that the foregoing resolution is the resolution of Indian Wells Valley Water District as duly passed and adopted by said Board of Directors at a legally convened meeting held on the 11th day of October, 2005.

WITNESS my hand and the official seal of said Board of Directors this 11th day of October, 2005.



President of the Indian Wells
Valley Water District and of
the Board of Directors thereof.



Secretary of the Indian Wells
Valley Water District and of the
Board of Directors thereof.

(SEAL)

STATE OF CALIFORNIA)
)
COUNTIES OF KERN)
AND SAN BERNARDINO)

I, TOM MULVIHILL, Secretary of the Board of Directors of the Indian Wells Valley Water District, DO HEREBY CERTIFY, as follows:

The foregoing Resolution is a full, true and correct copy of Resolution No. 05-12, duly adopted at a Regular Meeting of the Board of Directors of said District, duly and regularly held at the regular meeting place of the Board on the 11th day of October, 2005, for which all of the members of said Board of Directors had due notice and at which a majority of the Board of Directors were present; and that at said meeting said resolution was adopted by the following roll call vote:

AYES: Director Corlett
Director Cortichiato
Director Manning
Vice-President Brown
President Saint-Amand

NOES:

ABSENT:

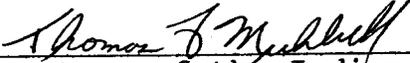
ABSTAIN:

An agenda of said meeting was posted at least 72-hours before said Regular Meeting at 500 West Ridgecrest Boulevard, Ridgecrest, California, in a location freely accessible to members of the public, and a brief description of said Resolution appeared on said agenda.

I have carefully compared the foregoing with the original Minutes of said meeting on file and of record in my office, and the foregoing is a full, true and correct copy of the original resolution adopted at said Meeting and entered into said Minutes.

Resolution No. 05-12 has not been amended, modified or rescinded since the date of its adoption on October 11, 2005, and the same is now in full force and effect.

WITNESS my hand and the official seal of said Board of Directors this 11th day of October, 2005.


Secretary of the Indian Wells
Valley Water District and of
the Board of Directors thereof.

(SEAL)

Appendix D
Draft No Waste Ordinance

NO WASTE ORDINANCE (DRAFT)
(Pursuant to Water Code Section 31026 et seq.)

INDIAN WELLS VALLEY WATER DISTRICT
KERN AND SAN BERNARDINO COUNTIES, CALIFORNIA

The District Board of Directors of the Indian Wells Valley Water District does hereby resolve as follows:

PROHIBITING WASTEFUL USE OF WATER

REGULATIONS AND RESTRICTIONS ON WATER USE

It is hereby resolved by the District Board of Directors that in order to conserve the District's water supply for the greatest public benefit, and to reduce the quantity of water used by the District's customers, that wasteful use of water should be eliminated. Customers of the District shall observe the following regulations and restrictions on water use:

1. No customer shall waste water. As used herein, the term "waste" means:
 - a. Use of potable water to irrigate turf, ground-cover, shrubbery, crops, vegetation, and trees (agricultural accounts are excluded from the time of irrigation restriction) between the hours of 10:00 o'clock A.M. and 6:00 o'clock P.M. or in such a manner as to result in runoff for more than five (5) minutes;
 - b. Use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground or other hard surfaced areas except where necessary for public health or safety;
 - c. Allowing potable water to escape from breaks within the customer's plumbing system for more than twenty-four (24) hours after the customer is notified or discovers the break;
 - d. Washing cars, boats, trailers, aircraft, or other vehicles by hose without a shutoff nozzle and bucket except to wash such vehicles at commercial or fleet vehicle washing facilities using water recycling equipment.
 - e. Use of potable water to clean, fill or maintain decorative fountains, lakes or ponds unless such water is recycled.

2. The following restrictions are effective during a declared Water-Shortage Emergency.
 - a. No restaurant, hotel, cafe, cafeteria or other public place where food is sold, served or offered for sale, shall serve drinking water to any customer unless expressly requested.
 - b. Use of potable water for street or parking lot sweeping, building wash-down where non-potable or recycled water is sufficient.
 - c. Use of potable water for sewer system maintenance or fire protection training without prior approval by the General Manager;
 - d. Use of potable water for any purpose in excess of the amounts allocated or each class of service.

3. Other restrictions may be necessary during a declared Water Shortage Emergency, to safeguard the adequacy of the water supply for domestic, sanitation, fire protection, and environmental requirements.

ENFORCEMENT

Any customer violating the regulations and restrictions on water use set forth in this chapter shall receive a written warning for the first such violation. Upon a second violation, the customer shall receive a written warning and the district may cause a flow-restrictor to be installed in the service. If a flow-restrictor is placed, the cost of installation and removal shall be paid by the violator. Any willful violation occurring subsequent to the issuance of the second written warning shall constitute a misdemeanor and may be referred to the County District Attorney's Office for prosecution. The district may also disconnect the water service. If water service is disconnected, it shall be restored only upon payment of the turn-on charge fixed by the Board of Directors.

PENALTY FOR VIOLATIONS

Except as provided in the enforcement section for the first and second violations any person, firm, partnership, association, corporation or political entity violating or causing or permitting the violation of any of the provisions of this section or providing false information to the district in response to district's requests for information needed by the district to calculate consumer water allotments shall be guilty of a misdemeanor punishable by imprisonment in the county jail for not more that thirty days or by a fine not exceeding six hundred dollars or both. Each separate day or portion thereof in which any violation occurs or continues without a good faith effort by the responsible party to correct the violation shall constitute a separate offense and, upon conviction thereof, shall be separately punishable.

APPEALS

Variations from the requirements of this Section may be granted by the Board of Directors only after denial of a variance request by the general manager. Appeals of variance request denials shall be made in writing to the secretary of the Board at least 2 weeks prior to the meeting at which they will be heard. Upon granting any appeal, the Board of directors may impose any conditions it determines to be just and proper. Variances granted by the Board shall be prepared in writing, the furnished to the applicant. The board of Directors may require it to be recorded at applicant's expense.

REMEDIES/CUMULATIVE

The remedies available to the district to enforce this ordinance are in addition to any other remedies available under the district's code or any state statutes or regulations, and do not replace or supplant any other remedy, but are cumulative.

EFFECTIVE DATE AND PUBLICATION

This ordinance shall be immediately effective and District staff shall cause publication of this ordinance to occur pursuant to Water Code Section 31027