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APPENDIX A

*California Water Code – Urban Water Management
Planning Act of 1983, amended to 2015*

California Water Code Division 6, Part 2.6.

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Chapter 1. General Declaration and Policy

SECTION 10610-10610.4

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

10610.2. (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) 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.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) 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.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) 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 existing 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.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Chapter 2. Definitions

SECTION 10611-10617

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, either 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 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

Chapter 3. Urban Water Management Plans

Article 1. General Provisions

SECTION 10620-10621

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.
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, except as provided in subdivision (d).
- (b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
 - (c) 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).
 - (d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

Article 2. Contents of Plan

SECTION 10630-10634

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 that 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 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 basins that 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.
- (c) (1) 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:
- (A) An average water year.
 - (B) A single-dry water year.
 - (C) Multiple-dry water years.
- (2) 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.

- (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.
 - (J) Distribution system water loss.
- (2) The water use projections shall be in the same five-year increments described in subdivision (a).
- (3) (A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.
 - (B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.
- (4) (A) If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

- (B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:
 - (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.
 - (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.
- (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
 - (1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.
 - (B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:
 - (i) Water waste prevention ordinances.
 - (ii) Metering.
 - (iii) Conservation pricing.
 - (iv) Public education and outreach.
 - (v) Programs to assess and manage distribution system real loss.
 - (vi) Water conservation program coordination and staffing support.
 - (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.
 - (2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.
- (g) 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 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.

- (h) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.
- (j) An urban water supplier that relies 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).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

- (b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan may, but is not required to, include any of the following information:

- (1) An estimate of the amount of energy used to extract or divert water supplies.
 - (2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
 - (3) An estimate of the amount of energy used to treat water supplies.
 - (4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
 - (5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
 - (6) An estimate of the amount of energy used to place water into or withdraw from storage.
 - (7) Any other energy-related information the urban water supplier deems appropriate.
- (b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

- (2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).
- (3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has

submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

- (i) Compliance on an individual basis.
 - (ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.
- (B) The department may require additional information for any determination pursuant to this section.
- (3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.
- (c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).
 - (d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.
 - (e) 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. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

- (f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:
- (1) 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 that are applicable to each stage.
 - (2) 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.
 - (3) 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.
 - (4) 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.
 - (5) 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.

- (6) Penalties or charges for excessive use, where applicable.
 - (7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), 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.
 - (8) A draft water shortage contingency resolution or ordinance.
 - (9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.
- (b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

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.
- (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, indirect potable reuse, 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.

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.

Article 2.5. Water Service Reliability

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.

Article 3. Adoption and Implementation of Plans

SECTION 10640-10645

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. 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.

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) (1) 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.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

- (b) (1) Notwithstanding Section 10231.5 of the Government Code, 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 exemplary 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.

- (2) A report to be submitted pursuant to paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

- (c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

- (2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

- (3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

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

SECTION 10650-10656

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 funding pursuant to Division 24 (commencing with Section 78500) or Division 26

(commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

APPENDIX B

*California Water Code – Sustainable Water Use and
Demand Reduction (SB X7-7)*

California Water Code Division 6, Part 2.55.

- Chapter 1. General Declarations and Policy §10608-10608.8**
- Chapter 2. Definitions §10608.12**
- Chapter 3. Urban Retail Water Suppliers §10608.16-10608.44**
- Chapter 4. Agricultural Water Suppliers §10608.48**
- Chapter 5. Sustainable Water Management §10608.50**
- Chapter 6 Standardized Data Collection §10608.52**
- Chapter 7 Funding Provisions §10608.56-10608.60**
- Chapter 8 Quantifying Agricultural Water Use Efficiency §10608.64**

Chapter 1. General Declarations and Policy

SECTION 10608-10608.8

10608. The Legislature finds and declares all of the following:

- (a) Water is a public resource that the California Constitution protects against waste and unreasonable use.
- (b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.
- (c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.
- (d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.
- (e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.
- (f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.
- (g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.
- (h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

- (i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

- (a) Require all water suppliers to increase the efficiency of use of this essential resource.
- (b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.
- (c) Measure increased efficiency of urban water use on a per capita basis.
- (d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.
- (e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.
- (f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.
- (g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.
- (h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.
- (i) Require implementation of specified efficient water management practices for agricultural water suppliers.
- (j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.
- (k) Advance regional water resources management.

- 10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.
- (2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to

California Water Code Division 6, Part 2.55.

- Chapter 1. General Declarations and Policy §10608-10608.8**
- Chapter 2. Definitions §10608.12**
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- (e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.
- (f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.
- (g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.
- (h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

- (i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

- (a) Require all water suppliers to increase the efficiency of use of this essential resource.
- (b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.
- (c) Measure increased efficiency of urban water use on a per capita basis.
- (d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.
- (e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.
- (f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.
- (g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.
- (h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.
- (i) Require implementation of specified efficient water management practices for agricultural water suppliers.
- (j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.
- (k) Advance regional water resources management.

- 10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.
- (2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to

January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

- (3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.
- (b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.
- (c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.
- (d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2 Definitions

SECTION 10608.12

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

- (a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.
- (b) "Base daily per capita water use" means any of the following:
 - (1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

- (2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
- (3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.
- (c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.
- (d) "Commercial water user" means a water user that provides or distributes a product or service.
- (e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.
- (f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.
- (g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:
 - (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.
 - (2) The net volume of water that the urban retail water supplier places into long-term storage.
 - (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.
 - (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.
- (h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.
- (i) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

- (j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.
- (k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.
- (l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.
- (m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:
 - (1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:
 - (A) Metered.
 - (B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.
 - (C) Treated to a minimum tertiary level.
 - (D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.
 - (2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.
- (n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:
 - (1) The capture and reuse of stormwater or rainwater.
 - (2) The use of recycled water.
 - (3) The desalination of brackish groundwater.

- (4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.
- (o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.
- (p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.
- (q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.
- (r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3 Urban Retail Water Suppliers

SECTION 10608.16-10608.44

10608.16.(a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

- (b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20.(a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

- (2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

- (b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

- (1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

- (2) The per capita daily water use that is estimated using the sum of the following performance standards:

- (A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.
 - (B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.
 - (C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.
- (3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.
- (4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:
- (A) Consider climatic differences within the state.
 - (B) Consider population density differences within the state.
 - (C) Provide flexibility to communities and regions in meeting the targets.
 - (D) Consider different levels of per capita water use according to plant water needs in different regions.
 - (E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.
 - (F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.
- (c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method

described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

- (d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.
- (e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.
- (f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.
- (g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).
- (h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:
 - (A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.
 - (B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.
- (2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.
- (i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.
- (2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the

Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

- (j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.
- (2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph(3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24.(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in

paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

- (e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.
- (f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26.(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

- (1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.
 - (2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.
 - (3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.
- (b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.
- (c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the conservation of that military installation under federal Executive Order 13514.
- (d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit

an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

- (2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28.(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

- (1) Through an urban wholesale water supplier.
- (2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).
- (3) Through a regional water management group as defined in Section 10537.
- (4) By an integrated regional water management funding area.
- (5) By hydrologic region.
- (6) Through other appropriate geographic scales for which computation methods have been developed by the department.

- (b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans

submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42.(a) The department shall review the 2015 urban water management plans and report to the Legislature by July 1, 2017, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

(b) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use at facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

Chapter 4 Agricultural Water Suppliers

SECTION 10608.48

10608.48.(a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

- (6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.
 - (7) Construct and operate supplier spill and tailwater recovery systems.
 - (8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.
 - (9) Automate canal control structures.
 - (10) Facilitate or promote customer pump testing and evaluation.
 - (11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.
 - (12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:
 - (A) On-farm irrigation and drainage system evaluations.
 - (B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.
 - (C) Surface water, groundwater, and drainage water quantity and quality data.
 - (D) Agricultural water management educational programs and materials for farmers, staff, and the public.
 - (13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.
 - (14) Evaluate and improve the efficiencies of the supplier's pumps.
- (d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.
 - (e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.
 - (f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

- (g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.
- (h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.
- (i)
 - (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).
 - (2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

Chapter 5 Sustainable Water Management

Section 10608.50

- 10608.50.(a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:
- (1) Revisions to the requirements for urban and agricultural water management plans.
 - (2) Revisions to the requirements for integrated regional water management plans.
 - (3) Revisions to the eligibility for state water management grants and loans.

- (4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.
 - (5) Increased funding for research, feasibility studies, and project construction.
 - (6) Expanding technical and educational support for local land use and water management agencies.
- (b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

Chapter 6 Standardized Data Collection

SECTION 10608.52

- 10608.52.(a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.
- (b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Chapter 7 Funding Provisions

Section 10608.56-10608.60

- 10608.56.(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.
- (b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

- (c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.
 - (d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.
 - (e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.
 - (f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).
- 10608.60.(a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.
- (b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

Chapter 8 Quantifying Agricultural Water Use Efficiency

SECTION 10608.64

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

Appendix C

Changes to California Water Code Since 2010

Changes to the Water Code Since 2010

Italicized text indicates new language

Strike out text indicates language that has been removed

Regular font indicates existing text

Appendix C Changes to California Water Code Final

Change Number	Topic	CWC Section	Legislative Bill	Summary	Guidebook Section
1	Demand Management Measures	10631 (f)(1) and (2)	AB 2067, 2014	Requires water suppliers to provide narratives describing their water demand management measures, as provided. Requires retail water suppliers to address the nature and extent of each water demand management measure implemented over the past 5 years and describe the water demand management measures that the supplier plans to implement to achieve its water use targets.	Chapter 9
2	Submittal Date	10621 (d)	AB 2067, 2014	Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.	Chapter 10
3	Electronic Submittal	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to be submitted electronically to the department.	Chapter 10
4	Standardized Forms	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.	CH 1, Section 1.4
5	Water Loss	10631 (e) (1) (J) and (e) (3) (A) and (B)	SB 1420, 2014	Requires a plan to quantify and report on distribution system water loss.	Appendix L
6	Estimating Future Water Savings	10631 (e) (4)	SB 1420, 2014	Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans, when that information is available and applicable to an urban water supplier.	Appendix K
7	Voluntary Reporting of Energy Intensity	10631.2 (a) and (b)	SB 1036, 2014	Provides for an urban water supplier to include certain energy-related information, including, but not limited to, an estimate of the amount of energy used to extract or divert water supplies.	Appendix O
8	Defining Water Features	10632	AB 2409, 2010	Requires urban water suppliers to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	CH 8, Section 8.2.4

1. Demand Management Measures (AB 2067, 2014)

10631(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 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.~~

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the

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supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

- (i) Water waste prevention ordinances.
- (ii) Metering.
- (iii) Conservation pricing.
- (iv) Public education and outreach.
- (v) Programs to assess and manage distribution system real loss.
- (vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

~~—(h)~~

(g) 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),~~ programs 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.

~~—(i)~~

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

~~—(j)~~

(i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of ~~subdivisions~~ subdivision (f) ~~and (g)~~ by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

~~—(k) Urban~~

2. Submittal Date (AB 2067, 2014)

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, except as provided in subdivision (d).

(d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

3. Electronic Submittal (SB 1420, 2014)

10644. (a)(2) *The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically...*

4. Standardized Forms (SB 1420, 2014)

10644. (a)(2) *The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) ... shall include any standardized forms, tables, or displays specified by the department.*

5. Water Loss (SB 1420, 2014)

(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.
- (J) Distribution system water loss.

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

(3) (A) *For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.*

(B) *The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.*

6. Voluntary Reporting of Passive Savings (SB 1420, 2014)

10631 (4) (A) *If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.*

(B) *To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:*

- (i) *Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.*

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(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

7. Voluntary Reporting of Energy Intensity (SB 1036, 2014)

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan may, but is not required to, include any of the following information:

(1) An estimate of the amount of energy used to extract or divert water supplies.

(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

(3) An estimate of the amount of energy used to treat water supplies.

(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.

(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

8. Defining Water Features (AB 2409, 2010)

10632 (b) Commencing with the urban water management plan update due December 31, 2015, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

APPENDIX D

DWR Urban Water Management Plan Checklist

2015 City of Adelanto UWMP Checklist - Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location <i>(Optional Column for Agency Use)</i>
10620(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.	Plan Preparation	Section 2.1	Section 2.1, Page 2-1
10620(d)(2)	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.	Plan Preparation	Section 2.5.2	Section 2.4, Page 2-3
10642	Provide supporting documentation that the water supplier has encouraged 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.	Plan Preparation	Section 2.5.2	Section 2.4, Page 2-3
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Section 3.1, Page 3-1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Section 3.3, Page 3-3
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Section 3.5, Page 3-11, Table 3-3
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Section 3.5, Page 3-11
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Section 3.5, Page 3-11, Table 3-3
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Section 4.2, Page 4-1, Tables 4-1 and 4-2
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	Section 4.4, Page 4-3, Table 4-4
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	Section 4.6, Page 4-5, Table 4-6
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	Section 5.1, Page 5-1

10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	Sections 5.4, 5.5, and 5-6, Pages 5-4 to 5-7
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	Section 5.4, Page 5-4
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Section 5.6, Page 5-7
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	No adjustment; Section 5.6, Page 5-7, Tale 5-9
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	n/a; retailer
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	Chapter 5.0, Page 5-1, Appendix I
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	Section 6.1, Page 6-1, Table 6-2
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Section 6.2.1, Page 6-4
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	Section 6.2.1, Page 6-4, Appendix J
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	Section 6.2.1, Page 6-4
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	Section 6.2.1, Page 6-4, Appendix J
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become	System Supplies	Section 6.2.3	n/a

	overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.			
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	Section 6.2.1, Pages 6-4 to 6-17, Tables 6-4, 6-5 and 6-6
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	Section 6.2.1, Page 6-17, Table 6-6
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	Section 6.5, Page 6-23
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	Section 6.6, Page 6-24
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Section 6.4, Page 6-22
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	Section 4.3, Page 4-2, Table 4-3
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	n/a; retailer
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	Section 6.3.1, Page 6-18
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	Section 6.3.2, Pages 6-19, Tables 6-7 and 6-8
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	Section 6.3.2, Page 6-19, Table 6-8
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	Section 6.3.3, Page 6-20

10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	Section 6.3.3, Page 6-20
10633(e)	Describe 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.	System Supplies (Recycled Water)	Section 6.5.4	Section 6.3.3, Page 6-20
10633(f)	Describe the actions 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.	System Supplies (Recycled Water)	Section 6.5.5	Section 6.3.4, Page 6-21
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	Section 6.3.4, Page 6-21
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	Section 7.1, Pages 7-2 to 7-10
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	Section 6.8, Page 6-27, Section 7.1, Pages 7-2 to 7-10
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	Section 7.2, Pages 7-11 to 7-16, Tables 7-5, 7-6, and 7-7
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	n/a
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	Section 6.9, Page 6-28
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	Section 7.2, Pages 7-11 to 7-16, Tables 7-5, 7-6, and 7-7
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	Chapter 8.0, Pages 8-1 to 8-8, Tables 8-1, 8-2, and 8-3

10632(a)(2)	Provide 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.	Water Shortage Contingency Planning	Section 8.9	Section 8.9, Pager 8-8, Table 8-4
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	Section 8.8, Page 8-8
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Section 8.2, Page 8-2
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Section 8.4, Page 8-6
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Section 8.3, Page 8-5
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	Section 8.6, Pager 8-7
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	Section 8.7, Pager 8-7, Appendix N
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	Section 8.5, Page 8-6
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	Section 9.1, Page 9-1
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	n/a
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	n/a; not a CUWCC member
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	Section 10.2, Page 10-2, Appendix O

10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	Section 10.2, Page 10-1, Appendix O
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	Section 10.5, Page 10-2
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Section 10.2, Page 10-2
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	Section 10.3, Page 10-1
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	Section 10.3, Page 10-1, Appendix O
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Section 10.4, Page 10-2, Appendix O
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	Section 10.5, Page 10-2
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Section 10.5, Page 10-2
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	Section 10.5, Page 10-2
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	Section 10.5, Page 10-2

APPENDIX E

60-Day Notice and Public Hearing Letters



Rich Kerr
Mayor

Jermaine Wright Sr.
Mayor Pro-Tem

Ed Camargo
Council Member

Charley B. Glasper
Council Member

John "Bug" Woodard Jr.
Council Member

Cynthia M. Herrera
City Manager

April 18, 2016

City of Victorville
14343 Civic Dr.
Victorville, CA 92392

SUBJECT: CITY OF ADELANTO 2015 URBAN WATER MANAGEMENT PLAN UPDATE

Dear Doug Matthews,

The City of Adelanto (City) is in the process of reviewing its 2010 Urban Water Management Plan (UWMP) and will consider if changes or amendments are needed in the preparation of its 2015 UWMP Update.

The City is currently documenting its sources of available water, system demands and water use analysis of SB x7-7 baseline and targets for 2015 and 2020, water reliability, water shortage contingency planning, water quality, and demand management measures.

The Urban Water Management Planning Act (Act) requires urban water suppliers providing water to more than 3,000 customers, or providing more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP every five years in December in years ending in five and zero. However, because of recent changes in State law, the due date for submittal has been extended to July 1, 2016.

The City's Draft 2015 UWMP is anticipated to be available in May 2016 for review, with a Public Hearing and City Council adoption planned in June 2016. If you have any questions, please contact Wilson So, Director of Public Services/City Engineer 760-246-2300 WilsonSo@saeinc.org

Sincerely,

CITY OF ADELANTO

A handwritten signature in black ink, appearing to read "Wilson So", is written over a faint circular seal of the City of Adelanto. The seal contains the text "CITY OF ADELANTO CALIFORNIA" and "INCORPORATED DECEMBER 2, 1919".

Wilson So
Director of Public Services/City Engineer

C: Cindy Herrera, City Manager



Rich Kerr
Mayor

Jermaine Wright Sr.
Mayor Pro-Tem

Ed Camargo
Council Member

Charley B. Glasper
Council Member

John "Bug" Woodard Jr.
Council Member

Cynthia M. Herrera
City Manager

April 18, 2016

County of San Bernardino
Division of Environmental Health Services
172 W. 3rd Street
San Bernardino, Ca 92415

SUBJECT: CITY OF ADELANTO 2015 URBAN WATER MANAGEMENT PLAN UPDATE

Dear Eurich Santiago,

The City of Adelanto (City) is in the process of reviewing its 2010 Urban Water Management Plan (UWMP) and will consider if changes or amendments are needed in the preparation of its 2015 UWMP Update.

The City is currently documenting its sources of available water, system demands and water use analysis of SB x7-7 baseline and targets for 2015 and 2020, water reliability, water shortage contingency planning, water quality, and demand management measures.

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Sincerely,

CITY OF ADELANTO

A handwritten signature in black ink, appearing to read "Wilson So".

Wilson So
Director of Public Services/City Engineer

C: Cindy Herrera, City Manager



Rich Kerr
Mayor

Jermaine Wright Sr.
Mayor Pro-Tem

Ed Camargo
Council Member

Charley B. Glasper
Council Member

John "Bug" Woodard Jr.
Council Member

Cynthia M. Herrera
City Manager

April 18, 2016

Mojave Water Agency
13846 Conference Center Drive
Apple Valley, CA 92307

SUBJECT: CITY OF ADELANTO 2015 URBAN WATER MANAGEMENT PLAN UPDATE

Lance Eckhart,

The City of Adelanto (City) is in the process of reviewing its 2010 Urban Water Management Plan (UWMP) and will consider if changes or amendments are needed in the preparation of its 2015 UWMP Update.

The City is currently documenting its sources of available water, system demands and water use analysis of SB x7-7 baseline and targets for 2015 and 2020, water reliability, water shortage contingency planning, water quality, and demand management measures.

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Sincerely,

CITY OF ADELANTO

A handwritten signature in black ink, appearing to read "Wilson So".

Wilson So
Director of Public Services/City Engineer

C: Cindy Herrera, City Manager

APPENDIX F

Mojave Water Agency Population Forecast

Mojave Water Agency Population Forecast



December
2015



Mojave Water Agency Population Forecast

This publication was prepared for:

Mojave Water Agency

This publication was prepared by:

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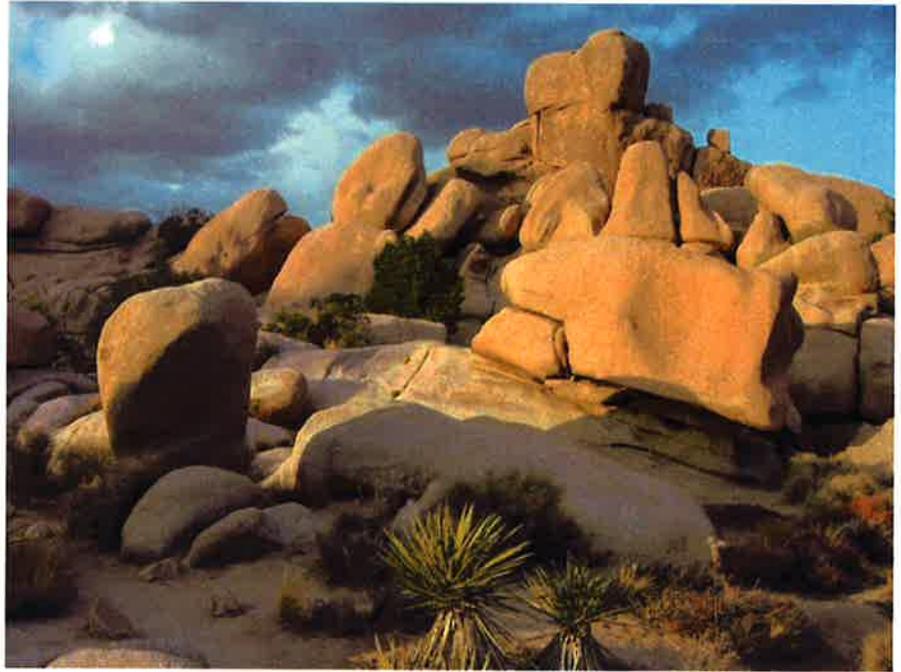
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EXECUTIVE SUMMARY

Having a good sense of population growth trends is a crucial part of urban development planning, especially when it comes to water. Food and other resources can be readily imported, but developing and managing water infrastructure and resources is best done over the long run with a keen eye on the future. Population forecasting then becomes an integral part of that planning process, and to that end this report has been commissioned by the Mojave Water Agency (MWA) in order to get a better sense of future population growth, as well as the magnitude of that growth.



San Bernardino County and the broader Inland Empire region are anticipated to see more population growth in the near term than the coastal regions of Southern California, and in the longer run, Beacon Economics expects the MWA service area to see even stronger population growth. Affordability is the name of the game here. As housing has become more unaffordable in the coastal counties of Los Angeles, Orange, and San Diego, the Inland Empire has been a destination of choice for many residents willing to commute to the coast.

This has boosted economic activity within the Inland Empire as these commuters spend their wages locally, creating a positive feedback effect which drives further growth and attracts more residents to the area. The MWA service area is, in terms of housing prices, even more affordable than other parts of San Bernardino County, and we expect these dynamics to help drive future population growth above and beyond growth in the County overall.

This forecast uses historical trends primarily to drive future results. Areas that have grown the fastest in the past are projected to see population growth rates above and beyond what is projected for the MWA service area as a whole. Similarly, areas that have grown slower in the past are projected to see slower population growth over the life of the forecast. The forecasts for the incorporated cities have a large influence on the forecasts for the unincorporated regions of the MWA service area (which will be discussed in the subsequent section). Some of the incorporated areas worthy of mention include:

- Victorville: This city experienced one of the strongest average annual population growth rates from 1990 to 2010 – and the 2011 to 2015 estimates indicate similar relative growth. The current forecast calls for 2.0% average annual population growth, slightly higher than the 1.8% for the MWA service area overall.

- Barstow: Out of the incorporated cities Barstow experienced some of the slowest growth from 1990 to 2010 – and the 2011 to 2015 estimates indicate the same trend. As such, this city is expected to be one of the slower growing over the life of the forecast.

This report is divided into three sections. In the first section we provide a broad overview of the methodology used to arrive at the current forecast. The affordability dynamics that have helped drive growth in the broader Inland Empire region are examined in the second part of this report, and in the third part, the similar dynamics are examined for the MWA service area specifically. The detailed forecasts of the MWA service area and its various regions can be found in the appendices at the end of the report.

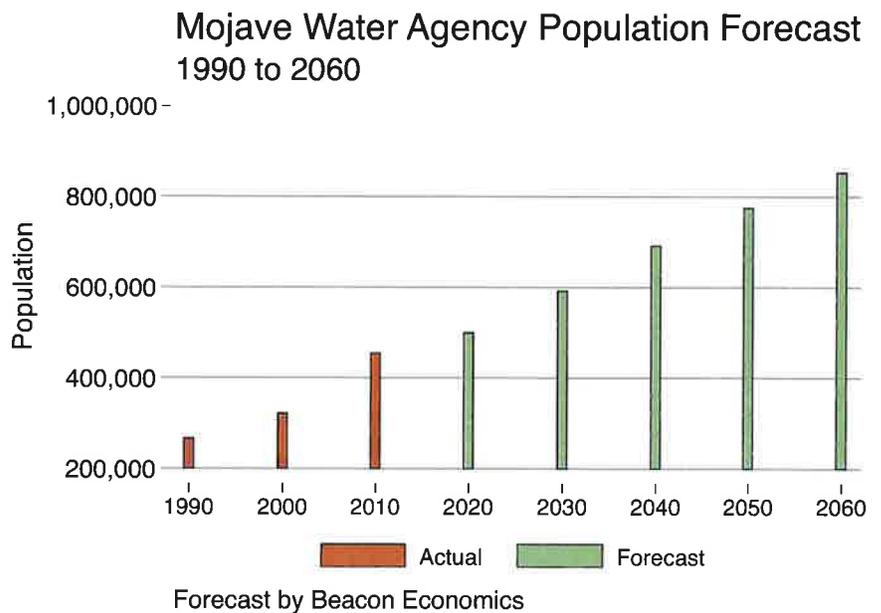
FORECAST METHODOLOGY

Beacon Economics forecast of the MWA service area and its incorporated cities, sub areas, and water purveyors is based on historic correlations with population trends in their surrounding area. A long run driver of future population in the surrounding area was used to forecast population growth out to the year 2060. In the case of the incorporated portions of the MWA service area, historic population trends were correlated with population growth in San Bernardino County overall. In the case of the sub areas and water purveyors in unincorporated regions of the MWA service area, the historical population data was correlated with the nearest incorporated city.

Historical data used in the forecast of the incorporated cities were obtained from the California Department of Finance (DOF), which makes estimates available from 1970 forward on an annual basis. With this data in hand, an econometric time series model was created to capture the historical correlations with countywide population growth. Future population growth for the incorporated cities of the MWA service area was then estimated using these historic correlations and a long run driver of countywide population growth.

Population projections for San Bernardino County from the DOF were used as the long run driver for the forecasts of incorporated cities. The DOF uses a baseline cohort-component method to produce their population projections out to the calendar year 2060. This method traces people born in a given year throughout their lives. As each year passes, cohorts change due to mortality and migration assumptions. Applying fertility assumptions to women of childbearing age forms new cohorts.¹

¹For a more detailed description of the DOF methodology see State of California, Department of Finance, State and County Population Projections by Race/Ethnicity, Sex, and Age 2010-2060, Sacramento, California, December 2014.



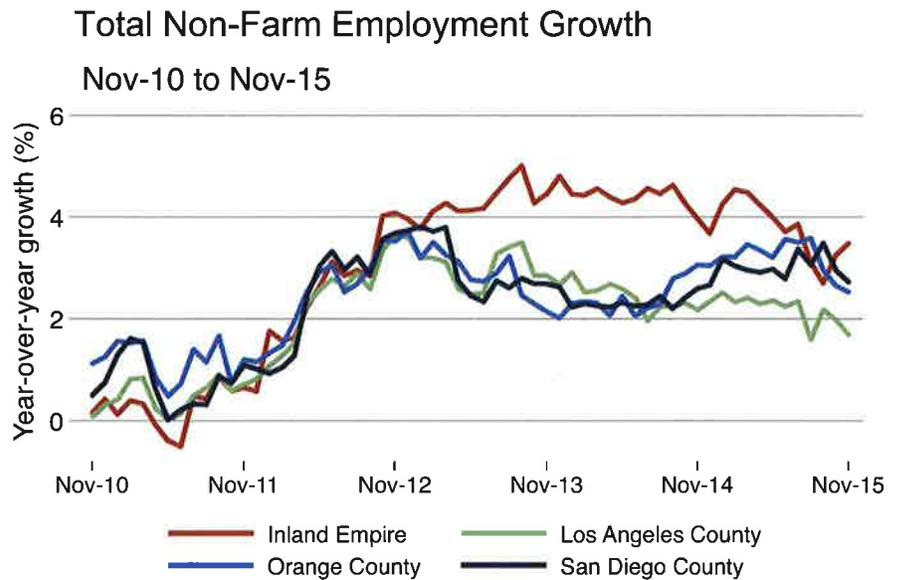
Several sub areas and water purveyors in the MWA service area are closely associated with the boundaries of one or more incorporated cities. In these cases the forecasted population growth rates from the incorporated cities were applied to historical population counts for these areas to produce a forecast of future population. For sub areas or water purveyors in an unincorporated portion of the MWA service area, the historical correlations between the respective area and the nearest incorporated city were used to project future population growth. Due to the long run nature of this forecast, DOF countywide population estimates were the primary driver of the estimates for future population in the MWA service area. Other factors, such as building permits or planned developments, were not used as they represent a very short term outlook and are not a driver of population growth in of themselves. A forecast of long run population growth carries with it the assumption that there will be sufficient residential development to accommodate future population growth.

It should be noted that long run forecasts of any nature have a greater margin of error the longer the forecast time frame. Forecasts of one to two years can be quite accurate, whereas forecasts of five to ten years into the future are less likely to be as accurate. Several factors, most notably business cycle effects, can have strong impacts on population or other socioeconomic indicators, over the long run. Forecasts are a ultimately a “best guess” given current data and assumptions, and forecasts far into the future, such as a ten years plus, can be subject to very large forecast errors.

SAN BERNARDINO COUNTY / INLAND EMPIRE ECONOMIC AND DEMOGRAPHIC TRENDS

In order to put population growth of the Mojave Water Agency regions in proper context, it is important to consider the broader San Bernardino and Inland Empire economy. The various regions of California experience population and economic growth differently, which in turn impacts sub-regional performance over time. The inland regions of California, for example, are expected to grow quite differently than coastal areas, and San Bernardino is no exception to this.

Historically, economic growth has been concentrated in the coastal regions of California, particularly in Southern California. This has resulted in the coastal regions of Los Angeles, Orange, and San Diego counties becoming the major job centers in Southern California. With economic and employment growth concentrated along the coast, real estate prices, on both the residential and commercial sides of the market, remain higher in coastal counties. This has in turn resulted in inland areas having a considerable



Source: California Employment Development Department

affordability advantage, which has and will continue to attract residents and businesses to regions like the Inland Empire.

In recent years, we have already begun to see the Inland Empire region begin to separate itself from the major job centers along the coast. Total nonfarm employment growth in the Inland Empire has drastically outpaced its coastal neighbors. Since the beginning of 2012, the Inland Empire has seen year-over-year non-farm job growth average 3.8%, noticeably higher than Los Angeles County (2.5%), Orange County (2.8%), and San Diego County (2.7%).

County	2009 to 2014	2015 YTD
Los Angeles	31.0	4.0
Orange	31.1	2.3
San Bernardino	38.7	7.6
San Diego	32.6	3.6

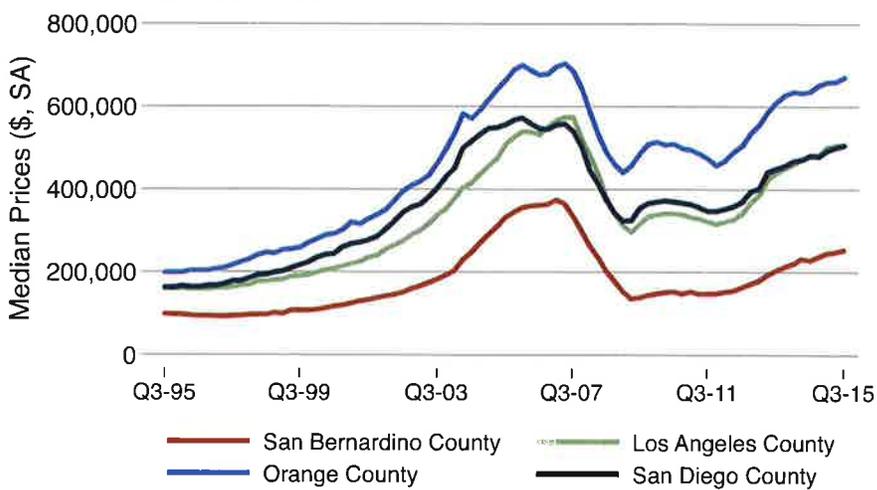
Source: California Board of Equalization

Many workers in the coastal job centers choose to take advantage of more affordable housing in the Inland Empire region. According to the American Community Survey, 29.1% of workers age 16 and over in San Bernardino County in 2014 commuted outside of the County for work.

These commuters spend most of their wages locally, which in turn fosters “internal” driven economic growth. Indeed, consumer and business spending in San Bernardino County, as measured by taxable sales, has grown faster in recent years compared to its coastal neighbors. From 2009 to 2014 taxable sales in San Bernardino grew by 38.7% over the five-year period, faster than Los Angeles (31.0%), Orange (31.1%), and San Diego (32.6%) counties. During the first three quarters of 2015, growth has accelerated as taxable sales in San Bernardino County were 7.6% higher than the same year-to-date period the prior year, vastly outpacing the coastal counties.

Home prices in San Bernardino County in particular present a stark example of just how affordable housing is in the County, relative to the coastal regions. As of the third quarter of 2015, the median price for an existing home in San Bernardino County stood at \$254,000 on a seasonally adjusted basis. In contrast, median prices in Los Angeles and San Diego counties were both \$507,000, double the median price in San Bernardino County. The price differential was even greater in Orange County where the median price was \$670,000 in the third quarter.

Median Existing Home Prices
Q3-95 to Q3-15



Source: DataQuick

On the commercial side of the market we see very similar affordability dynamics at work. For both office and retail properties, the average rent per square foot in the Inland Empire is more than 25% lower compared to the coastal counties. So not only does the

Inland empire region attract new residents through housing affordability, but businesses have an incentive to start up or relocate to the region as well.

The affordability advantage of the Inland Empire region, coupled with the strong post-recession growth of the region’s economy, has succeeded in drawing residents to the region, even more than the coastal counties of Southern California. In fact, net migration to the Inland Empire has been greater than the coastal regions in both 2014 and 2015. In 2014 there were 14,256 more residents that moved into the Inland Empire than those that left the Inland Empire, and net migration was 9,418 in 2015. In contrast, Los Angeles County experienced negative net migration for both years (-4,183 in 2014; -3,651 in 2015), and both San Diego County (13,818 in 2014; 2,977 in 2015) and Orange County (6,697 in 2014; 5,128 in 2015) had lower net migration in absolute terms.

Region	Office	Retail
Los Angeles County	35.12	31.24
Inland Empire	21.79	21.48
Orange County	30.07	32.25
San Diego County	30.61	30.13

Source: REIS

The higher net migration in the Inland Empire has resulted in faster rates of population growth in recent years compared to these coastal counties. The latest data from the California Department of Finance shows that the Inland Empire population increased 1% from July 2014 to July 2015, which had faster population growth than Los Angeles County (0.7%), Orange County (0.8%), and San Diego County (0.9%).

Looking forward, Beacon Economics expects these affordability advantages to continue to promote economic and population growth in the Inland Empire region. The Inland Empire is home to many commuters working in the coastal job centers, but they spend much of their wages locally. This in turn generates positive feedback within the region’s economy and helps to promote further business and employment growth. Compared to the coastal regions of Southern California, the Inland Empire is expected to experience higher growth rates for the foreseeable future due to its affordability advantage, much like we have seen in the last few years.

MOJAVE WATER AGENCY POPULATION FORECAST

The service area of the MWA has vast potential for future growth over the next several decades. In much the same way that San Bernardino County and the broader Inland Empire region hold an affordability advantage over coastal counties, making the area more attractive to residents and businesses, the MWA area holds an affordability advantage within San Bernardino County. This will allow the population within the MWA service area to increase at a faster rate than the County overall for the life of this forecast.

Looking at median home prices in the incorporated parts of the MWA service area provides the clearest example of this affordability advantage. As of October 2015, all six of the incorporated cities within the MWA service areas have median home prices that are lower than the countywide median of \$260,000. Hesperia

City	Oct-2015 (\$)	YoY (%)
Adelanto	156,500	1.0
Apple Valley	189,000	-0.8
Barstow	76,750	-4.1
Hesperia	220,000	16.4
Victorville	185,000	5.0
Yucca Valley	142,500	10.5
San Bernardino County	260,000	7.0

Source: DataQuick

ria comes the closest with a median price of \$220,000, and Barstow is on the lower end of the spectrum with a median price of \$76,750.

The lower home prices in the incorporated cities within the MWA service areas indicate that demand for housing is currently not as strong as in other parts of the county, but as population grows in other cities this will drive up prices in those parts and the MWA areas will become that much more attractive. This is the same dynamic that has been at work for the larger Inland Empire region as coastal parts of Southern California become increasingly unaffordable.

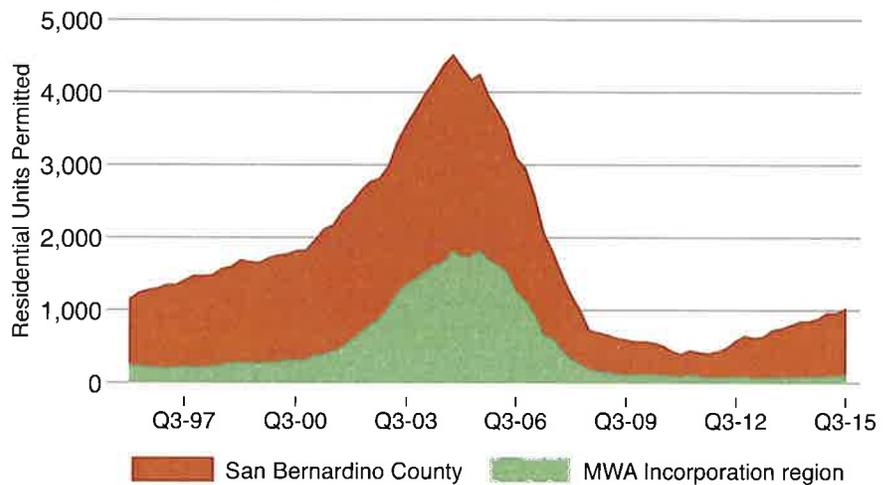
Overall economic growth in the incorporated cities of the MWA service area, as measured by taxable sales, indicates that these cities have yet to transition towards the growth centers of San Bernardino County. Five-year growth trends show that most of the incorporated cities grew slower than the County overall. During the first three quarters of 2015, all six incorporated cities witnessed lower growth than the County overall compared to the same year-to-date period the year prior. In the coming years, we expect this trend to reverse as more residents choose to live in the more affordable areas within the MWA service area and these cities, as well as the unincorporated parts of the MWA area, and taxable sales growth in these regions overtakes the countywide average growth.

City	2009 to 2014	2015 YTD
Adelanto	40.1	-17.4
Apple Valley	15.8	-0.1
Barstow	31.2	-5.5
Hesperia	54.0	-1.1
Victorville	28.0	3.6
Yucca Valley	6.2	5.5
San Bernardino County	38.7	7.6

Source: California Board of Equalization

Residential construction is another area where the MWA service areas has lagged behind the rest of the County, however we expect this trend to reverse as well in the coming years. Since 2012, the incorporated region of the MWA service area has seen slower growth in permitting for new residential structures on an annual basis. For the first three quarters of 2015, however, residential permitting growth was slightly stronger in the MWA area. We should see more of that in the years to come as affordability continues to attract more residents and fuel population growth.

Residential Construction Permits
Q1-96 to Q3-15



Source: Construction Industry Research Board

SUMMARY

The MWA service area is anticipated to experience population growth rates over the next several decades that are stronger than those anticipated for San Bernardino County overall. The broader Inland Empire region has seen strong economic and employment growth these last few years, and much of that has been due to its affordability advantage it holds over coastal counties of Southern California.

In similar fashion, the MWA service area is expected to see this kind of growth as well, relative to other parts of the Inland Empire, due to its affordability advantage relative to the broader region. The current data available for the incorporated cities of the MWA service area shows that the region has not yet transitioned to being one of the growth centers for San Bernardino County, but given its clear advantage in terms of home prices, Beacon Economics expects economic and population growth to pick up in the years to come and over the life of this forecast.

APPENDIX 1: MWA INCORPORATED CITY FORECASTS

Year	Adelanto	Apple Valley	Barstow	Hesperia	Victorville	Yucca Valley
1990	6,751	46,159	24,260	50,705	50,579	16,442
2000	17,895	54,240	22,699	62,740	64,165	16,855
2010	31,760	69,144	22,757	90,170	115,913	20,656
2011	31,609	69,484	23,010	90,539	117,239	20,727
2012	30,918	69,769	23,161	90,739	118,933	20,783
2013	31,178	70,261	23,340	91,221	120,388	20,922
2014	32,472	70,743	23,517	91,541	120,882	20,992
2015	33,080	71,453	23,661	92,302	121,568	21,317
2020	35,476	75,731	24,239	99,716	132,153	22,211
2025	38,453	81,566	24,858	108,659	147,364	23,395
2030	42,221	87,767	25,475	118,976	163,486	24,720
2035	46,311	93,862	26,059	129,739	179,396	26,028
2040	50,182	99,189	26,604	139,849	194,677	27,190
2045	53,560	103,816	27,122	148,888	209,137	28,189
2050	56,555	108,352	27,648	157,422	222,675	29,123
2055	59,573	112,685	28,163	165,674	235,240	30,012
2060	62,482	116,772	28,674	173,574	246,817	30,846

Forecast by Beacon Economics

APPENDIX 2: MWA SUB AREA FORECASTS

Year	Alto						
	Alto	Transition Zone	Baja	Centro	Este	Morongo	Oeste
1990	165,100	17,468	5,782	35,046	5,167	31,001	5,501
2000	222,012	14,636	5,035	33,392	5,822	31,375	7,838
2010	334,862	23,366	4,729	34,167	7,370	38,177	10,595
2011	337,146	23,305	4,735	34,546	7,422	38,325	10,687
2012	339,478	22,909	4,739	34,774	7,454	38,414	10,743
2013	342,261	23,113	4,746	35,043	7,512	38,578	10,846
2014	343,913	23,957	4,753	35,308	7,568	38,734	10,945
2015	346,665	24,364	4,762	35,524	7,646	38,952	11,084
2020	371,356	26,132	4,812	36,393	8,073	40,140	11,844
2025	407,344	28,465	4,872	37,322	8,615	41,608	12,819
2030	449,520	31,413	4,933	38,248	9,196	43,140	13,880
2035	493,686	34,616	4,989	39,125	9,753	44,567	14,913
2040	535,002	37,663	5,036	39,943	10,244	45,791	15,835
2045	571,913	40,342	5,076	40,720	10,672	46,834	16,646
2050	607,027	42,744	5,112	41,510	11,086	47,827	17,440
2055	641,206	45,158	5,146	42,284	11,479	48,752	18,198
2060	674,042	47,489	5,177	43,050	11,851	49,613	18,922

Forecast by Beacon Economics

APPENDIX 3: MWA WATER PURVEYOR FORECASTS

Year	Apple Valley Ranchos Water Company	Bighorn-Desert View Water Agency	City of Adelanto Water District	County Service Area 64	County Service Area 70 J	Golden State Water Company - Barstow System
1990	37,228	1,200	6,751	5,353	3,328	29,905
2000	45,207	2,892	17,895	7,595	5,652	29,337
2010	57,847	3,839	31,760	9,075	9,467	30,173
2011	58,132	3,891	31,609	9,163	9,609	30,479
2012	58,370	3,922	30,918	9,216	9,695	30,662
2013	58,781	3,981	31,178	9,314	9,855	30,878
2014	59,185	4,037	32,472	9,408	10,009	31,090
2015	59,779	4,116	33,080	9,541	10,227	31,261
2020	63,357	4,554	35,476	10,267	11,433	31,951
2025	68,240	5,135	38,453	11,205	13,049	32,684
2030	73,427	5,794	42,221	12,236	14,906	33,412
2035	78,526	6,463	46,311	13,246	16,811	34,096
2040	82,983	7,082	50,182	14,156	18,597	34,732
2045	86,854	7,644	53,560	14,961	20,233	35,333
2050	90,649	8,209	56,555	15,753	21,891	35,940
2055	94,274	8,763	59,573	16,514	23,528	36,533
2060	97,693	9,303	62,482	17,243	25,135	37,116

Forecast by Beacon Economics

Year	Helendale Community Services District	Hesperia Water District	Hi-Desert Water District	Joshua Basin County Water District	Phelan Pinon Hills Community Services District	Victorville Water District
1990	3,273	50,976	19,060	7,515	9,688	54,539
2000	4,704	62,592	19,198	8,062	13,770	69,095
2010	6,180	89,742	23,760	9,534	19,423	122,051
2011	6,247	90,110	23,842	9,590	19,683	122,551
2012	6,287	90,308	23,906	9,624	19,841	122,821
2013	6,362	90,788	24,065	9,687	20,134	123,474
2014	6,434	91,106	24,147	9,746	20,416	123,907
2015	6,535	91,864	24,520	9,830	20,814	124,937
2020	7,090	99,242	25,548	10,287	23,009	139,151
2025	7,812	108,143	26,911	10,860	25,919	155,167
2030	8,613	118,411	28,435	11,469	29,219	172,144
2035	9,407	129,123	29,939	12,047	32,561	188,896
2040	10,127	139,185	31,276	12,551	35,655	204,986
2045	10,769	148,181	32,425	12,986	38,462	220,211
2050	11,406	156,675	33,499	13,406	41,283	234,466
2055	12,020	164,888	34,522	13,801	44,043	247,697
2060	12,612	172,750	35,481	14,172	46,735	259,887

Forecast by Beacon Economics

ABOUT BEACON ECONOMICS

Beacon Economics, LLC is a leading provider of economic research, forecasting, industry analysis, and data services. By delivering independent, rigorous analysis we give our clients the knowledge they need to make the right strategic decisions about investment, growth, revenue, and policy. Learn more at www.BeaconEcon.com.

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- Expert Testimony

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APPENDIX G
AWWA Water Loss Audit

AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:

Email Address:

Telephone | Ext.:

Name of City / Utility:

City/Town/Municipality:

State / Province:

Country:

Year:

Audit Preparation Date:

Volume Reporting Units:

PWSID / Other ID:

The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

<p><u>Instructions</u></p> <p>The current sheet. Enter contact information and basic audit details (year, units etc)</p>	<p><u>Reporting Worksheet</u></p> <p>Enter the required data on this worksheet to calculate the water balance and data grading</p>	<p><u>Comments</u></p> <p>Enter comments to explain how values were calculated or to document data sources</p>	<p><u>Performance Indicators</u></p> <p>Review the performance indicators to evaluate the results of the audit</p>	<p><u>Water Balance</u></p> <p>The values entered in the Reporting Worksheet are used to populate the Water Balance</p>	<p><u>Dashboard</u></p> <p>A graphical summary of the water balance and Non-Revenue Water components</p>
<p><u>Grading Matrix</u></p> <p>Presents the possible grading options for each input component of the audit</p>	<p><u>Service Connection Diagram</u></p> <p>Diagrams depicting possible customer service connection line configurations</p>	<p><u>Definitions</u></p> <p>Use this sheet to understand the terms used in the audit process</p>	<p><u>Loss Control Planning</u></p> <p>Use this sheet to interpret the results of the audit validity score and performance indicators</p>	<p><u>Example Audits</u></p> <p>Reporting Worksheet and Performance Indicators examples are shown for two validated audits</p>	<p><u>Acknowledgements</u></p> <p>Acknowledgements for the AWWA Free Water Audit Software v5.0</p>

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
American Water Works Association.
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?	Click to access definition
+	Click to add a comment

Water Audit Report for: **City of Adelanto / Adelanto Public Utilities Authority (CA3610001)**
Reporting Year: **2015** 1/2015 - 12/2015

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="?"/> 8	4,049.000	acre-ft/yr
Water imported:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	acre-ft/yr
Water exported:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	<input type="button" value="+"/> <input type="button" value="?"/> 2	<input type="radio"/> <input checked="" type="radio"/>	Value:	2.000	acre-ft/yr
	<input type="button" value="+"/> <input type="button" value="?"/>	<input type="radio"/> <input checked="" type="radio"/>			acre-ft/yr
	<input type="button" value="+"/> <input type="button" value="?"/>	<input type="radio"/> <input checked="" type="radio"/>			acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: **4,047.000** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="?"/> 8	3,282.000	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="?"/>	50.588	acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: **3,332.588** acre-ft/yr

Click here:
for help using option buttons below

Pcnt:	1.25%	<input checked="" type="radio"/> <input type="radio"/>	Value:		acre-ft/yr
-------	-------	--	--------	--	------------

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption)

714.413 acre-ft/yr

Apparent Losses

Unauthorized consumption: **10.118** acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: 2 **324.593** acre-ft/yr
Systematic data handling errors: **8.205** acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **342.916** acre-ft/yr

Pcnt:	0.25%	<input checked="" type="radio"/> <input type="radio"/>	Value:		acre-ft/yr
-------	-------	--	--------	--	------------

Pcnt:	9.00%	<input checked="" type="radio"/> <input type="radio"/>	Value:		acre-ft/yr
	0.25%	<input checked="" type="radio"/> <input type="radio"/>			acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **371.497** acre-ft/yr

WATER LOSSES: **714.413** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **765.000** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: 2 113.0 miles
Number of active AND inactive service connections: 4 8,165
Service connection density: **72** conn./mile main

Are customer meters typically located at the curbside or property line? No (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line: 2 ft

Average operating pressure: 2 73.0 psi

COST DATA

Total annual cost of operating water system: 10 \$9,300,000 \$/Year
Customer retail unit cost (applied to Apparent Losses): 8 \$2.40 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): 7 \$1,000.00 \$/acre-ft Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 69 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources

2: Customer metering inaccuracies

3: Unauthorized consumption



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for: City of Adelanto / Adelanto Public Utilities Authority (CA3610001)
Reporting Year: 2015 | 1/2015 - 12/2015

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 69 out of 100 ***

System Attributes:

	Apparent Losses:	342.916	acre-ft/yr
	+	Real Losses:	371.497
	=	Water Losses:	714.413

? Unavoidable Annual Real Losses (UARL): 150.14 acre-ft/yr

Annual cost of Apparent Losses: \$358,498

Annual cost of Real Losses: \$371,497 Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	18.9%	
		Non-revenue water as percent by cost of operating system:	8.4%	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	37.49	gallons/connection/day
		Real Losses per service connection per day:	40.62	gallons/connection/day
		Real Losses per length of main per day*:	N/A	
		Real Losses per service connection per day per psi pressure:	0.56	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 371.50 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 2.47

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: Water Balance

WAS v5.0

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Water Audit Report for:	City of Adelanto / Adelanto Public Utilities Authority (CA3610001)	
Reporting Year:	2015	1/2015 - 12/2015
Data Validity Score:	69	

		Water Exported <i>0.000</i>	Billed Water Exported				Revenue Water 0.000	
Own Sources (Adjusted for known errors)	4,047.000	Water Supplied 4,047.000	Authorized Consumption 3,332.588	Billed Authorized Consumption	Billed Metered Consumption (water exported is removed)	Revenue Water 3,282.000		
				3,282.000	3,282.000		Billed Unmetered Consumption	0.000
Water Imported 0.000	System Input 4,047.000	Water Supplied 4,047.000	Water Losses 714.413	Unbilled Authorized Consumption	Unbilled Metered Consumption	Non-Revenue Water (NRW) 765.000		
				50.588	0.000		Unbilled Unmetered Consumption	50.588
				Apparent Losses	Unauthorized Consumption		10.118	
				342.916	Customer Metering Inaccuracies		324.593	
				Real Losses	Systematic Data Handling Errors		8.205	
371.497	Leakage on Transmission and/or Distribution Mains	Not broken down						
	Leakage and Overflows at Utility's Storage Tanks	Not broken down						
	Leakage on Service Connections	Not broken down						



AWWA Free Water Audit Software: Dashboard

WAS v5.0

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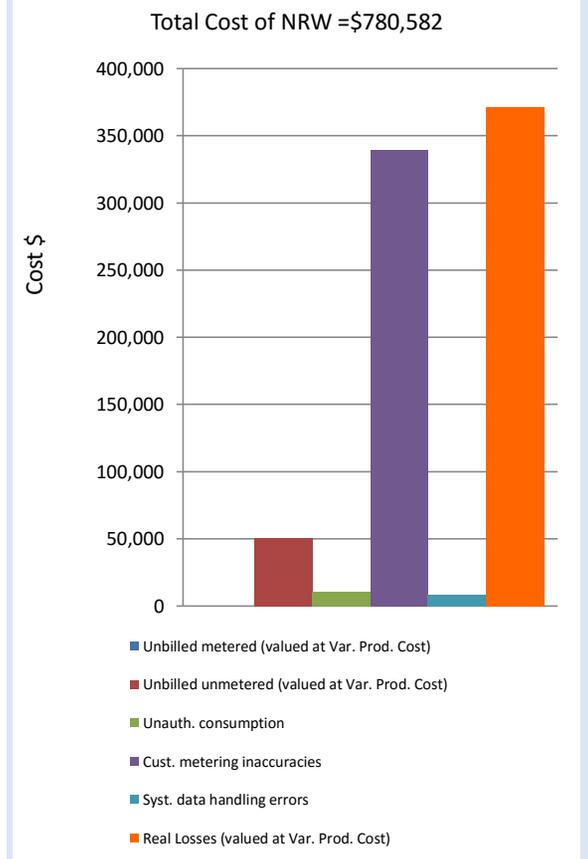
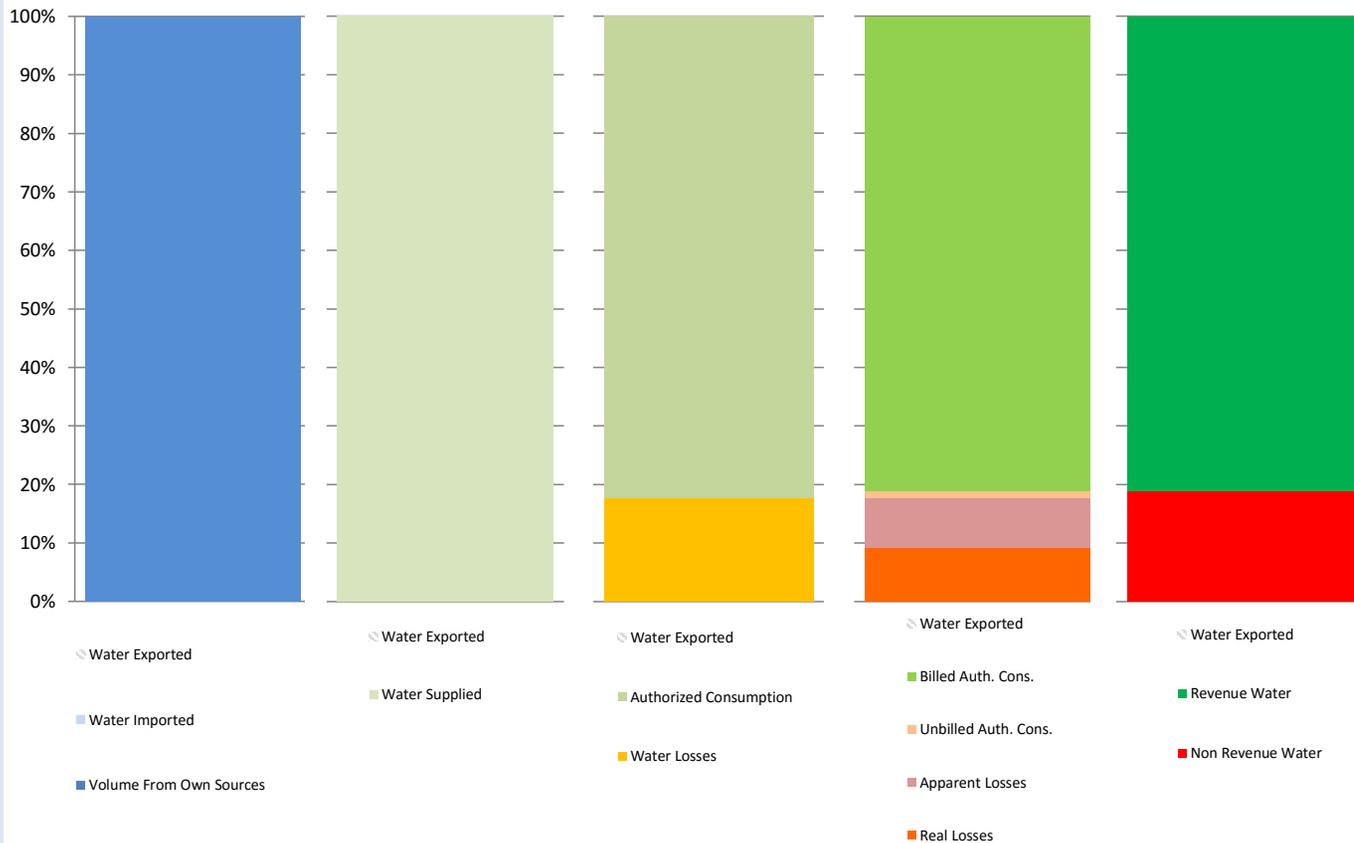
The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

Water Audit Report for: **City of Adelanto / Adelanto Public Utilities Authority (CA3610001)**

Reporting Year: **2015** **1/2015 - 12/2015**

Data Validity Score: **69**

- Show me the VOLUME of Non-Revenue Water
- Show me the COST of Non-Revenue Water



AWWA Free Water Audit Software: Grading Matrix

The grading assigned to each audit component and the corresponding recommended improvements and actions are highlighted in yellow. Audit accuracy is likely to be improved by prioritizing those items shown in red

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
WATER SUPPLIED											
Volume from own sources:	Select this grading only if the water utility purchases/imports all of its water resources (i.e. has no sources of its own)	Less than 25% of water production sources are metered, remaining sources are estimated. No regular meter accuracy testing or electronic calibration conducted.	25% - 50% of treated water production sources are metered; other sources estimated. No regular meter accuracy testing or electronic calibration conducted.	Conditions between 2 and 4	50% - 75% of treated water production sources are metered, other sources estimated. Occasional meter accuracy testing or electronic calibration conducted.	Conditions between 4 and 6	At least 75% of treated water production sources are metered, or at least 90% of the source flow is derived from metered sources. Meter accuracy testing and/or electronic calibration of related instrumentation is conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of treated water production sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted annually, less than 10% of meters are found outside of +/- 6% accuracy	Conditions between 8 and 10	100% of treated water production sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted semi-annually, with less than 10% found outside of +/- 3% accuracy. Procedures are reviewed by a third party knowledgeable in the M36 methodology.
Improvements to attain higher data grading for "Volume from own Sources" component:		to qualify for 2: Organize and launch efforts to collect data for determining volume from own sources	to qualify for 4: Locate all water production sources on maps and in the field, launch meter accuracy testing for existing meters, begin to install meters on unmetered water production sources and replace any obsolete/defective meters.		to qualify for 6: Formalize annual meter accuracy testing for all source meters; specify the frequency of testing. Complete installation of meters on unmetered water production sources and complete replacement of all obsolete/defective meters.		to qualify for 8: Conduct annual meter accuracy testing and calibration of related instrumentation on all meter installations on a regular basis. Complete project to install new, or replace defective existing, meters so that entire production meter population is metered. Repair or replace meters outside of +/- 6% accuracy.		to qualify for 10: Maintain annual meter accuracy testing and calibration of related instrumentation for all meter installations. Repair or replace meters outside of +/- 3% accuracy. Investigate new meter technology; pilot one or more replacements with innovative meters in attempt to further improve meter accuracy.		to maintain 10: Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate/pilot improving metering technology.
Volume from own sources master meter and supply error adjustment:	Select n/a only if the water utility fails to have meters on its sources of supply	Inventory information on meters and paper records of measured volumes exist but are incomplete and/or in a very crude condition; data error cannot be determined	No automatic datalogging of production volumes; daily readings are scribed on paper records without any accountability controls. Flows are not balanced across the water distribution system; tank/storage elevation changes are not employed in calculating the "Volume from own sources" component and archived flow data is adjusted only when grossly evident data error occurs.	Conditions between 2 and 4	Production meter data is logged automatically in electronic format and reviewed at least on a monthly basis with necessary corrections implemented. "Volume from own sources" tabulations include estimate of daily changes in tanks/storage facilities. Meter data is adjusted when gross data errors occur, or occasional meter testing deems this necessary.	Conditions between 4 and 6	Hourly production meter data logged automatically & reviewed on at least a weekly basis. Data is adjusted to correct gross error when meter/instrumentation equipment malfunction is detected, and/or error is confirmed by meter accuracy testing. Tank/storage facility elevation changes are automatically used in calculating a balanced "Volume from own sources" component, and data gaps in the archived data are corrected on at least a weekly basis.	Conditions between 6 and 8	Continuous production meter data is logged automatically & reviewed each business day. Data is adjusted to correct gross error from detected meter/instrumentation equipment malfunction and/or results of meter accuracy testing. Tank/storage facility elevation changes are automatically used in "Volume from own sources" tabulations and data gaps in the archived data are corrected on a daily basis.	Conditions between 8 and 10	Computerized system (SCADA or similar) automatically balances flows from all sources and storages; results are reviewed each business day. Tight accountability controls ensure that all data gaps that occur in the archived flow data are quickly detected and corrected. Regular calibrations between SCADA and sources meters ensures minimal data transfer error.
Improvements to attain higher data grading for "Master meter and supply error adjustment" component:		to qualify for 2: Develop a plan to restructure recordkeeping system to capture all flow data; set a procedure to review flow data on a daily basis to detect input errors. Obtain more reliable information about existing meters by conducting field inspections of meters and related instrumentation, and obtaining manufacturer literature.	to qualify for 4: Install automatic datalogging equipment on production meters. Complete installation of level instrumentation at all tanks/storage facilities and include tank level data in automatic calculation routine in a computerized system. Construct a computerized listing or spreadsheet to archive input volumes, tank/storage volume changes and import/export flows in order to determine the composite "Water Supplied" volume for the distribution system. Set a procedure to review this data on a monthly basis to detect gross anomalies and data gaps.		to qualify for 6: Refine computerized data collection and archive to include hourly production meter data that is reviewed at least on a weekly basis to detect specific data anomalies and gaps. Use daily net storage change to balance flows in calculating "Water Supplied" volume. Necessary corrections to data errors are implemented on a weekly basis.		to qualify for 8: Ensure that all flow data is collected and archived on at least an hourly basis. All data is reviewed and detected errors corrected each business day. Tank/storage levels variations are employed in calculating balanced "Water Supplied" component. Adjust production meter data for gross error and inaccuracy confirmed by testing.		to qualify for 10: Link all production and tank/storage facility elevation change data to a Supervisory Control & Data Acquisition (SCADA) System, or similar computerized monitoring/control system, and establish automatic flow balancing algorithm and regularly calibrate between SCADA and source meters. Data is reviewed and corrected each business day.		to maintain 10: Monitor meter innovations for development of more accurate and less expensive flowmeters. Continue to replace or repair meters as they perform outside of desired accuracy limits. Stay abreast of new and more accurate water level instruments to better record tank/storage levels and archive the variations in storage volume. Keep current with SCADA and data management systems to ensure that archived data is well-managed and error free.
Water Imported:	Select n/a if the water utility's supply is exclusively from its own water resources (no bulk purchased/imported water)	Less than 25% of imported water sources are metered, remaining sources are estimated. No regular meter accuracy testing.	25% - 50% of imported water sources are metered; other sources estimated. No regular meter accuracy testing.	Conditions between 2 and 4	50% - 75% of imported water sources are metered, other sources estimated. Occasional meter accuracy testing conducted.	Conditions between 4 and 6	At least 75% of imported water sources are metered, meter accuracy testing and/or electronic calibration of related instrumentation is conducted annually for all meter installations. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of imported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted annually, less than 10% of meters are found outside of +/- 6% accuracy	Conditions between 8 and 10	100% of imported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted semi-annually for all meter installations, with less than 10% of accuracy tests found outside of +/- 3% accuracy.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Water Imported Volume" component: (Note: usually the water supplier selling the water - "the Exporter" - to the utility being audited is responsible to maintain the metering installation measuring the imported volume. The utility should coordinate carefully with the Exporter to ensure that adequate meter upkeep takes place and an accurate measure of the Water Imported volume is quantified.)		<u>to qualify for 2:</u> Review bulk water purchase agreements with partner suppliers; confirm requirements for use and maintenance of accurate metering. Identify needs for new or replacement meters with goal to meter all imported water sources.	<u>To qualify for 4:</u> Locate all imported water sources on maps and in the field, launch meter accuracy testing for existing meters, begin to install meters on unmetered imported water interconnections and replace obsolete/defective meters.		<u>to qualify for 6:</u> Formalize annual meter accuracy testing for all imported water meters, planning for both regular meter accuracy testing and calibration of the related instrumentation. Continue installation of meters on unmetered imported water interconnections and replacement of obsolete/defective meters.		<u>to qualify for 8:</u> Complete project to install new, or replace defective, meters on all imported water interconnections. Maintain annual meter accuracy testing for all imported water meters and conduct calibration of related instrumentation at least annually. Repair or replace meters outside of +/- 6% accuracy.		<u>to qualify for 10:</u> Conduct meter accuracy testing for all meters on a semi-annual basis, along with calibration of all related instrumentation. Repair or replace meters outside of +/- 3% accuracy. Investigate new meter technology; pilot one or more replacements with innovative meters in attempt to improve meter accuracy.		<u>to maintain 10:</u> Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Continue to conduct calibration of related instrumentation on a semi-annual basis. Repair or replace meters outside of +/- 3% accuracy. Continually investigate/pilot improving metering technology.
Water imported master meter and supply error adjustment:	Select n/a if the Imported water supply is unmetered, with Imported water quantities estimated on the billing invoices sent by the Exporter to the purchasing Utility.	Inventory information on imported meters and paper records of measured volumes exist but are incomplete and/or in a very crude condition; data error cannot be determined. Written agreement(s) with water Exporter(s) are missing or written in vague language concerning meter management and testing.	No automatic datalogging of imported supply volumes; daily readings are scribed on paper records without any accountability controls to confirm data accuracy and the absence of errors and data gaps in recorded volumes. Written agreement requires meter accuracy testing but is vague on the details of how and who conducts the testing.	Conditions between 2 and 4	Imported supply metered flow data is logged automatically in electronic format and reviewed at least on a monthly basis by the Exporter with necessary corrections implemented. Meter data is adjusted by the Exporter when gross data errors are detected. A coherent data trail exists for this process to protect both the selling and the purchasing Utility. Written agreement exists and clearly states requirements and roles for meter accuracy testing and data management.	Conditions between 4 and 6	Hourly Imported supply metered data is logged automatically & reviewed on at least a weekly basis by the Exporter. Data is adjusted to correct gross error when meter/instrumentation equipment malfunction is detected; and to correct for error confirmed by meter accuracy testing. Any data gaps in the archived data are detected and corrected during the weekly review. A coherent data trail exists for this process to protect both the selling and the purchasing Utility.	Conditions between 6 and 8	Continuous Imported supply metered flow data is logged automatically & reviewed each business day by the Exporter. Data is adjusted to correct gross error from detected meter/instrumentation equipment malfunction and/or results of meter accuracy testing. Any data errors/gaps are detected and corrected on a daily basis. A data trail exists for this process to protect both the selling and the purchasing Utility.	Conditions between 8 and 10	Computerized system (SCADA or similar) automatically records data which is reviewed each business day by the Exporter. Tight accountability controls ensure that all error/data gaps that occur in the archived flow data are quickly detected and corrected. A reliable data trail exists and contract provisions for meter testing and data management are reviewed by the selling and purchasing Utility at least once every five years.
Improvements to attain higher data grading for "Water Imported master meter and supply error adjustment" component:		<u>to qualify for 2:</u> Develop a plan to restructure recordkeeping system to capture all flow data; set a procedure to review flow data on a daily basis to detect input errors. Obtain more reliable information about existing meters by conducting field inspections of meters and related instrumentation, and obtaining manufacturer literature. Review the written agreement between the selling and purchasing Utility.	<u>to qualify for 4:</u> Install automatic datalogging equipment on Imported supply meters. Set a procedure to review this data on a monthly basis to detect gross anomalies and data gaps. Launch discussions with the Exporters to jointly review terms of the written agreements regarding meter accuracy testing and data management; revise the terms as necessary.		<u>to qualify for 6:</u> Refine computerized data collection and archive to include hourly Imported supply metered flow data that is reviewed at least on a weekly basis to detect specific data anomalies and gaps. Make necessary corrections to errors/data errors on a weekly basis.		<u>to qualify for 8:</u> Ensure that all Imported supply metered flow data is collected and archived on at least an hourly basis. All data is reviewed and errors/data gaps are corrected each business day.		<u>to qualify for 10:</u> Conduct accountability checks to confirm that all Imported supply metered data is reviewed and corrected each business day by the Exporter. Results of all meter accuracy tests and data corrections should be available for sharing between the Exporter and the purchasing Utility. Establish a schedule for a regular review and updating of the contractual language in the written agreement between the selling and the purchasing Utility; at least every five years.		<u>to maintain 10:</u> Monitor meter innovations for development of more accurate and less expensive flowmeters; work with the Exporter to help identify meter replacement needs. Keep communication lines with Exporters open and maintain productive relations. Keep the written agreement current with clear and explicit language that meets the ongoing needs of all parties.
Water Exported:	Select n/a if the water utility sells no bulk water to neighboring water utilities (no exported water sales)	Less than 25% of exported water sources are metered, remaining sources are estimated. No regular meter accuracy testing.	25% - 50% of exported water sources are metered; other sources estimated. No regular meter accuracy testing.	Conditions between 2 and 4	50% - 75% of exported water sources are metered, other sources estimated. Occasional meter accuracy testing conducted.	Conditions between 4 and 6	At least 75% of exported water sources are metered, meter accuracy testing and/or electronic calibration conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of exported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted annually, less than 10% of meters are found outside of +/- 6% accuracy.	Conditions between 8 and 10	100% of exported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted semi-annually for all meter installations, with less than 10% of accuracy tests found outside of +/- 3% accuracy.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Water Exported Volume" component: <i>(Note: usually, if the water utility being audited sells (Exports) water to a neighboring purchasing Utility, it is the responsibility of the utility exporting the water to maintain the metering installation measuring the Exported volume. The utility exporting the water should ensure that adequate meter upkeep takes place and an accurate measure of the Water Exported volume is quantified.)</i>		Review bulk water sales agreements with purchasing utilities; confirm requirements for use & upkeep of accurate metering. Identify needs to install new, or replace defective meters as needed. <i>to qualify for 2;</i>	Locate all exported water sources on maps and in field, launch meter accuracy testing for existing meters, begin to install meters on unmetred exported water interconnections and replace obsolete/defective meters <i>to qualify for 4;</i>		Formalize annual meter accuracy testing for all exported water meters. Continue installation of meters on unmetred exported water interconnections and replacement of obsolete/defective meters. <i>to qualify for 6;</i>		Complete project to install new, or replace defective, meters on all exported water interconnections. Maintain annual meter accuracy testing for all exported water meters. Repair or replace meters outside of +/- 6% accuracy. <i>to qualify for 8;</i>		Maintain annual meter accuracy testing for all meters. Repair or replace meters outside of +/- 3% accuracy. Investigate new meter technology; pilot one or more replacements with innovative meters in attempt to improve meter accuracy. <i>to qualify for 10;</i>		Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate/pilot improving metering technology. <i>to maintain 10;</i>
Water exported master meter and supply error adjustment:	Select n/a only if the water utility fails to have meters on its exported supply interconnections.	Inventory information on exported meters and paper records of measured volumes exist but are incomplete and/or in a very crude condition; data error cannot be determined. Written agreement(s) with the utility purchasing the water are missing or written in vague language concerning meter management and testing.	No automatic datalogging of exported supply volumes; daily readings are scribed on paper records without any accountability controls to confirm data accuracy and the absence of errors and data gaps in recorded volumes. Written agreement requires meter accuracy testing but is vague on the details of how and who conducts the testing.	Conditions between 2 and 4	Exported metered flow data is logged automatically in electronic format and reviewed at least on a monthly basis, with necessary corrections implemented. Meter data is adjusted by the utility selling (exporting) the water when gross data errors are detected. A coherent data trail exists for this process to protect both the utility exporting the water and the purchasing Utility. Written agreement exists and clearly states requirements and roles for meter accuracy testing and data management.	Conditions between 4 and 6	Hourly exported supply metered data is logged automatically & reviewed on at least a weekly basis by the utility selling the water. Data is adjusted to correct gross error when meter/instrumentation equipment malfunction is detected, and to correct for error found by meter accuracy testing. Any data gaps in the archived data are detected and corrected during the weekly review. A coherent data trail exists for this process to protect both the selling (exporting) utility and the purchasing Utility.	Conditions between 6 and 8	Continuous exported supply metered flow data is logged automatically & reviewed each business day by the utility selling (exporting) the water. Data is adjusted to correct gross error from detected meter/instrumentation equipment malfunction and any error confirmed by meter accuracy testing. Any data errors/gaps are detected and corrected on a daily basis. A data trail exists for the process to protect both the selling (exporting) Utility and the purchasing Utility.	Conditions between 8 and 10	Computerized system (SCADA or similar) automatically records data which is reviewed each business day by the utility selling (exporting) the water. Tight accountability controls ensure that all error/data gaps that occur in the archived flow data are quickly detected and corrected. A reliable data trail exists and contract provisions for meter testing and data management are reviewed by the selling Utility and purchasing Utility at least once every five years.
Improvements to attain higher data grading for "Water exported master meter and supply error adjustment" component:		<i>to qualify for 2;</i> Develop a plan to restructure recordkeeping system to capture all flow data; set a procedure to review flow data on a daily basis to detect input errors. Obtain more reliable information about existing meters by conducting field inspections of meters and related instrumentation, and obtaining manufacturer literature. Review the written agreement between the utility selling (exporting) the water and the purchasing Utility.	<i>to qualify for 4;</i> Install automatic datalogging equipment on exported supply meters. Set a procedure to review this data on a monthly basis to detect gross anomalies and data gaps. Launch discussions with the purchasing utilities to jointly review terms of the written agreements regarding meter accuracy testing and data management; revise the terms as necessary.		<i>to qualify for 6;</i> Refine computerized data collection and archive to include hourly exported supply metered flow data that is reviewed at least on a weekly basis to detect specific data anomalies and gaps. Make necessary corrections to errors/data errors on a weekly basis.		<i>to qualify for 8;</i> Ensure that all exported metered flow data is collected and archived on at least an hourly basis. All data is reviewed and errors/data gaps are corrected each business day.		<i>to qualify for 10;</i> Conduct accountability checks to confirm that all exported metered flow data is reviewed and corrected each business day by the utility selling the water. Results of all meter accuracy tests and data corrections should be available for sharing between the utility and the purchasing Utility. Establish a schedule for a regular review and updating of the contractual language in the written agreements with the purchasing utilities; at least every five years.		<i>to maintain 10;</i> Monitor meter innovations for development of more accurate and less expensive flowmeters; work with the purchasing utilities to help identify meter replacement needs. Keep communication lines with the purchasing utilities open and maintain productive relations. Keep the written agreement current with clear and explicit language that meets the ongoing needs of all parties.
AUTHORIZED CONSUMPTION											
Billed metered:	n/a (not applicable). Select n/a only if the entire customer population is not metered and is billed for water service on a flat or fixed rate basis. In such a case the volume entered must be zero.	Less than 50% of customers with volume-based billings from meter readings; flat or fixed rate billing exists for the majority of the customer population	At least 50% of customers with volume-based billing from meter reads; flat rate billing for others. Manual meter reading is conducted; with less than 50% meter read success rate, remaining accounts' consumption is estimated. Limited meter records, no regular meter testing or replacement. Billing data maintained on paper records, with no auditing.	Conditions between 2 and 4	At least 75% of customers with volume-based, billing from meter reads; flat or fixed rate billing for remaining accounts. Manual meter reading is conducted with at least 50% meter read success rate, consumption for accounts with failed reads is estimated. Purchase records verify age of customer meters; only very limited meter accuracy testing is conducted. Customer meters are replaced only upon complete failure. Computerized billing records exist, but only sporadic internal auditing conducted.	Conditions between 4 and 6	At least 90% of customers with volume-based billing from meter reads; consumption for remaining accounts is estimated. Manual customer meter reading gives at least 80% customer meter reading success rate, consumption for accounts with failed reads is estimated. Good customer meter records exist, but only limited meter accuracy testing is conducted. Regular replacement is conducted for the oldest meters. Computerized billing records exist with annual auditing of summary statistics conducted by utility personnel.	Conditions between 6 and 8	At least 97% of customers exist with volume-based billing from meter reads. At least 90% customer meter reading success rate; or at least 80% read success rate with planning and budgeting for trials of Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) in one or more pilot areas. Good customer meter records. Regular meter accuracy testing guides replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics occurs annually by utility personnel, and is verified by third party at least once every five years.	Conditions between 8 and 10	At least 99% of customers exist with volume-based billing from meter reads. At least 95% customer meter reading success rate; or minimum 80% meter reading success rate, with Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) trials underway. Statistically significant customer meter testing and replacement program in place on a continuous basis. Computerized billing with routine, detailed auditing, including field investigation of representative sample of accounts undertaken annually by utility personnel. Audit is conducted by third party auditors at least once every three years.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Billed Metered Consumption" component:	If n/a is selected because the customer meter population is unmetered, consider establishing a new policy to meter the customer population and employ water rates based upon metered volumes.	<u>to qualify for 2:</u> Conduct investigations or trials of customer meters to select appropriate meter models. Budget funding for meter installations. Investigate volume based water rate structures.	<u>to qualify for 4:</u> Purchase and install meters on unmetered accounts. Implement policies to improve meter reading success. Catalog meter information during meter read visits to identify age/model of existing meters. Test a minimal number of meters for accuracy. Install computerized billing system.		<u>to qualify for 6:</u> Purchase and install meters on unmetered accounts. Eliminate flat fee billing and establish appropriate water rate structure based upon measured consumption. Continue to achieve verifiable success in removing manual meter reading barriers. Expand meter accuracy testing. Launch regular meter replacement program. Launch a program of annual auditing of global billing statistics by utility personnel.		<u>to qualify for 8:</u> Purchase and install meters on unmetered accounts. If customer meter reading success rate is less than 97%, assess cost-effectiveness of Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) system for portion or entire system; <u>or</u> otherwise achieve ongoing improvements in manual meter reading success rate to 97% or higher. Refine meter accuracy testing program. Set meter replacement goals based upon accuracy test results. Implement annual auditing of detailed billing records by utility personnel and implement third party auditing at least once every five years.		<u>to qualify for 10:</u> Purchase and install meters on unmetered accounts. Launch Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) system trials if manual meter reading success rate of at least 99% is not achieved within a five-year program. Continue meter accuracy testing program. Conduct planning and budgeting for large scale meter replacement based upon meter life cycle analysis using cumulative flow target. Continue annual detailed billing data auditing by utility personnel and conduct third party auditing at least once every three years.		<u>to maintain 10:</u> Continue annual internal billing data auditing, and third party auditing at least every three years. Continue customer meter accuracy testing to ensure that accurate customer meter readings are obtained and entered as the basis for volume based billing. Stay abreast of improvements in Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) and information management. Plan and budget for justified upgrades in metering, meter reading and billing data management to maintain very high accuracy in customer metering and billing.
Billed unmetered:	Select n/a if it is the policy of the water utility to meter all customer connections, and it has been confirmed by detailed auditing that all customers do indeed have a water meter; i.e. no intentionally unmetered accounts exist	Water utility policy does <u>not</u> require customer metering; flat or fixed fee billing is employed. No data is collected on customer consumption. The only estimates of customer population consumption available are derived from data estimation methods using average fixture count multiplied by number of connections, or similar approach.	Water utility policy does <u>not</u> require customer metering; flat or fixed fee billing is employed. Some metered accounts exist in parts of the system (pilot areas or District Metered Areas) with consumption read periodically or recorded on portable dataloggers over one, three, or seven day periods. Data from these sample meters are used to infer consumption for the total customer population. Site specific estimation methods are used for unusual buildings/water uses.	Conditions between 2 and 4	Water utility policy <u>does</u> require metering and volume based billing in general. However, a liberal amount of exemptions and a lack of clearly written and communicated procedures result in up to 20% of billed accounts believed to be unmetered by exemption; or the water utility is in transition to becoming fully metered, and a large number of customers remain unmetered. A rough estimate of the annual consumption for all unmetered accounts is included in the annual water audit, with no inspection of individual unmetered accounts.	Conditions between 4 and 6	Water utility policy <u>does</u> require metering and volume based billing but established exemptions exist for a portion of accounts such as municipal buildings. As many as 15% of billed accounts are unmetered due to this exemption or meter installation difficulties. Only a group estimate of annual consumption for all unmetered accounts is included in the annual water audit, with no inspection of individual unmetered accounts.	Conditions between 6 and 8	Water utility policy <u>does</u> require metering and volume based billing for all customer accounts. However, less than 5% of billed accounts remain unmetered because meter installation is hindered by unusual circumstances. The goal is to minimize the number of unmetered accounts. Reliable estimates of consumption are obtained for these unmetered accounts via site specific estimation methods.	Conditions between 8 and 10	Water utility policy <u>does</u> require metering and volume based billing for all customer accounts. Less than 2% of billed accounts are unmetered and exist because meter installation is hindered by unusual circumstances. The goal exists to minimize the number of unmetered accounts to the extent that is economical. Reliable estimates of consumption are obtained at these accounts via site specific estimation methods.
Improvements to attain higher data grading for "Billed Unmetered Consumption" component:		<u>to qualify for 2:</u> Conduct research and evaluate cost/benefit of a new water utility policy to require metering of the customer population; thereby greatly reducing or eliminating unmetered accounts. Conduct pilot metering project by installing water meters in small sample of customer accounts and periodically reading the meters or datalogging the water consumption over one, three, or seven day periods.	<u>to qualify for 4:</u> Implement a new water utility policy requiring customer metering. Launch or expand pilot metering study to include several different meter types, which will provide data for economic assessment of full scale metering options. Assess sites with access difficulties to devise means to obtain water consumption volumes. Begin customer meter installation.		<u>to qualify for 6:</u> Refine policy and procedures to improve customer metering participation for all but solidly exempt accounts. Assign staff resources to review billing records to identify errant unmetered properties. Specify metering needs and funding requirements to install sufficient meters to significant reduce the number of unmetered accounts		<u>to qualify for 8:</u> Push to install customer meters on a full scale basis. Refine metering policy and procedures to ensure that all accounts, including municipal properties, are designated for meters. Plan special efforts to address "hard-to-access" accounts. Implement procedures to obtain a reliable consumption estimate for the remaining few unmetered accounts awaiting meter installation.		<u>to qualify for 10:</u> Continue customer meter installation throughout the service area, with a goal to minimize unmetered accounts. Sustain the effort to investigate accounts with access difficulties, and devise means to install water meters or otherwise measure water consumption.		<u>to maintain 10:</u> Continue to refine estimation methods for unmetered consumption and explore means to establish metering, for as many billed remaining unmetered accounts as is economically feasible.
Unbilled metered:	select n/a if all billing-exempt consumption is unmetered.	Billing practices exempt certain accounts, such as municipal buildings, but written policies do not exist; and a reliable count of unbilled metered accounts is unavailable. Meter upkeep and meter reading on these accounts is rare and not considered a priority. Due to poor recordkeeping and lack of auditing, water consumption for all such accounts is purely guesstimated.	Billing practices exempt certain accounts, such as municipal buildings, but only scattered, dated written directives exist to justify this practice. A reliable count of unbilled metered accounts is unavailable. Sporadic meter replacement and meter reading occurs on an as-needed basis. The total annual water consumption for all unbilled, metered accounts is estimated based upon approximating the number of accounts and assigning consumption from actively billed accounts of same meter size.	Conditions between 2 and 4	Dated written procedures permit billing exemption for specific accounts, such as municipal properties, but are unclear regarding certain other types of accounts. Meter reading is given low priority and is sporadic. Consumption is quantified from meter readings where available. The total number of unbilled, unmetered accounts must be estimated along with consumption volumes.	Conditions between 4 and 6	Written policies regarding billing exemptions exist but adherence in practice is questionable. Metering and meter reading for municipal buildings is reliable but sporadic for other unbilled metered accounts. Periodic auditing of such accounts is conducted. Water consumption is quantified directly from meter readings where available, but the majority of the consumption is estimated.	Conditions between 6 and 8	Written policy identifies the types of accounts granted a billing exemption. Customer meter management and meter reading are considered secondary priorities, but meter reading is conducted at least annually to obtain consumption volumes for the annual water audit. High level auditing of billing records ensures that a reliable census of such accounts exists.	Conditions between 8 and 10	Clearly written policy identifies the types of accounts given a billing exemption, with emphasis on keeping such accounts to a minimum. Customer meter management and meter reading for these accounts is given proper priority and is reliably conducted. Regular auditing confirms this. Total water consumption for these accounts is taken from reliable readings from accurate meters.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Unbilled Metered Consumption" component:		<u>to qualify for 2:</u> Reassess the water utility's policy allowing certain accounts to be granted a billing exemption. Draft an outline of a new written policy for billing exemptions, with clear justification as to why any accounts should be exempt from billing, and with the intention to keep the number of such accounts to a minimum.	<u>to qualify for 4:</u> Review historic written directives and policy documents allowing certain accounts to be billing-exempt. Draft an outline of a written policy for billing exemptions, identify criteria that grants an exemption, with a goal of keeping this number of accounts to a minimum. Consider increasing the priority of reading meters on unbilled accounts at least annually.		<u>to qualify for 6:</u> Draft a new written policy regarding billing exemptions based upon consensus criteria allowing this occurrence. Assign resources to audit meter records and billing records to obtain census of unbilled metered accounts. Gradually include a greater number of these metered accounts to the routes for regular meter reading.		<u>to qualify for 8:</u> Communicate billing exemption policy throughout the organization and implement procedures that ensure proper account management. Conduct inspections of accounts confirmed in unbilled metered status and verify that accurate meters exist and are scheduled for routine meter readings. Gradually increase the number of unbilled metered accounts that are included in regular meter reading routes.		<u>to qualify for 10:</u> Ensure that meter management (meter accuracy testing, meter replacement) and meter reading activities for unbilled accounts are accorded the same priority as billed accounts. Establish ongoing annual auditing process to ensure that water consumption is reliably collected and provided to the annual water audit process.		<u>to maintain 10:</u> Reassess the utility's philosophy in allowing any water uses to go "unbilled". It is possible to meter and bill all accounts, even if the fee charged for water consumption is discounted or waived. Metering and billing all accounts ensures that water consumption is tracked and water waste from plumbing leaks is detected and minimized.
Unbilled unmetered:		Extent of unbilled, unmetered consumption is unknown due to unclear policies and poor recordkeeping. Total consumption is quantified based upon a purely subjective estimate.	Clear extent of unbilled, unmetered consumption is unknown, but a number of events are randomly documented each year, confirming existence of such consumption, but without sufficient documentation to quantify an accurate estimate of the annual volume consumed.	Conditions between 2 and 4	Extent of unbilled, unmetered consumption is partially known, and procedures exist to document certain events such as miscellaneous fire hydrant uses. Formulae is used to quantify the consumption from such events (time running multiplied by typical flowrate, multiplied by number of events).	Default value of 1.25% of system input volume is employed	Coherent policies exist for some forms of unbilled, unmetered consumption but others await closer evaluation. Reasonable recordkeeping for the managed uses exists and allows for annual volumes to be quantified by inference, but unsupervised uses are guesstimated.	Conditions between 6 and 8	Clear policies and good recordkeeping exist for some uses (ex: water used in periodic testing of unmetered fire connections), but other uses (ex: miscellaneous uses of fire hydrants) have limited oversight. Total consumption is a mix of well quantified use such as from formulae (time running multiplied by typical flow, multiplied by number of events) or temporary meters, and relatively subjective estimates of less regulated use.	Conditions between 8 and 10	Clear policies exist to identify permitted use of water in unbilled, unmetered fashion, with the intention of minimizing this type of consumption. Good records document each occurrence and consumption is quantified via formulae (time running multiplied by typical flow, multiplied by number of events) or use of temporary meters.
Improvements to attain higher data grading for "Unbilled Unmetered Consumption" component:		<u>to qualify for 5:</u> Utilize the accepted default value of 1.25% of the volume of water supplied as an expedient means to gain a reasonable quantification of this use. <u>to qualify for 2:</u> Establish a policy regarding what water uses should be allowed to remain as unbilled and unmetered. Consider tracking a small sample of one such use (ex: fire hydrant flushings).	<u>to qualify for 5:</u> Utilize accepted default value of 1.25% of the volume of water supplied as an expedient means to gain a reasonable quantification of this use. <u>to qualify for 4:</u> Evaluate the documentation of events that have been observed. Meet with user groups (ex: for fire hydrants - fire departments, contractors to ascertain their need and/or volume requirements for water from fire hydrants).		<u>to qualify for 5:</u> Utilize accepted default value of 1.25% of the volume of water supplied as an expedient means to gain a reasonable quantification of all such use. This is particularly appropriate for water utilities who are in the early stages of the water auditing process, and should focus on other components since the volume of unbilled, unmetered consumption is usually a relatively small quality component, and other larger-quantity components should take priority.	<u>to qualify for 6 or greater:</u> Finalize policy and begin to conduct field checks to better establish and quantify such usage. Proceed if top-down audit exists and/or a great volume of such use is suspected.	<u>to qualify for 8:</u> Assess water utility policy and procedures for various unmetered usages. For example, ensure that a policy exists and permits are issued for use of fire hydrants by persons outside of the utility. Create written procedures for use and documentation of fire hydrants by water utility personnel. Use same approach for other types of unbilled, unmetered water usage.		<u>to qualify for 10:</u> Refine written procedures to ensure that all uses of unbilled, unmetered water are overseen by a structured permitting process managed by water utility personnel. Reassess policy to determine if some of these uses have value in being converted to billed and/or metered status.		<u>to maintain 10:</u> Continue to refine policy and procedures with intention of reducing the number of allowable uses of water in unbilled and unmetered fashion. Any uses that can feasibly become billed and metered should be converted eventually.
APPARENT LOSSES											
Unauthorized consumption:		Extent of unauthorized consumption is unknown due to unclear policies and poor recordkeeping. Total unauthorized consumption is guesstimated.	Unauthorized consumption is a known occurrence, but its extent is a mystery. There are no requirements to document observed events, but periodic field reports capture some of these occurrences. Total unauthorized consumption is approximated from this limited data.	conditions between 2 and 4	Procedures exist to document some unauthorized consumption such as observed unauthorized fire hydrant openings. Use formulae to quantify this consumption (time running multiplied typical flowrate, multiplied by number of events).	Default value of 0.25% of volume of water supplied is employed	Coherent policies exist for some forms of unauthorized consumption (more than simply fire hydrant misuse) but others await closer evaluation. Reasonable surveillance and recordkeeping exist for occurrences that fall under the policy. Volumes quantified by inference from these records.	Conditions between 6 and 8	Clear policies and good auditable recordkeeping exist for certain events (ex: tampering with water meters, illegal bypasses of customer meters); but other occurrences have limited oversight. Total consumption is a combination of volumes from formulae (time x typical flow) and subjective estimates of unconfirmed consumption.	Conditions between 8 and 10	Clear policies exist to identify all known unauthorized uses of water. Staff and procedures exist to provide enforcement of policies and detect violations. Each occurrence is recorded and quantified via formulae (estimated time running multiplied by typical flow) or similar methods. All records and calculations should exist in a form that can be audited by a third party.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Unauthorized Consumption" component:		<p><u>to qualify for 5:</u> Use accepted default of 0.25% of volume of water supplied.</p> <p><u>to qualify for 2:</u> Review utility policy regarding what water uses are considered unauthorized, and consider tracking a small sample of one such occurrence (ex: unauthorized fire hydrant openings)</p>	<p><u>to qualify for 5:</u> Use accepted default of 0.25% of system input volume</p> <p><u>to qualify for 4:</u> Review utility policy regarding what water uses are considered unauthorized, and consider tracking a small sample of one such occurrence (ex: unauthorized fire hydrant openings)</p>		<p><u>to qualify for 5:</u> Utilize accepted default value of 0.25% of volume of water supplied as an expedient means to gain a reasonable quantification of all such use. This is particularly appropriate for water utilities who are in the early stages of the water auditing process.</p>	<p><u>to qualify for 6 or greater:</u> Finalize policy updates to clearly identify the types of water consumption that are authorized from those usages that fall outside of this policy and are, therefore, unauthorized. Begin to conduct regular field checks. Proceed if the top-down audit already exists and/or a great volume of such use is suspected.</p>	<p><u>to qualify for 8:</u> Assess water utility policies to ensure that all known occurrences of unauthorized consumption are outlawed, and that appropriate penalties are prescribed. Create written procedures for detection and documentation of various occurrences of unauthorized consumption as they are uncovered.</p>		<p><u>to qualify for 10:</u> Refine written procedures and assign staff to seek out likely occurrences of unauthorized consumption. Explore new locking devices, monitors and other technologies designed to detect and thwart unauthorized consumption.</p>		<p><u>to maintain 10:</u> Continue to refine policy and procedures to eliminate any loopholes that allow or tacitly encourage unauthorized consumption. Continue to be vigilant in detection, documentation and enforcement efforts.</p>
Customer metering inaccuracies:	select n/a only if the entire customer population is unmetered. In such a case the volume entered must be zero.	Customer meters exist, but with unorganized paper records on meters; no meter accuracy testing or meter replacement program for any size of retail meter. Metering workflow is driven chaotically with no proactive management. Loss volume due to aggregate meter inaccuracy is guesstimated.	Poor recordkeeping and meter oversight is recognized by water utility management who has allotted staff and funding resources to organize improved recordkeeping and start meter accuracy testing. Existing paper records gathered and organized to provide cursory disposition of meter population. Customer meters are tested for accuracy only upon customer request.	Conditions between 2 and 4	Reliable recordkeeping exists; meter information is improving as meters are replaced. Meter accuracy testing is conducted annually for a small number of meters (more than just customer requests, but less than 1% of inventory). A limited number of the oldest meters are replaced each year. Inaccuracy volume is largely an estimate, but refined based upon limited testing data.	Conditions between 4 and 6	A reliable electronic recordkeeping system for meters exists. The meter population includes a mix of new high performing meters and dated meters with suspect accuracy. Routine, but limited, meter accuracy testing and meter replacement occur. Inaccuracy volume is quantified using a mix of reliable and less certain data.	Conditions between 6 and 8	Ongoing meter replacement and accuracy testing result in highly accurate customer meter population. Testing is conducted on samples of meters of varying age and accumulated volume of throughput to determine optimum replacement time for various types of meters.	Ongoing meter replacement and accuracy testing result in highly accurate customer meter population. Statistically significant number of meters are tested in audit year. This testing is conducted on samples of meters of varying age and accumulated volume of throughput to determine optimum replacement time for these meters.	Good records of all active customer meters exist and include as a minimum: meter number, account number/location, type, size and manufacturer. Ongoing meter replacement occurs according to a targeted and justified basis. Regular meter accuracy testing gives a reliable measure of composite inaccuracy volume for the customer meter population. New metering technology is embraced to keep overall accuracy improving. Procedures are reviewed by a third party knowledgeable in the M36 methodology.
Improvements to attain higher data grading for "Customer meter inaccuracy volume" component:	If n/a is selected because the customer meter population is unmetered, consider establishing a new policy to meter the customer population and employ water rates based upon metered volumes.	<p><u>to qualify for 2:</u> Gather available meter purchase records. Conduct testing on a small number of meters believed to be the most inaccurate. Review staffing needs of the metering group and budget for necessary resources to better organize meter management.</p>	<p><u>to qualify for 4:</u> Implement a reliable record keeping system for customer meter histories, preferably using electronic methods typically linked to, or part of, the Customer Billing System or Customer Information System. Expand meter accuracy testing to a larger group of meters.</p>		<p><u>to qualify for 6:</u> Standardize the procedures for meter recordkeeping within an electronic information system. Accelerate meter accuracy testing and meter replacements guided by testing results.</p>		<p><u>to qualify for 8:</u> Expand annual meter accuracy testing to evaluate a statistically significant number of meter makes/models. Expand meter replacement program to replace statistically significant number of poor performing meters each year.</p>		<p><u>to qualify for 9:</u> Continue efforts to manage meter population with reliable recordkeeping. Test a statistically significant number of meters each year and analyze test results in an ongoing manner to serve as a basis for a target meter replacement strategy based upon accumulated volume throughput.</p>	<p><u>to qualify for 10:</u> Continue efforts to manage meter population with reliable recordkeeping, meter testing and replacement. Evaluate new meter types and install one or more types in 5-10 customer accounts each year in order to pilot improving metering technology.</p>	<p><u>to maintain 10:</u> Increase the number of meters tested and replaced as justified by meter accuracy test data. Continually monitor development of new metering technology and Advanced Metering Infrastructure (AMI) to grasp opportunities for greater accuracy in metering of water flow and management of customer consumption data.</p>
Systematic Data Handling Errors:	Note: all water utilities incur some amount of this error. Even in water utilities with unmetered customer populations and fixed rate billing, errors occur in annual billing tabulations. Enter a positive value for the volume and select a grading.	Policies and procedures for activation of new customer water billing accounts are vague and lack accountability. Billing data is maintained on paper records which are not well organized. No auditing is conducted to confirm billing data handling efficiency. An unknown number of customers escape routine billing due to lack of billing process oversight.	Policy and procedures for activation of new customer accounts and oversight of billing records exist but need refinement. Billing data is maintained on paper records or insufficiently capable electronic database. Only periodic unstructured auditing work is conducted to confirm billing data handling efficiency. The volume of unbilled water due to billing lapses is a guess.	Conditions between 2 and 4	Policy and procedures for new account activation and oversight of billing operations exist but needs refinement. Computerized billing system exists, but is dated or lacks needed functionality. Periodic, limited internal audits conducted and confirm with approximate accuracy the consumption volumes lost to billing lapses.	Conditions between 4 and 6	Policy and procedures for new account activation and oversight of billing operations is adequate and reviewed periodically. Computerized billing system is in use with basic reporting available. Any effect of billing adjustments on measured consumption volumes is well understood. Internal checks of billing data error conducted annually. Reasonably accurate quantification of consumption volume lost to billing lapses is obtained.	Conditions between 6 and 8	New account activation and billing operations policy and procedures are reviewed at least biannually. Computerized billing system includes an array of reports to confirm billing data and system functionality. Checks are conducted routinely to flag and explain zero consumption accounts. Annual internal checks conducted with third party audit conducted at least once every five years. Accountability checks flag billing lapses. Consumption lost to billing lapses is well quantified and reducing year-by-year.	Conditions between 8 and 10	Sound written policy and procedures exist for new account activation and oversight of customer billing operations. Robust computerized billing system gives high functionality and reporting capabilities which are utilized, analyzed and the results reported each billing cycle. Assessment of policy and data handling errors are conducted internally and audited by third party at least once every three years, ensuring consumption lost to billing lapses is minimized and detected as it occurs.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Systematic Data Handling Error volume" component:		<u>to qualify for 2:</u> Draft written policy and procedures for activating new water billing accounts and oversight of billing operations. Investigate and budget for computerized customer billing system. Conduct initial audit of billing records by flow-charting the basic business processes of the customer account/billing function.	<u>to qualify for 4:</u> Finalize written policy and procedures for activation of new billing accounts and overall billing operations management. Implement a computerized customer billing system. Conduct initial audit of billing records as part of this process.		<u>to qualify for 6:</u> Refine new account activation and billing operations procedures and ensure consistency with the utility policy regarding billing, and minimize opportunity for missed billings. Upgrade or replace customer billing system for needed functionality - ensure that billing adjustments don't corrupt the value of consumption volumes. Procedurize internal annual audit process.		<u>to qualify for 8:</u> Formalize regular review of new account activation process and general billing practices. Enhance reporting capability of computerized billing system. Formalize regular auditing process to reveal scope of data handling error. Plan for periodic third party audit to occur at least once every five years.		<u>to qualify for 10:</u> Close policy/procedure loopholes that allow some customer accounts to go unbilled, or data handling errors to exist. Ensure that billing system reports are utilized, analyzed and reported every billing cycle. Ensure that internal and third party audits are conducted at least once every three years.		<u>to maintain 10:</u> Stay abreast of customer information management developments and innovations. Monitor developments of Advanced Metering Infrastructure (AMI) and integrate technology to ensure that customer endpoint information is well-monitored and errors/lapses are at an economic minimum.
SYSTEM DATA											
Length of mains:		Poorly assembled and maintained paper as-built records of existing water main installations makes accurate determination of system pipe length impossible. Length of mains is guesstimated.	Paper records in poor or uncertain condition (no annual tracking of installations & abandonments). Poor procedures to ensure that new water mains installed by developers are accurately documented.	Conditions between 2 and 4	Sound written policy and procedures exist for documenting new water main installations, but gaps in management result in a uncertain degree of error in tabulation of mains length.	Conditions between 4 and 6	Sound written policy and procedures exist for permitting and commissioning new water mains. Highly accurate paper records with regular field validation; or electronic records and asset management system in good condition. Includes system backup.	Conditions between 6 and 8	Sound written policy and procedures exist for permitting and commissioning new water mains. Electronic recordkeeping such as a Geographical Information System (GIS) and asset management system are used to store and manage data.	Conditions between 8 and 10	Sound written policy exists for managing water mains extensions and replacements. Geographic Information System (GIS) data and asset management database agree and random field validation proves truth of databases. Records of annual field validation should be available for review.
Improvements to attain higher data grading for "Length of Water Mains" component:		<u>to qualify for 2:</u> Assign personnel to inventory current as-built records and compare with customer billing system records and highway plans in order to verify poorly documented pipelines. Assemble policy documents regarding permitting and documentation of water main installations by the utility and building developers; identify gaps in procedures that result in poor documentation of new water main installations.	<u>to qualify for 4:</u> Complete inventory of paper records of water main installations for several years prior to audit year. Review policy and procedures for commissioning and documenting new water main installation.		<u>to qualify for 6:</u> Finalize updates/improvements to written policy and procedures for permitting/commissioning new main installations. Confirm inventory of records for five years prior to audit year; correct any errors or omissions.		<u>to qualify for 8:</u> Launch random field checks of limited number of locations. Convert to electronic database such as a Geographic Information System (GIS) with backup as justified. Develop written policy and procedures.		<u>to qualify for 10:</u> Link Geographic Information System (GIS) and asset management databases, conduct field verification of data. Record field verification information at least annually.		<u>to maintain 10:</u> Continue with standardization and random field validation to improve the completeness and accuracy of the system.
Number of active AND inactive service connections:		Vague permitting (of new service connections) policy and poor paper recordkeeping of customer connections/billings result in suspect determination of the number of service connections, which may be 10-15% in error from actual count.	General permitting policy exists but paper records, procedural gaps, and weak oversight result in questionable total for number of connections, which may vary 5-10% of actual count.	Conditions between 2 and 4	Written account activation policy and procedures exist, but with some gaps in performance and oversight. Computerized information management system is being brought online to replace dated paper recordkeeping system. Reasonably accurate tracking of service connection installations & abandonments; but count can be up to 5% in error from actual total.	Conditions between 4 and 6	Written new account activation and overall billing policies and procedures are adequate and reviewed periodically. Computerized information management system is in use with annual installations & abandonments totaled. Very limited field verifications and audits. Error in count of number of service connections is believed to be no more than 3%.	Conditions between 6 and 8	Policies and procedures for new account activation and overall billing operations are written, well-structured and reviewed at least biannually. Well-managed computerized information management system exists and routine, periodic field checks and internal system audits are conducted. Counts of connections are no more than 2% in error.	Conditions between 8 and 10	Sound written policy and well managed and audited procedures ensure reliable management of service connection population. Computerized information management system, Customer Billing System, and Geographic Information System (GIS) information agree; field validation proves truth of databases. Count of connections recorded as being in error is less than 1% of the entire population.
Improvements to attain higher data grading for "Number of Active and Inactive Service Connections" component:	Note: The number of Service Connections does not include fire hydrant leads/lines connecting the hydrant to the water main	<u>to qualify for 2:</u> Draft new policy and procedures for new account activation and overall billing operations. Research and collect paper records of installations & abandonments for several years prior to audit year.	<u>to qualify for 4:</u> Refine policy and procedures for new account activation and overall billing operations. Research computerized recordkeeping system (Customer Information System or Customer Billing System) to improve documentation format for service connections.		<u>to qualify for 6:</u> Refine procedures to ensure consistency with new account activation and overall billing policy to establish new service connections or decommission existing connections. Improve process to include all totals for at least five years prior to audit year.		<u>to qualify for 8:</u> Formalize regular review of new account activation and overall billing operations policies and procedures. Launch random field checks of limited number of locations. Develop reports and auditing mechanisms for computerized information management system.		<u>to qualify for 10:</u> Close any procedural loopholes that allow installations to go undocumented. Link computerized information management system with Geographic Information System (GIS) and formalize field inspection and information system auditing processes. Documentation of new or decommissioned service connections encounters several levels of checks and balances.		<u>to maintain 10:</u> Continue with standardization and random field validation to improve knowledge of system.
	Note: If customer water	Gradings 1-9 apply if customer properties are unmetered, if customer meters exist and are located inside the customer building premises, or if the water utility owns and is responsible for the entire service connection piping from the water main to the customer building. In any of these cases the average distance between the curb stop or boundary separating utility/customer responsibility for service connection piping, and the typical first point of use (ex: faucet) or the customer meter must be quantified. Gradings of 1-9 are used to grade the validity of the means to quantify this value. (See the "Service Connection Diagram" worksheet)									Either of two conditions can be met for a grading of 10:

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Average length of customer service line:	Note: If customer water meters are located outside of the customer building next to the curb stop or boundary separating utility/customer responsibility, then the auditor should answer "Yes" to the question on the Reporting Worksheet asking about this. If the answer is Yes, the grading description listed under the Grading of 10(a) will be followed, with a value of zero automatically entered at a Grading of 10. See the Service Connection Diagram worksheet for a visual presentation of this distance.	Vague policy exists to define the delineation of water utility ownership and customer ownership of the service connection piping. Curb stops are perceived as the breakpoint but these have not been well-maintained or documented. Most are buried or obscured. Their location varies widely from site-to-site, and estimating this distance is arbitrary due to the unknown location of many curb stops.	Policy requires that the curb stop serves as the delineation point between water utility ownership and customer ownership of the service connection piping. The piping from the water main to the curb stop is the property of the water utility; and the piping from the curb stop to the customer building is owned by the customer. Curb stop locations are not well documented and the average distance is based upon a limited number of locations measured in the field.	Conditions between 2 and 4	Good policy requires that the curb stop serves as the delineation point between water utility ownership and customer ownership of the service connection piping. Curb stops are generally installed as needed and are reasonably documented. Their location varies widely from site-to-site, and an estimate of this distance is hindered by the availability of paper records of limited accuracy.	Conditions between 4 and 6	Clear written policy exists to define utility/customer responsibility for service connection piping. Accurate, well-maintained paper or basic electronic recordkeeping system exists. Periodic field checks confirm piping lengths for a sample of customer properties.	Conditions between 6 and 8	Clearly worded policy standardizes the location of curb stops and meters, which are inspected upon installation. Accurate and well maintained electronic records exist with periodic field checks to confirm locations of service lines, curb stops and customer meter pits. An accurate number of customer properties from the customer billing system allows for reliable averaging of this length.	Conditions between 8 and 10	a) Customer water meters exist outside of customer buildings next to the curb stop or boundary separating utility/customer responsibility for service connection piping. If so, answer "Yes" to the question on the Reporting Working asking about this condition. A value of zero and a Grading of 10 are automatically entered in the Reporting Worksheet. b). Meters exist inside customer buildings, or properties are unmetered. In either case, answer "No" to the Reporting Worksheet question on meter location, and enter a distance determined by the auditor. For a Grading of 10 this value must be a very reliable number from a Geographic Information System (GIS) and confirmed by a statistically valid number of field checks.
Improvements to attain higher data grading for "Average Length of Customer Service Line" component:		<u>to qualify for 2:</u> Research and collect paper records of service line installations. Inspect several sites in the field using pipe locators to locate curb stops. Obtain the length of this small sample of connections in this manner.	<u>to qualify for 4:</u> Formalize and communicate policy delineating utility/customer responsibilities for service connection piping. Assess accuracy of paper records by field inspection of a small sample of service connections using pipe locators as needed. Research the potential migration to a computerized information management system to store service connection data.		<u>to qualify for 6:</u> Establish coherent procedures to ensure that policy for curb stop, meter installation and documentation is followed. Gain consensus within the water utility for the establishment of a computerized information management system.		<u>to qualify for 8:</u> Implement an electronic means of recordkeeping, typically via a customer information system, customer billing system, or Geographic Information System (GIS). Standardize the process to conduct field checks of a limited number of locations.		<u>to qualify for 10:</u> Link customer information management system and Geographic Information System (GIS), standardize process for field verification of data.		<u>to maintain 10:</u> Continue with standardization and random field validation to improve knowledge of service connection configurations and customer meter locations.
Average operating pressure:		Available records are poorly assembled and maintained paper records of supply pump characteristics and water distribution system operating conditions. Average pressure is guesstimated based upon this information and ground elevations from crude topographical maps. Widely varying distribution system pressures due to undulating terrain, high system head loss and weak/erratic pressure controls further compromise the validity of the average pressure calculation.	Limited telemetry monitoring of scattered pumping station and water storage tank sites provides some static pressure data, which is recorded in handwritten logbooks. Pressure data is gathered at individual sites only when low pressure complaints arise. Average pressure is determined by averaging relatively crude data, and is affected by significant variation in ground elevations, system head loss and gaps in pressure controls in the distribution system.	Conditions between 2 and 4	Effective pressure controls separate different pressure zones; moderate pressure variation across the system, occasional open boundary valves are discovered that breach pressure zones. Basic telemetry monitoring of the distribution system logs pressure data electronically. Pressure data gathered by gauges or dataloggers at fire hydrants or buildings when low pressure complaints arise, and during fire flow tests and system flushing. Reliable topographical data exists. Average pressure is calculated using this mix of data.	Conditions between 4 and 6	Reliable pressure controls separate distinct pressure zones; only very occasional open boundary valves are encountered that breach pressure zones. Well-covered telemetry monitoring of the distribution system (not just pumping at source treatment plants or wells) logs extensive pressure data electronically. Pressure gathered by gauges/dataloggers at fire hydrants and buildings when low pressure complaints arise, and during fire flow tests and system flushing. Average pressure is determined by using this mix of reliable data.	Conditions between 6 and 8	Well-managed, discrete pressure zones exist with generally predictable pressure fluctuations. A current full-scale SCADA System or similar realtime monitoring system exists to monitor the water distribution system and collect data, including real time pressure readings at representative sites across the system. The average system pressure is determined from reliable monitoring system data.	Conditions between 8 and 10	Well-managed pressure districts/zones, SCADA System and hydraulic model exist to give very precise pressure data across the water distribution system. Average system pressure is reliably calculated from extensive, reliable, and cross-checked data. Calculations are reported on an annual basis as a minimum.
Improvements to attain higher data grading for "Average Operating Pressure" component:		<u>to qualify for 2:</u> Employ pressure gauging and/or datalogging equipment to obtain pressure measurements from fire hydrants. Locate accurate topographical maps of service area in order to confirm ground elevations. Research pump data sheets to find pump pressure/flow characteristics	<u>to qualify for 4:</u> Formalize a procedure to use pressure gauging/datalogging equipment to gather pressure data during various system events such as low pressure complaints, or operational testing. Gather pump pressure and flow data at different flow regimes. Identify faulty pressure controls (pressure reducing valves, altitude valves, partially open boundary valves) and plan to properly configure pressure zones. Make all pressure data from these efforts available to generate system-wide average pressure.		<u>to qualify for 6:</u> Expand the use of pressure gauging/datalogging equipment to gather scattered pressure data at a representative set of sites, based upon pressure zones or areas. Utilize pump pressure and flow data to determine supply head entering each pressure zone or district. Correct any faulty pressure controls (pressure reducing valves, altitude valves, partially open boundary valves) to ensure properly configured pressure zones. Use expanded pressure dataset from these activities to generate system-wide average pressure.		<u>to qualify for 8:</u> Install a Supervisory Control and Data Acquisition (SCADA) System, or similar realtime monitoring system, to monitor system parameters and control operations. Set regular calibration schedule for instrumentation to insure data accuracy. Obtain accurate topographical data and utilize pressure data gathered from field surveys to provide extensive, reliable data for pressure averaging.		<u>to qualify for 10:</u> Annually, obtain a system-wide average pressure value from the hydraulic model of the distribution system that has been calibrated via field measurements in the water distribution system and confirmed in comparisons with SCADA System data.		<u>to maintain 10:</u> Continue to refine the hydraulic model of the distribution system and consider linking it with SCADA System for realtime pressure data calibration, and averaging.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
COST DATA											
Total annual cost of operating water system:		Incomplete paper records and lack of financial accounting documentation on many operating functions makes calculation of water system operating costs a pure guesstimate	Reasonably maintained, but incomplete, paper or electronic accounting provides data to estimate the major portion of water system operating costs.	Conditions between 2 and 4	Electronic, industry-standard cost accounting system in place. However, gaps in data are known to exist, periodic internal reviews are conducted but not a structured financial audit.	Conditions between 4 and 6	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited periodically by utility personnel, but not a Certified Public Accountant (CPA).	Conditions between 6 and 8	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited at least annually by utility personnel, and at least once every three years by third-party CPA.	Conditions between 8 and 10	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited annually by utility personnel and annually also by third-party CPA.
Improvements to attain higher data grading for "Total Annual Cost of Operating the Water System" component:		<u>to qualify for 2:</u> Gather available records, institute new financial accounting procedures to regularly collect and audit basic cost data of most important operations functions.	<u>to qualify for 4:</u> Implement an electronic cost accounting system, structured according to accounting standards for water utilities		<u>to qualify for 6:</u> Establish process for periodic internal audit of water system operating costs; identify cost data gaps and institute procedures for tracking these outstanding costs.		<u>to qualify for 8:</u> Standardize the process to conduct routine financial audit on an annual basis. Arrange for CPA audit of financial records at least once every three years.		<u>to qualify for 10:</u> Standardize the process to conduct a third-party financial audit by a CPA on an annual basis.		<u>to maintain 10:</u> Maintain program, stay abreast of expenses subject to erratic cost changes and long-term cost trend, and budget/track costs proactively
Customer retail unit cost (applied to Apparent Losses):	Customer population unmetered, and/or only a fixed fee is charged for consumption.	Antiquated, cumbersome water rate structure is used, with periodic historic amendments that were poorly documented and implemented; resulting in classes of customers being billed inconsistent charges. The actual composite billing rate likely differs significantly from the published water rate structure, but a lack of auditing leaves the degree of error indeterminate.	Dated, cumbersome water rate structure, not always employed consistently in actual billing operations. The actual composite billing rate is known to differ from the published water rate structure, and a reasonably accurate estimate of the degree of error is determined, allowing a composite billing rate to be quantified.	Conditions between 2 and 4	Straight-forward water rate structure in use, but not updated in several years. Billing operations reliably employ the rate structure. The composite billing rate is derived from a single customer class such as residential customer accounts, neglecting the effect of different rates from varying customer classes.	Conditions between 4 and 6	Clearly written, up-to-date water rate structure is in force and is applied reliably in billing operations. Composite customer rate is determined using a weighted average residential rate using volumes of water in each rate block.	Conditions between 6 and 8	Effective water rate structure is in force and is applied reliably in billing operations. Composite customer rate is determined using a weighted average composite consumption rate, which includes residential, commercial, industrial, institutional (CII), and other distinct customer classes - are reviewed by a third party knowledgeable in the M36 methodology at least once every five years.	Conditions between 8 and 10	Current, effective water rate structure is in force and applied reliably in billing operations. The rate structure and calculations of composite rate - which includes residential, commercial, industrial, institutional (CII), and other distinct customer classes - are reviewed by a third party knowledgeable in the M36 methodology at least once every five years.
Improvements to attain higher data grading for "Customer Retail Unit Cost" component:		<u>to qualify for 2:</u> Formalize the process to implement water rates, including a secure documentation procedure. Create a current, formal water rate document and gain approval from all stakeholders.	<u>to qualify for 4:</u> Review the water rate structure and update/formalize as needed. Assess billing operations to ensure that actual billing operations incorporate the established water rate structure.		<u>to qualify for 6:</u> Evaluate volume of water used in each usage block by residential users. Multiply volumes by full rate structure.	<u>Launch effort to fully meter the customer population and charge rates based upon water volumes</u>	<u>to qualify for 8:</u> Evaluate volume of water used in each usage block by all classifications of users. Multiply volumes by full rate structure.		<u>to qualify for 10:</u> Conduct a periodic third-party audit of water used in each usage block by all classifications of users. Multiply volumes by full rate structure.		<u>to maintain 10:</u> Keep water rate structure current in addressing the water utility's revenue needs. Update the calculation of the customer unit rate as new rate components, customer classes, or other components are modified.
Variable production cost (applied to Real Losses):	Note: if the water utility purchases/imports its entire water supply, then enter the unit purchase cost of the bulk water supply in the Reporting Worksheet with a grading of 10	Incomplete paper records and lack of documentation on primary operating functions (electric power and treatment costs most importantly) makes calculation of variable production costs a pure guesstimate	Reasonably maintained, but incomplete, paper or electronic accounting provides data to roughly estimate the basic operations costs (pumping power costs and treatment costs) and calculate a unit variable production cost.	Conditions between 2 and 4	Electronic, industry-standard cost accounting system in place. Electric power and treatment costs are reliably tracked and allow accurate weighted calculation of unit variable production costs based on these two inputs and water imported purchase costs (if applicable). All costs are audited internally on a periodic basis.	Conditions between 4 and 6	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Pertinent additional costs beyond power, treatment and water imported purchase costs (if applicable) such as liability, residuals management, wear and tear on equipment, impending expansion of supply, are included in the unit variable production cost, as applicable. The data is audited at least annually by utility personnel.	Conditions between 6 and 8	Reliable electronic, industry-standard cost accounting system in place, with all pertinent primary and secondary variable production and water imported purchase (if applicable) costs tracked. The data is audited at least annually by utility personnel, and at least once every three years by a third-party knowledgeable in the M36 methodology.	Conditions between 8 and 10	Either of two conditions can be met to obtain a grading of 10: 1) Third party CPA audit of all pertinent primary and secondary variable production and water imported purchase (if applicable) costs on an annual basis. or: 2) Water supply is entirely purchased as bulk water imported, and the unit purchase cost - including all applicable marginal supply costs - serves as the variable production cost. If all applicable marginal supply costs are not included in this figure, a grade of 10 should not be selected.
Improvements to attain higher data grading for "Variable Production Cost" component:		<u>to qualify for 2:</u> Gather available records, institute new procedures to regularly collect and audit basic cost data and most important operations functions.	<u>to qualify for 4:</u> Implement an electronic cost accounting system, structured according to accounting standards for water utilities		<u>to qualify for 6:</u> Formalize process for regular internal audits of production costs. Assess whether additional costs (liability, residuals management, equipment wear, impending infrastructure expansion) should be included to calculate a more representative variable production cost.		<u>to qualify for 8:</u> Formalize the accounting process to include direct cost components (power, treatment) as well as indirect cost components (liability, residuals management, etc.) Arrange to conduct audits by a knowledgeable third-party at least once every three years.		<u>to qualify for 10:</u> Standardize the process to conduct a third-party financial audit by a CPA on an annual basis.		<u>to maintain 10:</u> Maintain program, stay abreast of expenses subject to erratic cost changes and budget/track costs proactively

APPENDIX H

*2011 Technical Memorandum on SBx7-7 20x2020
GPCD Baseline Calculation & Water Use
Target Method Selection*

TECHNICAL MEMORANDUM

To: Rick Gomez

From: Harvey Gobas, PE

Date: June 1, 2011

Subject: 20x2020 Baseline Calculation & Water Use Target Method Selection

According to the Department of Water Resources (DWR), a water supplier must define a continuous 10 or 15 year base period (baseline) for water use ending no earlier than December 31, 2004 and no later than December 31, 2010 that will be used to develop their per capita water use target for the year 2020 and an interim target for 2015. A water supplier who met at least 10 percent of its 2008 measured retail water demand through recycled water may use a 15-year baseline period; otherwise a supplier must use a 10-year baseline. The City of Adelanto did not use any recycled water to meet its 2008 water demand and, as a result, must use a 10-year baseline.

Table 1 shows the groundwater use within the City water service area. Since the City has no agricultural use, no recycled water use or any other source of water the groundwater use is the gross water use for purposes of determining the per capita consumption. The table also includes population of the water service area and per capita water use from fiscal year (FY) 1996 through FY 2010. Population data used herein is from the Department of Finance (DOF) and includes the entire water service area. Since water use has been trending downward recently even with increasing population, per capita use has been dropping. The most advantageous period for the City to use is the one generating the highest per capita use, making subsequent conservation easier to achieve. Therefore, the 10-year period from FY 1996 thru FY 2005 was determined to be the most advantageous and was used to calculate a baseline per capita water use average of 321.8 gallons per capita per day (GPCD) as shown in *Table 1*.

Table 1
City of Adelanto Base Daily Per Capita Use

Water Year	Ground-water ^[1] (AFY)	Gross Water Use ^[2] (AFY)	Gross Water Use (gal/day)	Water Service Area Population ^[3]	Annual/ Capita Use (GPCD)
1996	4,475	4,475	3,994,750	7,123	560.8
1997	4,396	4,396	3,924,229	8,433	465.3
1998	4,015	4,015	3,584,117	10,676	335.7
1999	4,336	4,336	3,870,668	12,708	304.6
2000	4,871	4,871	4,348,252	18,130	239.8
2001	5,402	5,402	4,822,266	18,284	263.7
2002	5,710	5,710	5,097,212	18,777	271.5
2003	5,714	5,714	5,100,783	19,447	262.3
2004	6,062	6,062	5,411,436	21,313	253.9
2005	6,795	6,795	6,065,772	23,338	259.9
2006	6,538	6,538	5,836,353	24,796	235.4
2007	4,653	4,653	4,153,648	27,007	153.8
2008	5,326	5,326	4,754,422	28,000	169.8
2009	5,477	5,477	4,889,217	28,221	173.2
2010	4,866	4,866	4,343,789	31,765	136.7
Baseline (Average FY 1996-2005)					321.8
Minimum Baseline (Average FY 2004-2008)					214.6

[1] Pumped Water is groundwater pumped from the City's active wells.

[2] Gross Water Use = Pumped Water

[3] Population is obtained from Department of Finance's (DOF) Table E-4: Population Estimates for California State and Counties. Population for 2000 is as of Census date (April 1st), all other years are January 1st DOF estimates. Per DOF's Press Release on April 29, 2011 the 2010 populations were revised to incorporate 2010 Census counts as the benchmark.

A water supplier must set a 2020 water use target and a 2015 interim target using one of the following four methods as defined further in Section 10608.20 of Senate Bill No. 7 (SBX7-7):

- Method 1: Eighty percent of the water supplier's baseline per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscape area water use; and commercial, industrial, and institutional uses
- Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan
- Method 4: A BMP Option based on standards that are consistent with the California Urban Water Conservation Council's (CUWCC) best management practices (BMPs).

Calculation of Minimum Targets

If the average base daily per capita water use is greater than 100 GPCD for a defined 5-year baseline period, the legislation's minimum water use reduction requirement must also be met as set in Section 10608.22 of Senate Bill No. 7 SBX7-7.

Per SBX7-7, the minimum water use reduction baseline period must end no earlier than December 31, 2007 and no later than December 31, 2010 and the minimum reduction shall be no less than 5 percent of this 5-year base daily per capita water use. A minimum water use reduction baseline period between FY 2004 through 2008 was selected to calculate the most advantageous 5-year minimum water use reduction target. As shown in *Table 1*, the minimum baseline water use for that period averages 214.6 GPCD. The minimum per capita water use target for 2020 would therefore be 203.9 GPCD (95% of 214.6).

Calculation of Targets Using Methods 1 – 4

Method 1: Using a baseline per capita average of 321.8 GPCD (shown in Table 1) the City of Adelanto 2020 target would be 257.4 GPCD (80% of 321.8). Since the target water use for Method 1 is greater than the one found using the legislation's minimum requirement criteria (203.9), the water target level needs to be reduced to the minimum target of 203.9 GPCD for 2020, if this method is selected.

Method 2: The City of Adelanto does not currently maintain records of lot size, irrigated landscaped area for each parcel, reference evapotranspiration for each parcel, etc. to split its residential, commercial, industrial, or institutional uses into inside and outside (landscape irrigation) uses. The use of Method 2 to calculate conservation targets is therefore not feasible.

Method 3: The City of Adelanto falls within the South Lahontan Region (Hydrologic Region 9). According to the State's April 30, 2009 draft 20x2020 Water Conservation Plan, the 2020 Target for Hydrologic Region 9 is 170 GPCD. Using Method 3, the City of Adelanto's 2020 water use target would be 161.5 GPCD (95% of 170). Since the target water use generated by Method 3 is less than the one found using the minimum requirement criteria (203.9), no further adjustments to this water use target would be required, if this method is selected.

Method 4: DWR recently released this method and a calculator for agencies wishing to use this BMP-based method. A default indoor residential water savings of 15 GPCD was assumed and the City of Adelantos's Public Water System Statistics Report for calendar year 2000 submitted to the Department of Water Resources (DWR) was referenced to obtain the Commercial, Industrial and Institutional (CII) water use consumption (647 AF). Using the midpoint of the baseline period (year 2000) and DWR's "SBX7-7 Provisional Method 4 Target Calculator" resulted in a 2020 water use target of 203.9 GPCD. Since the target water use for Method 4 is equal to the one found using the legislation's minimum requirement criteria (203.9), no further adjustments to this water use target would be required, if this method is selected.

Conclusion

The discussion and calculations above are summarized in *Table 2*.

Table 2
City of Adelanto
Water Use Target Summary (GPCD)

Method	2020
1	203.9
2	Not Applicable
3	161.5
4	203.9

As shown in *Table 2*, Method 1 and 3 results are the most favorable water use target level for the City of Adelanto, with the minimum 5-year water use reduction governing in Method 1. The 2015 interim target would then be 262.9 GPCD (mid-point between baseline of 321.8 and 2020 target of 203.9). It should be noted that the City has met this 2020 target consecutively for the past four years and the 2015 target the last eight years.

APPENDIX I
SB X7-7 Verification Form

SB X7-7 Table 0: Units of Measure Used in UWMP*

(select one from the drop down list)

Acre Feet

**The unit of measure must be consistent with Table 2-3*

NOTES:

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	5,326	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period ^{1,2}	10	Years
	Year beginning baseline period range	1996	
	Year ending baseline period range ³	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range ⁴	2008	

¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period. ² The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.

³ The ending year must be between December 31, 2004 and December 31, 2010.

⁴ The ending year must be between December 31, 2007 and December 31, 2010.

NOTES:

SB X7-7 Table 2: Method for Population Estimates**Method Used to Determine Population**
(may check more than one)**1. Department of Finance (DOF)**DOF Table E-8 (1990 - 2000) and (2000-2010) and
DOF Table E-5 (2011 - 2015) when available**2. Persons-per-Connection Method****3. DWR Population Tool****4. Other**

DWR recommends pre-review

NOTES:

SB X7-7 Table 3: Service Area Population

Year	Population	
10 to 15 Year Baseline Population		
Year 1	1996	7,123
Year 2	1997	8,433
Year 3	1998	10,676
Year 4	1999	12,708
Year 5	2000	18,130
Year 6	2001	18,284
Year 7	2003	18,777
Year 8	2003	19,447
Year 9	2004	21,313
Year 10	2005	23,338
<i>Year 11</i>		
<i>Year 12</i>		
<i>Year 13</i>		
<i>Year 14</i>		
<i>Year 15</i>		
5 Year Baseline Population		
Year 1	2004	21,313
Year 2	2005	23,338
Year 3	2006	24,796
Year 4	2007	27,007
Year 5	2008	28,000
2015 Compliance Year Population		
2015		33,080
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Annual Gross Water Use
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
10 to 15 Year Baseline - Gross Water Use							
Year 1	1996	4,475	-	-	-	-	4,475
Year 2	1997	4,396	-	-	-	-	4,396
Year 3	1998	4,015	-	-	-	-	4,015
Year 4	1999	4,336	-	-	-	-	4,336
Year 5	2000	4,871	-	-	-	-	4,871
Year 6	2001	5,402	-	-	-	-	5,402
Year 7	2003	5,710	-	-	-	-	5,710
Year 8	2003	5,714	-	-	-	-	5,714
Year 9	2004	6,062	-	-	-	-	6,062
Year 10	2005	6,795	-	-	-	-	6,795
Year 11	0	-			-		-
Year 12	0	-			-		-
Year 13	0	-			-		-
Year 14	0	-			-		-
Year 15	0	-			-		-
10 - 15 year baseline average gross water use							5,178
5 Year Baseline - Gross Water Use							
Year 1	2004	6,062	-	-	-	-	6,062
Year 2	2005	6,795	-	-	-	-	6,795
Year 3	2006	6,538	-	-	-	-	6,538
Year 4	2007	4,653	-	-	-	-	4,653
Year 5	2008	5,326	-	-	-	-	5,326
5 year baseline average gross water use							5,875
2015 Compliance Year - Gross Water Use							
2015		4,049	-	-	-	-	4,049
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3							
NOTES:							

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source Groundwater

This water source is:

The supplier's own water source

A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
---	-------------------------------------	--	---

10 to 15 Year Baseline - Water into Distribution System

Year 1	1996	4,475	-	4,475
Year 2	1997	4,396	-	4,396
Year 3	1998	4,015	-	4,015
Year 4	1999	4,336	-	4,336
Year 5	2000	4,871	-	4,871
Year 6	2001	5,402	-	5,402
Year 7	2003	5,710	-	5,710
Year 8	2003	5,714	-	5,714
Year 9	2004	6,062	-	6,062
Year 10	2005	6,795	-	6,795
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-

5 Year Baseline - Water into Distribution System

Year 1	2004	6,062	-	6,062
Year 2	2005	6,795	-	6,795
Year 3	2006	6,538	-	6,538
Year 4	2007	4,653	-	4,653
Year 5	2008	5,326	-	5,326

2015 Compliance Year - Water into Distribution System

2015	4,049	-	4,049
-------------	-------	---	-------

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1996	7,123	4,475	561
Year 2	1997	8,433	4,396	465
Year 3	1998	10,676	4,015	336
Year 4	1999	12,708	4,336	305
Year 5	2000	17,895	4,871	243
Year 6	2001	19,282	5,402	250
Year 7	2003	20,668	5,710	247
Year 8	2003	22,055	5,714	231
Year 9	2004	23,441	6,062	231
Year 10	2005	24,828	6,795	244
<i>Year 11</i>	0	-	-	
<i>Year 12</i>	0	-	-	
<i>Year 13</i>	0	-	-	
<i>Year 14</i>	0	-	-	
<i>Year 15</i>	0	-	-	
10-15 Year Average Baseline GPCD				311
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2004	23,441	6,062	231
Year 2	2005	24,828	6,795	244
Year 3	2006	26,214	6,538	223
Year 4	2007	27,601	4,653	150
Year 5	2008	28,987	5,326	164
5 Year Average Baseline GPCD				202
2015 Compliance Year GPCD				
2015		33,080	4,049	109
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day
Summary From Table SB X7-7 Table 5

10-15 Year Baseline GPCD	311
5 Year Baseline GPCD	202
2015 Compliance Year GPCD	109

NOTES:

SB X7-7 Table 7: 2020 Target Method*Select Only One*

Target Method		Supporting Documentation
<input checked="" type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator

NOTES:

SB X7-7 Table 7-A: Target Method 1

20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
311	249
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target

5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
202	192	249	192

¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD except for suppliers at or below 100 GPCD.

² 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
192	311	252

119 59.5 251.5

NOTES:

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
109	252	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	-	109	109	YES

NOTES:

Appendix J
Mojave Basin Judgement

JUDGMENT AFTER TRIAL

JANUARY 10, 1996

**MOJAVE BASIN AREA ADJUDICATION
CITY OF BARSTOW, ET AL V. CITY OF ADELANTO, ET AL
RIVERSIDE COUNTY SUPERIOR COURT CASE NO. 208568**



CHAMBERS OF
VICTOR MICELI
JUDGE OF THE SUPERIOR COURT

Superior Court
STATE OF CALIFORNIA
COUNTY OF RIVERSIDE

COURTHOUSE
4050 MAIN STREET
RIVERSIDE, CALIFORNIA 92501

January 10, 1996

TO: ALL PARTIES LISTED ON THE ATTACHED MAILING LIST
FROM: E. MICHAEL KAISER, JUDGE *by ss*
SUBJECT: CITY OF BARSTOW VS CITY OF ADELANTO, Case No.: 208568

The Judgment in the above-entitled case was signed on January 10, 1996. Please find attached the amended two pages of Exhibit B, Table B-1.

Please find attached two amended pages of Exhibit B, Table B-1.

~~12/10/92~~
~~01/20/93~~
~~02/02/93~~
~~04/18/93~~
~~01/28/93~~
09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹	BASE ANNUAL ²	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)	PRODUCTION RIGHT (PERCENT)	FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEIER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA E	126	0.1030	126	119	113	107	100
* VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

* Durston Well, location 06N/04W-18F, APN 468-151-11 - water production right of 357 acre/feet, claimed by Durston/Van Burger/CVB Investments and Industrial Asphalt. Product right to be determined in a subsequent severed proceeding, jurisdiction reserved.

~~12/10/92~~
~~01/20/93~~
~~02/02/93~~
~~01/10/93~~
~~01/28/92~~
09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹	BASE ANNUAL ²	FREE PRODUCTION ALLOWANCES (ACRE-FBET)				
	PRODUCTION (ACRE-FBET)	PRODUCTION RIGHT (PERCENT)	FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY (Now, Virgil Gorman)	220	0.3883	220	209	198	187	176
BARNES, PAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, MARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAPA, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GESIRIECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSBN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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RIVERSIDE COUNTY

4 William J. Brunick, (Bar No. 46289)
Boyd L. Hill, (Bar No. 140435)

JAN 10 1996

5 Attorneys for

Cross-Complainant
6 MOJAVE WATER AGENCY

ARTHUR A. BURNS, Clerk
By *Y.A. Burns* Y.A. Burns
Deputy

7
8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 IN AND FOR THE COUNTY OF RIVERSIDE

10
11 CITY OF BARSTOW, et al,

12 Plaintiff,

13 v.

14 CITY OF ADELANTO, et al,

15 Defendant.

16
17 MOJAVE WATER AGENCY,

18 Cross-complainant,

19 v.

20 ANDERSON, RONALD H. et al,

21 Cross-defendants.

) CASE NO. 208568

)
) ASSIGNED TO JUDGE KAISER
) DEPT. 4 FOR ALL PURPOSES

) JUDGMENT AFTER TRIAL

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Exhibit "B" - Tables entitled, "Table B-1: Table Showing Base Annual Production, Base Annual Production Right of Each Producer Within Each Subarea, and Free Production Allowance for Subareas for First Five Years of the Judgment" and "Table B-2: Table Showing Total Water Production for Aquaculture and Recreational Lake Purposes."

Exhibit "C" - Engineering Appendix.

Exhibit "D" - Time Schedules.

Exhibit "E" - List of Producers and Their Designees.

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Exhibit "G" - Subarea Obligations.

Exhibit "H" - Biological Resource Mitigation.

Exhibit "I" - Map Showing Potential Groundwater Recharge Areas

1 I. INTRODUCTION

2 A. The Complaint. The original complaint herein was filed
3 by the City of Barstow and Southern California Water Company
4 (collectively "Plaintiffs") in San Bernardino Superior Court, North
5 Desert District, on May 30, 1990 as Case No. BCV6672, and
6 transferred to Riverside County Superior Court on November 27,
7 1990. Plaintiffs allege that the cumulative water Production
8 upstream of the City of Barstow Overdrafted the Mojave River
9 system, and request an average Annual flow of 30,000 acre-feet of
10 surface water to the City of Barstow area. The complaint also
11 includes a request for a writ of mandate to require the Mojave
12 Water Agency ("MWA") to act pursuant to its statutory authority to
13 obtain and provide Supplemental Water for use within the Mojave
14 Basin Area.

15 B. The MWA Cross-Complaint. On July 26, 1991, the MWA filed
16 its first amended cross-complaint in this case. The MWA first
17 amended cross-complaint and its ROE amendments name Producers who
18 collectively claim substantially all rights of water use within the
19 Mojave Basin Area, including Parties downstream of the City of
20 Barstow. The MWA cross-complaint, as currently amended, requests
21 a declaration that the available native water supply to the Mojave
22 Basin Area (not including water imported from the California State
23 Water Project) is inadequate to meet the demands of the combined
24 Parties and requests a determination of the water rights of
25 whatever nature within the MWA boundaries and the Mojave Basin
26 Area. The MWA has named as Parties several hundred Producers
27 within the Basin Area.

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1 C. The Arc Las Flores Cross-Complaint. On July 3, 1991, Arc
2 Las Flores filed a cross-complaint for declaratory relief seeking
3 a declaration of water rights of certain named cross-defendants and
4 a declaration that the appropriative, overlying and riparian rights
5 of Arc Las Flores be determined to be prior and paramount to any
6 rights of the Plaintiffs and other appropriators.

7 D. Stipulation and Trial. On October 16, 1991, the Court
8 ordered a litigation standstill. The purpose of the standstill was
9 to give the parties time to negotiate a settlement and develop a
10 solution to the overdraft existing in the Mojave River Basin.

11 A committee of engineers and attorneys, representing a variety
12 of water users and interests throughout the Mojave River Basin, was
13 created to develop a physical solution to the water shortage
14 problem. The work of the committee resulted in a stipulated
15 interlocutory order and judgment, which was entered by the court on
16 September 23, 1993.

17 Several non-stipulating parties requested a trial. On April
18 20, 1994, the Court issued a memorandum setting forth the trial
19 issues. This cause came on regularly for trial on February 6,
20 1995, and was tried in Department 4 of the above-entitled Court,
21 the Honorable E. Michael Kaiser, Judge, Presiding, without a jury.
22 Oral and documentary evidence was introduced on behalf of the
23 respective parties and the cause was argued and submitted for
24 decision.

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1 II. DECREE

2 NOW, THEREFORE, IT IS ORDERED, ADJUDGED AND DECREED:

3 A. JURISDICTION, PARTIES, DEFINITIONS.

4 1. Jurisdiction and Parties.

5 a. Jurisdiction. This Court has jurisdiction to
6 enter Judgment declaring and adjudicating the rights to reasonable
7 and beneficial use of water by the Parties in the Mojave Basin Area
8 pursuant to Article X, Section 2 of the California Constitution.
9 This Judgment constitutes an adjudication of water rights of the
10 Mojave Basin Area pursuant to Section 37 of Chapter 2146 of
11 Statutes of 1959 ("the MWA Act").

12 b. Parties. All Parties to the MWA cross-
13 complaint are included in this Judgment. The MWA has notified
14 those Persons claiming any right, title or interest to the natural
15 waters within the Mojave Basin Area to make claims. Such notice
16 has been given: 1) in conformity with the notice requirements of
17 Water Code §§ 2500 et seq.; 2) pursuant to Section 37 of the MWA
18 Act; and 3) pursuant to order of this Court. Subsequently, all
19 Producers making claims have been or will be included as Parties.
20 The defaults of certain Parties have been entered, and certain
21 named cross-defendants to the MWA cross-complaint who are not
22 Producers have been dismissed. All named Parties who have not been
23 dismissed have appeared herein or have been given adequate
24 opportunity to appear herein. The Court has jurisdiction of the
25 subject matter of this action and of the Parties hereto.

26 c. Minimal Producers. There are numerous Minimal
27 Producers in the Basin Area and their number is expected to
28 increase in the future. In order to minimize the cost of

1 administering this Judgment and to assure that every Person
2 producing water in the Basin Area participates fairly in the
3 Physical Solution, MWA shall:

4 i. within one Year following entry of this
5 Judgment, prepare a report to the Court: 1) setting forth the
6 identity and verified Base Annual Production of each Minimal
7 Producer in each Subarea of the Basin Area; and 2)
8 recommending a proposed system of Minimal Producer
9 Assessments. The system of Minimal Producer Assessments shall
10 achieve an equitable allocation of the costs of the Physical
11 Solution that are attributable to Production of verified Base
12 Annual Production amounts by Minimal Producers in each Subarea
13 to and among such Minimal Producers. Minimal Producer
14 Assessments need not be the same for existing Minimal
15 Producers as for future Minimal Producers.

16 ii. within one Year following entry of this
17 Judgment, prepare a report to the Court setting forth a
18 proposed program to be undertaken by MWA, pursuant to its
19 statutory authority, to implement the proposed system of
20 Minimal Producer Assessments. The Court may order MWA to
21 implement the proposed program or, if MWA's statutory
22 authority is inadequate to enable implementation, or if either
23 the proposed program or the proposed system of Minimal
24 Producer Assessments is unacceptable to the Court, the Court
25 may then order MWA either to implement an alternative program
26 or system, or in the alternative, to name all Minimal
27 Producers as Parties to this litigation and to serve them for
28 the purpose of adjudicating their water rights.

1 Any Minimal Producer whose Annual Production exceeds ten (10) acre-
2 feet in any Year following the date of entry of Judgment shall be
3 made a Party pursuant to Paragraph 12 and shall be subject to
4 Administrative, Replacement Water, Makeup Water and Biological
5 Resources Assessments. Any Minimal Producer who produced during
6 the 1986-1990 period may become a Party pursuant to Paragraph 40
7 with a Base Annual Production Right based on such Minimal
8 Producer's verified Base Annual Production. To account properly
9 for aggregate Production by Minimal Producers in each Subarea,
10 Table B-1 of Exhibit B shall include an estimated aggregate amount
11 of Base Annual Production by all Minimal Producers in each Subarea.
12 The Base Annual Production of any Minimal Producer who becomes a
13 Party shall be deducted from the aggregate amount and assigned to
14 such Minimal Producer.

15 2. Physical and Legal Complexity. The physical and
16 legal issues of the case as framed by the complaint and cross-
17 complaints are extremely complex. Production of more than 1,000
18 Persons producing water in the Basin Area has been ascertained. In
19 excess of 1,000 Persons have been served. The water supply and
20 water rights of the entire Mojave Basin Area and its hydrologic
21 Subareas extending over 4000 square miles have been brought into
22 issue. Most types and natures of water right known to California
23 law are at issue in the case. Engineering studies by the Parties,
24 jointly and severally, leading toward adjudication of these rights
25 and a Physical Solution, have required the expenditure of over two
26 Years' time and hundreds of thousands of dollars.

27 3. Need for a Declaration of Rights and Obligations and
28 for Physical Solution. A Physical Solution for the Mojave Basin

1 Area based upon a declaration of water rights and a formula for
2 Intra- and Inter-Subarea allocation of rights and obligations is
3 necessary to implement the mandate of Article X, Section 2 of the
4 California Constitution and California water policy. Such Physical
5 Solution requires the definition of the individual rights of all
6 Producers within the Basin Area in a manner which will equitably
7 allocate the natural water supplies and which will provide for
8 equitable sharing of costs for Supplemental Water. Nontributary
9 supplemental sources of water are or will be available in amounts,
10 which when combined with water conservation, water reclamation,
11 water transfers, and improved conveyance and distribution methods
12 within the Basin Area, will be sufficient in quantity and quality
13 to assure implementation of a Physical Solution. Sufficient
14 information and data are known to formulate a reasonable and just
15 allocation of existing water supplies as between the hydrologic
16 Subareas within the Basin Area and as among the water users within
17 each Subarea. Such Physical Solution will allow the public water
18 supply agencies and individual water users within each hydrologic
19 Subarea to proceed with orderly water resource planning and
20 development. It will be necessary for MWA to construct conveyance
21 facilities to implement the Physical Solution. Absent the
22 construction of conveyance facilities, some Subareas may be
23 deprived of an equitable share of the benefits made possible by the
24 Physical Solution. Accordingly, this Physical Solution mandates
25 the acquisition or construction of conveyance facilities for
26 importation and equitable distribution of Supplemental Water to the
27 respective Subareas. Such construction is dependent on the
28 availability of appropriate financing, and any such financing

1 assessed to the Parties will be based upon benefit to the Parties
2 in accordance with the MWA Act.

3 4. Definitions. As used in this judgment, the
4 following terms shall have the meanings herein set forth:

5 a. Afton - The United States Geological Survey gauging
6 station "Mojave River at Afton, CA."

7 b. Annual or Year - As used in this Judgment refers to
8 the Annual period beginning October 1 and ending
9 September 30 of the following Year.

10 c. Aquaculture Water - Water so identified in Exhibit
11 "B". Such water may be used only for fish breeding
12 and rearing. The Annual Consumptive Use of such
13 water in acre-feet is equal to the water surface
14 area, in acres, of the fish rearing facilities
15 multiplied by seven (feet).

16 d. Assessments - Those Assessments levied and
17 collected pursuant to this judgment including
18 Replacement Water, Makeup Water, Administrative and
19 Biological Resource Assessments.

20 e. Barstow - The United States Geological Survey
21 Gauging Station "Mojave River at Barstow, CA."

22 f. Base Annual Production - The verified maximum Year
23 Production, in acre-feet, for each Producer for the
24 five Year Period 1986-1990 as set forth in Table
25 B-1 of Exhibit "B", except where otherwise noted
26 therein. The maximum Year Production for each
27 Producer was verified based on one or more of the
28 following: flow meter readings, electrical power

1 or diesel usage records or estimated applied water
2 duty. The Base Annual Production for recreational
3 lakes in the Baja Subarea and for Aquaculture shall
4 be equal either to the area of water surface
5 multiplied by seven feet or to verified Production,
6 whichever is less. The five Year period 1986-1990
7 shall also be the time period for which Base Annual
8 Production for Minimal Producers shall be
9 calculated.

10 g. Base Annual Production Right - The relative Annual
11 right of each Producer to the Free Production
12 Allowance within a given Subarea, expressed as a
13 percentage of the aggregate of all Producers' Base
14 Annual Production in the Subarea. The percentage
15 for each Producer is calculated by multiplying that
16 Producer's Base Annual Production in a Subarea
17 times one hundred (100) and dividing the result by
18 the aggregate Base Annual Production for all
19 Producers in the Subarea. The percentage shall be
20 rounded off to the nearest one ten-thousandth of
21 one per cent.

22 h. Base Flow - That portion of the total surface flow
23 measured Annually at Lower Narrows which remains
24 after subtracting Storm Flow.

25 i. Carry Over Right - The right of a Producer to delay
26 and accumulate the Production of such Producer's
27 share of a Subarea Free Production Allowance until
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1 and only until the following Year free of any
2 Replacement Water Assessment.

3 j. Consumption or Consumptive Use - The permanent
4 removal of water from the Mojave Basin Area through
5 evaporation or evapo-transpiration. The
6 Consumptive Use rates resulting from particular
7 types of water use are identified in Paragraph 2 of
8 Exhibit "F".

9 k. Free Production Allowance - The total amount of
10 water, and any Producer's share thereof, that may
11 be Produced from a Subarea each Year free of any
12 Replacement Obligation.

13 l. Groundwater - Water beneath the surface of the
14 ground and within the zone of saturation; i.e.,
15 below the existing water table, whether or not
16 flowing through known and definite channels.

17 m. Harper Lake Basin - That portion of the Centro
18 Subarea identified as such on Exhibit "A".

19 n. Lower Narrows - The United States Geological Survey
20 gauging station "Mojave River near Victorville,
21 CA."

22 o. Makeup Water - Water needed to satisfy a Minimum
23 Subarea Obligation.

24 p. Makeup Obligation - The obligation of a Subarea to
25 pay for Makeup Water to satisfy its Subarea
26 Obligation.

27 q. Minimal Producer - Any Person whose Base Annual
28 Production, as verified by MWA is not greater than

1 ten (10) acre-feet. A Person designated as a
2 Minimal Producer whose Annual Production exceeds
3 ten (10) acre-feet in any Year following the date
4 of entry of Judgment is no longer a Minimal
5 Producer.

6 r. Minimum Subarea Obligation - The minimum Annual
7 amount of water a Subarea is obligated to provide
8 to an adjoining downstream Subarea or the
9 Transition Zone or, in the case of the Baja
10 Subarea, the minimum Annual Subsurface Flow at the
11 MWA eastern boundary toward Afton in any Year, as
12 set forth in Exhibit "G".

13 s. Mojave Basin Area or Basin Area - The area shown on
14 Exhibit "A" that lies within the boundaries of the
15 line labelled "Limits of Adjudicated Area" which
16 generally includes the area tributary to the Mojave
17 River and its tributaries except for such area not
18 included within the Mojave Water Agency's
19 jurisdiction.

20 t. MWA - Cross complainant Mojave Water Agency.

21 u. Overdraft - A condition wherein the current total
22 Annual Consumptive Use of water in the Mojave Basin
23 Area or any of its Subareas exceeds the long term
24 average Annual natural water supply to the Basin
25 Area or Subarea.

26 v. Party (Parties) - Any Person(s) named in this
27 action who has intervened in this case or has

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1 become subject to this Judgment either through
2 stipulation, default, trial or otherwise.

3 w. Person(s) - Any natural person, firm, association,
4 organization, joint venture, partnership, business,
5 trust, corporation, or public entity.

6 x. Produce - To pump or divert water.

7 y. Producer(s) - A Person, other than a Minimal
8 Producer, who Produces water.

9 z. Production - Annual amount of water produced,
10 stated in acre-feet of water.

11 aa. Production Safe Yield - The highest average Annual
12 Amount of water that can be produced from a
13 Subarea: (1) over a sequence of years that is
14 representative of long-term average annual natural
15 water supply to the Subarea net of long-term
16 average annual natural outflow from the Subarea,
17 (2) under given patterns of Production, applied
18 water, return flows and Consumptive Use, and (3)
19 without resulting in a long-term net reduction of
20 groundwater in storage in the Subarea.

21 bb. Purpose of Use - The broad category of type of
22 water use including but not limited to municipal,
23 irrigation, industrial, aquaculture, and lakes
24 purposes. A change in Purpose of Use includes any
25 reallocation of water among mixed or sequential
26 uses, excluding direct reuse of municipal
27 wastewater.

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1 cc. Recirculated Water - Water that is Produced but not
2 consumed by the Parties listed in Table B-2 of
3 Exhibit "B" and then returned either to the Mojave
4 River or to the Groundwater basin underlying the
5 place of use.

6 dd. Replacement Obligation - The obligation of a
7 Producer to pay for Replacement Water for
8 Production from a Subarea in any Year in excess of
9 the sum of such Producer's share of that Year's
10 Free Production Allowance for the Subarea plus any
11 Production pursuant to a Carry Over Right.

12 ee. Replacement Water - Water purchased by Watermaster
13 or otherwise provided to satisfy a Replacement
14 Obligation.

15 ff. Responsible Party - The Person designated by a
16 Party as the Person responsible for purposes of
17 filing reports and receiving notices pursuant to
18 the provisions of this Judgment.

19 gg. Stored Water - Water held in storage pursuant to a
20 Storage Agreement with Watermaster.

21 hh. Storm Flow - That portion of the total surface flow
22 originating from precipitation and runoff without
23 having first percolated to Groundwater storage in
24 the zone of saturation and passing a particular
25 point of reckoning, as determined annually by the
26 Watermaster.

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- 1 ii. Subareas - The five Subareas of the Mojave Basin
2 Area -- Este, Oeste, Alto, Centro and Baja -- as
3 shown on Exhibit "A".
- 4 jj. Subarea Obligation - The average Annual amount of
5 water that a Subarea is obligated to provide to an
6 adjoining downstream Subarea or the Transition Zone
7 or, in the case of the Baja Subarea, the average
8 Annual Subsurface Flow toward Afton at the MWA
9 eastern boundary as set forth in Exhibit "G".
- 10 kk. Subsurface Flow - Groundwater which flows beneath
11 the earth's surface.
- 12 ll. Supplemental Water - Water imported to the Basin
13 Area from outside the Basin Area, water that would
14 otherwise be lost from the Basin Area but which is
15 captured and made available for use in the Basin
16 Area, or any Producer's share of Free Production
17 Allowance that is not Produced and is acquired by
18 Watermaster pursuant to this Judgment.
- 19 mm. Transition Zone - The portion of the Alto Subarea,
20 shown on Exhibit "A", that lies generally between
21 the Lower Narrows and the Helendale Fault.
- 22 nn. Watermaster - The Person(s) appointed by the Court
23 to administer the provisions of this Judgment.

24 5. Exhibits. The following exhibits are attached to this
25 Judgment and made a part hereof.

26 Exhibit "A" - Map entitled, "Map showing Mojave Water
27 Agency, Mojave River, Mojave Basin Area and Hydrologic Subareas and

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1 Limits of Adjudicated Area Together with Geologic and Other
2 Pertinent Features."

3 Exhibit "B" - Table entitled, "Table B-1: Table Showing
4 Base Annual Production and Base Annual Production Right of Each
5 Producer Within Each Subarea, and Free Production Allowances for
6 Subareas for First Five Years after entry of the Interlocutory
7 Judgment" and "Table B-2: Table Showing Total Water Production for
8 Aquaculture and Recreational Lake Purposes."

9 Exhibit "C" - Engineering Appendix.

10 Exhibit "D" - Time Schedules.

11 Exhibit "E" - List of Producers and Their Designees.

12 Exhibit "F" - Transfers of Base Annual Production Rights.

13 Exhibit "G" - Subarea Obligations.

14 Exhibit "H" - Biological Resource Mitigation.

15 Exhibit "I" - Map Showing Potential Groundwater Recharge
16 Areas

17 B. DECLARATION OF HYDROLOGIC CONDITIONS.

18 6. Mojave Basin Area as Common Source of Supply. The
19 area shown on Exhibit "A" as the Mojave Basin Area is comprised of
20 five Subareas. The waters derived from the Mojave River and its
21 tributaries constitute a common source of supply of the five
22 Subareas and of the Persons producing therefrom.

23 7. Existence of Overdraft. In each and every Year, for
24 a period in excess of five (5) years prior to the May 30, 1990
25 filing date of Plaintiffs' Complaint, the Mojave Basin Area and
26 each of its respective Subareas have been and are in a state of
27 Overdraft, and it is hereby found that there is no water available

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1 for Production from the Basin Area or any Subarea therein except
2 pursuant to this Judgment.

3 C. DECLARATION OF RIGHTS AND OBLIGATIONS.

4 8. Production Rights of the Parties. The Base Annual
5 Production and Base Annual Production Right of each Party are
6 declared as set forth in Table B-1 of Exhibit "B". Certain Parties
7 also have the right to continue to Produce Recirculated Water in
8 the amounts set forth in Table B-2 of Exhibit "B", subject to the
9 following:

10 a. Aquaculture. Two of the Producers listed in
11 Table B-2 of Exhibit "B", California Department of Fish and Game
12 Mojave River Fish Hatchery (Hatchery) and Jess Ranch Water Company
13 (Jess), Produce Recirculated Water for Aquaculture. The Hatchery
14 and Jess or their successors or assignees shall have the right to
15 continue to Produce up to the amounts listed in Table B-2 of
16 Exhibit "B" as Recirculated Water for Aquaculture on the property
17 where it was used in the Year for which Base Annual Production was
18 verified. Production of such amount of Recirculated water by Jess
19 shall be free of any Replacement Water Assessments, Makeup Water
20 Assessments or Administrative Assessments but shall be subject to
21 Biological Resources Assessments and each Jess well producing
22 Recirculated Water shall be subject to an Annual administrative fee
23 equal to the lowest Annual fee paid to MWA by a Minimal Producer.
24 Neither the Hatchery nor Jess Recirculated Water may be transferred
25 or used for any other purpose or transferred for use on any other
26 property, except as provided in Paragraph 7 of Exhibit "F" for the
27 Hatchery. Any Production of Recirculated Water by Jess in excess
28 of the amount shown in Table B-2 shall be subject to all

1 Assessments. Production of Recirculated Water by the Hatchery will
2 be subject to the rules set forth in Paragraph 7 of Exhibit "F".
3 All Jess Aquaculture Recirculated Water shall be discharged
4 immediately and directly to the Mojave River.

5 b. Camp Cady. One Producer listed in Table B-2 of
6 Exhibit "B", California Department of Fish and Game-Camp Cady (Camp
7 Cady), Produces Recirculated Water for Lakes containing Tui Chub,
8 an endangered species of fish. Camp Cady or its successors or
9 assignees shall have the right to continue to Produce up to the
10 amount listed in Table-B-2 of Exhibit "B" as Recirculated Water at
11 Camp Cady. Production of each amount of Recirculated water shall
12 be free of any Assessments. Camp Cady Recirculated Water may not
13 be transferred or used for any other purpose or transferred for use
14 on any other property. Any Production of Recirculated Water by
15 Camp Cady in excess of the amount shown in Table B-2 of Exhibit "B"
16 shall be subject to all Assessments except Biological Resource
17 Assessments. All Camp Cady Recirculated Water shall be allowed to
18 percolate immediately and directly to the Groundwater basin
19 underlying Camp Cady.

20 c. Recreational Lakes in Baja Subarea. All
21 Producers listed in Table B-2 of Exhibit "B" except the Hatchery,
22 Jess and Camp Cady Produce Recirculated Water for recreational
23 lakes in the Baja Subarea. Such Producers or their successors or
24 assignees shall have the right to continue to Produce up to the
25 amounts identified in Table B-2 of Exhibit "B" as Recirculated
26 Water for use in recreational lakes on the property where it was
27 used in the Year for which Base Annual Production was verified,
28 free of any Replacement Water Assessments, Makeup Water

1 Assessments, or Administrative Assessments, but such Production
2 shall be subject to any Biological Resource Assessment. Each well
3 producing such Recirculated Water shall be subject to an Annual
4 administrative fee equal to the lowest Annual fee paid by a Minimal
5 Producer. Recirculated Water cannot be transferred or used for any
6 other purpose. All recreational lake Recirculated Water shall be
7 allowed to percolate immediately and directly to the Groundwater
8 basin underlying the recreational lake.

9 9. MWA Obligations. The Physical Solution is intended
10 to provide for delivery and equitable distribution to the
11 respective Subareas by MWA of the best quality of Supplemental
12 Water reasonably available. MWA shall develop conveyance or other
13 facilities to deliver this Supplemental Water to the areas depicted
14 in Exhibit "I," unless prevented by forces outside its reasonable
15 control such as an inability to secure financing consistent with
16 sound municipal financing practices and standards.

17 a. Secure Supplemental Water. MWA, separate and
18 apart from its duties as the initial Watermaster designated under
19 this Judgment, shall exercise its authority under Sections 1.5 and
20 15 of the MWA Act to pursue promptly, continuously and diligently
21 all reasonable sources to secure Supplemental Water as necessary to
22 fully implement the provisions of this Judgment.

23 b. Supplemental Water Prices. The MWA shall
24 establish fair and equitable prices for Supplemental Water
25 delivered to the Watermaster under this Judgment.

26 c. Supplemental Water Delivery Plan. Not later
27 than September 30, 1996, MWA shall prepare a report on potential
28 alternative facilities or methods to deliver Supplemental Water to

1 the areas shown on Exhibit "I." The report shall include, for each
2 alternative, a development time schedule, a summary of cost
3 estimates, an analysis of the relative benefits to Producers in
4 each Subarea and an analysis of alternative methods of financing
5 and cost allocation, including any state or federal sources of
6 funding that may be available.

7 d. Water Delivery Cost Allocation. The report
8 required by subdivision (c) above shall recommend methods of
9 financing and cost allocation that are based on benefits to be
10 received. MWA's cost allocation plan shall be subject to Court
11 review as provided in subdivision (f) below to verify that costs
12 are allocated fairly and according to benefits to be received. The
13 MWA financing and cost allocation plan may include a mix of revenue
14 sources including the following:

15 (1) Developer or connection fees to the
16 extent MWA can demonstrate a nexus, as
17 required by law, between the fees and the
18 impact of the development upon the water
19 resources of the Mojave Basin Area and
20 each subarea thereof;

21 (2) Other methods of financing available to
22 MWA, including but not limited to
23 property based taxes, assessments or
24 standby charges;

25 (3) Water sales revenues, but only to the
26 extent other sources are not available or
27 appropriate, and in no event shall the
28 water sales price to cover facility

1 capital costs exceed a rate equal to
2 fifty percent of the variable cost rate
3 charged to MWA under its contract for
4 water delivery from the California State
5 Water Project;

6 e. Legislative Changes. MWA shall seek promptly
7 to have enacted amendments to the MWA Act (Water Code Appendix,
8 Part 97) that allow MWA to implement any methods of governmental
9 financing available to any public entity in California.

10 f. Court Review and Determination of Benefit. Not
11 later than September 30, 1996, MWA shall submit its report to the
12 Court in a noticed motion pursuant to Paragraph 36. The report
13 shall set forth MWA's recommendations as to the following: (1)
14 which alternatives should be implemented; (2) methods of cost
15 allocation for the recommended alternatives; (3) financing for the
16 recommended alternatives; and (4) a time schedule to complete the
17 recommended alternatives. The Court may approve or reject the
18 recommendations. The Court may further order the use of
19 alternatives and time schedules or it may order additional studies
20 and resubmittals, as it may deem proper.

21 10. Priority and Determination of Production Rights.
22 The water rights involved herein are of differing types and
23 commenced at different times. Many of the rights involved are
24 devoted to public uses. The Declaration of Water Rights that is
25 part of the judgment and the Physical Solution decreed herein takes
26 into consideration the competing priorities which have been
27 asserted in addition to the equitable principles applicable to
28 apportionment of water in this situation. The following factors

1 have been considered in the formulation of each Producer's Base
2 Annual Production Right:

3 a. The Mojave Basin Area and each of its hydrologic
4 Subareas have continuously for many Years been in a state of
5 system-wide Overdraft;

6 b. All Producers have contributed to the Overdraft;

7 c. None of the priorities asserted by any of the
8 Producers is without dispute;

9 d. Under the complex scheme of California water
10 law, the allocation of water and rights mechanically based upon the
11 asserted priorities would be extremely difficult, if not
12 impossible, and would not result in the most equitable
13 apportionment of water;

14 e. Such mechanical allocation would, in fact,
15 impose undue hardship on many Parties;

16 f. There is a need for conserving and making
17 maximum beneficial use of the water resources of the State;

18 g. The economy of the Mojave Basin Area has to a
19 great extent been established on the basis of the existing
20 Production;

21 h. The Judgment and Physical Solution take into
22 consideration the unique physical and climatic conditions of the
23 Mojave Basin Area, the Consumptive Use of water in the several
24 sections of the Basin, the character and rate of return flows, the
25 extent of established uses, the availability of storage water, the
26 relative benefits and detriments between upstream areas and
27 downstream areas if a limitation is imposed on one and not the

28 ///

1 other, and the need to protect public interest and public trust
2 concerns.

3 In consideration of the foregoing factors, and in
4 accordance with the terms and conditions of this Judgment, the
5 Parties are estopped and barred from asserting special priorities
6 or preferences.

7 11. Exercise of Carry Over Rights. The first water
8 Produced by a Producer during any Year shall be deemed to be an
9 exercise of any Carry Over Right. Such Carry Over Right may be
10 transferred in accordance with Exhibit "F".

11 12. Production Only Pursuant to Judgment. This
12 Judgment, and the Physical Solution decreed herein, addresses all
13 Production within the Mojave Basin Area. Because of the existence
14 of Overdraft, any Production outside the framework of this Judgment
15 and Physical Solution will contribute to an increased Overdraft,
16 potentially damage the Mojave Basin Area and public interests in
17 the Basin Area, injure the rights of all Parties, and interfere
18 with the Physical Solution. Watermaster shall bring an action or
19 a motion to enjoin any Production that is not pursuant to the terms
20 of this Judgment.

21 13. Declaration of Subarea Rights and Obligations. In
22 the aggregate, Producers within certain Subareas have rights, as
23 against those in adjoining upstream Subareas, to receive average
24 Annual water supplies and, in any one Year, to receive minimum
25 Annual water supplies equal to the amounts set forth in Exhibit
26 "G", in addition to any Storm Flows. In turn, in the aggregate,
27 Producers within certain Subareas have an obligation to provide to
28 adjoining downstream Subareas such average Annual water supplies in

1 the amounts and in the manner set forth in Exhibit "G". In any one
2 Year, Producers within certain Subareas have an obligation to
3 provide to adjoining downstream Subareas such minimum Annual water
4 supplies in the amounts and in the manner set forth in Exhibit "G".
5 The Producers in the Baja Subarea have an obligation to provide
6 average and minimum Subsurface Flows toward Afton at the MWA
7 eastern boundary equal to the amounts shown in Exhibit "G".
8 Producers in each of the Subareas have rights in the aggregate, as
9 against each adjoining downstream Subarea or, in the case of the
10 Baja Subarea, as against flows at the MWA eastern boundary toward
11 Afton, to divert, pump, extract, conserve, and use all surface
12 water and Groundwater supplies originating therein or accruing
13 thereto, and so long as the adjoining downstream Subarea
14 Obligations are satisfied under this Judgment and there is
15 compliance with all of its provisions. Watermaster shall maintain
16 a continuing account of the status of each Subarea's compliance
17 with its Subarea Obligation, including any cumulative credits or
18 debits and any requirement for providing Makeup Water. The
19 accounting and determinations relative to Subarea Obligations shall
20 be made in accordance with procedures set forth in Exhibit "G".

21
22 **III. INJUNCTION**

23 14. Injunction Against Unauthorized Production. Each
24 and every Party, its officers, agents, employees, successors, and
25 assigns, is ENJOINED AND RESTRAINED from Producing water from the
26 Basin Area except pursuant to the provisions of the Physical
27 Solution in this Judgment.

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1 15. Injunction Re Change in Purpose of Use Without
2 Notice Thereof to Watermaster. Each and every Party, its officers,
3 agents, employees, successors, and assigns, is ENJOINED AND
4 RESTRAINED from changing its Purpose of Use at any time without
5 first notifying Watermaster of the intended change.

6 16. Injunction Against Unauthorized Recharge. Each and
7 every Party, its officers, agents, employees, successors and
8 assigns, is ENJOINED AND RESTRAINED from claiming any right to
9 recapture Water that has been recharged in the Basin Area except
10 pursuant to a Storage Agreement with Watermaster. This provision
11 does not prohibit Parties from importing Supplemental Water into
12 the Basin Area for direct use.

13 17. Injunction Against Transportation from Mojave Basin
14 Area. Except upon further order of the Court, each and every
15 Party, its officers, agents, employees, successors and assigns, is
16 ENJOINED AND RESTRAINED from transporting water hereafter Produced
17 from the Basin Area to areas outside the Basin Area.

18 18. Injunction Against Diverting Storm Flows. No Party
19 may undertake or cause the construction of any project that will
20 directly reduce the amount of Storm Flow that would otherwise go
21 through the naturally occurring hydrologic regime to a downstream
22 Subarea or that will reduce the surface area over which Storm Flow
23 currently occurs by alteration to the bed of the Mojave River.
24 This paragraph shall not prevent any flood control agency or
25 municipality from taking such emergency action as may be necessary
26 to protect the physical safety of its residents and its structures
27 from flooding. Any such action shall be done in a manner that will
28 minimize any reduction in the quantity of Storm Flows.

1 IV. CONTINUING JURISDICTION

2 19. Jurisdiction Reserved. Full jurisdiction, power and
3 authority are retained by and reserved to the Court for purposes of
4 enabling the Court upon the application of any Party, by a motion
5 noticed in accordance with the notice procedures of Paragraph 36
6 hereof, to make such further or supplemental order or directions as
7 may be necessary or appropriate for interim operation before the
8 Physical Solution is fully operative, or for interpretation,
9 enforcement or carrying out of this Judgment, and to modify, amend
10 or amplify any of the provisions of this Judgment or to add to the
11 provisions thereof consistent with the rights herein decreed;
12 provided, that nothing in this paragraph shall authorize either a
13 reduction of the Base Annual Production Right of any Party, except
14 in accordance with the rules set forth in Exhibit "F", or a
15 reduction of the Base Flow portion of any Subarea Obligation.

16
17 V. Physical Solution

18 A. GENERAL

19 20. Purpose and Objective. The Court hereby declares
20 and decrees that the Physical Solution herein contained: 1) is a
21 fair and equitable basis for satisfaction of all water rights in
22 the Mojave Basin Area; 2) is in furtherance of the mandate of the
23 State Constitution and the water policy of the State of California;
24 and 3) takes into account applicable public trust interests; and
25 therefore adopts and orders the Parties to comply with the Physical
26 Solution. As noted in Paragraph 3 of this Judgment, the
27 declaration of rights and obligations of the Parties and Subareas
28 is a necessary component of this Physical Solution. The purpose of

1 the Physical Solution is to establish a legal and practical means
2 for making the maximum reasonable beneficial use of the waters of
3 the Basin Area by providing for the long-term conjunctive
4 utilization of all water available thereto to meet the reasonable
5 beneficial use requirements of water users therein.

6 21. Need for Flexibility. It is essential that this
7 Physical Solution provide maximum flexibility and adaptability in
8 order that the Court may be free to use existing and future
9 technological, social, institutional and economic options in order
10 to maximize reasonable beneficial use of the waters of the Basin
11 Area. To that end, the Court's retained jurisdiction may be
12 utilized where appropriate, to supplement the Physical Solution.

13 22. General Pattern of Operations. The Producers will
14 be divided into five Subareas for purposes of administration. The
15 Subarea rights and obligations are herein decreed. A fundamental
16 premise of the Physical Solution is that all Parties will be
17 allowed, subject to this Judgment, to Produce sufficient water to
18 meet their reasonable beneficial use requirements. To the extent
19 that Production by a Producer in any Subarea exceeds such
20 Producer's share of the Free Production Allowance of that Subarea,
21 Watermaster will provide Replacement Water to replace such excess
22 Production according to the methods set forth herein. To the
23 extent that any Subarea incurs a Makeup Obligation, Watermaster
24 will provide Supplemental Water to satisfy such Makeup Obligation
25 according to the methods set forth herein. For the initial five
26 (5) full Years after entry of this Judgment (including any
27 interlocutory Judgment), the Free Production Allowance for each
28 Subarea shall be set as the amount of water equal to the following

1 percentages of the aggregate Base Annual Production for that
2 Subarea:

	<u>Judgment Year</u>	<u>Percentage</u>	
3			
4	1993-1994	First Full Year	100
5	1994-1995	Second Full Year	95
6	1995-1996	Third Full Year	90
7	1996-1997	Fourth Full Year	85
8	1997-1998	Fifth Full Year	80

9 The extent of Overdraft now varies between Subareas and the
10 reasonableness of any physical solution as applied to each Producer
11 depends in part upon such Producer's foreseeable needs and the
12 present and future availability of water within the Subarea in
13 which each Producer is located. The Physical Solution described in
14 this Judgment in part generally contemplates (i) initially allowing
15 significant unassessed production on a substantially uniform basis
16 for all Producers and Subareas and (ii) a phasing in of the
17 monetary obligations necessary to obtain Supplemental Water. The
18 above two provisions will affect each Subarea differently, may not
19 be sufficient to ultimately eliminate the condition of Overdraft in
20 each Subarea and could result in increased Overdraft within a
21 Subarea. Any adverse impact to any Subarea caused by the
22 implementation of the provisions shall be the responsibility of the
23 Producers in each such Subarea.

24 B. ADMINISTRATION.

25 23. Administration by Watermaster. Watermaster shall
26 administer and enforce the provisions of the Judgment and any
27 subsequent instructions or orders of this Court.

28 ///

1 (a) Standard of Performance. Watermaster shall, in
2 carrying out its duties, powers and responsibilities herein, act in
3 an impartial manner without favor or prejudice to any Subarea,
4 Producer, Party or Purpose of Use.

5 (b) Removal of Watermaster. Full jurisdiction, power
6 and authority are retained and reserved by the Court for the
7 purpose of enabling the Court on its own motion, or upon
8 application of any Party, and upon notice in accordance with the
9 notice procedures of paragraph 36 hereof, and after hearing
10 thereon, to remove any appointed Watermaster and substitute a new
11 Watermaster in its place. The Court shall find good cause for the
12 removal of Watermaster upon a showing that Watermaster has failed
13 to perform its duties, powers and responsibilities in an impartial
14 manner, or has otherwise failed to act in the manner consistent
15 with the provisions set forth in this Judgment or subsequent order
16 of the Court.

17 (c) MWA Appointed as Initial Watermaster. The MWA is
18 hereby appointed, until further order of the Court, as Watermaster
19 to administer and enforce the provisions of this Judgment and any
20 subsequent orders of this Court issued in the performance of its
21 continuing jurisdiction. In carrying out this appointment, MWA
22 shall segregate and separately exercise in all respects the
23 Watermaster powers delegated by the Court under this Judgment from
24 MWA's statutory powers. All funds received, held, and disbursed by
25 MWA as Watermaster shall be by way of separate Watermaster
26 accounts, subject to separate accounting and auditing. Meetings
27 and hearings held by the MWA Board of Directors when acting as
28 Watermaster shall be noticed and conducted separately from MWA

1 meetings. All Watermaster staff and consultant functions shall be
2 separate and distinct from MWA staff and consultant functions;
3 provided, however, that pursuant to duly adopted Watermaster rules,
4 which shall be subject to review according to Paragraph 36 hereof,
5 Watermaster staff and consultant functions may be accomplished by
6 MWA staff and consultants, subject to strict time and cost
7 accounting principles so that Watermaster functions, and the
8 Assessments provided under this Judgment, do not subsidize, and are
9 not subsidized by, MWA functions. Subject to these principles, MWA
10 shall implement practicable cost efficiencies through consolidation
11 of Watermaster and MWA staff and consultant functions.

12 24. Powers and Duties. Subject to the continuing
13 supervision and control of the Court, Watermaster shall have and
14 may exercise the following express powers, and shall perform the
15 following duties, together with any specific powers, authority and
16 duties granted or imposed elsewhere in this Judgment or hereafter
17 ordered or authorized by the Court in the exercise of its
18 continuing jurisdiction:

19 a. Rules and Regulations. To adopt any and all
20 appropriate rules and regulations for conduct pursuant to this
21 Judgment after public hearing. Notice of hearing and a copy of the
22 proposed rules and regulations, and any amendments thereof, shall
23 be mailed to all Parties thirty days prior to the date of the
24 hearing thereon.

25 b. Employment of Experts and Agents. To employ
26 such administrative personnel, engineering, legal, accounting, or
27 other specialty services and consulting assistants as may be deemed
28 appropriate in carrying out the terms of this Judgment.

1 c. Makeup and Replacement Obligations. To
2 determine the Makeup Obligations for each Subarea and Replacement
3 Obligations for each Producer and each Subarea, pursuant to the
4 terms of the Judgment.

5 d. Measuring Devices, etc. To adopt rules and
6 regulations regarding determination of amounts of Production and
7 installation of individual water meters. The rules and regulations
8 shall provide for approved devices or methods to measure or
9 estimate Production. Producers who meter Production on the date of
10 entry of this Judgment shall continue to meter Production.
11 Thereafter, Producers who do not meter Production on the effective
12 date of entry of this Judgment may be required by Watermaster rules
13 and regulations to install water meters upon a showing that then
14 employed measurement devices or methods do not accurately determine
15 actual Production. The rules and regulations shall require that
16 within three Years after the date of entry of this Judgment, any
17 Producer who provides piped water for human Consumption to more
18 than five service connections shall have installed an individual
19 water meter on each service connection.

20 e. Hydrologic Data Collection. To install, operate
21 and maintain such wells, measuring devices and/or meters necessary
22 to monitor stream flow, precipitation and groundwater levels and to
23 obtain such other data as may be necessary to carry out the
24 provisions of this Judgment, including a study of the Basin Area
25 phreatophyte consumptive use.

26 f. Assessments. To set, levy and collect all
27 Assessments specified herein.

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1 g. Purchase of and Recharge with Supplemental
2 Water. In accordance with Paragraph 27, to the extent Supplemental
3 Water is available and is reasonably needed for Replacement Water
4 or Makeup Water, to use Replacement Water Assessment proceeds to
5 purchase Replacement Water, and to use Makeup Water Assessment
6 proceeds to purchase Makeup Water and to have such Replacement
7 Water and Makeup Water provided to the appropriate Subarea as soon
8 as practicable. Watermaster may prepurchase Supplemental Water and
9 apply subsequent Assessments towards the costs of such
10 prepurchases.

11 h. Water Quality. To take all reasonable steps to
12 assist and encourage appropriate regulatory agencies to enforce
13 reasonable water quality regulations affecting the Basin Area,
14 including regulation of solid and liquid waste disposal.

15 i. Notice List. To maintain a current list of
16 Responsible Parties to receive notice hereunder.

17 j. Annual Administrative Budget. To prepare a
18 proposed administrative budget for each Year, hold hearings
19 thereon, and adopt an administrative budget according to the time
20 schedule set forth in Exhibit "D". The administrative budget shall
21 set forth budgeted items and Administrative Assessments in
22 sufficient detail to show the allocation of the expense among the
23 Producers. Following the adoption of the budget, expenditures
24 within budgeted items may thereafter be made by Watermaster in the
25 exercise of powers herein granted, as a matter of course.

26 k. Annual Report to Court.

27 (1) To file an Annual report with this Court
28 not later than April 1 of each Year beginning April 1 following the

1 first full Year after entry of Judgment. Prior to filing the
2 Annual report with the Court, Watermaster shall notify all Parties
3 that a draft of the report is available for review and shall
4 provide notice of a hearing to receive comments and recommendations
5 for changes in the report. The public hearing shall be conducted
6 on the same date and at the same place as the hearings required by
7 Paragraphs 3 and 4 of Exhibit "D". The notice of hearing may
8 include such summary of the draft report as Watermaster may deem
9 appropriate. Watermaster shall also distribute the report to the
10 Parties requesting copies.

11 (2) The Annual report shall include an Annual
12 fiscal report of the preceding Year's operation and shall include
13 details as to operation of each of the Subareas and an audit of all
14 Assessments and expenditures pursuant to this Physical Solution and
15 a review of Watermaster activities pursuant to this Judgment. The
16 Annual report shall include a compilation of at least the
17 following:

18 Determinations and data required by:

- 19 i) Paragraph 24(c) (Makeup and Replacement Obligations)
- 20 ii) Paragraph 24(e) (Hydrologic Data Collection)
- 21 iii) Paragraph 24(g) (Purchase of and Recharge with
22 Supplemental Water)
- 23 iv) Paragraph 24(i) (Notice List)

24 Rules and regulations adopted pursuant to:

- 25 v) Paragraph 24(a) (Rules and Regulations)
- 26 vi) Paragraph 24(d) (Measuring Devices, etc.)
- 27 vii) Paragraph 24(s) (Storage Agreements)

28 Reports required by:

- 1 viii) Paragraph 24(j) (Annual Administrative Budget)
2 ix) Paragraph 24(n) (Transfers)
3 x) Paragraph 24(o) (Free Production Allowance)
4 xi) Paragraph 24(p) (Production Reports)
5 xii) Exhibit "D" (Prior Year Report)
6 xiii) Exhibit "F" (Transfers of Base Annual Production
7 Rights)
8 xiv) Exhibit "G" (Status of Subarea Obligation)
9 xv) Exhibit "H" (Biological Resource Mitigation)

10 1. Investment of Funds. To hold and invest any
11 funds in investments authorized from time to time for public
12 agencies in the State of California.

13 m. Borrowing. To borrow in anticipation of receipt
14 of Assessment proceeds in an amount not to exceed the Annual amount
15 of Assessments levied but uncollected.

16 n. Transfers. To prepare on an Annual basis and
17 maintain a report or record of any transfer of Base Annual
18 Production Rights. Such report or record shall be available for
19 inspection by any Party upon reasonable notice to the Watermaster.

20 o. Free Production Allowance. Not later than the
21 end of the 1997-1998 Water Year, and Annually thereafter, to
22 recommend in the Watermaster Annual Report an adjustment, if
23 needed, to the Free Production Allowance for any Subarea. In
24 making its recommendation, Watermaster shall be guided by the
25 factors set forth in Exhibit "C", including but not limited to an
26 annual calculation of the change of water in storage. The Annual
27 report shall include all assumptions and calculations relied upon
28 in making its recommendations. Following the 1997-1998 Water Year,

1 or any time thereafter, Watermaster shall obtain prior Court
2 approval for any increase or reduction of any Subarea's Free
3 Production Allowance. In no event shall a reduction in any Year
4 for a Subarea exceed five percent of the aggregate Base Annual
5 Production of that Subarea. In the event Watermaster recommends in
6 its report to the Court that the Free Production Allowance for any
7 Subarea may need to be increased or reduced, the Court shall
8 conduct a hearing, after notice given by Watermaster according to
9 paragraph 36, upon Watermaster's recommendations and may order such
10 changes in Subarea Free Production Allowance. The most recent
11 Subarea Free Production Allowances shall remain in effect until
12 revised according to this Paragraph 24(o).

13 p. Production Reports. To require each Producer to
14 file with Watermaster, pursuant to procedures and time schedules to
15 be established by Watermaster, a report on a form to be prescribed
16 by Watermaster showing the total Production of such Party for each
17 reporting period rounded off to the nearest tenth of an acre foot,
18 and such additional information and supporting documentation as
19 Watermaster may require.

20 q. Production Adjustment for Change in Purpose of
21 Use. If Watermaster determines, using the Consumptive Use rates
22 set forth in Exhibit "F", that a new Purpose of Use of any
23 Producer's Production for any Year has resulted in a higher rate of
24 Consumption than the rate applicable to the original Purpose of Use
25 of that Producer's Production in the Year for which Base Annual
26 Production was determined, Watermaster shall use a multiplier (1)
27 to adjust upward such Production for the purpose of determining the
28 Producer's Replacement Water Assessment and, (2) to adjust upward

1 the Free Production Allowance portion of such Production for the
2 purpose of determining the Producer's Makeup Water Assessment. The
3 multiplier shall be determined by dividing the number of acre feet
4 of Consumption that occurred under the new Purpose of Use by the
5 number of acre feet of Consumption that would have occurred under
6 the original Purpose of Use for the same Production.

7 r. Reallocation of Base Annual Production Rights.

8 To reallocate annually the Base Annual Production Rights in each
9 Subarea to reflect any permanent transfers of such Rights among
10 Parties.

11 s. Storage Agreements. To enter into Storage
12 Agreements with any Party in order to accommodate the acquisition
13 of Supplemental Water. Watermaster may not enter into Storage
14 Agreements with non-Parties unless such non-Parties become subject
15 to the provisions of this Judgment and the jurisdiction of the
16 Court. Such Storage Agreements shall by their terms preclude
17 operations which will have a substantial adverse impact on any
18 Producer. If a Party pursuant to a Storage Agreement has provided
19 for predelivery or postdelivery of Replacement Water for the
20 Party's use, Watermaster shall at the Party's request credit such
21 water to the Party's Replacement Obligation. Watermaster shall
22 adopt uniformly applicable rules for Storage Agreements.
23 Watermaster shall calculate additions, extractions and losses of
24 water stored under Storage Agreements and maintain an Annual
25 account of all such water.

26 t. Subarea Advisory Committee Meetings. To meet on
27 a regular basis and at least semi-annually with the Subarea
28 Advisory Committees to review Watermaster activities pursuant to

1 this Judgment and to receive advisory recommendations from the
2 Subarea Advisory Committees.

3 u. Unauthorized Production. To bring such action
4 or motion as is necessary to enjoin unauthorized Production as
5 provided in Paragraph 12 hereinabove.

6 v. Meetings and Records. To ensure that all
7 meetings and hearings by Watermaster shall be noticed and conducted
8 according to then current requirements of the Ralph M. Brown Act,
9 Government Code Sections 54950, et seq. Watermaster files and
10 records shall be available to any person according to the
11 provisions of the Public Records Act, Government Code §§ 6200 et
12 seq.

13 w. Data, Estimates and Procedures. To rely on and
14 use the best available records and data to support the
15 implementation of this Judgment. Where actual records of data are
16 not available, Watermaster shall rely on and use sound scientific
17 and engineering estimates. Watermaster may use preliminary records
18 of measurements, and, if revisions are subsequently made,
19 Watermaster may reflect such revisions in subsequent accounting.
20 Exhibit "C" sets forth methods and procedures for determining
21 surface flow components. Watermaster shall use either the same
22 procedures or procedures that will yield results of equal or
23 greater accuracy.

24 x. Biological Resource Mitigation. To implement
25 the Biological Resource Mitigation measures set forth in Exhibit
26 "H" herein.

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1 C. ASSESSMENTS

2 25. Purpose. Watermaster shall levy and collect
3 Assessments from the Parties based upon Production in accordance
4 with the time schedules set forth in Exhibit "D". Watermaster
5 shall levy and collect such Assessments as follows:

6 a. Administrative Assessments. Administrative
7 Assessments to fund the Administrative Budget adopted by the
8 Watermaster pursuant to Paragraph 24(j) shall be levied uniformly
9 against each acre foot of Production. A Producer who does not
10 Produce in a given Year shall pay an Administrative Assessment in
11 amount equal to the lowest MWA assessment for Minimal Producers for
12 that Year.

13 b. Replacement Water Assessments. Replacement
14 Water Assessments shall be levied against each Producer on account
15 of such Producer's Production, after any adjustment pursuant to
16 Paragraph 24(q), in excess of such Producer's share of the Free
17 Production Allowance in each Subarea during the prior Year.

18 c. Makeup Water Assessments. Makeup Water
19 Assessments shall be levied against each Producer in each Subarea
20 on account of each acre-foot of Production therein which does not
21 bear a Replacement Assessment hereunder, after any adjustment
22 pursuant to Paragraph 24(q), to pay all necessary costs of
23 satisfying the Makeup Obligation, if any, of that Subarea.

24 d. Biological Resource Assessment. To establish
25 and, to the extent needed, to maintain the Biological Resource
26 Trust Fund balance at one million dollars (in 1993 dollars)
27 pursuant to Paragraph 24(x) and Exhibit "H", a Biological Resource
28 Assessment in an amount not to exceed fifty cents (in 1993 dollars)

1 for each acre-feet of Production shall be levied uniformly against
2 each producer except the California Department of Fish and Game.

3 e. MWA Assessment of Minimal Producers. The MWA
4 shall identify and assess Minimal Producers through its own
5 administrative procedures, and not acting as Watermaster.

6 26. Procedure. Each Party hereto is ordered to pay the
7 Assessments herein provided for, which shall be levied and
8 collected in accordance with the procedures and schedules set forth
9 in Exhibit "D". Any Assessment which becomes delinquent, as
10 defined in Paragraph 7 of Exhibit "D", shall bear interest at the
11 then current San Bernardino County property tax delinquency rate
12 Said interest rate shall be applicable to any said delinquent
13 Assessment from the due date thereof until paid. Such delinquent
14 Assessment, together with interest thereon, costs of suit,
15 attorneys fees and reasonable costs of collection, may be collected
16 pursuant to motion giving notice to the delinquent Party only, or
17 Order to Show Cause proceeding, or such other lawful proceeding as
18 may be instituted by the Watermaster; and shall, if provided for in
19 the MWA Act, constitute a lien on the property of the Party as of
20 the same time and in the same manner as does the tax lien securing
21 County property taxes. The Watermaster shall Annually certify a
22 list of all such unpaid delinquent Assessments to the MWA (in
23 accordance with applicable provisions of the MWA Act). The MWA (in
24 accordance with applicable provisions of the MWA Act) shall include
25 the names of those Parties and the amounts of the liens in its list
26 to the County Assessor's Office in the same manner and at the same
27 time as it does its administrative assessments. MWA shall account
28 for receipt of all collections of Assessments collected pursuant to

1 this Judgment, and shall pay such amounts collected pursuant to
2 this Judgment to the Watermaster. The Watermaster shall also have
3 the ability to enjoin production of those Persons who do not pay
4 Assessments pursuant to this Judgment.

5 27. Availability of Supplemental Water. All
6 Replacement and Makeup Water Assessments collected by the
7 Watermaster shall be used to acquire Supplemental Water from MWA.
8 Watermaster shall determine when to request Supplemental Water from
9 MWA and shall determine the amount of Supplemental Water to be
10 requested. MWA shall use its best efforts to acquire as much
11 Supplemental Water as possible in a timely manner. If MWA
12 encounters delays in the acquisition of Supplemental Water which,
13 due to cost increases, results in collected assessment proceeds
14 being insufficient to purchase all Supplemental Water for which the
15 Assessments were made, MWA shall purchase as much water as the
16 proceeds will allow when the water becomes available. If available
17 Supplemental Water is insufficient to meet all Makeup and
18 Replacement Water obligations, Watermaster shall allocate the
19 Supplemental Water for delivery to the Subareas on an equitable and
20 practicable basis pursuant to duly adopted Watermaster rules and
21 regulations, giving preference to: First, Transition Zone
22 Replacement Water Obligations as set forth in Exhibit "G"; Second,
23 Makeup Water Obligations; and Third, other Replacement Water
24 Obligations. MWA may acquire Supplemental Water at any time. MWA
25 shall be entitled to enter into a Storage Agreement with
26 Watermaster to store water MWA acquires prior to being paid to do
27 so by Watermaster. Such water, including such water acquired and
28 stored prior to the date of this Judgment or prior to the entry of

1 a Storage Agreement, may later be used to satisfy MWA's duty under
2 this paragraph.

3 28. Use of Replacement Water Assessment Proceeds and
4 Makeup Water Assessment Proceeds. The Proceeds of Replacement
5 Water Assessments and any interest accrued thereon shall only be
6 used for the purchase of Replacement Water for that Subarea from
7 which they were collected. In addition, the proceeds of
8 Replacement Water Assessments collected on account of Production in
9 the Transition Zone, except as provided in Exhibit "G", shall only
10 be used for the purchase of Replacement Water for the Transition
11 Zone, and the proceeds of Replacement Water Assessments collected
12 on account of Production in that portion of the Baja Subarea
13 downstream of the Calico-Newberry fault shall only be used for the
14 purchase of Replacement Water for that portion of the Baja Subarea
15 downstream of the Calico-Newberry fault. The proceeds of Makeup
16 Water Assessments and any interest accrued thereon shall only be
17 used for the purchase of Makeup Water to satisfy the Makeup
18 Obligation for which they are collected.

19 29. MWA Annual Report to the Watermaster. MWA shall
20 Produce and deliver to Watermaster an Annual written report
21 regarding actions of MWA required by the terms of this Judgment.
22 The report shall contain: 1) a summary of the actions taken by MWA
23 in identifying and assessing Minimal Producers, including a report
24 of Assessments made and collected; 2) a summary of other MWA
25 activities in collecting Assessment on behalf of Watermaster; 3) a
26 report of water purchases and water distribution for the previous
27 Year; 4) actions taken to implement its Regional Water Management
28 Plan, including actions relating to conveyance facilities referred

1 to in this Judgment. The MWA report will be provided to
2 Watermaster not less than 30 days prior to the Annual Watermaster
3 report to the Court required by this Judgment.

4 D. SUBAREA ADVISORY COMMITTEES.

5 30. Authorization. The Producers in each of the five
6 Subareas are hereby authorized and directed to cause committees of
7 Producer representatives to be organized and to act as Subarea
8 Advisory Committees.

9 31. Composition and Election. Each Subarea Advisory
10 Committee shall consist of five (5) Persons who shall be called
11 advisors. In the election of advisors, every Party shall be
12 entitled to one vote for every acre-foot of Base Annual Production
13 for that Party in that particular Subarea. Parties may cumulate
14 their votes and give one candidate a number of votes equal to the
15 number of advisors to be elected multiplied by the number of votes
16 to which the Party is normally entitled, or distribute the Party's
17 votes on the same principle among as many candidates as the Party
18 thinks fit. In any election of advisors, the candidates receiving
19 the highest number of affirmative votes of the Parties are elected.
20 Elections shall be held upon entry of this Judgment and thereafter
21 every third year. In the event a vacancy arises, a temporary
22 advisor shall be appointed by unanimous decision of the other four
23 advisors to continue in office until the next scheduled election.
24 The California Department of Fish and Game shall serve as a
25 permanent ex-officio member of the Alto and Baja Subarea Advisory
26 Committees. Rules and regulations regarding organization, meetings
27 and other activities shall be at the discretion of the individual

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1 Subarea Advisory Committees, except that all meetings of the
2 committees shall be open to the public.

3 32. Compensation. The Subarea Advisory Committee
4 members shall serve without compensation.

5 33. Powers and Functions. The Subarea Advisory
6 Committee for each Subarea shall act in an advisory capacity only
7 and shall have the duty to study, review and make recommendations
8 on all discretionary determinations made or to be made hereunder by
9 Watermaster which may affect that Subarea.

10 E. TRANSFERABILITY.

11 34. Assignment, Transfer, etc. of Rights. In order to
12 further the purposes of this Judgment and Physical Solution, any
13 Base Annual Production Right, or any portion thereof, may be sold,
14 assigned, transferred, licensed or leased pursuant to the rules and
15 procedures set forth in Exhibit "F".

16 F. MISCELLANEOUS PROVISIONS.

17 35. Water Quality. Nothing in this Judgment shall be
18 interpreted as relieving any Party of its responsibilities to
19 comply with state or federal laws for the protection of water
20 quality or the provisions of any permits, standards, requirements,
21 or orders promulgated thereunder.

22 36. Review Procedures. Any action, decision, rule or
23 procedure of Watermaster pursuant to this Judgment shall be subject
24 to review by the Court on its own motion or on timely motion by any
25 Party, as follows:

26 a. Effective Date of Watermaster Action. Any
27 order, decision or action of Watermaster pursuant to this Judgment
28 on noticed specific agenda items shall be deemed to have occurred

1 on the date of the order, decision or action.

2 b. Notice of Motion. Any Party, may, by a
3 regularly noticed motion, petition the Court for review of
4 Watermaster's action or decision pursuant to this Judgment. The
5 motion shall be deemed to be filed when a copy, conformed as filed
6 with the Court, has been delivered to Watermaster together with the
7 service fee established by Watermaster sufficient to cover the cost
8 to photocopy and mail the motion to each Party. Watermaster shall
9 prepare copies and mail a copy of the motion to each Party or its
10 designee according to the official service list which shall be
11 maintained by Watermaster according to Paragraph 37. A Party's
12 obligation to serve notice of a motion upon the Parties is deemed
13 to be satisfied by filing the motion as provided herein. Unless
14 ordered by the Court, any such petition shall not operate to stay
15 the effect of any Watermaster action or decision which is
16 challenged.

17 c. Time for Motion. A motion to review any
18 Watermaster action or decision shall be filed within ninety (90)
19 days after such Watermaster action or decision, except that motions
20 to review Watermaster Assessments hereunder shall be filed within
21 thirty (30) days of mailing of notice of the Assessment.

22 d. De Novo Nature of Proceeding. Upon filing of a
23 petition to review Watermaster action, the Watermaster shall notify
24 the Parties of a date when the Court will take evidence and hear
25 argument. The Court's review shall be de novo and the Watermaster
26 decision or action shall have no evidentiary weight in such
27 proceeding.

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1 e. Decision. The decision of the Court in such
2 proceeding shall be an appealable Supplemental Order in this case.
3 When the same is final, it shall be binding upon Watermaster and
4 the Parties.

5 f. Payment of Assessments. Payment of Assessments
6 levied by Watermaster hereunder shall be made pursuant to the time
7 schedule in Exhibit "D"; notwithstanding any motion for review of
8 Watermaster actions, decisions, rules or procedures, including
9 review of Watermaster Assessments.

10 37. Designation of Address for Notice and Service. Each
11 Party shall designate the name and address to be used for purposes
12 of all subsequent notices and service herein, either by its
13 endorsement on the Stipulation for Judgment or by a separate
14 designation to be filed within thirty (30) days after Judgment has
15 been entered. Said designation may be changed from time to time by
16 filing a written notice of such change with Watermaster. Any Party
17 desiring to be relieved of receiving notices of Watermaster
18 activity may file a waiver of notice on a form to be provided by
19 Watermaster. Watermaster shall maintain at all times a current
20 list of Parties to whom notices are to be sent and their addresses
21 for purposes of service. Watermaster shall also maintain a full
22 current list of names and addresses of all Parties or their
23 successors, as filed herein. Copies of such lists shall be
24 available to any Person. If no designation is made, a Party's
25 designee shall be deemed to be, in order of priority: i) the
26 Party's attorney of record; ii) if the Party does not have an
27 attorney of record, the Party itself at the address on the
28 Watermaster list.

1 38. Service of Documents. Delivery to or service upon
2 any Party by Watermaster, by any other Party, or by the Court, of
3 any document required to be served upon or delivered to a Party
4 under or pursuant to the Judgment shall be deemed made if made by
5 Deposit thereof (or by copy thereof) in the mail, first class,
6 postage prepaid, addressed to the designee of the Party and at the
7 address shown in the latest designation filed by that Party.

8 39. No Abandonment of Rights. It is in the interest of
9 reasonable beneficial use of the Basin Area and its water supply
10 that no Party be encouraged to take and use more water in any Year
11 than is actually required. Failure to Produce all of the water to
12 which a Party is entitled hereunder shall not, in and of itself, be
13 deemed or constitute an abandonment of such Party's right, in whole
14 or in part.

15 40. Intervention After Judgment. Any person who is not
16 a Party or successor to a Party and who proposes to Produce water
17 from the Basin Area may seek to become a Party to this Judgment
18 through a Stipulation for Intervention entered into with
19 Watermaster. Watermaster may execute said Stipulation on behalf of
20 the other Parties herein but such Stipulation shall not preclude a
21 Party from opposing such Intervention at the time of the Court
22 hearing thereon. Said Stipulation for Intervention must thereupon
23 be filed with the Court, which will consider an order confirming
24 said intervention following thirty (30) days' notice to the
25 Parties. Thereafter, if approved by the Court, such intervenor
26 shall be a Party bound by this Judgment and entitled to the rights
27 and privileges accorded under the Physical Solution herein.

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EXHIBIT A

MAP OF MOJAVE BASIN AREA

[INDEX MAP AND DETAIL SHEET CONSISTING OF 42
1" = 4,000' SCALE MAPS COVERING THE BASIN
AREA; THE MAP IS ON DISPLAY AT THE OFFICE OF
THE MOJAVE WATER AGENCY, 22450 HEADQUARTERS,
APPLE VALLEY, CA 92307 AND ON FILE WITH THE
COURT]

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EXHIBIT B

PRODUCTION TABLES

CONTENTS

TABLE B-1: TABLE SHOWING BASE ANNUAL PRODUCTION AND BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN EACH SUBAREA AND FREE PRODUCTION ALLOWANCES FOR EACH SUBAREA FOR THE FIRST FIVE YEARS AFTER ENTRY OF THE INTERLOCUTORY JUDGMENT

TABLE B-2: TABLE SHOWING TOTAL VERIFIED PRODUCTION, BASE ANNUAL PRODUCTION AND RECIRCULATED WATER PRODUCTION FOR AQUACULTURE AND FOR RECREATIONAL LAKES

~~12/30/92~~
~~01/30/93~~
~~02/28/93~~
~~04/10/93~~
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09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
ABSHIRE, DAVID V	24	0.1093	24	22	21	20	19
ANDERSON, ROSS C & BETTY J	34	0.1548	34	32	30	28	27
BAR H MUTUAL WATER COMPANY	53	0.2414	53	50	47	45	42
BELL, CHUCK	494	2.2497	494	469	444	419	395
BURNS, BOBBY J & EVELYN J	1,300	5.9204	1,300	1,235	1,170	1,105	1,040
CASA COLINA FOUNDATION	90	0.4099	90	85	81	76	72
CENTER WATER CO	40	0.1822	40	38	36	34	32
CLUB VIEW PARTNERS	1,276	5.8111	1,276	1,212	1,148	1,084	1,020
CROSS, LAWRENCE E	23	0.1047	23	21	20	19	18
CRYSTAL HILLS WATER COMPANY	194	0.8835	194	184	174	164	155
DAHLQUIST, GEORGE R	594	2.7052	594	564	534	504	475
DELPERDANG, ROBERT H	56	0.2550	56	53	50	47	44
DESERT DAWN MUTUAL WATER COMPANY	15	0.0683	15	14	13	12	12
GARTA, TRINIDAD	512	2.3317	512	486	460	435	409
GAYJIKIAN, SAMUEL & HAZEL	102	0.4645	102	96	91	86	81
GRACETOWN INVESTMENT CO - JETCO PROP FUND	752	3.4247	752	714	676	639	601
GUBLER, HANS	30	0.1366	30	28	27	25	24
HAL-DOR LTD	23	0.1047	23	21	20	19	18
HANDLEY, DON R & MARY ANN	73	0.3325	73	69	65	62	58
HART, MERRILL W	473	2.1541	473	449	425	402	378
HERT, SCOTT	276	1.2569	276	262	248	234	220
HI-GRADE MATERIALS	442	2.0129	442	419	397	375	353
HITCHIN LUCERNE, INC	16	0.0729	16	15	14	13	12
JAMS RANCH	28	0.1275	28	26	25	23	22

~~10/10/92~~
~~01/20/93~~
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~~04/10/93~~
~~04/28/93~~
09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBARBA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
JUBILEE MUTUAL WATER COMPANY	142	0.6467	142	134	127	120	113
JUNIPER RIVIERA COUNTY WATER DISTRICT	37	0.1685	37	35	33	31	29
LEE, DOO HWAN	78	0.3552	78	74	70	66	62
LOPEZ, BALTAZAR	385	1.7533	385	365	346	327	308
LUA, ANTONIO	348	1.5848	348	330	313	295	278
LUCERNE VALLEY MUTUAL WATER COMPANY	54	0.2459	54	51	48	45	43
LUCERNE VALLEY PARTNERS	1,213	5.5242	1,213	1,152	1,091	1,031	970
LUCERNE VISTA WATER CO	21	0.0956	21	19	18	17	16
MITSUBISHI CEMENT CORPORATION	1,299	5.9158	1,299	1,234	1,169	1,104	1,039
MONACO INVESTMENT COMPANY	70	0.3188	70	66	63	59	56
MOSS, LAWRENCE W & HELEN J	43	0.1958	43	40	38	36	34
PARK, CHANHO	597	2.7188	597	567	537	507	477
PARK, JEONG, IL & HEA JA	96	0.4372	96	91	86	81	76
PEREZ, EVA	247	1.1249	247	234	222	209	197
PETTIGREW, DAN	1,422	6.4760	1,422	1,350	1,279	1,208	1,137
PETTIGREW, HOWARD L	1,500	6.8312	1,500	1,425	1,350	1,275	1,200
PLUESS-STAUFER CALIFORNIA INC	23	0.1047	23	21	20	19	18
REED, MIKE	58	0.2641	58	55	52	49	46
ROGERS, ROY	1,449	6.5990	1,449	1,376	1,304	1,231	1,159
SAN BERNARDINO CO SERVICE AREA 29	21	0.0956	21	19	18	17	16
SEALS, LAWRENCE	113	0.5146	113	107	101	96	90
SON'S RANCH	140	0.6376	140	133	126	119	112
SOUTHERN CALIFORNIA WATER COMPANY	178	0.8106	178	169	160	151	142
SPECIALTY MINERALS, INC	42	0.1913	42	39	37	35	33

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~~01/00/02~~
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09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
SPILLMAN, JAMES R & NANCY J	23	0.1047	23	21	20	19	18
STEWART WATER COMPANY	54	0.2459	54	51	48	45	43
STRINGER, W EDWARD	573	2.6095	573	544	515	487	458
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC	10	0.0455	10	9	9	8	8
TURNER, LOYD & CAROL	77	0.3507	77	73	69	65	61
VISOSKY, JOSEPH F JR	1,120	5.1006	1,120	1,064	1,008	952	896
WEISER, SIDNEY & RAQUEL	90	0.4099	90	85	81	76	72
WILLOW WELLS MUTUAL WATER COMPANY	30	0.1366	30	28	27	25	24

~~10/10/82~~
~~01/20/83~~
~~02/02/83~~
~~04/28/83~~
~~04/28/83~~
09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
MINIMAL PRODUCER POOL	2,000	9.1083	2,000	1,900	1,800	1,700	1,600
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	1,485	6.7629					
ESTE SUBAREA TOTALS =	21,958	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN OESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

OESTE SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
AEROCHEM, INC	660	5.3645	660	627	594	561	528
BROWN, DOUG & SUB	46	0.3739	46	43	41	39	36
CHAMISAL MUTUAL	96	0.7803	96	91	86	81	76
DAVIS, PAUL	19	0.1544	19	18	17	16	15
DOSSEY, D A	14	0.1138	14	13	12	11	11
MEADOWBROOK DAIRY	2,335	18.9791	2,335	2,218	2,101	1,984	1,868
RESSEGUE, JOHN & BILL	259	2.1052	259	246	233	220	207
SAN BERNARDINO CO SERVICE AREA 70G	110	0.8941	110	104	99	93	88
SAN BERNARDINO CO SERVICE AREA 70L	1,306	10.6153	1,306	1,240	1,175	1,110	1,044
THORESON, ROBERT F & A KATHLEEN	40	0.3251	40	38	36	34	32
TROBGER, RICHARD H	112	0.9103	112	106	100	95	89
VAN DAM BROTHERS	1,860	15.1183	1,860	1,767	1,674	1,581	1,488

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~~03/30/93~~
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~~04/18/92~~
~~04/28/92~~
09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN OESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

OESTE SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
MINIMAL PRODUCER POOL	1,500	12.1921	1,500	1,425	1,350	1,275	1,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	3,946	32.0735					
OESTE SUBAREA TOTALS =	12,303	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBARRA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
ABBOND, EDWARD & GRACE	28	0.0229	28	26	25	23	22
ABBOTT, LEONARD C	284	0.2321	284	269	255	241	227
ADELANTO, CITY OF	1,573	1.2855	1,573	1,494	1,415	1,337	1,258
ADELANTO, CITY OF - GEORGE A F B	3,433	2.8055	3,433	3,261	3,089	2,918	2,746
AGCON, INC	384	0.3138	384	364	345	326	307
APPLE VALLEY COUNTRY CLUB	709	0.5794	709	673	638	602	567
APPLE VALLEY DEVELOPMENT	724	0.5917	724	687	651	615	579
APPLE VALLEY FOOTHILL CO WATER DISTRICT	167	0.1365	167	158	150	141	133
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	125	0.1022	125	118	112	106	100
APPLE VALLEY RANCHOS WATER COMPANY	13,022	10.6419	13,022	12,370	11,719	11,068	10,417
APPLE VALLEY RECREATION & PARKS	45	0.0368	45	42	40	38	36
APPLE VALLEY VIEW MUTUAL WATER CO	36	0.0294	36	34	32	30	28
APPLE VALLEY, TOWN OF	298	0.2435	298	283	268	253	238
ARC LAS FLORES	6,331	5.1739	6,331	6,014	5,697	5,381	5,064
BACA, ENRIQUE	74	0.0605	74	70	66	62	59
BALDY MESA WATER DISTRICT	1,495	1.2218	1,495	1,420	1,345	1,270	1,196
BASS, NEWTON T	514	0.4201	514	488	462	436	411
BASTIANON, REMO	77	0.0629	77	73	69	65	61
BASURA, STEVE	25	0.0204	25	23	22	21	20
BEINSCHROTH, A J	90	0.0736	90	85	81	76	72
BOYCE, KENNETH & WILLA	102	0.0834	102	96	91	86	81
BROWN, BOBBY G & VALERIA R	42	0.0343	42	39	37	35	33
BURNS, ULYSSES & ANNIE L	164	0.1340	164	155	147	139	131
CARDOZO, MANUEL & MARIA	909	0.7429	909	863	818	772	727

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
CDFG - MOJAVE NARROWS REGIONAL PARK	2,107	1.7219	2,107	2,001	1,896	1,790	1,685
CDFG - MOJAVE RIVER FISH HATCHERY	20	0.0163	20	19	18	17	16
CLARK, KENNETH R	223	0.1822	223	211	200	189	178
CLEAR VIEW FARMS	501	0.4094	501	475	450	425	400
COPELAND, ET AL (C/O DON W. LITTLE)	175	0.1430	175	166	157	148	140
CRAMER, MARGARET MUIR	280	0.2288	280	266	252	238	224
CUNNINGHAM, WILLIAM	29	0.0237	29	27	26	24	23
DEXTER, CLAIR F	175	0.1430	175	166	157	148	140
DEXTER, J P	515	0.4209	515	489	463	437	412
DIBERNARDO, JOHN	203	0.1659	203	192	182	172	162
DOLCH, ROBERT & JUDY	426	0.3481	426	404	383	362	340
DOMBROWSKI, MICHAEL W & SUSAN M	19	0.0155	19	18	17	16	15
DOWSE, PHILIP	20	0.0163	20	19	18	17	16
EVENSON, EDWIN H & JOYCELAINE	70	0.0572	70	66	63	59	56
FISHER, DOLORES DR	48	0.0392	48	45	43	40	38
FISHER, JEROME	633	0.5173	633	601	569	538	506
FITZWATER, R E	291	0.2378	291	276	261	247	232
GARCIA, SONIA L	288	0.2354	288	273	259	244	230
GOMBZ, CIRIL - LIVING TRUST	330	0.2697	330	313	297	280	264
GREEN ACRES ESTATES	25	0.0204	25	23	22	21	20
GULBRANSON, MERLIN	163	0.1332	163	154	146	138	130
HELENDALE SCHOOL DISTRICT	18	0.0147	18	17	16	15	14
HESPERIA GOLF AND COUNTRY CLUB	678	0.5541	678	644	610	576	542
HESPERIA WATER DISTRICT	12,213	9.9808	12,213	11,602	10,991	10,381	9,770

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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
HI-GRADE MATERIALS	149	0.1218	149	141	134	126	119
HODGE, STANLEY W	67	0.0548	67	63	60	56	53
HOLWAY, ROBERT	88	0.0719	88	83	79	74	70
HRUBIK, THOMAS A	3,862	3.1561	3,862	3,668	3,475	3,282	3,089
INDUSTRIAL ASPHALT	109	0.0891	109	103	98	92	87
JESS RANCH WATER COMPANY	7,480	6.1129	7,480	7,106	6,732	6,358	5,984
JOHNSON, LARRY & CARLEAN	82	0.0670	82	77	73	69	65
JOHNSON, RONALD	31	0.0253	31	29	27	26	24
JOHNSTON, HARRIET AND LARRY W	127	0.1038	127	120	114	107	101
KEMPER CAMPBELL RANCH	473	0.3865	473	449	425	402	378
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	658	0.5377	658	625	592	559	526
LAWSON, ERNEST & BARBARA	15	0.0123	15	14	13	12	12
LENHERT, RONALD & TONI	37	0.0302	37	35	33	31	29
LEWIS HOMES OF CALIFORNIA	1,693	1.3836	1,693	1,608	1,523	1,439	1,354
LONGMAN, JACK	115	0.0940	115	109	103	97	92
LOUNSBURY, J PETER & CAROLYN	208	0.1700	208	197	187	176	166
LOW, ROBERT	399	0.3261	399	379	359	339	319
LUCKEY, MANLEY J	800	0.6538	800	760	720	680	640
LUTH, KEN	27	0.0221	27	25	24	22	21
MARIANA RANCHOS COUNTY WATER DISTRICT	245	0.2002	245	232	220	208	196
MCCALL, REX	44	0.0360	44	41	39	37	35
MCINNIS, WILLIAM S	30	0.0245	30	28	27	25	24
MITCHELL, ROBIN & JUDITH	36	0.0294	36	34	32	30	28
MURPHY, BERNARD H	25	0.0204	25	23	22	21	20

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BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
MURPHY, BERNARD TRUST	162	0.1324	162	153	145	137	129
MURPHY, KENNETH	42	0.0343	42	39	37	35	33
MUTUAL FUNDING CORP	101	0.0825	101	95	90	85	80
NAVAJO MUTUAL WATER CO	88	0.0719	88	83	79	74	70
NUNN, DONALD & PEARL	66	0.0539	66	62	59	56	52
O'BRYANT, ROBERT C & BARBARA	107	0.0874	107	101	96	90	85
ORMSBY, HARRY G	386	0.3154	386	366	347	328	308
PALISADES RANCH	824	0.6734	824	782	741	700	659
PARKER, DAVID E	37	0.0302	37	35	33	31	29
PEARL, ALICE	147	0.1201	147	139	132	124	117
PEARSON, DERYL B	22	0.0180	22	20	19	18	17
PERRY, THOMAS A	35	0.0286	35	33	31	29	28
PETTIS TRUST	126	0.1030	126	119	113	107	100
PHENIX PROPERTIES LTD	652	0.5328	652	619	586	554	521
PITTMAN, LEROY W	148	0.1209	148	140	133	125	118
POLICH, LEE & DONNA	65	0.0531	65	61	58	55	52
RANCHERITOS MUTUAL WATER CO	169	0.1381	169	160	152	143	135
RIVERSIDE CEMENT CO - ORO GRANDE PLANT	3,452	2.8211	3,452	3,279	3,106	2,934	2,761
ROGERS, ROY (ORO GRANDE RANCH)	115	0.0940	115	109	103	97	92
RUDMAN, ROBERT T	300	0.2452	300	285	270	255	240
RUE RANCH	30	0.0245	30	28	27	25	24
SAN BERNARDINO CO SERVICE AREA 42	465	0.3800	465	441	418	395	372
SAN BERNARDINO CO SERVICE AREA 64	3,822	3.1234	3,822	3,630	3,439	3,248	3,057
SAN BERNARDINO CO SERVICE AREA 70C	2,346	1.9172	2,346	2,228	2,111	1,994	1,876

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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ¹ YEAR	FIFTH ³ YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEYER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA B	126	0.1030	126	119	113	107	100
VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LERUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
VANNI, MIKE	54	0.0441	54	51	48	45	43
VICTOR VALLEY COMMUNITY COLLEGE DIST	240	0.1961	240	228	216	204	192
VICTOR VALLEY WATER DISTRICT	13,354	10.9133	13,354	12,686	12,018	11,350	10,683
VICTORVILLE, CITY OF	12	0.0098	12	11	10	10	9
VOGLER, ALBERT H	132	0.1079	132	125	118	112	105
WACKERN, CAESAR	1,635	1.3362	1,635	1,553	1,471	1,389	1,308
WAKULA, JOHN	291	0.2378	291	276	261	247	232
WARD, KEN & BARBARA	65	0.0531	65	61	58	55	52
WEBER, DAVE	80	0.0654	80	76	72	68	64
WEST, CAROLYN & SMITH, RICHARD	24	0.0196	24	22	21	20	19
WEST, HOWARD & SUZY	72	0.0588	72	68	64	61	57
WHITTINGHAM, RICHARD V	15	0.0123	15	14	13	12	12
YEAGER, E L - CONSTRUCTION COMPANY INC	34	0.0278	34	32	30	28	27

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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
MINIMAL PRODUCER POOL	4,000	3.2689	4,000	3,800	3,600	3,400	3,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	4,967	4.0592					
ALTO SUBAREA TOTALS =	122,365	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST ³ YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY	220	0.3883	220	209	198	187	176
BARNES, FAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, HARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAFI, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GBSIRIECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSEN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
HI DESERT MUTUAL WATER CO	34	0.0600	34	32	30	28	27
HILEMAN, KATHERINE	19	0.0335	19	18	17	16	15
HILL, MELVIN	2,335	4.1213	2,335	2,218	2,101	1,984	1,868
HOY, MIKE	632	1.1155	632	600	568	537	505
JORDAN, RAYMOND	460	0.8119	460	437	414	391	368
JUSTICE, CHRIS	421	0.7431	421	399	378	357	336
KING, GENEVIEVE E	69	0.1218	69	65	62	58	55
LEE, SEPOONG ETAL & WOO POONG	77	0.1359	77	73	69	65	61
LEYERLY, GENEVA	65	0.1147	65	61	58	55	52
LEYERLY, RICHARD	862	1.5214	862	818	775	732	689
LUDINGTON, JAMES E & JO ANN	58	0.1024	58	55	52	49	46
LYON, LOUIS & BRIKA	130	0.2295	130	123	117	110	104
MARTIN, LENDELL	14	0.0247	14	13	12	11	11
MCCOLLUM, CHARLES L	347	0.6125	347	329	312	294	277
MEAD, G C	90	0.1589	90	85	81	76	72
MEYERS, LONNIE	27	0.0477	27	25	24	22	21
MITCHELL, CHARLES A	201	0.3548	201	190	180	170	160
MOFFITT, THOMAS R & EDITH I	62	0.1094	62	58	55	52	49
MOST, MILTON W	9,660	17.0500	9,660	9,177	8,694	8,211	7,728
NELSON, MILDRED L	52	0.0918	52	49	46	44	41
NEWBERRY SPRINGS COMPANY, INC	2,489	4.3931	2,489	2,364	2,240	2,115	1,991
OHAI, REYNOLDS & DOROTHY	137	0.2418	137	130	123	116	109
OROPEZA, JOSE M	190	0.3354	190	180	171	161	152
OSTERKAMP, GEROLD	260	0.4589	260	247	234	221	208

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FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST ³ YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
OWL ROCK PRODUCTS COMPANY	466	0.8225	466	442	419	396	372
PG & B	1,657	2.9246	1,657	1,574	1,491	1,408	1,325
REDDY, BOMMI V & KARUNA V	24	0.0424	24	22	21	20	19
ROWLAND, JAMES & HELEN	22	0.0388	22	20	19	18	17
RUISCH, DALE W	650	1.1473	650	617	585	552	520
SHIRKEY, ALAN G & MARY E	35	0.0618	35	33	31	29	28
SMITH, ROBERT A	43	0.0759	43	40	38	36	34
SOPPELAND, WAYNE	783	1.3820	783	743	704	665	626
SOUTHERN CALIFORNIA WATER COMPANY	11,309	19.9605	11,309	10,743	10,178	9,612	9,047
SPINK, WALTHALL	44	0.0777	44	41	39	37	35
ST CHARLES, DONALD B	609	1.0749	609	578	548	517	487
SUN 'N SKY COUNTRY CLUB	337	0.5948	337	320	303	286	269
TALLAKSON, WILLIAM V	17	0.0300	17	16	15	14	13
TILLEMA, HAROLD	874	1.5426	874	830	786	742	699
VAN DAM, ELBERT & SUSAN	722	1.2743	722	685	649	613	577
VAN LEEUWEN, JOHN	1,922	3.3923	1,922	1,825	1,729	1,633	1,537
VAN VLIET, HENDRIKA	820	1.4473	820	779	738	697	656
VANHOF, LUTHER C	23	0.0406	23	21	20	19	18
VERNOLA, PAT	3,116	5.4998	3,116	2,960	2,804	2,648	2,492
VISSER, ANNIE	91	0.1606	91	86	81	77	72
YANG, YOUNG MO	371	0.6548	371	352	333	315	296
YKEMA HARMSSEN DAIRY	1,000	1.7650	1,000	950	900	850	800

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
MINIMAL PRODUCER POOL	2,000	3.5300	2,000	1,900	1,800	1,700	1,600
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	864	1.5250					
CENTRO SUBAREA TOTALS =	56,657	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
AKE, CHARLES J & MARJORIE M	23	0.0333	23	21	20	19	18
ANGERSER, ROBERT J & PEGGY	24	0.0347	24	22	21	20	19
ANTELOPE VALLEY DAIRY	5,430	7.8597	5,430	5,158	4,887	4,615	4,344
ARGUELLES, ALFREDO	1,047	1.5155	1,047	994	942	889	837
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	80	0.1158	80	76	72	68	64
BAGLEY, ROY	20	0.0289	20	19	18	17	16
BALDERRAMA, ALFRED & LINDA	250	0.3619	250	237	225	212	200
BALL, DAVID P	81	0.1172	81	76	72	68	64
BARAK, RICHARD	132	0.1911	132	125	118	112	105
BARBER, JAMES B	167	0.2417	167	158	150	141	133
BARSTOW CALICO K O A	24	0.0347	24	22	21	20	19
BAUR, KARL & RITA	26	0.0376	26	24	23	22	20
BEDINGFIELD, LYNDLELL & CHARLENE	56	0.0811	56	53	50	47	44
BENTON, PHILIP G	35	0.0507	35	33	31	29	28
BORGOGNO, STEVEN & LILLIAN B	1,844	2.6691	1,844	1,751	1,659	1,567	1,475
BOWMAN, EDWIN L	31	0.0449	31	29	27	26	24
BROWN, RONALD A	1,080	1.5632	1,080	1,026	972	918	864
BROWY, ORVILLE & LOUISE	33	0.0478	33	31	29	28	26
BRUINS, NICHOLAS	29	0.0420	29	27	26	24	23
CALICO LAKES HOMEOWNERS ASSOCIATION	1,031	1.4923	1,031	979	927	876	824
CALIF DEPT OF TRANSPORTATION	71	0.1028	71	67	63	60	56
CAMPBELL, M A & DIANNE	22	0.0318	22	20	19	18	17
CARTER, JOHN THOMAS	746	1.0798	746	708	671	634	596
CDFG - CAMP CADY	14	0.0203	14	13	12	11	11

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TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
CHANG, TIMOTHY & JANE	18	0.0261	18	17	16	15	14
CHASTAIN, W C	100	0.1447	100	95	90	85	80
CHEYENNE LAKE, INC	122	0.1766	122	115	109	103	97
CHIAO MEI DEVELOPMENT	451	0.6528	451	428	405	383	360
CHO BROTHERS RANCH	758	1.0972	758	720	682	644	606
CHUANG, MARSHAL	70	0.1013	70	66	63	59	56
CONNER, WILLIAM H	25	0.0362	25	23	22	21	20
COOL WATER RANCH	76	0.1100	76	72	68	64	60
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	447	0.6470	447	424	402	379	357
DAGGETT COMMUNITY SERVICES DISTRICT	235	0.3402	235	223	211	199	188
DALJO CORPORATION	31	0.0449	31	29	27	26	24
DAVIS, RONALD & DONNA	53	0.0767	53	50	47	45	42
DE JONG, ALAN L	1,648	2.3854	1,648	1,565	1,483	1,400	1,318
DENNISON, QUENTIN D	29	0.0420	29	27	26	24	23
DESERT LAKES CORPORATION - (LAKE DOLORES)	483	0.6991	483	458	434	410	386
DOCIMO, DONALD P & PATRICIA J	23	0.0333	23	21	20	19	18
DONALDSON, JERRY & BEVERLY	90	0.1303	90	85	81	76	72
ELLISON, SUSAN	15	0.0217	15	14	13	12	12
EVKHANIAN, JAMES H	110	0.1592	110	104	99	93	88
FAWCETT, EDWARD C	20	0.0289	20	19	18	17	16
FELIX, ALAN E & CAROL L	36	0.0521	36	34	32	30	28
PERRO, DENNIS & NORMA	32	0.0463	32	30	28	27	25
FRIEND, JOSEPH & DEBORAH	60	0.0868	60	57	54	51	48
FUNDAMENTAL CHRISTIAN ENDRAVOR	285	0.4125	285	270	256	242	228

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 TABLE B-1
 TABLE SHOWING BASE ANNUAL PRODUCTION AND
 BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
 TOGETHER WITH FREE PRODUCTION ALLOWANCES
 FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
GARCIA, DANIEL	23	0.0333	23	21	20	19	18
GOLD, HAROLD	249	0.3604	249	236	224	211	199
GRAVES, CHESTER B	32	0.0463	32	30	28	27	25
HAIGH, WHILLYN & MARGARET	32	0.0463	32	30	28	27	25
HALL, LARRY	23	0.0333	23	21	20	19	18
HARALIK, BESS & ROBERT	27	0.0391	27	25	24	22	21
HARDESTY, LESLIE E & BECKY J	47	0.0680	47	44	42	39	37
HARSON, NICHOLAS & MARY	30	0.0434	30	28	27	25	24
HARTER FARMS	1,083	1.5676	1,083	1,028	974	920	866
HARTER, JOE & SUE	738	1.0682	738	701	664	627	590
HARTLEY, LONNIE	19	0.0275	19	18	17	16	15
HARVEY, FRANK	38	0.0550	38	36	34	32	30
HENDLEY, RICK & BARBARA	48	0.0695	48	45	43	40	38
HIETT, PATRICIA J	16	0.0232	16	15	14	13	12
HILARIDES, FRANK	1,210	1.7514	1,210	1,149	1,089	1,028	968
HOLLISTER, ROBERT H & RUTH M	44	0.0637	44	41	39	37	35
HONG, PAUL B & MAY	95	0.1375	95	90	85	80	76
HORTON'S CHILDREN'S TRUST	106	0.1534	106	100	95	90	84
HORTON, JOHN MD	183	0.2649	183	173	164	155	146
HOSKING, JOHN W & JEAN	94	0.1361	94	89	84	79	75
HUBBARD, ESTER & MIZUNO, ARLEAN	28	0.0405	28	26	25	23	22
HUNT, RALPH M & LILLIAN F	31	0.0449	31	29	27	26	24
HUTCHISON, WILLIAM O	901	1.3042	901	855	810	765	720
HYATT, JAMES & BRENDA	210	0.3040	210	199	189	178	168

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TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBARRA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBARRA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
IRVIN, BERTRAND W	29	0.0420	29	27	26	24	23
J V A AIR INC	54	0.0782	54	51	48	45	43
JACKSON, RAY	20	0.0289	20	19	18	17	16
JOHNSON, JAMES R	247	0.3575	247	234	222	209	197
JUSTICE, CHRIS	6	0.0087	6	5	5	5	4
KAPLAN, ABRAHAM M	76	0.1100	76	72	68	64	60
KASNER, ROBERT	1,001	1.4489	1,001	950	900	850	800
KATCHER, AUGUST M & MARCELINE	23	0.0333	23	21	20	19	18
KEMP, ROBERT & ROSE	32	0.0463	32	30	28	27	25
KIEL, MARY	34	0.0492	34	32	30	28	27
KIM, JOON HO	764	1.1059	764	725	687	649	611
KOSHAREK, JOHN & JOANNE	54	0.0782	54	51	48	45	43
LAKE JODIE PROPERTY OWNERS ASSOCIATION	254	0.3677	254	241	228	215	203
LAKE WAIKIKI	98	0.1419	98	93	88	83	78
LAKE WAINANI OWNERS ASSOCIATION	202	0.2924	202	191	181	171	161
LANGLEY, MICHAEL R	20	0.0289	20	19	18	17	16
LAWRENCE, WILLIAM W	45	0.0651	45	42	40	38	36
LBE, MOON & OKBEA	49	0.0709	49	46	44	41	39
LBE, VIN JANG T	630	0.9119	630	598	567	535	504
LESHIN, CONNIE & SOL	1,416	2.0496	1,416	1,345	1,274	1,203	1,132
LESHIN, SOL	1,997	2.8906	1,997	1,897	1,797	1,697	1,597
LEVINE, DR LESLIE	1,637	2.3695	1,637	1,555	1,473	1,391	1,309
LONG, BALLARD	35	0.0507	35	33	31	29	28
M BIRD CONSTRUCTION	41	0.0593	41	38	36	34	32

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION RIGHT	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	(ACRE-FEET)	(PERCENT)	FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
MAHJOUBI, APSAR S	63	0.0912	63	59	56	53	50
MALIN, LILY	54	0.0782	54	51	48	45	43
MALONEY, JANICE	36	0.0521	36	34	32	30	28
MARCROFT, JAMES A & JOAN	38	0.0550	38	36	34	32	30
MARSHALL, CHARLES	20	0.0289	20	19	18	17	16
MAYBERRY, DONALD J	41	0.0593	41	38	36	34	32
MILBRAT, IRVING	73	0.1057	73	69	65	62	58
MITCHELL, CHARLOTTE	115	0.1665	115	109	103	97	92
MITCHELL, JAMES L & CHERYL A	155	0.2244	155	147	139	131	124
MOORE, WAYNE G & JULIA H	103	0.1491	103	97	92	87	82
MORRIS, KARL	304	0.4400	304	288	273	258	243
MULLIGAN, ROBERT & INEZ	35	0.0507	35	33	31	29	28
NEWBERRY COMMUNITY SERVICE DIST	23	0.0333	23	21	20	19	18
NU VIEW DEVELOPMENT, INC	2,899	4.1962	2,899	2,754	2,609	2,464	2,319
O P D L INC	109	0.1578	109	103	98	92	87
O'KEEFE, SARAH-LEE & JOKE E	50	0.0724	50	47	45	42	40
P & H ENGINEERING & DEV CORP	667	0.9654	667	633	600	566	533
PARKER, GEORGE R	144	0.2084	144	136	129	122	115
PATHFINDER INVESTORS	472	0.6832	472	448	424	401	377
PAYAN, PAUL	32	0.0463	32	30	28	27	25
PERKO, BERT K	132	0.1911	132	125	118	112	105
PITTS, JOE	30	0.0434	30	28	27	25	24
POHL, ANDREAS & CATHLYN	17	0.0246	17	16	15	14	13
POLAND, JOHN R & SANDRA M	92	0.1332	92	87	82	78	73

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TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
PRICE, ALAN E	37	0.0536	37	35	33	31	29
PRICE, DONALD	42	0.0608	42	39	37	35	33
PUCKHABER, WILLIAM F TRUST	63	0.0912	63	59	56	53	50
PURCIO, THOMAS F & PATRICIA A	80	0.1158	80	76	72	68	64
RANDOLPH, JOAN E	24	0.0347	24	22	21	20	19
REEVES, RICHARD	230	0.3329	230	218	207	195	184
RICE, DANIEL & MARY	121	0.1751	121	114	108	102	96
RICE, HENRY C & DIANA	24	0.0347	24	22	21	20	19
RIBGER, WALTER M	62	0.0897	62	58	55	52	49
RIKUO CORPORATION	1,517	2.1958	1,517	1,441	1,365	1,289	1,213
ROSSI, JAMES L & NAOMI I	614	0.8887	614	583	552	521	491
ROTRX CONSTRUCTION COMPANY	2,529	3.6606	2,529	2,402	2,276	2,149	2,023
SAN BERNARDINO COUNTY BARSTOW - DAGGETT AIRPORT	168	0.2432	168	159	151	142	134
SANTUCCI, ANTONIO & WILSA	30	0.0434	30	28	27	25	24
SCOGGINS, JERRY	105	0.1520	105	99	94	89	84
SHEPPARD, THOMAS & GLORIA	217	0.3141	217	206	195	184	173
SHORT, CHARLES & MARGARET	54	0.0782	54	51	48	45	43
SHORT, JEFF	30	0.0434	30	28	27	25	24
SILVER VALLEY RANCH, INC	109	0.1578	109	103	98	92	87
SMITH, WILLIAM E	19	0.0275	19	18	17	16	15
SNYDER, KRYL K & ROUTH, RICHARD J	64	0.0926	64	60	57	54	51
SOUTHERN CALIFORNIA EDISON CO - AGRICULTURE	5,858	8.4792	5,858	5,565	5,272	4,979	4,686
SOUTHERN CALIFORNIA EDISON CO - INDUSTRIAL	4,565	6.6076	4,565	4,336	4,108	3,880	3,652
SOUTHERN CALIFORNIA GAS COMPANY	98	0.1419	98	93	88	83	78

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBARBA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBARBA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
ST ANTONY COPTIC ORTHODOX MONASTERY	130	0.1882	130	123	117	110	104
STEWART, STANLEY & PATRICIA	27	0.0391	27	25	24	22	21
SUGA, TAKRAKI	154	0.2229	154	146	138	130	123
SUNDOWN LAKES, INC	168	0.2432	168	159	151	142	134
SWARTZ, ROBERT & IRENE	50	0.0724	50	47	45	42	40
TAPIE, RAYMOND & MURIEL	18	0.0261	18	17	16	15	14
TAYLOR, TOM	503	0.7281	503	477	452	427	402
THAYER, SHARON	58	0.0840	58	55	52	49	46
THE 160 NEWBERRY RANCH CALIFORNIA, LTD	1,033	1.4952	1,033	981	929	878	826
TRIPLE H PARTNERSHIP	993	1.4373	993	943	893	844	794
UNION PACIFIC RAILROAD COMPANY	249	0.3604	249	236	224	211	199
VAN BASTELAAR, ALPHONSE	78	0.1129	78	74	70	66	62
VAN DIEST, CORNELIUS	934	1.3519	934	887	840	793	747
VAN LEEUWEN, JOHN	1,084	1.5690	1,084	1,029	975	921	867
VANDER DUSSEN, AGNES	1,792	2.5938	1,792	1,702	1,612	1,523	1,433
VAUGHT, ROBERT E & KAREN M	43	0.0622	43	40	38	36	34
VERNOLA, PAT	1,310	1.8962	1,310	1,244	1,179	1,113	1,048
WARD, ERNEST & LAURA	38	0.0550	38	36	34	32	30
WARD, RONNY H	130	0.1882	130	123	117	110	104
WEBER, F R & JUNELL	96	0.1390	96	91	86	81	76
WEBSTER, THOMAS M & PATRICIA J	24	0.0347	24	22	21	20	19
WEIDKNECHT, ARTHUR J & PEGGY A	79	0.1143	79	75	71	67	63
WESTERN HORIZON ASSOCIATES INC	1,188	1.7196	1,188	1,128	1,069	1,009	950
WESTERN ROCK PRODUCTS	31	0.0449	31	29	27	26	24

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
WET SET, INC	129	0.1867	129	122	116	109	103
WITTE, E DANIEL	27	0.0391	27	25	24	22	21
WLSR INC	133	0.1925	133	126	119	113	106
WORSEY, REVAE	29	0.0420	29	27	26	24	23
YARD, BETTY	26	0.0376	26	24	23	22	20
YERMO WATER COMPANY	453	0.6557	453	430	407	385	362
YOUNG, KRITH O - (DESERT TURF)	312	0.4516	312	296	280	265	249
MINIMAL PRODUCER POOL	3,500	5.0661	3,500	3,325	3,150	2,975	2,800
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	320	0.4632					
BAJA SUBAREA TOTALS =	69,087	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

EXHIBIT B
TABLE B-2
TABLE SHOWING TOTAL WATER PRODUCTION
FOR AQUACULTURE AND RECREATIONAL LAKE PURPOSES
ALTO SUBAREA

PRODUCER	TOTAL WATER ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION	RECIRCULATED ³ WATER
	(ACRE-FEET)		
CDFG - MOJAVE RIVER FISH HATCHERY	10,678	20	10,658
JESS RANCH WATER COMPANY	18,625	7,480	11,145
ALTO SUBAREA TOTALS =	29,303	7,500	21,803

Total Water Production is the reported maximum year production for each producer for the five year period 1986-1990.

These values reflect the maximum production determined by one or more of the following: Southern California Edison records; James C. Hanson site inspection; land use estimates from 1989 aerial photography; responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

² Base Annual Production as shown on Table B-1.

³ Amount shown is the difference between the Total Water Production and the Base Annual Production.

EXHIBIT B
TABLE B-2
TABLE SHOWING TOTAL WATER PRODUCTION
FOR AQUACULTURE AND RECREATIONAL LAKE PURPOSES
BAJA SUBAREA

PRODUCER	TOTAL WATER ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION	RECIRCULATED ³ WATER
	(ACRE-FEET)		
BROWY, ORVILLE & LOUISE	210	33	177
CALICO LAKES HOMEOWNERS ASSOCIATION	2,513	1,031	1,482
CDFG - CAMP CADY	102	14	88
CHEYENNE LAKE, INC	638	122	516
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	6,575	447	6,128
DESERT LAKES CORPORATION - (LAKE DOLORES)	928	483	445
FUNDAMENTAL CHRISTIAN ENDEAVOR	440	285	155
HORTON'S CHILDREN'S TRUST	1,291	106	1,185
HORTON, JOHN MD	672	183	489
KIEL, MARY	188	34	154
LAKE JODIE PROPERTY OWNERS ASSOCIATION	2,805	254	2,551
LAKE WAIKIKI	400	98	302
LAKE WAINANI OWNERS ASSOCIATION	1,420	202	1,218
LEE, MOON & OKBEA	171	49	122
O F D L INC	434	109	325
RICE, DANIEL & MARY	614	121	493
SCOGGINS, JERRY	922	105	817
SILVER VALLEY RANCH, INC	455	109	346
SMITH, WILLIAM E	153	19	134
SUNDOWN LAKES, INC	1,109	168	941
TAPIE, RAYMOND & MURIEL	108	18	90
THAYER, SHARON	159	58	101
WET SET, INC	441	129	312
WLSR INC	678	133	545

EXHIBIT B
TABLE B-2
TABLE SHOWING TOTAL WATER PRODUCTION
FOR AQUACULTURE AND RECREATIONAL LAKE PURPOSES
BAJA SUBAREA

PRODUCER	TOTAL WATER ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION	RECIRCULATED ³ WATER
(ACRE-FEET)			
BAJA SUBAREA TOTALS =	23,426	4,310	19,116

- 1 Total Water Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records; James C. Hanson site inspection; land use estimates from 1989 aerial photography; responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production as shown on Table B-1.
- 3 Amount shown is the difference between the Total Water Production and the Base Annual Production.

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EXHIBIT C

ENGINEERING APPENDIX

CONTENTS

- A. ADJUSTMENT OF FREE PRODUCTION ALLOWANCES
- B. DETERMINATION OF SURFACE FLOW COMPONENTS

TABLE C-1: MOJAVE BASIN AREA ADJUDICATION SUBAREA HYDROLOGICAL INVENTORY BASED ON LONG-TERM AVERAGE NATURAL WATER SUPPLY AND OUTFLOW AND CURRENT YEAR IMPORTS AND CONSUMPTIVE USE

1 total measured surface flow at Lower Narrows was Storm Flow and
2 what portion was Base Flow.

3 The Parties in reaching the physical solution provided for in
4 the Judgment, used certain procedures to separate the Storm Flow
5 and Base Flow components of the total measured surface flow at
6 Lower Narrows. Hydrographs of the mean daily discharge at Lower
7 Narrows were plotted for the Year under consideration together with
8 corresponding rainfall data obtained from the National Oceanic and
9 Atmospheric Administration (NOAA) for Lake Arrowhead. Hydrographs
10 were also plotted for the combined flow of West Fork Mojave River
11 and Deep Creek which together with the Lake Arrowhead precipitation
12 data served as a guide for interpreting those periods during which
13 Storm Flow was likely to have occurred at Lower Narrows.

14 Other factors considered included:

15 * Occurrences of Storm Flow at Barstow and Afton Canyon,
16 * Precipitation at Victorville and Barstow,
17 * Consideration of the time of Year and temperature, &
18 * Shape of hydrographs for Years having similar Base Flow
19 characteristics.

20 Based on interpretation of all of the foregoing information,
21 the flows occurring on those days during which Storm Flow most
22 likely occurred were "scalped" by projecting an estimated Base Flow
23 Curve through the Storm Flow Period. The Base Flow component of
24 the total monthly flow was then determined as follows:

25 a. For those periods during which there was obviously no
26 Storm Flow, the entire recorded mean daily flows were assumed to be
27 Base Flow.
28

1 b. For the remaining Storm Flow periods, the Base Flow
2 component was taken as the area under the Base Flow Curve, except
3 that for those days within the Storm Flow period when the actual
4 mean daily discharge is less than the amount indicated by the Base
5 Flow Scalping Curves, then the actual recorded amount is used.

6 2. Determination of Surface Flow Components at Waterman
7 Fault. The total amount of surface flow passing the Waterman Fault
8 (under current riverbed conditions) is considered to be Storm Flow
9 and can be estimated from the Storm Flow passing the USGS gauging
10 station Mojave River at Barstow. The following table was developed
11 to provide a method for estimating flow at Waterman Fault:

12	Storm Flow At Barstow Gage ¹ 13 <u>(Acre-Feet)</u>	Estimated Surface Flow at Waterman Fault 14 <u>(Acre-Feet)</u>
14	2,000	0
15	10,000	6,200
16	20,000	14,300
17	30,000	22,600
18	40,000	31,400
19	50,000	40,500
20	60,000	49,200
21	70,000	58,400
22	80,000	67,800
23	90,000	76,800
24	100,000	85,400

25
26
27 ¹From Recorded Flow at USGS Gaging Station Mojave River at
28 Barstow. Relationship is based on single storm events. More than
one storm event separated by more than five day of zero flow will
be considered as separate storms.

1 3. Determination of Surface Flow Components at Afton.

2 Records available for the discharge of the Mojave River at Afton,
3 California, provide data on the total amount of surface flow and
4 since storm runoff occurs during and immediately following a major
5 storm event in the watershed area tributary to the Baja Basin below
6 Barstow or in the event of large Storm Flows at Barstow which reach
7 Afton, it was necessary to determine what portion of the total
8 measured surface flow at Afton is Storm Flow and what portion of
9 Base Flow.

10 The Parties, in reaching the physical solution provided for in
11 the Judgment, used certain procedures to separate the Storm Flow
12 and Base Flow components of the total measured surface flow at
13 Afton. Hydrographs of the mean daily discharge at Afton were
14 plotted for the water Year under consideration. In the absence of
15 Storm Flow, the Base Flow curve at Afton was generally a relatively
16 constant amount. Storm Flows were evidenced by sharp spikes or
17 abrupt departures from the antecedent Base Flow and a fairly rapid
18 return to pre-storm Base Flow Condition. The hydrograph of flows
19 at Barstow served as a guide for identifying those periods during
20 which Storm Flow was likely to have occurred at Afton.

21 Based on interpretation of all of the foregoing information,
22 the flows occurring on those days during which Storm Flow most
23 likely occurred were "scalped" by projecting an estimated Base Flow
24 Curve through the Storm Flow Period. The Base Flow component of
25 the total monthly flow was then determined as follows:

26 a. For those periods during which there is obviously no
27 Storm Flow, the entire recorded mean daily flows were assumed to be
28 Base Flow.

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b. For the remaining Storm Flow periods, the Base Flow component was taken as the area under the Base Flow Curve except that for those days within the Storm Flow period when the actual mean daily discharge was less than the amount indicated by the Base Flow Scalping Curves, then the actual recorded amount was used.

4. Engineers' Work Papers. These procedures are reflected in the Work Papers of the Engineers, copies of which are filed with the Watermaster.

TABLE C-1
Mojave Basin Area Adjudication
Subarea Hydrological Inventory Based On
Long-Term Average Natural Water Supply and Outflow
and Current Year Imports and Consumptive Use
(All Amounts in Acre-Feet)

WATER SUPPLY	Este	Oeste	Alto	Centro	Baja	Basin Totals
Surface Water Inflow						
Gaged	0	0	65,000	0	0	65,000 ¹
Ungaged	1,700	1,500	3,000	37,300 ¹	14,300 ²	6,500 ³
Subsurface Inflow	0	0	1,000	2,000	1,200	0 ⁴
Deep Percolation of Precipitation	0	0	3,500	0	100	3,600
Imports						
Lake Arrowhead CSD	0	0	1,500	0	0	1,500
Big Bear ARWWA	2,000	0	0	0	0	2,000
TOTAL	3,700	1,500	74,000	39,300	15,600	78,600
CONSUMPTIVE USE AND OUTFLOW						
Surface Water Outflow						
Gaged	0	0	0	0	8,200	8,200
Ungaged	0	0	37,300 ¹	14,000 ⁵	0	0
Subsurface Outflow	200	800	2,000	1,200	0	0
Consumptive Use						
Agriculture	6,800	2,900	16,300	20,300	30,200	76,500
Urban	1,900	1,200	36,300	9,500	9,700	58,600 ⁶
Phreatophytes	0	0	5,100	900	1,500	7,500
Exports	0	0	0	0	0	0
TOTAL	8,900	4,900	97,000	45,900	49,600	150,800
Surplus / (Deficit)	(5,200)	(3,400)	(23,000)	(6,600)	(34,000)	(72,200)
Total Estimated Production (Current Year) ⁷	15,700	7,600	98,900	46,500	54,300	223,000
PRODUCTION SAFE YIELD (Current Year)⁷	10,500	4,200	75,900	39,900	20,300	150,800

¹ Estimated from reported flows at USGS gaging station, Mojave River at Victorville Narrows.

² Includes 14,000 acre-feet of Mojave River surface flow across the Waterman Fault estimated from reported flows at USGS gaging station, Mojave River at Barstow, and 300 acre-feet of local surface inflow from Kane Wash.

³ Represents the sum of Este (1,700 af), Oeste (1,500 af), Alto (3,000 af) and Baja (300 af from Kane Wash).

⁴ Inter subarea subsurface flows do not accrue to the total basin water supply.

⁵ Estimated from reported flows at USGS gaging station, Mojave River at Barstow.

⁶ Estimated by Bookman-Edmonston.

⁷ For purposes of this Table, the current year is 1990.

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EXHIBIT D

TIME SCHEDULES

1 Production Allowance, Watermaster shall notify all Parties as to
2 its recommendation not later than February 1, shall hold a public
3 hearing thereon not later than March 1, and shall submit any such
4 recommendation, which may be revised pursuant to the public
5 hearing, to the Court not later than April 1.

6 5. Payment of Administrative Assessments and Biological
7 Resource Assessments. Each Producer shall submit quarterly along
8 with the Production report required by Paragraph 24 (p) an
9 Administrative Assessment payment in an amount equal to the current
10 Year Administrative Assessment Rate multiplied times the acre-feet
11 of water Produced during the quarter and a Biological Resource
12 Assessment payment in an amount equal to the current Year
13 Biological Resource Assessment Rate multiplied times the acre-feet
14 of water Produced during the quarter.

15 6. Payment of Replacement Water Assessments and Makeup Water
16 Assessments. Replacement Water Assessments and Makeup Water
17 Assessments for the prior Year shall be due and payable on July 1.

18 7. Delinquency of Assessments. Any assessment payable
19 pursuant to this Judgment shall be deemed delinquent: i) if paid in
20 Person, if not paid within five (5) days of the date due; ii) if
21 paid by electronic funds transfer, if not paid within three (3)
22 banking days of the date due; or iii) if paid by any other means,
23 if not paid within ten (10) days of the date due. "Payment" shall
24 occur when good and sufficient funds have been received by the
25 Watermaster. Any assessment shall also be deemed delinquent in the
26 event that any attempted payment is by funds that are not good and
27 sufficient.

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EXHIBIT E

LIST OF PRODUCERS AND THEIR DESIGNEES

EXHIBIT E

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BROMMER, MARVIN
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LEE, SEPOONG ETAL & WOO POONG	Same
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WESTERN ROCK PRODUCTS
WET SET, INC
WHITTINGHAM, RICHARD V
WILLOW WELLS MUTUAL WATER COMPANY
WITTE, E DANIEL & MARCIA
WLSR INC
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EXHIBIT F
TRANSFERS OF BASE ANNUAL PRODUCTION RIGHTS.

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EXHIBIT F
TRANSFERS OF
BASE ANNUAL PRODUCTION RIGHTS

1. Transferability. Any Base Annual Production Right, including any Carryover Right (Right) or any portion thereof may be sold, assigned, transferred, licensed or leased subject to the rules set forth in this Exhibit "F".

2. Consumptive Use Adjustments. A transferred Right shall be adjusted so as not to cause an increased Consumptive Use of water. For either inter Subarea or intra Subarea transfers, if the transferee's Consumptive Use of water Produced under the transferred Right would be at a higher rate than that of transferor, the transferred Right shall be reduced by Watermaster to a level that equalizes the Consumptive Use to that of transferor. Any such adjustments by Watermaster shall be made using the following Consumptive Use rates. If a transfer would cause the same or a decreased Consumptive Use, no adjustment shall be made.

Type of Water Use	Consumptive Use Rate
Municipal	50%
Irrigation	50%
Industrial	case by case
Lakes or Aquaculture	surface acres x 7 ft.

For mixed or sequential uses of water excluding direct reuse of municipal wastewater, the total acre-feet of Consumptive Use shall be the sum of Consumptive Uses for each use.

1 3. Notice to Watermaster. No transfer shall become operable
2 until the Parties to the transfer have jointly notified Watermaster
3 of the terms and conditions of the transfer, the price to be paid
4 by the transferee, the name of the Responsible Party and the name
5 of the Person who will pay any applicable Assessments. Intra-
6 Subarea transfers shall not require Watermaster authorization after
7 giving notice. No inter-Subarea transfer shall become operable
8 until authorized by Watermaster after giving notice. Watermaster
9 shall authorize such transfers in the order of the date of notice,
10 provided that funds are available as set forth in Paragraph 4 of
11 this Exhibit "F".

12 4. Inter Subarea Transfers of Rights. A Party's Right in a
13 (Source) Subarea may be transferred (by lease only) to a Party in
14 another (Use) Subarea provided that in any Year the resulting
15 unconsumed water in the Source Subarea due to all such transfers
16 shall not be greater than the Replacement Water requirement of the
17 Source Subarea in the preceding Year. Watermaster shall replace
18 the resulting Consumptive Use in the Use Subarea that is
19 attributable to the transfer, utilizing Replacement Water
20 Assessments from the Source Subarea.

21 5. Transfers to Meet Replacement Water or Makeup Water
22 Obligations. Watermaster may use Assessment proceeds to purchase
23 or lease Rights in a Subarea in order to obtain water to meet an
24 Obligation. The water so obtained shall be equal to the
25 Consumptive Use portion of the transferred and unproduced Rights.
26 No such purchases of leases of Rights in the Harper Lake Basin may
27 be used to satisfy Obligations in other parts of the Centro
28 Subarea.

1 6. Inter Subarea Transfers of Water. Water Produced in one
2 (source) Subarea and exported to another Subarea for use or
3 disposal shall bear a Replacement Water Obligation equal to the sum
4 of the Production in excess of the Producer's share of the Free
5 Production Allowance in the source Subarea plus the amount of water
6 exported that would normally have been returned to the source
7 Subarea. Such exported water shall be credited to the appropriate
8 Subarea Obligation unless it has been purchased or leased as
9 Replacement Water pursuant to a transfer agreement.

10 7. Verde Ranch Producers. Together the Spring Valley Lake
11 Country Club ("the Country Club"), the Spring Valley Lake
12 Association ("the Association"), the California Department of Fish
13 and Game (DFG) Mojave Narrows Regional Park ("the Park") the Kemper
14 Campbell Ranch ("the Ranch") comprise a group herein called the
15 Verde Ranch Producers. Each Verde Ranch Producer has the ability
16 physically both to Produce Groundwater and to Produce water that
17 originated as tailwater flowing from the DFG Mojave River Fish
18 Hatchery. DFG Producer Groundwater to supply the Hatchery, and
19 Hatchery tailwater can be discharged in part or entirely to the
20 Mojave River or in part or entirely to a lined channel that conveys
21 tailwater to points where the Verde Ranch Producers can Produce it.
22 The present flow regimen is as follows: Hatchery Production flows
23 through the Hatchery and is then discharged to the River and/or the
24 lined channel. Water discharged to the lined channel flows to a
25 Country Club lake. The Country Club Produces Groundwater that is
26 discharged to the Country Club lake. The Country Club property is
27 irrigated by pumping from the Country Club lake. Water overflowing
28 from the Country Club lake flows through a lined channel and

1 through other Country Club lakes, and finally is discharged to
2 Spring Valley Lake. The Association Produces Groundwater that is
3 discharged to Spring Valley Lake. Water overflowing from Spring
4 Valley Lake flows to lakes in the Park. The Park Produces
5 Groundwater that is discharged to the lakes in the Park. The Park
6 also Produces Groundwater that is used directly for irrigation of
7 the Park. The Park is also irrigated by pumping from the lakes in
8 the Park. Water overflowing from the lakes in the Park is
9 discharged to the Mojave River. Some water from the lakes in the
10 Park also flows to a lake on the Ranch. The Ranch also Produces
11 Groundwater. The Ranch is irrigated from the lake on the Ranch.
12 No water flows on the surface from the Ranch property to the Mojave
13 River.

14 In order to continue the present arrangements among the
15 Hatchery and the Verde Ranch Producers while assuring that they
16 participate fairly in the Physical Solution the following rules
17 shall apply:

18 a. Total Production by the Country Club will be
19 calculated as the sum of Country Club Groundwater Production plus
20 inflow of Hatchery tailwater minus outflow to Spring Valley Lake.
21 The Country Club shall monitor and report to Watermaster the
22 amounts of such Groundwater Production, inflow and outflow.

23 b. Total Production by the Association will be
24 calculated as the sum of Association Groundwater Production plus
25 inflow from the Country Club minus outflow to the Park. The
26 Association shall monitor and report to Watermaster the amounts of
27 such Groundwater Production, inflow and outflow.

28

1 c. Total Production by the Park will be calculated as
2 the sum of Park Groundwater Production plus inflow from the
3 Association minus outflow to the Ranch minus outflow to the Mojave
4 River. The Park shall monitor and report to Watermaster as to such
5 Groundwater Production, inflow and outflows.

6 d. Total Production by the Ranch will be calculated as
7 the sum of Ranch Groundwater Production plus inflow from the Park.
8 The Ranch shall monitor and report to Watermaster the amounts of
9 such Groundwater Production and inflow.

10 e. Hatchery Production up to 10,678 acre-feet per Year
11 will be permitted free of any Assessments against the Hatchery.
12 The Hatchery shall monitor and report to Watermaster its
13 Groundwater Production and the amounts of tailwater discharged to
14 the River and to the artificial channel. In any Year the Hatchery
15 may Produce more than 10,678 acre-feet free of any Assessments
16 against the Hatchery, provided such Production in excess of 10,678
17 acre-feet is reported as Groundwater Production by one or more of
18 the Verde Ranch Producers in the same Year pursuant to operating
19 agreements by and between the Hatchery and such Producer(s) filed
20 with the Watermaster. The operating agreement shall specify the
21 responsibility for payment of assessments. In the operating
22 agreement, the Verde Ranch Producers may elect to have assessments
23 be based on the aggregate Production of the Verde Ranch Producers,
24 and may freely transfer Base Annual Production Rights internally,
25 provided that the aggregate consumptive use of the Verde Ranch
26 Producers shall not be increased. In the absence of such operating
27 agreements, or if the operating agreements do not otherwise
28 allocate responsibility for payment of Assessments, the Hatchery

1 shall be liable for Administrative, Replacement Water and
2 Biological Resource Assessments on the amount of water Produced by
3 the Hatchery in excess of 10,678 acre-feet in any Year. In the
4 event that Verde Ranch Producer who is allocated responsibility for
5 payment of Assessments pursuant to an operating agreement is
6 delinquent in making any such payment, the Hatchery shall not be
7 liable therefor.

8 f. In any Year, if the total discharge to the River
9 from the Hatchery and the Verde Ranch Producers exceeds the
10 Groundwater Production by the Hatchery, such excess discharge shall
11 be subject to Administrative, Replacement Water and, except for the
12 Park, Biological Resource Assessments. Such Assessments shall be
13 levied against individual Verde Ranch Producers in proportion to
14 the extent that outflow from each Producer exceeds inflow to that
15 Producer.

16 g. The Hatchery and the Verde Ranch Producers shall
17 install all stage recorders, meters or other measuring devices
18 necessary to determine inflows, outflows and Production that they
19 are responsible for monitoring and reporting to Watermaster. Such
20 stage recorders, meters or other measuring devices shall be
21 installed, calibrated and operated in manner satisfactory to
22 Watermaster.

23 h. Any change in the flow regimen described above will
24 be subject to the same general rules set forth in this Paragraph 7.
25 Any such change shall be reported to Watermaster in advance.

26 8. Harper Lake Basin. No Producer in the Harper Lake Basin
27 may transfer any Base Annual Production Right or any portion
28 thereof to Producers outside of Harper Lake Basin except by

1 physically conveying the water in compliance with the rules set
2 forth in this Exhibit "F".

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EXHIBIT G

SUBAREA OBLIGATIONS

1 e. Alto Subarea Producers--an average Annual combined
2 Subsurface Flow and Base Flow of 23,000 acre-feet per Year to the
3 Transition Zone. For the purposes of Paragraph 6 of this Exhibit
4 G, the Subsurface Flow component shall be deemed to be 2,000 acre-
5 feet per Year. In any Year Alto Subarea Producers shall have an
6 obligation to provide to the Transition Zone a minimum combined
7 Subsurface Flow and Base Flow as follows:

8 i. If the accounting pursuant to Paragraph 5, below,
9 reflects a net cumulative credit at the beginning of the Year,
10 the combined minimum flow obligation shall be 18,400 acre-feet
11 minus any net cumulative credit, but shall be not less than
12 15,000 acre-feet.

13 ii. If the accounting pursuant to Paragraph 5, below,
14 does not reflect a net cumulative credit at the beginning of
15 the Year, the combined minimum flow obligation shall be 18,400
16 acre-feet plus one-third of any net cumulative debit plus any
17 additional amount of water required to reduce the net
18 cumulative debit to 23,000 acre-feet.

19 2. Obligation for Transition Zone Replacement Water.

20 a. Until the Court approves Groundwater levels to be
21 established and maintained pursuant to Subparagraph 2b of this
22 Exhibit, Watermaster shall provide Replacement Water in the
23 Transition Zone equal to Production in the Transition Zone that is
24 in excess of the Transition Zone Producers' share of the Alto
25 Subarea Free Production Allowance for that Year. All such
26 Replacement Water shall be provided as soon as practicable during
27 the next ensuing Year.
28

1 b. As soon as is practicable, the MWA shall establish
2 key wells to be used to monitor Groundwater levels in the
3 Transition Zone and, subject to approval by the Court, Watermaster
4 shall establish minimum water levels to be maintained in the key
5 wells.

6 c. After water level elevations have been established
7 pursuant to Subparagraph 2b of this Exhibit, Watermaster shall
8 provide Replacement Water in the Transition Zone as necessary to
9 maintain the minimum water levels. Water purchased with
10 Replacement Water Assessments paid by Producers in the Transition
11 Zone in excess of the quantity of water needed to maintain said
12 water levels shall be provided elsewhere in the Alto Subarea.

13 3. Other Water. "Other Water" that may be credited to a
14 Subarea Obligation may include water conveyed and discharged across
15 a boundary or Free Production Allowance water that is not Produced.
16 Water other than Base Flow, Subsurface Flow or Storm Flow that is
17 conveyed and discharged across a boundary between Subareas other
18 than pursuant to a transfer agreement, shall be credited or
19 debited, as appropriate, to the pertinent Subarea Obligation during
20 the Year in which it is so conveyed and discharged. Any portion of
21 the Subarea's Free Production Allowance that is allowed to remain
22 unproduced in a Subarea pursuant to transfer agreements in order to
23 satisfy a Subarea Obligation shall be credited to the pertinent
24 Subarea Obligation in accordance with the terms of the transfer
25 agreements.

26 4. Makeup Water. Assessments for Makeup Water shall be paid
27 in accordance with the time schedule set forth in Exhibit D.
28

1 Makeup Water shall be credited to the Subarea Obligation at the end
2 of the Year in which the Makeup Water Assessment is paid.

3 5. Accounting. Watermaster shall Annually not later than
4 February 1 cause to be prepared a report of the status of each
5 Subarea Obligation as of the end of the prior Year. The report
6 shall set forth at least the following information for each Subarea
7 Obligation:

8 a. The cumulative total of the average Annual Subarea
9 Obligations since the Judgment was entered as of the beginning of
10 the prior Year;

11 b. The cumulative total of all water credited to the
12 Subarea Obligation since the Judgment was entered as of the
13 beginning of the prior Year;

14 c. The net cumulative credit or debit [the difference
15 between (a) and (b)] as of the beginning of the prior Year;

16 d. The amounts of water credited to the Subarea
17 Obligation during the prior Year including, as appropriate, Base
18 Flow, Subsurface Flow, Other Water and Makeup Water;

19 e. The cumulative total of the average Annual Subarea
20 Obligations as of the end of the prior Year;

21 f. The cumulative total of all water credited to the
22 Subarea Obligation as of the end of the prior Year;

23 g. The net cumulative credit or debit as of the end of
24 the prior Year;

25 h. Any Makeup Water Obligation;

26 i. The Minimum Subarea Obligation for the current Year.

27 6. Subsurface Flow Assumptions. Some Subarea Obligations
28 are expressed as average Annual or minimum Annual Subsurface Flow.

1 In all cases the Subsurface Flow obligations have been established
2 initially at amounts equal to the estimated historical average
3 Subsurface Flow across Subarea boundaries. Not later than two
4 Years following entry of this Judgment MWA shall begin to install
5 monitoring wells to be used to obtain data to enable improved
6 estimates of Subsurface Flow at each Subarea boundary where there
7 is a Subsurface Flow obligation and to develop methodology for
8 future determinations of actual Subsurface Flow. Not later than
9 ten years following entry of this Judgment Watermaster shall
10 prepare a report setting forth the results of the monitoring
11 program and the future methodology. Following opportunity for
12 review of Watermaster's report by all Parties, Watermaster shall
13 prepare a recommendation to the Court as to the likely accuracy of
14 the estimated historical Subsurface Flows and any revision of
15 Subarea Obligations that may be indicated. Pending Watermaster's
16 report to the Court, Subsurface Flows shall be assumed to be equal
17 to the Subsurface Flow obligations for purposed of accounting for
18 compliance therewith.

19 7. Example Calculation. Table G-1 sets forth an example of
20 Subarea Obligation accounting procedures using hypothetical flows.
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TABLE G-1
 HYPOTHETICAL EXAMPLE
 ACCOUNTING FOR COMPLIANCE WITH SUBAREA OBLIGATIONS

OBLIGATION OF SUBAREA A TO SUBAREA B

AVERAGE ANNUAL: 23,000 AFA (21,000 AFA BASEFLOW + 2,000 AFA SUBSURFACE FLOW)

MINIMUM ANNUAL: 18,400 AFA + 1/3 OF ANY NET CUMULATIVE DEBIT; OR 18,400 AFA - ANY NET CUMULATIVE CREDIT, BUT NOT LESS THAN 15,000 AFA

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF
STATUS AT BEGINNING OF YEAR										
CUMULATIVE OBLIGATION	0	23,000	46,000	69,000	92,000	115,000	138,000	161,000	184,000	207,000
CUMULATIVE FLOW	0	17,000	32,600	50,000	69,067	87,067	107,111	139,978	168,378	198,978
NET CUMULATIVE CREDIT (DEBIT)										
	0	(6,000)	(13,400)	(18,200)	(22,933)	(27,933)	(30,889)	(21,022)	(15,622)	(8,022)
FLOW DURING THE YEAR (HYPOTHETICAL)										
BASE FLOW	8,000	5,000	4,000	4,000	2,000	2,000	15,000	18,000	20,000	23,000
SUBSURFACE FLOW	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
OTHER WATER	7,000	7,200	7,400	7,600	7800	8,000	8,200	8,400	8,600	8800
MAKEUP WATER PURCHASED	0	1,400	4,800	4,667	6,200	8,044	7,667	0	0	0
TOTAL FLOW										
	17,000	15,600	18,200	18,267	18,000	20,044	32,867	28,400	30,600	33,800
MINIMUM OBLIGATION DURING THE YEAR										
	18,400	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074
MAKEUP OBLIGATION INCURRED										
	1,400	4,800	4,667	6,200	8,044	7,667	0	0	0	0
STATUS AT END OF YEAR										
CUMULATIVE OBLIGATION	23,000	46,000	69,000	92,000	115,000	138,000	161,000	184,000	207,000	230,000
CUMULATIVE FLOW	17,000	32,600	50,000	69,067	87,067	107,111	139,978	168,378	198,978	232,778
NET CUMULATIVE CREDIT (DEBIT)										
	(6,000)	(13,400)	(18,200)	(22,933)	(27,933)	(30,889)	(21,022)	(15,622)	(8,022)	2,778
FOLLOWING YEAR MINIMUM OBLIGATION										
18,400 + 1/3 OF NET CUM. DEBIT	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074	0
ADDITIONAL TO REDUCE DEBIT TO 23,000	0	0	0	0	0	0	0	0	0	0
18,400 - CUM. CREDIT, BUT NLY 15,000	0	0	0	0	0	0	0	0	0	15,622
MINIMUM OBLIGATION										
	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074	15,622

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EXHIBIT H

BIOLOGICAL RESOURCE MITIGATION

1 Allowance, shall compare the Free Production Allowance with the
2 estimated Production Safe Yield. In the event the Free Production
3 Allowance exceeds the estimated Production Safe Yield by five
4 percent or more, Watermaster shall recommend a reduction of the
5 Free Production Allowance equal to a full five percent of the
6 aggregate Subarea Base Annual Production. In considering whether
7 to increase or decrease the Free Production Allowance in a Subarea,
8 Watermaster shall, among other factors, take into consideration for
9 the areas shown on Figure H-1 the Consumptive Use of water by
10 riparian habitat, the protection of public trust resources,
11 including the species listed in Table H-1 and the riparian habitat
12 areas shown on Figure H-1, and whether an increase would be
13 detrimental to the protection of public trust resources.

14 b. If, pursuant to Paragraph 27, Watermaster buys or
15 leases Free Production Allowance in the Baja Subarea below the
16 Calico-Newberry Fault to satisfy the need for Replacement Water,
17 priority shall be given to purchases or leases that will result in
18 reducing Production in or near the area described in Subparagraph
19 1(c) of this Exhibit.

20 c. Pursuant to Paragraph 2 of Exhibit "G", Watermaster
21 shall purchase Replacement Water to maintain Groundwater levels in
22 the Transition Zone.

23 3. Additional Protection Pursuant to Trust Fund Established
24 by Watermaster Using the Proceeds of Biological Resource
25 Assessments.

26 a. Watermaster shall establish a Biological Resources
27 Trust Fund account for the benefit of the riparian habitat areas
28 shown on Figure H-1 and the species listed on Table H-1. To

1 establish and maintain the Trust Fund Watermaster shall levy
2 against each acre-foot of Production within the Basin Area, other
3 than Production by the California Department of Fish and Game
4 (DFG), a Biological Resource Assessment of fifty cents (\$0.50)
5 (1993 dollars) to be collected at the same time and in the same
6 manner as the Administrative Assessment, except that no Biological
7 Resources Assessment shall be levied whenever the Trust Fund
8 account balance exceeds \$1,000,000 (1993 dollars).

9 b. Watermaster shall make funds held in the Biological
10 Resources Trust Fund available to DFG only in the event that
11 Groundwater levels are not maintained as set forth in Table H-2.
12 Watermaster shall take action to acknowledge any proposed
13 expenditure from the Biological Resources Trust Fund by DFG. Such
14 Watermaster action shall be subject to the review procedures set
15 forth in Paragraph 36 of the Judgment, provided that any motion
16 made pursuant thereto and any Court disapproval of such Watermaster
17 action and proposed DFG expenditure may be based only: 1) on the
18 ground that the Groundwater levels set forth in Table H-2 are being
19 maintained; and/or 2) the ground that the proposed expenditure is
20 not for any of the purposes set forth in Subparagraphs 3.b.(i),
21 (ii), or (iii) below in this Exhibit. The Biological Resources
22 Trust Fund may be used only for the following purposes and only in
23 the three areas identified on Figure H-1:

24 i. not to exceed \$100,000 for the preparation by DFG of
25 a DFG habitat water supply management plan, which plan shall
26 include the water needs of the species listed in Table H-1 and
27 the riparian habitat areas shown on Figure H-1.
28

1 ii. the purchase or lease by DFG of Supplemental Water
2 or the lease or purchase of DFG of Base Annual Production
3 Rights to be used to meet riparian habitat water needs of the
4 species listed in Table H-1 and the riparian habitat areas
5 shown on Figure H-1.

6 iii. the construction, repair and replacement of wells or
7 other facilities identified in the plan prepared pursuant to
8 Subparagraph (i), above, and/or any other measures necessary
9 to implement the plan.

10 DFG shall not prepare or make any expenditure from the trust fund
11 for the payment of administrative overhead or staff of DFG.

12 4. DFG agrees that absent substantial changed circumstances,
13 DFG shall not seek to modify the provisions of this Judgment in any
14 way to add to or change the above-stated measures to protect the
15 referenced species or habitat. Nothing stated in this Judgment or
16 in this Exhibit "H" is intended nor shall be deemed to relieve any
17 Party hereto from any obligation or obligations not specifically
18 referenced in this Exhibit H. Nothing in this Judgment or in this
19 Exhibit H is intended or shall be construed to be a waiver by the
20 State or any of its departments or agencies, including DFG, of its
21 rights and obligations under the common law, the public trust
22 doctrine, the constitution, statutes and regulations to preserve,
23 protect or enhance the natural resources of the State including
24 rare, threatened or endangered species or species of concern.

TABLE H-1

LIST OF SPECIES
(CONT'D)

SPECIES	ALTO			CENTRO		BAJA		
	Forks Dam to Upper Narrows	Upper Narrows to Lower Narrows	Lower Narrows to Helendale	Helendale to Hodge	Hodge to Barstow	Barstow to Harvard Road	Harvard Road to Mannix Wash	Afton Canyon
Yellow Warbler	9							
Yellow-breasted Chat	8	8			8	8		
Summer Tanager	8	8						8
Pale Big Eared Bat	8							
Mohave Ground Squirrel	4, 6		4, 6	4, 6				
Mohave Vole			6	6				
Nelson's Bighorn Sheep					10	10		10
TOTAL NUMBER OF SPECIES = 30								
TOTAL NUMBER OF SPECIES IN EACH AREA:	25	11	7	8	7	8	3	5

- 1 = Federally Endangered
- 2 = Federally Threatened
- 3 = State Endangered
- 4 = State Threatened
- 5 = Federal Category: 1
- 6 = Federal Category: 2
- 7 = Federal Category: 3b
- 8 = State: Special Concern
- 9 = State: Sensitive
- 10 = State: Fully Protected

TABLE H-2

**RIPARIAN HABITAT MONITORING WELL
WATER LEVEL CRITERIA**

ZONE	WELL NUMBER	MAXIMUM DEPTH BELOW GROUND
Victorville/Alto	H1-1	Seven (7) Feet
Victorville/Alto	H1-2	Seven (7) Feet
Lower Narrows/Transition	H2-1	Ten (10) Feet
Harvard/Eastern Baja Riparian Forest Habitat	H3-1	Seven (7) Feet
Harvard/Eastern Baja Surface Water Habitat	H3-2	Plus One (1) Foot (1705 Ft msl)*

- * Surface Water Habitat water surface elevation of 1705 ft. msl is approximate pending ground elevation survey.

FIGURE H-1 VICTORVILLE - ALTO RIPARIAN ZONE

LEGEND



Water Table Monitoring well

HI-2

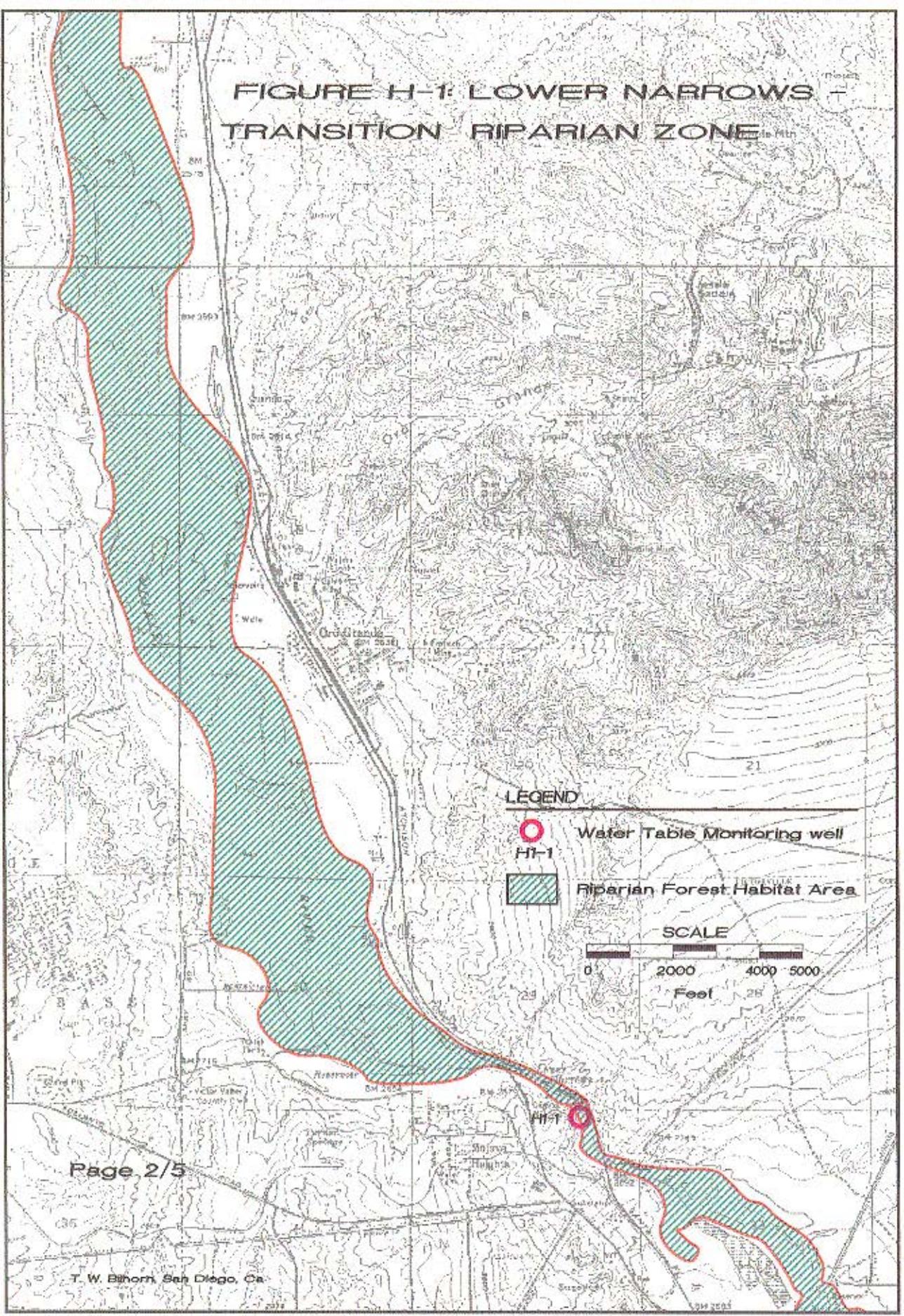


Riparian Forest Habitat Area

SCALE



FIGURE H-1: LOWER NARROWS TRANSITION RIPARIAN ZONE



LEGEND



Water Table Monitoring well

H1-1



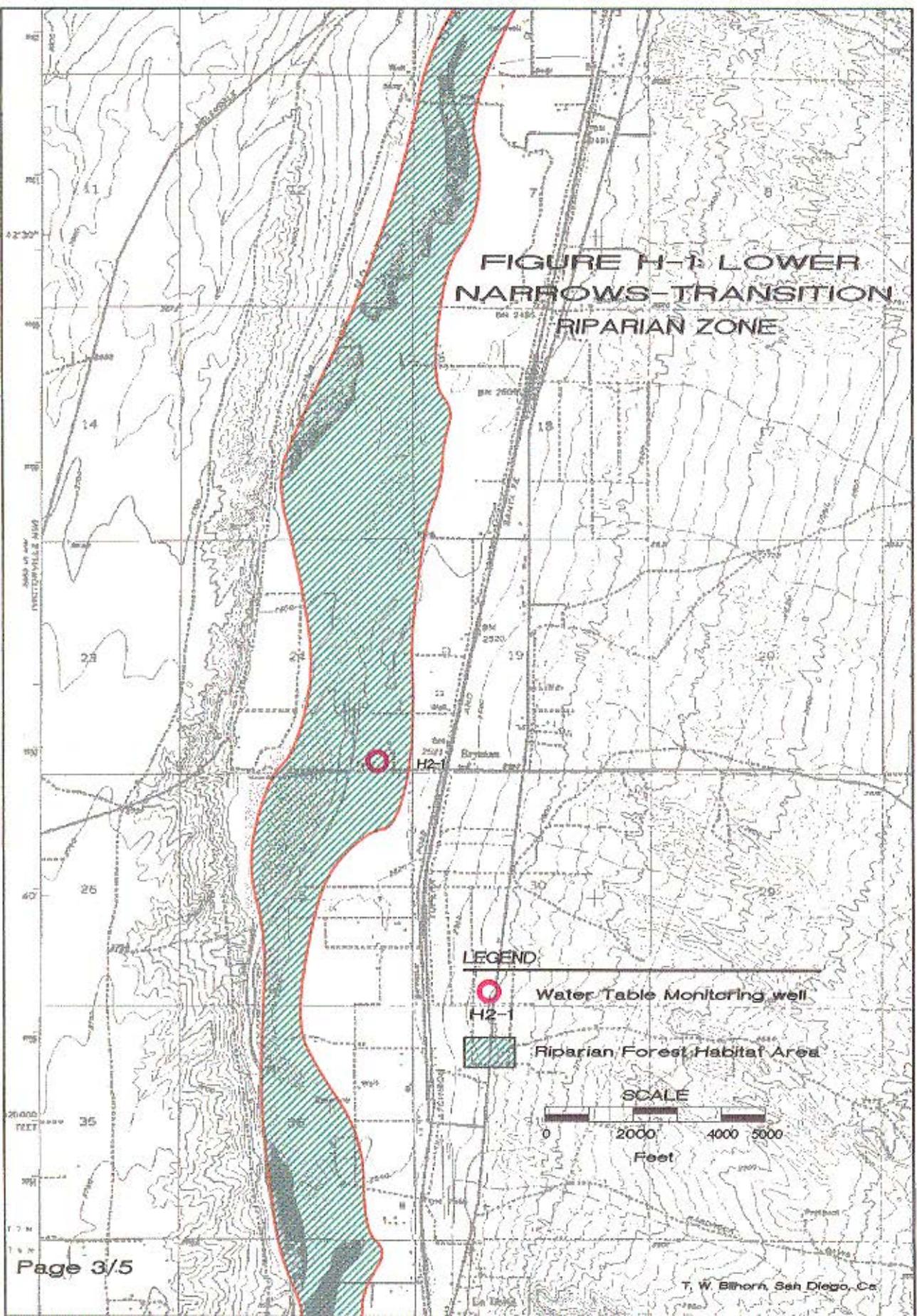
Riparian Forest Habitat Area

SCALE



Feet

**FIGURE H-1: LOWER
NARROWS-TRANSITION
RIPARIAN ZONE**

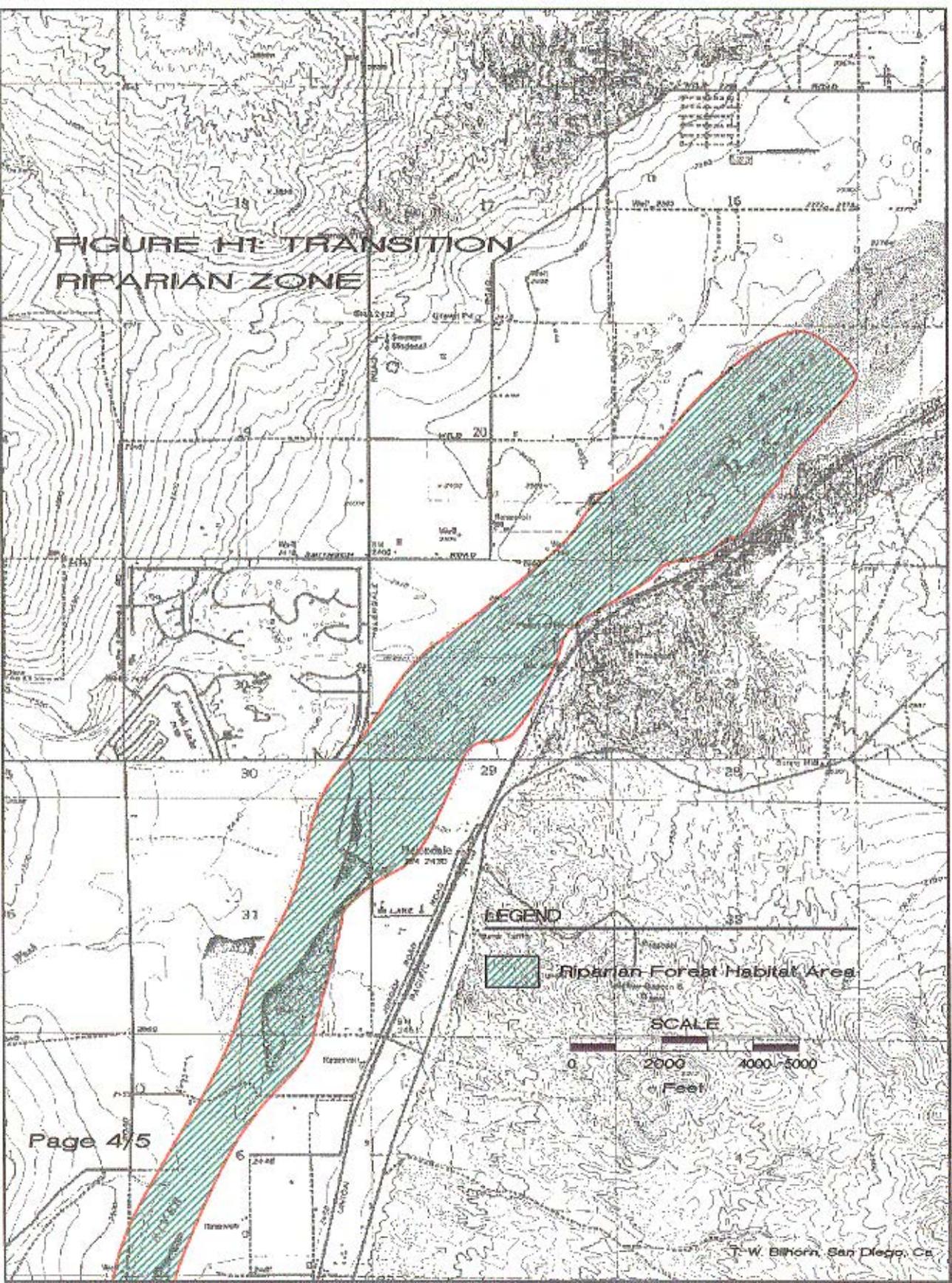


LEGEND

-  Water Table Monitoring well
H2-1
-  Riparian Forest Habitat Area



FIGURE 11- TRANSITION RIPARIAN ZONE



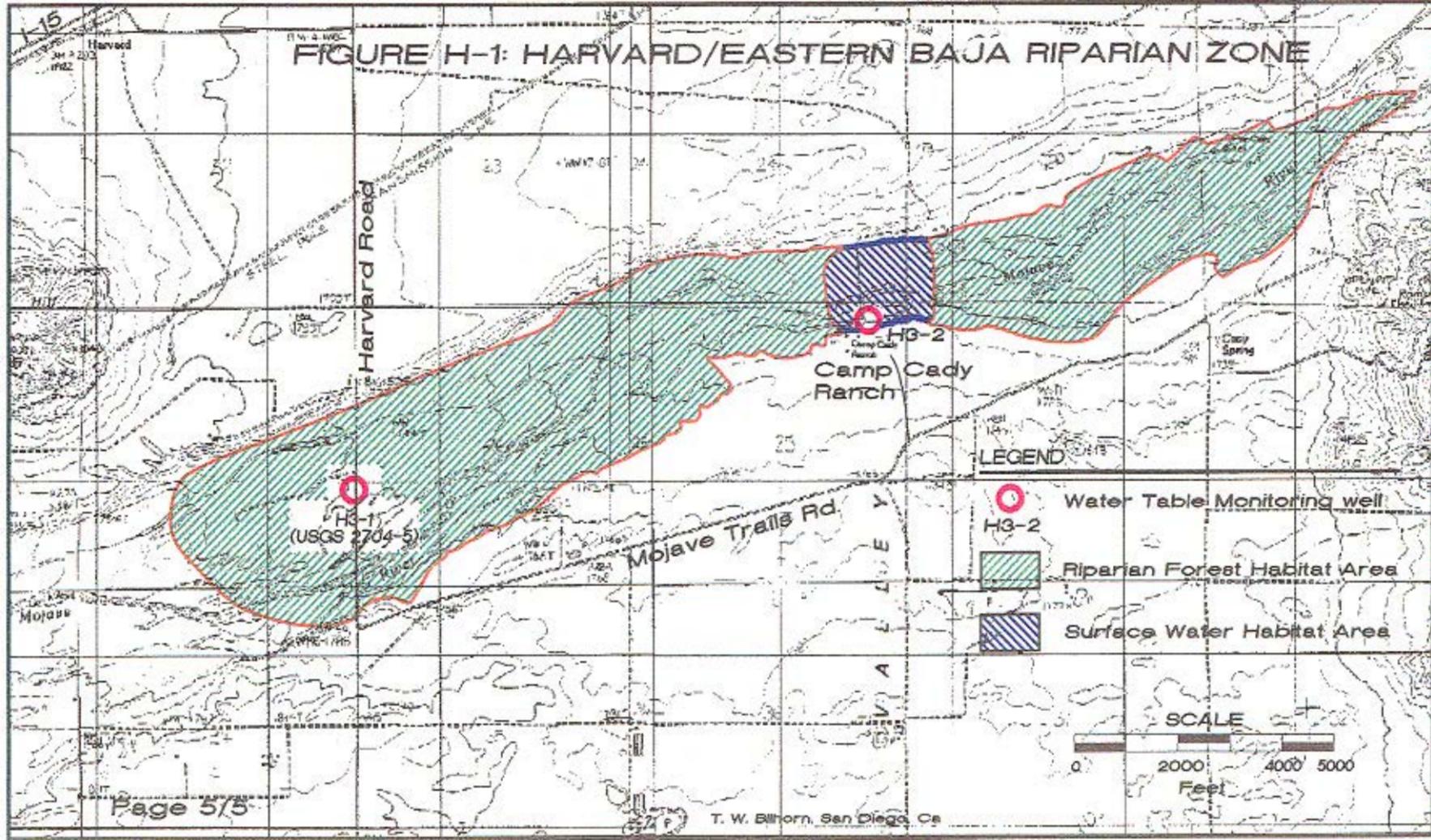
LEGEND

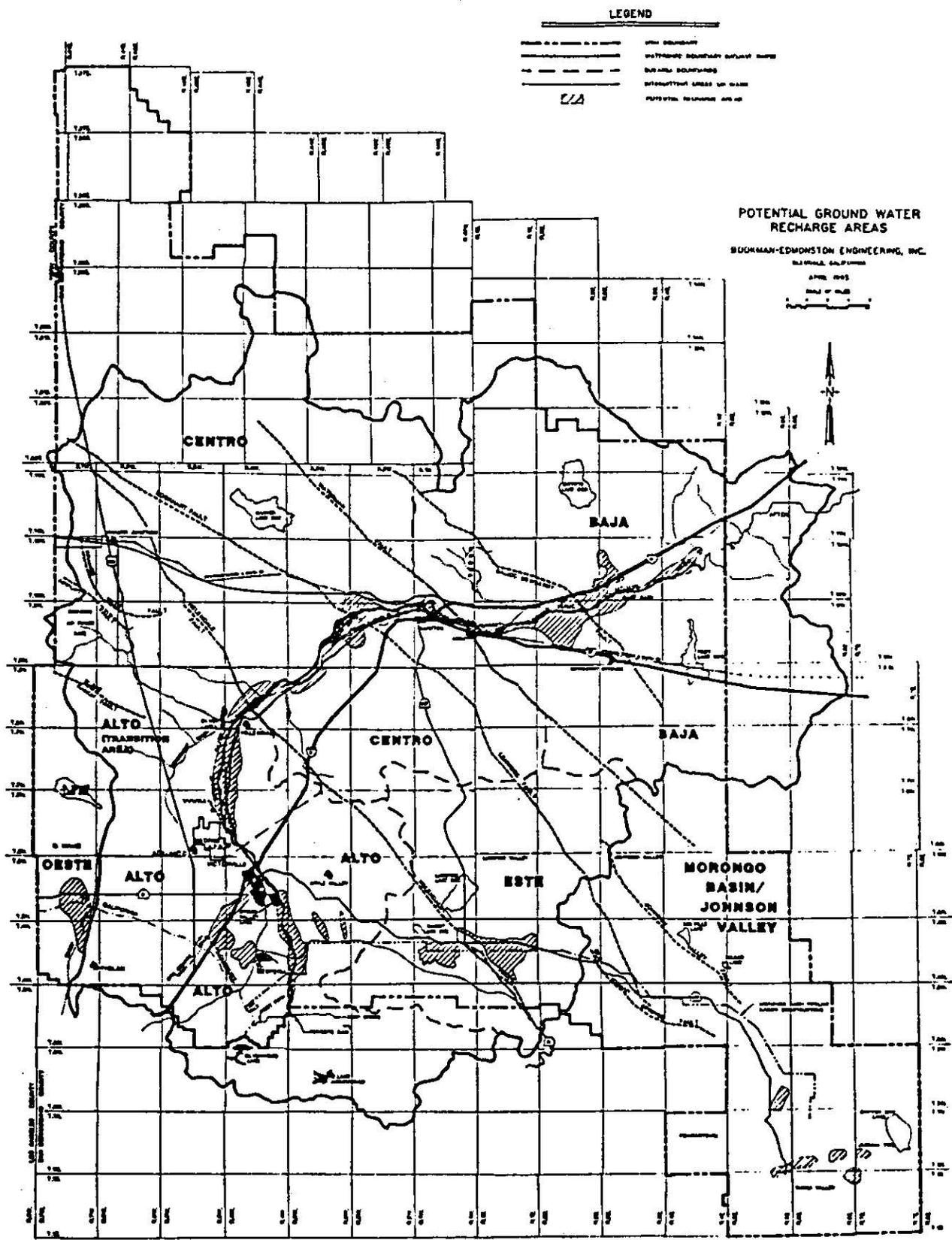
 Riparian Forest Habitat Area

SCALE



FIGURE H-1: HARVARD/EASTERN BAJA RIPARIAN ZONE





MOJAVE WATER AGENCY
 REGIONAL WATER MANAGEMENT PLAN

APPENDIX K

City of Adelanto 2014 Consumer Confidence Report



11780 Air Expressway
 Adelanto
 California 92301
 Office 760.246.2300
www.percwater.com

ANNUAL WATER QUALITY REPORT 2014

ADELANTO WATER AUTHORITY
 Consumer Confidence Report
 July 1, 2015

SOURCE OF DRINKING WATER SUPPLY

About 5.3 million gallons of water is pumped daily from a combination of ten (10) of the City’s active wells. Wells include 1G, 3G2, 4, 4G, 5A, 6, 7, 8G2, 14A and 15. Water is pumped from underground storage areas called aquifers located within the City and along the Mojave River. These aquifers are recharged naturally by rainfall and snowmelt and artificially from the State Water Project; an emergency source connection with the City of Victorville exists for backup or emergency needs.



WATER QUALITY REGULATIONS

Water quality regulations are strictly enforced on a state and federal level. The State of California Department of Public Health (CDPH) (formerly California Department of Health Services (DHS) monitors all listed contaminants plus bacteriological samples taken on a weekly basis.

WATER QUALITY CONTROL

Before the water reaches your tap, samples from wells and 30 individual locations throughout the City have been collected and tested in State certified laboratories. In this report, we summarize the extensive certified third-party laboratory data and test results in a simple manner to inform our customers of the exceptionally high quality drinking water we provide.

SOURCE WATER ASSESSMENTS

In the year 2001 the CDPH conducted a source water assessment of all 15 of the City’s water wells. The purpose of the assessment was to determine the vulnerability of the wells to “possible contaminating activities.” A copy of the complete assessment may be viewed at the City of Adelanto Water Department or at the CDPHS San Bernardino District Office, 464 W. Street, Suite 437, San Bernardino, CA 92401.

PUBLIC PARTICIPATION

As always the public is welcome to attend and encouraged to participate in water related discussions. City Council meetings are held on the 2nd and 4th Wednesdays of each month at 7:00 p.m. at City Hall, 11600 Air Expressway.

CONTACT INFORMATION

Questions concerning this report may be directed to Rich Buday, Water Superintendent at (760) 246-2300.

EDUCATIONAL INFORMATION

Additional General Information on Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the California Department of Health Services (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.



Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791). Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Terms used in this Report

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.
- **Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk of health. PHGs are set by the California Environmental Protection Agency.
- **Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.
- **Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- **Secondary Drinking Water Standards (SDWS):** MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Variations and Exemptions:** Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.
- **ND:** not detectable at testing limit.
- **ppm:** parts per million or milligrams per liter (mg/L).
- **ppb:** parts per billion or micrograms per liter (ug/L)
- **ppt:** parts per trillion or nanograms per liter (ng/L).
- **pCi/L:** picocuries per liter (a measure of radiation)
- **MFL:** million fibers per liter. MCL for fibers exceeding μm in length.
- **N/A:** Not Applicable
- **Notification Level (NL):** Notification levels are health-based advisory levels established by CDPH for chemicals in drinking water that lack maximum contaminant levels (MCLs).
- **μmho :** Microohms

CITY OF ADELANTO 2014 WATER QUALITY REPORT

Primary Standards: Mandatory Health-Related Standards

CONTAMINANT	MCL	PHG (MCLG)	AVERAGE	RANGE	SOURCES IN DRINKING WATER
Arsenic (ppb)	10	0.004	0.48	ND-10	Erosion of natural deposits
Flouride (ppm)	2	1	0.55	0.29-2.1	Naturally Present in environment
Barium (ppm)	1	2	ND	ND	Erosion of natural deposits
Gross Alpha (pCi/L)	15	0	2.66	0.99-15	Erosion of natural deposits
Total Trihalomethanes "TTHMs" (ug/L)	80	N/A	29.47	10.2-48	By-product of drinking water disinfection
Haloacetic Acid "HAAS" (ug/L)	60	N/A	6.32	1.1-11.6	By-product of drinking water disinfection
UNREGULATED CONTAMINANT	NOTIFICATION LEVEL	PHG (MCLG)	AVERAGE	RANGE	SOURCES IN DRINKING WATER
Vanadium (ppb)	50	N/A	13.25	5.5-21	

Secondary Standards

Aesthetic Standards

CONTAMINANT	MCL	AVERAGE	RANGE	SOURCES IN DRINKING WATER
Bicarbonate Alkalinity (ppm)	N/A	110	110-210	Naturally present in environment
Calcium	N/A	16	16-54	Naturally present in environment
Chloride (ppm)	500.0	75	13-160	Naturally present in environment
Color (units)	15.0	0	0	Naturally present in environment
Odor Threshold (units)	3.0	1	1	Naturally present in environment
Hardness (CaCO3)	N/A	96	52-180	Naturally present in environment
Iron (ppm)	300.0	0.02	ND-20	Naturally present in environment; industrial waste
Manganese (ppm)	0.1	0.047	ND-1.4	Naturally present in environment
ph Units	N/A	7.56	7-8.6	Naturally present in environment
Clarity "turbidity" (NTU)	5.0	0.2	0-0.77	Naturally present in environment
Sodium (ppm)	N/A	133	53-360	Naturally present in environment
Specific Conductance (µmho)	1600.0	856	340-1600	Substances from ions in water
(ppm)	250.0	174	56-400	Naturally present in environment
Zinc (ppm)	5.0	0.017	ND-0.05	Naturally present in environment

Detection of Coliform Bacteria

MICROBIOLOGICAL CONTAMINANT	MCL	HIGHEST NO. OF DETECTIONS	MONTHS IN VIOLATION	SOURCES IN DRINKING WATER
*Total Coliform Bacteria ≤ 40 Samples/Month (Present/Absent)	More than 1 sample in a month with a detection	1	0	Normally present in the environment

Lead and Copper

CONTAMINANT	Sample Date	No. of samples collected	90 th percentile level detected	No. sites exceeding AL	AL	PHG	SOURCES IN DRINKING WATER
Copper (ppb)	9/20/2012	32	1.0	0	1.3	0.3	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

**Emergency Source
City of Victorville
Water Quality 2014**

Table 1 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD					
Chemical or Constituent	Range of Detections	Average Level	MCL	PHG (MCLG) (MRDLG)	Typical Source of Contaminant
Arsenic (ppb)	0 - 10	4.72	10	0.004	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Chromium (ppb)	0-12	5.43	50	(100)	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	0-3.50	0.64	2.0	1	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as No3) (ppm)	0-12.0	3.94	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits

Table 2 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD					
Chemical or Constituent	Range of Detection	Average Level	Secondary MCL	PHG (MCLG)	Typical Source of Contaminant
Chloride (ppm)	1.8-49.0	8.5	500	N/A	Runoff/leaching from natural deposits; seawater influence
Specific Conductance (µmho)	180-550	264	1600	N/A	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2.7-150	21.07	500	N/A	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	94-350	176	1000	N/A	Runoff/leaching from natural deposits
Turbidity (NTU)	0-4.7	0.4	5	N/A	Soil runoff

Table 4 – SAMPLING RESULTS FOR SODIUM AND HARDNESS					
Chemical or Constituent	Range of Detection	Average Level	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	20-72	47.54	None	None	Naturally occurring mineral found in ground & surface water
Hardness (ppm)	0-170	27.87	None	None	Generally found in ground & surface water

Summary Information for Contaminants Exceeding an MCL, MRDL, or AL, or a Violation of Any Treatment Technique or Monitoring and Reporting Requirement

Arsenic levels in Well 4 were found to exceed the EPA maximum contaminant level of 10 ppb (0.010 ppm); Well 4 water is being blended with well waters with low levels of Arsenic to produce finished water below the MCL for Arsenic. A blending plan for Arsenic was submitted to CDPH in 2013.

Water blending is required for Fluoride adjustment from wells 4 and 5A. Filtration treatment is required for Iron and Manganese for wells 1G, 3G2, 4G, and 8G2. CDPH approved Fluoride blending in 2005.

While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic’s possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.

Monitoring Requirements Not Met for City of Adelanto

Our water system failed to monitor as required for drinking water standards during the past year and, therefore, was in violation of the regulations. Even though this failure was not an emergency, as our customers, you have a right to know what you should do, what happened, and what we did to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 2014, we did not complete all monitoring for Nitrate and therefore, cannot be sure of the quality of our drinking water during that time.

What should I do?

- There is nothing you need to do at this time
- The table below lists the contaminant we did not properly test for during the last year, how many samples we are required to take and how often, how many samples we took, when samples should have been taken, and the date on which follow-up samples were taken.

Contaminant	Required Sampling Frequency	Number of Samples Taken	Number of delinquent sample	When All Samples Should Have Been Taken	When Delinquent Samples Were Taken
Nitrate	One (1) Annual Sample per Well (10)	Five (5)	Five (5)	2014	*6/2/2015

* Nitrate Sample results for two of the three delinquent wells was "Non-detect". One well remains unsampled due to maintenance issues of the well. Nitrate sampling met water quality standards. The delinquent wells ran for a total of 271 days (Well 6), 352 days (Well 7), 298 days (Well 8G2), and 362 days (Well 1G).

- If you have other health issues concerning the consumption of this water, you may wish to consult your doctor.

What happened? What is being done?

Nitrate samples are required to be taken annually from source water wells used for potable water consumption. During 2014 5 of the ten wells were sampled for Nitrate; five were not. These five wells are utilized intermittently during the year on an as needed basis; one well was out of service for maintenance issues and is still out of service so samples were not taken from this well. The remaining 4 wells were not sampled due Staff's failure to properly adhere to the sampling frequency.

One well remains out of service for maintenance and will be sampled when the well is returned to service. The remaining 4 wells were sampled on June 2, 2015. **The results from Nitrate sampling was "Non-detect" respectively for these wells. Nitrate sampling met water quality standards.**

For more information, please contact Mr. Thomas Thornton; (Public Utilities Director) at 760-246-2300; Ext: 3025 or at 11600 Air Expressway, Adelanto, CA 92301.

Secondary Notification Requirements

Upon receipt of notification from a person operating a public water system, the following notification must be given within 10 days [Health and Safety Code Section 116450(g)]:

- **SCHOOLS:** Must notify school employees, students, and parents (if the students are minors).
- **RESIDENTIAL RENTAL PROPERTY OWNERS OR MANAGERS** (including nursing homes and care facilities): Must notify tenants.
- **BUSINESS PROPERTY OWNERS, MANAGERS, OR OPERATORS:** Must notify employees of businesses located on the property.

This notice is being sent to you by the City of Adelanto

State Water System ID#: 3610001. Date distributed: _____.

APPENDIX L

*Landscape Water Conservation Ordinance No. 441,
Adelanto Municipal Code, Section 17.60*

ORDINANCE NO. 441

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ADELANTO, SAN BERNARDINO COUNTY, STATE OF CALIFORNIA, FINDING THE APPROVAL OF CODE AMENDMENT 05-02 EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT PURSUANT TO SECTION 15308 OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES (ACTIONS BY REGULATORY AGENCIES FOR PROTECTION OF THE ENVIRONMENT), ADOPTING CODE AMENDMENT 05-02 MODIFYING CHAPTER 17.10 OF THE ZONING CODE DELETING THE CURRENT LANDSCAPING SECTION 17.10.110 AND ADDING CHAPTER 17.60 TO INCLUDE THE OLD LANDSCAPE REQUIREMENTS AND ADDING NEW INFORMATION REGARDING WATER CONSERVATION, INCORPORATING MORE DETAILED REGULATIONS FOR NEW RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT, MODIFYING TABLE 25-1 OF SECTION 17.25.040 AND TABLE 30-1 OF SECTION 17.30.040(A) REDUCING THE MINIMUM AMOUNT OF LANDSCAPING FOR COMMERCIAL AND INDUSTRIAL DEVELOPMENT FROM 10 PERCENT TO 5 PERCENT IN THE ADELANTO MUNICIPAL CODE, AND MAKING FINDINGS IN SUPPORT THEREOF.

WHEREAS, the City of Adelanto has enacted landscaping regulations as part of the adopted Zoning Code; and

WHEREAS, the City of Adelanto acknowledges that there is a need to conserve water throughout the Victor Valley; and

WHEREAS, a Notice of public hearing was posted and published in the newspaper on January 26, 2006. In addition, a letter advising applicants of the proposed Code Amendment, and an invitation to a workshop on December 1, 2005 was mailed to all applicants with current development projects in process in the City, both residential and non-residential; and

WHEREAS, at the November 9, 2005 meeting, staff presented for discussion an ordinance amendment to reduce the percentage of landscaping area required for commercial and industrial development; and

WHEREAS, a workshop was conducted with the development community on December 1, 2005 to review the proposed water conservation policies; and

WHEREAS, a duly noticed public hearing was held before the City Council on February 8, 2006 to hear public testimony and consider the proposals; and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ADELANTO, CALIFORNIA HEREBY ORDAINS AS FOLLOWS:

Section 1. The above recitals are all true and correct.

Section 2. The City Council has reviewed and considered the information included in the General Plan, Zoning Code, staff reports for the public hearings, and public testimony prior to taking action on the proposed Code Amendment. This information is on file and available at the Community Development Department at the City Hall of the City of Adelanto.

Section 3. The City Council finds and determines that the adoption of Code Amendment 05-02 is exempt from the California Environmental Quality Act pursuant to Section 15308 of the California Environmental Quality Act Guidelines (Actions by Regulatory Agencies for Protection of

the Environment) and the City Council determinations reflect the independent judgment of the City Council.

Section 4. The City Council hereby further finds and determines that the City has followed the procedures for Ordinance Amendments as set forth in Sections 65850 through 65863.13 of the California Government Code.

Section 5. The City Council of the City of Adelanto hereby adopts Ordinance No. 441, adopting Code Amendment 05-02, modifying Chapter 17.10 of the Zoning Code deleting the current landscaping Section 17.10.110 and adding Chapter 17.60 to include the old landscape requirements and adding new information regarding water conservation, incorporating more detailed regulations for new residential, commercial, and industrial development, modifying Table 25-1 of Section 17.25.040 and Table 30-1 of Section 17.30.040(a) reducing the minimum amount of landscaping for commercial and industrial development from 10 percent to 5 percent in the Adelanto municipal code, attached hereto as Exhibits A, B, and C, and incorporated herein.

Section 6. If any provision of this ordinance or the application thereof to any persons or circumstances is held invalid, the remainder of the ordinance and the application of such provision to other persons or circumstances shall not be affected thereby.

Section 7. The Mayor shall sign and the City Clerk shall certify passage and adoption of this Ordinance, and shall cause the same to be published and posted pursuant to the provisions of law in this regard, and this Ordinance shall take effect sixty (60) days after its final passage.

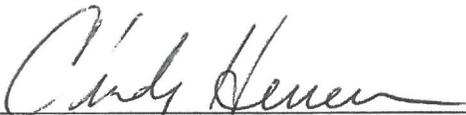
Attachments

- Exhibit A: Chapter 17.60
- Exhibit B: Table 25-1
- Exhibit C: Table 30-1

PASSED, APPROVED AND ADOPTED this 22nd day of February 2006.



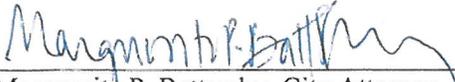
Jim Nehmens
Mayor of the City of Adelanto



Cindy Herrera
City Clerk

ORDINANCE NO. 441
Code Amendment 05-02
Page 3

APPROVED AS TO FORM:



Marguerite P. Battersby, City Attorney

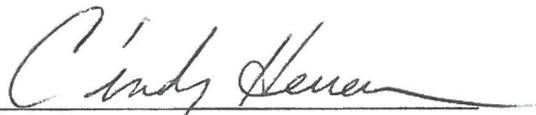
I, Cindy Herrera, City Clerk of the City of Adelanto, California, do hereby certify that the foregoing Ordinance No. 441 was duly introduced for first reading on the 8th day of February 2006 and regularly adopted at a regular meeting of the City Council of the City of Adelanto on this 22nd day of February 2006, by the following vote, to-wit:

AYES: Council Members Baisden, Glasper, McCauley, Mayor Pro Tem
Perez, and Mayor Nehmens

NOES: None

ABSENT: None

IN WITNESS WHEREOF, I hereunto set my hand and affix the official seal of the City of Adelanto on this 22nd day of February 2006.



Cindy Herrera
City Clerk

SEAL

Exhibit A – Ordinance No. 441

CHAPTER 17.60

LANDSCAPING/WATER CONSERVATION

17.60.10	General Provisions
17.60.20	Landscape Design Plan
17.60.30	Landscape Design Standards
17.60.40	Landscape Material and Area Requirements
17.60.50	Model Home Complexes
17.60.60	Landscape Maintenance
17.60.70	Water Conservation
17.60.80	Approved Plant List

17.60.10 General Provisions

Landscaping shall be provided, irrigated and maintained as required by the Planning Director, pursuant to this Code and the policies of the City General Plan, each of which may be amended from time to time.

A. Purpose. The purpose of this Chapter is to provide minimum water conservation and landscape development standards which will promote the general welfare of Adelanto residents through the provision of an outdoor environment which will:

1. Create aesthetically pleasing views and vistas along public streets;
2. Complement and enhance the functional and aesthetic design of new building and site development projects so as to protect and enhance property values;
3. Provide visual screening of parking, service and storage areas;
4. Mitigate the adverse impacts of higher intensity land uses upon lower intensity uses through the provision of needed landscape buffers;
5. Promote water conservation by restricting the use of turf and ornamental water features and requiring the utilization of low water use plant materials;
6. Promote climate modifications for enhancement of pedestrian environment at street frontages, parking lots and building facades.
7. Provide maximum shade on ground surfaces to reduce the "urban heat island effect" produced by large expanses of unprotected

paved areas.

B. Applicability.

All persons owning, developing or maintaining property subject to the provisions of this Chapter shall comply with all applicable provisions contained herein as identified below.

The landscape standards and requirements established by Sections ~~B. through E 17.60.20 through 17.60.280 of this Chapter~~ shall apply to all new developments whether residential, commercial or industrial. The landscape standards and requirements establish by Sections ~~B. through F. 17.60.20 through 17.60.80 of this Chapter~~ shall not apply to existing development, unless the development is being expanded by 25% or more of the existing floor area. The landscape maintenance provisions of Section ~~F. of this Chapter 17.60.60~~ shall apply to all new and existing development.

This Chapter does not apply to registered historical sites or cemeteries. Registered historical sites and cemeteries shall provide scheduled irrigation based on CIMIS (California Irrigation Management Information System) or conduct water audits every three (3) years with strict adherence to the recommendations in the water audit. CIMIS and water audits shall be submitted to the water serving entity for compliance.

17.60.20 Landscape Design Plan

A. Prior to the issuance of a building permit, ~~one (1) copy~~ *three (3) copies* of a landscape design plan consisting of the landscape and irrigation plans shall be submitted to the Planning Division. Such plans shall be drawn at a minimum scale of one (1) inch equals thirty (30) feet (maximum sheet size 30" X 42") and contain the following information:

1. Building footprints and roof overhangs, walkways, parking surfaces and vehicular overhang lines, property lines, right-of-way lines, and easement lines;
2. Calculations of the square footage and percent of total of all site elements including building footprints, parking, and landscaped area. Landscaped area shall also be further subdivided into subcategories of turf, shrubs/groundcover, and inorganic materials;
3. The location of existing and proposed plant materials;
4. Plant graphic symbol legend and a plant schedule including botanical and common names, planting size, number of plants, and on-center spacing of massed shrubs and ground cover plants on each landscape plan sheet;

5. Planting details, specifications and required guarantee (see Section ~~F-2~~ 17.60.60.B);
 6. Inorganic materials schedule including type of materials (i.e. decomposed granite, river rock, screened rock, etc.) quantities and depth;
 7. Irrigation plan showing location of controller, existing or proposed meters, backflow preventer, water lines, heads, and materials schedule on each landscape plan sheet. Irrigation systems shall be designed to minimize maintenance and water consumption, and the irrigation system shall be properly designed and installed to ensure that overspray onto fences, walls and structures is eliminated to the maximum extent feasible;*
 8. Irrigation details and pressure loss calculations.
 9. A diagrammatic plan showing the amount of shading that the landscaping is expected to provide at its maturity with the sun at its apex.
- B. The landscaping and irrigation plans shall be approved by the Director if found to be in compliance with the standards and requirements of this Chapter, which approval shall be obtained prior to the installation of the landscaping and irrigation materials. The installation of the landscaping and irrigation materials required by this Chapter shall be completed and shall be approved by the Director prior to the issuance of a Certificate of Occupancy for the structure, or prior to the use of the facility if no structure is involved.

17.60.30 Landscape Design Standards

- A. Landscaping shall be designed, installed and continuously maintained in accordance with the following standards:
1. Principles of Xeriscape Landscaping. Landscape developments shall be designed, installed and continuously maintained in accordance with the following seven basic principles of Xeriscape landscaping:
 - a. Planning and Design. Use a water conservation design. Implement a "mini-oasis" concept. Water using plants and turf should be concentrated in small areas near buildings where they may be enjoyed at the pedestrian level.
 - b. Limited Turf Areas. Limit the use of turf to small areas where it will be actively used and efficiently watered. *See Section 17.60.70.E for further information.*

- c. Efficient Irrigation. Utilize the most efficient irrigation system for the area being served. Drip irrigate individual plants rather than flooding larger areas. Group plantings with common water requirements together to be watered on the same irrigation control zone.
- d. Soil Improvements. Add soil amendments within planned areas to increase the water holding capacity of the soil and improve the health and vigor of plants.
- e. Mulching. Cover final soil surfaces with organic or inorganic mulches to insulate against soil temperature extremes and conserve moisture.
- f. Use Lower Water Demand Plants. Utilize only those plants listed in the officially approved low water use plant list (see Section ~~G- 17.60.80~~) or alternative plants approved by the Director.
- g. Appropriate Maintenance. Maintain irrigation systems so they operate at peak efficiency. Lessen water demand by keeping weed growth down and by thinning unwanted wood from trees rather than cropping them.

2. Unity and Continuity¹.

Landscape unity and continuity may be significantly enhanced through the selection of a dominant tree and shrub species. Such dominance shall be established by making the selected species clearly in the majority (60% or more).

3. Tree and Shrub Placement in Proximity to Fire Hydrants.

Trees, as measured from trunk center, shall be placed a minimum of five (5) feet from fire hydrants. Shrubs, as measured from their mature perimeter, shall be located a minimum of five (5) feet from the rear of a fire hydrant. In no case shall any material other than groundcover be placed between the street or roadway and within fifteen (15) feet of either side or front of a fire hydrant (Figure ~~17.10.110-A~~ ~~17.60.30-A~~).

¹ Plant palettes partially implemented through the construction of one or more phases of a previously approved master planned project, except for turf areas in excess of the limitations established by these landscape standards, shall be continued throughout the development of that project.

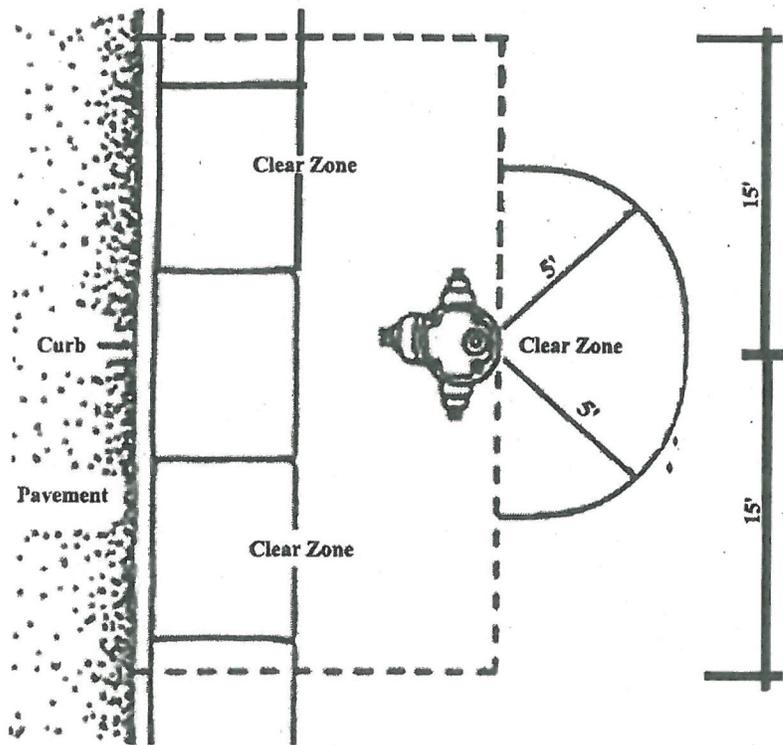


Figure 17.60.30-A - Fire Hydrant Clear Zone

4. Ground Surface Treatment

- a. Pre-Treatment of Ground Surfaces Required. A pre-emergent herbicide shall be applied to the ground prior to and after the placement of natural surface materials (decomposed granite, gravel, crushed rock, river run rock, etc.) in any landscaped area to prevent weed growth.
- b. Inorganic Ground Cover. Inorganic ground covers (decomposed granite, crushed stone, etc.) shall be of a natural color harmonious with other site and architectural materials and shall be installed to a minimum depth of two (2) inches.
- c. Plant Cover/Dust Control. All portions of a development site (including future building pads) not occupied by buildings, structures, paved improvements, and required landscape areas shall be temporarily landscaped with plant materials in accordance with this Chapter or treated

with an appropriate inorganic ground cover and maintained in a weed and dust free condition.

5. Plant Massing.

The massing of trees and shrubs into groups containing three (3) or more plants is required unless standards elsewhere within this Chapter require only a single element, e.g., single trees within parking lot planter islands. Planting of single shrub specimens, unless used to repeat an element already established within a massed planting within the same visual area, is prohibited.

6. Plant Groupings.

The grouping of plant species commonly found together in natural associations or of common environmental requirements (soil type, water, sun exposure, temperature limitations, etc.) is required.

7. Plant Spacing.

In order to foster a more natural look, an uneven spacing of plants is required unless such plants are being used to create a massed shrub or groundcover bed. The spacing of shrubs shall be sufficient to allow plants to reach their natural mature size and form.

8. Consistency with Existing Streetscape Standards.

Street frontage landscaping shall be consistent with any previously adopted specific streetscape standards.

17.60.40 Landscape Material and Area Requirements

A. New developments shall be landscaped in accordance with the following minimum standards:

1. Plant Material

a. Landscaping shall consist of native or drought-tolerant plants capable of surviving the desert environment and climate with a minimum of maintenance and supplemental watering. A list of plants determined capable of meeting this criterion is contained in Section ~~G~~ 17.60.80. Other plants may be considered on their merits in meeting this criterion. Determinations of plant species suitability will be made by the Director upon submission of project plans.

b. Landscaping materials may also consist of wood

timbers, decorative rocks, boulders, sand, bark, gravel, or a combination thereof; provided, however, that the majority of landscape materials and area shall consist of plants, as set forth above.

2. Irrigation

Utilize the most efficient irrigation system for the area being served. Irrigation of required landscaped areas should be by drip irrigation and matched precipitation rate, low-gallonage sprinkler heads, bubblers, and timing devices. Timing devices shall include soil moisture sensors and rain sensing override devices.

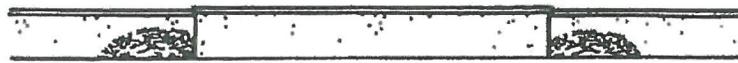
Irrigation systems shall be designed to minimize maintenance and water consumption, and the irrigation system shall be properly designed and installed to ensure that overspray onto fences, walls and structures is eliminated to the maximum extent feasible.

3. Landscape Area Requirements.

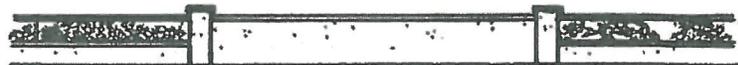
All portions of a development site not utilized for building development, service areas, paved or improved storage areas, parking, driveways, etc., shall be landscaped. *Developers are required to install front and street side yard landscaping for all new development.* Minimum areas of landscaping are as follows:

- a. Front Building Setback/Street Right-of-Way Areas. All front building setback and street right-of-way areas located between on-site improvements and the back of existing or future public sidewalks or street curbs, except needed access driveways, shall be fully landscaped, unless otherwise provided for in this Development Code.
- b. Parking Lot Area. The following landscaping standards apply to parking lots (Figure ~~17.10.110~~ 17.60.40-B, C, and D).
 - 1) In order to reduce the "heat island effect" of large expanses of unprotected paved areas, a minimum of thirty (30) percent of the interior parking surface of all parking lots shall be shaded at the maturity of the landscaping.
 - 2) Provide a minimum of one (1) tree (minimum fifteen (15) gallon size when planted) for each seven (7) parking spaces located so as to visually disrupt long rows of parking spaces, trees may be clustered where appropriate.

- 3) A thirty-six to forty-two (36-42) inch high decorative masonry wall, hedge or landscaped berm, as measured from the finished grade of the parking area, shall also be used adjacent to public rights-of-way to screen the parking area. The height of the screening wall or berm may be reduced when the parking lot is below grade. Horizontal and vertical variations in the design of screening walls are required where the length of such walls exceeds forty (40) feet. Said variations are subject to Planning Staff approval.



Elevation Of Staggered Wall



Elevation Of Solid Planters/Wall

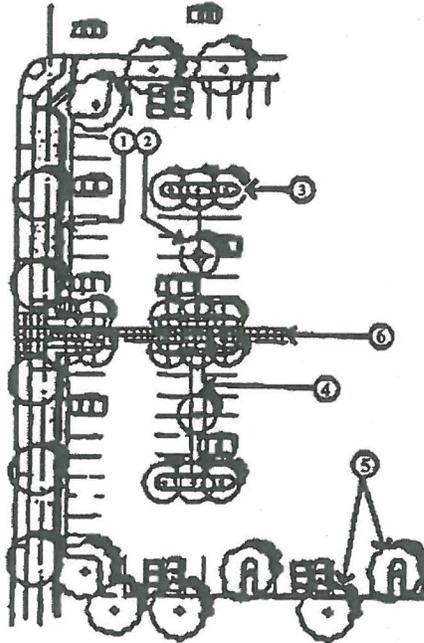


Elevation Of Wall With Breaks

Figure 17.60.40-B - Recommended Design Features and Materials

- 4) A minimum of five (5) percent of the interior parking surface area of all parking lots shall be landscaped. Such percentage may be achieved by combining paragraph (1) below with paragraph (2) and/or (3).
- a) Planter islands a minimum of five (5) feet in width shall be located at the ends of all rows of parking stalls between the last stall and any drive aisle. Where drive aisles are curved, alternative dimensions with similar area may be approved (Figure 17.10.110 17.60.40-C); and

- b) Planter islands, shall be uniformly distributed throughout the interior parking area, and protected by raised curbs (Figure 17.10.110 17.60.40-C); or
 - c) Planter strips, located between double rows of parking stalls, shall be a minimum of four (4) feet in width. Each parking stall may overhang two (2) feet into this area (Figure 17.10.110 17.60.40-C).
- 5) Trees within parking lots shall be kept trimmed to a minimum clear canopy height of six (6) feet for visual safety.



LEGEND

- 1 30" - 42" Block wall and/or berm.
- 2 Minimum 6' square tree well.
- 3 Minimum 6'x18' end of row planter island.
- 4 Planter strips a minimum of 4' in width between double rows.
- 5 Minimum one tree per each 7 uninterrupted parking stalls.
- 6 Special paving at pedestrian circulation areas.

Figure 17.60.40-C - Planter Islands/Strips

- 6) A landscaped strip with a minimum width of ten (10) feet shall be provided where parking lots are adjacent to a public right-of-way or
- 17.60-9 Amended February 2006

residential uses or districts, unless otherwise provided for in this Code.

4. Landscape Buffers/Perimeter Landscape Strips

- a. Landscape Buffers. When providing a buffer between commercial/industrial and residential uses or districts the following features are required:

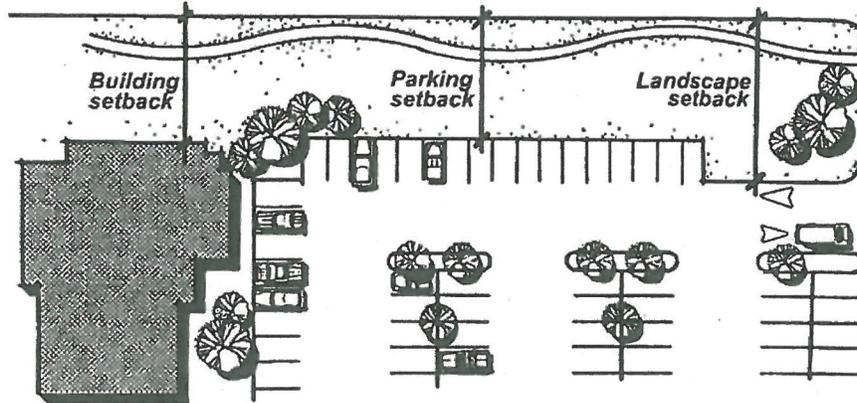


Figure 17.60.40-D - Landscape Areas

- 1) Landscaping shall include one (1) tree for each 200 square feet of required landscape area. Said tree shall be a minimum fifteen (15) gallon size when planted, twenty (20) percent of such required trees shall be twenty-four (24) inch box size; and
 - 2) A six (6) foot decorative masonry wall to City standards; and
 - 3) Evergreen trees a minimum of six (6) feet in height, and 2 inches in diameter, planted at a maximum spacing of twenty (20) feet on center and shrubs planted at a rate of five (5) per one hundred linear feet.
- b. Front Building Setback Area. Landscaping in the front building setback area shall be provided at a minimum rate of one (1) tree and six (6) shrubs per thirty (30) linear feet of frontage plus sufficient groundcover plantings to provide combined shrub and ground coverage of fifty (50) percent of the total landscaped area. Trees and shrubs may be grouped, but gaps between groupings of plants shall not exceed forty (40) feet.

c. Other Perimeter Areas. Landscaping in other perimeter areas shall be provided at a minimum rate of one (1) tree and six (6) shrubs per forty (40) linear feet plus sufficient groundcover plantings to provide combined shrub and ground coverage of forty (40) percent of the total landscaped area, except where screening is required. Trees shall be a minimum fifteen (15) gallon size when planted, twenty (20) percent of which shall be twenty-four (24) inch box size. Trees and shrubs may be grouped, but gaps between groupings of plants shall not exceed fifty (50) feet.

5. Landscape Improvement Requirements. The following minimum landscape improvements are required within the following landscape areas:

a. Single and Multi-Family Residential Developments

1) Common open space/retention areas. A minimum of one (1) tree and six (6) shrubs per 500 square feet of open space plus such additional vegetative ground cover as is necessary to cover a minimum of fifty (50) percent of the total landscaped area with shrubs and ground cover. The inclusion of turf is subject to the limitations established in ~~subsection 6. below~~, Section 17.60.70.E and in Table ~~17.10.110~~ 17.60.40-A.

2) Arterial and collector street rights-of-way. Arterial and collector street rights-of-way adjacent to and within single and multi-family residential developments shall be landscaped at a rate of one (1) tree and three (3) shrubs per 30 linear feet plus such vegetative ground cover necessary to cover a minimum of forty (40) percent of the total landscaped area with shrubs and ground cover. Turf is prohibited within public rights-of-way.

3) *Front and Street Side Yards. The use of turf in these areas is discouraged. See Section 17.60.70.E for specific restrictions.*

b. Commercial/Office/Institutional Developments. One (1) tree and six (6) shrubs per 500 square feet of interior open space plus such additional ground cover which, upon maturity, will cover a minimum of fifty (50) percent of all interior open space surfaces. The inclusion

of turf is subject to the limitations established in ~~subsection 6. below, Section 17.60.70.D~~ and in Table ~~17.10.110~~ 17.60.40-A.

- c. Industrial Developments. One (1) tree and six (6) shrubs per 750 square feet of interior open space plus such additional vegetative ground cover which, upon maturity, will cover a minimum of forty (40) percent of all interior open space surfaces. The inclusion of turf is subject to the limitations established in ~~subsection 6. below, Section 17.60.70.D~~ and in Table ~~17.10.110~~ 17.60.40-A.
- d. Grading in the Front Building Setback. Front setback areas shall be graded in a manner which creates natural and pleasing ground forms in accordance with the following guidelines:
 - 1) A maximum of fifty (50) percent of the front building setback area may be used for storm water retention;
 - 2) Soil excavated to create needed retention basins shall, within the slope limitations established below, be used to create complementary earth mounds elsewhere within the same front building setback area;
 - 3) Earth mounds with a maximum slope ratio of four to one (4:1), horizontal to vertical, shall be located and designed to minimize street views into retention basins;
 - 4) Grading and other site preparation shall preclude the run-off of rain and/or irrigation water from landscaped surfaces onto paved surfaces.
- e. Finished Grade Surfaces. All landscaped areas shall be graded so that finish grade surfaces of all nonliving materials (i.e., decomposed granite, crushed rock, mulch, and the like) are at least one and one-half (1 1/2) inches below concrete or other paved surfaces.
- f. Protection of Landscaped Areas. Landscaped areas adjacent to vehicular drives or parking areas shall be protected by a six (6) inch vertical curb. Areas surfaced with different materials (i.e. lawn and decomposed granite) shall be separated by masonry, wood, or mowing strips.

- g. Irrigation Systems. The use of drip irrigation systems or systems of equivalent efficiency for all landscaping at commercial and industrial facilities and all common areas of residential developments is required. The use of similar systems on individual residential lots is encouraged.

Irrigation systems shall be designed to minimize maintenance and water consumption, and the irrigation system shall be properly designed and installed to ensure that overspray onto fences, walls and structures is eliminated to the maximum extent feasible.

- h. Limitations on the Use of Turf

Unless watered with "reclaimed" water, the use of turf in specific land uses shall be limited to the percentages listed in Table 17.60.40-A below.

Table 17.60.40-A – Permitted Turf Area	
Land Use	Turf permitted as a percent of Total Landscaped Area
Single family residential	No limitations 20%
Multi-family residential	40% 20%
Common open space/retention basins	40% 20%
Parks, schools, golf course and cemeteries	No limitations
Commercial/office/institutional	20%
Industrial	10%

7. Decorative Water Features.

Within commercial, industrial and multi-family developments the use of decorative water features including, but not limited to, pools, ponds, fountains, streams, and waterfalls, unless serviced with "reclaimed water", shall be limited to small scale pedestrian oriented locations and features. Water feature designs that reduce evaporation, e.g. cascading water rather than vertical sprays, are required.

17.60.50 Model Home Complexes

- A. Model home complexes, unless they are utilizing "reclaimed water",

shall be landscaped in accordance with the xeriscape landscape principles listed in ~~subsection C.1. of this Chapter~~ *Section 17.60.30.A* and the following minimum requirements:

1. Plant Materials.

Landscaping shall consist of native or drought-tolerant plants capable of surviving the desert environment and climate with a minimum of maintenance and supplemental watering. A list of plants determined capable of meeting this criterion is contained in ~~Section G. 17.60.80 of this Chapter~~. Other plants may be considered on their merits in meeting this criterion. Determinations of plant species suitability will be made by the Director upon submission of project plans.

2. Turf and Water Surfaces/Features.

Combined turf and water surfaces of all water features shall not occupy more than fifty (50) percent of the landscapable area within each lot in the model home complex. Swimming pools, hot tubs and spas are exempt from this limitation.

3. Literature Package.

A literature package describing water conserving landscaping designs shall be on display within all model sales offices. If copies of the literature package are not made available by the homebuilder, such display shall include information regarding where the literature is available. The following are recommended to be included in the literature package:

- a. A Guide to High Desert Landscaping. Available at your local water district offices and the Planning Division offices.
- b. The Unthirsty One Hundred
Reprint from Sunset Magazine - October 1988
Lane Publishing Company
Menlo Park, California 94025

17.60.60 Landscape Maintenance

A. Landscape Maintenance. Landscaping shall be continuously maintained (watering, fertilizing, weeding, mowing, trash pick-up, and pruning) by the landowner or the lessor of new and existing development in accordance with the following:

1. Sites shall be kept clean and attractive at all times. Weeds and trash (windblown or otherwise) shall not be allowed to accumulate on the site.

2. Living plant material shall receive sufficient water and fertilization to maintain health and vigor and shall, to the maximum extent possible, be allowed to attain its natural mature size and shape.
3. Pruning and mowing shall be used to maintain plant health and vigor while enhancing its form and structure. Cropping trees, unless necessary to protect traffic safety or overhead power lines, is prohibited.

Pruning and mowing will conform to the commonly used standards for each species; however, in no case will the landscape areas be allowed to become overgrown. Examples of overgrown landscape material include:

- a. Lawn grass species: Plants which have established seed heads, lawns that have become thatched and matted, have become infested with herbaceous weeds, or exceed eight (8) inches in height.
 - b. Shrubs and decorative grasses: Plants that have grown so large as to block natural light from entering windows, extend over property lines, extend over roof peaks or eaves, or are causing the strangulation of other plants.
 - c. Trees: Plants which display sucker growth, have grown to a height or canopy width which impairs the normal illumination of street lights, extend over property lines, interfere with overhead lines or impact public property.
4. All dead or obviously unhealthy plant material shall be replaced in an expeditious manner with material equal to that which was originally specified on the approved landscape plan.
 5. Bare spots in lawns or planters shall be promptly revegetated.
 6. Customary maintenance shall include provision of adequate irrigation, based on the micro-climate, and regular application of fertilizer, based on the needs of the plant.
 7. *All property owners shall be responsible for maintenance of parkway areas within the public right-of-way adjacent to their properties, except those areas outside of a six-foot high block wall or solid fence.*

B. Landscape Guarantee

1. The owner or developer shall, prior to the issuance of a certificate of occupancy, evidence that all plant materials are

guaranteed for a minimum period of sixty (60) days from the date of final approval of the installation of the landscaping. Terms of the guarantee shall also specify that any plant materials which are not approved prior to October 1st of the calendar year in which they are installed shall be further guaranteed until May 20th of the following calendar year.

2. Trees, shrubs, vines, ground cover, and turf which have to be replaced under terms of the guarantee shall be guaranteed for an additional sixty (60) days from the date of replacement.
3. All plant materials requiring replacement under the conditions of the contractors guarantee shall be replaced within ten (10) working days from the date of written notification.

C. Existing Landscaping

1. Maintenance. Required landscape areas, existing at the time of adoption of this Ordinance, shall be maintained in accordance with the provisions of Section ~~F-1~~ 17.60.60.A above.
2. Prevention of Wasted Water. Existing developments shall, through improvements to its irrigation system and landscaped areas, prevent water waste resulting from inefficient landscape irrigation, run-off, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, nonirrigated areas, walks, roadways, or structures.

17.60.70 *Water Conservation*

A. *Definitions*

1. *Acre-foot of water – that quantity of water required to cover (1) acre of land one (1) foot deep, or three hundred twenty-five thousand, eight hundred fifty-one (325,851) gallons.*
2. *Active recreational area – an area designated and primarily used for organized sports, including, without limitation, softball, baseball, football, soccer or a similar related sport, including all amenities related to the activity.*
3. *Body of water – any artificially constructed lake, pond, or lagoon, regardless of size.*
4. *City – the City of Adelanto*
5. *Controller – a mechanical timer capable of operating valve stations to set days, length of time, and frequency of water application.*

6. *Escaped water* – the pumping, flow release, escape, or leakage of any water from any pipe, valve, faucet, connection, diversion berm, well, or any facility for the purposes of water supply, transport, storage, disposal, or delivery onto adjacent property or public right-of-way.
7. *Excess runoff* – water accumulation on streets, gutters, neighboring properties, or other areas in an amount sufficient to cause flow.
8. *Manager* – the City Manager or the City Manager’s designee.
9. *Lot* – a legally created parcel of land occupied or intended for occupancy by one (1) main building together with its accessory buildings, and uses customarily incidental to it, including the open space required by the City’s zoning ordinance, and having its principal frontage upon a street as defined in the City’s zoning ordinance.
10. *Model home* – a facility used exclusively for the promotion and sale of homes similar to the model.
11. *Person* – an individual, corporation, partnership, incorporated association, or any other similar entity.
12. *Public water system* – any publicly or privately owned network of pipes, conduits, wells, reservoirs, holding tanks, and other components, including any combination thereof, which supplies water to water users, who are charged a fee of any kind or nature for such purpose, or which is designed to supply water or is capable of supplying water to water users for a fee, and includes any such system whether it is operated under the regulatory authority of the City of Adelanto, but does not include any irrigation company or district whose primary purpose is to supply water for farming.
13. *Residential development* – the development of any type of dwelling unit or units suitable or designed for human habitation, including, but not limited to, single family homes, condominiums, or manufactured homes, but not including hotels, motels, licensed convalescent homes, commercially operated retirement homes, time share units, or the like. “Residential development” shall not include remodeling or reconstruction where no new dwelling unit is created.
14. *Right of way* – land which by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the general public for street, highway, alley, public utility, or pedestrian walkway purposes.

15. *Turf* – a surface layer of earth containing grass with its roots.
16. *Turf-related facility* – a school, public recreational facility, cemetery, golf course, industrial park, or common area of a housing development that applies water from any source, including effluent.
17. *Water-intensive landscape* – an area of land that is watered with a permanent water application system and planted primarily with plants not listed in Section H “Approved Plant List”. Included is the total surface area of all water features (i.e. swimming pools of any size, fountains, ponds, water courses, waterfalls, and other artificial water structures) filled or refilled with water from any source.
18. *Water purveyor* – the owner or operator of a public water system.
19. *Water user* – those persons, customers, and properties served by a water purveyor within the incorporated boundaries of the City.
20. *Water waste* – the indiscriminate use or excessive dissipation of water, which is unproductive or does not reasonably sustain life or economic benefits.

B. Application of Section

The provisions of this chapter shall apply to all water users. Any new single family residential development that is in Final Map check or has submitted Street Improvement Plans at the time this Ordinance is adopted is exempt from these regulations.

1. *resulting from fire fighting, hydrant flushing, or fire training activities; or*
2. *necessary to prevent or abate threats to the public health or safety; or*
3. *from routine maintenance of any public water system or from temporary water system failures or malfunctions; or*
4. *from water users engaged in landscape irrigation with treated wastewater, effluent, grey water, or other nonpotable water.*
5. *drought tolerant plants as outlined in Section 17.60.80.*

C. Prohibited Water Uses and Water Waste

The restrictions or prohibitions in this chapter shall not apply to water

use, runoff, or flow.

1. *It shall be unlawful for any water user of a public water system to knowingly allow water waste at any location or premises within the City limits after having been served with a notice of violation, pursuant to Section 17.60.70.C for wasting water from the same location or premises.*
2. *It shall be unlawful for any owner, occupier, or manager of real property within the City to knowingly allow water waste at any such real property after having been served with a notice of violation, pursuant to Section 17.60.70.C for wasting water from the same location or premises.*
3. *It shall be unlawful for any water user within the City to knowingly make, cause, use, or permit the use of water for residential, commercial, industrial, agricultural, or any other purpose in a manner contrary to any provision of this chapter.*
4. *It shall be unlawful for any water user to cause or permit any water furnished to any property within the City to run or to escape from any hose, pipe, valve, faucet, sprinkler, or irrigation device onto any sidewalk, street, or gutter or to otherwise escape from the property, if such running or escaping can reasonably be prevented.*
5. *It shall be unlawful for any water user to wash any vehicle, equipment, or other object, or any driveway, parking lot, sidewalk, street, or other paved surface, in any manner permitting the continuous flow of water for more than five minutes.*
6. *Commercial and noncommercial watering of turf, ground cover, open ground, shrubbery, crops, gardens, and trees, including agricultural irrigation, in a manner or to an extent which allows substantial amounts or excess runoff shall not be permitted. A minimum amount of runoff, which is a natural consequence of conservative watering, either by hand or by mechanical or automated sprinkling facilities, is permitted, so long as such runoff does not amount to excess runoff as defined in this Chapter.*
7. *It shall be unlawful for any water user to permit the excess use, loss, or escape or water through breaks, leaks, or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected.*
8. *It shall be unlawful for any water user to willfully or negligently permit or cause the escape or flow of irrigation water in such*

quantity as to cause flooding, impede vehicular or pedestrian traffic, create a hazardous condition to such traffic, or cause damage to public or private rights of way through failure or neglect to properly operate or maintain any irrigation structure, delivery ditch, or waste ditch.

9. *It shall be unlawful for any water user to water or permit the watering of water intensive landscape or turf at time other than as authorized by the water purveyor.*
10. *It shall be unlawful for any water user to willfully or negligently fail to accept irrigation water after it has been ordered.*

D. Limitation on water intensive landscape and turf areas within new nonresidential facilities

The following types of facilities shall limit the water intensive landscape and turf within the landscaped area to the following percentages of the total lot area, and all remaining landscaped area shall consist of plants listed in Section 17.60.80:

1. *Churches. Twenty percent (20%) of total lot area.*
2. *Resorts, including hotels and motels. See Table 17.60.40-A (Permitted Turf Area).*
3. *Commercial and industrial uses. See Table 17.60.40-A (Permitted Turf Area).*
4. *Active recreational areas shall not be considered in calculating the percentage of the total lot area and shall not be considered in determining compliance with this Section.*
5. *No water intensive landscape or turf shall be permitted in any right of way.*
6. *No water features (ponds, fountains, etc.) shall be allowed without proof that the feature is utilizing water conservation measures such as recirculated water.*

E. Limitations on model home and new residential development landscaping

1. *Developers are required to provide front and street side yard landscaping to all new developments prior to the issuance of a Certificate of Occupancy. All new model homes and new residential development shall limit water intensive landscape and turf area to the following percentage of the total lot area, and all remaining landscaped area shall consist of plants listed in Section 17.60.80:*

- a. *Front yard and street side yards. Twenty percent (20%) of the total front/street side yard area. (Total yard area of single family residences include any hardscape areas such as driveways and walkways.)*
 - b. *Rear yard. No limitations.*
2. *Common areas in residential developments. Ten percent (10%) of the first acre and five percent (5%) of each additional acre up to five (5) acres. Residential developments larger than five (5) acres shall not plant any additional water intensive landscape and turf in common areas.*
 3. *Each model home complex shall include at least one plan showing no turf in the front yard and another plan showing no turf in the rear yard (may be the same plan if desired). This no-turf option shall be offered as an option to the home buyer.*

In addition, at least one plan of each model home complex shall contain no more than 20 percent turf in the rear yard. This option shall be offered as an option to the home buyer.
 4. *Water intensive landscape or turf is not limited in rear yards, but is strongly encouraged.*
 5. *No water intensive landscape or turf shall be permitted in any right of way.*
 6. *No water features (ponds, fountains, etc.) shall be allowed without proof that the feature is utilizing water conservation measures such as recirculated water.*

Any modification to the landscaping that results in a proven reduction of water use may be used to obtain greater flexibility in the minimum turf area allowed. Methods used to reduce water use may include: satellite sprinkler systems, elimination of surface runoff, and/or the use of reclaimed water.

F. *Public education during drought*

The City will use intensive public education to assist water users impacted by the drought to understand the City's need for voluntary compliance. In addition to education, the City may use enforcement measures to curb water misuse.

G. *Drought management plan implementation*

1. *The City Council shall promulgate a drought management plan containing regulations setting forth the criteria for*

implementation and termination of various water use reduction stages.

2. *The City Council is authorized to declare a drought, and to implement a drought management plan, in response to events including, but not limited to, the following: reductions in supply from the Mojave Water Agency or Adelanto Public Utilities Authority, or when an insufficient supply appears likely due to water system limitations or structural failure.*
3. *Such declaration may designate the entire area of the City, or a portion of it if the shortage is not Citywide.*
4. *The City Council may terminate the drought declaration when he or she determines that the events that triggered the drought no longer exist.*

H. Notification and publication of drought management plan

If the City Council determines that the health and safety of the City dictate implementing the drought management plan, notification shall be published in a paper of general circulation, to educate the public about the need for the plan, and give them notice of conservation regulations and requirements of the applicable stage of the plan. A copy of the drought management plan shall also be available for inspection at the City Clerk's office.

I. Enforcement of drought management plan

1. *The City Manager or his or her designee shall have authority to take actions to enforce any mandatory elements that are part of drought management plans.*
2. *A written notice shall be placed on the property when a first violation occurs, and a duplicate mailed to the person who is responsible for the service to the property where the violation took place. The notice shall describe the violation and order that it be abated immediately.*
3. *For subsequent violations, the City will issue citations and fines according to the provisions of this Chapter.*
4. *Funds generated by the fines under this Section shall be used to mitigate the impact of the drought.*

J. Variances from drought management plan

Variances to drought management plan provisions may be granted at the discretion of the City Manager or his or her designee. Applicants for a variance must apply in writing to the City Manager or his or her

designee, and demonstrate special circumstances such as health and safety needs or obligation of contract.

K. Limited exemption to restrictions for users of reclaimed water

To the extent they are exempt from the drought management plan, users of reclaimed or recycled water shall clearly post notices stating that the water being used is not potable and not from the public drinking water supply, and is in conformance to the drought management plan in force at the time.

L. Violations

1. *For a first violation of any provision of this chapter, the City shall issue a written notice of first violation and provide the violator with educational materials on water conservation, including a copy of the relevant provisions of this chapter. The City shall give the water user a reasonable period of time to correct the violation. Failure to correct the violation within a reasonable period of time shall constitute a second violation.*
2. *For a second violation of any provision of this chapter, the City shall issue a written notice of second violation to the water user imposing a fine in the amount not to exceed that outlined in the City of Adelanto Municipal Code and requiring immediate correction of the violation.*
3. *For a third violation of any provision of this section, the City shall issue a written notice of third violation to the water user imposing a fine in an amount not to exceed that outlined in the City of Adelanto Municipal Code and requiring immediate correction of the violation.*
4. *For a fourth or subsequent violation of this Section, the City shall impose a fine in an amount not to that outlined in the City of Adelanto Municipal Code. The fourth and each subsequent violation of this chapter shall be deemed a public nuisance, which may be abated pursuant to the procedures provided in the City of Adelanto Municipal Code.*
5. *Any fine imposed under this Section shall be collected in accordance with the procedures provided in the City of Adelanto Municipal Code. Failure to pay any portion of a water user's account, including any fines imposed pursuant to this Section, shall subject said account to termination of water service in accordance with the provisions of this Section.*
6. *In addition to the remedies set forth above, the City may seize equipment, line, fountains, and other devices which are operated in violation of this Chapter, until the fine is paid. The City may*

dispose of these items if the fine is not paid in six (6) months from the date the equipment was confiscated.

M. Right to hearing

Any water user against whom a penalty is levied under this chapter shall have a right to a hearing before the City Manager of the City Manager's designee.

17.60.80 Approved Plant List

CITY OF ADELANTO
WATER CONSERVING PLANTS FOR THE HIGH DESERT

LEGEND: D = Drought Tolerant
M = Moderate Water Use

1. Vines

M	Antigonon leptopus.....	Queen's Wreath
M	Campsis radicans.....	Trumpet Creeper
M	Gelsemium sempervirens.....	Carolina Jasmine
M	Hedera helix.....	English Ivy
M	Jasminum mesnyi.....	Yellow Jasmine
M	Lonicera japonica 'Halliana'.....	Hall's Honeysuckle
M/D	Macfadyena unguis-cati.....	Cat Claw Vine
M/D	Parthenocissus quinquefolia.....	Virginia Creeper
M	Rosa banksiae.....	Lady Bank's Rose
M	Wisteria floribunda.....	Japanese Wisteria

2. Ground

M/D	Acacia redolens.....	Prostrate Acacia
D	Atriplex semibacata.....	Salt Bush
M/D	Buccharis pilularis 'Twin Peaks'.....	Coyote Bush
D	Cerastium tomentosum.....	Snow-in-summer
M/D	Convolvulus mauritanicus.....	Ground Morning Glory
D	Dalea greggii.....	Trailing Indigo Bush
M	Euonymus fortunei.....	Winter Creeper
M/D	Festuca ovina glauca.....	Blue Fescue
M/D	Gazinia rigens 'Copper King'.....	Gazania
M	Lirope muscari.....	Lily Turf
D	Oenothera berlandieri.....	Mexican Primrose
M	Ophiopogon japonicus.....	Mondo Grass
M/D	Pyrocantha coccinea 'Low Boy'.....	Firethorn
M/D	Teucrium chamaedrys.....	Germander
M/D	Verbena rigida.....	Verbena
M	Vinca major.....	Periwinkle
M	V. minor.....	Dwarf Periwinkle

3. Trees

D	Acacia constricta.....	Whitethorn Acacia
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D	<i>A. greggii</i>	Catclaw Acacia
D	<i>Ailanthus altissima</i>	Tree of Heaven
M	<i>Albizia jullibrissin</i>	Silk Tree/Mimosa
M/D	<i>Arbutus unedoq.</i>	Strawberry Tree
M/D	<i>Calocedrus decurrens</i>	Insense Cedar
M	<i>Cauarina stricta</i>	Beefwood/She Oak
D	<i>Catalpa speciosa</i>	Western Catalpa
M	<i>Chitalpa (Chiolopsis linearis X Catalpa bignonioides)</i>	
M	<i>Cedrus atlantica</i>	Atlas Cedar
M	<i>C. deodora</i>	Deodar Cedar
D	<i>Celtis pallida</i>	Desert Hackberry
M/D	<i>C. reticulata</i>	Western Hackberry
D	<i>Cercidium Floridum</i>	Blue Palo Verde
D	<i>C. microphyllum</i>	Little Leaf Palo Verde
M/D	<i>Cercis occidentalis</i>	Western Redbud
M	<i>Chamaerops humulis</i>	Mediterranean Fan Palm
D	<i>Chilopsis linearis</i>	Desert Willow
D	<i>Cupressus arizonica</i>	Arizona Cypress
D	<i>Cotinus coggygria</i>	Smoke Tree
D	<i>Cupressus glabra</i>	Arizona Cypress
D	<i>C. sempervirens</i>	Italian Cypress
D	<i>Elaeagnus angustifolia</i>	Russian Olive
M	<i>Eriobotrya japonica</i>	Loquat
D	<i>Eucalyptus cinerea</i>	Silver Dollar Gum
D	<i>E. gunnii</i>	Cider Gum
D	<i>E. microtheca</i>	Coolibah Tree
D	<i>E. nicholii</i>	Willow Lead Peppermint
D	<i>E. pulverulenta</i>	Silver Mountain Gum
M/D	<i>Fraxinus velutina</i>	Arizona Ash
M/D	<i>F.v. 'Modesto'</i>	Modesto Ash
M/D	<i>F.v. 'Rio Grande'</i>	Fan-Tex Ash
D	<i>Fremontodendron californicum</i>	Flannel Bush
M	<i>Gleditsia triacanthos</i>	Honey Locust
M	<i>G.t. 'Sunburst'</i>	Sunburst
D	<i>Heteromeles arbutifolia</i>	Toyon/California Holly
M/D	<i>Koelreuteria paniculata</i>	Golden Rain Tree
M/D	<i>Lagerstromieia indica</i>	Crape Myrtle
M/D	<i>Melia azedarach</i>	Chinaberry
M	<i>Morus alba</i>	Fruitless Mullberry
M/D	<i>Nerium oleander</i>	Oleander
M/D	<i>Olea eruopaea</i>	European Olive
D	<i>Parkinsonia aculeata</i>	Mexican Palo Verde
M	<i>Photinia fraseri</i>	Fraser's Photinia
M/D	<i>Pinus eldarica</i>	Mondel Pine
M/D	<i>P. halepensis</i>	Aleppo Pine
M/D	<i>P. edulis</i>	Pinion Pine
M/D	<i>P. pinea</i>	Italian Stone Pine
M/D	<i>P. roxburghii</i>	Chir Pine
M/D	<i>P. thunbergiana</i>	Japanese Black Pine
D	<i>Pistachio atlantica</i>	Mt. Atlas Pistache

M	Platanus acerfolia.....	London Plane Tree
M	R. pacemosa.....	California Sycamore
D	Prosopis species.....	Mesquite
D	Prunis ilicifolia	Hollyleaf Cherry
M	P. caroliniana	Carolina Cherry
M.	P. cerasifera 'Autopurpurea'.....	Purple Leaf Plum
M	P. persica.....	Flowering Peach
M/D	Punica granatum	Pomegranate
M	Pyrus kawakamii.....	Evergreen Pear
D	Quercus dumosa	Scrub Oak
M	Q. ilex	Holly Oak
M	Q. lobata.....	Valley Oak
M	Q. palustris.....	Pin Oak
M	Q. suber.....	Cork Oak
M/D	Robinia ambigua 'Idahoensis'	Idaho Locust
D	R. Pseudoacacia.....	Black Locust
M	Sambucus mexicana	Mexican Elderberry
M	Sequoiadendron giganteum	Giant Sequoia
D	Sophora secundiflora	Texas Mountain Laurel
M/D	Trachycarpus fortunei.....	Windmille Palm
M/D	Vauquelinia californica.....	Rosewood
M/D	Vitex agnus-castus.....	Chaste Tree
M/D	Washingtonia filifera	California Fan Palm
M/D	W. robusta.....	Mexian Fan Palm
D	Yucca brevifolia	Joshua Tree
M/D	Zelkova Serrata.....	Japanese Zelkova
M/D	Ziziphus jujuba	Chinese Date

4. Shrubs

M	Abelia grandiflora.....	Glossy Abelia
M	A.g. 'Prostrata'.....	Dwarf abelia
D	Agave americana	Century plant
D	Aloe saponaria	African Aloe
M/D	Arctostaphylos hookerii.....	Monterey Manzanita
D	Atriplex canescens.....	Four-wing Salt Bush
D	A. lentiformis.....	Quail Bush
D	A.l. 'Breweri'.....	Brewer's Saltbush
D	Daccharis sarthroides.....	Desert Broom
M	Buxus microphylla.....	Japanese Boxwood
D	Caesalpinia gilliessi	Desert Bird of paradise
D	Calliandra eriophulla	Fairy Duster
D	Cassia Wislizeni	Shrubby senna
D	Cistus species.....	Rockrose
M/D	Convolvulus species	Bush Morning Glory
D	Cortaderia seloana	Pampas Grass
M	Cotoneaster horizontalis	Rock Cotoneaster
M	C. microphyllus	Rockspray Cotoneaster
M	C. lacteus	Parney Cotoneaster
D	Dasyilirion wheeleri.....	Desert Spoon
D	Dendromecon rigida	Bush Poppy

D	Elaeagnus pungens	Silverberry
D	Eriogonum species.....	Buckwheat
M	Euonymus Species.....	Evergreen Euonymus
M	Fatsia japonica	Japanese Aralia
D	Ferocactus species	Barrel cactus
D	Fouquieria splendens	Ocotilla
D	Hesperaloe englemanii	Red Yucca
M/D	Hibiscus syriacus	Rose of Sharon
M	Ilex cornuta "Burfordii".....	Buford Holly
M/D	Ilex vomitoria	Yapon Holly
M/D	Juniperus species	Juniper
D	Larrea tridentata.....	Creosote Bush
D	Lavendula species.....	Lavender
D	Leucophyllum frutescens.....	Texas Ranger
M	Ligustrum texanum.....	Wax Leaf Privet
D	Lycium species	Desert Thorn
M/D	Mahonia aquifolium	Oregon Grape
M	Myrtus communis.....	True Myrtle
M	M.c. Compacta.....	Dwarf Myrtle
M	M.c. 'Boetica'.....	Twisted Myrtle
M/D	Nandina domestica	Heavenly Bamboo
M/D	N.d. 'Nana'	Dwarf Nandina
M/D	Nerium oleander	Oleander
D	Opuntia species.....	Prickley Pear and Cholla Cactus
M	Osmanthus fragrans	Sweet Olive
D	Pennisetum species.....	Fountain Grass
D	Penstemon species	Beard Tongue
M	Photinia fraseri.....	Fraser's Photinia
M	P. serrulata	Chinese Photinia
M	Pittosporum tobira	Mock Orange
M	P.t. 'Wheeler's Dwarf'	Wheeler's Dwarf
D	Teucrium fruticans.....	Bush Germander
M/D	Puracantha species.....	Firethorn
M	Raphiolepis indica	Indian Hawthorn
D	Romneya coulteri.....	Matilija Poppy
D	Phus ovata.....	Sugarbush
M/D	Rosmarinus officinalis.....	Bush Rosemary
M/D	R. prostratus.....	Dwarf Rosemary
D	Santolina chamaecyparissus	Lavander Cotton
D	S. virens	Green Santolina
D	Salvia dorrii	Mojave Sage
M/D	Syringa vulgaris.....	Common Lilac
D	Yucca alofolia.....	Spanish Bayonet
D	Y. schidigera.....	Mojave Yucca
D	Y. Whipplei	Our Lord's Candle
D	Zauschneria californica	California Fuchsia

(Ord. 441, January 2006)

**Exhibit B – Table 25-1
As Amended by Ordinance No. 441**

**TABLE 25-1
COMMERCIAL ZONE DISTRICTS - DEVELOPMENT STANDARDS**

Zone Districts			
Development Standard	CR-2	C	CR
A. Minimum Project Size, GLA	2,000 sf	10,000 sf	10,000 sf
B. Minimum Lot Dimensions			
<input type="checkbox"/> Width	120 ft	100 ft	100 ft
<input type="checkbox"/> Depth	120 ft	100 ft	100 ft
C. Maximum Height (a)	45 ft	45 ft	45 ft
D. Landscaping Required	At least 10 5% of the project area (exclusive of areas within a public right of way) must be landscaped.		
E. Parking Lot Landscaping	At least 5% of parking areas (exclusive of loading areas) must be landscaped. This landscaping may be counted toward the total site area landscaping required in item E above.		
F. Maximum Floor Area Ratio (FAR)	No maximum floor-to-area ratio; FAR will be subject to meeting parking and landscaping standards		
G. Minimum Front Yard Setback			
· Setback to Building	25 ft	25 ft	25 ft
· Setback to Parking Area	10 ft	10ft	10 ft
H. Minimum Side Yard Setback (b)			
<input type="checkbox"/> Street Side	25 ft	25 ft	20 ft
<input type="checkbox"/> All others	10 ft	10 ft	10 ft
I. Minimum Rear Yard Setback (c)	20 ft	20 ft	20 ft
Abbreviations: sf = square feet; ft = feet; GLA = gross land area			
Notes: (a) On lots located adjacent to a residential zone district, building height shall be limited to 35 feet.			
(b) Only one side yard is required. If a site adjoins a property zoned for residential, open space, or institutional uses, then the side yard must be provided on that side.			
(c) A rear yard is required only when the adjoining rear property is zoned for residential, open space, or public uses.			

**Exhibit C – Table 30-1
As Amended by Ordinance No. 441**

**TABLE 30-1
ADD, LM and MI ZONE DISTRICTS - DEVELOPMENT STANDARDS**

Development Standard	ADD, LM and MI Districts
A. Minimum Lot Size	20,000 sf (a)
B. Minimum Lot Dimensions <input type="checkbox"/> Width <input type="checkbox"/> Depth	100 ft 100 ft Minimum lot dimensions may be reduced through the use a condominium-type project where areas smaller than the minimum standards are sold, leased, or rented to individual users.
C. Maximum Building Height	75 ft. (or per CALUP)
D. Landscaping Required	At least 10 5% of the project area (exclusive of areas within a public right of way) must be landscaped.
E. Parking Lot Landscaping	At least 5% of parking areas (exclusive of loading areas) must be landscaped. This landscaping may be counted toward the total site area landscaping required in item E above.
G. Maximum Floor Area Ratio (FAR)	No maximum floor-to-area ratio; FAR will be subject to meeting parking and landscaping standards
H. Minimum Front Yard Setback · Setback to Building · Setback to Parking Area	25 ft 15 ft
I. Minimum Side Yard Setbacks (b) <input type="checkbox"/> Street Side <input type="checkbox"/> All Others	20 ft 10 ft
J. Minimum Rear Yard Setback <input type="checkbox"/> Abutting residential district <input type="checkbox"/> All other	40 ft; May be reduced to zero (0) if approved by the City and the Fire Department 0 ft
Abbreviations: sf = square feet; ft = feet	
Notes:	
(a) Except in a condominium development, where a different minimum lot size standard may be provided.	
(b) Only one side yard is required. If a site adjoins a property zoned for residential, open space, or public uses, the side yard must be provided on that side.	

APPENDIX M

*City of Adelanto Water Conservation Plan, Adelanto
Municipal Code, Section 8.20*

CITY OF ADELANTO

MEASURE AMENDMENT TO THE 2010 URBAN WATER MANAGEMENT PLAN ESTABLISHING MANDATORY CONSERVATION

April 2014 Proclamation refers to the Governor's Proclamation declaring a drought State of Emergency to exist in California due to severe drought conditions. The January 2014 Proclamation finds that dry conditions and lack of precipitation present urgent problems to drinking water supplies and cultivation of crops, which put farmers long term investments at risk. The conditions also threaten the survival of animals and plants that rely on California's rivers, including many species in danger of extinction. The January 2014 Proclamation also calls on all Californians to reduce their water usage by 20 percent.

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8.1 INTRODUCTION

8 WATER SHORTAGE CONTINGENCY PLAN

8.1 INTRODUCTION

California's extensive system of water supply infrastructure, its reservoirs, groundwater basins, and inter-regional conveyance facilities, mitigates the effect of short-term dry periods. Defining when a drought begins is a function of drought impacts to water users. Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Droughts occur slowly, over a multiyear period. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline. In addition to climate, other factors that can cause water supply shortages include earthquakes, chemical spills, and energy outages at treatment and pumping facilities. The City has included the probability of catastrophic outages in its reliability planning.

8.2 URBAN WATER SHORTAGE CONTINGENCY PLAN

Stages of Action

The City of Adelanto has proposed a four stage plan of action for implementation in the event of a long term drought or a significant loss of supply, including losses of up to 50 percent of the water supply. The four stages include:

1. Stage 1 – This stage becomes effective when the City declares a water shortage exists. In this stage, the APUA will recommend a voluntary 10 percent reduction in water use based on an established baseline year determined by the City at the time Stage 1 is implemented. Simultaneously with this declaration, the City will

begin a public outreach campaign to encourage the efficient use of water. This will include articles published in local newspapers, information posted on the City's website, literature distributed to customers and educational conservation programs held on school campuses.

2. Stage 2 – The second stage is entered when the Stage 1 reduction goal has not been met for two consecutive years of a drought. Public awareness efforts will continue and a survey will be conducted on Stage 1 efforts. The City will establish a water conservation advisory committee comprised of officials from the Adelanto Public Utilities Authority and the City of Adelanto.

3. Stage 3 – The third stage goes into effect if the water shortage continues for four consecutive years. This stage recommends 20% Mandatory reductions in water use effective June 1, 2015 . A plan and Ordinance to enforce penalties for excessive water use will be developed as part of stage 3. The Ordinance will include prohibitions against specific wasteful practices such as gutter flooding, open hose car washing, driveway wash downs and other similar practices as described in further detail below (under the heading “Water Conservation Plan”). During Stage 3, the City will also analyze the impacts of the Conservation Plan on revenue and expenditures and propose measures to overcome those impacts.

4. Stage 4 – Stage four will be declared if a water shortage continues for one year beyond Stage 3. In this stage, the City shall determine the extent of any required additional conservation measures needed to address water supply reductions of up to 50 percent. Consumer compliance with all stages will be enforced through penalties, as outlined in

Section 8.4 of this UWMP.

Table 8.2-1 shows the use reduction stages as a guideline for recommending the

appropriate conservation stage and water conservation target.

Table 8.2-1

Water Use Reduction Stages

% Shortage Condition Water Conservation Stage

Type of Use

Reduction Program

Up to 10% 1 and 2 Voluntary/ Mandatory

10% to 20% 3 Mandatory

20% to 50% 4 Mandatory

Water Conservation Plan

Chapter 8.20 (Appendix H) of Adelanto’s Municipal Code entitled “Water Conservation Plan” sets forth the rules and regulations governing the use of water in the City, even during non-drought times. The Code also requires adherence to the City’s Landscape Water Conservation Ordinance contained within Section 17.60 of the Municipal Code (Adopted by Ordinance No. 441 – Appendix G). This section of the City’s Municipal Code specifically requires all water users to abide by the following water conservation measures (even during non-drought times):

1. The use of water for any purpose shall not result in flooding or unnecessary runoff in gutters, driveways, streets or adjacent lands.
2. Lawns, trees, shrubs, and other landscaping shall not be watered beyond what they need for growth and to sustain life and water shall not be permitted to pool or to run off property onto streets or adjacent land.

Watering of lawns, grass, shrubbery, ground cover or other landscaping shall only be done on set watering days.

Even address numbers water on Tuesday and Thursday.

Odd address numbers water on Wednesday and Friday

If your property address ends in an even number, customers may only water their outdoor landscape on Tuesdays and Thursdays

If your property address ends in an odd number, customers may only water their outdoor landscape on Wednesdays and Fridays.

There will be no outdoor landscape watering on Mondays and weekends.

3. Sidewalks, walkways, driveways, parking areas, patios, porches or verandas or any other like area shall not be washed off with water from hoses or by any other means. The exception to this shall be the washing of flammable or other similar dangerous substances that require direct hose flushing using recognized safety control measures for the benefit of the public health and safety. Notification to the City of such wash down is required.

4. Water, sprinkling, aerial watering or irrigating of any landscaped or vegetated areas, including lawns, trees, shrubs, grass, ground cover, plants, vines, gardens, vegetables, flowers, or other landscaping shall not occur between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September; provided, however, that these restrictions shall not apply to hand-held hose or drip irrigation systems or to establishment of new lawns, landscaping, or gardens.

5. Non-commercial washing of privately owned vehicles, trailers, motor homes, buses, boats and mobile homes is prohibited except from a bucket, and except that a hose equipped with an automatic shut-off nozzle may be used for a quick rinse.

6. Water shall not be used to clean, fill, operate or maintain levels in decorative fountains unless such water is for replenishment of a recycling system.

7. Water lines, faucets, and other facilities shall be maintained so that they do not leak water. Existing leaks shall be repaired in a timely manner.

8. Restaurants, other food establishments, or other public places where food is served, shall not routinely provide glasses of drinking water to customers unless specifically requested by the customer.

9. Water for construction purposes including, but not limited to, debrushing of vacant land, compaction of fills and pads, trench backfill and other construction uses, shall be used in an efficient manner. The use of aerial type sprinklers is not recommended but, if used, shall not be operated between the hours of 9:00 a.m. and 6:00 p.m.

10. All new residential, commercial and industrial construction shall be equipped with low-flush toilets and low-flow showers and faucets.

11. Water used for cooling systems must be recycled to the extent possible.
12. Evaporation resistant covers are required for all new swimming pools and hot tubs and are encouraged to be installed for existing pools. The covers required by this Chapter shall, at the time of purchase, installation and all subsequent maintenance, meet or exceed current standards and specifications for swimming pool, spa and hot tub covers adopted by the American Society for Testing and Materials (ASTM).
13. Hotels/motels are required to post a notice in substantially the form provided by the City urging guests to conserve water.
14. All current and future water customers are encouraged to install flow restrictors or pressure reducers and to install toilet tank displacement devices (dams, bottles or bags), and as appliances or fixtures wear out, replace them with water saving models.
15. Parks, schools, golf courses, cemeteries, school grounds and all public use lands shall not irrigate between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September inclusive and are encouraged to use water conservation irrigation equipment.
16. The use of drought tolerant or native plant material is encouraged for exterior landscaping in all new residential construction, and required for new commercial and industrial construction.
17. The use of low precipitation sprinkler heads, bubblers, drip irrigation and timing devices are required in the exterior landscaping in all new residential, commercial and industrial construction.
18. At least fifty percent (50%) of all new model homes shall include as a part of the exterior landscape development low water use, drought-tolerant or native plants.
19. Projects, including Commercial and Planned Unit Developments, which utilize recycled water from sewage treatment or agricultural operations, may receive an exemption from Subsections 15 through 18 of this Section by approval of the City Council.

Health and Safety Requirements

The primary goal of the City's water system is to preserve the health and safety of its personnel and the public. Meeting this goal is a continuous function of the system – before, during and after a disaster or water shortage. Fire suppression capabilities will continue to be maintained during any water shortage contingency stage. Some water

needs are more immediate than others. The following list of public health needs and the allowable time without potable water is a guideline and will depend on the magnitude of the water shortage:

- Hospitals – continuous need
- Emergency shelters – immediate need
- Kidney dialysis – 24 hours
- Drinking water – 72 hours
- Personal hygiene, waste disposal – 72 hours

Based on commonly accepted estimates of interior residential water use in the United States, Table 8.2-2 indicates per capita health and safety water requirements. During the initial stage of a shortage, customers may adjust either interior and/or outdoor water use to meet the voluntary water reduction goal.

Table 8.2-2

Per Capita Health and Safety Water Quantity Calculations

Item Non-Conserving Fixtures Habit Changes

Conserving Fixtures

Toilet 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 4 min. x 2.5 gpm 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 68.0 48.0 37.5

CCF per capita per year 33.0 23.0 18.0

gpcd = gallons per capita per day / gpf = gallons per flush / gpm = gallons per minute

CCF = hundred cubic feet (approximately 748 gallons)

Reduced shower use from shorter and reduced flow. Reduced washer use from fuller loads. Fixtures include ULF 1.6 gpf toilets, 2.5 gpm showerheads, and efficient clothes washers.

Priority by Use

Conditions prevailing in the City of Adelanto service area require that available water resources be put to maximum beneficial use to the extent possible. The waste, unreasonable use, or unreasonable method of use, of water should be prevented and water conservation and water use efficiency is encouraged with a view toward maximizing reasonable and beneficial use thereof in the interests of the people of the City and for the public welfare. Preservation of health and safety will be a top priority for the City.

8.3 ESTIMATE OF MINIMUM SUPPLY FOR NEXT THREE YEARS

The Mojave Water Agency has projected a reliable supply of water during all multiple dry years through 2035. Consequently, MWA does not anticipate any problems in meeting the City's demands during multiple dry years occurring over the next three years. With that in mind, the information presented below has been extracted from Table 5.2-3.

Table 8.3-1

3-Year Estimated Water Supply Based on

Driest 3-Year Historic Sequence in AFY

Water Supply Sources

Normal Years Multiple Dry Years

2011 2012 2013 2011 2012 2013

Local (Groundwater) 5,408 5,940 6,492 5,721 6,089 6,457

Total City Water Supply 5,408 5,940 6,492 5,721 6,089 6,457

Source: Projections are interpolated from data in Tables 5.2-1 and 5.2-3

8.4 Catastrophic Supply Interruption Plan - Water Shortage Emergency

Response

A water shortage emergency could result from a drought or a catastrophic event such as an earthquake, transmission facility failure, regional power outage, flooding, supply contamination from chemical spills, or other adverse conditions.

The City recognizes, that in the event of an emergency such as an earthquake, the integrity of the water system can be breached causing disruptions in water supply.

Because of the possibility of emergencies from both man-made and natural causes, water utility emergency planning is of utmost importance. The City of Adelanto prepared an Emergency Operations Plan to comply with the Standardized Emergency Management System (SEMS) developed by the State of California, and the National Incident Management System (NIMS) developed by the Federal Emergency Management Agency. The plan includes information on the Emergency Operations Organization, the roles and responsibilities of each section, and includes operational checklists to guide response actions.

In the event of an emergency, the City Manager will assume overall responsibility for coordinating the City's response. The City's Director of Public Utilities will coordinate all activities relating to water operations. The City of Adelanto has also entered into mutual aid agreements with other local cities and the County of San Bernardino, which may be implemented during an emergency, if necessary.

8.4.1 Prohibitions, Penalties, and Consumption Reduction Methods

Chapter 8.20.050 of the City's Municipal Code stipulates that anyone who violates any provision of the City's water conservation code (Chapter 8.20) shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished in accordance with the provisions of Chapter 1.20 of the Code (Municipal Code Violations).

Enforcement

Code Compliance officers shall be empowered to investigate instance of Water Waste and enforce all provisions.. Officers will issue any notice of violation or administrative citation in accordance with the provision in the chapter 8.20.050 of the City's Municipal code.

Administrative Fine Schedule

Administrative Fines shall be assessed as follows:

(1) For a first violation of any prohibition of this Chapter prior to the issuance of an administrative citation, shall be issued in accordance with the procedures for service and posting set forth in Section 8.20.050 of this Chapter.

(2) For violation(s) of any prohibitions during Shortage Stage 1, Administrative Fines may be assessed for each violation of the provisions of Section 8.20.050 in the amount of two hundred dollars (\$200.00).

(3) For violation(s) of any prohibitions during Shortage Stage 2 Administrative Fines may be assessed for each violation of the provisions of Section 8.20.050 in the amount of three hundred dollars (\$300.00).

(4) For violation(s) of any prohibitions during Shortage Stage 3, Administrative Fines may be assessed for each violation of the provisions of Section 8.20.050 in the amount of five hundred dollars (\$500.00).

5) For violation(s) of any prohibitions during Shortage Stage 4, Administrative Fines may be assessed for each violation of the provisions of Section 8.20.050 in the amount of Seven hundred dollars (\$700.00).

(b) The City Manager or his/her designee may waive any Administrative Fine or portion thereof assessed under this Section pursuant to written procedures (to be

developed by the City Manager) wherein mitigating circumstances or other conditions make the imposition of the Administrative Fine unreasonable.

(c) If the Responsible Person(s) fails to correct the violation(s), subsequent administrative citations and fines may be issued for the same violation(s).

(d) Payment of the Administrative Fine shall not excuse the failure to correct the violation nor shall it bar further enforcement action up to and including discontinuance of water service (following the notice specified in Section 8.20.050 (c) of this Chapter.

(e) Any fines imposed under this Section shall be collected in accordance with the Cities currently-effective Water Regulations and Service provisions as adopted by Ordinance. Such fines shall be deposited in the Cities APUA fund.

8.20.050

8.4.2 Revenue and Expenditure Impacts and Measures to Overcome those

Impacts

The Adelanto Water Authority Fund provides funding for the operation and maintenance of the City's water distribution system under an enterprise fund separate from the City's General Fund. In governmental accounting, enterprise funds are used to account for operations that are operated and financed in a manner similar to private business enterprises where the intent is that the costs (expenses including depreciation) of providing goods or services to the general public on a continuing basis are to be financed or recovered primarily through user charges; or where periodic determination of revenues earned, expenses incurred, and/or net income is deemed appropriate, for capital maintenance, public policy, management control accountability or other purposes.

The Water Authority Enterprise Fund also serves as an emergency source of funds in the event of an extreme water shortage. Should an extreme shortage be declared and a large

reduction in water sales occur for an extended period of time, the City would re-examine its water rate structure and monitor projected expenditures. If needed, the City would consider increases in rates to overcome revenue lost.

8.5 WATER SHORTAGE CONTINGENCY ORDINANCE

As previously noted, the City's Municipal Code, adopted Ordinances and Four Stage Water Shortage Contingency Plan of Action address the use of water during periods of extreme drought including projected shortages of up to 50 percent.

8.6 MECHANISMS TO DETERMINE REDUCTIONS IN WATER USE

During normal water supply conditions, production figures are recorded daily and are incorporated into the City's water production report. During water shortages, water usage will continue to be closely monitored on a daily or, if necessary, hourly basis depending on the severity of the drought. Production data from the City's wells can be retrieved on an hourly basis. This will allow City staff to determine the effects of a reduction on water production within the system.

During a shortage resulting from a disaster, production figures will be monitored on an ongoing basis. The City's SCADA system will provide prompt warning of any critical conditions. Once a shortage stage is implemented, actual reductions in water production and usage can be determined based on the SCADA system monitoring. Reports will be provided on a daily basis to the City's Director of Utilities.

APPENDIX N

Draft Water Conservation Plan Resolution

DRAFT

APUA RESOLUTION NO. _____

**A RESOLUTION OF THE ADELANTO PUBLIC UTILITY
AUTHORITY OF THE CITY OF ADELANTO, COUNTY OF
SAN BERNARDINO, CALIFORNIA, FINDING THE
EXISTENCE OF A WATER SHORTAGE AND ORDERING
THE IMPLEMENTATION OF SHORTAGE STAGE _____
OF THE CITY OF ADELANTO WATER CONSERATION
PLAN**

WHEREAS, the Adelanto Public Utility Authority Water Conservation Plan establishes supply shortage contingency measures to be implemented when the demand for water consumption threatens to exceed the City's available supply of quality water to the consumer, provided there are not immediate resources available to remedy the situation; and

WHEREAS, Section 8.2 of the Water Conservation Plan establishes water shortage stages and Section 8.4.1 establishes enforcement penalties for violations of mandatory conservation measures to be enacted during a declared water shortage.

WHEREAS, the Adelanto Public Utility Authority is authorized to direct implementation of the applicable provisions of the Water Conservation Plan upon determination that such implementation is necessary to protect the public health, welfare and safety.

WHEREAS, the Adelanto Public Utility Authority hereby finds that a water shortage exists within the City's service area.

NOW, THEREFORE BE IT RESOLVED, the Adelanto Public Utility Authority does hereby resolve as follows:

Section 1. TBD

Section 2. TBD

APPENDIX O

*Notice of Public Hearing Letters,
Notice of Public Hearing and Resolution for Plan
Adoption, Proof of Publication of Public
Hearing Notice*



Rich Kerr
Mayor

Jermaine Wright Sr.
Mayor Pro-Tem

Ed Camargo
Council Member

Charley B. Glasper
Council Member

John "Bug" Woodard Jr.
Council Member

Cynthia M. Herrera
City Manager

June 6, 2016

County of San Bernardino
Division of Environmental Health Services
172 W. 3rd St.
San Bernardino CA 92415

SUBJECT: NOTIFICATION OF PUBLIC HEARING FOR ADOPTION OF THE CITY OF ADELANTO 2015
URBAN WATER MANAGEMENT PLAN UPDATE

Dear Eurich Santigo:

The City of Adelanto (City) will conduct a public hearing on Wednesday, June 22, 2016, at or after 7:00 p.m. at the Adelanto Governmental Center City Council Chambers located at 11600 Air Expressway, Adelanto, California 92301.

In accordance with the Urban Water Management Planning Act (California Water Code §10610 et seq.), the City of Adelanto has prepared a 2015 Urban Water Management Plan (UWMP) Update. The purpose of the public hearing is to receive public comment prior to formal adoption of the City's 2015 UWMP Update. Copies of the draft 2015 UWMP are available for public review at City Hall located at 11600 Air Expressway, Adelanto, California 92301, during regular business hours. The draft 2015 UWMP Update is also available at the City's website – www.ci.adelanto.ca.us.

If you cannot attend, you are encouraged to submit written comments prior to the public hearing. Written comments may be mailed to: Wilson So, Director of Public Services/City Engineer, City of Adelanto, 11600 Air Expressway, Adelanto, California 92301; or emailed to WilsonSo@saeinc.org. Questions regarding the draft 2015 UWMP Update should also be directed to Wilson So at WilsonSo@saeinc.org or 760-246-2300.

Sincerely,

CITY OF ADELANTO

A handwritten signature in black ink, appearing to read "Wilson So".

Wilson So
Director of Public Services/City Engineer

C: Cindy Herrera, City Manager



Rich Kerr
Mayor

Jermaine Wright Sr.
Mayor Pro-Tem

Ed Camargo
Council Member

Charley B. Glasper
Council Member

John "Bug" Woodard Jr.
Council Member

Cynthia M. Herrera
City Manager

June 6, 2016

Mojave Water Agency
13486 Conference Center Drive
Apple Valley CA 92308

SUBJECT: NOTIFICATION OF PUBLIC HEARING FOR ADOPTION OF THE CITY OF ADELANTO 2015 URBAN WATER MANAGEMENT PLAN UPDATE

Dear Lance Eckhart:

The City of Adelanto (City) will conduct a public hearing on Wednesday, June 22, 2016, at or after 7:00 p.m. at the Adelanto Governmental Center City Council Chambers located at 11600 Air Expressway, Adelanto, California 92301.

In accordance with the Urban Water Management Planning Act (California Water Code §10610 et seq.), the City of Adelanto has prepared a 2015 Urban Water Management Plan (UWMP) Update. The purpose of the public hearing is to receive public comment prior to formal adoption of the City's 2015 UWMP Update. Copies of the draft 2015 UWMP are available for public review at City Hall located at 11600 Air Expressway, Adelanto, California 92301, during regular business hours. The draft 2015 UWMP Update is also available at the City's website – www.ci.adelanto.ca.us.

If you cannot attend, you are encouraged to submit written comments prior to the public hearing. Written comments may be mailed to: Wilson So, Director of Public Services/City Engineer, City of Adelanto, 11600 Air Expressway, Adelanto, California 92301; or emailed to WilsonSo@saeinc.org. Questions regarding the draft 2015 UWMP Update should also be directed to Wilson So at WilsonSo@saeinc.org or 760-246-2300.

Sincerely,

CITY OF ADELANTO

A handwritten signature in black ink, appearing to read "Wilson So", is written over the typed name.

Wilson So
Director of Public Services/City Engineer

C: Cindy Herrera, City Manager



Rich Kerr
Mayor

Jermaine Wright Sr.
Mayor Pro-Tem

Ed Camargo
Council Member

Charley B. Glasper
Council Member

John "Bug" Woodard Jr.
Council Member

Cynthia M. Herrera
City Manager

June 6, 2016

City of Victorville
14343 Civic Dr.
Victorville CA 92392

SUBJECT: NOTIFICATION OF PUBLIC HEARING FOR ADOPTION OF THE CITY OF ADELANTO 2015 URBAN WATER MANAGEMENT PLAN UPDATE

Dear Doug Matthews:

The City of Adelanto (City) will conduct a public hearing on Wednesday, June 22, 2016, at or after 7:00 p.m. at the Adelanto Governmental Center City Council Chambers located at 11600 Air Expressway, Adelanto, California 92301.

In accordance with the Urban Water Management Planning Act (California Water Code §10610 et seq.), the City of Adelanto has prepared a 2015 Urban Water Management Plan (UWMP) Update. The purpose of the public hearing is to receive public comment prior to formal adoption of the City's 2015 UWMP Update. Copies of the draft 2015 UWMP are available for public review at City Hall located at 11600 Air Expressway, Adelanto, California 92301, during regular business hours. The draft 2015 UWMP Update is also available at the City's website – www.ci.adelanto.ca.us.

If you cannot attend, you are encouraged to submit written comments prior to the public hearing. Written comments may be mailed to: Wilson So, Director of Public Services/City Engineer, City of Adelanto, 11600 Air Expressway, Adelanto, California 92301; or emailed to WilsonSo@saeinc.org. Questions regarding the draft 2015 UWMP Update should also be directed to Wilson So at WilsonSo@saeinc.org or 760-246-2300.

Sincerely,

CITY OF ADELANTO

A handwritten signature in black ink, appearing to read "Wilson So".

Wilson So
Director of Public Services/City Engineer

C: Cindy Herrera, City Manager

APUA RESOLUTION NO. 16-01A

A RESOLUTION OF THE ADELANTO PUBLIC UTILITY AUTHORITY OF THE CITY OF ADELANTO, COUNTY OF SAN BERNARDINO, CALIFORNIA, APPROVING THE 2015 URBAN WATER MANAGEMENT PLAN ADOPTION AND ORDERING THE REPORT TO BE FILED WITH THE DEPARTMENT OF WATER RESOURCES

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et Seq., known as the Urban 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 (Plan), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Adelanto Public Utility Authority is an Urban Supplier of water in excess of over 3,000 acre feet annually; and

WHEREAS, the Urban Water Management Plan shall be periodically reviewed at least once every five years, and that the Adelanto Public Utility Authority shall make any amendments or changes to the Plan which are indicated by the review; and

WHEREAS, the Adelanto Public Utility Authority has therefore, prepared and circulated for public review a draft 2015 Urban Water Management Plan and a properly noticed public hearing regarding said plan was held by the Adelanto Public Utility Authority on June 22, 2016; and

WHEREAS, the Adelanto Public Utility Authority did prepare and shall file said plan with the Department of Water Resources by July 1, 2016.

NOW, THEREFORE BE IT RESOLVED, DETERMINED AND ORDERED BY THE ADELANTO PUBLIC UTILITY AUTHORITY, CALIFORNIA, AS FOLLOWS:

Section 1. The Adelanto Public Utility Authority authorizes the adoption of its updated 2015 Urban Water Management Plan and orders the filing of the Plan with the California Department of Water Resources.

Section 2. The Adelanto Public Utility Authority's adoption of the Plan approves the Water Use Baselines and Targets analysis, which demonstrates the City of Adelanto has met its 2015 Interim Target and is on track to meet its 2020 Target.

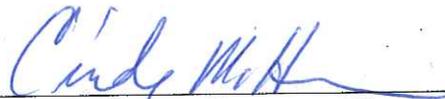
Section 3. The Adelanto Public Utility Authority is further authorized to implement the Water Conservation Programs as set forth in the 2015 Urban Water Management Plan, which includes a water shortage contingency analysis and recommendations regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation and water recycling programs.

Section 4. The Adelanto Public Utility Authority is further authorized to declare a Water Shortage Emergency according to the Water Shortage Stages and Triggers indicated in the Plan, implement necessary elements of the Plan, and recommend additional regulations to carry out effective and equitable allocation of water resources.

PASSED, APPROVED AND ADOPTED this 22nd day of June, 2016, by the following vote:



Rich Kerr, President



Cindy M. Herrera, Secretary of the
Adelanto Public Utility Authority

APPROVED AS TO FORM:



Curtis R. Wright, City Attorney

APUA Resolution No. 16-01

Page 3

I, Cindy M. Herrera, Board Secretary of the Adelanto Public Utility Authority in the City of Adelanto, California, do hereby certify that the foregoing APUA Resolution No. 16-01 was duly and regularly adopted at a regular meeting of the City Council of the City of Adelanto on this 22nd day of June, 2016 be the following vote to wit:

AYES: Authority Members Camargo, Glasper, Woodard, Vice President Wright,
and President Kerr

NOES: None

ABSENT: None

ABSTAIN: None

IN WITNESS THEREOF, I hereunto set my hand and affix the official seal of the City of Adelanto on the 22nd day of June, 2016.


Cindy M. Herrera, Board Secretary

Valleywide Newspapers

Apple Valley News
P.O. Box 1147
21940 Hwy 18 Unit B
Apple Valley, CA 92307
(760) 242-1930
Adjudication No. 69754

Hesperia Resorter
P.O. Box 400937
16925 Main St.
Hesperia CA 92345
(760) 244-0021
Adjudication No. 114788

Adelanto Bulletin
P.O. Box 673
17767 Adelanto Rd. #B
Adelanto, CA 92301
(760) 246-6822
Adjudication No.
VCV006222 & VCV012959

County Legal Reporter
P.O. Box 2728
15490 Civic Dr. Suite 204
Victorville, CA 92393
(760) 243-8022
Adjudication No.
VCV019015

Main Accounting Office: P.O. Box 400937, Hesperia, CA 92340

**PROOF OF PUBLICATION
(2015.5 C.C.P)**

**STATE OF CALIFORNIA,
County of San Bernardino**

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of the:

***ADELANTO BULLETIN
APPLE VALLEY NEWS
HESPERIA RESORTER
COUNTY LEGAL REPORTER**

newspapers of general circulation published every Thursday or Friday in Adelanto, Apple Valley, Hesperia, or Victorville, California, County of San Bernardino, and which newspapers have been adjudged newspapers of general circulation by the Superior Court of the County of San Bernardino, State of California, under the dates of: ADELANTO BULLETIN: July 11, 1995, Case Number VCV012959, and for the City of Adelanto, Case Number VCV006222; APPLE VALLEY NEWS: January 13, 1997, Case Number 69754, Case Number VCV011254; HESPERIA RESORTER: July 23, 1997, Case Number 114788; COUNTY LEGAL REPORTER: March 30, 1998 Case Number VCV019015; that the notice, of which the annexed is a printed copy (set in type not smaller than non-pareil), has been published in each regular and entire issue of said newspapers and not in any supplement thereof on the following dates, to wit:

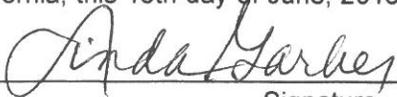
June 9 & 16, 2016

all in the year of 2016

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at **Hesperia,**

California, this 16th day of June, 2016



Signature

This space is for the County Clerk's Filing Stamp

Proof of Publication of

**PUBLIC NOTICE FOR
ADOPTION OF
THE CITY OF ADE-
LANTO
2015 URBAN WATER
MANAGEMENT PLAN
UPDATE**

Notice is hereby given that a public hearing will be conducted by the Adelanto Public Utility Authority of the City of Adelanto on **Wednesday, June 22, 2016**, at or after 7:00 p.m. at the Adelanto Governmental Center City Council Chambers located at 11600 Air Expressway, Adelanto, California 92301.

In accordance with the Urban Water Management Planning Act (California Water Code §10610 et seq.), the City of Adelanto has prepared a 2015 Urban Water Management Plan (UWMP) Update. The purpose of the public hearing is to receive public comment prior to formal adoption of the City's 2015 UWMP Update. Copies of the draft 2015 UWMP are available for public review at City Hall located at 11600 Air Expressway, Adelanto, California 92301, during regular business hours. The draft 2015 UWMP Update is also available at the City's website - www.ci.adelanto.ca.us.

If you cannot attend, you are encouraged to submit written comments prior to the public hearing. Written comments may be mailed to: Wilson So, Director of Public Services/City Engineer, City of Adelanto, 11600 Air Expressway, Adelanto, California 92301, or emailed to WilsonSo@saeinc.org. Questions regarding the draft 2015 UWMP Update should also be directed to Wilson So at Wilsonso@saeinc.org or 760-246-2300.

Published in the Adelanto Bulletin 6/9 & 6/16/2016
B-080