# CITY OF MANHATTAN BEACH

# 2010 URBAN WATER MANAGEMENT PLAN

# APPENDICES

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# APPENDIX A

# URBAN WATER MANAGEMENT PLANNING ACT

Draft

# CALIFORNIA WATER CODE DIVISION 6
# PART 2.6. URBAN WATER MANAGEMENT PLANNING

All California Codes have been updated to include the 2010 Statutes.


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## WATER CODE
## 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.

## WATER CODE
## 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.

## WATER CODE
## 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.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to 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).

## WATER CODE
## 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 those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

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

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

(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.

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

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

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

(A) Water survey programs for single-family residential and 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.
(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
(j) 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 (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 water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

**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.

**10631.5.** (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 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.

**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.

## WATER CODE SECTION 10635

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

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

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

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

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

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the 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.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those 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.

# WATER CODE
# 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

# WATER CONSERVATION BILL OF 2009

Draft

# Section L: California Water Code, Division 6, Part 2.55: Water Conservation

The following sections of California Water Code Division 6, Part 2.55, are available online at http://www.leginfo.ca.gov/calaw.html.

| | |
|---|---|
| **Chapter 1. General Declarations and Policy** | §10608-10608.8 |
| **Chapter 2. Definitions** | §10608.12 |
| **Chapter 3. Urban Retail Water Suppliers** | §10608.16-10608.44 |

## Legislative Counsel's Digest

**Senate Bill No. 7**
**Chapter 4**

An act to amend and repeal Section 10631.5 of, to add Part 2.55 (commencing with Section 10608) to Division 6 of, and to repeal and add Part 2.8 (commencing with Section 10800) of Division 6 of, the Water Code, relating to water.

[Approved by Governor November 10, 2009. Filed with Secretary of State November 10, 2009.]

**Legislative Counsel's Digest**

SB 7, Steinberg. Water conservation.

(1) Existing law requires the Department of Water Resources to convene an independent technical panel to provide information to the department and the Legislature on new demand management measures, technologies, and approaches. "Demand management measures" 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.

This bill would require the state to achieve a 20% reduction in urban per capita water use in California by December 31, 2020. The state would be required to make incremental progress towards this goal by reducing per capita water use by at least 10% on or before December 31, 2015. The bill would require each urban retail water supplier to develop urban water use targets and an interim urban water use target, in accordance with specified requirements. The bill would require agricultural water suppliers to implement efficient water management practices. The bill would require the department, in consultation with other state agencies, to develop a single standardized water use reporting form. The bill, with certain exceptions, would provide that urban retail water suppliers, on and after July 1, 2016, and agricultural water suppliers, on and after July 1, 2013, are not eligible for state water grants or loans unless they comply with the water conservation requirements established by the bill. The bill would repeal, on July 1, 2016, an existing requirement that conditions

eligibility for certain water management grants or loans to an urban water supplier on the implementation of certain water demand management measures.

(2) Existing law, until January 1, 1993, and thereafter only as specified, requires certain agricultural water suppliers to prepare and adopt water management plans.

This bill would revise existing law relating to agricultural water management planning to require agricultural water suppliers to prepare and adopt agricultural water management plans with specified components on or before December 31, 2012, and update those plans on or before December 31, 2015, and on or before December 31 every 5 years thereafter. An agricultural water supplier that becomes an agricultural water supplier after December 31, 2012, would be required to prepare and adopt an agricultural water management plan within one year after becoming an agricultural water supplier. The agricultural water supplier would be required to notify each city or county within which the supplier provides water supplies with regard to the preparation or review of the plan. The bill would require the agricultural water supplier to submit copies of the plan to the department and other specified entities. The bill would provide that an agricultural water supplier is not eligible for state water grants or loans unless the supplier complies with the water management planning requirements established by the bill.

(3) The bill would take effect only if SB 1 and SB 6 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.55 (commencing with Section 10608) is added to Division 6 of the Water Code, to read:

## Part 2.55. Sustainable Water Use and Demand Reduction

### Chapter 1. General Declarations and Policy

**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 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

**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

**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 subdivision (a) 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 required pursuant to Part 2.6 (commencing with Section 10610) due in 2010 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) An urban retail water supplier shall be 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 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.

**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 United States Department of Defense military installation's requirements under federal Executive Order 13423.

(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.** The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, 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 in order to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

**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 on facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

# APPENDIX C

# COORDINATION LETTERS

Draft

# City of Manhattan Beach
## Public Works Department

Phone: (310) 802-5300
FAX: (310) 802-5301
TDD: (310) 546-3501

August 19, 2011

Registrar – Recorder / County Clerk
County of Los Angeles
12400 Imperial Highway
Norwalk, CA 90650

Re: **Notice of Preparation City of Manhattan Beach 2010 Urban Water Management Plan**

Dear Registrar-Recorder/County Clerk;

The City of Manhattan Beach is preparing the 2010 Urban Water Management Plan as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on the City's website at www.citymb.info and will be sent to your agency in CD form by September 23, 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011Guidebook issued by the California Department of Water Resources.

A Public Hearing on the final 2010 UWMP will take place at the October 18, 2011 City Council meeting which begins at 6:00 P.M. Subsequent to the Public Hearing, the City Council will consider adoption of the UWMP.

The City of Manhattan Beach will send a CD of the adopted UWMP in early, 2011 to your agency.

If you have any questions, please contact Raul Saenz, Utilities Manager at (310) 345-0335.

Sincerely,

Jim Arndt
Director of Public Works

# City of Manhattan Beach
## Public Works Department

Phone: (310) 802-5300
FAX: (310) 802-5301
TDD: (310) 546-3501


August 19, 2011

Henry Wind
District Manager
California Water Service Company
2632 West 237th Street
Torrance, CA 90505

Re: **Notice of Preparation City of Manhattan Beach 2010 Urban Water Management Plan**

Dear Mr. Wind;

The City of Manhattan Beach is preparing the 2010 Urban Water Management Plan as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on the City's website at www.citymb.info and will be sent to your agency in CD form by September 23, 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011Guidebook issued by the California Department of Water Resources.

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If you have any questions, please contact Raul Saenz, Utilities Manager at (310) 345-0335.

Sincerely,

Jim Arndt
Director of Public Works

# City of Manhattan Beach
## Public Works Department

Phone: (310) 802-5300
FAX: (310) 802-5301
TDD: (310) 546-3501


August 19, 2011

Mr. Rich Nagel
West Basin Municipal Water District
17140 South Avalon Blvd, Ste. 210
Carson, CA 90746-1296

**Re: Notice of Preparation City of Manhattan Beach 2010 Urban Water Management Plan**

Dear Mr. Nagel;

The City of Manhattan Beach is preparing the 2010 Urban Water Management Plan as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on the City's website at www.citymb.info and will be sent to your agency in CD form by September 23, 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011Guidebook issued by the California Department of Water Resources.

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Sincerely,

Jim Arndt
Director of Public Works

# City of Manhattan Beach
## Public Works Department

Phone: (310) 802-5300
FAX: (310) 802-5301
TDD: (310) 546-3501


August 19, 2011

Robb Whitaker
General Manager
Water Replenishment District
4040 Paramount Blvd.
Lakewood, CA 90712

Re: **Notice of Preparation City of Manhattan Beach 2010 Urban Water Management Plan**

Dear Mr. Whitaker;

The City of Manhattan Beach is preparing the 2010 Urban Water Management Plan as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on the City's website at www.citymb.info and will be sent to your agency in CD form by September 23, 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011Guidebook issued by the California Department of Water Resources.

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If you have any questions, please contact Raul Saenz, Utilities Manager at (310) 345-0335.

Sincerely,

Jim Arndt
Director of Public Works

# City of Manhattan Beach
## Public Works Department

Phone: (310) 802-5300
FAX: (310) 802-5301
TDD: (310) 546-3501


August 19, 2011

Stephanie Katsouleas
Director of Public Works
City of El Segundo
350 Main St.
El Segundo, CA 90245

Re: **Notice of Preparation City of Manhattan Beach 2010 Urban Water Management Plan**

Dear Ms. Katsouleas;

The City of Manhattan Beach is preparing the 2010 Urban Water Management Plan as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on the City's website at www.citymb.info and will be sent to your agency in CD form by September 23, 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011Guidebook issued by the California Department of Water Resources.

A Public Hearing on the final 2010 UWMP will take place at the October 18, 2011 City Council meeting which begins at 6:00 P.M. Subsequent to the Public Hearing, the City Council will consider adoption of the UWMP.

The City of Manhattan Beach will send a CD of the adopted UWMP in early, 2011 to your agency.

If you have any questions, please contact Raul Saenz, Utilities Manager at (310) 345-0335.

Sincerely,

Jim Arndt
Director of Public Works

# APPENDIX D

# NOTICE OF PUBLIC HEARING

Draft

**NOTICE OF PUBLIC HEARING**
**2010 URBAN WATER MANAGEMENT PLAN AND**
**AVAILABILITY OF PLAN FOR REVIEW**

The Manhattan Beach City Council will hold a public hearing on Tuesday, December 20, 2011 at 6:30 p.m. or as soon thereafter as the item can be heard for the purpose of discussing and receiving comments on the 2010 Urban Water Management Plan. The City Council will consider adoption of the City's method for determining water use targets under SBX-7-7 ("20 by 2020" water conservation requirements) and adoption of the 2010 Urban Water Management Plan.

The California Urban Water Management Plan Act of 1983 requires that urban water suppliers develop a water management plan that addresses water demands, supplies, conservation and efficient use of water supplies. The Act also requires Urban Water Management Plans to be updated every 5 years. A draft copy of the proposed 2010 Urban Water Management Plan (UWMP) is available for public inspection at the following locations: City of Manhattan Beach Public Library (1320 Highland Avenue), City of Manhattan Beach Department of Public Works Yard (3621 Bell Avenue) and on the City's website at www.citymb.info in the *Community News & Update* section.

The City of Manhattan Beach encourages the active involvement of its citizens. Oral and written testimony on the UWMP will be taken at the meeting. Written comments may be submitted to the Public Works Department, City of Manhattan Beach, 1400 Highland Avenue, Manhattan Beach, CA 90266, for receipt prior to the hearing.

If you have questions about the UWMP, or SBX-7-7 compliance, please contact Raul Saenz, Utilities Division Manager at (310) 802-5315 or by email at rsaenz@citymb.info.

Dated: December 1, 2011

/s/ Liza Tamura

LIZA TAMURA, City Clerk
City of Manhattan Beach

# LEGALS • LEGALS • LEGALS • LEGALS • LEGALS

PUBLIC NOTICE

**NOTICE OF PETITION TO ADMINISTER ESTATE OF SHARYN LEE GRANSTROM**
Case No. BP131780

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the will or estate, or both, of SHARYN LEE GRANSTROM

A PETITION FOR PROBATE has been filed by Daniel Lee Granstrom in the Superior Court of California, County of LOS ANGELES.

THE PETITION FOR PROBATE requests that Daniel Lee Granstrom and Bonnie Van der Baan be appointed as personal representative to administer the estate of the decedent.

THE PETITION requests the decedent's will and codicils, if any, be admitted to probate. The will and any codicils are available for examination in the file kept by the court.

THE PETITION requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.

A HEARING on the petition will be held on Dec. 21, 2011 at 8:30 AM in Dept. No. 5 located at 111 N. Hill St., Los Angeles, CA 90012.

IF YOU OBJECT to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.

IF YOU ARE A CREDITOR or a contingent creditor of the deceased, you must file your claim with the court and mail a copy to the personal representative appointed by the court within four months from the date of first issuance of letters as provided in Probate Code section 9100. The time for filing claims will not expire before four months from the hearing date noticed above.

YOU MAY EXAMINE the file kept by the court. If you are a person interested in the estate, you may file with the court a Request for Special Notice (form DE-154) of the filing of an inventory and appraisal of estate assets or of any petition or account as provided in Probate Code section 1250. A Request for Special Notice form is available from the court clerk.

**Attorney for petitioner:**
**STEPHEN W KRAMER ESQ**
**SBN 69616**
**KRAMER LAW GROUP**
*5858 WILSHIRE BLVD*
*STE 205*
*LOS ANGELES CA 90036*

Published as The Beach Reporter No. 7345, December 1, 8, 15, 2011

---

NOTICE OF TRUSTEE'S SALE T.S. No CA1100036022 Loan No 0601045778 Insurer No. YOU ARE IN DEFAULT UNDER A DEED OF TRUST DATED 08/16/2004. UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDING AGAINST YOU, YOU SHOULD CONTACT A LAWYER. A public auction sale to the highest bidder for cash, cashier's check drawn on a state or national bank check drawn by a state or federal credit union, or a check drawn by a state or federal savings and loan association, or savings association, or savings bank specified in Section 5102 of the Financial Code and authorized to do business in this state, will be held by the duly appointed trustee. The sale will be made; but without covenant or warranty, expressed or implied, regarding title, possession, or encumbrances, to satisfy the obligation secured by said Deed of Trust. The undersigned Trustee disclaims any liability for any incorrectness of the property address or other common designation, if any, shown herein. TRUSTOR: CARL L. MITCHELL AND CELIA B. MITCHELL, HUSBAND AND WIFE AS JOINT TENANTS Recorded 08/24/2004 as Instrument No. 04 2178334 in Book XX, page XX of Official Records in the office of the Recorder of Los Angeles County, California, Date of Sale: 12/23/2011 at 11:00 A.M. Place of Sale: By the fountain located at 400 Civic Center Plaza, Pomona, CA 91766 Property Address is purported to be: 3620 ALMA AVENUE MANHATTAN BEACH, CA 90266 APN#: 4175-015-007 The total amount secured by said instrument as of the time of initial publication of this notice is $315,494.61, which includes the total amount of the unpaid balance (including accrued and unpaid interest) and reasonable estimated costs, expenses, and advances at the time of initial publication of this notice. Executive Trustee Services, LLC dba ETS Services, LLC Date: 11/22/2011 2255 North Ontario Street, Suite 400 Burbank, CA 91504-3120 Sale Line: 714-730-2727 TRUSTEE SALE OFFICER ASAP# 4132149 11/24/2011, 12/01/2011, 12/08/2011

Published as The Beach Reporter No. 7344, November 24, December 1, 8, 2011

PUBLIC NOTICE

**NOTICE OF PETITION TO ADMINISTER ESTATE OF: JANET M. SORESINA AKA JANET MEREDITH SORESINA**
**CASE NO. BP131492**

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the WILL or estate, or both of JANET M. SORESINA AKA JANET MEREDITH SORESINA.

A PETITION FOR PROBATE has been filed by SUE CAMPION in the Superior Court of California, County of LOS ANGELES.

THE PETITION FOR PROBATE requests that SUE CAMPION be appointed as personal representative to administer the estate of the decedent.

THE PETITION requests authority to administer the estate under the Independent Administration of Estates Act . (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.

A HEARING on the petition will be held in this court as follows: 12/05/11 at 8:30AM in Dept. 9 located at 111 N. HILL ST., LOS ANGELES, CA 90012

IF YOU OBJECT to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.

IF YOU ARE A CREDITOR or a contingent creditor of the decedent, you must file your claim with the court and mail a copy to the personal representative appointed by the court within four months from the date of first issuance of letters as provided in Probate Code section 9100. The time for filing claims will not expire before four months from the hearing date noticed above.

YOU MAY EXAMINE the file kept by the court. If you are a person interested in the estate, you may file with the court a Request for Special Notice (form DE-154) of the filing of an inventory and appraisal of estate assets or of any petition or account as provided in Probate Code Section 1250. A Request for Special Notice form is available from the court clerk.

Attorney for Petitioner
KENNETH G. CAMPION
SBN 65380 - A PROFESSIONAL CORPORATION
10419 BOGARDUS AVE #100
WHITTIER CA 90603-2643
11/17, 11/24, 12/1/11
**CNS-2204290#**
**THE BEACH REPORTER**

Published as The Beach Reporter No. 7339, November 17, 24, December 1, 2011


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PUBLIC NOTICE

**NOTICE OF PETITION TO ADMINISTER ESTATE OF RACHEL S. DAVIDSON**
Case No. YP011674

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the will or estate, or both, of RACHEL S. DAVIDSON

A PETITION FOR PROBATE has been filed by Bruce Michael Davidson in the Superior Court of California, County of LOS ANGELES.

THE PETITION FOR PROBATE requests that Bruce Michael Davidson be appointed as personal representative to administer the estate of the decedent.

THE PETITION requests the decedent's lost will and codicils, if any, be admitted to probate. Copies of the lost will and any codicils are available for examination in the file kept by the court.

THE PETITION requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.

A HEARING on the petition will be held on Dec. 21, 2011 at 8:30 AM in Dept. No. M located at 825 Maple Ave, Torrance CA 90503.

IF YOU OBJECT to the granting of the petition, you should appear at the hearing and state your objections or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.

IF YOU ARE A CREDITOR or a contingent creditor of the deceased, you must file your claim with the court and mail a copy to the personal representative appointed by the court within four months from the date of first issuance of letters as provided in Probate Code section 9100. The time for filing claims will not expire before four months from the hearing date noticed above.

YOU MAY EXAMINE the file kept by the court. If you are a person interested in the estate, you may file with the court a Request for Special Notice (form DE-154) of the filing of an inventory and appraisal of estate assets or of any petition or account as provided in Probate Code section 1250. A Request for Special Notice form is available from the court clerk.

**Attorney for petitioner:**
**DAVID L RICE ESQ**
**SBN 89916**
**ERIC JETER ESQ**
**SBN 261839**
**DAVID LEE RICE APLC**
*2780 SKYPARK DR*
*STE 475*
*TORRANCE CA 90505*

Published as The Beach Reporter No. 7342, November 24, December 1, 8, 2011

PUBLIC NOTICE | PUBLIC NOTICE | PUBLIC NOTIC

NOTICE OF A PUBLIC HEARING
BEFORE THE PLANNING COMMISSION
OF THE CITY OF MANHATTAN BEACH
ZONING CODE AMENDMENT (TITLE 10) AND
LOCAL COASTAL PROGRAM AMENDMENT TO
ESTABLISH REGULATIONS FOR FOOD TRUCKS

A public hearing will be held before the Planning Commission for the project described below.

Applicant: City of Manhattan Beach- City Council 2011-12 Work Plan Item—Food Trucks

Property Location: Citywide

Project Description: Consideration of amendment to Title 10 Planning and Zoning of the Manhattan Beach Municipal Code (MBMC) and the City's Local Coastal Program to revise private property regulations for Food Trucks within the City.

Environmental Determination: Pursuant to California Environmental Quality Act (CEQA) and the Manhattan Beach Cl Guidelines, portions of the subject amendments are exempt in that they are covered by general rule that CEQA [Section 15061 (b)(3)] only applies to projects which have the pote for causing a significant effect on the environment, and since it can be seen with certainty there is no possibility that the activity will have a significant effect on the environment, activity is not subject to CEQA.

Project Planner: Eric Haaland, Associate Planner (310)-802-5511, ehaaland@citymb.info

Public Hearing: **Wednesday, December 14, 2011 at 6:30 p.m.**
**Council Chambers, City Hall, 1400 Highland Avenue**

Further Information: Proponents and opponents may be heard at that time. For further information contact project Planner. Project files are available for review at the Community Developr Department at City Hall. A Staff Report will be available for review at the Civic Center Lit on Saturday, December 10, and at the Community Development Department on Mon December 12, or on the City website (http//www.citymb.info) on Friday December 9 after pm.

Public Comments: Oral and written testimony will be received during the public hearing. Anyone wishing to prc written comments for inclusion in the Staff Report must do so by December 7, 2 Comments received after this date will be forwarded to the Planning Commission at or pri the public hearing.

*If you challenge the proposed actions in court, you may be limited to raising only those is: you or someone else raised at the public hearing described in this Notice, or in correspond delivered to the Planning Commission at, or prior to, the public hearing.*

RICHARD THOMPSON
**Director of Community Development**

Published as The Beach Reporter No. 7347, December 1, 2011


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**NOTICE OF PUBLIC HEARING**
**2010 URBAN WATER MANAGEMENT PLAN AND AVAILABILITY OF PLAN FOR REVIEW**

The Manhattan Beach City Council will hold a public hearing on Tuesday, December 20, 2011 at 6:30 p.m. or as soon thereafter as the item can be heard for the purpose of discussing and receiving comments on the 2010 Urban Water Management Plan. The City Council will consider adoption of the City's method for determining water use targets under SBX-7-7 ("20 by 2020" water conservation requirements) and adoption of the 2010 Urban Water Management Plan.

The California Urban Water Management Plan Act of 1983 requires that urban water suppliers develop a water management plan that addresses water demands, supplies, conservation and efficient use of water supplies. The Act also requires Urban Water Management Plans to be updated every 5 years. A draft copy of the proposed 2010 Urban Water Management Plan (UWMP) is available for public inspection at the following locations: City of Manhattan Beach Public Library (1320 Highland Avenue), City of Manhattan Beach Department of Public Works Yard (3621 Bell Avenue) and on the City's website at www.citymb.info in the *Community News & Update* section.

The City of Manhattan Beach encourages the active involvement of its citizens. Oral and written testimony on the UWMP will be taken at the meeting. Written comments may be submitted to the Public Works Department, City of Manhattan Beach, 1400 Highland Avenue, Manhattan Beach, CA 90266, for receipt prior to the hearing.

If you have questions about the UWMP, or SBX-7-7 compliance, please contact Raul Saenz, Utilities Division Manager at (310) 802-5315 or by email at rsaenz@citymb.info.

Dated: December 1, 2011

/s/ Liza Tamura
LIZA TAMURA, City Clerk
City of Manhattan Beach

Published as The Beach Reporter No. 7346, December 1 and 15, 2011

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# APPENDIX E

# RESOLUTION ADOPTING PLAN

Draft

RESOLUTION NO. 6337

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH, CALIFORNIA, ADOPTING THE 2010 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Sections 10610 et seq., known as the Urban Water Management Planning Act (the "Act") during the 1983-84 Regular Session; and

WHEREAS, the Act requires every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare an Urban Water Management Plan (Plan), the primary objective of which is for the conservation of water; and

WHEREAS, the City of Manhattan Beach is an urban supplier of water to a population of over 35,000; and

WHEREAS, the Act requires Plans to be reviewed at least once every five years, and requires cities to make any amendments or changes to the Plan which are indicated by the review; and

WHEREAS, the City adopted its last Urban Water Management Plan in 2005; and

WHEREAS, a new Urban Water Management Plan must be adopted by the Council, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, the City of Manhattan Beach has prepared and circulated for public review a Draft 2010 Urban Water Management Plan, and a properly noticed public hearing regarding the Plan was held by the City Council on December 20, 2011; and

NOW, THEREFORE, THE COUNCIL OF THE CITY OF MANHATTAN BEACH DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. The above recitals are true and correct.

Section 2. The City Council hereby adopts the City's 2010 Urban Water Management Plan as presented to the City Council at the December 20, 2011 City Council meeting and hereby orders that a copy of the plan be kept on file in the office of the City Clerk.

Section 3. The City Manager is hereby authorized and directed to submit the 2010 Urban Water Management Plan with the California Department of Water Resources within thirty days after the date this Resolution is adopted.

Section 4. This resolution shall take effect immediately upon adoption.

Section 5. The City Clerk shall certify to the adoption of this resolution.

PASSED, APPROVED AND ADOPTED this 20th day of December, 2011.

Ayes: Lesser, Howorth, Montgomery, Powell and Mayor Tell.
Noes: None.
Absent: None.
Abstain: None.

Nicholas W. Tell, Jr., Mayor
City of Manhattan Beach, California

Attest:

_____(SEAL)
Liza Tamura, City Clerk

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# APPENDIX F

# WEST COAST BASIN JUDGMENT

Draft

CHANGES BETWEEN FIRST AND LATEST DRAFT OF AMENDED
WEST BASIN JUDGMENT

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7/79

HELM, BUDINGER & LEMIEUX
An Association, Including A
Professional Corporation
4444 Riverside Drive, Suite 201
Burbank, CA. 91505
(213) 849-6473

Attorneys for Defendant,
Dominguez Water Corporation

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

| | |
|---|---|
| CALIFORNIA WATER SERVICE COMPANY, et al., Plaintiffs vs. CITY OF COMPTON, et al., Defendants. | NO. 506,806<br>AMENDED JUDGMENT<br>(DECLARING AND ESTABLISHING WATER RIGHTS IN THE WEST COAST BASIN, IMPOSING A PHYSICAL SOLUTION THEREIN AND ENJOINING EXTRACTIONS THEREFROM IN EXCESS OF SPECIFIED QUANTITIES.) |

AMENDED JUDGMENT

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## INTRODUCTION

The above - entitled matter came on regularly for further trial before the Honorable George Francis, Judge of the Superior Court of the State of California, assigned by the Chairman of the Judicial Council to sit in this case, on Friday the 21st day of July, 1961. Thereupon plaintiffs filed a dismissal of the action as to certain defendants named in the Complaint and in the Amended Complaint herein who are not mentioned or referred to in Paragraph III of this Judgment, and the further trial of the action proceeded in respect to the remaining parties.

The objections to the Report of Referee and to all supplemental Reports thereto, having been considered upon exceptions thereto filed with the Clerk of the Court in the manner of and within the time allowed by law, were overruled.

Oral and documentary evidence was introduced, and the matter was submitted to the Court for decision. Findings of Fact, Conclusions of Law and Judgment herein have heretofore been signed and filed.

Pursuant to the reserved and continuing jurisdiction of the Court under the Judgment herein, certain amendments to said Judgment and temporary Orders have heretofore been made and entered.

Continuing jurisdiction of the Court under said Judgment is currently assigned to the HONORABLE JULIUS M. TITLE.

The motion of defendant herein, DOMINGUEZ WATER CORPORATION, for further amendments to the Judgment, notice thereof and of the hearing thereon having been duly and regularly given to all parties, came on for hearing in Department 48 of the

above-entitled Court on_____, 1979, at 1:30 o'clock P.M., before said HONORABLE JULIUS M. TITLE. Defendant, DOMINGUEZ WATER CORPORATION, was represented by its attorneys, Helm, Budinger & Lemieux, and Ralph B. Helm. Various other parties were represented by counsel of record appearing on the Clerk's records. Hearing thereon was concluded on that date. The within "Amended Judgment" incorporates amendments and orders heretofore made to the extent presently operable and amendments pursuant to said last mentioned motion. To the extent this Amended Judgment is a restatement of the Judgment as heretofore amended, it is for convenience in incorporating all matters in one document, it is not a readjudication of such matters and is not intended to reopen any such matters. As used hereinafter the word "Judgment" shall include the original Judgment as amended to date.

NOW, THEREFORE, IT IS HEREBY ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

I.

Existence of Basin and Boundaries Thereof.

There exists in the County of Los Angeles, State of California, an underground water basin or reservoir known and hereinafter referred to as "West Coast Basin","West Basin" or the "Basin", and the boundaries thereof are described as follows:

> Commencing at a point in the Baldwin Hills about 1300 feet north and about 100 feet west of the intersection of Marvale Drive and Northridge Drive; thence through a point about 200 feet northeasterly along Northridge Drive from the



> intersection of Marvale and Northridge Drives to the base of the escarpment of the Potrero fault; thence along the base of the escarpment of the Potrero fault in a straight line passing through a point about 200 feet south of the intersection of Century and Crenshaw Boulevards and extending about 2650 feet beyond this point to the southerly end of the Potrero escarpment; thence from the southerly end of the Potrero escarpment in a line passing about 700 feet south of the intersection of Western Avenue and Imperial Boulevard and about 400 feet north of the intersection of El Segundo Boulevard and Vermont Avenue and about 1700 feet south of the intersection of El Segundo Boulevard and Figueroa Street to the northerly end of the escarpment of the Avalon-Compton fault at a point on said fault about 700 feet west of the intersection of Avalon Boulevard and Rosecrans Avenue; thence along the escarpment of the Avalon-Compton fault to a point in the Dominguez Hills located about 1300 feet north and about 850 feet west of the intersection of Central Avenue and Victoria Street; thence along the crest of the Dominguez Hills in a straight line to a point on Alameda Street about 2900 feet north of Del Amo Boulevard as measued along Alameda Street; thence in a straight line extending through a point located on Del Amo Boulevard about 900 feet west of the

Pacific Electric Railway to a point about 100 feet north and west of the intersection of Bixby Road and Del Mar Avenue; thence in a straight line to a point located about 750 feet west and about 730 feet south of the intersection of Wardlow Road and Long Beach Boulevard at the escarpment of the Cherry Hill fault; thence along the escarpment of the Cherry Hill fault through the intersection of Orange Avenue and Willow Street to a point about 400 feet east of the intersection of Walnut and Creston Avenues; thence to a point on Pacific Coast Highway about 300 feet west of its intersection with Obispo Avenue; thence along Pacific Coast Highway easterly to a point located about 650 feet west of the intersection of the center line of said Pacific Coast Highway with the intersection of the center line of Lakewood Boulevard; thence along the escarpment of the Reservoir Hill fault to a point about 650 feet north and about 700 feet east of the intersection of Anaheim Street and Ximeno Avenue; thence along the trace of said Reservoir Hill fault to a point on the Los Angeles - Orange County line about 1700 feet northeast of the Long Beach City limit measured along the County line; thence along said Los Angeles - Orange County line in a southwesterly direction to the shore line of the Pacific Ocean; thence in a northerly and westerly direction along



the shore line of the Pacific Ocean to the intersection of said shore line with the southerly end of the drainage divide of the Palos Verdes Hills; thence along the drainage divide of the Palos Verdes Hills to the intersection of the northerly end of said drainage divide with the shore line of the Pacific Ocean; thence northerly along the shore line of the Pacific Ocean to the intersection of said shore line with the westerly projection of the crest of the Ballona escarpment; thence easterly along the crest of the Ballona escarpment to the mouth of Centinela Creek; thence easterly from the mouth of Centinela Creek across the Baldwin Hills in a line encompassing the entire watershed of Centinela Creek to the point of beginning.

All streets, railways and boundaries of Cities and Counties hereinabove referred to are as the same existed at 12:00 o'clock noon on August 20, 1961.

The area included within the foregoing boundaries is approximately 101,000 acres in extent.

II.

Definitions:

1. Basin, West Coast Basin and West Basin, as these terms are interchangeably used herein, mean the ground water basin underlying the area described in Paragraph I hereof.

2. A fiscal year, as that term is used herein, is a twelve month period beginning July 1 and ending June 30.

3. A water purveyor, as that term is used in Paragraph XII hereof, means a party which sells water to the public, whether a regulated public utility, mutual water company or public entity, which has a connection or connections for the taking of imported water through The Metropolitan Water District of Southern California, through West Basin Municipal Water District, or access to such imported water through such connection, and which normally supplies at least a part of its customers' water needs with such imported water.

4. A water year, as that term is used herein, is a twelve month period beginning October 1 and ending September 30, until it is changed to a "fiscal year," as provided in Paragraph XVI hereof.

III.

Declaration of Rights - Water Rights Adjudicated.

Certain of the parties to this action have no right to extract water from the Basin. The name of each of said parties is listed below with a zero following his name, and the absence of such right in said parties is hereby established and declared. Certain of the parties to this action and/or their successors in interest (through September 30, 1978) are the owners of rights to extract water from the Basin, which rights are of the same legal force and effect and without priority with reference to each other, and the amount of such rights, stated in acre-feet per year, hereinafter referred to as "Adjudicated Rights" is listed below following such parties' names, and the rights of the last-mentioned parties are hereby declared and established accordingly. Provided, however, that the Adjudicated Rights so declared and established



shall be subject to the condition that the water, when used, shall be put to beneficial use through reasonable methods of use and reasonable methods of diversion; and provided further that the exercise of all of said Rights shall be subject to a pro rata reduction, if such reduction is required, to preserve said Basin as a common source of water supply.

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| ABC NURSERY, INCORPORATED | | 24.1 |
| Successor to Harry C. Jenkins | 1.8 | |
| Successor to Sidney R. Title and Charlotte W. Title | 13.6 | |
| Successor to William Verburg and Clara B. Verburg | 6.7 | |
| Successor in Part to United California Bank | 2.0 | |
| ABEGG, JOE | | 0 |
| ABELL, FRANK | 1.8 | 0 |
| Sold to City of Inglewood | -1.8 | |
| ABERCROMBY, ALEXANDER | | 0 |
| Henry Abercromby | | |
| one Fred Roland Cooper | | |
| one Ted R. Cooper | | |
| one Roy F. Knapp | | |
| ALCAST FOUNDRY, ET AL. | | 0 |
| Successor to Charles L. Draper et al. | 7.2 | |
| Sold to City of Torrance | -7.2 | |
| AIRWAYS WATER COMPANY (Incorporated) | | 0 |
| ALLEN, H.A. | | 0 |
| ALLIED CHEMICAL CORPORATION, a corporation, formerly General Chemical Company (See Industrial Chemical Division) | | 0 |
| ALUMINUM COMPANY OF AMERICA (See U.S. Navy Department) | | 0 |
| AMERICAN RADIATOR & STANDARD SANITARY CORPORATION, a corporation | | 0 |
| ALWAG, HILARIO S. AND EMMA ALWAG | | 0 |
| Successor to T.C. Navarro | 53.9 | |
| Successor to Peggy Swick | 5.5 | |
| Sold to Torrance Unified School District | -59.4 | |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| AMERICAN PLANT GROWERS, INCORPORATED | | 10.0 |
| Carl H. Tasche | | |
| Second West Coast Basin Judgment | 2.6 | |
| Successor to Ben Cluff Dairy | 7.4 | |
| ANDERSON, REMBERT C. | 80.5 | 0 |
| Allen W. Ashburn | | |
| Ann F. Ashburn | | |
| Martha D. Bingham | | |
| Laura Bonanno | | |
| Louise Casey also known as Louise Casey Gibson | | |
| Ruby Decius sued as Jane Doe 19 | | |
| Ruby F. Joel | | |
| Catherine Lass sued as Jane Doe 18 | | |
| Catherine B. Maddox | | |
| Louisa Watson sued as Jane Doe 17 | | |
| Hazel Parsons | | |
| J.W. Parsons | | |
| Myrtle Mae Parsons | | |
| Alexander Poggi | | |
| One Freda E. Poggi | | |
| Mary Richley sued as Jane Doe 16 | | |
| Devisees of Gurney E. Newlin, deceased, to wit: | | |
| Helen Newlin Hastings | | |
| Robert Pusey Hastings | | |
| Thomas Newlin Hastings | | |
| Helen Hastings Schribner | | |
| Edith Hastings Murphy | | |
| George R. Bell, Jr. | | |
| Thomas Elwood Bell | | |
| Sold to Sparkletts Drinking Water Corp. | -80.5 | |
| ASAHI FANCY KOI, INCORPORATED | | 2.0 |
| Successor in part to Jake Engelsma | | |
| ASHBROOK, KATHLEEN formerly | | 0 |
| Kathleen M. Davies | | |
| One J & E Investment Co. | | |
| ASSOCIATED SOUTHERN INVESTMENT COMPANY | | 0 |
| (formerly Edison Securities Company) | 46.7 | |
| Sold to Southern California Edison Company | -46.7 | |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, (The), a corporation | | 0 |
| ATLANTIC RICHFIELD COMPANY (formerly Richfield Oil Company) | | 4428.0 |
| AUTOMATION INDUSTRIES, INC.-HARRIS TUBE | | 0.7 |
| Successor to Harris Tube, Incorporated | 0.7 | |
| AZEVEDO ESTATE COMPANY, a corporation | | 0 |
| AZVEDO, JOHN | | 0 |
| BAILEY, WM. D. | | 0 |
| Harry C. Cain | | |
| Jesse E. Cain | | |
| Dorothy Luther sued as Dorothy F. Luther | | |
| Harold M. Luther | | |
| BALDWIN, E.W. | | 0 |
| BALLMAN, FRANK A. AND ROSEMARY N. BALLMAN | 7.0 | 0 |
| Sold to United California Bank | -7.0 | |
| BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIATION, as Trustee (under its Trust BI-100) | | 0 |
| BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIATION, as Trustee (under its Trust BI-51) | 0.1 | 0 |
| Released to Michael L. Rockwell | -0.1 | |
| BARCLAY HOLLANDER CURCI, INC. | | 3.33 |
| Successor in Part to Joughin Torrance Ranch | 3.33 | |
| BARCLAY, RICHARD AND R.A. WATT | | 0 |
| Successors to Emma J. Osborn | 32.66 | |
| Successors in part to Isabela J. Granz Estate | 13.55 | |
| Successors in part to George R. Murdock | 13.75 | |
| Sold to City of Torrance | -59.96 | |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| BARNARD, GEORGE W. AND JOSEPH A. BARNARD, as Trustees under the last will and testament of ANNIE E. BARNARD one Fritz B. Burns | | 0 |
| BARNES, ANNA T. (MRS.) one Alfred O. Barnes | | 0 |
| BAUMAN, GUS A. Transferred to Palos Verdes Begonia Farm | | 0 |
| BECHTEL, JOHN H. one Riverside Cement Company | | 0 |
| BEGO CORPORATION, a corporation | | 0 |
| one Arthur S. Delaney | 4.1 | |
| Sold to Estate of Golda Delaney | -4.1 | |
| BELLES, J.W. | | 0 |
| one L.W. Mason | | |
| one S.M. Mason | | |
| BELVIDERE MUTUAL WATER COMPANY | 33.4 | 0 |
| Sold to City of Torrance | -33.4 | |
| BERARDINO, JAMES, sued as James Bernardino and Jim Berardino, sued as Jim Bernardino | | 0 |
| BERDOLLT, P. T.J. Heithold | | 0 |
| BERNARD, A.M. one Moneta Gardens, Inc., a corporation | | 0 |
| BEST, H.W. | | 0 |
| BIZEGO, LOUIS | | 0 |
| BLACK, ALEXANDER R. one Liberty Investment Company | | 0 |
| BLAIN, SR., ARTHUR A., sued as A.A. Blain | | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| BLAIS, N.J.<br>one Michael Chuchor<br>one Albert J. Sahm | | 0 |
| BLAKE, H.H.<br>one Pearl E. Grady | | 0 |
| BLOEMSMA, ARNOLD sued as<br>Arnold Bloesma | | 0 |
| BODGER REALTY COMPANY, (The),<br>a corporation | | 0 |
| BOISE CASCADE BUILDING COMPANY<br>Successor in part to Joughin<br>Torrance Ranch<br>Sold to Inglewood, City of | <br>16.92<br><br>-16.92 | 0 |
| BOONE, COLIN J.<br>Clarence J. Lamb<br>Lora Lamb | | 0 |
| BOONSTRA, ANNA<br>Tedde Boonstra<br>one M.V. Deniz | | 0 |
| BOWMAN, CHARLES P. sued as Pat Bowen<br>Ann Bowman<br>one Harlan T. Maples | | 0 |
| BROOKS, WAYNE E.<br>one Artie Waller<br>one V.W. Waller | | 0 |
| BROWN, CARL L. | | 0 |
| BUCKMASTER, EDA<br>Rose Faure<br>Frank X. Girard<br>Julia Girard<br>John Oddoris<br>Paul Oddoris<br>Marie Girard Seal sued as Marie Girard<br>one Frank Girard | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| BULTRY CORPORATION, a corporation<br>one Paul E. Black<br>one Ronald L. Black | | 0 |
| BURKE, E.D., sued as BURKE, E.W. | | 0 |
| BURKE, W.F.<br>Lois Price Burke, sued as Jane Doe 14<br>Sold to H.S. Scott | <br>9.5<br>-9.5 | 0 |
| BURNS, FRITZ B.<br>Second West Coast Basin Judgment | | 0 |
| BUTTE, M.P. | | 0 |
| CBS INC.<br>(Formerly Columbia Broadcasting Systems Inc.) | | 9.5 |
| CALIFORNIA, STATE OF<br>Successor to Robert L. Fullilove<br>Successor to Joe Moniz, Jr.<br>Successor in part to Kelly Pipe Company<br>Successor in part to Flavio Rodriguez<br>Successor in part to A.H. Smith, Sam Surber, and Freda Smith<br>Sold to Sparkletts Drinking Water Corporation | <br>1.0<br>2.2<br>16.3<br>4.0<br>2.6<br>-26.1 | 0 |
| CALIFORNIA WATER SERVICE COMPANY,<br>a corporation<br>Successor to Palos Verdes Water Company | <br>3071.0<br>999.0 | 4070.0 |
| CAMERON, HUGH N.<br>Ysaburo Mishima<br>Satsuki Mishima | | 0 |
| CARLTON, JACK C. | | 0 |
| CARRELL, ELOISE | | 0 |
| CARRELL, FRANK R. (Estate of)<br>Tom Ware and James Blake, as co-executors of the Last Will & Testament of Frank R. Carrell, deceased. | | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| CARSON ESTATE COMPANY | 130.0 | 0 |
| Sold to Dominguez Water Corp. | -130.0 | |
| CARSON-MADRONA COMPANY | | 104.0 |
| Successor to Chanslor-Western Oil and Development Co. | 104.0 | |
| CAVANAUGH, J.F. | | 0 |
| | | 9.5 |
| CENTINELA VALLEY UNION HIGH SCHOOL DISTRICT | | 0 |
| CHAMBERS, MARY RIORDAN, sued as Mary R. Chambers | | 0 |
| CHAMBERS, MARY R. AND DAN MURPHY COMPANY, a corporation | | 0 |
| CHANDLERS PALOS VERDES SAND AND GRAVEL CORP. | | 294.2 |
| Second West Coast Basin Judgment | 95.2 | |
| Successor to Southwestern Portland Cement Company | 15.0 | |
| Successor to Torrance Sand and Gravel Corp. | 184.0 | |
| CHANSLOR-WESTERN OIL & DEVELOPMENT COMPANY | | 0 |
| (Formerly Chanslor-Canfield Midway Oil Co.) | 104.0 | |
| Sold to Carson-Madrona Company | -104.0 | |
| CHEVRON, U.S.A., INC. (Formerly Standard Oil Company of California) | | 4541.7 |
| CHRISTIE, CLEM | | 0 |
| CHRISTIE, CLEM, DON C. FOHL AND LEON LARSON | | 0 |
| As Trustees of the Wilmington Cemetery Association | 0.02 | |
| (Abandoned water right) | -0.02 | |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| CHUCHUA, MICHAEL | | 0 |
| Second West Coast Basin Judgment | | |
| CLARK, JENNIE M. | | 0 |
| CLARK, WILFORD H. sued as W.H. Clark and Ida E. Clark, sued as Jane Doe 1 | | 0 |
| CLIFT, LOIS (MRS.) | | 0 |
| COAST INVESTMENT COMPANY, a corporation | | 0 |
| CLUFF, BEN DAIRY | | 0 |
| Successor to Edward and Emily Cost | 7.4 | |
| Sold to American Plant Growers, Inc. | -7.4 | |
| Successor to Southwest Steel Rolling Mills | 3.4 | |
| Sold to Georgia-Pacific Corporation | -3.4 | |
| COLLINS, EDMOND S. | | 0 |
| COLLISTER, CAMERON | 136.82 | 0 |
| Quitclaimed to Normandie Park | -136.82 | |
| COLTRIN, LILY | | 0 |
| COLUMBIA BROADCASTING SYSTEMS, INC. | | 0 |
| sued as Columbia Broadcasting Co. | 18.5 | |
| Sold to Ronald F. Moran | -9.0 | |
| Changed name to CBS, Inc. | -9.5 | |
| (See CBS, Inc.) | | |
| COMMUNITY AIRPORTS, INC., a corporation | | 0 |
| COMPARETTE, V.G. | | 0 |
| COMPTON BRICK & TILE COMPANY, a corporation | | 0 |
| COMPTON, CITY OF | | 0 |
| COMPTON UNION HIGH SCHOOL DISTRICT | | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| CONOVER, F.A. | | 0 |
| CONTINENTAL PRODUCTION COMPANY<br>Second West Coast Basin Judgment | | 0 |
| CORTRITE, A. | | 0 |
| COST, EDWARD AND EMILY COST, sued as Emily Costa | 7.4 | 0 |
| Sold to Ben Cluff Dairy | -7.4 | |
| COST, ERNEST | | 0 |
| CROWLEY, DANIEL | | 0 |
| CURTIS, OWEN W. | 3.8 | 0.36 |
| Sold to Southern California Water Company | -3.44 | |
| DALLAPE, LOUIS sued as Louis Dallapi | | 0 |
| DALLAPE, TOM | | 0 |
| DARBEAIAN, MIKE<br>sued as John Doe 25 | | 0 |
| DeBARNARDI, LUIGI | | 0 |
| DEFTERIOS, GERASIMOS K.<br>one Anna G. Defterios | | 0 |
| DEL AMO ESTATE COMPANY | 121.0 | 0 |
| Sold to Dominguez Water Corp. | -121.0 | |
| DELANEY, GOLDA (ESTATE OF)<br>(Formerly Arthur J. Delaney) | | 4.1 |
| Successor to Rego Corporation | 4.1 | |
| DENISON, HENRY M.<br>one Frank A. Basso | | 0 |
| DENNIS, ESTHER M. SHEETS<br>(Formerly Esther M. Sheets) | 5.5 | 5.5 |
| DERMODY, FRANK | | 0 |
| DESSER ENTERPRISES<br>Second West Coast Basin Judgment | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| DIBLE, G. | | 0 |
| DIE CAST PRODUCTS, INC.<br>Second West Coast Basin Judgment | | 0 |
| DIEGO, H. (MRS.) | | 0 |
| DIONNE, JOHN<br>one Eleanor G. Dreher | | 0 |
| DOMBROWSKI, LEESA<br>one Darthmouth Homes, Inc. | | 0 |
| DOMINGUEZ ESTATE COMPANY | 254.0 | 0 |
| Sold to Dominguez Water Corp. | -254.0 | |
| DOMINGUEZ WATER CORPORATION | 9477.8 | 10150.65 |
| Successor to Carson Estate Co. | 130.0 | |
| Successor to Del Amo Estate Co. | 121.0 | |
| Successor to Dominguez Estate Co. | 254.0 | |
| Successor to Don Wilson Builders | 32.6 | |
| Successor to Jeanette R. Heydenbeck | 0.7 | |
| Successor to Kikuno Nakano, et al. | 19.3 | |
| Successor in part to H.J. Early | 91.0 | |
| Successor in part to R.A. Watt, Inc. | 61.85 | |
| Sold in part to Watson Land Co. | -37.6 | |
| DONALD, RAY (MRS.)<br>one Pauline H. Wilson | | 0 |
| DOUGLAS AIRCRAFT COMPANY, INC.<br>(See McDonnel Douglas Corp.) | | 0 |
| DOW CHEMICAL CO., (THE),<br>a corporation | | 0 |
| DRALE, CRISTINA O.<br>O'Brien Z. Drale | | 0 |
| XXX | | |
| XXX | | |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| DRAPER, CHARLES L. | 7.2 | 0 |
| one James H. Alleman | | |
| one Flora M. Draper | | |
| one Bernice Alleman | | |
| Bess M. Feder | | |
| Ben T. Johnston | | |
| Genevieve K. Miles | | |
| Ikuko Nakawatse | | |
| Frank Wirz | | |
| Sold to Allcast Foundry, et al | -7.2 | |
| DURAND, A.J. | | 0 |
| EARLY, DAISY | | 0 |
| H.J. Early and one Vickers, Inc. | 111.0 | |
| Sold to Samuel R. Fujimoto and Raymond S. Fujimoto | -20.0 | |
| Sold to Dominguez Water Corp. | -91.0 | |
| EAST GARDENA WATER COMPANY | | 0 |
| EDISON SECURITIES COMPANY, a corporation sued as Richard Roe Company 13 (now known and shown herein as Associated Southern Investment Co.) | 46.7 | 0 |
| Sold to Southern California Edison Company | -46.7 | |
| EDWARDS, C.O. | | 0 |
| W.J. Edwards | | |
| EL CAMINO JUNIOR COLLEGE DISTRICT | | 0 |
| ELLINWOOD, LATHROP M. | 32.6 | 0 |
| Sold to Isamu Kita, Kazuo Kita and Yoshiki R. Kita | -32.6 | |
| ELLIOTT, CLINTON sued as C.C. Eliot | | 0 |
| Georgia M. Elliott | | |
| Juluis G. Elliott | | |
| Frank M. Elliott | | |
| EL SEGUNDO, CITY OF | | 953.0 |
| EL SEGUNDO LAND & IMPROVEMENT COMPANY, a corporation | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| ENGELSMA, JAKE | | 12.1 |
| Successor to Wilbur Hornstra | 14.1 | |
| Sold to Asahi Fancy Koi, Incorporated | -2.0 | |
| ENGLAND, GEORGE | | 0 |
| ETCHEMENDY, CAROLINE (ESTATE OF) (formerly Caroline Etchemendy, sued as Jane Doe 12 | | 8.2 |
| Mariana T. Etchemendy, sued as Jane Doe 11) | | |
| EWING, CARMELITA ROSECRANS, sued as | | 0 |
| C.F. Rosecrans and W.S. Rosecrans | 91.3 | |
| Sold to Southern California Water Co. | -91.3 | |
| EWING, NED, ET AL. | | 0 |
| Successor in part to Isabel J. Granz Estate | 6.50 | |
| Sold to R.A. Watt, Incorporated | -6.50 | |
| FALCINELLA, OSCAR AND MIKE FALCINELLA | | 0 |
| FIESEL, FRED | | 0 |
| FITTINGER, JAMES L. | | 0 |
| FLESH, LESLIE R. AND ANDOR PASTERNAK ET AL. | | 0 |
| Successors to Alfred D. Seaback and Ruth Seaback | 3.5 | |
| Sold to Stanley C. Lagerlof | -3.5 | |
| FLETCHER OIL AND REFINING COMPANY, a corporation (Formerly Fletcher Oil Co., a corporation) composed of D.S. Fletcher, F.O. Fletcher, Helen Fletcher O'Connell and Idaho Fidelity Corporation | 86.3 | 90.0 |
| Successor to Fletcher, Robert G., et al. | 3.7 | |
| FLETCHER, ROBERT G., DANIEL S. FLETCHER AND WILFRED O. FLETCHER | | 0 |
| Successor to Fred A. Jungquist | 3.7 | |
| Sold to Fletcher Oil and Refining Company | -3.7 | |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| FORD, ROLLA | | 0 |
| FOX HILLS COUNTRY CLUB | | 0 |
| FRIEDMAN, MARY M.<br>Second West Coast Basin Judgment | | 0 |
| FRIETAS, TONY | | 0 |
| FROGGE, W.J.<br>Sold to Sigmund S. Hockwold and Lionel S. Hockwold | 12.5<br>-12.5 | 0 |
| FUKUWA, HERBERT SAKAYE<br>(dba Mayflower Nurseries) | | 0 |
| FULLER, A.O.<br>Helene M. Fuller | | 0 |
| FULLILOVE, ROBERT L.<br>Sold to State of California | 1.0<br>-1.0 | 0 |
| FUJIMOTO, SAMUEL R. AND RAYMOND S. FUJIMOTO<br>Successor in part to H.J. Early and Daisy Early | 20.0 | 20.0 |
| FUTURA INDUSTRIES, INCORPORATED<br>Successor to Spanish American Institute | 44.4 | 44.4 |
| GALDARISI, JOE<br>Brody Investment Company | | 0 |
| GARCIA, AMADOR<br>Eva Garcia | | 0 |
| GARCIA, ARTHUR B. sued as Arthur D. Garcia<br>June Garcia | | 0 |
| GARCIA, JOSE H. | | 0 |
| GARDENA SYNDICATE NO. 2 | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| GARDENA WATER SUPPLY COMPANY | | 0 |
| GARRETT CORPORATION (THE)<br>Successor to Shinoda Brothers, Inc. | 22.5 | 22.5 |
| GATEX TANK STORAGE TERMINAL CORP.<br>Successor to Phillips Petroleum Co. | 167.0 | 167.0 |
| GAY LAND COMPANY LTD., a corporation | | 0 |
| GEORGIA-PACIFIC CORPORATION<br>Successor to Coast Forest Products sold to Inglewood, City of | 3.4<br>-3.4 | 0 |
| GERAGOSIAN, V.M.<br>one Stanley N. Lewis | | 0 |
| GERAHUE LAND COMPANY<br>Successor and Assignee for A.S. Johnston Drilling Co.<br>Abandoned Water Right | 11.9<br>-11.9 | 0 |
| GETTY, GEORGE F., INC. | | 0 |
| GIACIOMAZZI, CAROLINA,<br>sued as Mrs. C. Giaciomagzi | | 0 |
| GIANNI, ALBERT | | 0 |
| GILLINGHAM, AMANDA L.,<br>sued as Jane Doe 20<br>Floyd W. Gillingham, sued as John Doe 24<br>Josephine Gillingham, sued as Jane Doe 21 | | 0 |
| GILLINGHAM, FLORENCE R.<br>Thora Pursche<br>Nellie P. Smith<br>Anna M. Pursche | | 2.4 |
| GIMINEZ, MATEA (MRS.) | | 0 |
| GODDARD, LALLA D.<br>Ralf Goddard | | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| GOLDSMITH, WM. H.<br>Cliff Ralph | | 0 |
| GONZALEZ, FELIPE<br>Gabriela Gonzales | | 34.3 |
| GOOSSEN, T.B. | | 0 |
| GORDON, WILLIAM W., sued as<br>John Doe Gordon | | 0 |
| GOSS, BERTHA<br>one Property Management Corporation | | 0 |
| GRAND LAND COMPANY<br>Successor in part to Smith, A.H. et al.<br>Abandoned Water Rights 1961-62 | <br>5.7<br>-5.7 | 0 |
| GRANDE, GEORGE | | 0 |
| GRANT, JOHN (Estate of) | | 59.0 |
| GRANZ, ISABELA J. (Per Judgment)<br>Partitioned to Heirs<br>Isabela J. Granz Estate<br>Joughin Torrance Ranch<br>George R. Murdock<br>Emma J. Osborn<br>Subject to Long Term Lease<br>Standard Oil Company of Calif.<br>Superior Oil Company | 380.0<br><br>-33.8<br>-212.42<br>-15.12<br>-32.66<br><br>59.60*<br>26.40* | 86.0* |
| GRANZ, ISABELA J. (ESTATE OF)<br>Successor in part to Isabela J. Granz<br>Sold in part to Richard Barclay and R.A. Watt<br>Sold in part to Ned Ewing, et al.<br>Sold in part to R.Watt, Inc. | <br>33.80<br><br>-13.55<br>-6.5<br>-13.75 | * |

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| PARTY AND SUCCESSOR, IF ANY | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|
| GREEN, EDWARD I. sued as<br>E.J. Green<br>one Florence D. Green | 0 |
| GRESHAM, PRICE W.<br>Walter G. Gresham<br>Comer J. Lewis<br>Voleta A. Lewis | 0 |
| GRIFFITH, BEATRICE S.<br>W.P. Griffith<br>one Otto K. Olessen | 0 |
| GRIGGS, B.H.<br>Olive W. Griggs | 0 |
| GROSS, JOSEPH M. sued as Joseph Gross<br>Myron J. Glauber, sued as John Doe 20,<br>Clarence L. Brown, sued as John Doe 21, and Perfect Properties Inc., a corporation sued as Richard Roe Co. 20. | 0 |
| GUENSER, HENRY M.<br>Sophia E. Guenser | 0 |
| GUIDOTTI, DANIEL | 0 |
| HADLEY, DON C.<br>one D.W. Sleet<br>one Virgie Sleet | 0 |
| HAIGHT, CHARLES N.<br>one Grace P. Warden | 0 |
| HAILS, RAYMOND R. | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| HAMMOND, WALTER<br>one Contractor's Asphalt Products Co. | | 0 |
| HANCOCK CHEMICAL COMPANY, a corporation | | 0 |
| HANSEN, BETTY<br>HANSEN, DONALD J.<br>Second West Coast Basin Judgment | | 0 |
| HARBOR CITY DEVELOPMENT COMPANY | | 0 |
| HARDING, R.B. | | 0 |
| HARRIS, ROY W. | | 0 |
| HARRIS, R. AND L. HARRIS<br>Successor to Lawrence I. Liston<br>Disclaimed Water Right | <br>0.7<br>-0.7 | 0 |
| HARRIS PUMPING PLANT<br>Leesa Dombrowski<br>Carl G. Pursche<br>Anna M. Pursche<br>Harry Krumdick<br>Anna Doherty<br>Mrs. Frank Cota<br>Holly Corporation, a corporation<br>Homer Bales and Ernest Haughton<br>dba and sued as Pursche Water Co. | | 0 |
| HARRIS TUBE INCORPORATED<br>Successor in part to B. Robinson & Associates<br>Transferred to Automation Ind. Inc.-Harris Tube | <br>0.7<br>-0.7 | 0 |
| HASEGAWA, W.<br>one Kauffman, Milton, Construction Company, successor | | 0 |
| HASKINS, C.R. | | 0 |
| HATFIELD, BESSIE M.<br>Second West Coast Basin Judgment | | 0 |
| HAUT, FRED M.<br>one Ivy H. Haut | | 0 |
| HAWTHORNE, CITY OF | | 1882.0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| HAYES, CHARLES R.<br>one Robert W. Colby<br>one Fern M. Colby | | 0 |
| HAYES FURNACE MFG. & SUPPLY<br>Second West Coast Basin Judgment | | 0 |
| HENDERSON, BEATRICE, M.<br>Abandoned Water Right | 1.3<br>-1.3 | 0 |
| HEREDIA, DAVID P. | | 0 |
| HERMAN, E.N. | | 0 |
| HERMANSEN, JULIA | | 0 |
| HERRBECK, MIKE L.<br>Second West Coast Basin Judgment | | 0 |
| HERZOG, AUGUST<br>one Martha Herzog | | 0 |
| HEYDENBECK, JEANETTE R.<br>(Formerly Jeanette R. Reifsnyder)<br>Sold to Dominguez Water Corp. | <br>0.7<br>-0.7 | 0 |
| HILLSIDE MEMORIAL PARK<br>Successor to Sigmund S. Hockwald and Lionel S. Hockwald<br>Successor to W.J. Frogge<br>Successor to Santa Fe Land Improvement Company | 16.7<br>12.5<br><br>39.5 | 68.7 |
| HILYARD, MARY N. sued as Jane Doe 55<br>Mrs. Monta Templeton, sued as Jane Doe 56 | | 0 |
| HIMMELFARB, HENRY<br>Wm. Pirk<br>one Western Air Compressor Company | | 0 |
| HOCKWALD, SIGMOND S. AND LIONEL S. HOCKWALD<br>Successor to W.J. Frogge<br>Second West Coast Basin Judgment<br>Sold to Hillside Memorial Park | <br>12.5<br><br>-12.5 | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| HODNEFIELD, T.E | | 0 |
| HOFFMAN, MARIE C.<br>Los Angeles City School District, successor | | 0 |
| HOEPTNER, J.P.<br>Ida B. Hoeptner<br>one Jack I. Gantz<br>One Lillian H. Gantz | | 0 |
| HOLLIDAY, CLIFFORD | | 0 |
| HOLLINGSWORTH, W.I.<br>one Julius L. Jenkins<br>one Evelyn M. Jenkins | | 0 |
| HOLLYWOOD TURF CLUB, a corporation | | 282.0 |
| HONSTA, WILBUR | 14.1 | 0 |
| Sold to Jake Engelsma | -14.1 | |
| HUBER, FRANK S.<br>Second West Coast Basin Judgment | | 0 |
| HUDSON, C.L. | | 0 |
| HUNT, DONALD G. | | 0 |
| Successor to James Scanda | 1.9 | |
| Sold to Kenichi Inose | -1.9 | |
| HURT, ARTHUR C.<br>one Truman Enterprises, Inc. | | 0 |
| INDUSTRIAL CHEMICAL DIVISION, ALLIED CHEMICAL CORP.<br>(Formerly Allied Chemical Corp.<br>Gen. Chemical Co.) | | 255.0 |
| INGLEWOOD, CITY OF | 4382.0 | 4405.49 |
| Successor to Frank Abell | 1.8 | |
| Successor to Boise Cascade Building Co. | 16.92 | |
| Successor to Georgia-Pacific Corp. | 3.4 | |
| Successor in part to George R. Murdock | 1.37 | |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| INGLEWOOD PARK CEMETERY ASSOCIATION, a corporation, sued as Inglewood Park Mortuary Assoc. | | 0 |
| INOSE, YOSHI<br>one Seijiro Inose | | 0 |
| INOSE, KENICHI | | 5.4 |
| Successor to Donald G. Hunt | 1.9 | |
| Successor to Thaxter Ralph and Lois A. Lenoir | 3.5 | |
| IRVINE, F.C. | | 0 |
| ISAMU, KASUO AND YOSHIKI R. KITA | | 0 |
| Successor to Lathrop M. Ellinwood | 32.6 | |
| Sold to Don Wilson Builders | -32.6 | |
| ISHIDA, HENRY J.<br>Second West Coast Basin Judgment | | 0 |
| ITO, CHIYEKO<br>Second West Coast Basin Judgment | | 0 |
| IWATA, FRED<br>John Iwata | | 0 |
| J.B. D. HOLDING CORP., a corporation | | 0 |
| JENKINS, HARRY C. | | 0 |
| Successor to H.L. Perry | 1.8 | |
| Sold to ABC Nursery, Incorporated | -1.8 | |
| JOHNS-MANVILLE PRODUCTS CORPORATION | | 881.0 |
| JOHNSON, C.F. | 12.2 | 0 |
| sold to Kaoru Wada and Satoru Wada | -12.2 | |
| JOHNSTON, A.S. DRILLING COMPANY | 11.9 | 0 |
| Assigned to Gerahue Land Company | -11.9 | |
| JOHNSON, O.T. CORPORATION<br>A.P. Johnson Company sued as Richard Roe Company one | | 0 |
| JONES, ANNA MAE, successor to Anne Taylor, deceased (sued herein as Anna Taylor) | 50.2 | 0 |
| Sold to City of Torrance | -50.2 | |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| JONES, E.F. | | 0 |
| JONES, W.H.<br>one Leon A. Carpenter and<br>Darline N. Carpenter, successors | | 0 |
| JOSHUA-HENDY IRON WORKS | | 0 |
| JOUGHIN TORRANCE RANCH | | 0 |
| Successor in part to Isabela J. Granz | 212.47 | |
| Sold in part to Barclay Hollander Curci, Inc. | -3.33 | |
| Sold in part to Boise Cascade Building Co. | -16.92 | |
| Sold in part to Cameron Collister | -136.82 | |
| Sold in part to R.A. Watt, Inc. | -56.35 | |
| JUNGQUIST, FRED A.<br>(Formerly Katherine P. Woodman Jungquist) | 3.7 | 0 |
| Sold to Robert G. Fletcher, Daniel S. Fletcher and Wilfred O. Fletcher | -3.7 | |
| KAHLER, DORA A. | | 0 |
| KAHLERT, ET AL. | | 0 |
| Successor in part to Kelly Pipe Co. | 18.9 | |
| Sold to Sparkletts Drinking Water Corp. | -18.9 | |
| KARR, OSCAR E.<br>Sherley Karr | | 0 |
| KEHN, CHESTER L. | | 0 |
| K.L. KELLOGG & SONS, a corporation | | 0 |
| KELLY PIPE COMPANY | 49.0 | 0 |
| Sold in part to State of California | -16.3 | |
| Sold in part to Kahlert, et al | -18.9 | |
| Sold in part to Sparkletts Water Corp. | -13.8 | |
| KELTON, LOUIS | | 0 |
| KETTLER AND WILSEY, INC.<br>Second West Coast Basin Judgment | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| KILLINGER, W.G.<br>one Esther N. Lee | | 0 |
| KINCAID, JEANETTE B.<br>one Fred F. Hoyt<br>one Yvonne A. Hoyt | | 0 |
| KING, MAXWELL C. | | 0 |
| KING, SARAH S.<br>one Crawford Building Corporation | | 0 |
| KITA, ISAMU, KAYUO KITA, AND YOSHIKI R. KITA | 32.6 | 0 |
| Successor to Lathrop M. Ellinwood | | |
| Sold to Don Wilson Builders | -32.6 | |
| KRAUSS, JOHN<br>Dan E. Vail and Barbara M. Vail | | 0 |
| KULL, CHARLES | | 0 |
| KURTZ, GLADYS | 3.5 | 0 |
| Sold to Sparkletts Drinking Water Corp. | -3.5 | |
| LAGERLOF, STANLEY C. | | 3.5 |
| Successor to Leslie R. Flesh and Andor Pasternak, et al. | 3.5 | |
| LAMPO, JOHN | | 0 |
| LARSEN, MAGNUS C. sued as M. Larsen | | 0 |
| LAUTRUP, NELS | | 0 |
| LAWLER, JAMES K. (Estate of) | 3.1 | 0 |
| Sold to B. Robinson and Associates | -3.1 | |
| LAWNDALE (CITY) SCHOOL DISTRICT OF LOS ANGELES COUNTY, sued as Richard Roe Company 12 | | 0 |
| LEACH, ANNA | | 0 |
| LEONARDO, JOE | | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| LERMENS, EVELYN<br>(Formerly Alfred Lermens) | | 0.7 |
| LENZINER, EMMA L. sued as<br>Mrs. E.L. Leuziner | | 1.4 |
| LINDERMAN, ABRAHAM<br>Second West Coast Basin Judgment | | 0 |
| LISTON, LAWRENCE<br>Sold to R. Harris and L. Harris | 0.7<br>-0.7 | 0 |
| LITTLE, WILLIAM<br>Sold to Watt Industrial Properties | 0.1<br>-0.1 | 0 |
| LIZZA, PAT | | 0 |
| LOCHMAN, ERNEST C.<br>LOCHMAN, WALTER<br>Second West Coast Basin Judgment | | 0 |
| LONG, BEN<br>Persilla Long, sued as Pricilla Long | | 0 |
| LONG, JOHN | | 0 |
| LONG BEACH, CITY OF | | 0.7 |
| LOPEZ, FRANK | | 3.7 |
| LOPEZ, MANUEL<br>one Rudolph E. Lopez | | 0 |
| LOS ANGELES, CITY OF | | 1503.0 |
| LOS ANGELES CITY SCHOOL DISTRICT | | 0 |
| LOS ANGELES COUNTY (ALONDRA PARK)<br>Successor to Los Angeles County Flood Control District | 28.7<br>39.0 | 67.7 |
| LOS ANGELES COUNTY FLOOD CONTROL DISTRICT<br>Successor in part to A.H. Smith et al<br>Sold to Los Angeles County-Alondra Park | 37.6<br>1.4<br>-39.0 | 0 |



| PARTY AND SUCCESSOR, IF ANY | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|
| LOS ANGELES COUNTY SANITATION DISTRICT No. 2, sued as Los Angeles County Sanitary District No. 2 | 102.0 |
| LOS ANGELES COUNTY WATER WORKS DISTRICT NO. 1 | 0 |
| LOS ANGELES COUNTY WATER WORKS DISTRICT NO. 13 | 1352.0 |
| LOS ANGELES COUNTY WATER WORKS DISTRICT NO. 22 | 551.0 |
| LOS ANGELES COUNTY (WESTERN AVENUE GOLF COURSE)<br>Second West Coast Basin Judgment listed as Board of Retirement of the Los Angeles County Employee's Retirement System | 296.0 |
| LOS ANGELES EXTENSION COMPANY | 0 |
| LOS ANGELES INVESTMENT COMPANY | 0 |
| LOS NIETOS COMPANY, a corporation | 0 |
| LOYOLA UNIVERSITY FOUNDATION | 0 |
| LOYOLA MARYMOUNT UNIVERSITY<br>(Formerly Loyola University of Los Angeles) | 48.1 |
| MAC LEAN, LORENA<br>one Torrance Land Company | 0 |
| MADRIGAL, PETE | 0 |
| MAGALLANES, S.W. | 0 |
| MANCHESTER AVENUE COMPANY, a corporation<br>one Inglewood Golf Course, a partnership | 0 |
| MANHATTAN BEACH, CITY OF | 1131.2 |
| MARCH, H.C.<br>one Victory Oil Company | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| MARTIN BROTHERS BOX CO. OF CALIF.<br>Second West Coast Basin Judgment | | 0 |
| MARTIN, EARL<br>Second West Coast Basin Judgment | | 0 |
| MARTIN, P.T.<br>one Arlington Garden Homes Company | | 0 |
| MARTZ, HOWARD DOUGLAS<br>James L. Martz<br>Louise H. Martz | | 0 |
| MATSON, RAY F. sued as R.F. Matson<br>Florence M. Nielsen | | 0 |
| MAU, FRED | | 0 |
| MAYFLOWER NURSERIES<br>(See also under Herbert Sakaye Fukuwai) | | 0 |
| McCANDLESS, JAMES<br>Sold to Sparkletts Drinking Water Corp. | 6.7<br>-6.7 | 0 |
| McCLAIN, ETHEL | | 0 |
| McCRACKIN, G.A. sued as<br>G.A. McCracken | | 0 |
| McDONNELL DOUGLAS CORPORATION<br>(Formerly Douglas Aircraft Company, Inc.)<br>Long Term Lease from U.S. Navy Dept. 1.7* | | 1.7* |
| McCULLEY, M.F. | | 0 |
| McGRANAGHAN, J.J. | | 0 |
| McKERNON, IVAN J.<br>one Doris E. Parks<br>one L. Kenneth Parks | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| MEANS, AIMEE R.<br>one Prarie Company | | 0 |
| MESPLOU, PAUL | | 0 |
| METZLER, J.J.<br>one Kenji Yokoyama and<br>one Miyeko Yokoyama | | 0 |
| MILBURN, E.B.<br>one M.Y. Yamane | | 0 |
| MILLER, CARL H. | | 0 |
| MINNEAPOLIS-HONEYWELL REGULATOR COMPANY, APPLIANCE CONTROLS DIVISION | | 0 |
| MISHIMA, YSABURO and SATSUKI MISHIMA<br>Hugh N. Cameron | | 0 |
| MOBIL OIL CORPORATION<br>(Formerly Socony Mobil Oil Company) | | 2570.0 |
| MOEN, O. | | 0 |
| MOLINE, P.E. | | 0 |
| MONETA MUTUAL WATER COMPANY<br>Sold to City of Torrance | 916.0<br>-916.0 | 0 |
| MONIZ, JOE JR., sued as Joe Moniz<br>one Rose Moniz<br>Sold to State of California | 2.2<br>-2.2 | 0 |
| MOODY, B.R.<br>one Opal B. Edwards | | 0 |
| MOORE, J.B. | | 0 |
| MOORE, MAMIE S. | | 0 |
| MORAN, RONALD F.<br>Successor in part to CBS, Inc.<br>Sold to City of Torrance | 9.0<br>-9.0 | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| MORI, ROY H. AND KENJI MORI | | 3.60 |
| Second West Coast Basin Judgment | 5.60 | |
| Sold to Nozaki, Sumikichi | -2.00 | |
| MORRISON, ALICE | | 0 |
| Ethel Morrison | | |
| MORSE, A.H. | | 0 |
| one J.J. Lapidus | | |
| one B.C. Investment Co., Inc. | | |
| MORTON, HAROLD C. sued as | | 0 |
| Harold Morton | | |
| one Allied Gardens Corporation | | |
| MOTT, V.G. | | 0 |
| MUELLER, ARNOLD W. | | 0 |
| Ruth Mueller | | |
| MURDOCK, GEORGE R. | | 0 |
| Successor in part to Isabela J. Granz Estate | 15.12 | |
| Sold in part to R. Barclay and R.A. Watt | -13.75 | |
| Sold in part to City of Inglewood | - 1.37 | |
| MURAKAMI, JAMES | | 0 |
| Murakami, Jean M. | | |
| Second West Coast Basin Judgment | | |
| NAGAO, SUMIYE | | 0 |
| NAKAMURA, HIROSHIMA | | 0 |
| NAKANO, KIKUNO | 19.3 | 0 |
| Ben Nakano | | |
| George Nakano | | |
| Helen Nakano | | |
| Kan Nakano | | |
| Mary Nakano | | |
| Taka Nakano | | |
| Misao Nakano Nakashima | | |
| Sold to Dominguez Water Corp. | -19.3 | |
| NARBONNE RANCH WATER CO. NO. 2 | | 0 |
| NARBONNE RANCH WATER CO. NO. 3 | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| NATIONAL ELECTRIC PRODUCTS CORP. | | 0 |
| NATIONAL ROYALTIES, INC., a corporation | | 0 |
| NAVARRO, T.C. | 53.9 | 0 |
| Sold to Hilario S. Alwag and Emma Alwag | -53.9 | |
| NELSON, A.L. | | 0 |
| Olaf Nelson | | |
| one George C. Orr | | |
| NEWELL, CALVIN | | 0 |
| Newell, Linda | | |
| Second West Coast Basin Judgment | | |
| NICKEL, EDWARD | | 0 |
| NICKEN, HENRY W. sued as H.W. Nielsen | | 0 |
| one Kenneth D. Durian | | |
| NORAIR, A DIVISION OF NORTHROP AIRCRAFT, INCORPORATED | | 38.15 |
| NORMANDIE PARK | | 0 |
| Successor to Collister, Cameron | 136.82 | |
| Sold to City of Torrance | -136.82 | |
| NORMINGTON, J.E. | | 0 |
| NORRIS, HAZEL F. | | 0 |
| Second West Coast Basin Judgment | | |
| NORTH AMERICAN AVIATION, INC., a corporation | | 0 |
| NOZAKI, SUMIKICHI | | 7.0 |
| Successor in part to Mori, Roy H. and Kenji Mori | 2.0 | |
| Successor in part to United California Bank | 5.0 | |
| OGLE, WARREN J. | | 0 |
| ORESKOVICH, JACK | | 0 |
| Harold Walsh | | |
| one Harold D. Walsh | | |
| one Marie L. Walsh | | |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| OSBORN, EMMA J. | | 0 |
| Successor in part to Isabela J. Granz Estate | 32.66 | |
| Sold to R. Barclay and R.A. Watt | -32.66 | |
| OTANI, CHISATO, sued as John Doe 57 | | 0 |
| PACIFIC CREST CEMETERY COMPANY, INC. | 17.7 | 39.4 |
| Successor to H.S. Scott | 9.5 | |
| Successor to Wada, Kaoru and Satoru Wada | 12.2 | |
| PACIFIC ELECTRIC RAILWAY COMPANY | | 0 |
| PACIFIC WESTERN OIL CORPORATION, a corporation | | 0 |
| PALISADES DEL REY WATER COMPANY (Included in City of Los Angeles) | | 0 |
| PALMER, E. | | 0 |
| PALOS VERDES BEGONIA FARM Successor to Gus A. Bauman | | 0 |
| PALOS VERDES WATER COMPANY, a corporation | 999.0 | 0 |
| Sold to California Water Service Co. | -999.0 | |
| PARCELL, G.L. AND MARGARET PARCELL one Rosie L. Kent | | 0 |
| PARK WATER COMPANY | | 160.0 |
| PARKE, MRS. ZORAIDA | 1.8 | 0 |
| Sold to H.L. Perry | -1.8 | |
| PASCHKE, WM. JOSEPH | .02 | 0 |
| Abandoned Water Right | -.02 | |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| PATTERSON, ROY | | 0 |
| PAULIC, JOHN one John W. Taylor | | 0 |
| PEREZ, DAVID Apuleyo Villagomez, sued as A. Villagomez | | 0 |
| PERRY, H.L. | | 0 |
| Successor to Zoraida Parke | 1.8 | |
| Sold to Harry C. Jenkins | -1.8 | |
| PERRY SCHOOL DISTRICT OF LOS ANGELES COUNTY | | 0 |
| PETERSON, WM. C. | | 0 |
| PHILLEO, A.E. | | 0 |
| PHILLIPS PETROLEUM CO. | | 0 |
| (Formerly Tidewater Oil Co.) | 167.0 | |
| Sold to Gatex Tank Storage Term. Corp. | -167.0 | |
| PIONEER DRILLING COMPANY, a corporation one Southern Heater Corp. | | 0 |
| PITTS, EDWARD A. one Clarence E. Harrison one Martha E. Harrison | | 0 |
| PLUNKETT, F.D. Second West Coast Basin Judgment | | 0 |
| POPSON, JOHN S. Second West Coast Basin Judgment | | 0 |
| PRICE, FRANK X. | | 0 |
| PRODUCING PROPERTIES, INC. Second West Coast Basin Judgment | | 0 |

| PARTY AND SUCCESSORS, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| PURSCHE, CAROL G. AND CARL P. PURSCHE dba Pursche Pumping Plant<br>Carl G. Pursche<br>Thora Pursche<br>Anna M. Pursche<br>one Guarantee Development Co. | | 0 |
| QUANDT, CHARLES H. sued as CHARLES A. QUANDT | | 0 |
| QUINN, RICHARD<br>Martha Quinn | | 0 |
| RAMOS, JOE B. | | 0 |
| RANCHO MUTUAL WATER COMPANY | | 0 |
| RAVEN, J.K.<br>one Andrea S. Teran | | 0 |
| REED, ELIZABETH E. sued and formerly known as Elizabeth Edna Baker and<br>Josephine Eilers for whom Dominguez Estate Company has been substituted | | 0 |
| REHOR, FRANK<br>one Josephine P. Rehor | 2.2 | 2.2 |
| REID, LUCILLE G.<br>Ogden G. Reid | | 0 |
| REIFSNYDER, JEANETTE R., also known as Jeanette Avant, and also known as Jeanette R. Heydenbeck<br>Calvin Wilson<br>Edward E. Wilson, Jr.<br>Harry R. Wilson<br>Harry R. Wilson and Jeanette Reifsnyder, also known as Jeanette Avant, as executors of the estate of Jeanette C. Wilson, deceased.<br>Harry R. Wilson and Jeanette Reifsnyder, also known as Jeanette Avant, as executors of the estate of Robert A. Wilson, deceased<br>(Now known as Jeanette R. Heydenbeck<br>See Heydenbeck, Jeanette R. | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| REPUBLIC PETROLEUM COMPANY | | 0 |
| RICHARD, LEONCIE, devisee of Anna Richard, deceased, and Edward Richard, sued as John Doe Richard | | 0 |
| RICHARDSON, ROSE A. AND WM. T. RICHARDSON<br>one South Normandie Manor, Inc. | | 0 |
| RICHFIELD OIL CORPORATION<br>(now known as Atlantic Richfield Co.) | | 0 |
| RING OIL COMPANY | | 0 |
| ROBINSON, B. AND ASSOCIATES<br>Successor to James K. Lawler<br>Sold in part to Harris Tube Inc.<br>Sold in part to Southern Calif-Water Company | 3.1<br>-0.7<br>-2.4 | 0 |
| ROCKWELL, MICHAEL L.<br>Successor to Bank of America NT & SA (Trust B1-51)<br>Sold to Little, William | 0.1<br>-0.1 | 0 |
| RODRIGUEZ, FLAVIO<br>Sold to State of California<br>Abandoned Water Right | 6.1<br>-4.0<br>-2.1 | 0 |
| ROMAN CATHOLIC ARCHBISHOP OF LOS ANGELES (THE), a corporation, sued as Holy Cross Cemetery | | 72.3 |
| ROOSEVELT MEMORIAL PARK ASSOCIATION | | 0 |
| ROSE, R.E.<br>Clara M. Rose, sued as Jane Doe 8 | | 0 |
| ROSSER, L.D. | | 0 |
| ROYAL MUTUAL WATER COMPANY, a corporation<br>one Delmer D. Kern | | 0 |
| RUDD, HOMER E.<br>one Kiyor Ide | | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| RUFFNER CORPORATION | | 0 |
| Successor to Louis M. Sepulveda | 0.7 | |
| Abandoned Water Right | -0.7 | |
| RUSS, F.J. | | 0 |
| one Ted Shpall | | |
| one Sam H. Shpall | | |
| RYAN AERONAUTICAL COMPANY, a corporation | 20.2 | 0 |
| Sold to Southern California Water Co. | -20.2 | |
| SANDOVAL, YGNACIO | | 0 |
| SAHM, ALBERT J. | | 0 |
| Second West Coast Basin Judgment | | |
| SANGER, C.W. | | 0 |
| One Gardena Valley Homes, Inc. | | |
| SANTA FE LAND IMPROVEMENT COMPANY | 39.5 | 0 |
| Sold to Hillside Memorial Park | -39.5 | |
| SCANDA, JAMES sued as | | 0 |
| James Scander | 1.9 | |
| George Nasim | | |
| Sold to Donald G. Hunt | -1.9 | |
| SCHENK, FLOYD H., JR. | | 0 |
| Cora A. Schenk | | |
| SCHLAEGEL, KEITH W. | 13.6 | 0 |
| Opal B. Schlaegel | | |
| Sold to Sidney R. Title and Charlotte W. Title | -13.6 | |
| SCHLAEGETER, EDYTHE L. | | 0 |
| one James Murakami | | |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| SCHRECKENGAST, C. | | 0 |
| SCHULTZ, W.C. | | 0 |
| SCOTT, H.S. | | 0 |
| Successor to W.F. Burke and Lois Price | 9.5 | |
| Quitclaimed to Pacific Crest Cemetery Co. | -9.5 | |
| SEABACK, ALFRED D. AND RUTH SEABACK | 3.5 | 0 |
| Sold to Leslie R. Flesh and Andor Pasternak, et al. | -3.5 | |
| SELOVER, MARVIN AND MARY ZWEITER | | 0 |
| one Hitoshi Fujii | | |
| one Toshije Fujii | | |
| SENTOUS HOLDING COMPANY | | 0 |
| SEPULVEDA, L.M. | | 0 |
| SEPULVEDA, LOUIS M. AND SECURITY-FIRST NATIONAL BANK, as Trustees under the last will and testament of Roman D. Sepulveda, deceased. | 0.7 | 0 |
| Acquired by Ruffner Corporation | -0.7 | |
| SERVIAN, P.C. | | 0 |
| Ruby H. Renfro | | |
| SEWARD, W.H. | | 0 |
| one R.A. Watt Construction Co. | | |
| SHAW, JOHN | | 0 |
| Phillip G. Shaw | | |
| SHEETS, CLYDE L. | | 0 |
| Esther M. Sheets | | |
| (see Dennis, Esther M. Sheets) | | |
| SHELL OIL COMPANY | | 4516.0 |
| SHEPARD, CHARLES W. | | 0 |
| Second West Coast Basin Judgment | | |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| SHEPHERD, J.M. | | 0 |
| SHIPMAN, JAMES W.<br>one Osie R. Shipman | | 0 |
| SHINODA BROTHERS, INCORPORATED<br>San Lorenzo Nursery Company<br>Second West Coast Basin Judgment<br>Sold to Garrett Corporation (The), et al | <br><br>22.5<br>-22.5 | 0 |
| SHORT, SAM, sued as Sam Sciortino | | 0 |
| SHURTLEFF, ELDON B.<br>Marcelle Shurtleff<br>one Barrett Development Corporation | | 0 |
| SIDEBOTHAM, EDWARD ROY AND EDWARD SIDEBOTHAM & SON., INC., sued as Edward Sidebotham | | 0 |
| SILVA, MRS. MARY<br>one Norman A. Leiman | | 0 |
| SIMMONS, E.E.<br>Second West Coast Basin Judgment | | 0 |
| SLOAN, JAMES | | 0 |
| SMITH, A.H.<br>Sam Surber and Freda Smith, sued as Jane Doe 9<br>Sold in part to the State of Calif.<br>Sold in part to Grand Land Company<br>Sold in part to L.A. County Flood Control District | <br>9.7<br>-2.6<br>-5.7<br>-1.4 | 0 |
| SMITH, EUNICE P. | | 0 |
| SOCONY MOBIL OIL COMPANY, INC.<br>(Successor by Merger to General Petroleum Corporation)<br>(See Mobil Oil Corporation) | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| SOUTH BAY UNION HIGH SCHOOL OF LOS ANGELES COUNTY, sued as Redondo Union High School District | | 0 |
| SOUTHERN CALIFORNIA ASSOCIATION OF SEVENTH DAY ADVENTIST<br>Second West Coast Basin Judgment | | 0 |
| SOUTHERN CALIFORNIA EDISON COMPANY<br>Successor to Associated Southern Investment Co. | 10.4<br>46.7 | 57.1 |
| SOUTHERN CALIFORNIA WATER COMPANY<br>Successor to Carmelita Rosecrans Ewing<br>Successor to Ryan Aeronautical Company<br>Successor to Southern Pacific Company<br>Successor in part to Owen W. Curtis<br>Successor in part to B. Robinson & Associates | 6265.3<br>91.3<br>20.2<br>166.0<br>3.44<br>2.4 | 6548.64 |
| SOUTHERN PACIFIC COMPANY, sued as Southern Pacific Railroad Co.<br>Sold to So. California Water Co. | 166.0<br>-166.0 | 0 |
| SOUTHWEST PROPERTIES, INC., a corporation | | 0 |
| SOUTHWEST STEEL ROLLING MILLS<br>Successor to A.K. Wilson Lumber Co.<br>Sold to Coast Forest Products | <br>3.4<br>-3.4 | 0 |
| SOUTHWESTERN PORTLAND CEMENT COMPANY, a corporation<br>Sold to Chandler's Palos Verdes Sand and Gravel Corp. | 15.0<br>-15.0 | 0 |
| SPANISH-AMERICAN INSTITUTE<br>Sold to Futura Industries, Inc. | 44.4<br>-44.4 | 0 |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| SPARKLETTS DRINKING WATER CORPORATION | | 152.6 |
| Successor to Gladys Kurtz | 3.5 | |
| Successor to James McCandless | 6.7 | |
| Successor to Kahlert, et al. | 18.9 | |
| Successor to Rembert C. Anderson, et al, | 80.5 | |
| Successor to State of California | 26.1 | |
| Successor to Wechsler, B.A. | 3.1 | |
| Successor in part to Kelly Pipe Company | 13.8 | |
| STANDARD OIL COMPANY OF CALIFORNIA (See Chevron U.S.A., Inc.) | | 0 |
| STAUFFER CHEMICAL COMPANY | | 521.0 |
| STEPHENSON, E.R. sued as E.R. Stevenson L.F. Stephenson | | 0 |
| STEWART, MRS. A.V. | | 0 |
| STRUBLE, CLYDE C. one Ames L. Avers one Clara Avers | | 0 |
| SUNSET OIL COMPANY, a corporation | | 0 |
| SUPERIOR OIL COMPANY (THE) | | 0 |
| SUTHERLAND, LOUISE A., sued as Bertha L. Sutherland | | 0 |
| SWICK, PEGGY | 5.5 | 0 |
| Sold to Hilario Alwag and Emma Alwag | -5.5 | |
| TAIX, MARIE D. Edith T. Viole, sued as Edith T. Violi | | 0 |
| TAMURA, TAKATOSHI one State of California, successor | | 0 |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| TANAKA, GEORGE Reiko Tanaka one Susumu Katsuda | | 0 |
| TAYLOR AUTO TRANSPORT Second West Coast Basin Judgment | | 0 |
| TEMPLETON, J.A. | | 0 |
| TERRY, RUBY one Reldon G. Pinney and one Nellie B. Pinney | | 0 |
| TEXACO INC. (formerly The Texas Company ) | | 3432.0 |
| THAXTER, RALPH, sued as R.F. Thaxter and Lois A. Lenoir | 3.5 | 0 |
| Sold to Kenichi Inose | -3.5 | |
| THORSON HOMES, INC., a corporation J.B. Investment Company, a corporation Anaheim Construction Company, a corporation | | 0 |
| TIDEWATER OIL CO., sued as Tide-Water Associated Oil Company (See Phillips Petroleum Company) | | 0 |
| TITLE, SIDNEY R. AND CHARLOTTE W. TITLE Successor to Keith W. and Opal B. Schlaegel | 13.6 | 0 |
| Sold to ABC Nursery, Inc. | -13.6 | |
| TORINO, JOSEPH Second West Coast Basin Judgment | | 0 |

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| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| TORRANCE, CITY OF | 2519.0 | 3804.73 |
| Successor to Alcast Foundry, et al. | 7.2 | |
| Successor to Richard Barclay and R.A. Watt | 59.96 | |
| Successor to Belvidere Mutual Water Company | 33.4 | |
| Successor to Anna Mae Jones | 50.2 | |
| Successor to Moneta Water Company | 916.0 | |
| Successor to Ronald E. Moran | 9.0 | |
| Successor to Normandie Park | 136.82 | |
| Successor to Torrance Unified School District | 59.4 | |
| Successor to R.A. Watt, Inc. | 13.75 | |
| TORRANCE SAND AND GRAVEL CORPORATION | | 0 |
| Successor to Weston Investment Co. | 184.0 | |
| Sold to Chandler's Palos Verdes Sand-Gravel Corp. | -184.0 | |
| TORRANCE UNIFIED SCHOOL DISTRICT | | 0 |
| Successor to Hilario S. Alwag and Emma Alwag | 59.4 | |
| Sold to City of Torrance | -59.4 | |
| TOY, YING | | 0 |
| TRAUB, ALBERT A. | | 0 |
| Jane P. Traub | | |
| one Baron Traub | | |
| TRIMBLE, CLYFF A. | | 0 |
| one Mary E. Trimble | | |
| TUNE, MATES, ET AL. | | 0 |
| Successor to Josephine Watkinson | 3.1 | |
| Sold to B.A. Wechsler | -3.1 | |
| TURNER, OSCAR E. | | 0 |
| one Elizabeth Miller Kolf | | |
| UCHINO, BRUCE | | 0 |
| UCHINO, SAKIYO | | |
| Second West Coast Basin Judgment | | |



| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| UEDA, ALICE M. | | 0 |
| Second West Coast Basin Judgment | | |
| UNION NURSERY, INCORPORATED | | 4.7 |
| Second West Coast Basin Judgment | | |
| UNION OIL COMPANY OF CALIFORNIA | | 2670.0 |
| UNION PACIFIC RAILROAD COMPANY | | 0 |
| Second West Coast Basin Judgment | | |
| UNITED CALIFORNIA BANK | | 0 |
| Successor to Ballman, Rosemary N. | 7.0 | |
| Sold to ABC Nursery, Inc. | -2.0 | |
| Sold to Nozaki, Sumikichi | -5.0 | |
| UNITED STATES NAVY DEPARTMENT | | * |
| Transferred from Aluminum Company of America | 1.7 | |
| *Long Term Lease to McDonnell Douglas Corp. | -1.7 | |
| UNITED STATES STEEL CORPORATION Columbia-Geneva Steel Div., successor by merger to Columbia Steel Company | | 1791.0 |
| UNIVERSAL-CONSOLIDATED OIL COMPANY, a corporation | | 0 |
| URBIE, JOSE | | 0 |
| USSERY, ANNA MAE AND LAWRENCE USSERY | | 0 |
| one Mike L. Herrback | | |
| one Rae Herrback | | |
| VALDEZ, HENRY | | 0 |
| VAN VLIET, A. | | 0 |
| one Jake Zwaagstra and | | |
| one Jessie M. Zwaagstra | | |
| VAN CAMP SEA FOOD COMPANY | | 0 |
| VERBURG, WILLIAMS, sued as Menlo Verburg and | | 0 |
| Clara B. Verburg | 6.7 | |
| Sold to ABC Nursery, Inc. | -6.7 | |

| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| VETTER, MARY | | 0 |
| VILLAGOMEZ, ENRIQUE, A.<br>Ysabel F. Villagomez | | 0 |
| VOLLMER, FRANK J. | | 0 |
| WADA, KARU AND SATORU WADA | | 0 |
| Transferred from C.F. Johnson | 12.2 | |
| Sold to Pacific Crest Cemetery Company | -12.2 | |
| WAGNER, EDWIN E. | | 0 |
| WAGNER, J.F.<br>one Orville N. Crafts | | 0 |
| WAGNER, JOSEPH F. | | 0 |
| WAIT, E.J. | | 0 |
| WALKER, PAUL E.<br>Second West Coast Basin Judgment | | 0 |
| WARD, EARL C. | | 0 |
| WARNER, DANIEL E. | | 0 |
| WATKINSON, JOSEPHINE | 3.1 | 0 |
| Sold to Mates Tune, et al. | -3.1 | |
| WATSON LAND CO., sued as Watson Estate Company | | 80.2 |
| Successor in part to Dominguez Water Corporation | 42.6<br>37.6 | |
| WATT INDUSTRIAL PROPERTIES<br>Successor to William Little | 0.1 | 0.1 |

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| PARTY AND SUCCESSOR, IF ANY | | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|---|
| WATT, R.<br>WATT, R.A.<br>WATT, R.A.,INCORPORATED<br>Watt, R.A. Construction Company | | 0 |
| Successor to Ned Ewing, et al | 6.5 | |
| Successor in part to Isabela J. Granz Estate | 13.75 | |
| Successor in part to Joughin Torrance Ranch | 55.35 | |
| Sold to Dominguez Water Corp. | -61.85 | |
| Sold to City of Torrance | -13.75 | |
| WECHSLER, B.A. | | 0 |
| Successor to Mates Tune, et al. | 3.1 | |
| Sold to Sparkletts Drinking Water Corp. | -3.1 | |
| WEEKS, M.E. | | 0 |
| WESCOTT, FRANK | | 0 |
| WESTON INVESTMENT COMPANY, sued as Richard Roe Co. 2 | 184.0 | 0 |
| one K.S. Senness<br>one Charles W. Shepard<br>Sold to Torrance Sand and Gravel Corp. | -184.0 | |
| WESTON, BEN | | 0 |
| WILSON, DON, BUILDERS | | 0 |
| Successors to Kasuo Isamu and Yoshiki R. Kita | 32.6 | |
| Sold to Dominguez Water Corp. | -32.6 | |
| WILSON, A.K., LUMBER COMPANY, a corporation | | 0 |
| one Martin Bros. Box Company of California | 3.4 | |
| Sold to Southwest Steel Rolling Mills | -3.4 | |
| WIRZ, FRANK | | 0 |
| WISEBURN SCHOOL DISTRICT | | 8.2 |

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| PARTY AND SUCCESSOR, IF ANY | ADJUDICATED RIGHT IN ACRE FEET, ANNUALLY |
|---|---|
| WITTSTROM, P.J. | 0 |
| WOOLLEY, CORA B. sued as Cora B. Wooley | 0 |
| WOODLAND, T.W. | 0 |
| WOODLAND CEMETERY ASSOCIATION | 0 |
| WOODMAN, KATHERINE P. sued as F.T. Woodman (See Fred A. Jungquist) | 0 |
| WOOLNER, HENRY S. | 0 |
| WREDEN, MINNIE V. one Golden Monroe Homes, Inc. | 0 |
| WRIGHT, A.P. sued as Paul Wright | 0 |
| ZIEGLER, MAXWELL | 0 |
| ZWEITER, MARY | 0 |
| Total | 64,477.75 |



IV.

Adjudicated Rights Transferable.

Any rights decreed and adjudicated herein may be transferred, assigned, licensed or leased by the owner thereof provided, however, that no such transfer shall be complete until compliance with the appropriate notice procedures established by the Watermaster herein.

Rights adjudicated herein which are temporarily transferred, licensed or leased shall be considered the production from the Basin on behalf of such transferee, licensee or lessee which next follows his production of released exchange pool water, if any.

V.

Physical Solution - Carry-Over, Excess Production and Drought Carry-Over.

1. Carry-over. In order to add flexibility to the operation of this Judgment and to assist in a physical solution to meet the water requirements in the West Basin, each of the parties to this action who is adjudged in Paragraph III hereof to have an Adjudicated Right and who, during a water year, does not extract from the Basin all of such party's Adjudicated Right, is permitted to carry over from such water year the right to extract from the Basin in the next succeeding water year an amount of water equivalent to the excess of his Adjudicated Right over his extraction during said water year not to exceed, however, 10% of such party's Adjudicated Right or two acre-feet, whichever is the larger.

2. Excess Production. In order to meet possible

emergencies, each of the parties to this action who is adjudged in paragraph III hereof to have an Adjudicated Right is permitted to extract from the Basin in any water year for beneficial use an amount in excess of each such party's Adjudicated Right not to exceed 2 acre-feet or ten per cent (10%) of such party's Adjudicated Rights, whichever is the larger, and in addition thereto, such greater amount as may be approved by the Court. If such greater amount is recommended by the Watermaster, such order of Court may be made ex parte. Each such party so extracting water in excess of his Adjudicated Rights shall be required to reduce his extractions below his Adjudicated Rights by an equivalent amount in the water year next following. Such requirement shall be subject to the proviso that in the event the Court determines that such reduction will impose upon such a party, or others relying for water service upon such party, an unreasonable hardship, the Court may grant an extension of time within which such party may be required to reduce his extractions by the amount of the excess theretofore extracted by such party. If such extension of time is recommended by the Watermaster, such order of Court may be granted ex parte.

3. Drought Carry-over. By reason of this Court's Orders dated June 2, 1977, and September 29, 1977, for the water years 1976-77 and 1977-78 any party herein (including any successor in interest) can "carry-over" until utilized, any Adjudicated Right (including any authorized carry-over rights from prior years) unexercised during said water years.

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VI.

Physical Solution- Exchange Pool Provisions.

As a further part of said physical solution herein imposed:

1. Mandatory Offer to Exchange Pool. Not less than sixty (60) days prior to the beginning of each water year, each party having supplemental water available to him through then existing facilities, other than water which any such party has the right to extract hereunder, shall file with the Watermaster the offer of such party to release to the Exchange Pool the amount by which such party's Adjudicated Right exceeds one-half of the estimated total required use of water by such party during the ensuing water year, provided that the amount required to be so offered for release shall not exceed the amount such party can replace with supplemental water so available to him.

(a) Basis of Offer to Exchange Pool- Redetermination of Offer by Watermaster. Such estimate of total required use and such mandatory offer shall be made in good faith and shall state the basis on which the offer is made, and shall be subject to review and redetermination by the Watermaster, who may take into consideration the prior use by such party for earlier water years and all other factors indicating the amount of such total required use and the availability of replacement water.

(b) Voluntary Offer to Exchange Pool. Any party filing an offer to release water under the mandatory provisions of this Paragraph VI may also file a voluntary offer to release

any part or all of any remaining amount of water which such party has the right under this Judgment to pump or otherwise extract from the Basin, and any party who is not required to file an offer to release water may file a voluntary offer to release any part or all of the amount of water which such party has the right under this Judgment to pump or otherwise extract from the Basin. All such voluntary offers shall be made not less than sixty (60) days prior to the beginning of each water year.

2. Price of Water Offered to Exchange Pool. Each offer to release water under the foregoing subparagraph [1 (a) and 1 (b)] shall be the price per acre-foot declared and determined at the time of the filing of such offer by the releasing party; provided:

(a) Replacement Cost. That such price per acre-foot shall not exceed the price which the releasing party would have to pay to obtain from others, in equal monthly amounts, through existing facilities, a quantity of supplemental water equal in amount to that offered to be released; or

(b) Maximum Price. If any such releasing party has no existing facilities through which to obtain water from others, such price shall not exceed the sum of the price per acre-foot charged by The Metropolitan Water District of Southern California to West Basin Municipal Water District plus the additional amount per acre-foot charged by the latter to municipalities and public utilities for water received from said Metropolitan Water District.

3. Price Dispute-Objection - Watermaster Determination-Court Determination. In the event of a dispute as to any price



at which water is offered for release, any party affected thereby may, within thirty (30) days thereafter, by an objection in writing, refer the matter to the Watermaster for determination. Within thirty (30) days after such objection is filed the Watermaster shall consider said objection and shall make his finding as to the price at which said water should be offered for release and notify all interested parties thereof. Any party in compliance to these Exchange Pool Provisions may file with the Court, within thirty (30) days thereafter, any objection to such finding or determination of the Watermaster and bring the same on for hearing before the Court at such time as the Court may direct, after first having served said objection upon each of the interested parties. The Court may affirm, modify, amend or overrule such finding or determination of the Watermaster. Pending such determination if the water so offered has been allocated, the party making the offer shall be paid the price declared in his offer, subject to appropriate adjustment upon final determination. The costs of such determination shall be apportioned or assessed by the Watermaster in his discretion between or to the parties to such dispute, and the Watermaster shall have the power to require, at any time prior to making such determination, any party or parties to such dispute to deposit with the Watermaster funds sufficient to pay the cost of such determination, subject to final adjustment and review by the Court as provided in this Paragraph.

4. Request For Water From Exchange Pool. Not less than sixty (60) days prior to the beginning of each water year any

party whose estimated required use of water during the ensuing water year exceeds the sum of the quantity of water which such party has the right under this Judgment to extract from the Basin and the quantity available to him through then existing facilities, may file with the Watermaster a request for the release of water in the amount that his said estimated use exceeds his said available supply. Such request shall be made in good faith and shall state the basis upon which the request is made, and shall be subject to review and redetermination by the Watermaster. Within thirty (30) days thereafter the Watermaster shall advise, in writing, those requesting water of the estimated price thereof. Any party desiring to amend his request by reducing the amount requested may do so after the service of such notice. Prior to the first day of each water year the Watermaster shall determine if sufficient water has been offered to satisfy all requests. If he determines that sufficient water has not been offered he shall reduce such requests pro rata in the proportion that each request bears to the total of all requests. Thereupon, not later than said first day of each water year, he shall advise all parties offering to release water of the quantities to be released by each and accepted in the Exchange Pool and the price at which such water is offered. Simultaneously, he shall advise all parties requesting water of the quantities of released water allocated from the Exchange Pool and to be taken by each requesting party and the price to be paid therefor.

5. Allocation of Exchange Pool Water by Watermaster. In allocating water which has been offered for release to the



Exchange Pool under subparagraph 1 hereof, the Watermaster shall first allocate that water required to be offered for release and which is offered at the lowest price pursuant to subparagraph 2 hereof, and progressively thereafter at the next lowest price or prices. If the aggregate quantity of water required to be released is less than the aggregate quantity of all requests for the release of water made pursuant to subparagraph 4 hereof, he shall then allocate water voluntarily offered for release and which is offered at the lowest price and progressively thereafter at the next lowest price or prices, provided that the total allocation of water shall not exceed the aggregate of all such requests.

Any water offered for release under subparagraph 1 hereof and not accepted in the Exchange Pool and not allocated therefrom shall be deemed not to have been offered for release and may be extracted from the Basin by the party offering the same as if such offer had not been made.

Each party requesting the release of water for his use and to whom released water is allocated from the Exchange Pool may thereafter, subject to all of the provisions of this Judgment, extract such allocated amount of water from the Basin, in addition to the amount such party is otherwise entitled to extract hereunder during the water year for which the allocation is made.

6. Exchange Pool Water Pumped Before Pumper's Own Right. From and after the first day of each water year, all water extracted from the Basin by any party requesting the release of water and to whom such water is allocated shall be deemed to have

been water so released until the full amount released for use by him shall have been taken, and no such party shall be deemed to have extracted from the Basin any water under his own right so to do until said amount of released water shall have been extracted. Water extracted from the Basin by parties pursuant to their request for the release of water shall be deemed to have been taken by the offerors of such water under their own rights to extract water from the Basin.

7. Price and Payment For Water Released for Exchange Pool. All parties allocated water under subparagraph 4 hereof shall pay a uniform price per acre-foot for such water, which price shall be the weighted average of the prices at which all the water allocated was offered for release.

Each party shall pay to the Watermaster, in five equal monthly installments during the applicable water year, an amount equal to the quantity of water allocated to him multiplied by said uniform price. The Watermaster shall bill each such party monthly for each such installment, the first such billing to be made on or before the first day of the second month of the water year involved, and payment therefor shall be made to the Watermaster within thirty (30) days after the service of each such statement. If such payment be not made within said thirty (30) days such payment shall be delinquent and a penalty shall be assessed thereon at the rate of 1% per month until paid. Such delinquent payment, including penalty, may be enforced against any party delinquent in payment by execution or by suit commenced by the Watermaster or by any party hereto for the benefit of the Watermaster.

Promptly upon receipt of such payment, the Watermater shall make payment for the water released and allocated, first, to the party or parties which offered such water at the lowest price, and then through successive higher offered prices up to the total allocated.

VII.

Additional Pumping Allowed Under Agreement With Central and West Basin Water Replenishment District, During Periods of Emergency.

Central and West Basin Water Replenishment District, a public corporation of the State of California, (Division 18, commencing with Section 60,000 of the Water Code), hereinafter "Replenishment District", overlies West Basin and engages in activities of replenishing the ground waters thereof.

During an actual or threatened temporary shortage of the imported water supply to West Basin, Replenishment District may, by resolution, determine to subsequently replenish the Basin for any water produced in excess of a party's adjudicated rights hereunder, within a reasonable period of time, pursuant to agreements with such parties (to a maximum of 10,000 acre feet), under the terms and conditions hereinafter set forth.

(a) Notwithstanding any other provision of this Judgment, parties (including successors in interest) who are water purveyors, as hereinabove defined, are authorized to enter into agreements with Replenishment District under which such water purveyors may exceed their Adjudicated Rights for a particular water year when the following conditions are met:

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(1) Replenishment District is in receipt of a resolution of the Board of Directors of The Metropolitan Water District of Southern California ("MWD") stating there is an actual or immediately threatened temporary shortage of MWD's imported water supply compared to MWD's needs, or a temporary inability to deliver MWD's imported water supply throughout its area, which will be alleviated in part by over-pumping from West Basin.

(2) The Board of Directors of both Replenishment District and West Basin Municipal Water District (WBMWD), by resolutions, concur in the resolution of MWD's Board of Directors and each determine that the temporary overproduction in West Basin will not adversely affect the integrity of the Basin or the sea water barrier maintained along the Coast of West Basin.

(3) In said resolution, Replenishment District's Board of Directors shall set a public hearing, and notice the time, place and date thereof (which may be continued from time to time without further notice) and which said notice shall be given by First Class Mail to the current designees of the parties, filed and served in accordance with Paragraph IX of this Judgment. Said notice shall be mailed at least ten (10) days before said scheduled hearing date.

(4) At said public hearing, parties (including successors in interest) shall be given full opportunity to be heard, and at the conclusion thereof the Board of Directors of Replenishment District by resolution decides to proceed with agreements under this Paragraph VII.

(b) All such agreements shall be subject to the following requirements, and such reasonable others as Replenishment District's Board of Directors shall require:

(1) They shall be of uniform content except as to the quantity involved, and any special provisions considered necessary or desirable with respect to local hydrological conditions or good hydrologic practice.

(2) They shall be offered to all water purveyors, excepting those which Replenishment District's Board of Directors determine should not over-pump because such over-pumping would occur in undesirable proximity to a sea water barrier project designed to forestall sea water intrustion, or within, or in undesirable proximity to, an area within West Basin wherein ground-

water levels are at an elevation where over-pumping is, under all the circumstances, then undesirable.

(3) The maximum terms for the agreements shall be four months, all of which said agreements shall commence and end on the same day (and which may be executed at any time within said four month period), unless an extension thereof is authorized by the Court, under this Judgment.

(4) They shall contain provisions that the water purveyor executing the agreement pay to the Replenishment District a price, in addition to the applicable replenishment assessment, determined on the following formula: The price per acre foot of WBMWD's treated domestic and municipal water for the water year in which the agreement is to run, less the total of: (a) an amount per acre foot as an allowance on account of incremental cost of pumping, as determined by Replenishment District's Board of Directors; and (b) the rate of the replenishment assessment of Replenishment District for the same fiscal year. If the term of the agreement is for a period which will be partially in one fiscal year and partially in another, and a change in



either or both the price per acre foot of WBMWD's treated domestic and municipal water and rate of the replenishment assessment of Replenishment District is scheduled, the price formula shall be determined by averaging the scheduled changes with the price and rate then in effect, based on the number of months each will be in effect during the term of the agreement. Any price for a partial acre foot shall be computed pro rata. Payments shall be due and payable on the principle that over-extractions under the agreement are the last water pumped in the fiscal year, and shall be payable as the agreement shall provide.

(5) They shall contain provisions that:

(a) All of such agreements (but not less than all) shall be subject to termination by Replenishment District if, in the Judgment of Replenishment District's Board of Directors, the conditions or threatened conditions upon which they were based have abated to the extent over-extractions are no longer considered necessary; and

(b) that any individual agreement or agreements may be terminated if the Replenishment District's Board of Directors

finds that adverse hydrologic circumstances have developed as a result of over-extractions by any water purveyor or purveyors which have executed said agreements, or for any other reason that Replenishment District's Board of Directors finds good and sufficient.

(c) Other matters applicable to such agreements and over-pumping thereunder are as follows, and to the extent they would affect obligations of the Replenishment District they shall be anticipated in said agreements:

(1) The quantity of over-pumping permitted shall be additional to that which the water purveyor could otherwise over-pump under this Judgment.

(2) The total quantity of permitted over-pumping under all said agreements during said four months shall not exceed ten thousand (10,000) acre feet, but the individual water purveyor shall not be responsible or affected by any violation of this requirement. That total is additional to over-extractions otherwise permitted under this Judgment.

(3) Only one four month period may be utilized by Replenishment District in entering into such agreements, as to any one emergency or continuation thereof declared by MWD's



Board of Directors under sub-paragraph 6 (a) hereof.

(4) The ex parte provisions of this Judgment may be utilized in lieu of the authority contained herein (which ex parte provisions are not limited as to time, nature or relief, or terms of any agreements), but neither Replenishment District nor any other party shall utilize both as to any one such emergency or continuation thereof.

(5) If any party claims that it is being damaged or threatened with damage by the over-extractions by any party to such an agreement, the Watermaster or any party hereto may seek appropriate action of the Court for termination of any such agreement upon notice of hearing given by the party complaining, to the party to said agreement, to the Replenishment District, and to all parties who have filed a request herein for such special notice. Any such termination shall not affect the obligation of the terminated party to make payments under the agreement for over-extractions which previously occurred thereunder.

(6) Replenishment District shall maintain separate accounting and a separate fund

of the proceeds from payments made pursuant to agreements entered into under this Paragraph VII. Said fund shall be utilized solely for purposes of replenishment and the replacement of waters in West Basin. Replenishment District shall, as soon as practicable, cause replenishment in West Basin by the amounts to be overproduced pursuant to this Paragraph VII, whether through spreading, injection, or in-lieu agreements.

(7) Over-extractions made pursuant to the said agreements shall not be subject to the "make up" provisions of this Judgment, as amended, provided, that if any party fails to make payments as required by the agreement, Watermaster may require such "make up" under Paragraph V hereof.

(8) Water Purveyor under any such agreement may, and is encouraged to, enter into appropriate arrangements with customers who have water rights in West Basin under or pursuant to this Judgment, whereby the Water Purveyor will be assisted in meeting the objectives of the agreement.

(9) Nothing in this Paragraph VII limits the exercise of the reserved and continuing jurisdiction of the court as provided in Paragraph XIV hereof.



VIII.

Injunction.

On and after the date hereof, each of the parties hereto, their successors and assigns, and each of their agents, employees, attorneys, and any and all persons acting by, through, or under them or any of them, are and each of them is hereby perpetually enjoined and restrained from pumping or otherwise extracting from the Basin any water in excess of said party's Adjudicated Rights, except as provided in Paragraphs V, VI, and VII hereof.

IX.

Order of Pumping Credit.

Production of water from the Basin for the use or benefit of the parties hereto shall be credited to each such party in the following order:

1. Exchange Pool production (Paragraph VI).
2. Leased or licensed production (Paragraph IV).
3. Normal carry-over (Paragraph V, 1).
4. Adjudicated Right (Paragraph III).
5. Drought carry-over (Paragraph V, 3).
6. Emergency Production under Agreement with Replenishment District (Paragraph VII).

X.

Loss of Decreed Rights.

It is in the best interests of the parties herein and the reasonable beneficial use of the Basin and its water supply that no party be encouraged to take and use more water than is actually required. Failure to produce all of the water to which a party is entitled hereunder shall not, in and of itself, be

deemed or constitute an abandonment of such party's right in whole or in part.

No taking of water under Paragraphs III, V, VI and VII hereof, by any party to this action shall constitute a taking adverse to any other party; nor shall any party to this action have the right to plead the statute of limitations or an estoppel against any other party by reason of his said extracting of water from the Basin pursuant to a request for the release of water; nor shall such release of water to the Exchange Pool by any party constitute a forfeiture or abandonment by such party of any part of his Adjudicated Right to water; nor shall such release in anywise constitute a waiver of such right although such water, when released under the terms of this Judgment may be devoted to a public use; nor shall such release of water by any such party in anywise obligate any party so releasing to continue to release or furnish water to any other party or his successor in interest, or to the public generally, or to any party thereof, otherwise than as provided herein.

XI.

Watermaster Appointment.

The Watermaster shall be the Department of Water Resources of the Resources Agency of the State of California, to serve at the pleasure of the Court, and said Watermaster shall administer and enforce the provisions of this Judgment and the instructions and subsequent orders of this Court, and shall have the powers and duties hereinafter set forth. If any such provisions, instructions or orders of the Court shall have been disobeyed or disregarded, said Watermaster is hereby empowered and



directed to report to the Court such fact and the circumstances connected therewith and leading thereto.

XII.

Watermaster- Powers and Duties.

In order to assist the Court in the administration and enforcement of the provisions of this Judgment and to keep the Court fully advised in the premises, the Watermaster shall have the following duties in addition to those provided for elsewhere herein:

1. Parties to Measure and Record Static Water Level of Each Well. The Watermaster may require each party, at such party's own expense, to measure and record not more often than once a month, the elevation of the static water level in such of his wells in the Basin as are specified by the Watermaster.

2. Parties to Install Meters on Wells and Record Production Therefrom. The Watermaster may require any party hereto owning any facilities for pumping or otherwise extracting water from the Basin, at such party's own expense, to install and at all times maintain in good working order, mechanical measuring devices, approved by the Watermaster, and keep records of water production, as required by the Watermaster, through the use of such devices. However, if in the opinion of the Watermaster such mechanical devices are not practicable or feasible, the Watermaster may require such party to submit estimates of his water production, together with such information and data as is used by such party in making such estimate. Upon the failure of any party to install such device or devices on or before the date the Watermaster shall fix for such installation, or to

provide the Watermaster with estimates of water production and information on which such estimates are based, the Watermaster may give the Court and the party notice of such failure for proper action in the premises.

3. Watermaster to Assemble Records and Data and Evaluate Same. The Watermaster shall collect and assemble the records and other data required of the parties hereto, and evaluate such records and other data. Such records and other data shall be open to inspection by any party hereto or his representative during normal business hours.

4. Watermaster's Annual Budget. The Watermaster shall prepare a tentative budget for each water year, stating the estimated expense for administering the provisions of this Judgment. The Watermaster shall mail a copy of said tentative budget to the designee of each of the parties hereto having an Adjudicated Right, at least sixty (60) days before the beginning of each water year. If any such party has any objection to said tentative budget or any suggestions with respect thereto, he shall present the same in writing to the Watermaster within fifteen (15) days after service of said tentative budget upon him. If no objections are received, the tentative budget shall become the final budget. If objections to said tentative budget are received, the Watermaster shall, within ten (10) days thereafter, consider such objections, prepare a final budget, and mail a copy thereof to each such party's designee, together with a statement of the amount assessed to each such party, computed as provided in subparagraph 5 of this Paragraph XII. Any such party whose objections to said tentative budget are denied in whole or in part



by the Watermaster may, within fifteen (15) days after the service of the final budget upon him, make written objection thereto by filing his objection with the Court after first mailing a copy of such objection to each party's designee, and shall bring such objection on for hearing before the Court at such time as the Court may direct. If objection to such budget be filed with the Court as herein provided, then the said budget and any and all assessments made as herein provided may be adjusted by the Court following said hearing.

5. Watermaster's Fees as Parties' Costs. The fees, compensation or other expenses of the Watermaster hereunder shall be borne by the parties hereto having Adjudicated Rights in the proportion that each such party's Adjudicated Right bears to the total Adjudicated Rights of all such parties, and the Court or Watermaster shall assess such costs to each such party accordingly.

Payment thereof, whether or not subject to adjustment by the Court as provided in this Paragraph XII, shall be made by each such party, on or prior to the beginning of the water year to which said final budget and statement of assessed costs is applicable. If such payment by any party is not made on or before said date, the Watermaster shall add a penalty of 5% thereof to such party's statement. Payment required of any party hereunder may be enforced by execution issued out of the Court, or as may be provided by any order hereinafter made by the Court, or by other proceedings by the Watermaster or by any party hereto on the Watermaster's behalf.

All such payments and penalties received by the Watermaster

shall be expended by him for the administration of this Judgment. Any money remaining at the end of any water year shall be available for such use in the following water year.

6. Watermaster's Annual Report. The Watermaster shall prepare an annual report within ninety (90) days after the end of each water year covering the work of the Watermaster during the preceding water year and a statement of his receipts and expenditures.

7. Watermaster Report to Contain All Basin Production. The Watermaster shall report separately, in said annual report, all water extractions in the Basin, including that by producers who have no "Adjudicated Right."

8. Watermaster Rules and Regulations. The Watermaster may prescribe such reasonable Rules and Regulations as will assist him in the performance of his duties hereunder.

9. Other Watermaster Duties. The Watermaster shall perform such other duties as directed by the Court and as may be otherwise provided by law.

XIII.

Objection to Watermaster Determination -Notice Thereof and Hearing Thereon.

Any party hereto having an Adjudicated Right who has objection to any determination or finding made by the Watermaster, other than as provided in Paragraphs VI and XII hereof, may make such objection in writing to the Watermaster within thirty (30) days after the date the Watermaster gives written notice of the making of such determination or finding, and within thirty (30) days thereafter the Watermaster shall consider said objection



and shall amend or affirm such finding or determination and shall give notice thereof to all parties hereto having Adjudicated Rights. Any such party may file with the Court within thirty (30) days from the date of said notice any objection to such final finding or determination of the Watermaster and bring the same on for hearing before the Court at such time as the Court may direct, after first having served said objection upon each of the parties hereto having an Adjudicated Right. The Court may affirm, modify, amend or overrule any such finding or determination of the Watermaster.

XIV.

Reserved and Continuing Jurisdiction of Court.

The Court hereby reserves continuing jurisdiction and, upon application of any party hereto having an Adjudicated Right or upon its own motion, may review (1) its determination of the safe yield of the Basin, or (2) the Adjudicated Rights, in the aggregate, of all of the parties as affected by the abandonment or forfeiture of any such rights, in whole or in part, and by the abandonment or forfeiture of any such rights by any other person or entity, and, in the event material change be found, to adjudge that the Adjudicated Right of each party shall be ratably changed; provided, however, that notice of such review shall be served on all parties hereto having Adjudicated Rights at least thirty (30) days prior thereto. Except as provided herein, and except as rights decreed herein may be abandoned or forfeited in whole or in part, each and every right decreed herein shall be fixed as of the date of the entry hereof.

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XV.

Judgment Modifications and Further Orders of Court.

The Court further reserves jurisdiction so that at any time, and from time to time, upon its own motion or upon application of any party hereto having an Adjudicated Right, and upon at least thirty (30) days notice to all such parties, to make such modifications of or such additions to, the provisions of this Judgment, or make such further order or orders as may be necessary or desirable for the adequate enforcement, protection or preservation of the Basin and of the rights of the parties as herein determined.

XVI.

Subsequent Change From Water Year to Fiscal Year.

"Water year" as used in Paragraphs V,VI,VII and XII hereof shall, beginning with the first "fiscal year" (July 1-June 30) commencing at least four months after this "Amended Judgment" becomes final, and thereafter, mean the "fiscal year". Since this changeover will provide a transitional accounting period of nine months, October 1 - June 30, notwithstanding the findings and determinations in the annual Watermaster Report for the last preceding water year, the Adjudicated Right of each of the parties hereto permitted to be extracted from the West Basin for said transitional accounting period shall be on the basis of three-quarters of each said party's otherwise Adjudicated Right. The Watermaster herein shall convert the times of his duties hereunder, including the rendition of a nine month report for the said transitional accounting period (October 1 - June 30), to coincide with the changeover from the water year to the fiscal



year hereunder.

XVII.

Designees of Parties For Future Notice and Service.

Service of this "Amended Judgment" on those parties who have executed and filed with the Court "Agreement and Stipulation for Judgment" or otherwise have named a designee, filed the same herein and have therein designated a person thereafter to receive notices, requests, demands,objections, reports, and all other papers and processes in this cause, shall be made by first class mail, postage prepaid, addressed to such designees (or their successors) and at the address designated for that purpose.

Each party who has not heretofore made such a designation shall, within thirty (30) days after the Amended Judgment herein shall have been served upon that party or his designee, file with the Court, with proof of service of a copy thereof upon the Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that party or delivered to that party, are to be so served or delivered.

A later substitute or successor designation filed and served in the same manner by any party shall be effective from the date of such filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that party.

Delivery to or service upon any party by the Watermaster, by any other party, or by the Court, of any item required to be

served upon or delivered to a party under or pursuant to this Judgment, may be by deposit in the mail, first class, postage prepaid, addressed to the latest designee and at the address in said latest designation filed by that party.

Parties hereto who have not entered their appearance or whose default has been entered and who are adjudged herein to have an Adjudicated Right, and who have not named a designee for service herein, shall be served with all said future notices, papers and process herein, and service herein shall be accomplished, by publication of a copy of such said notice, paper or process addressed to, "Parties to the West Basin Adjudication"; said publication shall be made once each week for two successive weeks in a newspaper of general circulation, printed and published in the County of Los Angeles, State of California, and circulated within the West Basin Area; the last publication of which shall be at least two weeks and not more than five weeks immediately preceding the event for which said notice is given or immediately preceding the effective date of any order, paper or process; in the event an effective date other than the date of its execution is fixed by the Court in respect of any order, paper or process, said last publication shall be made not more than five weeks following an event, the entry of an order by the Court,or date of any paper or process with respect to which such notice is given.

XVIII.

Intervention of Successors In Interest and New Parties.

Any person who is not a party herein or successor to such party and who proposes to produce water from the Basin may



seek to become a party to this Judgment, through a Stipulation In Intervention entered into with the Watermaster. Watermaster may execute said Stipulaton on behalf of the other parties herein, but such Stipulation shall not preclude a party from opposing such intervention at the time of the court hearing thereon. Said Stipulation for Intervention must thereupon be filed with the Court, which will consider an order confirming said intervention following thirty (30) days notice thereof to the parties, served as herein provided. Thereafter, if approved by the Court, such Intervenors shall be a party herein, bound by this Judgment and entitled to the rights and privileges accorded under the physical solution imposed herein.

XIX.

Judgment Binding on Successors.

Subject to the specific provisions hereinbefore contained, this Judgment and all provisions thereof are applicable to, binding upon and inure to the benefit of not only the parties to this action, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys-in-fact of any such persons.

XX.

Effect of Amended Judgment on Orders Heretofore Made and Entered Herein.

This Amended Judgment shall not abrogate the rights of any additional carry-over of unused Adjudicated Rights of the parties herein, as may exist pursuant to the Orders herein filed June 2, 1977, and September 29,1977.

XXI.

Costs.

None of the parties hereto shall recover his costs as against any other party.

The Clerk shall enter this Amended Judgment forthwith.

Dated: MAR. 21, 1980.

Judge Specially Assigned

HELM, BUDINGER & LEMIEUX
An Association including
A Professional Corporation
4444 Riverside Drive, Suite 201
Burbank, California 91505

Telephone (213) 849-6473

Attorneys for Defendant-Petitioner,
Dominguez Water Corporation

SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

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|---|---|
| CALIFORNIA WATER SERVICE COMPANY, et al., Plaintiffs, vs. CITY OF COMPTON, et al., Defendants. | No. 506806<br>NOTICE OF ORDER AND AMENDMENT TO THE AMENDED JUDGMENT HEREIN (TO PROVIDE FOR NON-CONSUMPTIVE ADDITIONAL WATER PRODUCTION TO RECOVER OLD REFINED OIL AND FOR BASIN CLEAN-UP)<br>Hearing: March 22, 1984<br>Dept. 48, 1:30 p.m. |

PLEASE TAKE NOTICE that the Court, Judge Julius M. Title, Presiding, on March 22, 1984, at 1:30 p.m. in Department 48, located at 111 N. Hill Street, Los Angeles, California, made the enclosed order approving the amended judgment to provide for non-consumptive additional water production to recover old refined oil and for basin clean-up.

DATED: March 22, 1984 HELM, BUDINGER & LEMIEUX

By Ralph B. Helm
Ralph B. Helm
Attorneys for Dominguez Water Corporation

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A Professional Corporation
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Attorneys for Defendant-Petitioner,
Dominguez Water Corporation

Original Filed
MAR 22 1984
COUNTY CLERK

SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

| | |
|---|---|
| CALIFORNIA WATER SERVICE COMPANY, et al., | No. 506806 |
| Plaintiffs, | ORDER AND AMENDMENT TO THE AMENDED JUDGMENT HEREIN (TO PROVIDE FOR NON-CONSUMPTIVE ADDITIONAL WATER PRODUCTION FROM THE BASIN TO RECOVER OLD REFINED OIL AND FOR BASIN CLEAN-UP) |
| vs. | |
| CITY OF COMPTON, et al., | |
| Defendants. | Hearing: March 22, 1984<br>Dept. 48, 1:30 P.M. |

Pursuant to Paragraph XIV of the Amended Judgment herein, the Petition of defendant, DOMINGUEZ WATER CORPORATION, for an order and amendment to the Amended Judgment herein and notice thereof, came on for hearing at 1:30 o'clock P.M., on March 22, 1984, in Department 48 of the above entitled court. HELM, BUDINGER & LEMIEUX and RALPH B. HELM appeared as attorneys for said defendant-petitioner, and proof being made to the satisfaction of the Court and good cause appearing:

IT IS HEREBY ORDERED:

A. A permit extending for five (5) years from the date hereof is hereby granted to defendant, ATLANTIC RICHFIELD CORPORATION ("ARCO" hereinafter), to extract a maximum of one thousand (1,000) acre feet per year of groundwater from the perched aquifer of the Basin and return the same essentially undiminished in quantity and quality to the same aquifer from which it was removed, as part of a project to remove old refined oil which has leaked into the Basin's aquifers. Such water production and the return thereof to the aquifer from which produced shall be permitted said defendant in addition to any other water production right from the Basin contained in the Judgment herein and as a part of a project for recovery and removal of old refined oil from the Basin.

Said old refined oil floating on the top of the perched groundwater in the Basin can be recovered and removed by said defendant by operations on its refinery property located near the intersection of Wilmington Avenue and Sepulveda Boulevard in the City of Carson, without interferring with other rights herein. Such operations may be conducted substantially as follows: Weep holes may be drilled through the clay lens approximately fifty (50) feet below the ground surface in a shallow aquifer of the Basin under defendant's said property, which will allow old refined oil on top of said clay lens to pass downward and combine with other old refined oil floating on top of the water in the deeper portion of the perched aquifer. Once this old refined oil has reached the said deeper portion of said aquifer it may then be removed therefrom together with any other oil on the water and in the vicinity, at least to the extent and condition existing prior to construction of the said weep holes, utilizing the following procedure:

(a) Water extraction wells may be drilled which, when operating, would create a localized cone of depression in the water table of the perched aquifer and thereby provide a place for a pool of any old refined oil floating on the top of the water to collect.

(b) A ring of injection wells should be constructed around the foregoing extraction wells and used to return the pumped water to the aquifer from which it was extracted without diminution, additives or treatment. In addition to providing for the disposal and return of the said extracted water, this would also tend to create a groundwater mound surrounding the pumping cone which would increase the migration of oil into the said pumping cone.

(c) The said old refined oil concentrated in the cone of depression should be extracted by separate pumps located in the same wells as are used for the extraction of said perched water. The separate oil extraction pumps should extend into the pool of such old oil floating on top of the water and should be designed to extract the said oil without extracting any significant amount of groundwater.

(d) There should be another concentric ring of extraction wells located around the ring of the said injection wells. These extraction wells should be equipped with separate pumps for extracting the water (for reinjection into the aforementioned ring of injection wells) and for extraction of the said old refined oil.

The stated procedure, in effect, consists of two distinct operations. First, there is extraction and reinjection of Basin



water for the purposes of managing the configuration of the water table therein in order to concentrate the said oil. Second, in a separate operation, there is extraction of the said oil so concentrated.

B. At the end of the said five years of operation hereunder, or when sooner terminated if so ordered by Watermaster, or, if ARCO should abandon the oil recovery program herein authorized, defendant, ARCO, shall plug the said herein authorized weep holes and rehabilitate the Basin's aquifers as directed by Watermaster to prevent future transition of groundwater from one Basin aquifer to another, as herein permitted. Such plugging and aquifer restoration to the condition prevailing prior to initiation of the payment shall also be in accordance with any requirements of the California Regional Water Quality Control Board of the Los Angeles Region.

C. Defendant ARCO shall pay in advance to Watermaster a reasonable annual administrative fee to cover all costs associated with and incurred by Watermaster to monitor, inspect and enforce compliance with the terms and conditions of the non-consumptive water use permit granted hereby.

IT IS HEREBY FURTHER ORDERED AND THE AMENDED JUDGMENT HEREIN SHALL BE AND, IT IS, HEREBY, FURTHER AMENDED AS FOLLOWS:

1. Any party herein may petition Watermaster for a non-consumptive water use permit as part of a project to recover old refined oil that has leaked into the perched aquifers of the Basin. Such petition shall:

a) Be accompanied by a processing or application fee determined by and payable in advance to Watermaster.

b) Request a permit for a project for non-consumptive use extractions from the Basin, which shall not not exceed five (5) years in duration, to produce a maximum of one thousand (1,000) acre feet per year of groundwater from the perched aquifers of the Basin, return the same undiminished in quantity and quality to the same aquifer from which produced and, in conjunction therewith, remove old refined oil which floats on the top of the water in such aquifers.

c) Set forth the purpose of the project and the period during which such water is to be so extracted and reinjected.

d) Describe the location, size, design and operation of the proposed water extraction and reinjection facilites.

e) Contain a reasonable estimate of the maximum amount of such water to be extracted and reinjected on both an annual and a total basis.

f) Propose and explain the manner in which any anticipated migration of groundwater from a perched zone to a non-perched zone in the Basin will be discontinued or prevented after completion or conclusion of the project, with any such aquifer restoration and any plugged clay lens holes to meet the requirements of Watermaster and of the California Regional Water Quality Control Board for the Los Angeles Region, for protection of potable groundwater basins.

g) Provide sufficient assurance, in Watermaster's judgment, that upon termination of the project, for any reason, the Basin's aquifer system will be restored to the condition



prevailing prior to initiation of the project to prevent groundwater migration from one zone or Basin acquifer to another. Said aquifer system restoration shall be sufficient to at least meet the conditions which existed prior to granting of the subject permit.

h) State, under penalties of perjury, that a copy of the petition and a notice of the time and place of Watermaster's hearing thereon has been mailed to the designees of all parties herein at least thirty (30) days prior to such hearing.

2. Watermaster shall conduct a public hearing on said petition and application and all parties herein and their represenatives shall be heard concerning the same.

3. Watermaster shall, in its discretion, grant or deny the application and petition for said permit and, if the same if granted, fix a reasonable annual administrative fee to be paid Watermaster by the Permittee. Within fifteen (15) days after the rendition of its decision, Watermaster shall give written notice thereof to the designees of all parties herein.

4. Watermaster's said decision shall be appealable to this court within thirty (30) days of the notice thereof and upon thirty (30) days notice to the designees of all parties herein.

5. Watermaster shall monitor and periodically inspect the permitted project for compliance with the terms and conditions of the granted permit hereunder.

6. Watermaster, on the motion of any party herein or on its own motion, may interrupt or stop the permitted project for non-compliance with the terms of its permit or to protect the integrity of the Basin or of the Judgment herein. Such stop or

interrupt order shall be appealable to this court within thirty (30) days of such order and upon thirty (30) days notice thereof to the designees of all parties herein.

7. The temporary and non-consumptive groundwater production from the shallow perched aquifers of the Basin allowed under the permits provided for herein, shall be in addition to, in excess of and not a part of any other Basin production right herein previously adjudged and it shall not interfere with, ripen into or become a right adverse thereto.

8. No party shall recover costs from any other party herein.

9. The Clerk shall enter this order.

Dated: March 22, 1984

Judge Specially Assigned



COPY PLEASE CONFORM

Wayne K. Lemieux
LAW OFFICES OF WAYNE K. LEMIEUX
141 Duesenberg Drive, Unit 5
Westlake Village, CA 91362

(805) 495-4770

ORIGINAL FILED
MAR 3 1989
COUNTY CLERK

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

| | |
|---|---|
| CALIFORNIA WATER SERVICE COMPANY ET AL.<br>Plaintiff,<br>vs.<br>CITY OF COMPTON ET AL.<br>Defendant. | CASE NO. 506806<br>ORDER AMENDING JUDGMENT |

GOOD CAUSE APPEARING upon the duly-noticed Motion of West Basin Municipal Water District:

IT IS HEREBY ORDERED THAT THE JUDGMENT HEREIN BE AMENDED AS FOLLOWS:

"NON-CONSUMPTIVE PRACTICES

1. Any party herein may petition the Watermaster for a non-consumptive water use permit as part of a project to recover old refined oil or other pollutants that has leaked into the underground aquifers of the Basin. If the petition is granted as set forth in this part, the petitioner may extract the groundwater covered by the petition without the production counting against the petitioner's production rights.

2. If the Watermaster determines that there is a problem of groundwater contamination which the proposed project will remedy or ameliorate, an operator may make extractions of groundwater to remedy or ameliorate that problem if the water is not applied to beneficial surface use, its extractions are made in compliance with terms and conditions established by the Watermaster, and the Watermaster has determined either of the following:

(a) The groundwater to be extracted is unusable and cannot be economically blended for use with other water.

(b) The proposed program involves extraction of usable water in the same quantity as will be returned to the underground without degradation of quality.

3. The Watermaster may provide those terms and conditions the Watermaster deems appropriate, including, but not limited to, restrictions on the quantity of extractions to be so exempted, limitations on time, periodic reviews, requirement of submission of test results from a Watermaster-approved laboratory, and any other relevant terms or conditions.

4. The Watermaster shall conduct a public hearing on the petition and all parties herein and their representatives shall have an opportunity to be heard concerning the same.

5. The Watermaster shall, in its discretion, grant or deny the petition and fix a reasonable annual administrative fee to be paid to the Watermaster by the permittee. Within fifteen (15) days after the rendition of its decision, the Watermaster shall give written notice thereof to the designees of all parties herein.



6. After a noticed, public hearing, the Watermaster may, on the motion of any party herein or on its own motion, interrupt or stop a project for non-compliance with the terms of its permit or rescind or modify the terms of a permit to protect the integrity of the Basin of the Judgment herein. An order to interrupt or stop a project or to rescind or modify the terms of a permit shall apply to groundwater extractions occurring more than 10 days after the date of the order. The permit holder and the designees of all parties herein shall be given two weeks written notice of any hearing to consider interrupting or stopping a permitted project or the rescission or modification of the terms of a permit. Notice will be deemed given when mailed by first-class mail or when personally delivered.

7. The Watermaster's decision to grant, deny, modify or revoke a permit or to interrupt or stop a permitted project may be appealed to this court within thirty (30) days of the notice thereof and upon thirty (30) days notice to the designees of all parties herein.

8. The Watermaster shall monitor and periodically inspect the project for compliance with the terms and conditions of the permit hereunder.

9. No party shall recover costs from any other party herein."

IT IS FURTHER ORDERED that the amendment to the judgment approved by the court on March 22, 1984 ("former amendment") is hereby repealed, provided, all permits issued by the Watermaster under the former amendment shall be deemed under the instant amendment.

Dated: MAR 08 1989

Florence T. Richard
Judge



## VERIFICATION

STATE OF CALIFORNIA, COUNTY OF

I have read the foregoing _____ and know its contents

☒ CHECK APPLICABLE PARAGRAPH

☐ I am a party to this action. The matters stated in the foregoing document are true of my own knowledge except as to those matters which are stated on information and belief, and as to those matters I believe them to be true

☐ I am ☐ an Officer ☐ a partner _____ ☐ a _____ of _____

a party to this action, and am authorized to make this verification for and on its behalf, and I make this verification for that reason. ☐ I am informed and believe and on that ground allege that the matters stated in the foregoing document are true. ☐ The matters stated in the foregoing document are true of my own knowledge except as to those matters which are stated on information and belief, and as to those matters I believe them to be true

☐ I am one of the attorneys for _____

a party to this action. Such party is absent from the county of aforesaid where such attorneys have their offices, and I make this verification for and on behalf of that party for that reason. I am informed and believe and on that ground allege that the matters stated in the foregoing document are true.

Executed on _____, 19____, at _____ California

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Type or Print Name _____ Signature _____

## ACKNOWLEDGMENT OF RECEIPT OF DOCUMENT
(other than summons and complaint)

Received copy of document described as _____

on _____ 19____

Type or Print Name _____ Signature _____

## PROOF OF SERVICE

STATE OF CALIFORNIA, COUNTY OF

I am employed in the county of Ventura, State of California.

I am over the age of 18 and not a party to the within action; my business address is 3209 Old Conejo Rd Newbury Park, CA

On ~~February 18~~, 1989 I served the foregoing document described as NOTICE OF MOTION; MOTION TO AMEND JUDGMENT TO PROVIDE FOR NON-CONSUMPTIVE CLEANUP OPERATIONS; ORDER AMENDING JUDGMENT

on All Interested Parties

in this action by placing a true copy thereof enclosed in a sealed envelope addressed as follows:

SEE ATTACHED LIST

☒ (B) MAIL: I caused such envelope with postage thereon fully prepaid to be placed in the United States mail at Newbury Park, California.

Executed on January 17, 1989, 19____, at Newbury Park, California

☐ (B) PERSONAL SERVICE: I caused such envelope to be delivered by hand to the offices of the addressee.

Executed on _____ 19____ at _____, California

☒ (State) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

☐ (Federal) I declare that I am employed in the office of a member of the bar of this court at whose direction the service was made.

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# APPENDIX G

# WEST COAST BASIN GROUNDWATER LEVELS

Draft

Water Replenishment District
of Southern California

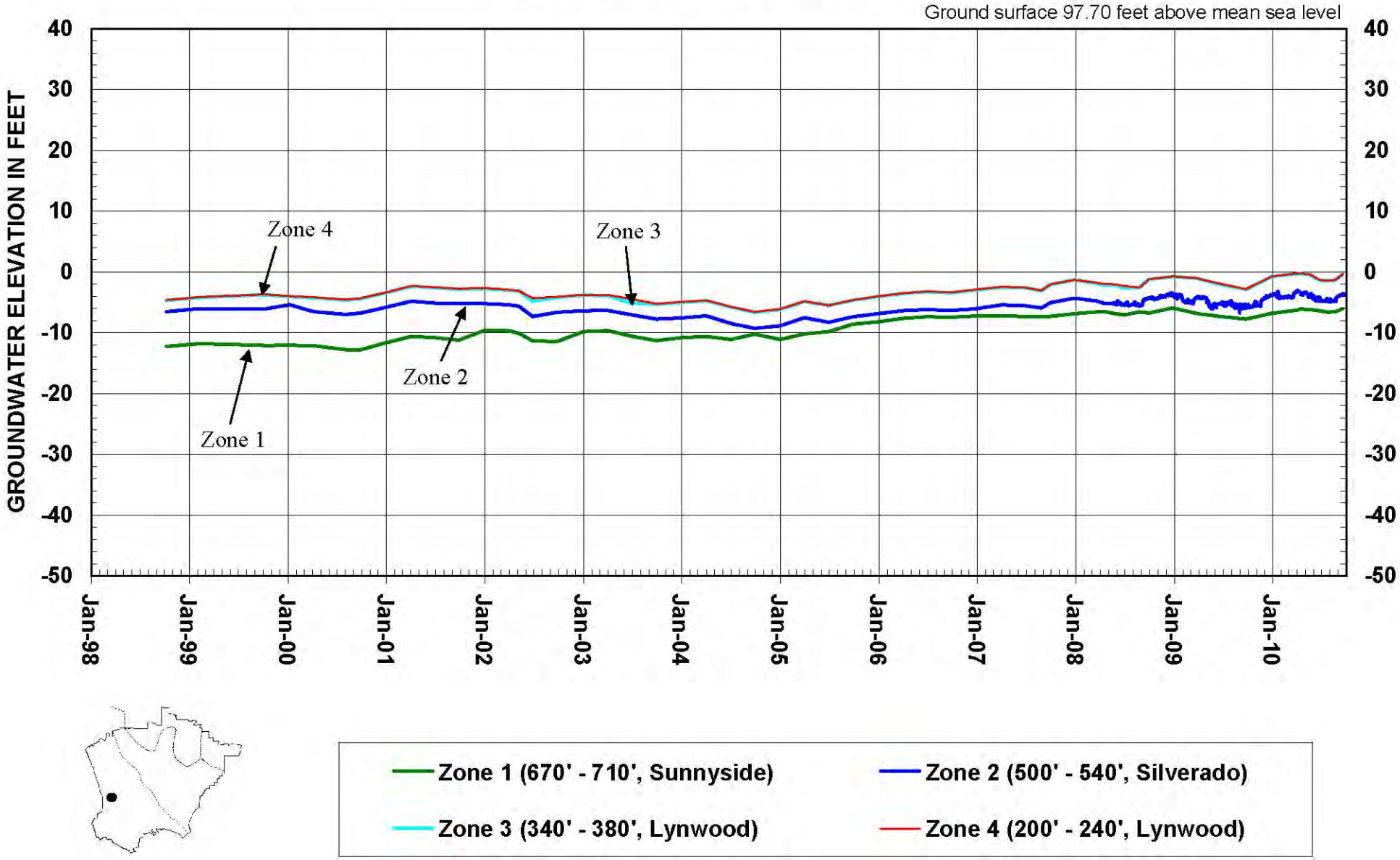
# REGIONAL GROUNDWATER MONITORING REPORT
# WATER YEAR 2009-2010

Central and West Coast Basins
Los Angeles County, California

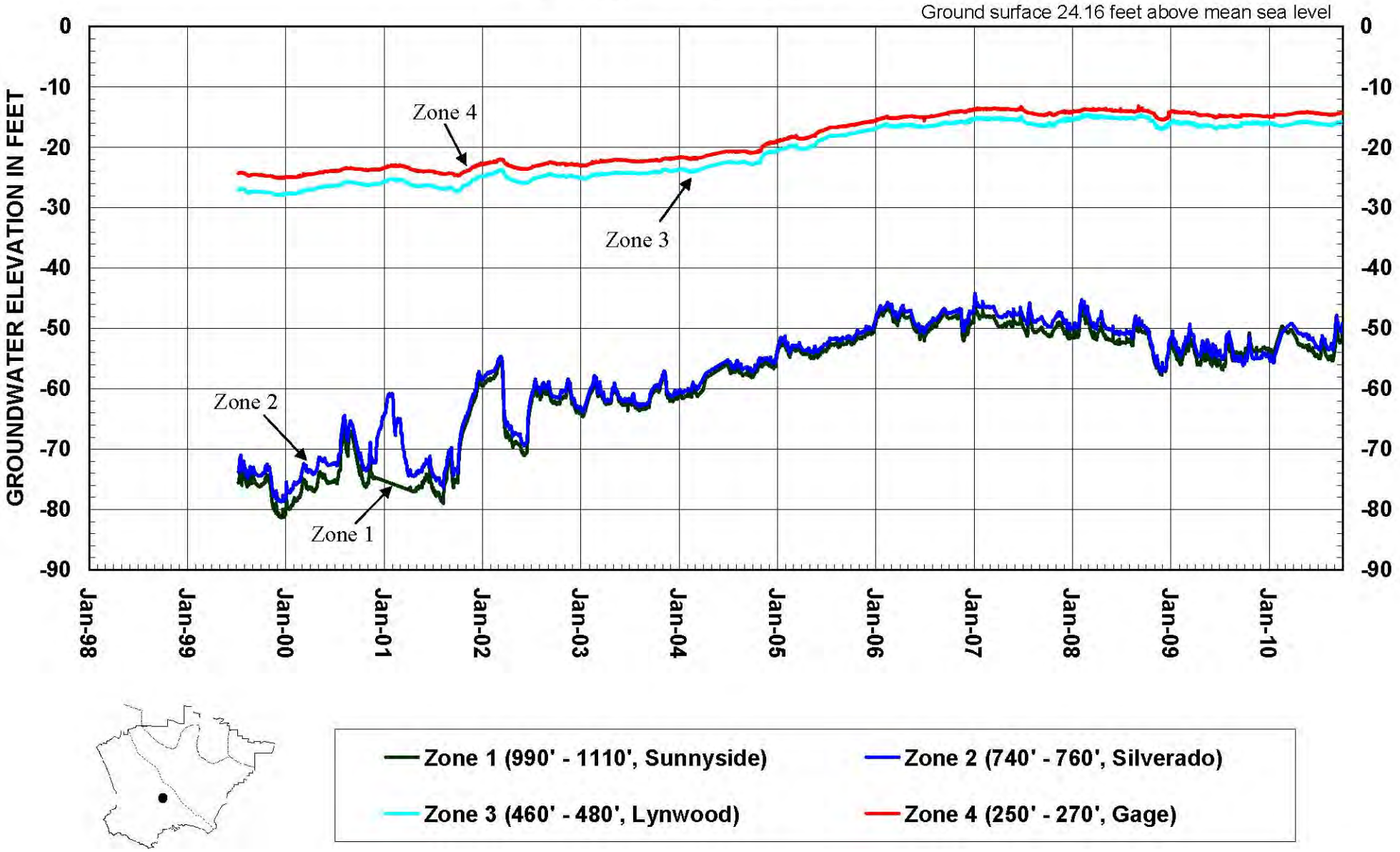
February 2011

WRD

# FIGURE 2.7
## WATER LEVELS IN WRD KEY NESTED MONITORING WELL PM-4 MARINER



# FIGURE 2.8
## WATER LEVELS IN WRD KEY NESTED MONITORING WELL CARSON #1




1/24/2011

# APPENDIX H

# DWR BULLETIN 118 WEST COAST SUBBASIN

Draft

# Coastal Plain of Los Angeles County Groundwater Basin, West Coast Subbasin

- Groundwater Basin Number: 4-11.03
- County: Los Angeles
- Surface Area: 91,300 acres (142 square miles)

## Basin Boundaries and Hydrology

The West Coast Subbasin of the Coastal Plain of Los Angeles Basin is adjudicated and commonly referred to as the "West Coast Basin." It is bounded on the north by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River. On the east it is bounded by the Newport-Inglewood fault zone, and on the south and west by the Pacific Ocean and consolidated rocks of the Palos Verdes Hills (DWR 1999). The surface of the subbasin is crossed in the south by the Los Angeles River through the Dominguez Gap, and the San Gabriel River through the Alamitos Gap, both of which then flow into San Pedro Bay. Average precipitation throughout the subbasin is 12 to 14 inches.

## Hydrogeologic Information

### *Water Bearing Formations*

The water-bearing deposits include the unconsolidated and semi-consolidated marine and alluvial sediments of Holocene, Pleistocene, and Pliocene ages. Discharge of groundwater from the subbasin occurs primarily by pumping extractions (DWR 1961).

The principal aquifers present in the subbasin are below.

| Aquifers/ Aquiclude | EPOCH | Formation | Lithology | Maximum Thickness (feet) | Yield (gpm) |
|---|---|---|---|---|---|
| Semiperched | Holocene | Alluvium | Sand, silt, clay | 60 | |
| Bellflower | | | Silty clay, clay | 80 | |
| Gaspur | | | Coarse sand, gravel | 120 | |
| Bellflower | | | Silty clay, clay | 200 | |
| Gardena | | | Sand, gravel | 160 | 100-1300 |
| Gage | Pleistocene | Lakewood Formation | Fine to coarse-grained sand and gravel | 160 | |
| Lynwood | Lower Pleistocene | San Pedro Formation | Sand, gravel with small amount of clay | 200 | 500-600 |
| Silverado | | | Coarse sand and gravel | 500 | |
| unnamed | | | Coarse sand and gravel/silt and clay | 500 to 700 | |

The Semiperched aquifer of both Holocene and Pleistocene age is unconfined. The water in underlying aquifers is confined throughout most of the Basin, though the Gage and Gardena aquifers are unconfined where water levels have dropped below the Bellflower aquiclude (DWR 1961). These aquifers merge in places with adjacent aquifers, particularly near Redondo Beach (DWR 1961).

The Silverado aquifer, underlying most of the West Coast Basin, is the most productive aquifer in the Basin. It yields 80-90 percent of the groundwater extracted annually (DWR 1999). Specific yield values range from 1 percent to 26 percent (DWR 1961), with a subbasin average of 13 percent (DWR 1961).

### *Restrictive Structures*

Folding and associated faulting have formed the dominant northwest-trending structural features in West Coast Basin. The major structural feature in the area is the Newport-Inglewood fault zone, which forms the eastern boundary of the subbasin and is a partial barrier to groundwater movement in the area. This zone is marked by thinning, folding and offsetting of the aquifers. Southeast of Signal Hill, the Cherry Hill and Reservoir Hill faults of this zone act as barriers to groundwater movement in all aquifers (DWR 1961). The Avalon-Compton fault acts as a barrier below the Lynwood aquifer. The Rosecrans and Dominguez anticlines appear to act as partial barriers to groundwater movement (DWR 1961).

### *Recharge Areas*

Natural replenishment of the Basin's groundwater supply is largely limited to underflow from the Central Basin through and over the Newport-Inglewood fault zone. Water spread in the Central Basin percolates into aquifers there, and eventually some crosses the Newport-Inglewood fault to supplement the groundwater supply in the West Coast Basin. Seawater intrusion occurs in some aquifers that are exposed to the ocean offshore. Injection wells in the West Coast Basin Barrier create a north-south trending mound of fresh water from the LA International Airport south to the Palos Verdes Hills. Injection wells also form a protective mound at the Dominguez Gap Barrier near Wilmington (DWR 1999). Minor replenishment to the West Coast Basin occurs from infiltration of surface inflow from both the Los Angles and San Gabriel Rivers into the uppermost aquifers. Other minor sources of recharge by infiltration from the surface include return irrigation water from fields and lawns, industrial waters, and other applied surface waters.

### *Groundwater Level Trends*

Water levels have risen about thirty feet from levels measured before adjudication of the subbasin in 1961(DWR 1999). In 1999, water levels were higher in the El Segundo and Dominguez gap areas from water levels of 1998 (DWR 1999). The general regional groundwater flow pattern is southward and westward from the Central Coastal Plain toward the ocean.

### *Groundwater Storage*

**Groundwater Storage Capacity.** The storage capacity of the primary water producing aquifer, the Silverado aquifer, is estimated to be 6,500,000 af (DWR 1961).

### *Groundwater Budget (Type A)*

A complete budget could not be constructed due to the lack of available data. However, some inflows and outflows for the subbasin were determined for water year 1998, and should give an idea of the subbasin activity. Recharge to the subbasin by means of artificial recharge was determined to be 95,638 af (DWR 1999). The subbasin received about 19,665 af of recharge from injection into wells forming the Dominguez Gap Barrier (DWR 1999). Subsurface inflow, arriving primarily from the Central Basin, accounts for 68,473 af (DPW 1952) of recharge to the subbasin. Extractions from the subbasin are predominately for urban use, with a small amount dedicated to agriculture. Urban use accounted for 51,673 af (DWR 1999), while agriculture was 89 af (DWR 1999).

### *Groundwater Quality*

**Characterization.** The character of water in the Gaspur zone of the subbasin is variable. Seawater intrusion has produced deterioration of water quality over time. Early tests indicated that the water was sodium bicarbonate in character. It is questionable whether this is representative of the entire zone, because the higher quality water residing outside the subbasin is calcium bicarbonate in nature (DPW 1952).

The Gardena water-bearing zone exhibits a calcium-sodium bicarbonate character and is of good quality. In the Silverado zone, the character of water varies considerably. In the coastal region of this zone, the water is calcium chloride in character, and then transitions into sodium bicarbonate moving inland. The Pico formation is sodium bicarbonate in nature and is of good quality (DPW 1952). Data from 45 public supply wells shows an average TDS content of 720 mg/L and a range of 170 to 5,510 mg/L.

**Impairments.** Seawater intrusion occurs in the Silverado zone along the Santa Monica Bay and in the Gaspur zone in the San Pedro Bay. Two seawater barrier projects are currently in operation. The West Coast Basin Barrier Project, which runs from the Los Angeles Airport to the Palos Verde Hills, and the Dominguez Gap Barrier Project which covers the area of the West Coast Basin bordering the San Pedro Bay. Injection wells along these barriers create a groundwater ridge, which inhibits the inland flow of salt water into the subbasin to protect and maintain groundwater elevations (DWR 1999).

## Water Quality in Public Supply Wells

| Constituent Group[1] | Number of wells sampled[2] | Number of wells with a concentration above an MCL[3] |
|---|---|---|
| Inorganics – Primary | 45 | 0 |
| Radiological | 45 | 1 |
| Nitrates | 46 | 0 |
| Pesticides | 46 | 0 |
| VOCs and SVOCs | 44 | 0 |
| Inorganics – Secondary | 45 | 30 |

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

## Well Production characteristics

| | Well yields (gal/min) |
|---|---|
| Municipal/Irrigation | To 1,300 gal/min |
| | **Total depths (ft)** |
| Domestic | |
| Municipal/Irrigation | |

## Active Monitoring Data

| Agency | Parameter | Number of wells /measurement frequency |
|---|---|---|
| USGS | Groundwater levels | 67 |
| USGS | Miscellaneous water quality | 58 |
| DWR | Groundwater levels | 71 |
| Department of Health Services and cooperators | Title 22 water quality | 45 |

## Basin Management

| | |
|---|---|
| Groundwater management: | In 1961 the West Coast Basin was adjudicated, and the Department of Water Resources was retained as Watermaster. Each month individual pumpers report their extractions to the Watermaster, which allows the Watermaster to regulate water rights in the subbasin. (DWR 1999) |
| Water agencies | |
| Public | City of El Segundo, City of Inglewood, City of Lomita, City of Long Beach, City of Los Angeles, City of Signal Hill, City of Torrance |
| Private | California-American Water Co., California Water Service Co., Dominguez Water Corp., Los Angeles Waterworks Dist. 29, Southern California Water Company. (DWR 1999) |

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California Department of Public Works (DPW). 1952. *West Coast Basin Reference-Report of Referee.* 130 p.

California Department of Water Resources (DWR). 1961. *Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County.* Bulletin No. 104.

____, Southern District. 1999. *Watermaster Service in the West Coast Basin, Los Angeles County, July 1, 1998 – June 30, 1999.* 84 p.

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## Errata

Changes made to the basin description will be noted here.

# APPENDIX I

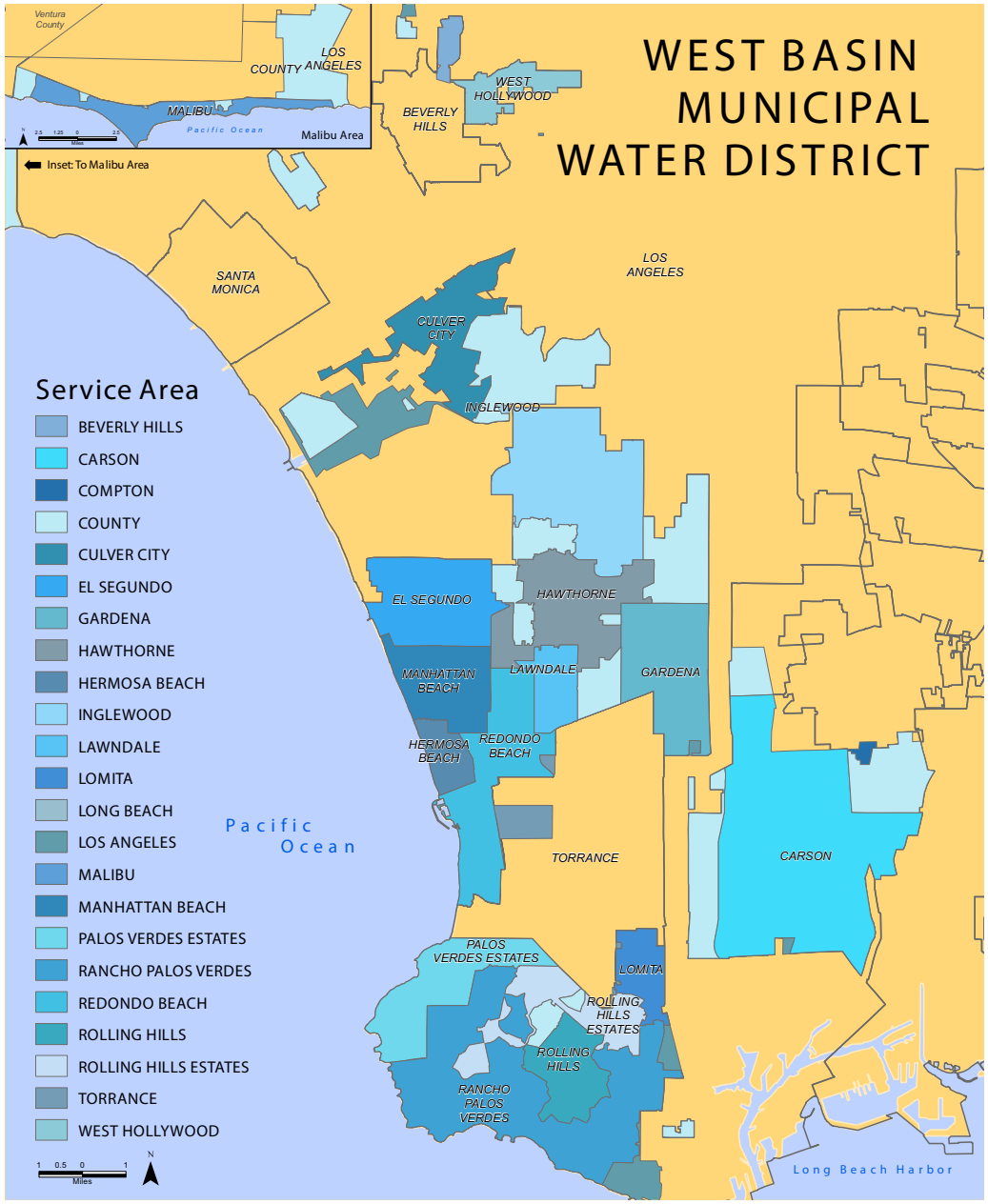
# WBMWD 2010 PLAN

Draft

West Basin Municipal Water District

# Urban Water Management Plan

2010



# West Basin Municipal Water District
# 2010 Urban Water Management Plan

Prepared by:

RMC
Water and Environment

June 2011

# MESSAGE FROM THE BOARD OF DIRECTORS

Since its formation in 1947, West Basin has remained steadfast in its commitment to ensure a safe and reliable water supply for the region. Through the years, West Basin has grown and transformed seeking innovative and viable solutions to meet the changing needs of its communities. All of us at West Basin continue to expand our efforts to meet the growing water demand while preserving our limited and precious water resources. Through our Water Reliability 2020 Program, including recycling, conservation and desalination, West Basin will continue to diversify its local water supplies to ensure a reliable supply of water for future generations.

We are proud to submit this 2010 Urban Water Management Plan to the State Department of Water Resources. The Plan reports all current and projected water supplies and demands within West Basin's service area, demonstrates water reliability for the next 25 years and provides a comprehensive overview of West Basin's various programs.

"Through various programs and projects, West Basin ensures that its customer agencies have a safe and reliable supply of water to provide to the residents, businesses and industries within its service area."

## Directors

**Division 1 (Director Ronald C. (Ron) Smith):** Cities of Carson, Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills Estates, Rolling Hills and portions of San Pedro;

**Division 2 (Director Gloria D. Gray):** Cities of Inglewood, South Ladera Heights, a portion of Lennox and Athens, Howard and Ross-Sexton;

**Division 3 (Director Carol W. Kwan):** Cities of Hermosa Beach, Lomita, Manhattan Beach, Redondo Beach and a portion of Torrance;

**Division 4 (Director Edward C. Little):** Cities of Culver City, El Segundo, Malibu, and West Hollywood, Lennox, North Ladera Heights, Del Aire, Topanga, View Park and Windsor Hills; and

**Division 5 (Director Donald L. Dear):** Cities of Gardena, Hawthorne, Lawndale and portions of El Camino Village.

## Mission Statement

"To provide a safe and reliable supply of high-quality water to the communities we serve."

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# Executive Summary

2010

# EXECUTIVE SUMMARY

## 1 West Basin's Mission

West Basin Municipal Water District (West Basin) was established in 1947 to help mitigate the over pumping of groundwater by providing imported water from the Metropolitan Water District of Southern California (MWD) as replenishment supplies. Today, this imported water is also provided to supplement local supplies including groundwater, desalination, and recycled supplies developed by West Basin or by retailer agencies operating within West Basin's service area. In addition, a combination of recycled water and imported water is introduced into local aquifers through the West Coast Seawater Barrier to both protect the groundwater supplies from seawater contamination and replace, or replenish, what is pumped.

In January 2008, the West Basin Board adopted a Strategic Business Plan to address water supply issues that plague Southern California by focusing on producing new sources of local water, improving its environmentally-sound and innovative technologies, and emphasizing customer service and satisfaction. With a goal to decrease its service area's dependence on imported water by 50 percent between now and 2020, West Basin is expanding its recycled water customer base, exploring the feasibility of taking its ocean-water desalination project to the next level, and broadening its water use efficiency programs and outreach. Through various programs and projects, West Basin ensures that its customer agencies have a safe and reliable supply of water to provide to the residents, businesses and industries within its service area.

## 2 West Basin's 2010 Urban Water Management Plan

West Basin's 2010 Urban Water Management Plan (UWMP) revises the 2005 UWMP prepared by West Basin and incorporates changes enacted by legislation since 2005. Since 2005, several amendments have been added to the Urban Water Management Act. The most significant being the requirements mandated through the passing of Senate Bill (SB) X7-7 that seeks a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020 and for agencies to calculate individual water use reduction targets to help achieve this goal.

As a water wholesaler, West Basin is not required to provide these targets. However, given its' role as a regional water provider, West Basin has elected, in cooperation with a portion of its customer agencies, to use its 2010 UWMP as a regional alliance UWMP. Although each of West Basin's customer agencies must prepare individual 2010 UWMPs, West Basin's 2010 UWMP provides a regional target that will allow these retailers and West Basin to collaborate on the most effective and efficient programs that will ensure the targeted reductions in demand can be met.

## 3 West Basin Service Area Demands

While demand in the West Basin service area has historically increased due to increased population growth, recent years have shown a decrease in overall system demand. This decrease has been attributed to aggressive conservation program implementation due to drought conditions in 2007-8, an economic downturn resulting in less consumption beginning in 2009, and subsequent wet seasons in 2009 and 2010.

Table ES-1 indicates that although West Basin's service area population is projected to increase, the overall potable demand in acre-feet per year (AFY) is expected to decrease given further water use efficiency and recycled water program implementation.

**Table ES-1: Projected West Basin Service Area Demand (AFY)**

| Year | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Baseline Demand[1] | 168,987 | 192,134 | 198,218 | 197,408 | 197,451 | 197,275 |
| Planned Conservation[2] | 14,000 | 15,119 | 21,039 | 21,640 | 22,971 | 23,632 |
| **Final Total Retail Demand** | **154,987** | **177,015** | **177,179** | **175,768** | **174,480** | **173,643** |
| Recycled Water Demand[3] | 14,182 | 16,368 | 33,882 | 33,882 | 37,382 | 37,382 |
| **Final Potable Demand** | **140,805** | **160,647** | **143,297** | **141,886** | **137,098** | **136,261** |

[1] Projections based on Water Demand Forecasting Model, 2010
[2] Water Use Efficiency Plan, Alliance for Water Efficiency Model, 2010
[3] Projections based on the Capital Implementation Master Plan, 2009

In terms of per capita use (in gallons per capita day (gpcd)), the West Basin Regional Alliance baseline and targeted water use for 2015 and 2020 are shown in table ES-2.

**Table ES-2: Regional Alliance 2015 Interim and 2020 Targets (gpcd)**

| Member | 10-Year Base Water Use | Calculated Water Use Targets | | Maximum Allowable Target | Final Targets | |
|---|---|---|---|---|---|---|
| | | Method | Target | | 2015 | 2020 |
| California Water Service Company Hawthorne | 96.5 | 3 | 141.6 | N/A | 119.0 | 141.6 |
| City of El Segundo | 220.6 | 1 | 176.5 | 182.2 | 198.6 | 176.5 |
| City of Inglewood | 105.3 | 3 | 141.6 | N/A | 123.4 | 141.6 |
| City of Lomita | 123.4 | 3 | 141.6 | 116.2 | 119.8 | 116.2 |
| City of Manhattan Beach | 175.7 | 3 | 141.6 | 144.9 | 158.6 | 141.6 |
| Los Angeles County Waterworks District #29 | 319.4 | 1 | 255.5 | 298.2 | 287.5 | 255.5 |
| **Regional Alliance** | **227.7** | **1** | **182.2** | **160.5** | **194.1** | **160.5** |

Note: Highlighted cells indicate target to be used

## 4 West Basin Service Area Supplies

West Basin has been able to support the diversification of supplies available to its customer agencies by providing access to imported water supplies from MWD as well as through the development of recycled water supplies. These supplies are served directly to its customer agencies and indirectly as the replenishment supplies necessary to maximize groundwater production. As table ES-3 shows, West Basin is projecting to more than double current recycled water supplies as well as invest in over 20,000



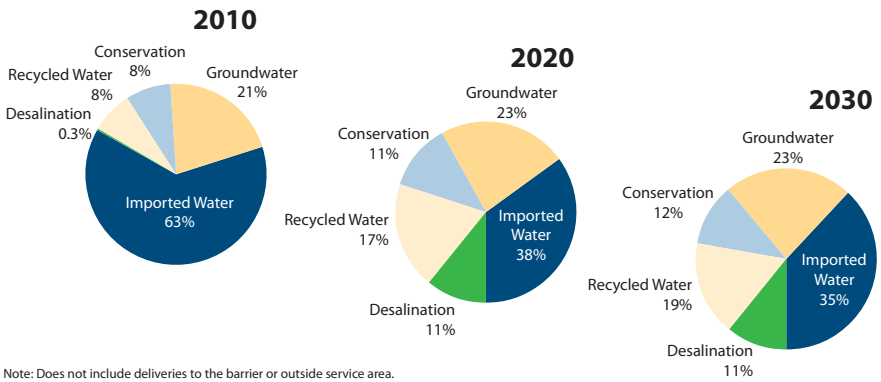
AFY of ocean-water desalination supply. Coupled with an additional doubling of conserved supply through water use efficiency programs, the overall imported water use is expected to be cut nearly in half by 2035 as shown in Figure ES-1.

**Table ES-3 West Basin's Service Area Projected Water Supply (AFY)**

| Supplies | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Groundwater[1] | 35,320 | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 |
| Imported Water[2] | 104,985 | 114,647 | 76,797 | 75,386 | 70,598 | 69,761 |
| Recycled Water[3] | 14,182 | 16,368 | 33,882 | 33,882 | 37,382 | 37,382 |
| Desalination[4] | 500 | 1,000 | 21,500 | 21,500 | 21,500 | 21,500 |
| **Total** | **154,987** | **177,015** | **177,179** | **175,768** | **174,480** | **173,643** |
| Conservation[5] | 14,000 | 15,119 | 21,039 | 21,640 | 22,971 | 23,632 |
| **Total** | **168,987** | **192,134** | **198,218** | **197,408** | **197,451** | **197,275** |

[1] Groundwater production within West Basin service area only.
[2] Imported retail use only; does not include replenishment deliveries (i.e. Barrier).
[3] Recycled water does not include replenishment deliveries (i.e. Barrier) and deliveries outside the service area.
[4] Desalination includes both brackish and ocean-water.
[5] Conservation consists of Active and Passive savings according to West Basin's projected estimates.

**Figure ES-1: West Basin Service Area Projected Water Supplies**




Note: Does not include deliveries to the barrier or outside service area.

## 5 Water Reliability

West Basin's supply reliability can be greatly impacted by many factors including changes in the availability of supplies due to climatic or infrastructure changes as well as the ability to use those supplies more efficiently in both average and dry periods. Therefore, West Basin has completed comprehensive water shortage contingency planning to provide reliability during these situations. West Basin's water shortage contingency analysis includes MWD's Water Surplus and Drought Management Plan (WSDM) and Water Supply Allocation Plan (WSAP). The WSDM plan provides MWD with a sequence of resource management actions to execute during surpluses and shortages to minimize the probability of severe shortages and reduce the possibility of extreme shortages and shortage allocations. The WSAP provides MWD with a method for determining imported water allocations for its member agencies, including West Basin, relative to the amount of supplies available.

As part of its water shortage contingency planning, West Basin is moving forward with its plans to expand its water use efficiency programs, further develop recycled water, and add ocean-water desalination supplies to improve its immediate, near- and long-term reliability of supplies. Additionally, West Basin's contingency planning includes a comprehensive plan to provide reliable water supplies under normal, single dry and multiple dry year hydrologies for current and projected supplies. Under single dry and multiple dry year conditions, West Basin plans to meet its annual increases in demand by purchasing imported water supplies. West Basin does not anticipate any shortages and will be able to provide reliable water supplies under both single dry year and multiple dry year conditions. Any shortfall in supplies will be met through imported water so long as MWD manages its supply and demand balance through its WSDM and WSAP.

Maintaining imported water reliability will continue to remain a challenge however with the development of local resources as well as furthering existing conservation to meet the Water Conservation Act of 2009 targets, MWD will be able to provide a supply buffer for its member agencies, including West Basin, to rely upon in times of drought and longer-term climatic changes.

## 6 Maintaining the Quality of Water Supplies

Compliance with water quality regulations is a regional water management priority and a shared responsibility. West Basin is responsible for the quality of the desalination and recycled water supplies generated at the C. Marvin Brewer Desalter and Edward C. Little Water Recycling Facility (ECLWRF) and its satellite facilities: Carson Water Recycling Facility, Chevron Nitrification Plant and Exxon-Mobil Nitrification Plant. MWD is responsible for complying with State and Federal drinking water regulations on its imported potable water sold to West Basin. West Basin's retail customer agencies are responsible for ensuring compliance in their individual distribution systems and at the customer tap.



West Basin has a dedicated program and budget to constantly engage in research projects that evaluate water quality, efficient operations and new pollution prevention technology and methods. Research projects close the environmental loop by addressing both final product water as well as source control issues to prevent pollution and the need for cleanup technology. West Basin leverages its research dollars by participating on the Boards of water industry research organizations such as WateReuse, American Water Works Associations, National Water Research Institute, Salinity Management Coalition as well as participating with academic institutions in water quality research.

## 7 Reducing Demand through Water Use Efficiency Planning

Since the severe drought of the early 1990s, West Basin has been a leader implementing aggressive water conservation programs to help limit water demand within its service area. West Basin programs have included a strong emphasis on education and the distribution of rebate incentives and plumbing retrofit hardware. The results of these programs, in conjunction with passive conservation measures such as modifications to city ordinances, have resulted in significant reductions in retail water use within West Basin's service area. By current estimates, demand management from West Basin's active and passive conservation efforts have saved over 4.5 billion gallons of imported water (14,000 AF) since 1991, which is equivalent to the average annual water use of almost 28,000 households.

In order to further increase conservation and meet the 2020 and interim 2015 water use targets, West Basin has recently collaborated with its Regional Alliance agencies to develop and implement the future water use efficiency measures shown in Table ES-4.

**Table ES-4: West Basin and Retailer Program Participation**

| Programs | West Basin | Los Angeles County Water-works District #29 | City of El Segundo | City of Manhattan Beach | City of Hawthorne | City of Lomita | City of Inglewood |
|---|---|---|---|---|---|---|---|
| **MWD** | | | | | | | |
| Residential Rebate Program | X | X | X | X | X | X | X |
| Save A Buck Rebate Program | X | X | X | X | X | X | X |
| **West Basin** | | | | | | | |
| High-Efficiency Toilet (HET) Distribu-tion Events | X | X | X | X | X | X | X |
| Green Living for Apartments and Condos (Direct HET Installations) | X | X | X | X | X | X | X |
| Ocean Friendly Landscape Program | X | X | X | X | X | X | X |
| Complete Restroom Retrofit Program | X | X | X | X | X | X | X |

| Programs | West Basin | Los Angeles County Water-works District #29 | City of El Segundo | City of Manhattan Beach | City of Hawthorne | City of Lomita | City of Inglewood |
|---|---|---|---|---|---|---|---|
| Recirc & Save Program | X | X | X | X | X | X | X |
| Cash for Kitchens | X | X | X | X | X | X | X |
| Education Programs | X | X | X | X | X | X | X |
| **West Basin Programs** (Funding Pending) | | | | | | | |
| High-Efficiency Nozzle Program | X | X | X | X | X | X | X |
| Water Star Schools Pilot Program | X | X | X | X | X | X | X |
| Water & Energy Efficiency in the Motel/Hotel and Schools Sectors | X | X | X | X | X | X | X |
| **Other Water Retailer** | | | | | | | |
| Turf Removal Program | N/A | X | - | - | - | - | - |
| HET Rebates (CII) | N/A | X | - | - | - | - | - |
| Landscape Surveys | N/A | X | - | - | - | - | - |
| Education Programs | N/A | X | - | - | - | - | - |
| Landscape Incentives | N/A | X | - | - | - | - | - |

## 8 Water Rates and Charges

As a water wholesale agency, West Basin does not directly charge residential and other end-use customers for supplies. Instead, West Basin's customer agencies purchase water from West Basin and then combine it with other supplies to deliver to their retail customers at a variety of rates.

West Basin's current potable water rates are primarily based upon the costs of imported supplies purchased from MWD. Imported water purchased by West Basin from MWD carries not only the cost of acquiring, importing, treating and distributing the water throughout the region, but also these costs associated with maintaining MWD reliability and "readiness to serve". The total West Basin rate structure must include the value-added costs associated with distributing to customer agencies the MWD and locally-produced recycled and desalinated groundwater supplies.

## 9 Recycled Water Development

Since planning and constructing its recycled water system in the early 1990s, West Basin has become an industry leader in water reuse. West Basin's recycled water supply is sold to customers for non-potable applications such as landscape irrigation, commercial and industrial processes, and indirect potable uses through groundwater



replenishment. While serving to offset imported water supplies, recycled water use also results in less ocean discharge of lesser-treated wastewater into the Santa Monica Bay.

In fiscal year 2009-10, West Basin delivered about 30,400 AF of recycled water to sites inside and outside its service area, saving enough potable water to serve roughly 61,000 households. Within West Basin's service area, municipal and industrial recycled water use totaled about 15,500 AF and seawater barrier about 7,796 AF, which is about 13 percent of the District's current total water supplies. It is projected that recycled water sales could represent 19 percent of total water supplies by 2035.

## 10 Ocean-Water Desalination Development

In late 2010, West Basin dedicated its Ocean-Water Desalination Demonstration Facility and Water Education Center. West Basin used the data acquired from the pilot project in the planning and development of the demonstration facility that produces 50,000 gallons per day of drinking water. This Ocean-Water Desalination Demonstration Facility will test the viability of a future, full-scale Ocean-Water Desalination Facility capable of providing up to 20,000 AFY, or enough to supply 40,000 families for a year.

West Basin will perform a Desalination Program Master Plan in 2011 that will evaluate potential siting opportunities within West Basin's service area that could accommodate a full-scale facility. Pending the findings from the demonstration facility, the Master Plan, and subsequent environmental review process, West Basin anticipates permitting, financing, and constructing a full-scale facility by 2017.

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SECTION ONE

# Plan Preparation

# SECTION 1 Plan Preparation

An Urban Water Management Plan (UWMP) is prepared by a water purveyor to ensure an appropriate level of water service reliability sufficient to meet the needs of its customers during normal, single dry or multiple dry years. The California Urban Water Management Planning Act of 1983 (Act), as amended, requires urban water suppliers to develop an UWMP every five years in the years ending in zero and five.

In describing the importance of the Act, the legislature declared that waters of the State are a limited and renewable resource, subject to ever increasing demands as well as the following tenets:

- That the conservation and efficient use of urban water supplies are of statewide concern;
- That successful implementation of plans is best accomplished at the local level;
- That conservation and efficient use of water shall be actively pursued to protect both the people of the State and their water resources;
- That conservation and efficient use of urban water supplies shall be a guiding criterion in public decisions; and
- That urban water suppliers shall be required to develop water management plans to achieve conservation and efficient use.

West Basin Municipal Water District's (West Basin) 2010 UWMP has been prepared in compliance with the requirements of the Act, as amended to 2009 (Appendix A), and includes the following:

- West Basin's Service Area
- Water Demand
- Water Supply
- Water Reliability
- Water Quality
- Water Use Efficiency
- Water Rates & Charges
- Water Recycling
- Desalination

## 1.1 Urban Water Management Planning Requirements

West Basin's 2010 UWMP revises the 2005 UWMP prepared by West Basin and incorporates changes enacted by legislation since 2005. The UWMP also incorporates water use efficiency efforts West Basin has implemented or is considering implementing pursuant to the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU)[1]. West Basin was one of the first agencies to become signatory to the MOU in September 1991.

1 The Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) was adopted in September 1991 by a large number of water suppliers, public advocacy organizations and other interested groups. It created the California Urban Water Conservation Council and established 16 Best Management Practices (BMPs) for urban water conservation, recently refined to 14 BMPs. West Basin became signatory to the MOU in September 1991.

The sections in this UWMP correspond to the outline of the Act, specifically Article 2, Contents of Plans, Sections 10631, 10632, and 10633. The sequence used for the required information, however, differs slightly in order to present information in a manner reflecting the unique characteristics of West Basin. The most recent version of the Department of Water Resources' (DWR) UWMP Checklist has been completed, which identifies the location of Act requirements in this UWMP and is included as Appendix B.

Since 2005, several amendments have been added to the Urban Water Management Act. The major changes to the Act impacting preparation of the 2010 UWMPs include the following:

- Requirement of at least 60 days advance public notice to city or county prior to public hearing on UWMP;
- Requirement that the UWMP includes water use projects for single-family and multi-family residential housing needed for low income and affordable households (retailers only); and
- Requirement that "indirect potable reuse" of recycled water be described and quantified in the UWMP, including a determination with regard to the technical and economic feasibility of serving those uses.

The most significant impact on 2010 UWMPs was the requirements mandated through the passing of Senate Bill (SB) X7-7. On November 10, 2009, the state legislature passed SB X7-7 (or the Water Conservation Bill of 2009) as a water conservation component to the Delta legislative package that seeks a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. SB X7-7 requires that each retail agency preparing a 2010 UWMP must calculate a baseline water use as well as an interim (for 2015) and final (for 2020) water use reduction target. The methodologies used to calculate both the baseline and targets were outlined in the Draft and Final UWMP guidelines published by DWR in December 2010 and March 2011. Since final guidelines were not released until March 2011, the deadline for retailer UWMP adoption and submittal has been extended to July 1, 2011. In September 2010, SB 1478 was signed by the Governor of California to extend the 2010 UWMP deadline to July 1, 2011 for wholesale agencies as well as retailers.

## 1.2 Regional Alliance UWMP

As a water wholesaler, West Basin is not required to provide SB X7-7 water use reduction targets. However, given its role as a regional water provider, West Basin has elected, in cooperation with a portion of its customer agencies, to use its 2010 UWMP as a regional alliance UWMP. According to DWR's 2010 UWMP guidelines, a regional demand reduction target can be developed by a regional alliance of multiple agencies to show compliance with SB X7-7. Although each of West Basin's customer agencies must prepare individual 2010 UWMPs with individual baseline and target calculations, West Basin's 2010 UWMP provides a regional target that will allow these

retailers and West Basin to collaborate on the most effective and efficient programs that will ensure that the targeted reductions in demand can be met. Additional information is described in Section 3: Water Demand.

## 1.3 Plan Adoption

The draft 2010 UWMP was completed in April 2011 and available for a 45 day-public review. The UWMP was available on West Basin's web site to facilitate the involvement of various social, cultural and economic elements of the population. Once finalized, the UWMP was adopted by a Resolution of the West Basin Board of Directors in May 2011, following a public hearing. The UWMP was then submitted to DWR within 30 days of Board approval. Copies of the Notice of Public Hearing and the Resolution of Plan Adoption are included in Appendices C and D, respectively.

The UWMP is intended to serve as a general, flexible, and open-ended document that periodically can be updated to reflect changes in the region's water supply trends, and conservation and water use efficiency policies. This UWMP, along with West Basin's other planning documents, will be used by West Basin staff to guide it's service area's water use and management efforts through the year 2015, when the UWMP is required to be updated next.

## 1.4 Agency Coordination

To facilitate the preparation of the draft UWMP, West Basin concurrently developed the West Basin Water Demand Forecasting Model as well as a Water Use Efficiency Master Plan for use by West Basin and its customer agencies. During this process, West Basin staff met with all of its customer agencies to discuss the demand model, calculation of SB X7-7 baseline and targets and the 2010 UWMP and offered to provide assistance when requested. West Basin also hosted a stakeholder workshop during the draft UWMP public review period. At the workshop, West Basin provided its customer agencies with consistent information for use in the development of their 2010 UWMPs.

West Basin is a water wholesaler and is fully dependent on the Metropolitan Water District of Southern California (MWD) for its imported water supplies. Therefore, West Basin provided comments and information during development of MWD's Draft Regional Urban Water Management Plan (RUWMP) which was distributed on June 4, 2010. West Basin staff also attended a June 2010 information meeting for stakeholders and the public from within MWD's service area.

As a summary of West Basin's agency coordination, Table 1-1 describes the coordination among West Basin, its customer agencies, the County of Los Angeles and MWD during the review of the draft UWMP.



**Table 1-1: Coordination with Appropriate Agencies**

| Agency | Participation in Regional Alliance | Received Copy of Draft | Attended Customer Workshop | Commented on Draft | Sent Notice of Intention to Adopt |
|---|---|---|---|---|---|
| County of Los Angeles - Water Resources | | X | | | X |
| Metropolitan Water District of Southern California | | X | | X | X |
| California American Water Company | | X | X | | X |
| California Water Service Company - Hawthorne | X | X | | | X |
| City of El Segundo | X | X | X | | X |
| City of Inglewood | X | X | | | X |
| City of Lomita | X | X | | | X |
| City of Manhattan Beach | X | X | X | | X |
| Golden State Water Company | | X | X | | X |
| LA County Waterworks District #29 | X | X | X | X | X |
| Water Replenishment District of Southern California | | X | | | X |

SECTION TWO

# Service Area

Section 2
**Service Area**

# SECTION 2 West Basin's Service Area

Today, West Basin's service area covers approximately 185-square miles and wholesale potable water is distributed to 17 cities, investor-owned utilities and water districts in Los Angeles County.

In addition, West Basin supplies recycled water to over 300 customer sites for municipal, commercial and industrial use as well as for injection into the West Coast Basin Seawater Barrier to halt seawater intrusion and replenish the aquifers.

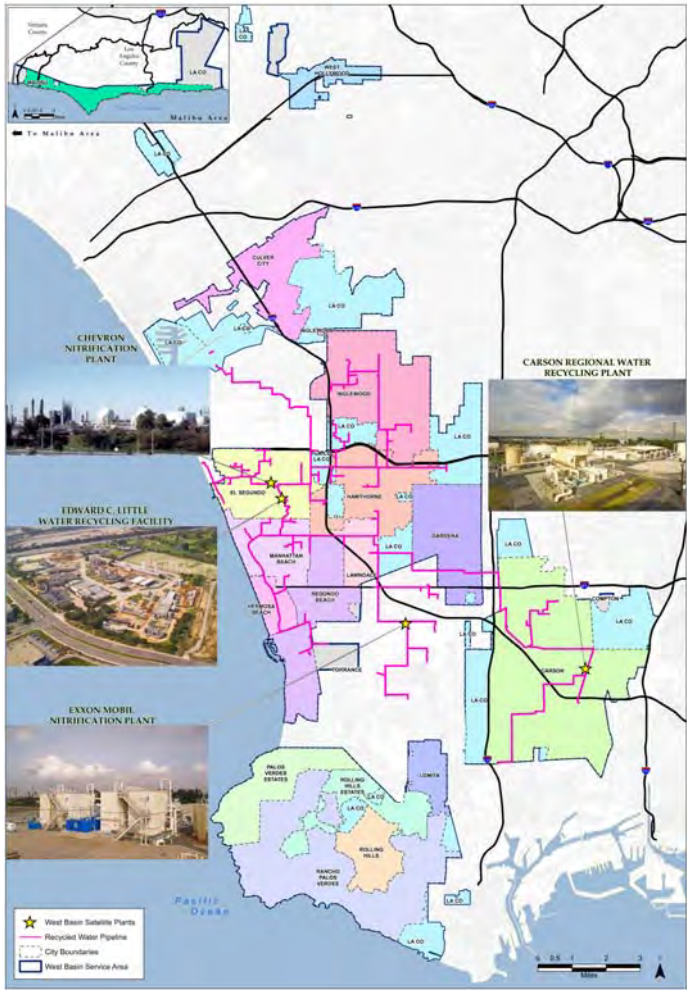
These facilities and West Basin's service area are shown in Figure 2-1. Several of West Basin's customer agencies also pump groundwater supplies from the underlying West Coast Groundwater Basin to help meet their demands. A small amount of water is also used in the California Water Service Company's service area from West Basin's C. Marvin Brewer Desalter, which treats brackish groundwater from the West Coast Groundwater Basin for drinking water use.

Approximately 1 million people are served within West Basin's service area which is governed by a five member elected Board of Directors. The Board of Directors guides the mission and policy of West Basin and each director serves a four-year term once elected.

## 2.1 West Basin's Regional Relationship

West Basin was established by a vote of the people in 1947 to help mitigate the over pumping in the West Coast Groundwater Basin (WCGB). West Basin's founders realized they would have to curtail the use of groundwater by providing the growing region with imported water. Therefore, West Basin also became a member agency of the MWD in 1948 to purchase, on a wholesale level, potable water imported from the Colorado River and the State Water Project to sell to local municipalities, investor-owned utilities and smaller water districts.

**Figure 2-1: West Basin Service Area and Recycled Water Facilities**





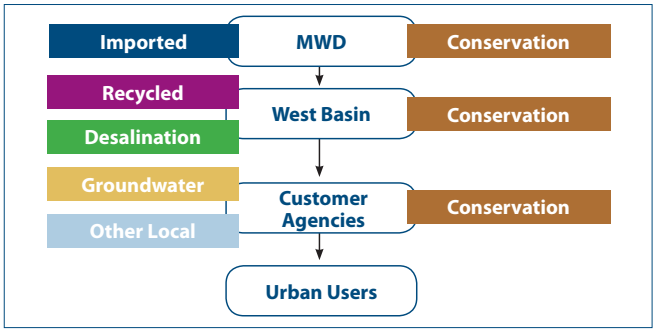

Today, West Basin imports water to supplement local supplies including groundwater, brackish desalination, and recycled water developed by both West Basin and its retail agencies operating within West Basin's service area. In addition, a blend of recycled and imported water is injected into the West Coast Basin Seawater Barrier to both protect the groundwater supplies from seawater contamination and replenish the aquifers. West Basin remains one of the largest member agencies in MWD's family of water agencies and representation on the MWD Board is critical to making West Basin's customer's voices heard at MWD to shape favorable outcomes on regional water issues. West Basin's Board of Directors appoints two representatives to serve on the 37-member MWD Board of Directors.

In January 2008, the West Basin Board adopted a Strategic Business Plan to address water supply issues that plague Southern California by focusing on producing new sources of local water, improving its environmentally-sound and innovative technologies, and emphasizing customer service and satisfaction. West Basin affirmed this new vision as an independent agency after concluding its joint operating agreement with Central Basin Municipal Water District, allowing West Basin to focus on the unique needs of its service area.

With a goal to decrease its service area's dependence on imported water by 50 percent between now and 2020, West Basin is implementing a Water Reliability 2020 Program (WR 2020) that will double its recycled water customer base, explore the feasibility of taking its ocean-water desalination demonstration project to the next level, and double its water use efficiency programs and outreach. Through WR 2020, West Basin ensures that its customer agencies have a safe and reliable supply of water to provide to the residents, businesses and industries within its service area.

Figure 2-2 illustrates the relationship West Basin has between MWD and its customer agencies to provide the region with diversified and integrated water supplies.

**Figure 2-2: West Basin Service Area Water Supplies**



## 2.2 Climate Characteristics

West Basin's service area lies in the heart of Southern California's coastal plain. The climate is Mediterranean, characterized by typically warm, dry summers and wet, cool winters with an average precipitation level of approximately 12.23 inches per year. The combination of mild climate and low rainfall makes the area a popular residential destination, which creates challenges for water agencies to provide for increased water demands with a tight water supply.

Areas with low precipitation, such as Southern California, are typically vulnerable to droughts. Historically, West Basin has experienced patterns of multiple dry years that have resulted in severe drought periods as was experienced in 1977-78, 1989-92, 1999-2004, and most recently 2007-2009. Excessively dry conditions increase the local demand given that less natural precipitation is available to meet landscaping irrigation needs. Drought conditions typically result in shortages given that this increase in demand is coupled with a decrease in natural supply.

Table 2-1 illustrates the historical average climate conditions for the overall Los Angeles and West Basin region. The potential for changes to the local climate and the resulting impacts are further discussed in Section 4: Water Supply.

**Table 2-1: West Basin Average Climate Characteristics**

| | Standard Monthly Average Eto (inches) | Average Rainfall (inches) | Average Temperature (Fahrenheit) |
|---|---|---|---|
| **January** | 1.83 | 2.72 | 65.1 |
| **February** | 2.03 | 2.75 | 65.4 |
| **March** | 3.48 | 1.93 | 65.2 |
| **April** | 4.21 | 0.78 | 67.5 |
| **May** | 4.62 | 0.17 | 69.2 |
| **June** | 4.54 | 0.05 | 72 |
| **July** | 5.37 | 0.02 | 75.2 |
| **August** | 5.06 | 0.08 | 76.4 |
| **September** | 4.21 | 0.16 | 76.1 |
| **October** | 2.94 | 0.37 | 73.6 |
| **November** | 1.83 | 1.46 | 70.3 |
| **December** | 1.46 | 1.74 | 66.1 |
| **Annual** | 3.47 | 12.23 | 70.2 |

Sources: Temperature and Precipitation: Western Climate Center's web site at the Los Angeles WSO Airport Station between 1/1/1914 and 12/31/2005 http://wrcc.dri.edu/cgi-bin/cliMAIN.pl?calosa. Eto data: California Irrigation Management Information System (CIMIS) at the Long Beach Station for the Los Angeles Region between 1/1/2000 and 12/31/2010. http://wwwcimis.water.ca.gov/cimis/welcome.jsp



## 2.3 Demographics

West Basin's service area encompasses 185 square miles in southwest Los Angeles County and includes 17 cities and several unincorporated areas. Given the dense urban nature of West Basin's service area, population has and was expected to rise over time. However, current projections show that population is expected to increase minimally through 2035.

Table 2-2 displays the current and projected population within West Basin's service area over the next 25 years. This population projection shows a more conservative increase in population relative to the projection provided in West Basin's 2005 UWMP.

**Table 2-2: West Basin Service Area Current and Projected Population**

| Year (FY) | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| **Total Population (# of persons)** | **853,377** | **874,219** | **892,116** | **909,498** | **926,592** | **942,893** |
| Single Family (# of households) | 169,843 | 172,738 | 175,181 | 176,760 | 178,248 | 179,274 |
| Multi-Family (# of households) | 117,020 | 121,023 | 124,544 | 127,360 | 130,222 | 132,678 |
| Total Household | 286,863 | 293,761 | 299,725 | 304,120 | 308,470 | 311,952 |
| Persons Per Household | 2.95 | 2.95 | 2.95 | 2.96 | 2.97 | 2.99 |
| Employment | 386,070 | 392,203 | 396,123 | 400,471 | 405,666 | 410,341 |

Source: Population data from the Department of Finance and Southern California Association of Governments (SCAG) and West Basin Demand Forecasting Model, 2010

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SECTION THREE

# Water Demand

# SECTION 3 Water Demand

With an estimated current population of approximately 850,000 as well as dense commercial and industrial areas, the total retail water demand within West Basin's service area is currently about 157,000 AFY. West Basin is responsible for meeting both the direct retail demand from its customer agencies through imported (potable) and recycled water, as well as groundwater replenishment / seawater intrusion barrier demand from the Water Replenishment District of Southern California (WRD).

While demand in the West Basin service area has historically increased due to increased population growth, recent years have shown a decrease in overall system demand. West Basin's 2005 UWMP projected a 2010 demand of nearly 40,000 AFY more than what was experienced this past year. This decrease has been attributed to aggressive conservation program implementation due to drought conditions in 2007-09, an economic downturn resulting in less consumption beginning in 2009, and subsequent wet seasons in 2009 and 2010.

These decreases have been experienced throughout Southern California and have come at a time when California has implemented new legislation calling for an overall 20 percent decrease in per capita water use by the year 2020. West Basin's 2010 UWMP provides a regional alliance target for per capita water use reductions by 2020 with an interim target for 2015 that is in compliance with the State's Water Conservation Bill of 2009.

This section will explore in greater detail West Basin's historical, current and projected water demands. As a water wholesaler in the region, West Basin will also provide a regional baseline and demand reduction targets for its customer agencies that are part of the regional alliance.

## 3.1 Historical Water Demands

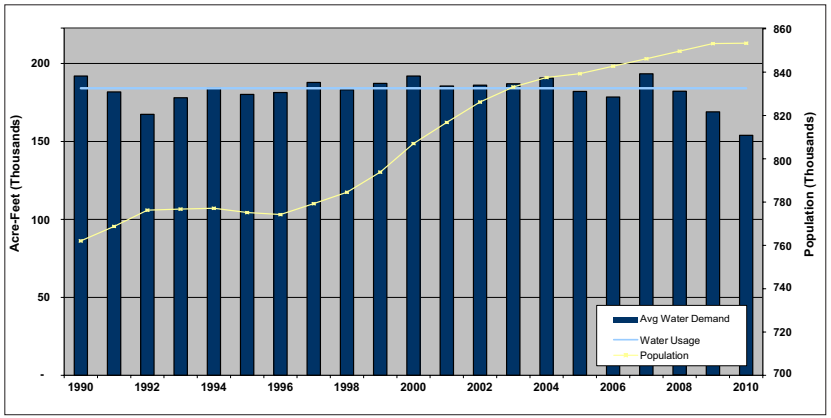
Total water use within West Basin's service area includes retail demand for potable and recycled water, and groundwater replenishment. Retail demand is defined as a population's direct consumption - or all municipal (residential, firefighting, parks, etc.) and industrial uses. Replenishment demand is the supply needed to maintain the groundwater operations in the basin and are not used directly by residences, municipalities or industries.

### 3.1.1 Historical Retail Demand

Historically, within the West Basin service area, increases in population have not resulted in increases in overall water demand as shown in Figure 3-1. In fact, within the last five years, demand has decreased relative to population increases. This is because other factors such as climate, economics/water rates and conservation programming also impact demand. Water use efficiency is more aggressive in drought years resulting in decreases in demand during those periods. Once severe droughts have passed, demand will often begin to slightly rise again. While these patterns may represent a fluctuation in per capita usage, the fact that total demand has not risen along with the overall population indicates increases in water use efficiency in average or wet years.



**Figure 3-1: West Basin Service Area Historical Retail Water Demand vs. Population**




Source: Population data from the Department of Finance and Southern California Association of Governments (SCAG). Water usage data from actual water sales.

Table 3-1 shows the historical demand of each of West Basin's retail agencies as reported to West Basin by those agencies. Although some agencies have seen some dramatic shifts in water demand, there is an overall decrease of retail agency demand by 5 percent in the last five years relative to 2001-2005.

**Table 3-1: Historical Water Demand per West Basin Customer Agency**

| Retail Agency | 2001-2005 | 2006-2010 | % Change |
|---|---|---|---|
| California American Water Co. | 3,943 | 3,896 | -1% |
| Cal Water Service Co.- Dominguez | 38,398 | 38,402 | 0% |
| Cal Water Service Co. - Hermosa/Redondo | 16,143 | 14,450 | -10% |
| Cal Water Service Co.- Palos Verdes | 20,907 | 21,524 | 3% |
| Cal Water Service Co.- Hawthorne | 5,132 | 4,616 | -10% |
| City of El Segundo | 16,742 | 17,577 | 5% |
| City of Inglewood | 12,440 | 11,667 | -6% |
| City of Lomita | 2,755 | 2,460 | -11% |
| City of Manhattan Beach | 7,169 | 6,366 | -11% |
| L.A. County Waterworks District #29 | 9,897 | 9,738 | -2% |
| Golden State Water | 39,916 | 34,184 | -14% |
| **Total** | **173,442** | **164,880** | **-5%** |

Source: Based upon actual water use sales.
Note: California American Water Co. and California Water Service Co - Dominguez include pumping from the Central Groundwater Basin into the West Basin service area.

### 3.1.2 Historical Replenishment Demand

The West Coast Groundwater Basin is reliant upon replenishment supplies to not only meet demand but also to maintain water quality levels. Groundwater in this basin is annually extracted beyond the natural level of replenishment, and as a result, seawater begins to intrude into the basin along the coast. The current method in preventing seawater from contaminating the groundwater basin is by injecting freshwater supplies into the West Coast and Dominguez Gap Seawater Intrusion Barriers.

While the Los Angeles County Department of Public Works (LACDPW) maintains these barriers, WRD is responsible for acquiring the supply necessary to meet the protection and replenishment demands. As the wholesaler in the region, West Basin sells treated imported and recycled water to WRD to inject into the seawater barriers. As Table 3-2 shows, WRD's demands over the last five years average about 19,000 AF annually from West Basin. Water demands at the barriers usually do not shift dramatically due to the limited groundwater production each customer is allowed annually. The LACDPW determines the quantity of injection based on the need to maintain protective elevations along the barrier system. Generally however, less groundwater production from the aquifers translates into less demand for barrier injection.

**Table 3-2: Historical Replenishment Demand (AFY)**

| Retailer | 2001-2005 | 2006-2010 |
|---|---|---|
| Water Replenishment District | 22,295 | 19,011 |

Source: Based upon actual water use sales.

## 3.2 Current and Projected Water Demands

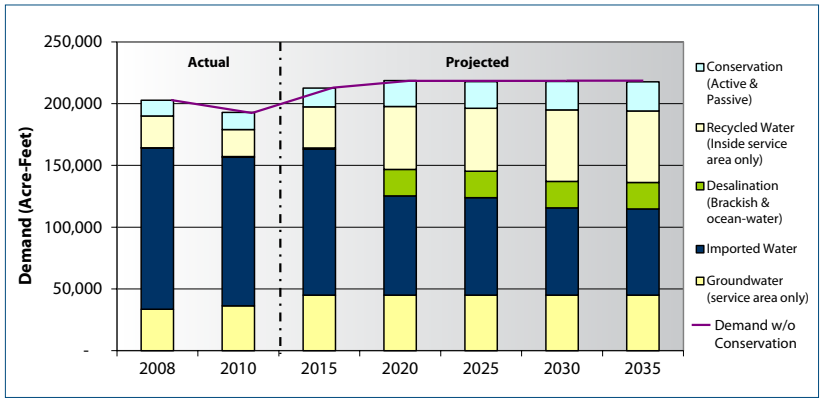
One of the objectives of this plan is to provide some insight into West Basin's expected water demands for the next 25 years. The predictability of water usage is an important element in planning future water supplies. In 2010, West Basin completed the Water Demand Forecasting Model that was used to project demand through 2035 for West Basin's entire service area. The water demand forecasting model produces various scenarios depending on the level of conservation activities anticipated, change in the cost of water, economic recovery and weather changes. These scenarios can be adjusted to determine different projected demand outcomes based on the change in conditions described above.

For example, the model was also used to show the anticipated decrease in demand that could be achieved as a result of the implementation of planned conservation programs by both West Basin and its retail customer agencies. West Basin then used the Alliance for Water Efficiency tracking tool to calculate the gallons per capita per day baseline usage and conservation targets. This per capita analysis for the regional alliance members follows the guidelines for the Water Conservation Bill of 2009 compliance.



Figure 3-2 provides an overview of the anticipated demands divided into supply sources (including conservation as a means to meet the anticipated demand). This figure also reflects the recent decrease in demand since 2008 and the anticipated future increase in natural demand as the economy improves. However, given planned conservation activities as described at the close of this section, conserved supply will actually offset this demand, maintaining a static level of overall demand of less than 200,000 AFY from 2015 through 2035.

**Figure 3-2: Historical and Projected West Basin Demands for Each Supply Resource (AFY)**




### 3.2.1 Current and Projected Retail Demand

Table 3-3 provides the projected total retail demand and potable retail demands net recycled water within West Basin's service area. This table reflects both the baseline demand anticipated if no additional conservation were implemented as well as the final total demand after planned conservation is implemented. A final potable demand is provided that removes the portion of the total demand that is to be met with recycled water supplies as planned and described in Section 4.

Table 3-3 does not include groundwater basin replenishment demands so as not to double count groundwater extraction by West Basin customer agencies. These replenishment demands are captured in Table 3-5. The demand projections shown in Table 3-3 and Table 3-4 include projected water use for lower income single-family and multifamily residential housing within West Basin's service area. As these household demands are served through West Basin's retail customer agencies, the details about those demands are contained within the individual customer agency UWMPs.

**Table 3-3: Projected West Basin Service Area Demand (AFY)**

| Year | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Baseline Demand[1] | 168,987 | 192,134 | 198,218 | 197,408 | 197,451 | 197,275 |
| Planned Conservation[2] | 14,000 | 15,119 | 21,039 | 21,640 | 22,971 | 23,632 |
| **Final Total Retail Demand** | **154,987** | **177,015** | **177,179** | **175,768** | **174,480** | **173,643** |
| Recycled Water Demand[3] | 14,182 | 16,368 | 33,882 | 33,882 | 37,382 | 37,382 |
| **Final Potable Demand** | **140,805** | **160,647** | **143,297** | **141,886** | **137,098** | **136,261** |

[1] Projections based on Water Demand Forecasting Model, 2010
[2] Water Use Efficiency Master Plan, Alliance for Water Efficiency Model, 2010
[3] Projections based on the Capital Implementation Master Plan, 2009

Table 3-4 lists the water use projections for each of West Basin's retail customer agencies net of conservation. These projected demands were estimated by analyzing historical water use for each customer agency and then pro-rated for each projected total demand for their service areas. They may not coincide with the individual retail agency UWMPs.

**Table 3-4: Projected Retail Water Demand by West Basin Customer Agency (AFY)**

| Retail Agency | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| California American Water Co. | 4,384 | 4,952 | 4,960 | 4,896 | 4,837 | 4,793 |
| Cal Water Service Co.- Dominguez | 34,033 | 38,446 | 38,501 | 38,011 | 37,553 | 37,206 |
| Cal Water Service Co.- Hawthorne | 5,136 | 5,802 | 5,811 | 5,737 | 5,668 | 5,615 |
| Cal Water Service Co. - Hermosa/Redondo | 14,179 | 16,017 | 16,040 | 15,836 | 15,645 | 15,501 |
| Cal Water Service Co.- Palos Verdes | 20,264 | 22,892 | 22,925 | 22,633 | 22,360 | 22,154 |
| City of El Segundo | 16,570 | 18,719 | 18,745 | 18,507 | 18,284 | 18,115 |
| City of Inglewood | 11,053 | 12,487 | 12,504 | 12,345 | 12,196 | 12,084 |
| City of Lomita | 3,142 | 3,549 | 3,554 | 3,509 | 3,467 | 3,435 |
| City of Manhattan Beach | 6,583 | 7,436 | 7,447 | 7,352 | 7,264 | 7,197 |
| L.A. County Waterworks District #29[2] | 8,289 | 11,293 | 11,220 | 11,922 | 12,608 | 13,266 |
| Golden State Water Company | 31,355 | 35,421 | 35,472 | 35,020 | 34,598 | 34,278 |
| **Total[1]** | **154,987** | **177,015** | **177,179** | **175,768** | **174,480** | **173,643** |

[1] Total projections based on water demand forecasting model [2] Provided by L.A. County Waterworks District #29

### 3.2.2 Current and Projected Additional Water Uses and Losses

West Basin's replenishment demands (the same as seawater intrusion barrier demands) are captured in Table 3-5. Water system losses and other factors are not included in West Basin's UWMP but are instead described by the retail customer agencies.

**Table 3-5: West Basin Additional Water Uses: Replenishment (AFY)**

| | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Imported Water | 15,274 | 3,500 | 3,500 | 3,500 | - | - |
| Recycled Water | 7,706 | 16,980 | 16,980 | 16,980 | 20,480 | 20,480 |
| **Total** | **22,980** | **20,480** | **20,480** | **20,480** | **20,480** | **20,480** |

Source: Projections based on the Capital Implementation Master Plan, 2009.



### 3.2.3 Projected Sales to Other Agencies

West Basin also sells recycled water supplies to agencies outside of its service area to meet external non-potable demands. These demands are summarized in Table 3-6.

**Table 3-6: West Basin Water Sales to External Agencies (AFY)**

| | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| City of Los Angeles | 719 | 6,650 | 6,650 | 6,650 | 6,650 | 6,650 |
| City of Torrance | 6,248 | 10,700 | 10,700 | 10,700 | 10,700 | 10,700 |
| **Total** | **6,967** | **17,350** | **17,350** | **17,350** | **17,350** | **17,350** |

Source: West Basin Water Demand Forecasting Model, 2010
Note: Sales are only recycled water

## 3.3 Regional Alliance Baseline and Target Demands

The Water Conservation Bill of 2009 (often referred to as SB X7-7 legislation) requires individual retail water suppliers to set water conservation targets for 2015 and 2020 to support an overall state goal of reducing urban potable per capita water use by 20 percent by 2020. Individual supplier conservation targets must be determined using one of four methods that are based upon a baseline of use that is calculated using the specific guidelines described in DWR's Guidebook to Assist Water Suppliers to Prepare a 2010 Urban Water Management Plan (DWR Guidebook).

As a regional water supply wholesale agency, West Basin is not required to report baseline or target demands in keeping with the Water Conservation Act of 2009. However, as a regional supplier, West Basin has elected to use its 2010 UWMP as the reporting mechanism for a regional alliance formed by some of its retail customer agencies to meet the per capita baseline and target reporting requirements of the Water Conservation Bill of 2009. Since not all of West Basin's retail agencies elected to participate in the regional alliance, the overall historical and projected demand within West Basin's service area described in Section 3.1 and 3.2 will be greater than the regional alliance per capita baseline described in this Section 3.3.

The decision for the investor-owned companies (California American Water Company, California Water Service Company, and Golden State Water Company) to not participate in the regional alliance is because much of their jurisdictions are outside West Basin's service area. Therefore, they each elected to comply as their own agency including their respective service areas across the State.

### 3.3.1 Regional Alliance Membership

The West Basin regional alliance members include the following West Basin retail customer agencies:

- California Water Service Company (Hawthorne region)
- City of El Segundo
- City of Inglewood
- City of Lomita
- City of Manhattan Beach
- Los Angeles County Waterworks District #29

As a regional alliance, these agencies worked with West Basin to establish a regional baseline of water use and conservation targets for 2015 and 2020. They will also collaborate on implementing the recycled water and conservation programs and projects that will be required to meet these targets.

### 3.3.2 Regional Alliance Base Use

The regional alliance members used the step by step process called out in the DWR Guidebook to determine the base daily water use for each member. That process and the resulting calculations are described in this section.

*Step 1: Determine Supplier Base Period Year Ranges*

Table 3-7 provides the recycled water deliveries in 2008 for each member of the regional alliance. The resulting analysis shows that the cities of El Segundo, Inglewood and Manhattan Beach meet over 10 percent of their demand through recycled water deliveries. Therefore these cities are allowed to use a range of 10 to 15 years from which to calculate their baseline water use. However, all members at the regional alliance chose to use a 10-year range. Since California Water Service Company (Hawthorne), City of Lomita and Los Angeles County Waterworks District #29 have less than 10 percent of their supply met with recycled water deliveries; they can only use a 10 year range to calculate their baseline use.

**Table 3-7: Regional Alliance Recycled Water Deliveries (2008)**

| Regional Alliance Members | Total Water Deliveries | Total Recycled Water Deliveries | % Recycled Water Deliveries |
|---|---|---|---|
| California Water Service Company - Hawthorne | 4,682 | 94 | 2% |
| City of El Segundo | 12,765 | 8,986 | 70% |
| City of Inglewood | 11,716 | 2,621 | 22% |
| City of Lomita | 2,501 | 7 | 0% |
| City of Manhattan Beach | 6,697 | 848 | 13% |
| Los Angeles County Waterworks District #29 | 10,310 | 0 | 0% |
| **Regional Alliance Total** | **57,394** | **12,556** | **22%** |

Table 3-8 shows the resulting 10- to 15-year base period and Table 3-9 shows the five-year base period that will be used for each regional alliance member. The base periods were selected by determining the most appropriate set of years to represent each regional alliance member's baseline use given the methodologies available through DWR.



**Table 3-8: Regional Alliance 10- to 15-Year Base Periods**

| Regional Alliance Members | Number of Years in Base Period | Beginning Year | Ending Year |
|---|---|---|---|
| California Water Service Company - Hawthorne | 10 | 1995 | 2004 |
| City of El Segundo | 10 | 1995 | 2004 |
| City of Inglewood | 10 | 1995 | 2004 |
| City of Lomita | 10 | 1998 | 2007 |
| City of Manhattan Beach | 10 | 1995 | 2004 |
| Los Angeles County Waterworks District #29 | 10 | 1999 | 2008 |

**Table 3-9: Regional Alliance 5-Year Base Period**

| Regional Alliance Members | Number of Years in Base Period | Beginning Year | Ending Year |
|---|---|---|---|
| California Water Service Company - Hawthorne | 5 | 2003 | 2007 |
| City of El Segundo | 5 | 2005 | 2009 |
| City of Inglewood | 5 | 2003 | 2007 |
| City of Lomita | 5 | 2003 | 2007 |
| City of Manhattan Beach | 5 | 2003 | 2007 |
| Los Angeles County Waterworks District #29 | 5 | 2005 | 2009 |

*Step 2: Estimate Distribution System Area and Population*

The composition of the regional alliance member distribution system boundaries does not match West Basin's entire service area. Therefore, the distribution service area descriptions and maps for each member of the regional alliance are provided as part of their individual agency 2010 UWMPs and not within West Basin's 2010 UWMP.

The service area population for each agency was determined independently as part of the demand forecasting model development. The service area populations used came from the Southern California Association of Government and Department of Finance projections based upon 2000 census data and predicted economic growth. The population for each regional alliance member for each of the base years is provided in Table 3-10 through Table 3-17.

*Step 3: Calculate Gross Water Use*

Gross water use for each year within the base year range was provided by each agency. The gross water use for each alliance member was calculated using DWR's Methodology 1 and is described in more detail within each of the alliance member 2010 UWMPs.

*Step 4: Calculate Base Per Capita Demand*

An annual per capita use was determined by dividing the actual potable water produced for each regional alliance member by the corresponding service area populations that were determined in Step 3 for each of the base year ranges. A final base gross water use is calculated by taking the average per capita use for all years within the selected 10-year range. These calculations are shown in Table 3-10 through Table 3-17.

The five-year base range was used to calculate average gross water use more recently to determine if any regional alliance members are already below the DWR 100 gpcd threshold. Those members with use lower than 100 gpcd would not be required to meet any further demand reductions.

**Table 3-10: California Water Service Company (Hawthorne) Base Daily Per Capita Water Use**

| Year | Calendar Year | Population | Gross Water Use (mgd*) | Per Capita Use (gpcd**) |
|---|---|---|---|---|
| 1 | 1995 | 42,503 | 4.2 | 99.9 |
| 2 | 1996 | 42,784 | 4.1 | 95.4 |
| 3 | 1997 | 43,065 | 4.4 | 101.6 |
| 4 | 1998 | 42,980 | 4.3 | 99.4 |
| 5 | 1999 | 42,957 | 4.1 | 96.0 |
| 6 | 2000 | 43,088 | 4.3 | 98.9 |
| 7 | 2001 | 46,217 | 4.2 | 91.2 |
| 8 | 2002 | 46,175 | 4.2 | 91.4 |
| 9 | 2003 | 45,147 | 4.3 | 95.4 |
| 10 | 2004 | 46,175 | 4.4 | 95.7 |
| **10 Year Base Daily Per Capita Use** | | | | **96.5** |
| 1 | 2003 | 45,147 | 4.3 | 96.0 |
| 2 | 2004 | 46,175 | 4.6 | 98.9 |
| 3 | 2005 | 46,190 | 4.2 | 91.2 |
| 4 | 2006 | 46,174 | 4.2 | 91.4 |
| 5 | 2007 | 46,199 | 4.4 | 95.4 |
| **5 Year Base Daily Per Capita Use** | | | | **94.6** |

* mgd = millions of gallons per day
** gpcd = gallons per capita per day



**Table 3-11: City of El Segundo -Base Daily Per Capita Water Use**

| Year | Calendar Year | Population | Gross Water Use (mgd) | Per Capita Use (gpcd) |
|---|---|---|---|---|
| 1 | 1995 | 15,525 | 3.8 | 241.9 |
| 2 | 1996 | 15,497 | 3.7 | 238.0 |
| 3 | 1997 | 15,543 | 3.8 | 241.5 |
| 4 | 1998 | 15,636 | 3.7 | 236.0 |
| 5 | 1999 | 15,766 | 3.7 | 233.9 |
| 6 | 2000 | 16,033 | 3.7 | 228.3 |
| 7 | 2001 | 16,292 | 3.4 | 209.2 |
| 8 | 2002 | 16,475 | 3.2 | 195.6 |
| 9 | 2003 | 16,663 | 3.2 | 191.5 |
| 10 | 2004 | 16,810 | 3.2 | 190.5 |
| **10 Year Base Daily Per Capita Use** | | | | **220.6** |
| 1 | 2005 | 16,904 | 3.0 | 178.5 |
| 2 | 2006 | 16,901 | 3.1 | 186.2 |
| 3 | 2007 | 16,912 | 3.2 | 188.4 |
| 4 | 2008 | 16,877 | 3.4 | 199.9 |
| 5 | 2009 | 16,937 | 3.5 | 206.3 |
| **5 Year Base Daily Per Capita Use** | | | | **191.8** |

**Table 3-12: City of Inglewood - Base Daily Per Capita Water Use**

| Year | Calendar Year | Population | Gross Water Use (mgd) | Per Capita Use (gpcd) |
|---|---|---|---|---|
| 1 | 1995 | 89,156 | 11.1 | 124.8 |
| 2 | 1996 | 89,432 | 10.2 | 114.0 |
| 3 | 1997 | 89,709 | 10.1 | 112.2 |
| 4 | 1998 | 89,987 | 8.3 | 92.0 |
| 5 | 1999 | 90,266 | 8.6 | 95.7 |
| 6 | 2000 | 90,545 | 9.4 | 103.6 |
| 7 | 2001 | 90,545 | 8.8 | 97.1 |
| 8 | 2002 | 90,545 | 9.1 | 100.2 |
| 9 | 2003 | 90,545 | 9.6 | 106.4 |
| 10 | 2004 | 90,545 | 9.7 | 106.7 |
| **10 Year Base Daily Per Capita Use** | | | | **105.3** |
| 1 | 2003 | 90,545 | 9.6 | 106.4 |
| 2 | 2004 | 90,545 | 9.7 | 106.7 |
| 3 | 2005 | 94,212 | 9.4 | 100.2 |
| 4 | 2006 | 94,704 | 9.0 | 94.7 |
| 5 | 2007 | 95,199 | 8.2 | 86.2 |
| **5 Year Base Daily Per Capita Use** | | | | **98.8** |

**Table 3-13: City of Lomita - Base Daily Per Capita Water Use**

| Year | Calendar Year | Population | Gross Water Use (mgd) | Per Capita Use (gpcd) |
|---|---|---|---|---|
| 1 | 1998 | 19,416 | 2.3 | 119.0 |
| 2 | 1999 | 19,477 | 2.4 | 125.7 |
| 3 | 2000 | 19,538 | 2.5 | 126.5 |
| 4 | 2001 | 19,538 | 2.4 | 122.5 |
| 5 | 2002 | 19,538 | 2.5 | 129.2 |
| 6 | 2003 | 19,538 | 2.5 | 128.1 |
| 7 | 2004 | 19,538 | 2.5 | 127.5 |
| 8 | 2005 | 19,830 | 2.4 | 119.0 |
| 9 | 2006 | 19,867 | 2.3 | 116.6 |
| 10 | 2007 | 19,905 | 2.4 | 120.3 |
| **10 Year Base Daily Per Capita Use** | | | | **123.4** |
| 1 | 2003 | 19,538 | 2.5 | 128.1 |
| 2 | 2004 | 19,538 | 2.5 | 127.5 |
| 3 | 2005 | 19,830 | 2.4 | 119.0 |
| 4 | 2006 | 19,867 | 2.3 | 116.6 |
| 5 | 2007 | 19,905 | 2.4 | 120.3 |
| **5 Year Base Daily Per Capita Use** | | | | **122.3** |

**Table 3-14: City of Manhattan Beach - Base Daily Per Capita Water Use**

| Year | Calendar Year | Population | Gross Water Use (mgd) | Per Capita Use (gpcd) |
|---|---|---|---|---|
| 1 | 1995 | 32,516 | 5.7 | 175.6 |
| 2 | 1996 | 32,399 | 7.6 | 233.1 |
| 3 | 1997 | 32,656 | 5.9 | 179.6 |
| 4 | 1998 | 32,806 | 5.5 | 166.9 |
| 5 | 1999 | 32,981 | 5.9 | 179.1 |
| 6 | 2000 | 33,852 | 5.8 | 172.3 |
| 7 | 2001 | 34,557 | 5.6 | 163.2 |
| 8 | 2002 | 35,427 | 5.8 | 163.1 |
| 9 | 2003 | 36,198 | 5.8 | 160.0 |
| 10 | 2004 | 36,464 | 6.0 | 164.2 |
| **10 Year Base Daily Per Capita Use** | | | | **175.7** |
| 1 | 2003 | 36,198 | 5.8 | 160.0 |
| 2 | 2004 | 36,464 | 6.0 | 164.2 |
| 3 | 2005 | 36,581 | 5.5 | 151.5 |
| 4 | 2006 | 36,364 | 5.3 | 144.6 |
| 5 | 2007 | 36,240 | 5.2 | 142.1 |
| **5 Year Base Daily Per Capita Use** | | | | **152.5** |



**Table 3-15: Los Angeles County Waterworks District #29 - Base Daily Per Capita Water Use**

| Year | Calendar Year | Population | Gross Water Use (mgd) | Per Capita Use (gpcd) |
|---|---|---|---|---|
| 1 | 1999 | 27,200 | 8.3 | 306.6 |
| 2 | 2000 | 27,473 | 8.4 | 307.1 |
| 3 | 2001 | 27,473 | 8.2 | 298.3 |
| 4 | 2002 | 27,473 | 9.0 | 327.4 |
| 5 | 2003 | 27,473 | 9.0 | 328.3 |
| 6 | 2004 | 27,473 | 9.4 | 341.4 |
| 7 | 2005 | 27,650 | 8.6 | 310.5 |
| 8 | 2006 | 28,056 | 8.8 | 315.1 |
| 9 | 2007 | 28,467 | 9.7 | 340.8 |
| 10 | 2008 | 28,885 | 9.2 | 318.6 |
| **10 Year Base Daily Per Capita Use** | | | | **319.4** |
| 1 | 2005 | 27,650 | 8.6 | 310.5 |
| 2 | 2006 | 28,056 | 8.8 | 315.1 |
| 3 | 2007 | 28,467 | 9.7 | 340.8 |
| 4 | 2008 | 28,885 | 9.2 | 318.6 |
| 5 | 2009 | 29,308 | 8.3 | 284.7 |
| **5 Year Base Daily Per Capita Use** | | | | **313.9** |

**Table 3-16: Combined West Basin Regional Alliance - Base Daily Per Capita Water Use**

| Year | Calendar Year | Population | Gross Water Use (mgd) | Per Capita Use (gpcd) |
|---|---|---|---|---|
| 1 | 1995 | 225,069 | 56.2 | 249.6 |
| 2 | 1996 | 225,804 | 59.7 | 264.5 |
| 3 | 1997 | 226,990 | 57.1 | 251.5 |
| 4 | 1998 | 227,755 | 53.8 | 236.4 |
| 5 | 1999 | 228,647 | 54.8 | 239.6 |
| 6 | 2000 | 230,529 | 54.0 | 234.2 |
| 7 | 2001 | 234,622 | 51.1 | 217.7 |
| 8 | 2002 | 235,633 | 49.9 | 211.8 |
| 9 | 2003 | 235,564 | 43.2 | 183.5 |
| 10 | 2004 | 237,005 | 44.6 | 188.2 |
| **10 Year Base Daily Per Capita Use** | | | | **227.7** |
| 1 | 2003 | 235,564 | 43.2 | 183.5 |
| 2 | 2004 | 237,005 | 44.6 | 188.2 |
| 3 | 2005 | 241,367 | 43.0 | 178.3 |
| 4 | 2006 | 242,067 | 41.7 | 172.2 |
| 5 | 2007 | 242,923 | 42.5 | 175.1 |
| **5 Year Base Daily Per Capita Use** | | | | **179.5** |

### 3.3.3 Regional Alliance Water Use Targets

The regional alliance water use targets were calculated by first determining which of the four allowable target calculation methods would be used for each member of the regional alliance. These methods are:

- Method 1: 80 percent of ten-year baseline per capita use
- Method 2: Applying performance standards
- Method 3: 95 percent of the DWR South Coast Region target of 149 gpcd
- Method 4: Applying savings by water sector

These selected methods were applied to the 10-year base per capita water use calculated in Tables 3-10 through 3-16 to determine a target per capita water use level for 2020. Once these targets were determined, they were confirmed by comparing them against DWR's maximum allowable target. The maximum allowable target is equivalent to 95 percent of each alliance member's five-year base per capita use calculated in Tables 3-10 through 3-16.

If the five-year base per capita use was less than 100 gpcd, then there is no maximum target for that supplier since they would be considered by DWR to be sufficiently efficient in water use. Only two suppliers, California Water Service Company - Hawthorne, and the City of Inglewood, have a five-year base per capita water use less than 100 gpcd, therefore under DWR they are sufficiently efficient in their water use. If the 2020 calculated target is greater than the maximum allowable target, then the maximum allowable target must be used instead of the calculated 10-year base targets.

Table 3-17 provides the final per capita targets for each member of the Regional Alliance as well as the overall targets for the combined Regional Alliance. Cells highlighted in gold indicate whether the calculated or maximum allowable target was used to determine the final 2020 target. Once the final 2020 water use target has been calculated, then an interim target is created by calculating the median between the 10-year base per capita use and the final 2020 target.

**Table 3-17: Regional Alliance 2015 Interim and 2020 Targets (gpcd)**

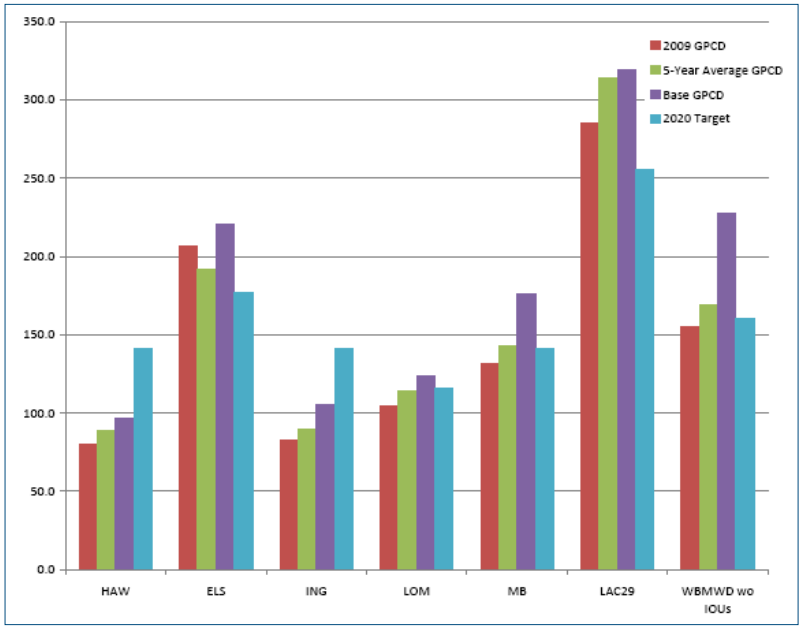
| Member | 10-Year Base Water Use | Calculated Water Use Targets | | Maximum Allowable Target | Final Targets | |
|---|---|---|---|---|---|---|
| | | Method | Target | | 2015[1] | 2020 |
| California Water Service Company-Hawthorne[2] | 96.5 | 3 | 141.6 | N/A | 119.0 | 141.6 |
| City of El Segundo | 220.6 | 1 | 176.5 | 182.2 | 198.6 | 176.5 |
| City of Inglewood[2] | 105.3 | 3 | 141.6 | N/A | 123.4 | 141.6 |
| City of Lomita | 123.4 | 3 | 141.6 | 116.2 | 119.8 | 116.2 |
| City of Manhattan Beach | 175.7 | 3 | 141.6 | 144.9 | 158.6 | 141.6 |
| Los Angeles County Waterworks District #29 | 319.4 | 1 | 255.5 | 298.2 | 287.5 | 255.5 |
| **Regional Alliance** | **227.7** | **1** | **182.2** | **160.5** | **194.1** | **160.5** |

[1] 2015 interim target was determined by calculating the median between the 10-year base per capita use and the final 2020 target.
[2] Five year base per capita water use was less than 100 gpcd (listed as N/A), supplier is currently sufficiently efficient according to DWR.



Figure 3-3 represents a comparison of the 2009, 5-year base, 10-year base and 2020 target water use for each regional alliance member.

**Figure 3-3: Regional Alliance Base and Target Use Summary**




## 3.4 Water Use Reduction Plan

In order to meet the 2020 and interim 2015 water use targets calculated in Table 3-17, West Basin has collaborated with its regional alliance agencies to develop individual Water Use Efficiency Master Plans. These plans are anticipated to be completed in May 2011. Table 3-18 identifies several key programs already identified for implementation that will help the regional alliance achieve or even go beyond the required water use targets.

**Table 3-18: West Basin and Retailer Conservation Program Participation**

| Programs | West Basin | Los Angeles County Waterworks District #29 | City of El Segundo | City of Manhattan Beach | City of Hawthorne | City of Lomita | City of Inglewood |
|---|---|---|---|---|---|---|---|
| **MWD** | | | | | | | |
| Residential Rebate Program | X | X | X | X | X | X | X |
| Save A Buck Rebate Program | X | X | X | X | X | X | X |
| **West Basin** | | | | | | | |
| High-Efficiency Toilet (HET) Distribution Events | X | X | X | X | X | X | X |
| Green Living for Apartments and Condos (Direct HET Installations) | X | X | X | X | X | X | X |
| Ocean Friendly Landscape Program | X | X | X | X | X | X | X |
| Complete Restroom Retrofit Program | X | X | X | X | X | X | X |
| Recirc & Save Program | X | X | X | X | X | X | X |
| Cash for Kitchens | X | X | X | X | X | X | X |
| Education Programs | X | X | X | X | X | X | X |
| **West Basin Programs** (Funding Pending) | | | | | | | |
| High-Efficiency Nozzle Program | X | X | X | X | X | X | X |
| Water Star Schools Pilot Program | X | X | X | X | X | X | X |
| Water & Energy Efficiency in the Motel/Hotel and Schools Sectors | X | X | X | X | X | X | X |
| **Other Water Retailer** | | | | | | | |
| Turf Removal Program | N/A | X | - | - | - | - | - |
| HET Rebates (CII) | N/A | X | - | - | - | - | - |
| Landscape Surveys | N/A | X | - | - | - | - | - |
| Education Programs | N/A | X | - | - | - | - | - |
| Landscape Incentives | N/A | X | - | - | - | - | - |



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SECTION FOUR

# Water Supply

2010

# SECTION 4 Water Supply

It is West Basin's mission to ensure a safe, adequate and reliable supply of water for the communities it serves. An increasing population and recent restrictions on imported supplies have challenged West Basin to continue to diversify its supply portfolio to meet new demands through expanded recycled water production and distribution, new ocean-water desalination supply development, and increased conservation programming through its WR 2020 Program.

This section provides an overview of the current and future water supplies needed to meet the expected demands within the West Basin service area. Although West Basin does not provide all of the supplies needed to meet these demands, this 2010 UWMP provides a complete picture of all of the historical and projected supplies to be used by its customer agencies to meet the overall demand within West Basin's service area.

While this section provides a discussion of the more traditional imported and groundwater supplies, alternative supplies such as recycled water and desalination are discussed within Sections 9 and 10 respectively. Water quality for all supplies is discussed in Section 6.

## 4.1 West Basin Service Area Water Supply Portfolio

Since its formation in 1947, West Basin has fulfilled its responsibility of providing its customer agencies with supplemental imported and recycled water supplies to meet increasing regional demands. Prior to West Basin, the average customer agency operating within the area relied completely on groundwater.

Today, these agencies rely on an increasingly diverse mix of water resources: 21% groundwater, 63% imported, 8% non-potable recycled water, and 8% conserved supply through water use efficiency measures. It is projected that by 2030, the resource mix on average will be 23% groundwater, 35% imported, 19% non-potable recycled water, 11% ocean water desalination and 12% conservation as shown in Figure 4-1.

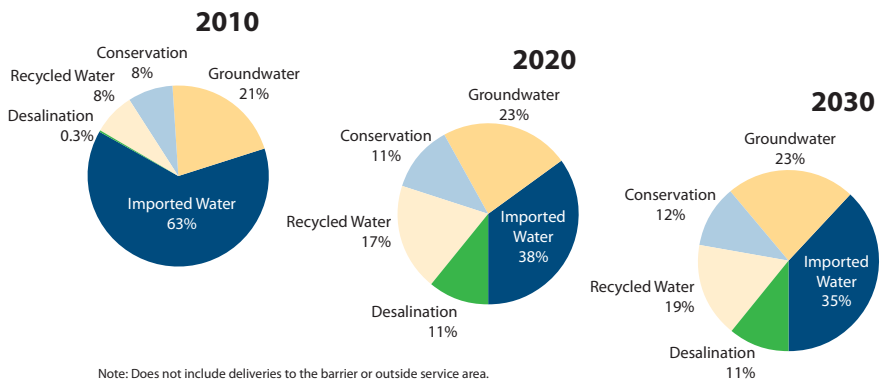
Table 4-1 provides West Basin's historical annual water supply in its service area from 2005 to 2009.

**Table 4-1: West Basin Service Area Historical Retail Water Supply (AFY)**

| Supplies | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Groundwater[1] | 34,304 | 31,469 | 31,773 | 33,849 | 38,307 |
| Imported Water[2] | 130,782 | 129,060 | 132,209 | 122,520 | 108,145 |
| Recycled Water[3] | 16,971 | 17,859 | 28,956 | 25,651 | 21,897 |
| Desalination[4] | 0 | 89 | 461 | 158 | 620 |
| **Total** | **182,057** | **178,477** | **193,399** | **182,178** | **168,969** |

[1] Groundwater production within West Basin service area only (includes West Coast Groundwater Basin and pumping from the Central Groundwater Basin into the West Basin service area). [2] Imported retail use only; does not include replenishment deliveries (i.e. Barrier). [3] Recycled water does not include replenishment deliveries (i.e. Barrier) [4] Desalination includes brackish only.

**Figure 4-1: West Basin Service Area Projected Water Supplies**




Note: Does not include deliveries to the barrier or outside service area.

West Basin has been able to support the diversification of supplies available to its customer agencies by providing access to imported water supplies from MWD as well as through the development of recycled and conserved water supplies. These supplies are served directly to its customer agencies and indirectly as the replenishment supplies necessary to maximize groundwater production. Historically, West Basin's primary supply source was imported water from MWD. However, given recent concerns over future reliability of these imported supplies, West Basin has been increasing its development of local supplies.

As Table 4-2 shows, West Basin is projecting to more than double current recycled water supplies as well as invest in over 20,000 AFY of ocean-water desalination supply. Coupled with an additional doubling of conserved supply through water use efficiency programs, the overall imported water use is expected to be cut nearly in half from the start of West Basin's WR 2020 Program in 2008, by 2020.



**Table 4-2 West Basin's Service Area Projected Water Supply (AFY)**

| Supplies | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Groundwater[1] | 35,320 | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 |
| Imported Water[2] | 104,985 | 114,647 | 76,797 | 75,386 | 70,598 | 69,761 |
| Recycled Water[3] | 14,182 | 16,368 | 33,882 | 33,882 | 37,382 | 37,382 |
| Desalination[4] | 500 | 1,000 | 21,500 | 21,500 | 21,500 | 21,500 |
| **Total** | **154,987** | **177,015** | **177,179** | **175,768** | **174,480** | **173,643** |
| Conservation[5] | 14,000 | 15,119 | 21,039 | 21,640 | 22,971 | 23,632 |
| **Total** | **168,987** | **192,134** | **198,218** | **197,408** | **197,451** | **197,275** |

[1] Groundwater production within West Basin service area only.
[2] Imported retail use only; does not include replenishment deliveries (i.e. Barrier).
[3] Recycled water does not include replenishment deliveries (i.e. Barrier) and deliveries outside the service area.
[4] Desalination includes both brackish and ocean-water.
[5] Conservation consists of Active and Passive savings according to West Basin's projected estimates.

## 4.2 Imported Water Supply

West Basin has historically relied on approximately 150,000 AFY of imported water from MWD to meet customer demand. MWD supplies originate from the Colorado River and State Water Project (SWP) to meet West Basin's retail and replenishment demands. In recent years, MWD's imported supplies have become increasingly restricted given protracted droughts and recent environmental rulings and restrictions that limited the amount of SWP water available for use.

These restrictions have resulted in partial allotments for West Basin and the unavailability of lower cost surplus water for in-lieu basin replenishment use. As a result, West Basin has been challenged to maximize the efficient use of this supply as well as explore ways to develop alternative supplies. This challenge has resulted in West Basin's goal of reducing its projected need for imported water supplies in half by 2020 through the development of local and conserved supplies.

### 4.2.1 Colorado River Resources

MWD owns and operates the Colorado River Aqueduct (CRA), which connects the Colorado River to MWD's regional distribution system. The CRA has a capacity of 1.25 Million AF (MAF) to transport MWD's current contracted entitlement of 550 Thousand AFY (TAF) of Colorado River water. MWD also holds a priority for an additional 662 TAF and 180 TAF when surplus flows are available.

MWD and the State of California have acknowledged that they could obtain less water from the Colorado River in the future. The U.S. Secretary of Interior asserted that California had to limit its use of Colorado River supplies to 4.4 MAF per year, plus any available surplus water. California's Colorado River Water Use Plan characterizes how California would develop a combination of programs to meet this limit as well as how to use any available surplus water. In 2003, the Quantification Settlement Agreement

*Lake Mead*

(QSA) among California agencies with Colorado River rights established the baseline water use for each of the agencies and facilitates the transfer of water from agricultural agencies to urban uses. The QSA is currently ruled as invalid due to multiple legal proceedings that have taken place over the past eight years. MWD has filed appeals that will stay the ruling until the outcome of the appeal. If the ruling stands, it could delay and potentially increase the cost of the QSA's supply development programs.

An extended drought from 2000-2007 within the Colorado River Basin has also decreased supply reserves to 50 percent capacity. Even in light of these challenges, according to MWD's 2010 Draft Regional Urban Water Management Plan, MWD intends to maximize the use of the California Aqueduct by obtaining a full 1.25 MAFY through the use of exchanging water rights purchases from agricultural and other holders.

*Colorado River Aqueduct*

### 4.2.2 State Water Project Resources

California's SWP is MWD's second main source of imported water and is the nation's largest state-built water and power development and conveyance system. It includes facilities, such as pumping and power plants; reservoirs, lakes, and storage tanks; and canals, tunnels, and pipelines, that capture, store, and convey water from Northern California to 29 water agencies in Central and Southern California.

Operated and maintained by DWR, the SWP provides water supplies for 25 million Californians and for 750,000 acres of irrigated farmland. The original State Water Contract called for an ultimate delivery capacity of 4.2 MAF, with MWD holding a contract for 1.9 MAF. Since that time there have been significant challenges to meeting those delivery goals.

More than two-thirds of California's drinking water, including all of the water supplied by SWP, passes through the San Francisco-San Joaquin Bay-Delta (Bay-Delta). For decades, the Bay-Delta system has experienced water quality and supply reliability challenges and conflicts due to variable hydrology and environmental standards that limit pumping operations.

Most recently, the State experienced a critically dry period from 2008 to 2009 (including the driest ever spring in 2008) that produced some of the lowest reservoir levels recorded for SWP facilities. During this drought period, a biological opinion regarding the dwindling populations of Bay-Delta Smelt (2008) and salmonid species (2009) resulted in legal rulings that have been estimated to reduce average SWP deliveries from approximately 3.3 MAF to 2.3 MAF. DWR released a Water Allocation Analysis in 2010 that has resulted in an MWD estimated reduction in SWP supplies of 150 – 200 TAF.



Although challenges to the SWP exist, MWD has developed plans to meet imported water needs for West Basin and other member agencies though the implementation of several exchange and storage programs as well as working towards a project that will fix the Bay-Delta issues and resume normal deliveries. These supply development programs will be implemented in concert with MWD's ongoing collaboration with member agencies to more efficiently use the supplies to meet increasing demands and potential climate change impacts.

*State Water Project System*

### 4.2.3 Types of MWD Supply

MWD offers different types of imported water to its member agencies depending on the ultimate use. Among them, West Basin has delivered Non-Interruptible Water (treated full-service) and Seasonal Treated Replenishment Water (in-lieu replenishment).

Non-Interruptible Water is the treated firm supply that is available all year and not subject to interruption. Historically, West Basin has delivered an average of about 150,000 AFY of non-interruptible water. It is used as the main supplemental supply to cities and water agencies, and the Dominguez Gap Seawater Barrier and 25% of the supply for the West Coast Basin Seawater Barrier.

Seasonal Treated Replenishment Water, when available, is delivered to customer agencies that are eligible to offset groundwater production with imported water. This program incentivizes customer agencies to take imported surplus water when available, which indirectly replenishes the groundwater basin. This surplus water is purchased at a discount rate in exchange for leaving groundwater in the basin for no less than a year so that it can be used subsequently during dry years.

## 4.3 Groundwater Supply

West Basin does not supply groundwater to retail agencies. However, retail agencies operating within West Basin's service area rely on groundwater production to meet just over 20 percent of retail demand and this is expected to continue through 2035. There are, however, a few jurisdictions within the West Basin service area that rely exclusively on imported water to meet all their current water needs.

West Basin overlies nearly all of the adjudicated WCGB. In the early 1940s, extensive over pumping of the WCGB had led to critically low groundwater levels, which resulted in seawater intrusion along the coast. This situation precipitated an adjudication that limits the allowable extraction that could occur in any given year and assigned water rights to basin pumpers. The adjudicated water rights (as shown in Table 4-3) that were developed are, however, in excess of the safe operating basin yield.

**Table 4-3: West Coast Groundwater Basin Pumping Rights (AFY)**

| Retail Agencies | 2009-2010 Pumping Rights |
|---|---|
| Cal Water Service Co. (Dominguez) | 10,417 |
| Cal Water Service Co. (Hawthorne) | 1,882 |
| Cal Water Service Co.(Hermosa/Redondo) | 4,070 |
| City of Inglewood | 4,450 |
| City of El Segundo | 953 |
| City of Lomita | 1,352 |
| City of Manhattan Beach | 1,131 |
| Golden State Water Company | 7,502 |
| Non-Retail Water Pumpers[1] | 32,711 |
| **Total** | **64,468** |

Source: West Basin Watermaster Report, DWR: 2009-2010
[1] Water right holders that are not water retail agencies: i.e. Nurseries, Cemeteries, Industries, and Refineries

To allow full WCGB rights to be pumped while limiting seawater intrusion, WRD purchases non-interruptible imported and recycled water supplies from West Basin for injection by the Los Angeles County Department of Public Works at the West Coast and Dominguez Gap Seawater Intrusion Barriers. WRD is the entity responsible for maintaining and replenishing the WCGB. WRD is a special district created by the State and governed by a 5-member elected body to replenish and protect the groundwater basin with imported water and recycled water.

Two of West Basin's customer retailers also import groundwater from outside the West Basin service area from the adjacent Central Groundwater Basin to meet their demand (California American Water Co. and California Water Service Co. – Dominguez). Although rights have been bought, sold, exchanged, or transferred through the years, the total amount of groundwater projected to be extracted over the next 25 years will be fairly consistent due to the adjudication of both the West Coast and Central basins. The financial costs to pump groundwater have been and are projected to remain less than the cost to purchase imported water so it can safely be assumed that water retailers will continue to maximize their groundwater rights.

Table 4-4 shows the historical amounts of Central Basin Groundwater Basin groundwater supplies that were purchased by West Basin's retail customer agencies.

**Table 4-4: Historical Central Basin Groundwater Retail Imported Supply (AF)**

| Retail Agency | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| California American Water Co. | 3,042 | 2,708 | 1,977 | 1,787 | 3,537 |
| Cal Water Service (Dominguez) | 1,242 | 2,374 | 2,815 | 2,344 | 1,647 |
| **Total** | **4,284** | **5,082** | **4,792** | **4,131** | **5,184** |

Source: DWR Watermaster Reports, 2004-2009



Table 4-5 shows the historical groundwater supplies for West Basin's retail customer agencies (not including the non-retail or private rights holders) from both basins.

**Table 4-5: Historical Groundwater Retail Supply (AF)**

| Basin name(s) | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| West Coast Basin | 30,020 | 26,387 | 26,981 | 29,717 | 33,123 |
| Central Basin | 4,284 | 5,082 | 4,792 | 4,132 | 5,184 |
| **Total** | **34,304** | **31,469** | **31,773** | **33,849** | **38,307** |

Source: DWR Watermaster Reports, 2004-2009

Table 4-6 shows the historical groundwater replenishment supplies for the West Coast and Dominguez Gap Barriers.

**Table 4-6: Historical Groundwater Replenishment Supply**

| | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| West Coast Barrier Supplies | 8,555 | 6,035 | 4,228 | 3,978 | 4,231 |
| Dominguez Gap Barrier Supplies | 5,327 | 5,828 | 4,027 | 4,049 | 7,927 |
| **Total** | **13,882** | **11,863** | **8,255** | **8,027** | **12,158** |

Source: DWR Watermaster Reports, 2004-2009

Table 4-7 shows the projected retail groundwater production to meet West Basin service demands through 2035.

**Table 4-7: Current and Projected Retail Groundwater Supply (AF)**

| Basin name(s) | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| West Coast Basin | 30,064 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Central Basin | 5,256 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| **Total** | **35,320** | **45,000** | **45,000** | **45,000** | **45,000** | **45,000** |

Source: Based upon actual water use sales.

Table 4-8 shows the projected replenishment (or seawater intrusion barrier) supplies to be met by West Basin's retail agencies through 2035.

**Table 4-8: Current and Projected Replenishment Groundwater Supply**

| | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Imported Water | 15,274 | 3,500 | 3,500 | 3,500 | - | - |
| Recycled Water | 7,706 | 16,980 | 16,980 | 16,980 | 20,480 | 20,480 |
| **Total** | **22,980** | **20,480** | **20,480** | **20,480** | **20,480** | **20,480** |

Note: Barrier water deliveries to both the West Coast and Dominguez Gap Barriers

## 4.4 Water Transfers and Exchanges

Water transfers and exchanges are management tools to address increased water needs in areas of limited supply. Although transfers and exchanges of water do not generate new supply, these management tools distribute water where it is abundant to where it is limited.

MWD has played an active role statewide in securing water transfers and exchanges as part of their planning goals. Although West Basin is a member of MWD, there has not been a compelling reason or opportunity to pursue transfers directly.

## 4.5 Alternative Sources of Supply

As shown in Figure 4-1, West Basin is planning on increasing the diversity of its water supply portfolio through the further development of alternatives to the more traditional imported water and groundwater supplies. This 2010 UWMP has dedicated entire sections to discuss the planned projects and programs to develop alternative supplies such as Recycled Water (Section 9) and Desalination (Section 10) as well as the increased water use efficiency programs discussed in Section 7. West Basin is pursuing these alternative supplies as part of its WR 2020 initiative.





SECTION FIVE

# Water Reliability

# SECTION 5 Water Reliability

West Basin's supply reliability can be greatly impacted by many factors including changes in the availability of supplies due to climatic or infrastructure changes as well as the ability to use those supplies more efficiently in both average and dry periods. These factors can result in immediate (facility failures), near-term (SWP limitations), or long-term (climate change) impacts to reliability and must therefore be considered in future planning.

The impacts of these factors on reliability increase under single dry and multiple dry year hydrologic patterns. Historically, dry years result in increases in demands as well as decreases in surface supplies that result in shortages if not managed effectively. Although not all shortages can be prevented, West Basin's WR 2020 goal to expand and further diversify its supply portfolio is the most important step toward improving the immediate, near- and long-term reliability of supplies. If shortages do occur, West Basin has completed comprehensive water shortage contingency planning to provide reliability during these situations.

## 5.1 Potential Impacts to Reliability

Reliability within the West Basin service area is a composite of the reliability of each source of supply. Table 5-1 summarizes the factors that impact each resource's supply reliability. Of all of the supplies shown in Table 5-1, imported supply has the greatest number of factors that will impact its reliability. It is because of this, that West Basin is moving forward with its plans to expand water use efficiency, further develop recycled water and add ocean-desalination supplies. Further explanation of each impact category on reliability is described in the subsections below.

**Table 5-1: Factors Resulting in Impacts to Reliability**

| Water Sources | Legal | Environmental | Water Quality | Climatic |
|---|---|---|---|---|
| Imported Water | X | X | X | X |
| Groundwater | X | | X | X |
| Recycled Water | | | X | |
| Ocean-Water Desalination | | | X | |

### 5.1.1 Imported Water Reliability

As discussed in Section 4, MWD has and will continue to contend with considerable challenges to maintaining a reliable source of imported supply for its member agencies. After learning from the droughts of 1977-78 and 1989-92, MWD instituted a resources planning process that has resulted in the following documents:

- **1996, 2004 and 2010 Integrated Resources Plans (IRP):** MWD's IRP process assessed potential future regional demand projections based upon anticipated population and economic growth as well as conservation potential. The IRP also includes regional supply strategies and implementation plans to better manage resources, meet anticipated demand, and increase overall system reliability.
- **1999 Water Surplus and Drought Management Plan (WSDM):** The WSDM provides the policy guidance to manage the region's water supplies to achieve the reliability goals of the IRP. This is achieved by integrating the operating activities of surplus and shortage supplies through a series of stages and principles.
- **2008 Water Supply Allocation Plan (WSAP):** The WSAP includes the specific formula for calculating member agency supply allocations and the key implementation elements needed for administering the allocation. The need for the WSAP arose after the 2008 Bay-Delta biological opinions and rulings that limited SWP supplies to its contractors including MWD. The WSAP formula seeks to balance the impacts of a shortage at the retail level while maintaining equity on the wholesale level for shortages of MWD supplies up to 50%.

Since the 2008 Bay-Delta reductions, MWD has been using the WSAP formulas to contend with the reduction in available imported supplies. Although it is anticipated that the WSAP will continue to be in effect in the near–term, MWD states in its 2010 Draft UWMP that there will be sufficient supply to meet member agency demands in single and multiple dry years from 2015 through 2035. This is assuming that MWD storage levels are at or above average levels prior to those cycles.

MWD also is planning as part of the 2010 IRP to further support member agency local resource development as well as investigate potentially generating its own local resources for distribution to member agencies. The development of local resources as well as furthering existing conservation goals to meet the Water Conservation Act of 2009 targets are anticipated to provide a supply buffer for member agencies to rely upon in times of drought and longer-term climatic changes.

The factors affecting reliability for imported water supplies include legal, environmental, water quality and climatic. The legal factor includes policies and contracts on the SWP with the Department of Water Resources and on the Colorado River system with the Department of the Interior and other Colorado River basin states. Legal actions can impact supplies from these two sources in various ways as experienced recently with a federal district court decision limiting SWP supplies due to perceived impacts on specific fish in the Delta estuary. This example also shows how environmental factors such as endangered species, their habitat, and other related concerns must be taken into account in decisions that can curtail supplies. Likewise, the quality of these imported source waters can impact availability of supplies due to treatment, remediation or otherwise to ensure drinking water standards are fully met. In terms of impacts from climatic factors, imported water supplies rely heavily on runoff from rainfall and

snowpack in the State Water Project and Colorado River watersheds. If the amount of snowpack and rainfall changes significantly in these two water supply systems, the quantity of water in any given year is subject to fluctuations. With the uncertainty of the impacts from long-term climate changes, imported water supplies may become more or less reliable in the future, depending on the availability of storage.

### 5.1.2 Groundwater Reliability

The reliability of groundwater supplies dictates how much supplemental supply West Basin will need to provide its customer agencies to meet their demands. Groundwater is traditionally considered a highly reliable supply since it is not immediately susceptible to changes in climate and surface flows. However, the two main factors that impact the reliability of groundwater supplies are legal and water quality.

Because the WCGB is an adjudicated basin, pumping rights are established for particular entities. However, changes to basin operation including allocation of pumping rights, opportunities to utilize the basin in other ways including storage, remediation of contaminated plumes, and pumping expansion for further extraction, are all considered legal impacts because it would require addressing the existing court-ordered judgment.

The LACDPW owns and maintains the seawater barrier system. They also monitor and work with WRD to determine how much barrier injection water is required in order to maintain protective levels to protect the aquifer from seawater intrusion. WRD also determines how much water is needed to replenish the WCGB to support pumping and orders this amount of water from West Basin who then delivers a combination of recycled and imported water.

The water quality of groundwater supplies is a factor in its reliability because the water needs to meet drinking water standards and sometimes requires expensive treatment at each pumping location.

During the time in which groundwater pumping was exceeding recharge and replenishment, seawater intruded into the WCGB. Once the intrusion barriers were brought on-line, the intrusion was stopped, but a large plume of saline water has remained trapped within the basin. The groundwater supply projections have already considered the presence of the plume and therefore anticipate no change in supply reliability as a result of its existence. The saline plume and the methods being employed by West Basin and its customer and neighboring agencies to manage the plume are further discussed in Section 6: Water Quality.



### 5.1.3 Recycled Water and Ocean-Water Desalination Reliability

*Edward C. Little Water Recycling Facility*

Recycled water is often considered as having one of the highest reliabilities of any supply given that there is a consistent source of supply for treatment. Ocean-water desalination is a newer form of supply in California but is also considered highly reliable given the abundance of ocean-water adjacent to West Basin's service area. West Basin has completed a pilot study and is now operating a demonstration facility to further determine environmental safeguards, energy and cost savings possible prior to a full scale program slated for completion by 2017. The planned recycled water and ocean-water desalination projects that West Basin is intending to use to meet future demand are further detailed in Sections 9 and 10 respectively.

### 5.1.4 Climate Change

Climate change adds its own new uncertainties to the challenges of planning. As a MWD member agency, West Basin is contributing to MWD's activities to better understand and plan for potential long-term climate change impacts.

According to the MWD RUWMP, MWD uses historical hydrological data to forecast both the frequency and the severity of future drought conditions, as well as the frequency and abundance of above-normal rainfall. However, weather patterns can be expected to shift dramatically and unpredictably in a climate driven by increased concentrations of carbon dioxide in the atmosphere. MWD is committed to performing its due diligence with respect to climate change.

While uncertainties remain regarding the exact timing, magnitude, and regional impacts of these temperature and precipitation changes, researchers have identified several areas of concern for California water planners. These include:

- Reduction in Sierra Nevada snowpack
- Increased intensity and frequency of extreme weather events
- Rising sea levels resulting in:
  - Increased risk of damage from storms, high-tide events, and the erosion of levees
  - Potential pumping cutbacks on the SWP and Central Valley Project
  - Increased threats to coastal groundwater basins

Other important issues of concern due to global climate change include:

- Changes in urban and agricultural demand levels and patterns
- Impacts to human health from water-borne pathogens and water quality degradation
- Declines in ecosystem health and function
- Alterations to power generation and pumping regimes

In March 2002, the MWD Board adopted policy principles on global climate change as related to water resource planning. The Principles stated in part that MWD supports further research into the potential water resource and quality effects of global climate change, and supports flexible "no regret" solutions that provide water supply and quality benefits while increasing the ability to manage future climate change impacts. To date MWD has completed the following actions to meet these Principles:

- Membership in the Water Utility Climate Alliance that has resulted in completion of several activities including:
  - Letter of support for Western Water Assessment's continued funding as a Regional Integrated Sciences and Assessments team under the National Oceanic and Atmospheric Administration (NOAA)
  - Letter of support for the 2009 Kerry-Boxer Water Utilities Mitigation and Adaptation Partnerships congressional bill addendum
  - Regular communication and consultations with federal agencies on the U.S. Environmental Protection Agency's Climate Ready Water Utility Working Group
  - NOAA Climate Service and January 2010 International Climate Change Forum
  - Released "Options for Improving Climate Modeling to Assist Water Utility Planning for Climate Change"
- Working with local water supply agencies, state and federal agencies and non-governmental organizations to collaborate on climate change related planning issues.
- Using MWD's IRP process to incorporate climate change science into regional plans by providing adaptive management strategies, creating buffer supplies, and encouraging the more efficient use of existing supplies.

## 5.2 Projected Supply Reliability

West Basin has experienced several examples of single dry and multiple dry year cycles within its historical hydrologic record. For the purposes of this UWMP, West Basin will use the years called out in Table 5-2 as the best representative examples of the single and multiple dry years. Table 5-3 provides an estimate of current (2010) water supply reliability from all four of West Basin's water sources. The table estimates supply reliability for 2011 if it were a single dry year and through a multiple dry period from 2011 to 2013. The average year supply projections shown in Table 5-4 are the average of all years within the 100 year hydrologic record and were previously reported in Section 4: Water Supply.



**Table 5-2: Basis of Water Years and Historic Conditions**

| | Single Dry Water Year | Normal Water Year | Multiple Dry Water Years | | |
|---|---|---|---|---|---|
| | Year 1 | | Year 1 | Year 2 | Year 3 |
| | 2001 | 1999 | 2001 | 2002 | 2003 |
| **Percent of Normal Year** | 4% | 0% | 4% | 4.5% | 5.0% |

**Table 5-3: Supply Reliability- Current Water Sources**

| Water Supply Sources[1] | Average/Normal Water Year Supply (2010) | Single Dry Water Year Supply (2011) | Multiple Dry Water Years Supply | | |
|---|---|---|---|---|---|
| | | | 2011 | 2012 | 2013 |
| Groundwater | 35,320 | 36,360 | 38,088 | 39,816 | 41,544 |
| Imported Water | 104,985 | 111,246 | 113,342 | 116,262 | 119,223 |
| Recycled Water | 14,182 | 14,182 | 14,619 | 15,056 | 15,494 |
| Desalination | 500 | 1,000 | 1,000 | 1,000 | 1,000 |
| **Total Supply** | 154,987 | 162,788 | 167,050 | 172,135 | 177,261 |
| **Percent of Normal Year** | 0% | 4% | 4% | 4.5% | 5% |

[1]Supply reliability covers only retail water demand; does not include replenishment/barrier deliveries.

**Table 5-4: Projected Average Year Supply and Demand**

| Supplies[1] | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Groundwater[1] | 35,320 | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 |
| Imported Water[2] | 104,985 | 114,647 | 76,797 | 75,386 | 70,598 | 69,761 |
| Recycled Water[3] | 14,182 | 16,368 | 33,882 | 33,882 | 37,382 | 37,382 |
| Desalination[4] | 500 | 1,000 | 21,500 | 21,500 | 21,500 | 21,500 |
| **Total Supply** | **154,987** | **177,015** | **177,179** | **175,768** | **174,480** | **173,643** |
| **Total Demand** | **154,987** | **177,015** | **177,179** | **175,768** | **174,480** | **173,643** |
| Surplus/(Shortage) | 0 | 0 | 0 | 0 | 0 | 0 |

[1] Groundwater production within West Basin service area only.
[2] Imported retail use only; does not include replenishment deliveries (i.e. Barrier).
[3] Recycled water does not include replenishment deliveries (i.e. Barrier) and deliveries outside the service area.
[4] Desalination includes both brackish and ocean-water.

### 5.2.1 Single Dry Year

Table 5-5 shows the projected reliability of water supplies under single dry year conditions for five year increments between 2010 and 2035.

The overall demand is estimated to increase by 4 percent over average year to account for increases in irrigation needs. The scenario selected in the demand forecasting model projects that demands will increase by 4 percent in a single dry year based on the following set of assumptions:

- Economic cycle and restrictions ( 4-year rebound)
- Growth in connections (normal)
- Population (normal)
- Effects of price of water (MWD projected increases)
- Long-term climate change conditions (normal)
- Water use efficiency (doubling current efforts)
- Short-term weather changes (hot and dry)

The extra demand can readily be met with a slight increase in imported water purchases given that West Basin is gradually reducing its dependence on imported supplies in an average year and therefore should have imported water allocations available to meet these slight increases in demand.

**Table 5-5: Projected Single-Dry Year Supply and Demand (AF)**

| Supplies[1] | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|
| Groundwater | 35,320 | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 |
| Imported Water | 111,246 | 121,728 | 83,884 | 82,417 | 77,577 | 76,707 |
| Recycled Water | 14,182 | 16,368 | 33,882 | 33,882 | 37,382 | 37,382 |
| Desalination | 500 | 1,000 | 21,500 | 21,500 | 21,500 | 21,500 |
| **Total Supply** | **161,248** | **184,096** | **184,266** | **182,799** | **181,459** | **180,589** |
| **Total Demand[2]** | **161,248** | **184,096** | **184,266** | **182,799** | **181,459** | **180,589** |
| Surplus/(Shortage) | 0 | 0 | 0 | 0 | 0 | 0 |

[1] Supply reliability covers only retail water demand; does not include replenishment/barrier deliveries.
[2] Reflects demand after planned conservation and assumes a 4% increase in demand from average year.

### 5.2.2 Multiple Dry Years

Table 5-6 through 5-10 show the projected reliability of supplies under multiple (three-year) dry year conditions for five year increments between 2010 and 2035. It was assumed in all tables that demand will increase by 5 percent over the average year in the third year of multiple dry year conditions. This projected increase was determined through the assumptions used in the demand forecasting model process and in previous dry-year conditions.

As under single dry year conditions, imported supplies will be purchased to meet any annual increase in demand. As a result, there are no anticipated shortages under any multiple dry year scenarios. Any shortfall in supplies will be met through imported water so long as MWD manages its supply and demand balance through its Water Surplus and Drought Management Plan, which includes specific actions such as storage withdrawals and implications of their WSAP. This is discussed in further detail in section 5.3.1.



**Table 5-6: Projected Multiple Dry-Year (2013-2015) Supply and Demand (AF)**

| Supplies | 2013 | 2014 | 2015 |
|---|---|---|---|
| Groundwater | 40,700 | 42,850 | 45,000 |
| Imported Water | 117,501 | 115,788 | 114,078 |
| Recycled Water | 15,494 | 15,931 | 16,368 |
| Desalination | 1,000 | 1,000 | 1,000 |
| **Total Supply[1]** | **174,695** | **175,569** | **176,446** |
| **Total Demand[2]** | **174,695** | **175,569** | **176,446** |
| Surplus/(Shortage) | 0 | 0 | 0 |

[1] Supply reliability covers only retail water demand; does not include replenishment/barrier deliveries.
[2] Reflects demand after conservation and assumes a 5% increase from average to dry year 3.

**Table 5-7: Projected Water Multiple Dry-Year (2018-2020) Supply and Demand (AF)**

| Supplies | 2018 | 2019 | 2020 |
|---|---|---|---|
| Groundwater | 45,000 | 45,000 | 45,000 |
| Imported Water | 99,022 | 92,340 | 85,662 |
| Recycled Water | 26,876 | 30,379 | 33,882 |
| Desalination | 13,300 | 17,400 | 21,500 |
| **Total Supply[1]** | **184,198** | **185,119** | **186,044** |
| **Total Demand[2]** | **184,198** | **185,119** | **186,044** |
| Surplus/(Shortage) | 0 | 0 | 0 |

[1] Supply reliability covers only retail water demand; does not include replenishment/barrier deliveries.
[2] Reflects demand after conservation and assumes a 5% increase from average to dry year 3.

**Table 5-8: Projected Water Multiple Dry-Year (2023-2025) Supply and Demand (AF)**

| Supplies | 2023 | 2024 | 2025 |
|---|---|---|---|
| Groundwater | 45,000 | 45,000 | 45,000 |
| Imported Water | 83,003 | 83,920 | 84,842 |
| Recycled Water | 33,882 | 33,882 | 33,882 |
| Desalination | 21,500 | 21,500 | 21,500 |
| **Total Supply[1]** | **183,385** | **184,302** | **185,224** |
| **Total Demand[2]** | **183,385** | **184,302** | **185,224** |
| Surplus/(Shortage) | 0 | 0 | 0 |

[1] Supply reliability covers only retail water demand; does not include replenishment/barrier deliveries.
[2] Reflects demand after conservation and assumes a 5% increase from average to dry year 3.

**Table 5-9: Projected Water Multiple Dry-Year (2028-2030) Supply and Demand (AF)**

| Supplies | 2028 | 2029 | 2030 |
|---|---|---|---|
| Groundwater | 45,000 | 45,000 | 45,000 |
| Imported Water | 79,513 | 79,723 | 79,937 |
| Recycled Water | 35,982 | 36,682 | 37,382 |
| Desalination | 21,500 | 21,500 | 21,500 |
| **Total Supply[1]** | **181,995** | **182,905** | **183,819** |
| **Total Demand[2]** | **181,995** | **182,905** | **183,819** |
| Surplus/(Shortage) | 0 | 0 | 0 |

[1] Supply reliability covers only retail water demand; does not include replenishment/barrier deliveries.
[2] Reflects demand after conservation and assumes a 5% increase from average to dry year 3.

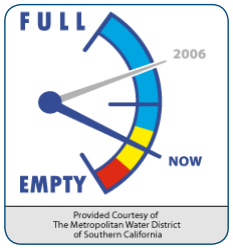
**Table 5-10: Projected Water Multiple Dry-Year (2033-2035) Supply and Demand (AF)**

| Supplies | 2033 | 2034 | 2035 |
|---|---|---|---|
| Groundwater | 45,000 | 45,000 | 45,000 |
| Imported Water | 77,055 | 77,960 | 78,869 |
| Recycled Water | 37,382 | 37,382 | 37,382 |
| Desalination | 21,500 | 21,500 | 21,500 |
| **Total Supply[1]** | **180,937** | **181,842** | **182,751** |
| **Total Demand[2]** | **180,937** | **181,842** | **182,751** |
| Surplus/(Shortage) | 0 | 0 | 0 |

[1] Supply reliability covers only retail water demand; does not include replenishment/barrier deliveries.
[2] Reflects demand after conservation and assumes a 5% increase from average to dry year 3.

## 5.3 Water Shortage Contingency Plan

DWR requires that each urban water supplier provide a water shortage contingency analysis within its UWMP. West Basin completed its WSAP in 2008 as a result of MWD's WSAP. West Basin's WSAP is only implemented after MWD reaches the appropriate stage. MWD has captured this planning in its WSDM Plan which guides MWD's planning and operations during both shortage and surplus conditions. Furthermore, MWD developed their WSAP which provides a standardized methodology for allocating supplies during times of shortage.



*Dated: June 2009*

### 5.3.1 MWD Water Surplus and Drought Management Plan

In April 1999, MWD's Board adopted the WSDM Plan. It provides policy guidance for managing regional water supplies to achieve the reliability goals of the IRP and identifies the expected sequence of resource management actions that MWD will execute during surpluses and shortages to minimize the probability of severe shortages and reduce the possibility of extreme shortages and shortage allocations. Unlike MWD's previous shortage management plans, the WSDM Plan recognizes the link between surpluses and shortages, and it integrates planned operational actions with respect to both conditions.



*WSDM Plan Implementation*

Each year, MWD evaluates the level of supplies available and existing levels of water in storage to determine the appropriate management stage. Each stage is associated with specific resource management actions designed to (1) avoid an Extreme Shortage to the maximum extent possible and (2) minimize adverse impacts to retail customers if an Extreme Shortage occurs. The current sequencing outlined in the WSDM Plan reflects anticipated responses based on detailed modeling of MWD's existing and expected resource mix.

*Surplus Stages*

MWD's supply situation under the WSDM Plan is considered to be in surplus as long as net annual deliveries can be made to water storage programs. The WSDM Plan further defines five surplus management stages that guide the storage of surplus supplies in MWD's storage portfolio. Deliveries for storage in the Diamond Valley Lake and in the State Water Project terminal reservoirs continue through each surplus stage provided there is available storage capacity. Withdrawals from Diamond Valley Lake for regulatory purposes or to meet seasonal demands may occur in any stage. Deliveries to other storage facilities may be interrupted, depending on the amount of the surplus.

*Shortage Stages*

The WSDM Plan distinguishes between Shortages, Severe Shortages, and Extreme Shortages. Within the WSDM Plan, these terms have specific meaning relating to Metropolitan's ability to deliver water to its customers.

***Shortage*:** MWD can meet full-service demands and partially meet or fully meet interruptible demands, using stored water or water transfers as necessary.

***Severe Shortage*:** MWD can meet full service demands only by using stored water, transfers, and possibly calling for extraordinary conservation. In a Severe Shortage, MWD may have to curtail Interim Agricultural Water Program deliveries.

***Extreme Shortage*:** MWD must allocate available supply to full-service customers.

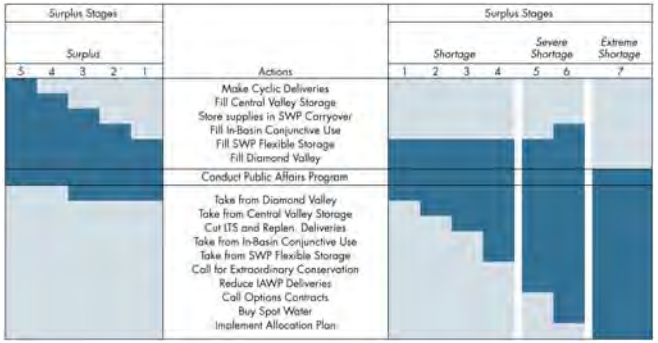
The WSDM Plan also defines seven shortage management stages to guide resource management activities. These stages are not defined merely by shortfalls in imported water supply, but also by the water balances in MWD's storage programs. Thus, a ten percent shortfall in imported supplies could be a stage one shortage if storage levels are high. If storage levels are already depleted, the same shortfall in imported supplies could potentially be defined as a more severe shortage.

When MWD must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Under most of these stages, it is still able to meet all end-use demands for water. For shortage stages 1 through 4, MWD will meet demands by withdrawing water from storage. At shortage stages 5 through 7, MWD may undertake additional shortage management steps, including issuing public calls

for extraordinary conservation, considering curtailment of Interim Agricultural Water Program deliveries in accordance with their discounted rates, exercising water transfer options, or purchasing water on the open market.

Figure 5-1 shows the actions under surplus and shortage stages when a Water Supply Allocation Plan would be necessary to enforce mandatory cutbacks. The overriding goal of the WSDM Plan is to never reach Shortage Stage 7, an Extreme Shortage. At shortage stage 7 MWD will implement its Water Supply Allocation Plan to allocate available supply fairly and efficiently to full-service customers.

**Figure 5-1: MWD Surplus and Shortage Stages**




Source: MWD 2010 UWMP

### 5.3.2 Drought Management Plan

When MWD is operating under a shortage stage, West Basin would take the following stages of action:

***Stage 1:*** West Basin would request for a voluntary effort among its customers to reduce imported water deliveries. In addition, West Basin would pursue an aggressive Public Awareness Campaign to encourage residents and industries to reduce their usage of water.

***Stage 2:*** In addition to the stage above, West Basin would work with its customer agencies to review and update as needed water waste prohibitions and ordinances to discourage unnecessary water usage.

***Stage 3:*** In addition to all the stages above, West Basin would implement its adopted Water Shortage Allocation Plan which calls for a curtailment of imported water for each of its customer agencies. This plan includes an adopted allocation methodology and is enforced by a penalty structure. A draft resolution is included in Appendix F.



### 5.3.3 West Basin's Water Shortage Allocation Plan

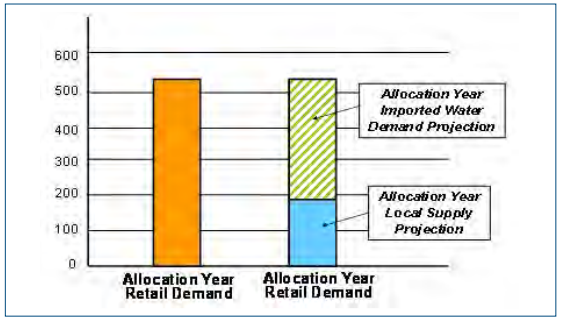
The purpose of West Basin's WSAP is to provide a method for determining allocations for its member agencies relative to the amount of supplies available when MWD has implemented its WSAP to determine West Basin's imported supply allocation. Like MWD, West Basin is a regional wholesaler and can't enforce end user restrictions – it can only impose allocations relative to its supply. Each of West Basin's member agencies must then determine how to meets its WSAP allocation of imported water to avoid over-use penalties.

This section provides an overview of West Basin's allocation formula and the requirements contained within its 2010 WSAP. The full 2010 WSAP is attached as Appendix F.

*Establishing Retail Customer Agency Allocations*

West Basin first calculates each customer agencies' baseline use by taking the average of total supply use (including both local and imported supplies) over a longer period of 1997-2007 (prior to the implementation of the Plan). The baseline is then projected forward to reflect changes in demand from population trends. This becomes the agency's allocation year demand and is shown in Figure 5-2.

**Figure 5-2: Example of Allocation Year Imported Water Demand Projection**




As shown in Table 5-11 and Figure 5-3, the projected imported water demand is what is allocated according to the declared MWD regional shortage level (Level 2 for the FY 2010-11 Allocation). The following concepts help explain the allocation further:

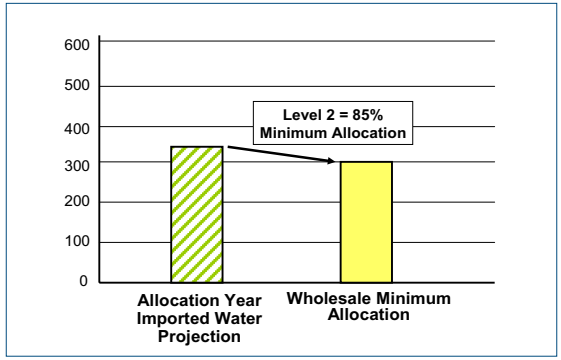
- **Regional Shortage Levels:** Each level from one to ten represents a five percent increment of Regional Shortage Percentage from 5 to 50 percent.
- **Regional Shortage Percentage:** The percentage difference between available supplies and allocation year demands, in 5 percent increments from 5 to 50.

- **Wholesale Minimum Allocation:** Ensures that customer agencies will not experience shortages on the wholesale level (from West Basin) that are greater than one-and-a-half times the Regional Shortage Percentage, according to Table 5-11.

**Table 5-11: Example of Initial Minimum Allocation**

| Regional Shortage Level | Regional Shortage Percentage | Wholesale Minimum Allocation |
|---|---|---|
| 1 | 5% | 92.5% |
| 2 | 10% | 85.0% |
| 3 | 15% | 77.5% |
| 4 | 20% | 70.0% |
| 5 | 25% | 62.5% |
| 6 | 30% | 55.0% |
| 7 | 35% | 47.5% |
| 8 | 40% | 40.0% |
| 9 | 45% | 32.5% |
| 10 | 50% | 25.0% |

**Figure 5-3: Example of Initial Minimum Allocation**




Unequal impacts of an across-the-board allocation at the retail level can be dramatic depending primarily on the amount of local supplies, if any, held by each customer agency. That is why the allocation methodology assigns additional water supplies based on the following adjustments and credits:



- **Retail Impact Adjustment:** Previously used only in Regional Shortage Level 3 and above, the addition of this adjustment to Levels 1 and 2 was made, to ensure that customer agencies with a high level of dependence on imported water do not experience disparate shortages at the retail level compared to other agencies. Agencies that are 100% dependent on imported water, for example, are allocated at the Regional Shortage Percentage instead of the Wholesale Minimum Percentage.
- **Conservation:** Based on each customer agency's pro-rated share of MWD's modeled estimate of West Basin's conservation in 2006, including active, passive and avoided system losses. It is preferable to use the most recent year, rather than a three-year average, for demand hardening considerations.
- **Qualifying Conservation Rate Structure:** Additional credit added to those customer agencies that have a conservation rate structure. To qualify, a retail customer agency's rate structure must have at least two tiers of volumetric rates, with a price differential between the top and bottom tiers of at least 10 percent. Upon verification of the retail rate structures by MWD, West Basin is given a credit of 0.5% for the total volume subject to these rate structures.

As a member agency of MWD, West Basin is provided the opportunity to request changes to its allocation through an appeals process. Likewise, customer agencies of West Basin are provided the opportunity to appeal to their individual allocations from West Basin based on new or corrected information. Grounds for requesting a change can include, but are not limited to:

- Errors in historical data used in base period calculations
- Unforeseen losses or gains in local supplies
- Extraordinary increases in local supplies
- Adjustments in credits for conservation, including qualifying conservation water rates

In some cases, West Basin has no flexibility to change a customer agency's allocation unless it results in a change to West Basin's total allocation with MWD. West Basin staff will, however, work with customer agencies to determine whether appeals to MWD are warranted, and if so, to prepare an appeal for review by MWD.

### *Allocation Penalty Rates*

West Basin will enforce customer agency allocations through a penalty rate structure similar to what West Basin is subject to in MWD's allocation plan. Penalty rates will only be assessed to the extent that an agency's total annual usage exceeds its total annual allocation. No billing or assessment of penalty rates will take place until the end of the twelve-month allocation period. Penalty rates are in addition to the base rate of the water purchased. The most recent change to the fiscal year 2010-11 WSAP is that there are two penalty rate scenarios.

Table 5-12 demonstrates the two penalty rate structure scenarios. If West Basin is under its MWD allocation but a customer agency is over its individual allocation, it will be assessed the penalty structure reflected in Column B. However, if West Basin is over its allocation to MWD, West Basin will assess penalties reflected in Column C to those customer agencies that exceed their individual allocation.

**Table 5-12: West Basin Allocation Penalty Rates**

| A | B | C |
|---|---|---|
| | Customer Agency Penalties* | |
| | West Basin Under Allocation to MWD | West Basin Over Allocation to MWD |
| Customer Agency up to 15% above allocation | 1 x Tier 2 | 1 x Tier 2 |
| Customer Agency over 15% above allocation | 1 x Tier 2 | 3 x Tier 2 |

* The Tier 2 penalty rate excludes the Treatment Surcharge ("Full Service Untreated Tier 2 Rate")

The actual penalty rates shall be based on the official MWD Untreated Tier 2 water rate in effect the last day in June of the twelve-month allocation period.

*Use of Penalty Revenues*

According to the WSAP policy adopted by the West Basin Board, any penalty funds collected by West Basin from customer agencies will first be applied to any penalty owed to MWD. Any "net penalty revenues" remaining can then be applied towards investments in water reliability projects and programs that benefit the West Basin service area as a whole, as approved by the board.

### 5.3.4 Catastrophic Supply Interruption

In the event imported water supplies are interrupted from a catastrophic event, West Basin, through coordination with MWD, can respond at both a regional and a local level.

In the event that an emergency such as an earthquake, system failure, or regional power outage, etc. affected the entire southern California region, MWD would take the lead and activate its Emergency Operation Center (EOC). The EOC coordinates MWD's and West Basin's responses to the emergency and concentrate efforts to ensure the system can begin distributing potable water in a timely manner.

If circumstances render the Southern California's aqueducts to be out of service, MWD's Diamond Valley Lake can provide emergency storage supplies for its entire service area's firm demand for up to six months. With few exceptions, MWD can deliver this emergency supply throughout its service area via gravity, thereby eliminating dependence on power sources that could also be disrupted. Furthermore, should additional



supplies be needed, MWD also has surface reservoirs and groundwater conjunctive use storage accounts that can be drawn upon to meet additional demands. The WSDM plan guides MWD's management of available supplies and resources during an emergency to minimize the impacts of a catastrophic event.

Locally, West Basin has the Member Agency Response System (MARS) to immediately contact its customer agencies and MWD during an emergency about potential interruption of services and the coordination of critical resources to respond to the emergency, also known as mutual aid. The MARS is a radio communication system developed by MWD and its member agencies to provide an alternative means of communication in extreme circumstances. West Basin is currently in the process of enhancing its communication system in order to provide a more rapid response. Additionally, a contingency plan has been developed for both planned and unplanned electrical outages which includes back-up generation for all water treatment plants, transporting mobile generators to key locations, and maintaining water supply through gravity feed in regional reservoirs (i.e. Lake Mathews, Castaic Lake, and Silverwood Lake).

SECTION SIX

# Water Quality

# SECTION 6 Water Quality

Providing a safe drinking water supply to consumers is a task of paramount importance to West Basin. All prudent actions are taken to ensure that water delivered throughout its service area meets or surpasses drinking water standards set by the California Department of Public Health (CDPH).

Compliance with water quality regulations is a regional water management priority and a shared responsibility. West Basin is responsible for the quality of the desalination and recycled water supplies generated at the C. Marvin Brewer Desalter and Edward C. Little Water Recycling Facility (ECLWRF) and its satellite facilities: Carson Water Recycling Facility, Chevron Nitrification Plant and Exxon-Mobil Nitrification Plant. MWD is responsible for complying with State and Federal drinking water regulations on its imported potable water sold to West Basin. West Basin's retail customer agencies are responsible for ensuring compliance in their individual distribution systems and at the customer tap. As a result of these measures, there are no anticipated water quality impacts that will decrease the supply available for use.

## 6.1 Imported Water

West Basin's imported water comes from the SWP and Colorado River via MWD pipelines and aqueducts. MWD is proactive in its water quality efforts, protecting its water quality interests through active participation in the regulatory arena and in treatment processes that provide the highest water quality from both sources. MWD has one of the most advanced laboratories in the country where water quality staff can examine the efficacy of existing treatment by performing tests and reviewing results as well as researching new treatment technologies. MWD tests its water for microbial, organic, inorganic, and radioactive contaminants as well as pesticides, herbicides and emerging contaminants of concern. Although not required, MWD also monitors for constituents that are not yet regulated but have captured scientific and/or public interest.

MWD has a strong record of identifying water quality issues early on and developing the water management strategies to minimize their impact on water supplies through their involvement in the following programs as described in MWD's 2010 Regional UWMP.

### 6.1.1 Source Water Protection

Source water protection is the first step in a multi-barrier approach to provide safe and reliable drinking water. In accordance with California's Surface Water Treatment Rule, Title 22 of the California Code of Regulations, CDPH requires large utilities delivering surface water to complete a Watershed Sanitary Survey every five years to identify possible sources of drinking water contamination, evaluate source and treated water quality, and recommend watershed management activities that will protect and improve source water quality. The most recent sanitary surveys for MWD's water sources were completed in 2005 and 2006.

The next Sanitary Surveys for the watersheds of the Colorado River and the SWP will report on water quality issues and monitoring data through 2010. MWD has an active source water protection program and continues to advocate on behalf of numerous SWP and Colorado River water quality protection issues.

### 6.1.2 DWR SWP Water Quality Programs

MWD supports DWR's policies and programs aimed at maintaining or improving the quality of SWP water delivered to MWD. In particular, MWD supported the DWR policy to govern the quality of non-project water conveyed by the California Aqueduct. In addition, MWD has supported the expansion of DWR's Municipal Water Quality Investigations Program beyond its Bay-Delta core water quality monitoring and studies to include enhanced water quality monitoring and forecasting of the Delta and SWP. These programs are designed to provide early warning of water quality changes that will affect treatment plant operations both in the short-term (hours to weeks) as well as seasonally. The forecasting model is currently suitable for use in a planning mode. It is expected that with experience and model refinement, it will be suitable to use as a tool in operational decision making.

### 6.1.3 Water Quality Exchanges

MWD has implemented selective withdrawals from the Arvin-Edison storage program and exchanges with the Kern Water Bank to improve water quality. Although these programs were initially designed to provide dry-year supply reliability, they can also be used to store SWP water at periods of better water quality so the stored water may be withdrawn at times of lower water quality, thus diluting SWP water deliveries. Although elevated arsenic levels have been a particular concern in one groundwater banking program, there are also short-term water quality benefits that can be realized through other storage programs, such as groundwater pump-ins into the California Aqueduct with lower total organic carbon (TOC) levels, as well as lower bromide and total dissolved solids (TDS), in some programs.

### 6.1.4 Water Supply Security

Changes in national and international security have led to increased concerns about protecting the nation's water supply. In coordination with its member agencies, MWD added new security measures in 2001 and continues to upgrade and refine procedures. Changes have included an increase in the number of water quality tests conducted each year (MWD now conducts over 300,000 analytical tests on samples collected within its service area and source waters), as well as the development of contingency plans that coordinate with the Homeland Security Office's multicolored tiered risk alert system.



## 6.2 Groundwater

Although West Basin does not serve traditional groundwater supplies, it works to support its customer agencies and WRD to protect and promote the quality of groundwater supplies within its service area.

### 6.2.1 West Basin and Customer Retail Agency Programs

As part of West Basin's customer service, the Water Quality Department works closely with regulatory agencies to assist retail agencies in meeting State and Federal drinking water regulations through the *Cooperative Basin-Wide Title 22 Groundwater Quality Monitoring Program*. Title 22 refers to the section of the California Code of Regulations pertaining to both domestic drinking water and recycled water standards.

This voluntary program offers water quality testing to customer agencies and is funded through an annual assessment. Three agencies in West Basin's service area participate in the monitoring program. West Basin's water quality staff coordinates wellhead and reservoir water quality testing at approximately eight groundwater wells in the service area to ensure high quality of the local supply of drinking water. Under the program, a contract laboratory provides sampling as well as analytical and reporting services. Laboratory results are reported to West Basin, retail agencies, and the CDPH. The program helps retail agencies save time and expense while providing a valuable service for public health.

Another service provided under the program is the production of an annual Customer Water Quality report if requested by a customer agency. The Customer Water Quality Report is required by State and Federal law and West Basin's water quality staff has prepared them for several agencies for over 15 years.

### 6.2.2 Water Replenishment District Programs

As the regional groundwater management agency for the Central and West Coast Groundwater Basins, WRD has several active programs to monitor, evaluate and mitigate water quality issues.

**Groundwater Quality Program:** WRD continually evaluates current and proposed water quality compliance in agency production wells, monitoring wells, and recharge/injection waters of the groundwater basins. If non-compliance is identified, WRD staff develops a recommended course of action and associated cost estimates to address the problem and to achieve compliance. WRD also monitors and evaluates the impacts of pending drinking water regulations and proposed legislation.

**Regional Groundwater Monitoring Program:** This program has a network of over 250 WRD and USGS-installed monitoring wells at nearly 50 locations throughout West Basin's service area. Monitoring well data is supplemented with information from production wells to capture the most accurate information available. WRD staff, comprised

of certified hydrogeologists and registered engineers, provides the in-house capability to collect, analyze and report groundwater data. This information is stored in WRD's GIS database and provides the basis to better understand the characteristics of the Central and WCGB.

**Safe Drinking Water Program:** This program is intended to promote the cleanup of groundwater resources at specific well locations. Through the installation of wellhead treatment facilities at existing production wells, WRD hopes to remove contaminants from the underground supply and deliver the extracted water for potable purposes. Projects implemented through the program are accomplished through direct input and coordination with well owners. The current program focuses on the removal of volatile organic compounds (VOCs) and offers financial assistance for the design and equipment of the selected treatment facility.

WRD provides extensive information on groundwater quality in its Engineering and Survey Reports as well as Regional Groundwater Monitoring Reports. Both reports have a section devoted solely to groundwater quality management, and can be accessed through WRD's website, www.wrd.org.

## 6.3 Brackish Desalination

Although construction of seawater barriers was effective in halting the intrusion of seawater into the WCGB, historic plumes of brackish water still remain in the WCGB behind the barriers. In the early 1990s, West Basin completed the C. Marvin Brewer Desalter facility as a demonstration project for removing and treating the brackish water using two existing drinking water wells that were impacted by the seawater intrusion. In 2005, enhancements were made to the desalter program that replaced the two wells with a new, more productive well. This well has the capability to pump 1,600 to 2,400 AFY of brackish groundwater to be treated at the desalting facility for use by West Basin's customers.

Since 2002, WRD has also been operating the Robert W. Goldsworthy Desalter, located adjacent to West Basin's desalter. Product water from the Goldsworthy Desalter is delivered for potable use to the City of Torrance's water distribution system.

## 6.4 Recycled Water

West Basin's ECLWRF, located in El Segundo, has been in continuous operation since 1995 and has conserved over 120 billion gallons of imported water by serving reliable supplies of recycled water for a wide variety of non-potable uses. A full description of West Basin's recycled water program is provided in the Water Recycling section of this report.

West Basin is committed to monitoring and maintaining the high quality of recycled water produced for injection at the West Coast Seawater Barrier and the surrounding groundwater from migrating contamination sources. In addition, groundwater quality



within the aquifer is monitored through more than a dozen monitoring wells inland of the Barrier. These wells represent the quality of the groundwater down-gradient of the Barrier and are essential in providing critical water quality data for the surrounding groundwater. Annual water quality data reports and groundwater modeling are submitted to both the CDPH and the Los Angeles Regional Water Quality Control Board to ensure compliance and security.

## 6.5 Ocean-Water Desalination

West Basin has been actively researching the feasibility of an ocean water desalination program as part of the drinking water supply. From 2002 to 2009, West Basin operated the Desalination Pilot Project, which marked the first use of microfiltration as a pretreatment to reverse osmosis for ocean-water desalination.

To ensure that this process was effectively treating the ocean water, West Basin performed extensive water quality research at the pilot plant. The water produced at the pilot project consisted of approximately 350 parts per million (ppm) of salt, lower than typical tap water in southern California. The pilot project's analytical test results indicated that the quality of the desalinated ocean water meets current State and Federal drinking water standards set by CDPH and the Environmental Protection Agency (EPA). Along with 500 analytical tests that were performed monthly, additional water quality studies were completed under the auspices of the American Water Works Association Research Foundation.

The research and testing conducted at the Pilot Project informed the design of the Ocean-Water Desalination Demonstration Facility, dedicated in November 2010. The Demonstration Facility will be operational for a minimum of two years while West Basin evaluates the feasibility of permitting and siting of a full-scale desalination plant capable of providing 20,000 AFY of potable water, enough to supply 40,000 families for a year.

While the Demonstration Facility is operational, West Basin will pursue a program master plan in partnership with MWD. The master plan effort will evaluate all water quality and other aspects necessary to develop a full-scale desalination facility with the option of integrating product water into the MWD distribution system. More information on West Basin's ocean-water desalination efforts is included in Section 10.

## 6.6 Research and Development

West Basin has a dedicated program and budget to constantly engage in research projects that evaluate water quality, efficient operations and new pollution prevention technology and methods. Research projects close the environmental loop by addressing both final product water as well as source control issues to prevent pollution and the need for cleanup technology. West Basin leverages its research dollars by participating on the Boards of water industry research organizations such as WateReuse, American Water Works Associations, National Water Research Institute, Salinity Management Coalition as well as participating with academic institutions in water quality research.

## 6.7 Effects on Water Management Strategies

Retail water agencies in densely populated southern California are acutely aware of the economic impact of water quality on a public water system. Management strategies must be developed to maintain a safe, reliable supply at reasonable cost without jeopardizing water quality and public health. Water quality, pressure, and supply are maintained through operational practices that can include wellhead treatment for contaminated groundwater sources, or blending down contaminated groundwater with purchased imported surface water from MWD or high quality groundwater from adjacent purveyors.

## 6.8 Effects on Supply Reliability

Poor water quality makes a water source unreliable, affects overall supply and increases the cost of serving water to the public. More importantly, it results in a loss of customer confidence, which can be very difficult to overcome, even after water quality is restored. A water source that fails drinking water regulations must be taken out of service. The source can be restored through treatment or other management strategies.

Groundwater can become impaired through leaching of contaminants into an aquifer, or by excessive concentrations of naturally-occurring constituents that impact quality, such as arsenic. Surface water sources become contaminated from human activities in the watershed or through deliberate contamination.



SECTION SEVEN

# Water Use Efficiency

# SECTION 7 Water Use Efficiency

Water Use Efficiency (WUE), or conservation, continues to play an important role in West Basin's water supply portfolio. Between 2005 and 2010, there were several new key developments that occurred in the area of water use efficiency policy.

- In 2008, as a result of State Water Project supply limitations and multiple year drought conditions, MWD instituted water supply allocations (or imposed conservation) that sought to reduce member agencies' imported water demand.
- In 2008, the California Urban Water Conservation Council (CUWCC) began restructuring its 14 BMPs and reporting process.
- In 2009, AB 1420 came into effect requiring agencies to provide up-to-date information on CUWCC BMP compliance as part of grant or loan applications to the State DWR.
- In 2009, the Governor of the State of California signed into law SBX 7-7, which calls for a state-wide 20 percent reduction in per capita water use by 2020. Individual agencies are required to provide water use reduction targets of gallons per capita per day as part of the 2010 UWMP update.
- In 2009, a key piece of water efficiency legislation called AB 1881 was entered into law that updated the Model Landscape Ordinance AB 325 of 1990. This new law stated that as of January 1, 2010, all local cities were required to adopt the new Model Landscape Ordinance or stricter versions of it. West Basin, along with other stakeholders, provided input to DWR for the development of the new ordinance.

At the local level, in 2008 West Basin launched a new program to help meet these challenges, called WR 2020 Program. The main goal of this program is to increase local water supplies by doubling recycled water production, doubling water conservation savings and by bringing responsible ocean-water desalination on-line.

## 7.1 Historical Water Conservation Efforts

Since the severe drought of the early 1990s, West Basin has been a leader implementing aggressive water conservation programs to help limit water demand within its service area. West Basin programs have included a strong emphasis on plumbing retrofit hardware, education and the distribution of rebate incentives. The results of these programs, in conjunction with passive conservation measures such as modifications to city ordinances, have resulted in significant reductions in retail water use within West Basin's service area. By current estimates, demand management from West Basin's active and passive conservation efforts have saved over 4.5 billion gallons of imported water (14,000 AF) since 1991, which is equivalent to the average annual water use of almost 28,000 households. This section will present the past and current water conservation efforts West Basin has undertaken since the last update to this plan in 2005.



West Basin's conservation efforts have been comprised of a wide array of cost-effective programs that contribute to conserving water, improving water quality, reducing imported water needs and increasing the region's water supply reliability.

West Basin prides itself in the partnerships it has created with Federal, State, and local entities to offer water efficiency programs. By developing integrated programs with its partners, West Basin has been able to leverage funding and resources to provide effective programs throughout its region. As a result, West Basin has been successful in obtaining more than $4 million in local, state and federal grant funds for conservation program implementation since 2005. Due to its successes with acquiring grants, West Basin has leveraged its funding and today provides $7 worth of programs to the public for every $1 it invests.

**The effect of Water Conservation is defined by two main elements: *Active* and *Passive*. Below is a brief description of these two.**

**Active Conservation:** Water savings produced from incentive based programs: rebates, giveaways, retrofits, etc.

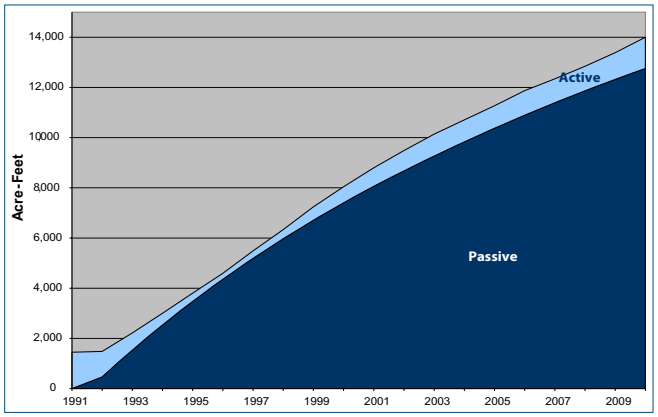
**Passive Conservation:** Water savings produced from building and plumbing codes, consumer behavioral changes, and responses to price shifts.

West Basin's current conservation programs target water conservation efforts in the residential, commercial, industrial, institutional and large landscape areas. These programs were identified as part of the 2006 Conservation Master Plan and are available to residents, businesses, and institutional customers within West Basin's service area. Below is a list of the conservation programs that were launched over the last five years:

- Region-Wide Residential Rebate Program
- Ocean Friendly Landscape Program
- Green Living for Apartments & Condos
- Green Garden Program
- Complete Restroom Retrofit Program
- Region-Wide Commercial Rebates
- High-Efficiency Toilet Distribution Events
- Cash for Kitchens Program
- Recirc & Save Program
- School Kit Program
- Zero Run-off Street Median Program
- School Education Programs
- Public Outreach Program
- Water Star Program

It is estimated that West Basin has distributed and installed over 300,000 devices from 1990 to 2010. As a result, it is estimated that West Basin currently saves, from active and passive (code-based) conservation combined, over 14,000 AF (4.5 billion gallons), or eight percent annually, of West Basin's total water demand. Figure 7-1 shows the total Active and Passive Savings from 1990- to 2010 on an annual basis.

Figure 7-1: West Basin Conservation Water Savings (1990 – 2010)




Source: Estimated total active and passive water savings from West Basin's Alliance for Water Efficiency Tracking Tool, 2011.

Conservation savings can further be verified by comparing West Basin's water usage versus population. As shown in Figure 7-2, average water demand has remained relatively consistent while population has escalated by an annual average of 1%.

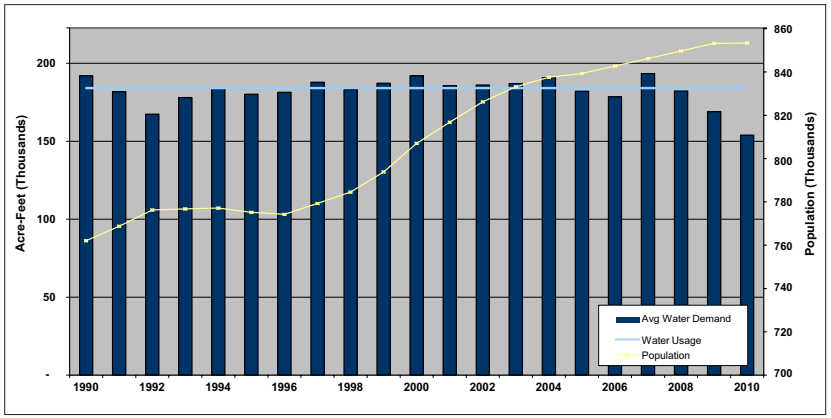
## 7.2 West Basin and Customer Agency Water Conservation Master Plans

In 2006, West Basin developed its first Conservation Master Plan (CMP). In developing the CMP, West Basin worked closely with its water retailers, local cities, environmental groups and others to develop meaningful programs that were targeted and effective. The CMP included a five year timeline for cost-effective program implementation. Since adoption of the CMP, West Basin has been successfully implementing programs described in this section below.

As the regional water wholesaler, West Basin spear-headed an effort to ensure the region is working together to meet the State's goal of a 20 percent reduction in water demand by the year 2020. Initiated in 2009, it was a unique program that allowed West Basin to work with its local water retailers to update the water conservation master planning efforts that were completed in 2006. West Basin (on behalf of its retailers) applied for and was awarded a $100,000 grant by the USBR to develop eight Local Water Use Efficiency Plans and to update West Basin's 2006 CMP. In addition to the grant, the retailers and West Basin provided a cost-share of $130,000. In 2010, West Basin began this project with the intent to help the agencies develop water use baselines and conservation targets to help meet the SBX 7-7 targets in 2015 and 2020.



Figure 7-2: Total Retail Water Demand vs. Population Growth (1990 – 2010)




Source: Information based on MWD Demographic Data, 2005
Note: Total retail demand includes groundwater production but not replenishment demands for use at seawater barriers.

West Basin and its partners used a GPCD target calculator and the Alliance for Water Use Efficiency Water Conservation Tracking Tool to develop the information for the Water Use Efficiency Plans. West Basin worked closely with each water retailer through bi-monthly meetings to collaborate, share ideas and discuss challenges. The plans will be completed by May 2011 and include a five year and a ten year timeline for implementation of various programs. The retailers will be able to use the information from their individual plans to report their conservation targets in their UWMPs.

## 7.3 External Agency Coordination

As a part of conservation planning and implementation, West Basin also works with other regional and statewide agencies and groups such as MWD, and the CUWCC.

### 7.3.1 Metropolitan Water District

In 2010, MWD adopted an updated Integrated Resources Plan (IRP) that includes a strong commitment to water conservation. MWD's 2010 IRP establishes water supply targets for Southern California through 2035, specifically a potable demand reduction of 1.7 MAF. This target represents MWD's goal of achieving a 20% reduction in per capita water use across its service area. MWD is currently developing a long-term conservation plan to implement the IRP conservation target. This plan focuses on conducting more research, providing device incentives and funding, assisting with market transformation and legislation and helping to support its member agencies with conservation efforts.

As a member agency of MWD, West Basin actively participated in both the IRP Working Group and the Long Term Conservation Plan development, and will benefit from the conservation implementation strategies outlined in the plan.

### 7.3.2 California Urban Water Conservation Council

In 1991, the CUWCC was created to increase water use efficiency by integrating urban water conservation BMPs into the planning and management of California water agencies. It is a partnership of agencies and organizations concerned with water supply and conservation of natural resources in California.

To encourage water use efficiency, the CUWCC asked water agencies and organizations to sign a MOU regarding urban water conservation in California, which committed participating urban water suppliers to use their "good faith efforts" to implement the CUWCC's 14 BMPs.

West Basin was one of the first urban water suppliers to become signatory to the CUWCC's MOU. Every two years, water agency signatories, including West Basin, must submit their BMP reports to the CUWCC. West Basin has submitted BMP Wholesaler Water Agency Reports to the CUWCC that detail West Basin's progress in implementing the 14 BMPs as currently specified in the MOU. In Appendix G, West Basin has included its most recent 2008-–09 and 2009–10 CUWCC Reports.

## 7.4 CUWCC – New BMPs and Reporting Options

In 2008/09, the CUWCC completed an ambitious project to revamp, streamline and improve the 14 BMPs and to develop several ways that an agency can report their water conservation targets and savings. Along with this process, the CUWCC created a new reporting database that agencies can use to report their achievements. Agencies must report to the CUWCC every two years, and the next reporting period will take place in 2011, when the new reporting database has been completed.

The CUWCC 14 BMPs are now organized into five categories. Two of the categories, Utility Operations and Education, are called Foundational BMPs because they are essential water conservation activities for any utility and therefore must be adopted by all signatories to the CUWCC MOU. The Residential, Commercial, Industrial, and Institutional (CII), and Landscape BMP categories are now called Programmatic BMPs.

*Foundational*

- Utility Operations
  - **BMP #3 System Water Audits:** Unaccounted for water calculated annually, and distribution system audits as required
  - **BMP #4 Metering with Commodity Rates:** Metering of consumption and billing by volume



  - **BMP #10 Wholesale Agency Assistance:** Support by wholesalers for conservation programs of retail water suppliers
  - **BMP #11 Conservation Pricing:** Uniform or increasing block rate structure, volume related water charges, and service cost recovery
  - **BMP #12 Conservation Coordinator:** Designation of staff coordination of agency conservation programs
  - **BMP #13 Water Waste Prohibition:** Enforced prohibition of wasteful use of water
- Education
  - **BMP #7 Public Information:** Public information to promote water conservation
  - **BMP #8 School Education:** Provision of education materials and services to schools

*Programmatic*

- Residential
  - **BMP #1 Residential Water Surveys:** Indoor and outdoor audits of residential water use and distribution of water-saving devices
  - **BMP #2 Residential Plumbing Retrofits:** Distribution or installation of water-saving devices in pre-1992 residences
  - **BMP #6 High Efficiency Clothes Washers:** Rebates for efficient washing machines
  - **BMP #14 Residential Ultra-Low Flush Toilet Replacement:** Programs promoting replacement of high-water-using toilets with ultra-low flush toilets
- Landscape
  - **BMP #5 Large-Landscape Conservation:** ET-based water budget for large landscape irrigators
- Commercial, Industrial, and Institutional
  - **BMP #9 Commercial, Industrial, and Institutional Conservation:** Programs to increase water use efficiency in CII sectors

## 7.5 Current Water Conservation Programs

As the water wholesaler for eight water retail agencies and one groundwater agency, West Basin has collaborated with many important stakeholders and leveraged funding to develop and implement cost-effective programs that conserve water and energy, reduce runoff and provide other important environmental benefits.

All of these programs combined are being used to help West Basin and its retailers meet the 14 BMPs. West Basin has provided programs and activities that have assisted its retailers to help meet the BMPs listed here.

### 7.5.1 BMP #1 - Water Survey Programs for Single-Family Residential and Multi-Family Customers

Water surveys provide residents with valuable information about their water use. Trained conservation professionals test the water flow rates using devices inside the home, such as showerheads, toilets, and sink aerators to make sure they are water efficient. They also check for leaks and teach the resident how to read the water meter correctly. A comprehensive evaluation is conducted on the outdoor landscape to identify inefficiencies and recommend ways the resident can save water outdoors.

Several of West Basin's water retailers have hired companies to provide this service to their customers. As the regional water wholesaler, West Basin supports these efforts and provides further resources as necessary.

In 2007, West Basin designed a residential landscape program called the Green Garden Program and received a grant for $231,000 from USBR. In addition, West Basin received local funding through a partnership with MWD and several of its local retail water agencies. The Green Garden Program focused on providing qualified residents with free landscape surveys, "smart" irrigation controllers and rotating sprinkler nozzles. The program contained three steps:

- **Step 1:** Residents first contacted West Basin's Program vendor to pre-qualify.
- **Step 2:** West Basin's vendor provided a free landscape survey and if the resident had an older, inefficient irrigation controller, they were invited to a free sprinkler controller exchange event.
- **Step 3:** Residents brought their old irrigation controllers to the exchange event, and at the event the resident would be provided with a "smart" irrigation controller and rotating sprinkler nozzles. They would also receive one hour of training on how to install and program the controller.

Upon completion of the program in September 2010, West Basin conducted a water use study to compare the pre-controller installation water use with the post-installation water use and found an overall water savings of 14 percent. This percentage translates to about 47 gallons saved per day. Table 7-1 shows the total conserved savings from the Green Garden Program.

**Table 7-1: Green Garden Program**

| | Number Completed | Water Use Saved (AF) |
|---|---|---|
| Landscape Surveys | 958 | N/A |
| Controllers Distributed | 580 | 30 |
| Rotating Sprinkler Nozzles | 4,845 | 32 |
| **Total** | **6,383** | **62** |



### 7.5.2 BMP #2 - Residential Plumbing Retrofit

This BMP recommends the distribution and retrofit of low-flow showerheads, toilet displacement devices, and faucet aerators, as well as the adoption of enforceable ordinances. As Table 7-2 shows, it is estimated that since 1990, West Basin has distributed over 2,000 faucet aerators and over 220,000 low-flow showerheads.

In mid 2000, several of West Basin's retail water agencies began working with a company called Resource Action Program. This company developed a water and energy conservation kit geared for elementary school kids. As a way to provide local support and increase the program, West Basin partnered with several local water agencies and was awarded a DWR grant of $261,000 to be used for the purchase and implementation of 20,000 school kits. Through the use of these kits, a total of 588 acre-feet of water and 62 million kilowatts of electricity will be saved.

**Table 7-2: Residential Plumbing Retrofits**

| Devices | 1990-2000 | | 2000-2005 | | 2005-2010 | | Total | |
|---|---|---|---|---|---|---|---|---|
| | # of Units | AF Saved | # of Units | AF Saved | # of Units | AF Saved | # of Units | AF Saved |
| Faucet Aerators | 954 | 3 | 0 | 0 | 1,133 | 3 | 2,087 | 6 |
| Low-Flow Showerheads | 215,563 | 1,014 | 7,500 | 35 | 152 | .68 | 223,215 | 1,049 |

### 7.5.3 BMP #3 - System Water Audits, Leak Detection, and Repair

In May 2009, the American Water Works Association published the 3rd Edition *M36: Manual Water Audits and Loss Control Programs*. Included was a new BMP 1.2 to replace the old BMP 3 and incorporated new water loss management procedures as they apply to California.

As a result, retail water agencies are expected to use the AWWA Free Water Audit Software to complete their standard water audit and water balance. Implementation shall consist of actions such as standard water audit and water balance, validation, and economic values, among others. While West Basin is required to comply with BMP 3 as a wholesale water agency, the agency is exempt due to the fact that the agency neither owns nor operates a potable water distribution system.

### 7.5.4 BMP #4 - Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

Since West Basin is a water wholesaler, this BMP does not directly apply. However, every water agency within West Basin's service area bills their retail customers according to meter consumption. By encouraging the installation of dedicated landscape meters, agencies will be able to recommend the appropriate irrigation schedules through future landscape programs.

This BMP requires that agencies identify barriers that make it difficult to retrofit commercial accounts with dedicated landscape meters as well as incentives to encourage such retrofits.

### 7.5.5 BMP #5 - Large Landscape Conservation Programs and Incentives

This BMP requires that agencies provide non-residential customers with support and incentives to improve their landscape water efficiency. Several of the local water retailers provide free large landscape surveys and MWD provides incentives for devices such as smart irrigation controllers and rotating sprinkler nozzles.

The large landscape sector was identified in West Basin's 2006 Conservation Master Plan as an area where a considerable amount of water could be saved. Recent data shows that irrigation system and landscape inefficiencies can be as high as 50 percent. Many landscapes are poorly maintained and overwatered, therefore additional training, education and resources are needed to reduce water use. As a result, West Basin and its water retailers partnered to develop several programs with grant funds.

*Ocean Friendly Landscape Program*

In 2007, West Basin formed a partnership with the Surfrider Foundation to develop the Ocean Friendly Landscape Program. This program contains several water conservation and education components including:

- Facilitation of 40 Ocean Friendly Garden workshops
- Distribution of 1,350 residential "smart" irrigation controller rebates
- Distribution of 1,117 large landscape irrigation controllers
- Development of 10 Ocean Friendly demonstration gardens
- Implementation of a study that would test the success of the irrigation controllers at reducing dry-weather runoff

As part of the Greater Los Angeles County Region Integrated Regional Water Management Program, Proposition 50 Implementation Grant Application, this program was awarded a $1.2 million grant. Since the implementation of this program began in 2010, West Basin has been working with cities, parks, school districts, Homeowner Associations, and other qualified sites to install "smart" controllers. Table 7-3 shows the estimated conserved savings to date of this program. Once all 1,117 controllers are installed by the end of the year 2012, the total annual water savings is estimated to be 332 AF per year.

Due to the State bond freeze in 2008 and 2009, the residential rebate and demonstration garden components of the program were put on hold. They both resumed implementation in late 2010.



**Table 7-3: Ocean-Friendly Landscape Program since Inception**

| Program Component | Units Completed | Annual Savings (AF) |
|---|---|---|
| Irrigation Controllers Installed | 100 | 30 |
| Classes Conducted | 19 | N/A |
| Residential Rebates Provided | 5 | .26 |
| Demonstration Gardens Installed | 0 | N/A |

*Comprehensive Landscape Survey Program*

In 2006, West Basin developed a Large Landscape Survey Program and was awarded funding through MWD's Enhanced Conservation Program. This program provided the services of a qualified landscape surveyor to conduct comprehensive surveys on large landscapes and provide a detailed audit report along with recommendations. Fifteen sites were audited with a resulting 55.6 percent of average irrigation efficiency due to broken and mismatched sprinkler heads, over-watering, no hydro-zoning, puddling of water, dry spots, incorrect water scheduling and various other problems.

**Figure 7-3: Example Audit Report**

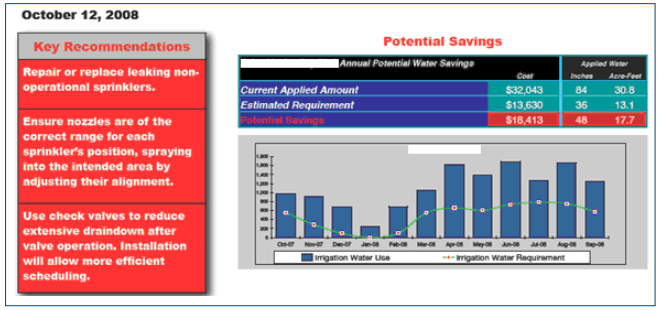



Figure 7-3 is an example of the front cover of the audit report. Within the report, the water usage was analyzed and compared to the recommended water usage using the local weather or evapotranspiration potential. Key recommendations were also provided to the customer.

**Table 7-4: Comprehensive Landscape Survey Program Savings**

| Number of Site Surveys | Annual Savings (AF) |
|---|---|
| 15 | 51 |

*Landscape Training to Professional Landscapers*

In order to better educate the landscape community about water conservation practices, West Basin held a workshop in 2009 in the City of Malibu. West Basin partnered with the City of Malibu, Los Angeles County Waterworks District #29 (the local water retailer) and a professional landscape company to conduct a training session. The class was taught in Spanish and provided information about water-efficiency practices, the local ordinance requirements, and overall best management practices.

*Model Landscape Ordinance Compliance*

The landscape programs mentioned above will help West Basin and its retailers abide by the requirements of the new State's Model Landscape Ordinance. The ordinance contains the following requirements and provisions:

- Encouragement of the use of recycled water
- Landscape water budget component
- Provision to minimize landscape irrigation overspray and runoff
- Provisions for appropriate use and groupings of plants
- Provisions for use of automatic irrigation systems and irrigation schedules based on climate conditions

West Basin's programs are aligned with the new ordinance. For example, West Basin continues to identify and connect new customers to its water recycling system. West Basin also encourages the use of water budgets as mentioned above in the Comprehensive Landscape Program. During the last few years, several of West Basin's water retailers have developed new tiered rates and water budgets. Through its Ocean Friendly Garden Classes, West Basin teaches residents how to develop a water efficient and sustainable garden. Some of the topics covered include: reducing turf, installing native plants, installing drip irrigation and using weather-based irrigation controllers, all of which are mentioned in the state's new ordinance.

### 7.5.6 BMP #6 - High-Efficiency Washing Machine Rebate Programs

Since 2005, the MWD has provided rebates for high-efficiency clothes washers to its member agencies. MWD has branded the term BeWaterWise to develop market recognition. During the 2006–2010 period, MWD conducted many radio and television commercials to promote the rebates as well as promoted the program on its website.

MWD testing found that many of the high-efficiency machines had a Water Factor of 6.0 or less. In order to motivate the public to purchase the most efficient washers possible, MWD developed a rebate that allowed only washers with a Water Factor of 4.0 or less to qualify for a $100 washer rebate. The washer rebate incentive continues to be an effective tool to achieve water conservation. Table 7-5 shows the annual water savings within West Basin's service area as a result of the use of higher efficient machines.



**Table 7-5: High-Efficiency Washing Machine Rebate Program Savings (2003-2010)**

| Number of Rebates | Annual Savings (AF) |
|---|---|
| 2,821 | 44 |

### 7.5.7 BMP #7 - Public Information Programs

West Basin uses many strategies to help promote its programs to the public. It coordinates with local and regional agencies to promote water conservation messaging as well as developing its own public information programs. Community support for WR 2020 is strong based on letters of support received from City Councils, Chambers of Commerce, community groups and more than 4,000 individual supporters.

In 2009, West Basin developed and launched its WR2020 Program. The goal of this program is to communicate to the public West Basin's goal of increasing local water reliability by doubling recycled water production, doubling its water conservation efforts and introducing ocean-water desalination to its water portfolio. All of West Basin's supply development programs fall under the umbrella of the WR2020 Program. As part of WR 2020, West Basin offers the specific conservation related programs described below.

*WR2020 Program – Speakers Bureau*

West Basin staff provides presentations on its WR 2020 Program. In 2009/10, West Basin conducted over 100 presentations to local community groups that included city councils, service clubs, chambers of commerce and others. The presentations provided information on current water supply challenges and the programs that West Basin launched to help meet those challenges. Through outreach efforts more than 3,500 local residents and 100 cities/community groups pledged their support for the WR 2020 Program.

*Imported Water Supply Tours*

West Basin, in cooperation with MWD, also provides inspection tours of the Colorado River Aqueduct and the State Water Project to legislators, local elected officials, retail agency staff, and the general public at various times throughout the year. The purpose of the three-day trips is to give local decision-makers a better understanding and appreciation of the water supply issues impacting the region.

*Water Harvest Festival*

*Water Harvest Festival*

In October 1999, West Basin began its first annual Water Harvest Festival located at the ECLWRF in El Segundo. West Basin invites the public to participate in a variety of games, shows, tours and contests to learn from informational stations about water recycling and conservation. In 2010, West Basin conducted its 12th annual Water Harvest Event that had over 3,000 people

in attendance. The event features local agencies and water conservation product vendors that provide the public with information about water conserving devices, rebates and programs. West Basin also provides free tours of its facility and demonstrates to the public how waste water is turned into usable recycled water.

*Smart Landscape Expo*

There has been an increased desire by the public recently to learn more about native plants, drip irrigation and other landscape conservation devices and measures. In response, West Basin developed the Smart Landscape Expo, where the public can visit irrigation vendors and purchase native plants from local nurseries. At the initial expo, conducted in 2009, West Basin provided free 30-minute workshops taught by landscape designers. West Basin filmed several outdoor landscape demonstrations and placed the clips on its web site for the public to view. For the third annual Expo, West Basin will incorporate energy efficiency awareness into the event to give the public a more holistic view of green living both outdoors and indoors. It has been renamed the Water and Energy Smart Expo.

*Water Recycling and Ocean-Water Desalination Tours*

Once a month, West Basin offers free tours of its ECLWRF to the public to share the WR 2020 Program, educate visitors about water supply issues, and show how water is purified in 20 minutes. The ocean-water desalination demonstration facility will open to the public in May 2011, and will soon offer tours three days a week. Both facilities will also be open for school tours for grades 3-12.

*ECLWRF School Tours*

*Ocean Friendly Garden Classes*

In 2008, West Basin began offering free Ocean Friendly Garden (OFG) Classes as part of its larger Ocean Friendly Landscape Program. In 2010, West Basin, in partnership with the Surfrider Foundation, conducted 19 classes throughout its service area. Classes are one-day, three-hour sessions that teach residents how to build an Ocean Friendly Garden of their own, reduce runoff, landscape with drought-tolerant plants, and keep water on their property. These classes were well attended with as many as 60 residents participating per class.

*Zero Runoff Street Median Water Conservation Program*

For this West Basin and MWD grant-funded program, water efficient street medians and parkways were designed to reduce water use by at least 50 percent and water runoff by 100 percent. This program included projects that replaced existing street medians and parkways with a combination of artificial turf, porous cover, native and/or drought tolerant plants, drip irrigation, or Smart Irrigation Controllers. Several cities took advantage of this program and retrofitted street medians to reduce water use, reduce runoff and educate the public about water conservation.

*Native Plant Demonstration Garden*

*New Native Plant Demonstration Gardens*

In 2009, West Basin built a new Native Plant Demonstration Garden at ECLWRF in El Segundo. As a part of this project, West Basin held two hands-on workshops where the public assisted with the installation of the plants, drip irrigation and the permeable walkway. In 2010, West Basin also renovated the landscape at its headquarters in Carson with two hands-on workshops to learn how to install and maintain the native plants and a drip irrigation system.

*California Water Awareness Campaign*

West Basin is also active with the California Water Awareness Campaign (CWAC), which is an association formed several years ago to coordinate efforts throughout the State during its *May is Water Awareness Month* campaign. With this effort, water agencies throughout the State, large and small, can tap into a large pool of knowledge and materials to promote a water awareness message not only in May, but throughout the year.

*Media Outreach*

West Basin maintains a strong link with the local news media through press releases, one-on-one tours and talks, and small group briefings to share West Basin's ongoing achievements in making water supply more reliable. Recently, West Basin conservation staff was included on the cover of a Palos Verdes gardening supplement highlighting native water efficiency plants.

### 7.5.8 BMP #8 - School Education Programs

Water and environmental education continue to be critical components of West Basin's outreach strategy. Therefore, West Basin offers a variety of elementary through high school programs free of charge to all schools within its service area. Descriptions of each program can be found in Section 7.6.

### 7.5.9 BMP #9 - Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts

West Basin has increased its participation and involvement with the CII sector over the past few years. Since 2007, West Basin has implemented, designed and participated in a number of successful CII programs partnering with local water agencies and their purveyors as well as with governmental organizations for increased outreach opportunities, described further below.

*Complete Restroom Retrofit Program*

This program provides businesses using older restroom devices with high-efficiency toilets, urinals and sink faucets. This program was initially funded through a grant and has been ongoing since 2007. This program has been successful for both small businesses and larger businesses alike. Phase 2 of the program was implemented in 2010 and will focus more on larger commercial customers such as high-rise buildings and hotels.

*Recirc and Save Program*

This program incentivizes large commercial and industrial customers to implement water-use efficiency projects as identified by West Basin. Increased incentives are offered for cooling tower efficiency upgrades and process water efficiency improvements such as water supply recirculation and on-site treatment. This program also offers technical assistance and audits to assist these customers in making changes to their processes that will result in water use reductions.

*Cash for Kitchens Program*

During its pilot phase in 2009, this program initially targeted large (greater than 1,000 square feet) commercial kitchens but has now been expanded to also include smaller restaurants. Food service facilities can benefit greatly from the use of efficient devices as well as through behavioral changes. In order to address both, the program includes a quick audit, a session with the facility's management as well as device replacements for qualifying equipment.

*Public Sector Program*

This program was designed and implemented by MWD to assist public and institutional facilities in making water-efficiency upgrades. It was offered as a limited-time only program providing up-front funding for these public sites to make changes to their indoor and outdoor water-using systems.

*Save Water, Save a Buck*

In 2005, West Basin entered into a 10-year agreement with MWD to help support the on-going regional marketing efforts of this CII rebate program. As a way to increase the success of this program, West Basin offers its cities and water purveyors an opportunity to contribute additional funding to Save Water, Save a Buck to increase the rebate amounts available to their commercial customers. Over the years, agencies have partnered to provide higher rebate amounts in an effort to increase conservation participation from their customers. Rebates are offered for commercial clothes washers, water brooms, cooling tower conductivity controllers, pre-rinse spray nozzles, x-ray machine recirculating devices and commercial toilets and urinals. Table 7-6 summarizes the success of these programs.



**Table 7-6: Summary of CII Programs**

| Program | Devices Distributed | Number of Units | AF Savings* | Agency Partnerships |
|---|---|---|---|---|
| **Complete Restroom Retrofit** | High-Efficiency Toilets, Zero-Water and Ultra-Low Flush Urinals, Self-Closing Sensor Faucets | 1,164 | 804 | California Water Service Company and Golden State Water Company, Metropolitan Water District, Department of Water Resources, Water Replenishment District |
| **Recirc and Save** | pH Conductivity Controllers, Various process improvements | 3 | 29 | California Water Service Company and Golden State Water Company, Metropolitan Water District, Department of Water Resources, United States Bureau of Reclamation |
| **Cash for Kitchens** | Faucet Aerators, Flow Restrictors, Pre-Rinse Spray Valves, Waterbrooms | 162 | 14.7 | California Water Service Company, Golden State Water Company, Water Replenishment District, Metropolitan Water District |
| **Public Sector Program** | High-Efficiency Toilets, Zero-Water and Ultra-Low Flush Urinals, Waterbrooms, Centralized Irrigation Controllers, Synthetic Turf | 265 | 978 | Metropolitan Water District |
| **Save Water, Save a Buck** | Various | 11,320 | 12,857 | Metropolitan Water District, California Water Service Company, and Golden State Water Company |
| **TOTAL** | | **12,914** | **14,683** | |

*Over the Lifetime of the Devices

### 7.5.10 BMP #10 - Wholesale Agency Programs

The programs provided by West Basin as a regional wholesaler are done in partnership with its retail agencies to benefit the 17 cities that are located within West Basin's service area as shown in Table 7-7.

Since 2005, West Basin has acquired more than $4 million from State, Federal and local grant funding sources for program development and implementation. Furthermore, West Basin markets, designs and implements a majority of the BMPs within its service area. West Basin has also invested over $2 million over the last five years to provide conservation and education programs that help increase water supply reliability for the region.

**Table 7-7 West Basin Wholesale Agency Program Support**

| Retail Agencies that West Basin Supports | BMPs that West Basin Supports |
|---|---|
| California American Water Company | BMP #3 - System Audits |
| California Water Service Company | BMP #5 - Landscape Programs |
| City of El Segundo | BMP #6 - Washing Machines |
| City of Inglewood | BMP #7 - Public Information |
| City of Lomita | BMP #8 - School Education |
| Los Angeles County Waterworks District #29 | BMP #9 - CII Rebates and Programs |
| City of Manhattan Beach | BMP #10 - Wholesaler Incentives |
| Golden State Water Company | BMP #12 - Water Conservation Coordinator |
| | BMP #14 - ULFT Replacement |

As part of West Basin's WR 2020 Program, conservation programs will be further enhanced to provide even greater support to city and water retailer conservation program efforts.

### 7.5.11 BMP #11 - Conservation Pricing

In 2003, West Basin passed-through MWD's two-tiered rate structure to its customer agencies to promote water conservation and regional water supply reliability. This rate structure called for customer agencies, in coordination with West Basin, to develop a reasonable budget for their Tier 1 annual maximum limit for imported water. Through voluntary purchase agreements, these customers will pay a higher price (Tier 2) for purchases that exceed their Tier 1 allotment. To assist them in not exceeding their Tier 1 allocation limits, West Basin works with agencies to enhance conservation, education and expand recycled water use.

### 7.5.12 BMP #12 - Water Conservation Coordinator

In 2007, West Basin added an additional full time employee, which was identified in the 2006 Conservation Master Plan, to assist with the development of West Basin CII Programs. West Basin's Conservation Department now employs both a Senior Water Use Efficiency Specialist and a CII Specialist.

### 7.5.13 BMP #13 - Water Waste Prohibition

West Basin helped to promote MWD's *Its Time to Get Serious* media campaign by developing a campaign to increase our cities' awareness of the current water situation by requesting that they adopt a resolution. The resolution stated that the city would be willing to review their current ordinances and policies as they related to water conservation. With West Basin's effort, many cities adopted the resolution and seven cities actually passed stricter water efficiency ordinances.

In 2008/09, MWD launched the Public Sector Program. This program provided upfront incentives to motivate the public including cities, counties, agencies, schools, and others, to purchase and install water-use efficiency devices. In order to participate in this program, MWD required each city to pass a Water Waste Prohibition Ordinance.



These ordinances feature provisions regarding water waste ranging from outdoor watering restrictions and requirements for water features and pools to requiring eating establishments to provide drinking water upon request only and requiring new car washes be equipped with recirculation systems. To date, the cities within West Basin's service territory that have passed these ordinances include: Rolling Hills Estates, West Hollywood, Lomita, Manhattan Beach, Culver City, El Segundo, and Malibu. Each city's ordinance may differ slightly.

### 7.5.14 BMP #14 - Residential Ultra-Low-Flush Toilet (ULFT) Replacement Programs

Since early 2000, MWD, West Basin and its local water retailers have been providing the public with ULFT rebates and programs. These successful programs have evolved through the steps listed below to provide the increasing water savings shown in Table 7-8.

- 2000 – 2010: MWD, West Basin, and local retailers provided rebates
- 2000 – 2010: West Basin provided free ULFTs and High-Efficiency Toilets (HET) to the public through its one-day toilet distributions
- 2008: West Basin received a grant from MWD to directly install HETs in the multi-family sector
- 2010: MWD, due to high ULFT saturation levels (in specific areas of its region), stopped providing residential toilet rebates

**Table 7-8: ULFT / HET Rebate Program**

| | 2000-2004 | 2005-2010 | Total |
|---|---|---|---|
| **$ per Rebate** | $100 | $50 | N/A |
| **# of Rebates** | 2,822 | 1,271 | 4,093 |
| **Water Savings (AF)** | 113 | 51 | 164 |

Over the last five years, there have been several new technological advancements with the ULFTs. In 2006-07, the 1.28 gallon per flush HET was introduced and began gaining greater acceptance in the market.

In 2009, MWD conducted a region-wide saturation study, as part of its *SoCalWaterSmart* Program and found a water efficient saturation level of over 70 percent. Therefore, in 2010, MWD phased-out the rebate for the HET. In 2004, West Basin had estimated a 40% saturation level and in 2009, estimated 60% saturation. West Basin's portion of MWD's service area has older communities and opportunities still remain for replacement of older 3 - 5 gallon toilets. Since opportunities still exist in West Basin's service area, West Basin along with several of its retail water agencies has continued conducting its free one-day HET distribution events. The results of this program are shown in Table 7-9.

**Table 7-9: One Day Free HET Replacement Program Savings**

| | 2000-2004 | 2005 | 2006* | 2007* | 2008 | 2009 | Total |
|---|---|---|---|---|---|---|---|
| **# of Devices** | 13,172 | 2,742 | 0 | 0 | 2,593 | 1,500 | 20,007 |
| **Water Savings (AF)** | 381 | 110 | 0 | 0 | 104 | 60 | 655 |

*Temporary stop in program

In 2006, West Basin and its sister agency Central Basin Municipal Water District separated and became two distinct agencies so there was a halt of this program from 2006 -2007. Also during this time period, West Basin's toilet vendor went out of business but was able to restart toilet distributions in 2008.

*Multi-Family Program*

In 2008, West Basin developed a unique water/energy direct installation program called Green Living for Apartments & Condos. In collaboration with Southern California Edison (Edison) and the Southern California Gas Company (Gas Company), West Basin received a MWD grant to provide apartment and condominium owners with free installations of HETs, showerheads, bathroom aerators and compact fluorescent light bulbs. In 2008, a total of 2,500 HETs were installed, conserving an estimated 100 AF per year. In 2009, West Basin also provided an additional 1,500 HETs to the multi-family sector, for a total of 4,000 toilets.

**Table 7-10: Multi-Family Residential Device Replacements**

| | 2008 | 2009 | Total | Annual Savings (AF) |
|---|---|---|---|---|
| **HETs** | 2,500 | 1,500 | 4,000 | 161 |
| **Showerheads** | 214 | 214 | 428 | 3 |
| **Aerators** | 230 | 230 | 460 | 1.2 |
| **CFLs** | 500 | 500 | 1,000 | N/A |
| **Water Savings (AF)** | 104 | 60 | 655 | 165 |

### 7.5.15 Additional Conservation Programs

West Basin is very active in working with MWD to develop new conservation programs that are included in the CUWCC BMPs. In 2005, MWD implemented two new programs that are described below.

*Water and Energy Implementation Program (WEIP)*

West Basin is designing the WEIP to lay out both near-term and long-term goals working toward program integration between ourselves, Edison, the Gas Company and the water purveyors. Potential integration includes coordinated visits with the Gas Company for the *Cash for Kitchens* program, to acknowledge the strong connection between kitchens and natural gas use, and coordinated efforts to market and



implement water-efficiency programs along with Edison's well established Small Business Direct Install programs.

*Community Partnering Program*

MWD, in cooperation with its member agencies, accepts applications from non-profit organizations and public agencies that promote discussions and educational activities for regional water quality, conservation and reliability issues. This program provides support for the following types of activities:

- After-school water education
- Community water festivals
- Watershed education outreach
- Environmental museum exhibits
- Library water resources education book drives
- Public policy water conferences
- Other projects that directly support water conservation or water quality education

## 7.6 Current and Future Education Programs

West Basin is particularly dedicated to working with MWD and its customer agencies to provide water conservation educational opportunities for the communities they serve. West Basin manages and supports several programs and has also developed new program ideas for future implementation.

*Solar Cup*

### 7.6.1 Current Programs

*Solar Cup*

Solar Cup is an annual solar-power boat building and racing competition held for high school students in Southern California. The goal of the 7-month program is to encourage students to learn about science, mathematics, water quality issues, conservation, and alternative energy and fuel sources. This year, MWD, the lead sponsor of the program, allowed member agencies, including West Basin, to sponsor up to four teams. In 2010, the West Basin sponsored teams were divided into veteran and rookie teams.

- Veteran Teams
  - Palos Verdes Peninsula High School, Rolling Hills Estates
  - City Honors High School, Inglewood
- Rookie Teams
  - Environmental Charter High School, Lawndale
  - West High School, Torrance

*Water is Life Student Art Contest*

This program encourages 3rd -12th grade students to learn about their water supply and design a water conservation slogan illustrated with original artwork. Grand prize winners in the elementary, middle and high school categories receive a MacBook laptop through the generous support of United Water Services and the Law Offices of Lemieux and O'Neill.

*Board of Directors Scholarship Program*

The West Basin Board offers an annual Scholarship Award of up to $1,000 per qualified student with an interest in pursuing studies or a career in the water industry. Commencing in 2009, this program awarded eight scholarships to graduating high school seniors in West Basin's service area who have been accepted to a college, university or trade school. In 2010, this program awarded seven scholarships.

*Water Educators Newsletter*

West Basin keeps in touch with educators and administrators regarding our programs through our quarterly newsletter *Waterworks*.

*Water Educators Newsletter*

*Water Explorations School Tours*

West Basin offers a free field trip experience for 3rd – 12th grade students (including a complimentary school bus) to visit the ECLWRF in El Segundo. During the field trip, students interact with a conservation exhibit that teaches the students about how changing their behavior can save water. The students are then taken to visit the SEA Lab aquarium to learn about local marine life. Also located at the SEA Lab facility is West Basin's new Water Education Center where students again get to experience another interactive conservation exhibit and learn about ocean-water desalination.

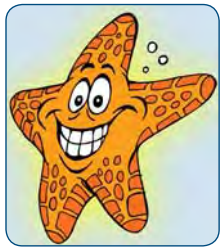
**Table 7-11: School Tours at ECLWRP**

| Grade Level | FY 2005-06 | FY 2006-07 | FY 2007-08 | FY 2008-09 | FY 2009-10 | Total |
|---|---|---|---|---|---|---|
| Grades K-3rd | 475 | 958 | 1,012 | 1,939 | 1,033 | 5,417 |
| Grades 4th-6th | 590 | 1,061 | 1,534 | 2,893 | 2,467 | 8,545 |
| Grades 7th-8th | 35 | 332 | 150 | 542 | 196 | 1,255 |
| High School | 0 | 25 | 145 | 344 | 167 | 681 |
| **Total** | **1,100** | **2,376** | **2,841** | **5,718** | **3,863** | **15,898** |

*Water Star Program*

West Basin's new WR 2020 Water Star Program encourages elementary aged school children to sign up to save 20 gallons a day, reducing our dependence on imported water and reducing runoff to the ocean. Children receive a water star conservation kit




*Water Star Program*

complete with fix-it tickets, a water star badge, shower timer, faucet aerator, and other water-saving reminders. More than 700 students pledged to save 20 gallons per day during the 2010 pilot program.

*Surfrider Foundation Teach and Test Program*

The Surfrider Foundation South Bay Chapter's Teach and Test Program is an exciting project pairing high school students with graduate students from Loyola Marymount University to study the water quality of our South Bay beaches. West Basin sponsors this on-going effort to improve the water quality of Santa Monica Bay and introduce youth to water quality research and careers.

Teams volunteer to collect water samples from 12 local beaches to then analyze and publish their results in an on-going database. Students have participated from several schools within West Basin's service area including Chadwick School, Westchester, El Segundo, Redondo Union, and South high schools.

*Splash Science*

In 2011, Splash Science will be morphed into a program to bring students to the Ocean-Water Desalination Demonstration Facility.

*Career Training Programs*

Every February, West Basin partners with United Water Services, Inc. to participate in the Inglewood/Airport Chamber of Commerce's Annual Youth Business and Industry Job Shadow Day. West Basin serves as a business host and conducts a 5-hour water careers program and facility tour that accommodates 10 students. Students are introduced to West Basin's mission, water sustainability projects, agency organization and variety of job positions. Students then go on a tour of the ECLWRF to see the result of the public/private partnership with United Water. Students are exposed to a wide range of careers in chemistry, biology, engineering, human resources, finance, water resource planning, public affairs, operations and maintenance. West Basin also hosts high school summer internships in partnership with the South Bay Workforce Investment Board.

### 7.6.2 Future Programs

In addition to the programs listed above, in 2010 West Basin will be completing an Education Master Plan that outlines the programs best suited for the students within our service area. These programs will be considered for implementation over the next five years.

## 7.7 Conservation Program Partnerships

By partnering with various entities, West Basin is able to leverage its funding and resources in order to develop targeted programs that have been identified in its CMP.

Over the last five years, West Basin has partnered with local, state and federal agencies and has received several grants. These grants have allowed West Basin to develop and offer the public free water conservation programs. For every $1 that West Basin invests, it provides $6 worth of programs to the public. West Basin's funding partners have included the following:

- United States Bureau of Reclamation (USBR)
- California Department of Water Resources
- Metropolitan Water District
- Retail Water Agencies
- Southern California Edison
- Southern California Gas Company

Over the last several years, West Basin has also developed new and important partnerships that help expand West Basin's conservation programs and messages including:

- **South Bay Environmental Services Center (South Bay Center):** In 2006, West Basin formed a partnership with the South Bay Center. The South Bay Center is a program of the South Bay Cities Council of Governments (South Bay COG) that promotes programs provided by Edison, the Gas Company, Los Angeles County Sanitation District and LA Metro as well as West Basin's water conservation programs throughout 16 cities in the South Bay.
- **Surfrider Foundation:** In 2006, West Basin formed a partnership with Surfrider for the purpose of creating the Ocean Friendly Landscape Program. Since that time, West Basin has also helped to sponsor Surfrider's Teach & Test Program. Surfrider works with high school students to teach them about water runoff issues and pollution to the ocean.
- **Southern California Edison and Southern California Gas Company:** Efforts to work more closely with the energy utilities have been made through West Basin's partnership with the South Bay Environmental Services Center. Residents and businesses interested in saving energy are more likely to be interested in saving water as well. Leveraging the efforts of the energy utilities allows for more cost-effective programs as well as enhanced offering for residential and business customers alike. Successful integration of water-use efficiency and energy efficiency programs is happening on a small scale with the real possibility of further and larger scale integration in the near future.



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SECTION EIGHT

# Rates and Charges

2010

Section 8
Rates and Charges

# SECTION 8 Water Rates & Charges

As a water wholesale agency, West Basin does not directly charge residential and other end-use customers for supplies. Instead, West Basin's customer agencies purchase water from West Basin and then combine it with other supplies to deliver to their retail customers at a variety of rates.

West Basin's current potable water rates are primarily based upon the costs of imported supplies purchased from MWD. Imported water purchased by West Basin from MWD carries not only the cost of acquiring, importing, treating and distributing the water throughout the region, but also these costs associated with maintaining MWD reliability and "readiness to serve". The total West Basin rate structure must include the value-added costs associated with representing customer agencies at MWD, and distributing locally-produced recycled and desalinated groundwater supplies.

## 8.1 MWD Rate Structure

In 2002, the MWD Board adopted a new rate structure to support its strategic planning vision to encourage the development of local supplies like recycled water and conservation, and ensure a reliable supply of imported water. To achieve these objectives, MWD called for voluntary purchase orders from its member agencies, unbundled its water rates, established a tiered supply rate system, and added a capacity charge. The new rate structure components provide a better opportunity for MWD and its member agencies to manage their water supplies and proactively plan for future demands.

### 8.1.1 Purchase Orders

The Purchase Order is an agreement between MWD and a member agency, whereby the member agency agrees to purchase a minimum amount of non-interruptible water over a ten-year Purchase period. The Annual Maximum is the amount of lower cost (Tier 1) non-interruptible water that a member agency is entitled to purchase annually as a result of that Purchase Order.

Table 8-1 shows how both the current annual maximum and purchase commitment were calculated for West Basin. West Basin's highest delivery of non-Order interruptible water was 174,304 AF in 1990. Therefore, West Basin's Tier 1 annual maximum is calculated as 90 percent of 174,304 AF – or 156,874 AF. The total purchase commitment is 60 percent of 174,304 AF multiplied by the 10 year Purchase Order period - or 1,045,824 AF to be purchased by the end of 2013. Since signing a Purchase Order with MWD in 2002 West Basin has remained below its Tier 1 annual maximum and has been on track to meet its Purchase Commitment by the year 2012.

**Table 8-1: West Basin Purchase Order Terms**

| Initial Base Allocation (AF) | Tier 1 Annual Maximum (90% of Base) (AF) | Purchase Order (60% of Base x 10) (AF) |
|---|---|---|
| 174,304 | 156,874 | 1,045,825 |

### 8.1.2 Unbundled Rates and Tier 1& 2

To justify the different components of the costs of water on a per acre foot basis, MWD rates are comprised of the following components:

- **Supply Rate Tier 1:** Reflects the average supply cost of water from the Colorado River and State Water Project.
- **Supply Rate Tier 2:** Reflects the MWD costs associated with developing new supplies, which is assessed when an agency exceeds its Tier 1 limit of firm deliveries.
- **System Access Rate:** Recovers a portion of the costs associated with the conveyance and distribution system, including capital and operating and maintenance costs.
- **Water Stewardship Rate:** Recovers MWD's cost of providing incentives to member agencies for conservation, water recycling, groundwater recovery, and other water management programs approved by the MWD Board.
- **Delta Supply Surcharge:** Reflects the additional supply costs that MWD faces along with other costs due to the pumping restrictions on the State Water Project. The Delta Supply Surcharge replaced the Water Supply Surcharge effective with the FY 2009/10 rates.
- **System Power Rate:** Recovers MWD's electricity-related costs, such as the pumping of water through the conveyance and distribution system.
- **Treatment Surcharge:** Recovers the treatment cost and is assessed only for treated water deliveries, whether firm or non-firm.

The MWD water rates for calendar year 2011 are displayed in Table 8-2.

**Table 8-2: MWD Rates Adopted for 2011**

| Category of Water | $/AF |
|---|---|
| Supply Rate Tier 1 | $104 |
| Supply Rate Tier 2 | $280 |
| System Access Rate | $204 |
| Water Stewardship Rate | $41 |
| Water Supply Surcharge | $0 |
| Delta Supply Surcharge | $51 |
| Power Rate | $127 |
| Treatment Rate | $217 |
| **Total Tier 1 Treated Rate** | **$744** |
| **Total Tier 2 Treated Rate** | **$869** |



### 8.1.3 Replenishment Service

Although the great majority of the MWD water supplies are sold as uninterruptible Tier 1 or Tier 2 supply, there are times when excess supply is available for storage replenishment purposes. Since these excess supplies are only as available (or interruptible), they are typically bought at a discounted rate by agencies to recharge groundwater supplies or fill surface storage. This Replenishment Service Water is offered by MWD as either untreated or treated (that can be used as "in-lieu," where a retail agency will curtail pumping and instead take direct deliveries from MWD). Replenishment Service Water rates are not tied to the uninterruptible rate structure illustrated in Table 8-2. These rates are established by MWD to provide the best incentive to replenish the groundwater basins. Replenishment Service rates effective January 1, 2011 are shown in Table 8-3.

**Table 8-3: MWD Replenishment Service Rate Adopted for 2011**

| Category of Water | $/AF |
|---|---|
| Replenishment Water Rate Untreated | $409 |
| Treated Replenishment Water Rate | $601 |

### 8.1.4 MWD Capacity Charge

The MWD capacity charge was developed to recover the costs of providing distribution capacity use during peak summer demands. The aim of this charge is to encourage member agencies to reduce peak day demands during the summer months (May 1 thru September 30) and shift usages to the winter months (October 1 thru April 30), which will result in more efficient utilization of MWD's existing infrastructure and defers capacity expansion costs. Currently, MWD's capacity charge for FY 2010 and 2011 are set at $7,200/cubic feet per second (cfs).

The capacity charge is applied to an agency's maximum usage rate, which is the highest daily average usage (per cfs) for the past three summer periods. Table 8-4 shows the maximum usage rate for West Basin.

**Table 8-4: MWD Capacity Charge for 2010**

| Peak Flow 2007 (cfs) | Peak Flow 2008 (cfs) | Peak Flow 2009 (cfs) | 3-Year Max (cfs) | Capacity Charge |
|---|---|---|---|---|
| 262 | 243 | 221 | 262 | $1,663,700 |

Note: These peak flows are based upon West Basin's coincident peak of all its MWD connections.

### 8.1.5 Readiness-to-Serve Charge

MWD's readiness-to-serve charge recovers a portion of MWD's debt service costs associated with regional infrastructure improvements and is determined by the member agencies' firm imported deliveries for the past ten years. West Basin meets this obligation through its commodity rates.

## 8.2 West Basin's Imported Water Rates

To deliver water from MWD to its customer agencies, West Basin must pass along the MWD costs as well as an additional administrative surcharge. Described below are elements of the rate structure that West Basin applies to the delivery of imported water for its customer agencies.

### 8.2.1 Purchase Agreements

In order to meet the Purchase Order commitment with MWD, West Basin established its own purchase contract policy with its customer agencies. West Basin's Imported Water Purchase Agreement also calculates an annual maximum and total purchase commitment, but offers more flexibility to the customer. West Basin requires only a five-year commitment, as opposed to the ten-year MWD term. Furthermore, customer agencies have the option to adjust their annual maximum and purchase commitment amounts annually by offsetting imported water demand with recycled water purchased from West Basin. For purchases above the Tier 1 limit, or in the absence of a Purchase Agreement, the customer agency pays the Tier 2 rate.

### 8.2.2 Reliability Service Charge

One of the main revenue sources for West Basin is the reliability service charge applied to all imported water sold. Revenue from this charge recovers West Basin's administrative costs including planning, outreach and education, and conservation efforts, as well as a portion of the recycled water system operating costs. As of July 1, 2010, West Basin's reliability service charge is at $66/AF.

### 8.2.3 Readiness-to-Serve Surcharge

West Basin passes along MWD's readiness-to-serve charge within its commodity rates for non-interruptible and Barrier water supplies to cover this charge. As of January 1, 2011, West Basin's surcharge will be $125/AF.

### 8.2.4 Water Service Charge

Water utility revenue structures benefit from a mix of fixed and variable sources. West Basin's water service charge recovers a portion of the agency's fixed administrative costs, but is a relatively small portion of its overall revenue from water rates. As of July 1, 2010, the water service charge is $34/cfs of a customer agency's meter capacity for imported water meters.

### 8.2.5 West Basin's Capacity Charge

MWD's capacity charge is intended to encourage customers to reduce peak day demands during the summer months, which will result in more efficient utilization of MWD's existing infrastructure. West Basin has passed through MWD's capacity charge to its customer agencies based upon their highest daily average usage (per cfs) for the past three summer periods. The capacity charge that West Basin is assessed by MWD is $6,350/cfs for FY 2011.



### 8.2.6 Desalter Water Charges

West Basin also sells water produced by the Brewer Desalter at the effective MWD rate. This includes the MWD non-interruptible base rate and an acre-foot equivalent for the Capacity Charge. Currently, the rate for Desalter water is $767/AF as of January 2011.

## 8.3 Recycled Water Rates

West Basin's ECLWRF provides five different qualities of water to meet the needs of landscape irrigation, cooling towers, refineries, and industries within and outside its service area. Since 1995, West Basin has encouraged the maximum use of recycled water by providing an economic incentive through specialized rates and charges.

*Recycled water use for irrigation - Home Depot Center, Carson, CA*

### 8.3.1 Recycled Water Rates

West Basin uses seven different rates for recycled water to account for differing treatment quality, power requirements, and customer location. All rates are assessed to include the operation and maintenance costs, and labor and power costs associated with the delivery of recycled water. A majority of these rates are set up in a declining tiered structure to further encourage the use of recycled water, while the others are set up to service one or more customers at a uniform rate. Most of the recycled water rates are set lower than potable water rates except for highly treated recycled water for use by refineries. Fiscal year 2010 – 2011 rates are shown in Table 8-5.

**Table 8-5: 2010-2011 Recycled Water Rates**

| Volume (AF/Month) | WBMWD Service Area | West Coast Barrier | Industrial R/O (WB Service Area) | Nitrified (Ind. R/O) | Industrial R/O Ultra (WB Service area) | Torrance/ LADWP Service Areas | Palos Verdes Zone Rate |
|---|---|---|---|---|---|---|---|
| 0-25 | $686/AF | $540/AF | $914/AF | $914/AF | $1,270/AF | $728/AF | $924/AF |
| 25-50 | $676/AF | $540AF | $914/AF | $914/AF | $1,270/AF | $718/AF | $941/AF |
| 50-100 | $666/AF | $540/AF | $914/AF | $914/AF | $1,270/AF | $708/AF | $904/AF |
| 100-200 | $656/AF | $540/AF | $914/AF | $914/AF | $1,270/AF | $698/AF | $894/AF |
| 200+ | $646/AF | $540/AF | $914/AF | $914/AF | $1,270/AF | $608/AF | $884/AF |

Customers outside of West Basin's service area boundaries pay an additional $42/AF per tier. This additional charge is applied to make up for the recycled water standby charge that is not levied on their parcels.

### 8.3.2 Recycled Water Standby Charge

The recycled water standby charge is levied by West Basin to each parcel within the service area. A rate of $24 per parcel (up to one acre for residential) is administered by West Basin to provide a source of non-potable water completely independent of drought-sensitive supplies. The revenue collected from this charge is used to pay the debt service obligations on the West Basin water recycling facilities. Each year West Basin holds a public hearing where they adopt West Basin's Engineer's Report and Resolution to assess this charge.

## 8.4 Future Water Rate Projections

As the demand for water increases in southern California so does the cost to administer, treat, and distribute imported and recycled water. However, West Basin has worked diligently to ensure that stable and predictable rates are managed for the future. This section discusses projections of imported and recycled water rate trends for the next ten years.

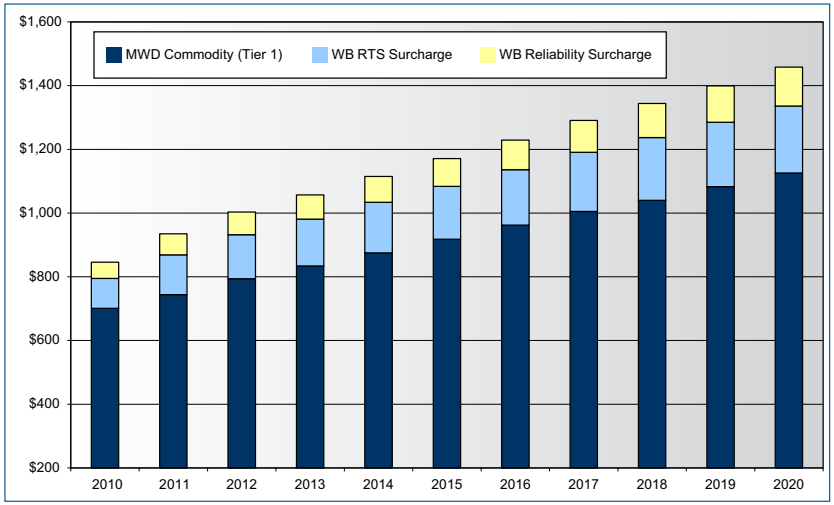
### 8.4.1 Imported Water Rate Projections

In 2004, the MWD Board adopted its Long Range Financial Plan. This plan was developed to forecast future costs and revenues necessary to support its operations and capital investments. Furthermore, it lays out the financial policy MWD will pursue over the next ten years. According to projected MWD sales, with investments into local resources, MWD estimates imported water rates will increase 4-6 percent annually. As a result, West Basin's water reliability service charge is projected to increase at an annual average rate of 7 percent. This increase is determined by West Basin's own Long Range Financial analysis and revenue requirements.



Figure 8-1: Projected Imported Water Rates displays West Basin's imported water rate projections for the next ten years.

**Figure 8-1: Projected Imported Water Rates**




Source: MWD Long Range Financial Plan & West Basin's Financial Plan.

### 8.4.2 Recycled Water Rate Projections

Similar to imported water rates, recycled water rates are expected to increase due to higher treatment, maintenance, and power costs. However, West Basin believes in setting recycled water rates at a competitive level to help offset the use of imported water. To achieve this economic incentive, recycled water rates have been projected to increase at a slightly lower level than imported water. Rates are projected to increase for all types of recycled water, by an average of 5 percent annually. However, these rates may vary depending upon energy and chemical costs.

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SECTION NINE

# Recycled Water

2010

# SECTION 9 Recycled Water

Recycled water is the cornerstone of West Basin's efforts to increase water reliability by augmenting local supplies and reducing dependence on imported water. Since planning and constructing its recycled water system in the early 1990s, West Basin has become an industry leader in water reuse. West Basin's recycled water supply is sold to customers for non-potable applications such as landscape irrigation, commercial and industrial processes, and indirect potable uses through groundwater replenishment. While serving to offset imported water supplies, recycled water use also results in less ocean discharge of lesser-treated wastewater into the Santa Monica Bay.

*Recycled Water Pipe*

In FY 2009-10, West Basin delivered about 30,400 AF of recycled water to sites inside and outside its service area, saving enough potable water to serve roughly 61,000 households. Within West Basin's service area, municipal and industrial recycled water use totaled about 15,500 AF and seawater barrier about 7,796 AF, which is about 13 percent of West Basin's current total water supplies. It is projected that recycled water sales could represent 27 percent of total water supplies by 2035.

## 9.1 Recycled Water Supply and Treatment

West Basin's recycled water source of supply is treated wastewater effluent from the City of Los Angeles's Hyperion Wastewater Treatment Plant (Hyperion). The City of Los Angeles has operated Hyperion, located adjacent to West Basin's service area, since 1894. Initially built as a raw sewage discharge plant into the Santa Monica Bay, Hyperion has been upgraded over the years to secondary and full secondary treatment. Hyperion's full treatment capacity is 450-850 mgd and secondary treatment capacity is 450 mgd.

Although the City of Los Angeles strives to provide West Basin with a consistent quality of secondary treated wastewater, the ECLWRF has to accommodate inevitable fluctuations in influent quality. Table 9-1 illustrates the amount of historical, current and projected wastewater collected and treated at Hyperion and the amount of recycled water that West Basin treats to at least tertiary recycled water standards.



**Table 9-1: Hyperion Wastewater Collected and Treated (AFY)**

| | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|---|---|
| Wastewater collected & treated in Los Angeles' service area[1] | 390,000 | 425,000 | 465,000 | 500,000 | 535,000 | 570,000 | 605,000 |
| Quantity treated to meet recycled water standard[2] | 24,160 | 30,000 | 58,100 | 62,000 | 66,000 | 70,000 | 70,000 |

[1] Data supplied by the Hyperion Wastewater Treatment Plant.
[2] Data supplied by West Basin.

West Basin purchases approximately 37,600 AF, or roughly 9 percent of Hyperion's secondary effluent for treatment at the ECLWRF. West Basin opened ECLWRF in 1995, which is still one of the largest recycled water plants of its kind in the nation. This facility has a current capacity of 62,700 AF with its fourth expansion expected to be complete in 2012.

Most of West Basin's recycled water is treated to meet California Code of Regulations Title 22 (Title 22) tertiary standards. Title 22 addresses specific treatment requirements for recycled water and lists approved uses. Approximately 2,000 tests are performed monthly at the West Basin ECLWRF to ensure water quality meets or exceed all State and Federal requirements.

In 2002, West Basin's ECLWRF was recognized by the National Water Research Institute as one of the six National Centers for Water Treatment Technologies in the country. West Basin's recycled water program is unique in that it provides a variety of recycled water qualities beyond basic tertiary Title 22 levels. These five different water products, including Tertiary, are developed to meet specific customer specifications and are as follows:

- **Tertiary Water:** Secondary treated wastewater meeting Title 22 regulations is produced for non-potable irrigation through a conventional treatment process of coagulation, flocculation, clarification, filtration and disinfection.
- **Nitrified Water:** Tertiary water that is nitrified to remove ammonia is produced for use in refinery cooling towers.
- **Reverse Osmosis Water:** Secondary treated wastewater pretreated by microfiltration followed by reverse osmosis (RO), disinfection with ultra-violet and peroxide treatment for groundwater recharge.
- **Pure Reverse Osmosis Water:** Secondary treated wastewater that has undergone micro-filtration and RO for low-pressure boiler feed water.
- **Ultra-Pure Reverse Osmosis Water:** Secondary treated water that has undergone micro-filtration and two passes through RO for high-pressure boiler feed water.

In addition to providing recycled water for commercial and industrial uses, the reverse osmosis water produced by West Basin is purchased by the WRD and blended with potable water for injection into the West Coast Basin Seawater Barrier. This injected

water has the dual benefit of not only preventing seawater intrusion into the aquifers of the West Coast Groundwater Basin, but also providing replenishment to replace the water that is extracted by drinking water wells.

Seawater barriers are a series of injection wells that form a barrier to ensure that the groundwater level near the ocean stays high enough to keep seawater from seeping into a basin. Currently, the West Coast Basin Barrier receives approximatelty 75 percent RO recycled water mixed with 25 percent potable water. In April 2009, West Basin and WRD signed an agreement to increase the amount of RO recycled water supplied to the barrier to 100 percent by 2012 — saving 5.5 billion gallons of potable imported water a year.

*Edward C. Little Water Recycling Facility*

In order to supply the variety of recycled water products to large customers that are often a long distance from the ECLWRF, West Basin also operates three satellite facilities that provide further treatment to tertiary water after passing through the ECLWRF.

*Recycled water used for irrigation - King Harbor, Redondo Beach, CA*

Figure 9-1 shows the location of the ECLWRF, in the City of El Segundo, as well as three satellite treatment facilities including the Exxon-Mobil Nitrification Plant in Torrance, the Chevron Nitrification Plant in El Segundo and the Carson Regional Water Recycling Plant in Carson.

## 9.2 Recycled Water Use

### 9.2.1 Existing System

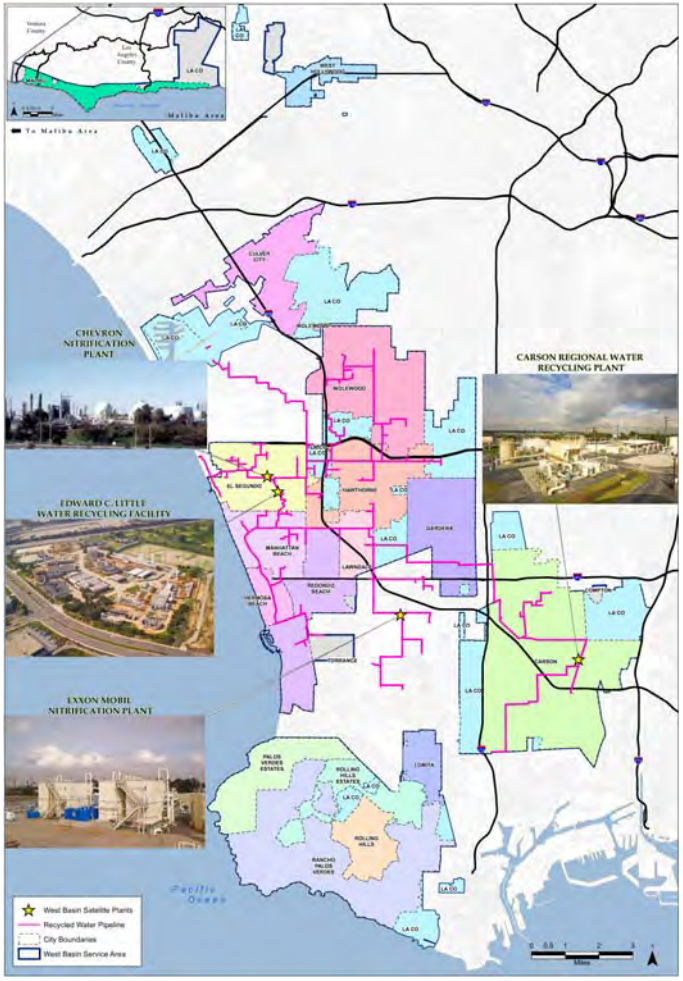
To date, West Basin has saved over 100 billion gallons of potable water imported from Northern California and the Colorado River which would have otherwise been used for non-potable applications. All recycled water is produced initially at the ECLWRF where it is distributed to either end-use sites or one of several satellite facilities. In all, more than 350 sites currently use more than 9.7 billion gallons annually.

As Figure 9-1 shows, West Basin's recycled water system serves the cities of Carson, El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Manhattan Beach, Lawndale, Redondo Beach, and unincorporated areas of Los Angeles County within its service area, as well as the cities of Torrance and Los Angeles, which are outside of its service area.

The recycled water distribution infrastructure is separate from the potable drinking water system. All pipes, pumps and other equipment used to transport recycled water are clearly identified as recycled water to distinguish them from the potable drinking water system.



**Figure 9-1: West Basin's Water Recycling Facilities**

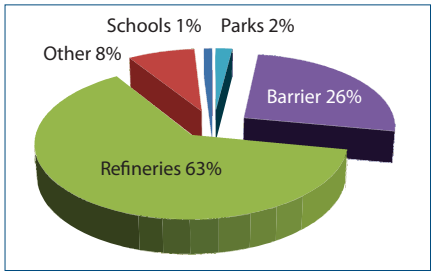


### 9.2.2 Recycled Water Use by Type

West Basin supplies recycled water for a wide-variety of customer uses such as:

- Seawater barriers
- Construction
- Industrial: Multi-Use
- Industrial: Nitrified
- Street Sweeping
- Irrigation: Cal-Trans
- Irrigation: Cemetery
- Irrigation: College
- Irrigation: Golf Course
- Irrigation: Landscape
- Irrigation: Medians
- Irrigation: Multi-Use
- Irrigation: Park
- Irrigation: School

**Figure 9-2: Recycled Water Use by Type**



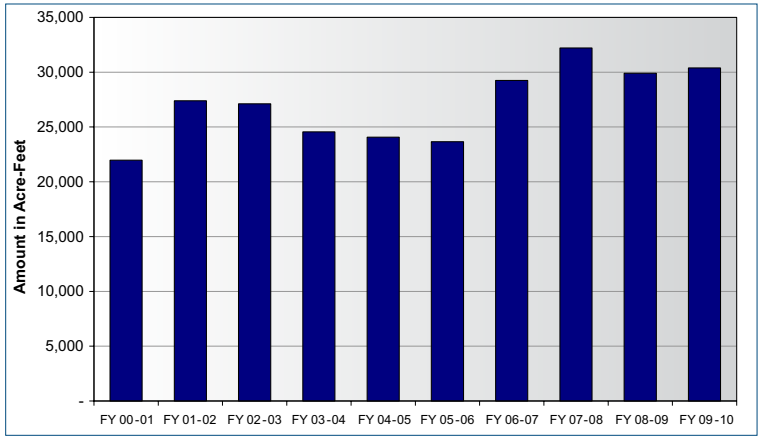

### 9.2.3 Historical and Current Sales

West Basin's recycled water sales over the past ten years are illustrated in Figure 9-3. Sales increased until 2002-03, then declined due to a change in the source water from Hyperion. Sales have increased slightly in subsequent years and have remained steady at around 30,000 AF for the past two years. Table 9-3 provides a more detailed breakdown of historical sales by showing each retail customer agency's annual purchases for the past ten years.

West Basin has been able to deliver over 270, 500 AF over the last ten years to customers both inside and outside of its service area. This recycled water use has replaced enough potable water to supply the needs of approximately 135,250 families of four for an entire year. West Basin anticipates recycled water production and use to increase in the future due to system expansions, new applications, increasing public acceptance and economic incentives.



**Figure 9-3: Historical Recycled Water Sales (FY 2000-2010)**




West Basin's recycled water system also services the Cities of Torrance and Los Angeles, which are located outside of West Basin boundaries. Therefore, although the total usage within West Basin's service area was 23,331 AF in 2009-2010, the total amount of recycled water delivered by West Basin was 30,384 AF

According to West Basin's 2005 UWMP, deliveries of recycled water within the service area were projected to reach over 39,000 by 2010. As shown in Table 9-2, actual sales in 2009/2010 fell significantly below this target. This was mainly due to setbacks in expanding the recycled water program in the southern portion of West Basin's service area which resulted in many large industrial customers not connecting to the system. In addition, water quality problems at Hyperion impacted deliveries to the West Coast Seawater Barrier significantly.

**Table 9-2: Comparison of Recycled Water Use Projections**

| Type of Use | 2005 Projection for 2010 | 2009/2010 Actual Use |
|---|---|---|
| Irrigation/Industrial | 21,848 | 22,588 |
| West Coast Barrier | 17,500 | 7,797 |
| **Total** | **39,348** | **30,384** |

### 9.2.4 Projected System Expansions

In 2009, West Basin completed a Capital Implementation Master Program (CIMP). The CIMP includes all of the planned projects for recycled water and desalination through the year 2030. The major recycled water capital projects are explained in further detail below.

**ECLWRF Phase V Expansion:** With the completion of the ECLWRF Phase V Expansion in 2012, West Basin is looking toward increasing its ability to provide enough recycled water to meet 100 percent of the West Coast Seawater Barrier's needs. The Phase V Expansion Project will increase barrier water production at the ECLWRF by up to an additional 5 mgd and serve the El Segundo Energy Center with 0.5 mgd of single-pass RO water. The Phase V Expansion will also expand ECLWRF's tertiary treatment system by an additional 10 mgd.

*Edward C Little Water Recycling Facility*

**Hyperion Secondary Effluent Pump Station Expansion:** As West Basin's recycled water production continues to increase, the demand for Hyperion's effluent will eventually exceed the capacity of the Hyperion Secondary Effluent Pump Station. A pump station expansion would be able provide a capacity of up to 70 mgd for ECLWRF. West Basin is working closely with Los Angeles Department of Water & Power, the provider of electrical power to the pump station, to also construct a second electrical feeder to the pump station that will also increase the reliability of the pumping facilities.



**Table 9-3: West Basin Recycled Water Sales FY 2000-2010 (AFY)**

| West Basin | 2000-01 | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| California Water Service Co. Dominguez | 3,297 | 3,165 | 3,101 | 3,639 | 3,616 | 3,665 | 3,610 | 4,690 | 5,293 | 4,959 | 39,035 |
| California Water Service Co. Hawthorne | 90 | 116 | 101 | 112 | 111 | 111 | 118 | 85 | 99 | 90 | 1,032 |
| California Water Service Co. Hermosa/ Redondo | 133 | 130 | 130 | 144 | 107 | 119 | 141 | 145 | 163 | 150 | 1,361 |
| City of El Segundo | 3,542 | 7,632 | 8,103 | 8,310 | 7,868 | 7,405 | 8,201 | 7,865 | 8,978 | 9,035 | 76,937 |
| City of Inglewood | 622 | 707 | 577 | 638 | 595 | 568 | 797 | 650 | 680 | 621 | 6,455 |
| City of Manhattan Beach | 272 | 307 | 254 | 301 | 274 | 249 | 316 | 288 | 251 | 264 | 2,777 |
| Inglewood Unified School District | 24 | 31 | 30 | 67 | 60 | 57 | 68 | 56 | 62 | 56 | 510 |
| Golden State Water Company | 237 | 282 | 315 | 432 | 435 | 429 | 523 | 552 | 410 | 360 | 3,975 |
| M&I | 8,216 | 12,371 | 12,610 | 13,643 | 13,064 | 12,604 | 13,774 | 14,330 | 15,936 | 15,535 | 132,082 |
| WRD (Barrier) | 6,753 | 7,290 | 6,754 | 3,935 | 3,799 | 4,383 | 9,104 | 11,129 | 7,652 | 7,797 | 68,596 |
| **Within Service Area** | **14,969** | **19,660** | **19,364** | **17,578** | **16,863** | **16,987** | **22,878** | **25,459** | **23,588** | **23,331** | **200,677** |
| City of Torrance | 91 | 117 | 144 | 196 | 186 | 253 | 285 | 311 | 277 | 272 | 2,134 |
| City of Torrance - Mobil | 6,558 | 7,212 | 7,328 | 6,385 | 6,735 | 6,156 | 5,774 | 6,078 | 5,599 | 6,173 | 63,998 |
| LA DWP | 357 | 398 | 277 | 394 | 283 | 257 | 313 | 360 | 444 | 608 | 3,692 |
| **Outside of Service Area** | **7,006** | **7,727** | **7,750** | **6,975** | **7,205** | **6,666** | **6,372** | **6,750** | **6,320** | **7,053** | **69,823** |
| **TOTAL** | **21,974** | **27,387** | **27,113** | **24,552** | **24,067** | **23,652** | **29,250** | **32,208** | **29,908** | **30,384** | **270,500** |

**Harbor-South Bay Recycled Water Expansion Project:** The Harbor-South Bay Recycled Water Expansion Project is a partnership between West Basin and the United States Army Corps of Engineers (USACE) to both expand West Basin's current recycled water distribution system as well as to provide an improvement in overall system reliability. This expansion will be able to bring additional recycled water supplies to the cities of Carson, Torrance, Palos Verdes, Gardena, and unincorporated areas of Los Angeles County.

**Treatment/Conveyance Facility Repair, Replacement, and Improvements:** Multiple improvements are under consideration for West Basin's treatment and conveyance system facilities. These improvements will enhance the safety, operability and efficiency of both the distribution system and treatment facilities. Some improvements will be made to comply with safety, water quality or other regulatory requirements or will be done to lower operating costs or improve equipment life.

**Conveyance Facility Corrosion Protection Improvements:** As a result of a study completed by West Basin, various cathodic protection improvements were identified that would ensure the integrity of West Basin's recycled water facilities. These improvements will be implemented periodically to ensure system integrity over the duration of the system's useful service life.

### 9.2.5 Projected Recycled Water Use

The 2009 CIMP identified and prioritized areas where recycled water has the potential to expand based upon potential future customers. Converting fabric and carpet dying industrial users to recycled water use are examples of significant opportunities for increased use.

The CIMP projects described in Section 9.2.4 are expected to result in at least an additional 40,900 AF of use within West Basin's service area by 2035. West Basin is also projecting to expand its export of recycled water within the City of Los Angeles' service area. Oil refineries within the harbor area of Los Angeles are proximal to West Basin's existing system and represent a large untapped potential for high-quality recycled water sales. West Basin will continue to pursue new cost-effective projects both within and outside its service area.

*Recycled water use for irrigation - Raytheon, El Segundo, CA*



Table 9-4 illustrates the projected increase of recycled water over the next 25 years.

**Table 9-4: Projected Recycled Water Use (AFY)**

| | 2015 | 2020 | 2025 | 2030 | 2035 |
|---|---|---|---|---|---|
| Industrial & Irrigation | 16,368 | 33,882 | 33,882 | 37,382 | 37,382 |
| Indirect Potable Reuse | 16,980 | 16,980 | 16,980 | 20,480 | 20,480 |
| **Within Service Area** | **33,348** | **50,862** | **50,862** | **57,862** | **57,862** |
| City Torrance | 6,650 | 6,650 | 6,650 | 6,650 | 6,650 |
| City of Los Angeles | 10,700 | 10,700 | 10,700 | 10,700 | 10,700 |
| **Outside of Service Area** | **17,350** | **17,350** | **17,350** | **17,350** | **17,350** |
| **Total** | **50,698** | **68,212** | **68,212** | **75,212** | **75,212** |

### 9.2.6 Encouraging Recycled Water Use

West Basin generates interest in recycled water by contacting potential customers and cities with sites that are located near an existing main pipeline, have a high water use potential in which a line can be constructed, are mandated to use recycled water, and/or express interest. For commercial and industrial customers, West Basin emphasizes the benefit of recycled water as a tool for profitability for businesses that goes beyond the benefits of water conservation. West Basin markets recycled water as a resource that:

- Is less expensive than potable water;
- Is more reliable than imported water in a drought; and
- Is consistent with statewide goals for water supply and ecosystem improvement on both the State Water Project and Colorado River systems.

The target customer is expanding from traditional irrigation users such as golf courses and parks to unconventional commercial and industrial users. Through innovative marketing, recycled water is now being used by oil refineries and for cooling towers. In addition, West Basin is investigating recycled water use in fabric dye houses, co-generating plants, and commercial laundries.

In addition to West Basin wholesaling recycled water at a rate lower than potable water, other financial incentives are used to encourage recycled water use. Some potential recycled water customers do not have the financial capability to pay for the onsite plumbing retrofits necessary to accept recycled water. Therefore, West Basin advances funds for retrofit expenses, which can later be reimbursed through the water bills. Table 9-5 illustrates West Basin's coordinated effort with key stakeholders during the development of the CIMP.

**Table 9-5: CIMP Coordination**

| Participating Agencies | Role in Plan Development |
|---|---|
| Water Purveyors | Customer Development, Facilities, Impacts, Rates |
| Wastewater Agencies | Recycled Water Supply, Water Quality, Reliability |
| Groundwater Agencies | Rates and Customer Involvement |
| Planning Agencies | Economic Analysis, Rates, Data Assessment, Customer Assessment, Rates, Community Impacts, Customer Involvement, Conceptual Pipeline Routes, Cost Estimates |

## Funding

Capital costs for projects planned over the next five years have been budgeted to average approximately $30 million a year. These costs will be covered by the sources identified here and other sources as they become available.

**MWD Local Resources Program Incentive:** To qualify, proposed recycled water projects by member agencies must cost more than projected MWD treated non-interruptible water rates and reduce potable water needs. As a member agency of MWD, West Basin is eligible to receive an incentive for up to $250/AF of produced recycled water. It is competitive and requires an application and review process by MWD in coordination with West Basin staff.

**Grant Funding:** West Basin often applies for Federal and State grant funding for recycled water projects including through the USACE, which affords qualified programs 75 percent project funding. West Basin has utilized this funding arrangement for several of our previous water recycling projects.



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SECTION TEN

# Desalination

# SECTION 10 Desalination

West Basin's experience in recycled water treatment includes substantial knowledge on methods used for the removal of salt from water supplies. This experience has proved useful to West Basin in pursuing both groundwater and ocean-water desalination programs to further develop local water supplies. Since 1993, West Basin has operated the C. Marvin Brewer Desalter Facility to treat brackish groundwater that remains on the inland side of the West Coast Seawater Barrier. In 2001 West Basin also began a multi-phase program to explore the systematic development of a full scale ocean-water desalination facility. This multi-phase approach has been based on deliberate scientific research and testing, beginning with a small pilot facility to test the basic treatment technology, and followed by West Basin's recently dedicated Ocean-Water Desalination Demonstration Facility and Water Education Center in order to evaluate and demonstrate ocean protection, energy recovery and cost reduction technologies. These facilities have been developed to ensure a full scale ocean water desalination facility will be done in a cost and energy efficient manner and with a goal to protect the ocean. Research results from the Demonstration Facility will be shared throughout the water industry worldwide via the web site.

## 10.1 Ocean Desalting Process

Desalination or desalting is the process of converting highly salty, or brackish, water into a drinkable supply. Today's ocean-water desalting process removes salt, minerals and impurities from ocean-water with cutting edge membrane technologies such as ultrafiltration or microfiltration and reverse osmosis. Using these methods, raw ocean-water first passes through an ultrafiltration or microfiltration membrane which has thousands of hollow strands with pores on the walls that are 5,000 times smaller than a pinhole. The water then continues on to reverse osmosis membranes for the final purification process. Reverse osmosis is a pressure driven process whereby water passes through the molecular structure of a thin membrane that filters out salts, minerals, and impurities. Figure 10-1 shows a diagram of the typical desalting process.

Traditionally, ocean-water desalination has been considered too expensive for a large-scale project, and for many years it was cost prohibitive compared to other sources of potable water in the West Basin service area. However, due to recent advancements in membrane technologies and energy recovery systems, and the increasing cost of existing sources of water, ocean-water desalination is now a financially viable new water source that is cost competitive with other sources of drinking water.

## 10.2 West Basin's Ocean-Water Desalination Pilot Project

In May 2002, West Basin initiated piloting efforts to desalinate ocean-water and evaluate the potential for developing a viable, new future drinking water supply for the region. This pilot project was located at the El Segundo Power Plant in the City of El Segundo and marked the first use of microfiltration pretreatment and reverse osmosis as a treatment process for ocean-water desalination. The pilot project was in operation for over seven years, and desalted approximately 20 gallons per minute (gpm) of raw ocean-water. The goal of the project was two-fold: 1) identify optimal performance conditions and 2) evaluate the water quality characteristics. The research findings are being shared among industry partners.

**Figure 10-1: Desalting Process**

The process combination of microfiltration pretreatment and reverse osmosis treatment was to evaluate whether this process was effectively treating ocean-water and so West Basin performed extensive water quality research. Tens of thousands of water quality test results indicated that the treatment approach of utilizing microfiltration pretreatment and reverse osmosis treatment provides a reliable and consistent water quality that meets all State and Federal drinking water standards. The water produced at the pilot project consisted of approximately 300 parts per million (ppm) of total dissolved solids, lower than typical tap water in southern California. Figure 10-2 shows the microfiltration and reverse osmosis membranes used in the pilot demonstration project.

**Figure 10-2: Treatment Technologies Used at West Basin's Pilot Plant**

*Example of Reverse Osmosis Units*

*Microfiltration Unit*



West Basin's ocean-water desalination pilot project was designed to be a regional and national asset, and it was an open, collaborative effort that has benefited the entire water industry. To fund the $7 million combined cost of the pilot project, West Basin partnered with major agencies within and related to the water industry, including the American Water Works Association Research Foundation, California Avocado Commission, City of Tampa Bay, DWR, East Bay Municipal Utility District, Long Beach Water Department, Los Angeles Department of Water and Power, MWD, National Water Research Institute, San Diego County Water Authority, South Florida Water Management District, and United States Bureau of Reclamation.

## 10.3 Ocean-Water Desalination Demonstration Facility Projects

Following the pilot project, West Basin's next objective was to evaluate several critical components of the ocean-water desalination process through a small full-scale desalination demonstration project. In early 2009, West Basin received all necessary permits to proceed with the construction of the West Basin Ocean-Water Desalination Demonstration Facility and Water Education Center. West Basin used the data acquired from the pilot project in the planning and development of the demonstration facility that is co-located at the SEA Lab Marine Educational Facility in Redondo Beach, California.

The Demonstration Facility draws in 500,000 gallons of seawater a day to perform various research and testing activities. Of the total intake volume, 100,000 gal/day is treated to produce 50,000 gal/day of drinking water (although the product water meets all drinking water standards, by permit the District is required to re-combine the water and return it to the ocean). This demonstration will develop a basis of design for a future full-scale desalination plant by accomplishing the following goals:

- Evaluating environmentally safe intake and concentrate discharge technologies and impacts
- Optimizing operation and maintenance procedures using full-scale elements
- Optimizing performance of energy recovery devices
- Analyzing water quality (as a continuation of the pilot plant testing)
- Providing opportunities for public and stakeholder education

Figure 10-3 shows the construction of the Demonstration Facility and Water Education Center within the facility.

## 10.4 Future Ocean-Water Desalination Projects

### 10.4.1 Ocean-Water Desalination Full-Scale Facility

This Ocean-Water Desalination Demonstration Facility will test the viability of a future, full-scale Ocean-Water Desalination Facility capable of providing up to 20,000 AFY, or enough to supply 40,000 families for a year. Pending the findings from the

demonstration facility and the environmental review process, West Basin anticipates permitting, financing, and constructing a full-scale facility by 2017. West Basin will perform a Desalination Program Master Plan in 2011 that will evaluate potential siting opportunities within West Basin's service area that could accommodate a full-scale facility. Potable water produced by the future ocean-water desalination facility will be supplied to local and/or regional drinking water distribution systems.

**Figure 10-3: West Basin's New Desalination Demonstration Facility**

*Construction of Demonstration Facility*

*Water Education Center*

*Water Education Center*

*Water Education Center*

**Table 10-1: Opportunities for Desalinated Water**

| Sources of Water | Yield AFY | Start Date | Type of Use |
|---|---|---|---|
| Ocean Water | 20,000 | June 2017 | Potable |



## 10.5 Brewer Desalter Treatment Facility

West Basin owns the C. Marvin Brewer Desalter Facility which began operating in July 1993. The Desalter was built on a site owned by California Water Service Company (CWSC) in the City of Torrance where it removes chloride from groundwater impacted by seawater intrusion in the WCGB. The Desalter was initially conceived as a five-year pilot program to see if brackish water could be economically treated to drinking water standards.

The Desalter originally used two wells to pump brackish water from a saline plume remaining within the WCGB. It treats the water using cartridge filters and reverse osmosis, and the treated water is then blended with other potable water. CWSC stores the treated water blend on-site in a 5-million gallon storage reservoir, and ultimately delivers it to consumers through their distribution system. Under the terms of an agreement with CWSC, West Basin reimburses CWSC to operate and maintain the Desalter.

In 2005, enhancements were made to the Desalter program that replaced the two wells with a new, more productive well. This well has the capability to pump 1,600 to 2,400 AFY of brackish groundwater to be treated at the Desalter.

**Figure 10-4: Brewer Desalter Facility Equipment**

*Brewer Extraction Well Site*

*Brewer Desalter RO Treatment*

# Appendices

# APPENDIX A

## Urban Water Management Planning Act

# CALIFORNIA WATER CODE DIVISION 6
# PART 2.6. URBAN WATER MANAGEMENT PLANNING

All California Codes have been updated to include the 2010 Statutes.


| | | |
|---|---|---|
| CHAPTER 1. | GENERAL DECLARATION AND POLICY | 10610-10610.4 |
| CHAPTER 2. | DEFINITIONS | 10611-10617 |
| CHAPTER 3. | URBAN WATER MANAGEMENT PLANS | |
| Article 1. | General Provisions | 10620-10621 |
| Article 2. | Contents of Plans | 10630-10634 |
| Article 2.5. | Water Service Reliability | 10635 |
| Article 3. | Adoption and Implementation of Plans | 10640-10645 |
| CHAPTER 4. | MISCELLANEOUS PROVISIONS | 10650-10656 |


## WATER CODE
## 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.

## WATER CODE
## 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.

## WATER CODE
## 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.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to 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).

## WATER CODE
## 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 those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

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

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

(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.

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

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

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

(A) Water survey programs for single-family residential and 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.

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

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

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

**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.

**10631.5.** (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 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.

**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.

## WATER CODE
## SECTION 10635

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

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

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

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



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

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the 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.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those 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.



## WATER CODE
## 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

## 2010 Urban Water Management Plan Checklist

**Table I-2 Urban Water Management Plan checklist, organized by subject**

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| PLAN PREPARATION | | | | |
| 4 | 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. | 10620(d)(2) | | Section 1.1.4 |
| 6 | Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, 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. Any city or county receiving the notice may be consulted and provide comments. | 10621(b) | | Section 1.1.1 |
| 7 | Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq. | 10621(c) | | N/A |
| 54 | Provide supporting documentation that the urban water management 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 this urban water management plan. | 10635(b) | | Appendix E |
| 55 | 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. | 10642 | | Section 1.1.3 |
| 56 | Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area. | 10642 | | Appendix C |
| 57 | Provide supporting documentation that the plan has been adopted as prepared or modified. | 10642 | | Appendix D |
| 58 | Provide supporting documentation as to how the water supplier plans to implement its plan. | 10643 | | Throughout All Sections of Document |



| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| 59 | Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to 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. This also includes amendments or changes. | 10644(a) | | Appendix D |
| 60 | Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours | 10645 | | Appendix D |
| SYSTEM DESCRIPTION | | | | |
| 8 | Describe the water supplier service area. | 10631(a) | | Section 2 |
| 9 | Describe the climate and other demographic factors of the service area of the supplier | 10631(a) | | Section 2.2 |
| 10 | Indicate the current population of the service area | 10631(a) | Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M. | Section 2.3 |
| 11 | Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections. | 10631(a) | 2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents. | Section 2.3 |
| 12 | Describe other demographic factors affecting the supplier's water management planning. | 10631(a) | | Section 2.3 |
| SYSTEM DEMANDS | | | | |
| 1 | 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. | 10608.20(e) | | Section 3.3 |
| 2 | *Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009. | 10608.36<br>10608.26(a) | Retailers and wholesalers have slightly different requirements | Section 3.4 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| 3 | Report progress in meeting urban water use targets using the standardized form. | 10608.40 | | N/A |
| 25 | Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (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, conjunctive use, and (I) agriculture. | 10631(e)(1) | Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years. | N/A |
| 33 | Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types | 10631(k) | Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030. | Section 1.4 |
| 34 | Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier. | 10631.1(a) | | N/A |
| SYSTEM SUPPLIES | | | | |
| 13 | Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030. | 10631(b) | The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided. | Section 4.1 |
| 14 | Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column. | 10631(b) | Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other. | Section |
| 15 | Indicate whether a groundwater management plan 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. | 10631(b)(1) | | N/A |
| 16 | Describe the groundwater basin. | 10631(b)(2) | | N/A |
| 17 | Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree. | 10631(b)(2) | | N/A |



| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| 18 | Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate "not applicable" in the UWMP location column. | 10631(b)(2) | | Section 4.3 |
| 19 | For groundwater basins that are not adjudicated, provide information as to whether DWR 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. If the basin is adjudicated, indicate "not applicable" in the UWMP location column. | 10631(b)(2) | | N/A |
| 20 | 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 | 10631(b)(3) | | Section 4.3 |
| 21 | Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped. | 10631(b)(4) | Provide projections for 2015, 2020, 2025, and 2030. | Section 4.3 |
| 24 | Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis. | 10631(d) | | Section 4.4 |
| 30 | Include a detailed description of all 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, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project. | 10631(h) | | Section 4.5 |
| 31 | Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater. | 10631(i) | | Section 10 |
| 44 | Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area. | 10633 | | Section 9 |
| 45 | Describe 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. | 10633(a) | | Section 9.2 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| 46 | 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. | 10633(b) | | Section 9.2 |
| 47 | Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use. | 10633(c) | | Section 9.3 |
| 48 | Describe and quantify 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. | 10633(d) | | Section 9.3.2 |
| 49 | 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. | 10633(e) | | Section 9.3.4 |
| 50 | Describe the 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. | 10633(f) | | Section 9.3.7 |
| 51 | Provide 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. | 10633(g) | | Section 9.3.6 |
| WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b] | | | | |
| 5 | Describe water management tools and options to maximize resources and minimize the need to import water from other regions. | 10620(f) | | Throughout All Sections of Document |
| 22 | Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years. | 10631(c)(1) | | Section 5.2 |
| 23 | 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. | 10631(c)(2) | | Section 5.1 |
| 35 | Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage | 10632(a) | | Section 5.3 |



| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| 36 | 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's water supply. | 10632(b) | | Section 5.2 |
| 37 | Identify 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. | 10632(c) | | Section 5.3.6 |
| 38 | Identify 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. | 10632(d) | | Section 5.3.1 |
| 39 | Specify 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. | 10632(e) | | Section 5.3.2 |
| 40 | Indicated penalties or charges for excessive use, where applicable. | 10632(f) | | Section 5.3.4 |
| 41 | Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments. | 10632(g) | | Section 5.3.3-5.3.5 |
| 42 | Provide a draft water shortage contingency resolution or ordinance. | 10632(h) | | Appendix C |
| 43 | Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis. | 10632(i) | | Section 5.3.1 |
| 52 | Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability | 10634 | For years 2010, 2015, 2020, 2025, and 2030 | Section 6 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| 53 | 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, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier. | 10635(a) | | Section 5.2 |
| DEMAND MANAGEMENT MEASURES | | | | |
| 26 | Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided. | 10631(f)(1) | Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules. | Section 7.6 |
| 27 | Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP. | 10631(f)(3) | | Section 7.6 |
| 28 | Provide 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 ability to further reduce demand. | 10631(f)(4) | | Section 7.2 |
| 29 | Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work. | 10631(g) | See 10631(g) for additional wording. | Section 7.6 |
| 32 | Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU. | 10631(j) | Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29. | Appendix G |

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

# APPENDIX C

## Notice of Public Hearing

## Published in Inglewood Today

**LEGAL NOTICE**

**Notice of Public Hearing**

**West Basin Municipal Water District**

PLEASE TAKE NOTICE that the Board of Directors of West Basin Municipal Water District will conduct a Public Hearing on **May 23, 2011** at the hour of **1:00 p.m.** or as soon thereafter as the matter can be heard, in the board room of West Basin's office located at 17140 S. Avalon Blvd., Carson, California to consider adoption of its 2010 Urban Water Management Plan. This planning document assesses West Basin's water resources, demands, and strategies over the next 25 years, as a requirement set forth by the State Department of Water Resources. A Final Draft 2010 Urban Water Management Plan can be found on West Basin's website at www.westbasin.org or a copy can be requested. Interested parties are invited to present oral or written comments.

Dated May 9, 2011

Charlene Jensen
Secretary

## Published in the Daily Breeze

**DB 5-31**

**LEGAL NOTICE**

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PLEASE TAKE NOTICE that the Board of Directors of West Basin Municipal Water District will conduct a Public Hearing on **May 23, 2011** at the hour of **1:00 p.m.** or as soon thereafter as the matter can be heard, in the board room of West Basin's office located at 17140 S. Avalon blvd., Carson, California to consider adoption of its 2010 Urban Water Management Plan. This planning document assesses West Basin's water resources, demands, and strategies over the next 25 years, as a requirement set forth by the State Department of Water Resources. A Final Draft 2010 Urban Water Management Plan can be found on West Basin's website at www.westbasin.org or a copy can be requested. Interested parties are invited to present oral or written comments.

Dated May 9, 2011

Charlene Jensen
Secretary

**Pub: May 09, 16, 2011**

# THE MALIBU TIMES

3864 Las Flores Canyon Road
Malibu, California 90265
(310) 456-5507

**PROOF OF PUBLICATION**
(2015.5 C.C.P)

STATE OF CALIFORNIA,
COUNTY OF LOS ANGELES,

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

The Malibu Times

a newspaper of general circulation, printed and

published Every Thursday

in the City of Malibu
County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the

date of December 1, 19 88,

Case Number C704330; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

5/12, 5/19

all in the year 20 11.
I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Malibu
California, this 19th day of May, 20 11.

Kathy Hao
Signature

This space is for the County Clerk's Filing Stamp

Proof of Publication of
Notice of Public Hearing

Notice of Public Hearing

West Basin Municipal Water District

PLEASE TAKE NOTICE that the Board of Directors of West Basin Municipal Water District will conduct a Public Hearing on May 23, 2011 at the hour of 1:00 p.m. or as soon thereafter as the matter can be heard, in the board room of West Basin's office located at 17140 S. Avalon Blvd., Carson, California to consider adoption of its 2010 Urban Water Management Plan. This planning document assesses West Basin's water resources, demands, and strategies over the next 25 years, as a requirement set forth by the State Department of Water Resources. A Final Draft 2010 Urban Water Management Plan can be found on West Basin's website at www.westbasin.org or a copy can be requested. Interested parties are invited to present oral or written comments. Dated May 9, 2011 Charlene Jensen Secretary 5/12, 5/19/11 The Malibu Times

# APPENDIX D

## Resolution of Urban Water Management Plan Adoption

CERTIFICATION

State of California )
County of Los Angeles ) SS
West Basin Municipal )
Water District )

I, Charlene Jensen, Secretary of West Basin Municipal Water District and of the Board of Directors thereof, do hereby certify that the foregoing is a full, true and correct copy of Resolution No. 05-11-941 **"A RESOLUTION OF THE BOARD OF DIRECTORS OF WEST BASIN MUNICIPAL WATER DISTRICT APPROVING THE 2010 URBAN WATER MANAGEMENT PLAN"** which was adopted at a Regular Board meeting held on May 23, 2011 by the Board of Directors of the West Basin Municipal Water District.

Dated: May 23, 2011

Charlene Jensen, Board Secretary
West Basin Municipal Water District and to
the Board of Directors thereof

G:\directors\boardmisc\certifications\certifywb resolution

**RESOLUTION NO. 05-11-941**

**A RESOLUTION OF THE BOARD OF DIRECTORS
OF WEST BASIN MUNICIPAL WATER DISTRICT
APPROVING THE 2010 URBAN WATER MANAGEMENT PLAN**

**BE IT RESOLVED, by the** BOARD OF DIRECTORS that the Board of Directors hereby adopt and sign a Resolution approving the 2010 Urban Water Management Plan, and

**BE IT RESOLVED,** that the West Basin Municipal Water District hereby agrees and further authorizes that the aforementioned document complies with all applicable requirements set forth in the California Urban Water Management Planning Act of 1983, as amended, and

**BE IT FURTHER RESOLVED,** that the President of the Board of Directors of the West Basin Municipal Water District is hereby authorized to sign the 2010 Urban Water Management Plan.

**PASSED, APPROVED, AND ADOPTED** on the 23rd day, May 2011.

President

ATTEST:

Secretary

(SEAL)

w:\\Plutonium\workgroup\WESTBASINBOARD\RESOS\wb941

# APPENDIX E

## Notice of Urban Water Management Plan Preparation

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Garry Hofer
Operations Manager
California American Water Company
8657 Grand Ave.
Rosemead, CA 91770

Dear Mr. Hofer:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

A workshop for West Basin's retail water agencies will be held in early April at the West Basin headquarters to provide a summary of the draft UWMP including water supply and demand projections. The Public Hearing on the final 2010 UWMP will take place at the West Basin Board of Directors Meeting on May 23, 2011 at 1:00 p.m. Subsequent to the Public Hearing, the Board will consider adoption of the UWMP. West Basin will send a CD of the adopted UWMP in June 2011 to your agency.

If you have any concerns, please contact Fernando Paludi, Water Policy and Resources Development Manager at (310) 660-6214.

Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Henry Wind
District Manager
California Water Service Company
2632 West 237th Street
Torrance, CA 90505

Dear Mr. Wind:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

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If you have any concerns, please contact Fernando Paludi, Water Policy and Resources Development Manager at (310) 660-6214.

Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

James Turner
Water Supervisor
City of El Segundo
350 Main St.
El Segundo, CA 90245

Dear Mr. Turner:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

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If you have any concerns, please contact Fernando Paludi, Water Policy and Resources Development Manager at (310) 660-6214.

Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Glen Kau
Public Works Director
City of Inglewood
One Manchester Blvd.
Inglewood, CA 90301

Dear Mr. Kau:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Vince DeMarco
Interim Director of Public Works
City of Lomita
P.O. Box 340
Lomita, CA 90717

Dear Mr. DeMarco:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

A workshop for West Basin's retail water agencies will be held in early April at the West Basin headquarters to provide a summary of the draft UWMP including water supply and demand projections. The Public Hearing on the final 2010 UWMP will take place at the West Basin Board of Directors Meeting on May 23, 2011 at 1:00 p.m. Subsequent to the Public Hearing, the Board will consider adoption of the UWMP. West Basin will send a CD of the adopted UWMP in June 2011 to your agency.

If you have any concerns, please contact Fernando Paludi, Water Policy and Resources Development Manager at (310) 660-6214.

Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Jim Arndt
Director of Public Works
City of Manhattan Beach
3621 Bell Avenue
Manhattan Beach, CA 90266

Dear Mr. Arndt:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Shad Rezai
Central District Manager
Golden State Water Company
1600 W. Redondo Beach Blvd, #101
Gardena, CA 90247-3226

Dear Mr. Rezai:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

David Rydman
Water Resources Manager
LA County Waterworks District #29
900 S. Freemont Ave.
Alhambra, CA 91803

Dear Mr. Rydman:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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If you have any concerns, please contact Fernando Paludi, Water Policy and Resources Development Manager at (310) 660-6214.

Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Robb Whitaker
General Manager
Water Replenishment District
4040 Paramount Blvd.
Lakewood, CA 90712

Dear Mr. Whitaker:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Tom Erb
Water Resources Manager
Los Angeles Department of Water and Power
P.O. Box 51111, Rm. 1315
Los Angeles, CA 90051

Dear Mr. Erb:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Rob Beste
Public Works Director
City of Torrance
20500 Madronna Ave.
Torrance, CA 90503

Dear Mr. Beste:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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If you have any concerns, please contact Fernando Paludi, Water Policy and Resources Development Manager at (310) 660-6214.

Sincerely,

Rich Nagel
General Manager

LK:jk

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Grace Chan
Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054

Dear Ms. Chan:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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Sincerely,

Rich Nagel
General Manager

LK:jks

17140 S. Avalon Blvd., Suite 210, Carson CA 90746 310-217-2411 www.westbasin.org

March 16, 2011

Water Resources Department
Los Angeles County Department of Public Works
900 S. Fremont Ave
Alhambra, CA 91803

Dear Water Resources Department:

**Notice of Preparation**
**West Basin 2010 Urban Water Management Plan**

West Basin Municipal Water District (West Basin) is currently preparing the 2010 Urban Water Management Plan (UWMP) for its service area as required by the Urban Water Management Planning Act (Act) in California Water Code section 10610. The final draft of the 2010 UWMP will be available for review on West Basin's website at www.westbasin.org and will be sent to your agency in hard copy form at the end of March 2011. This final draft UWMP will include information that is required under the Act and will meet all of the requirements in the 2011 Guidebook issued by the California Department of Water Resources.

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If you have any concerns, please contact Fernando Paludi, Water Policy and Resources Development Manager at (310) 660-6214.

Sincerely,

Rich Nagel
General Manager

LK:jks

# APPENDIX F

## Water Shortage Contingency Resolution

**RESOLUTION NO. 4-09-902**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF WEST BASIN MUNICIPAL WATER DISTRICT ESTABLISHING A WATER SHORTAGE ALLOCATION PLAN FOR CONSERVATION PURPOSES**

**BE IT RESOLVED BY THE BOARD OF DIRECTORS OF WEST BASIN MUNICIPAL WATER DISTRICT** as follows:

**WHEREAS,** the State of California is now in its third consecutive year of drought, with the annual rainfall and the water content in the Sierra Nevada Snowpack being significantly below the amounts needed to fill California's storage reservoir system; and

**WHEREAS,** local rainfall levels for the 2008-2009 water year are 66% of average as of the April 1, 2009, measurement; and

**WHEREAS,** storage in the State's reservoir system is at below normal levels; and

**WHEREAS,** recent legal decisions issued to protect delta smelt and other species have further reduced water supplies available for delivery from the State Water Project; and

**WHEREAS,** Governor Schwarzenegger issued water emergency proclamations on June 12, 2008, and February 27, 2009, both ordering his administration begin taking action to address the water shortage; and

**WHEREAS,** the State Department of Water Resources' allocation of State Water Project water available to Southern California State Water Contractors is only 20% of the contracted supply amount; and

**WHEREAS,** on April 14, 2009, the Metropolitan Water District of Southern California declared that a regional shortage exists and implemented its Water Supply Allocation Plan at a Regional Shortage Level 2, including allocation penalty rates for water use in excess of a member agency's annual allocation; and

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE WEST BASIN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:**

1. The West Basin Municipal Water District Board of Directors declare that there currently is a regional water shortage in the West Basin service area; and

2. The West Basin Water Shortage Allocation Plan, adopted by the West Basin Board on October 27, 2008 shall be implemented by the District's General Manager, effective July 1, 2009 through June 30, 2010, at Level 2 – the level equivalent to the Regional Shortage Level declared by the Metropolitan Water District; and

3. The West Basin Municipal Water District General Manager is hereby authorized and directed to take all necessary action to implement the West Basin Water Shortage Allocation Plan, consistent with its terms.

**PASSED, APPROVED AND ADOPTED** on _____, 2009.

_____
President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the West Basin Municipal Water District at its meeting held on April ___, 2009.

ATTEST:

_____
Secretary

[SEAL]

w:\westbasinboard\resos\wb902

# APPENDIX G

## Demand Management Measures Annual Reports

The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

CUWCC

# Base Year Data

Link to FAQs

**Reporting Unit Base Year**

What is your reporting period? Fiscal

Base Year 2008

**BMP 1.3 Metering**

Number of unmetered accounts in Base Year

**BMP 3.1 & BMP 3.2 & BMP 3.3 Residential Programs**

Number of Single Family Customers in Base Year

Number of Multi Family Units in Base Year

**BMP 3.4 WaterSense Specification (WSS) Toilets**

Number of Single Family Housing Units constructed prior to 1992

Number of Multi Family Units prior to 1992

Average number of toilets per single family household

Average number of toilets per multi family household

Five year average resale rate of single family households

Five-year average resale rate of multi family households

Average number of persons per single family household

Average number of persons per multi family household

**BMP 4.0 & BMP 5.0 CII & Landscape**

Total water use (in Acre Feet) by CII accounts

Number of accounts with dedicated irrigation meters

Number of CII accounts without meters or with Mixed Use Meters

Number of CII accounts

**Comments:** West Basin is a water wholesaler and does not own or operate a potable water distribution system.

The fields in red are required.

Agency name: West Basin Municipal Water Distr

Division name (Reporting unit): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

CUWCC

# WATER SOURCES

2009

**Service Area Population:** 837,683

## Potable Water

| Own Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| Desalter | 770.70 | Groundwater | Sold to Water Retailer - Cal Water |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |

| Imported Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| MWD | 114,293.23 | Surface | Non-Interruptible MWD Water |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |

| Exported Water Name | AF/YEAR | Where Exported? |
|---|---|---|
| California American Water Co. | 1,435.80 | Water Retailer |
| California Water Service Co. | 61,927.80 | Water Retailer |
| City of El Segundo | 8,794.73 | Water Retailer |
| City of Inglewood | 7,136.80 | Water Retailer |
| LA County Waterworks District #29 | 9,886.00 | Water Retailer |
| City of Lomita | 2,420.30 | Water Retailer |
| City of Manhattan Beach | 4,821.60 | Water Retailer |
| Golden State Water Company | 17,870.20 | Water Retailer |
| WRD | 9,773.57 | Groundwater Replenishment Agency |
| | | |
| | | |

The fields in red are required.

Agency name: West Basin Municipal Water Distr

Division name (Reporting unit): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

CUWCC

# 2009

Service Area Population: 837,683

## Non- Potable Water

If you select Other for type, enter

| Own Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| Recycled Water (inside District) | 23,587.89 | Recycled Non Potable | Recycled Water |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |

| Imported Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |

| Exported Water Name | AF/YEAR | Where Exported? such as groundwater recharge, retail, |
|---|---|---|
| Recycled Water (outside District) | 6,320.26 | Recycled Water sold to LADWP and the City of Torrance |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

CUWCC BMP Report Forms

You must enter the reporting unit that we have on record for your agency in order to process a coverage report. Click here to open a table to obtain this number.

CUWCC

View MOU

# 2009

## Wholesale agency assistance programs

### a. Financial Investments and Building Partnerships

List the total monetary amount of financial incentives and equivalent resources provided to retail members to assist with, or to otherwise support, implementation of BMPs, subtotaled by BMP. List regional partnerships developed to encourage resource conservation and maximize economies of scale benefits.

| BMP Section and/or Sub-section Name | Monetary Amount for Financial Incentives | Monetary Amount for Equivalent Resources |
|---|---|---|
| BMP 3 - Residential Programs | $440,000.00 | |
| BMP 4 - CII Programs | $574,521.00 | |
| BMP 5 - Landscape Programs | $325,000.00 | |
| Conservation Master Plan | $100,000.00 | |
| | | |
| | | |

### b. Technical Support

Supply a summary of types of technical support provided to retail agencies

West Basin MWD provides technical support to all eight of its water retail water agencies including the 17 cities it services. West Basin implements conservaiton programs on behalf of its water retailers.

### c. Program Management

If your wholesale agency has assumed reporting responsibility, list the programs managed on behalf of the retail agencies.

| Retail Agency Name | Program Name |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

### d. Water Shortage Allocation

If a water shortage allocation plan or policy has been developed, provide the date of adoption and electronic link to the document or hardcopy.

Date Format: 05/15/2010

Enter the file name of the document.
Send it to natalie@cuwcc.org

### e. Non-signatory Reporting

Receipt of reports

Enter the file name of the document.
Send it to natalie@cuwcc.org

### f. Encourage CUWCC Membership

List of efforts to recruit retailers and amount of dues paid on behalf of retail agencies.

City of El Segundo

Enter the file name of the document.
Send it to natalie@cuwcc.org





e fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

# 2009 BMP 1.2 Water Loss Control

Did your agency complete a pre-screening system audit in 2009? Yes ○ No ◉

If yes, answer the following:

Determine metered sales in AF:

Determine system verifiable uses AF:

Determine total supply into the system in AF:

Definition: other accountable uses not included in metered sales, such as unbilled water use, fire suppression, etc.

Does your agency keep necessary data on file to verify the answers above? Yes ○ No ○

Did your agency complete a full-scale system water audit during 2009? Yes ○ No ○

Does your agency maintain in-house records of audit results or the completed AWWA worksheet for the completed audit which could be forwarded to CUWCC? Yes ○ No ○

Did your agency operate a system leak detection program? Yes ○ No ○

## Comments:

West Basin is a water sholesaler and does not own or operate a potable water distribution system.

The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

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CUWCC

# BMP 1.3 Metering with Commodity

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

## Implementation

Does your agency have any unmetered service connections? ○ Yes ◉ No

If YES, has your agency completed a meter retrofit plan? ○ Yes ○ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? ○ Yes ○ No

Are all new service connections being billed volumetrically? ○ Yes ○ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? ○ Yes ○ No

**Please Fill Out The Following Matrix**

| Account Type | # Metered Accounts | # Metered Accounts Read | # Metered Accounts Billed by Volume | Billing Frequency Per Year | # of estimated bills/yr |
|---|---|---|---|---|---|
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |
| Other | | | | Other | |

Number of CII Accounts with Mixed-use Meters

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

## Feasibility Study

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

**If YES, please fill in the following information:**

A. When was the Feasiblity Study conducted

B. Email or provide a link to the feasibility study (or description of):

**File name(s): Email files to natalie@cuwcc.org** Enter the file name here e.g. WaterWastePreventionOrdinance

**Web address(s) URL: comma-separated list** Enter the URL to your documentation.

**General Comments about BMP 1.3:** West Basin is a water wholesaler and does not own or operate a potable water distrit

The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

CUWCC

2009

# BMP 2.1 Public Outreach

Link to FAQs

View MOU

**Is your agency performing Public Outreach for your Retailers?**

Are there one or more retail agencies that count on your agency to help them comply with this BMP? ○ Yes ◉ No

**Enter the name(s) of the retail agency (comma delimited)**

**Is your agency performing public outreach?**

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

**Public Information Programs List** Did at least one contact take place during each quarter of the reporting year? ✓

| Number of Public Contacts | Public Information Programs |
|---|---|
| 4 | Newsletter articles on conservation |
| 10 | Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets |
| 1 | Landscape water conservation media campaigns |
| 2 | General water conservation information |
| 4 | Website |

**Contact with the Media** Are there one or more retail agencies that count on your agency to help them comply with this BMP? ○ Yes ○ No

**Enter the name(s) of the retail agency (comma delimited)**

**OR Wholesale Agency (Contacts with the Media)**

**Media Contacts List** **Did at least one contact take place during each quarter of the reporting year?** ✓

| Number of Media Contacts | Did at least one contact take place during each quarter of the reporting year? | Media Contact Types |
|---|---|---|
| 18 | | News releases |
| 3 | | Television contacts |
| 6 | | Newspaper contacts |
| | | Select a type of media contact |
| | | Select a type of media contact |
| | | Select a type of media contact |

**Is a Wholesale Agency Performing Website Updates?**

Did one or more retail agencies rely on your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ○Yes ⊙No

**Enter the name(s) of the retail agency (comma delimited)**

**Is Your Agency Performing Website Updates?**

Enter your agency's URL (website address): www.westbasin.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

1. Conservation tips (English & Spanish)
2. Drought, plus need to conserve
3. Availability of conservation programs
4. HETs, Rebates and Ocean Friendly Garden classes

Did at least one Website Update take place during each quarter of the reporting year? ⊙Yes ○No

**Public Outreach Annual Budget**

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

| Category | Amount | Personnel Costs Included? If yes, check the box. | Comments |
|---|---|---|---|
| Public Outreach | $241,973 | | Does not include West Basin labor costs. |
| Marketing Partn | $130,000 | ✓ | Includes South Bay Center labor costs. |
| | | | |
| | | | |
| | | | |
| | | | |

**Comments:**

West Basin Municipal Water District is very active in providing the public with information on its conservation, water recycling and desalination projects. West Basi

The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

Click here to open a table that displays your agency name, reporting unit name and reporting unit number. Please ensure that you enter the correct information.

CUWCC

Link to FAQs

View MOU

# 2009

## BMP 2.2 School Education Programs, Retail Agencies

### School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? ⊙Yes ○No

Enter retailer names, separated by commas:

☑ Materials meet state education framework requirements?

Description of Materials: student coloring and activity booklets

☑ Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students: "Water Conservation" activity booklet, "Using Water Wisely" activity booklet, "Give Water a Second Chance" and "Recycle It" booklet

Number of students reached: 3,000

☐ Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students:

Number of Distribution:

Annual budget for school education program: $250,000.00

Description of all other water supplier education programs:

### School Program Activities

**Classroom presentations:**

Number of presentations: 35 Number of attendees: 2500

**Large group assemblies:**

Number of presentations: Number of attendees:

**Children's water festivals or other events:**

Number of presentations: 1 Number of attendees: 2000

**Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:**

Number of presentations: 20 Number of attendees: 600

**Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):**

| | |
|---|---|
| Description | Distributed West Basin's new WaterStar education kits. Kits sign-up and pledge to save 20 gallons per day. |
| Number distributed | 2,000 |
| **Staffing children's booths at events & festivals:** | |
| Number of booths | |
| Number of attendees | |
| **Water conservation contests such as poster and photo:** | |
| Description | water conservation poster contest |
| Number distributed | 430 |
| **Offer monetary awards/funding or scholarships to students:** | |
| Number Offered | 8 |
| Total Funding | $8,000.00 |
| **Teacher training workshops:** | |
| Number of presentations | |
| Number of attendees | |
| **Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:** | |
| Number of tours or field trips | 110 |
| Number of participants | 5000 |
| **College internships in water conservation offered:** | |
| Number of internships | 1 |
| Total funding | $10,000.00 |
| **Career fairs/workshops:** | |
| Number of presentations | 3 |
| Number of attendees | 200 |
| **Additional program(s) supported by agency but not mentioned above:** | |
| Description | |
| Number of events (if applicable) | |
| Number of participants | |
| **Total reporting period budget expenditures for school education programs (include all agency costs):** | $250,000.00 |

Comments

The fields in red are required.

Agency name: West Basin Municipal Water Distrit

Division name (Reporting unit): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

CUWCC

## WATER SOURCES

# 2010

Service Area Population: 880816

## Potable Water

| Own Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| Desalter | 371.90 | Other | Sold to Water Retailer - Cal Water |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |

| Imported Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| MWD | 108,260.92 | Surface | Non-Interruptible MWD Water |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |
| | | Other | |

| Exported Water Name | AF/YEAR | Where Exported? |
|---|---|---|
| California American Water Co. | 808.80 | Water Retailer |
| California Water Service | 59,653.30 | Water Retailer |
| City of El Segundo | 10,631.82 | Water Retailer |
| City of Inglewood | 6,551.80 | Water Retailer |
| LA County Waterworks District #29 | 8,749.60 | Water Retailer |
| City of Lomita | 2,290.30 | Water Retailer |
| City of Manhattan Beach | 3,301.00 | Water Retailer |
| Golden State Water Company | 16,274.50 | Water Retailer |
| WRD | 13,054.18 | Groundwater Replenishment Agency |
| | | |
| | | |

The fields in red are required.

Agency name: West Basin Municipal Water Distr

Division name (Reporting unit): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

CUWCC

## WATER SOURCES

2010

Service Area Population: 880816

### Non- Potable Water

| Own Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| Recycled Water (inside service area | 23,331.35 | Other | Recycled Water |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |

| Imported Supply Source Name | AF/YEAR | Water Supply Type | Water Supply Description |
|---|---|---|---|
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |
| | | Select a water type. | |

| Exported Water Name | AF/YEAR | Where Exported? |
|---|---|---|
| Recycled Water (outside area) | 7,052.80 | Recycled Water sold to LADWP and the City of Torrance. |
| | | |
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The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

CUWCC

CUWCC BMP Report Forms

You must enter the reporting unit that we have on record for your agency in order to process a coverage report. Click here to open a table to obtain the number.

View MOU

2010

### Wholesale agency assistance programs

#### a. Financial Investments and Building Partnerships

List the total monetary amount of financial incentives and equivalent resources provided to retail members to assist with, or to otherwise support, implementation of BMPs, subtotaled by BMP. List regional partnerships developed to encourage resource conservation and maximize economies of scale benefits.

| BMP Section and/or Sub-section Name | Monetary Amount for Financial Incentives | Monetary Amount for Equivalent Resources |
|---|---|---|
| BMP 3 - Residential Programs | $267,500.00 | |
| BMP 4 - CII Programs | $323,521.00 | |
| BMP 5 - Landscape Programs | $356,000.00 | |
| Conservation Master Plans Project | $100,000.00 | |
| | | |
| | | |

#### b. Technical Support

Supply a summary of types of technical support provided to retail agencies

West Basin MWD provides technical support to all eight of its retail agencies and to its 17 cities. West Basin provides information about regional and local rebates and programs. As part of the Conservation Master Plan Project, West Basin held several workshops with all 8 retailers to help develop technicial master plans. Through the master plan project, West Basin also encouraged its agencies to become members of the CUWCC.

#### c. Program Management

If your wholesale agency has assumed reporting responsibility, list the programs managed on behalf of the retail agencies.

| Retail Agency Name | Program Name |
|---|---|
| | |
| | |
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| | |



Questions? office@cuwcc.org

### d. Water Shortage Allocation

If a water shortage allocation plan or policy has been developed, provide the date of adoption and electronic link to the document or hardcopy.

04/26/2010

Date Format: 05/15/2010

2010 West Basin WSAP Guide-Final2.doc

Enter the file name of the document.
Send it to natalie@cuwcc.org

### e. Non-signatory Reporting

Receipt of reports

Enter the file name of the document.
Send it to natalie@cuwcc.org

### f. Encourage CUWCC Membership

List of efforts to recruit retailers and amount of dues paid on behalf of retail agencies.

Enter the file name of the document.
Send it to natalie@cuwcc.org





The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

# 2010 BMP 1.2 Water Loss Control

### AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software ○ Yes ◉ No

Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

West Basin is a water wholesaler and does not own or operate a potable water distribution

Water Audit Validity Score from AWWA spreadsheet

Agency Completed Training In The AWWA Water Audit Method ○ Yes ○ No

Agency Completed Training In The Component Analysis Process ○ Yes ○ No

Completed/Updated the Component Analysis (at least every 4 years)? ○ Yes ○ No

Component Analysis Completed/Updated Date

### Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective ○ Yes ○ No

### Recording Keeping Requirements:

| | |
|---|---|
| Date/Time Leak Reported | Leak Location |
| Type of Leaking Pipe Segment or Fitting | Leak Running Time From Report to Repair |
| Leak Volume Estimate | Cost of Repair |

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective ○ Yes ○ No

Type of Program Activities Used to Detect Unreported Leaks

### Annual Summary Information

**Complete the following table with annual summary information (required for reporting years 2-5 only)**

| Total Leaks Repaired | Economic Value Of Real Loss | Economic Value Of Apparent Loss | Miles Of System Surveyed For Leaks | Pressure Reduction Undertaken for loss reduction | Cost Of Interventions | Water Saved (AF/Year) |
|---|---|---|---|---|---|---|
| | | | | | | |

Comments: West Basin does not own or operate a potable water distribution system.

The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

CUWCC

# BMP 1.3 Metering with Commodity

2010

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

## Implementation

Does your agency have any unmetered service connections? ○ Yes ○ No

If YES, has your agency completed a meter retrofit plan? ○ Yes ○ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? ○ Yes ○ No

Are all new service connections being billed volumetrically? ○ Yes ○ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? ○ Yes ○ No

**Please Fill Out The Following Matrix**

| Account Type | # Metered Accounts | # Metered Accounts Read | # Metered Accounts Billed by Volume | Billing Frequency Per Year | # of estimated bills/yr |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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| | | | | | |

Number of CII Accounts with Mixed-use Meters

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

## Feasibility Study

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

**If YES, please fill in the following information:**

A. When was the Feasiblity Study conducted

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

**File name(s): Email files to natalie@cuwcc.org**

**Web address(s) URL: comma-separated list**

**Comments:**

West Basin does not own or operate a potable water distribution system.

The fields in red are required.

Agency name: West Basin Municipal Water District

Reporting unit name (District name): West Basin MWD

Reporting unit number: 259

Primary contact:

First name: Gus

Last name: Meza

Email: gusm@westbasin.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

CUWCC

2010

# BMP 2.1 Public Outreach

Link to FAQs

View MOU

**Is your agency performing Public Outreach for your Retailers?**

Are there one or more retail agencies that count on your agency to help them comply with this BMP? ○ Yes ◉ No

**Enter the name(s) of the retail agency (comma delimited)**

**Is your agency performing public outreach?**

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

**Public Information Programs List**

Did at least one contact take place during each quarter of the reporting year? ✓

| Number of Public Contacts | Public Information Programs |
|---|---|
| 4 | Newsletter articles on conservation |
| 12 | Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets |
| 1 | Landscape water conservation media campaigns |
| 3 | General water conservation information |
| 4 | Website |

**Contact with the Media**

Are there one or more retail agencies that count on your agency to help them comply with this BMP? ○ Yes ◉ No

**Enter the name(s) of the retail agency (comma delimited)**

**OR Wholesale Agency (Contacts with the Media)**

**Media Contacts List**

**Did at least one contact take place during each quarter of the reporting year?** ✓

| Number of Media Contacts | Did at least one contact take place during each quarter of the reporting year? | Media Contact Types |
|---|---|---|
| 20 | | News releases |
| 4 | | Television contacts |
| 1 | | Select a type of media contact |
| 10 | | Newspaper contacts |
| 6 | | Written editorials |
| | | Select a type of media contact |

**Is a Wholesale Agency Performing Website Updates?**

Did one or more retail agencies rely on your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ○Yes ⊙No

**Enter the name(s) of the retail agency (comma delimited)**

**Is Your Agency Performing Website Updates?**

Enter your agency's URL (website address): www.westbasin.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

1. Drought message and conservation tips
2. HET Distribution events throughout the year
3. Ocean Friendly Garden Classes
4. Besiness outreach to businesses and restaurants
5. WaterStar youth education program / Water monster video game

Did at least one Website Update take place during each quarter of the reporting year? ⊙Yes ○No

**Public Outreach Annual Budget**

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

| Category | Amount | Personnel Costs Included? If yes, check the box. | Comments |
|---|---|---|---|
| Public Outreach | $195,700 | | This does not include West Basin's labor costs |
| Marketing Partn | $130,000 | ✓ | This includes the labor for the South Bay Cen |
| | | | |
| | | | |
| | | | |
| | | | |

**Comments:**

West Basin is a water wholesaler and is very active in promote its conservation, water recycling and ocean desalination programs to the17 cities within its service

Prepared by:

**West Basin Municipal Water District**
17140 South Avalon Boulevard, Suite 210
Carson, CA 90746
www.westbasin.org

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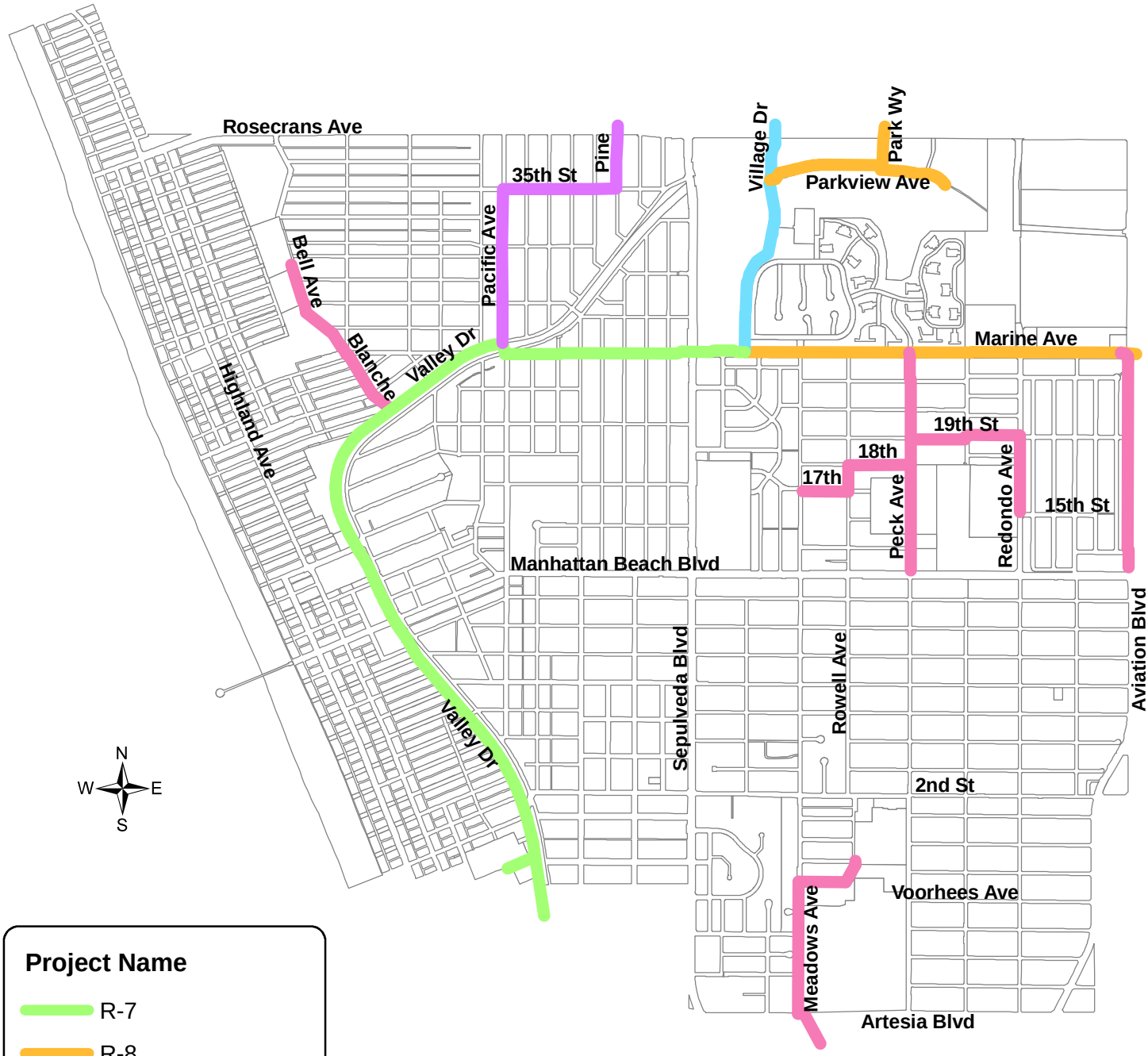
# APPENDIX J

# RECYCLED WATER SYSTEM

Draft

# West Basin Municipal Water District Reclaimed Water Lines




**Project Name**

- R-7
- R-8
- R-13
- R-16
- West Basin Phase I

10/28/2009

Geographic Information System

CITY OF MANHATTAN BEACH

# APPENDIX K

# MUNICIPAL CODE OF ORDINANCES

Draft

# Chapter 7.44 - WATER CONSERVATION

**Sections:**

7.44.010 - Repealed.
7.44.020 - General prohibition.
7.44.030 - Permanent water conservation requirements.
7.44.040 - Drought restrictions.
7.44.050 - Penalties and remedies.
7.44.053 - Repealed.
7.44.056 - Repealed.
7.44.060 - Relief from compliance.
7.44.070 - Failure to comply.
7.44.080 - Hearing regarding violations.
7.44.090 - Repealed.
7.44.100 - Public health and safety not to be affected.
7.44.110 - Severability.

## 7.44.010 - Repealed.

Repealed § 2, Ord. 2122, eff. July 2, 2009 and § 2, Ord. 2131, eff. December 31, 2009

## 7.44.020 - General prohibition.

No customer of the Manhattan Beach Water System shall make, cause, use or permit the use of water from the City water system in a manner contrary to any provision of this chapter or in an amount in excess of that use permitted by any curtailment provisions then in effect pursuant to action taken by the City Council in accordance with the provisions of this chapter.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91)*

## 7.44.030 - Permanent water conservation requirements.

The following water conservation requirements shall apply to all persons within the City of Manhattan Beach:

**A. Landscape.**

1. **Watering Hours.** No lawn or landscape area shall be spray irrigated between the hours of 9:00 a.m. and 6:00 p.m. on any day. This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.
2. **Irrigation Overspray and Runoff.** Water shall not spray or flow to any impermeable private or public surface, including but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains.
3. **Water Drift.** No sprinklers, fountains or other water features shall be operated when winds are so high as to create water drifting causing runoff or flow to any impermeable public surface, including, but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains as well as private driveways, sidewalks and patios.
4. **Over-Irrigation.** It is prohibited to water or irrigate lawns, turf or other landscape beyond saturation causing runoff or flow to any impermeable public surface, including, but not limited to, walkways, driveways, sidewalks, alleys, streets, or storm drains as well as private driveways, sidewalks and patios.
5. **Irrigation During/After a Rain Event.** It is prohibited to water or irrigate any landscaping within twenty-four (24) hours of a one-tenth of an inch (0.10") or greater rainfall event.

**B. Cleaning.** No person shall:

1. Use water to wash, clean or clear any sidewalks, streets, walkways, patios, Driveways, alleys or parking areas, whether paved or unpaved, with a hose connected to a domestic water source unless through use of a water broom. Exception: Pressure washing may be

permitted.

2. Wash or clean with water any vehicle, including, but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or unmotorized, except by use of a hand-held bucket or similar container or a hose equipped with a positive action quick release shutoff valve or nozzle. This subsection shall not apply to any commercial car washing facility which utilizes a recycling system to capture or reuse water.

C. **Water Features and Water Recreation Facilities.** No person shall:

1. Fill any water feature such as a fountain, pond, lake or water display unless the water feature is constructed with a water recirculation system.
2. Fill any water recreation facility such as a hot tub, spa, permanent swimming or wading pool unless the water recreation facility is constructed, installed or equipped with a cover to reduce water loss due to evaporation.

D. **Waste, Ponding and Leaks.** No person shall:

1. Cause, permit or allow water to leak from any exterior or interior pipe, hose or plumbing fixture of any kind whatsoever.
2. Cause, permit or allow water to flow from any source on private or public property into gutters, streets, alleys or storm drains except as a result of rainfall or excessive groundwater from a private sump pump or from a nonpotable source of water.
3. Cause, permit or allow water from any source to pond on private or public property except as a result of rainfall.
4. Cause, permit or allow water to flow from any source on private or public property without beneficial use.

E. **Eating and Drinking Establishments.**

1. All eating and drinking establishments of any kind whatsoever including, but not limited to, any restaurant, hotel, cafe, cafeteria, bar or club, whether public or private, shall only provide drinking water to any person upon receipt of an express request.
2. All food service businesses shall install water conserving pre-rinse nozzles.

F. **Hotels, Motels, Bed and Breakfast.**

1. All hotels, motels and bed and breakfast establishments shall provide customers the option of choosing not to have towels laundered daily. Each establishment shall prominently display notice of this option in each bathroom and sleeping room using clear easily understood language.
2. Within five (5) years from the effective date of this ordinance, July 2, 2009, all guest room toilets shall be replaced with the best available technology low flow toilets.

G. **Carwashes.**

1. Any new carwash system shall have a water recirculation system.
2. Within five (5) years from the effective date of this ordinance, July 2, 2009, all existing carwash systems shall have installed water recirculation systems.

H. **Commercial Establishments In General.**

1. All nonresidential buildings in the City shall within five (5) years from the effective date of this ordinance, July 2, 2009, replace all:
   a. Public toilets and urinals with best available technology low flow toilets and urinals.
   b. Dishwashers with water efficient dishwashers.
2. Water efficient washing machines shall be installed upon replacement of existing or acquisition of new washing machines in nonresidential buildings.

I. **Hoses.** No person shall allow water to flow freely from a hose that is not equipped with a positive action quick release shutoff valve or nozzle.

J. **Exceptions.** The provisions of this section are not applicable to the uses of water which are necessary to protect public health and safety or for essential services, such as police, fire and other similar emergency services.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91; Ord. No. 1846, Amended, 10/15/91; § 3, Ord. 2122, eff. July 2, 2009; § 3, Ord. 2131, eff. December 31, 2009)*

## 7.44.040 - Drought restrictions.

In addition to the permanent water restrictions set forth in Section 7.44.030, the following restrictions shall be imposed upon declaration by the Metropolitan Water District of a phased water shortage:

A. **Stage 1 Water Shortage.** When the Metropolitan Water District implements its stage 1 water shortage allocation reduction, the following restrictions on the use of water from the Manhattan Beach Water System shall be in effect:

1. Landscape irrigation using potable water shall be limited to no more than fifteen (15)

minutes per watering zone per watering day.

**2.** Landscape watering with potable water shall be limited to three (3) times per week between:

**a.** 6:00 p.m. on Monday and 9:00 a.m. the following Tuesday;

**b.** 6:00 p.m. on Wednesday and 9:00 a.m. the following Thursday; and

**c.** 6:00 p.m. on Saturday and 9:00 a.m. the following Sunday.

**3.** This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

**B.** **Stage 2 Water Shortage.** When the Metropolitan Water District implements its stage 2 water shortage allocation reduction, the following restrictions on the use of water from the Manhattan Beach Water System shall be in effect in addition to all stage 1 water shortage restrictions:

**1.** No landscape watering with potable water unless a timed sprinkler system is installed or watering is done with a handheld device.

**2.** Landscape watering with potable water shall be limited to two (2) times per week for not more than fifteen (15) minutes per watering zone from:

**a.** 6:00 p.m. on Wednesday and 9:00 a.m. the following Thursday; and

**b.** 6:00 p.m. on Saturday and 9:00 a.m. the following Sunday.

**3.** This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

**C.** **Stage 3 Water Shortage.** When the Metropolitan Water District implements its stage 3 water shortage allocation reduction, the following restrictions on the use of water from the Manhattan Beach Water System shall be in effect in addition to the stage 1 and 2 water shortage restrictions:

**1.** Washing of vehicles is prohibited except at commercial car washes or by mobile high pressure/low volume commercial services.

**2.** Landscape watering with potable water shall be limited to one (1) time per week for not more than fifteen (15) minutes per watering zone from 6:00 p.m. on Wednesday and 9:00 a.m. the following Thursday.

**3.** This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

**D.** **Stage 4 Water Shortage.** When the Metropolitan Water District implements its stage 4 water shortage allocation reduction, the following restrictions on the use of water from the Manhattan Beach Water System shall be in effect in addition to all stage, 1, 2 and 3 water shortage restrictions:

**1.** Home reverse osmosis treatment units and water softeners shall be disconnected or turned off.

**2.** Watering of nonpublic playing fields with potable water is prohibited.

**3.** Landscape watering with potable water shall be limited to one (1) time per week from 6:00 p.m. on Wednesday and 9:00 a.m. the following Thursday by only drip irrigation, hand held hoses, or if reclaimed water is utilized as permitted by law.

**4.** This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

**E.** **Stage 5 Water Shortage or Above.** When the Metropolitan Water District implements its stage 5 through 10 water shortage allocation reduction the following restrictions on the use of water from the Manhattan Beach Water System shall be in effect in addition to all stage 1, 2, 3, and 4 water shortage restrictions:

**1.** Filling of residential swimming pools or spas with potable water is prohibited.

**2.** Landscape irrigation with potable water is prohibited except with a watering can using water captured from indoor use.

**3.** Any additional water conservation measures adopted by the Director of Public Works or his or her designee deemed necessary for the preservation of public health, safety and welfare.

**4.** This subsection shall not apply to any drip irrigation system, irrigation system maintenance, leak repair or new planting of low water usage plants or if reclaimed water is utilized as permitted by law.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91; Ord. No. 1846, Amended, 10/15/91; § 3, Ord. 2122, eff. July 2, 2009; § 3, Ord. 2131, eff. December 31, 2009)*

## 7.44.050 - Penalties and remedies.

Violation of this section shall constitute an infraction and shall be punishable as described in Section 1.04.010(B) of this Code. Any offense which would otherwise constitute an infraction shall be deemed a misdemeanor if a defendant has been convicted of two (2) or more prior violations of this chapter within the twelve (12) month period immediately preceding the commission of the offense. For this purpose, a bail forfeiture shall be deemed to be a conviction of the offense charged. Each day that a violation occurs shall constitute a separate offense.

**B.** In addition to any other surcharge or penalty as may be provided for in this chapter or Code, any customer who fails to comply with any provision of Section 7.44.030 or 7.44.040 may be assessed a surcharge of seventy-five dollars ($75.00) or two hundred percent (200%) of the customer's total water bill for the most recent billing period, whichever is greater. Any customer against whom this fine is assessed shall be entitled to prior notice and may request a hearing regarding imposition of the fine.

**C.** It shall constitute a misdemeanor punishable by a fine not to exceed five hundred dollars ($500.00) or by imprisonment for a period not to exceed six (6) months or both, for any person to knowingly misrepresent any material fact to any employee, agent or representative of the City in any attempt or effort to circumvent or otherwise diminish the effectiveness of any of the requirements imposed by any part of this chapter.

**D.** A violation of any provision of this chapter is declared to be a public nuisance and the City Attorney is authorized to abate such violation(s) by means of a civil action.

**E.** The penalties and remedies established by the chapter shall be cumulative.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91; Ord. No. 1846, Amended, 10/15/91; Ord. No. 1866, Amended, 01/19/93; § 3, Ord. 2122, eff. July 2, 2009; § 3, Ord. 2131, eff. December 31, 2009)*

## 7.44.053 - Repealed.

Repealed § 2, Ord. 2122, eff. July 2, 2009 and § 2, Ord. 2131, eff. December 31, 2009

## 7.44.056 - Repealed.

Repealed § 2, Ord. 2122, eff. July 2, 2009 and § 2, Ord. 2131, eff. December 31, 2009

## 7.44.060 - Relief from compliance.

**A.** A customer may file an application for relief from any provision of this chapter. The City Manager shall develop such procedures as necessary to resolve such application for relief, and shall take reasonable steps to resolve the application for relief. The decision of the City Manager shall be final. The City Manager may delegate these duties and responsibilities under this section as appropriate.

**B.** The application for relief may include a request that the customer be relieved, in whole or in part, from the water use curtailment provisions of Section 7.44.030(C), 7.44.040(C), 7.44.050(C), 7.44.053(C) and 7.44.056(C).

**C.** In determining whether to grant relief and the nature of any relief, the City Manager shall take into consideration all relevant factors including, but not limited to, the following, where any of the following are applicable:

**1.** Whether the applicable reduction in water consumption will result in unemployment;

**2.** Whether additional persons have been permanently added to the household;

**3.** Changes in vacancy factors in multi-family housing;

**4.** Increased number of permanent employees in commercial, industrial, and governmental offices;

**5.** Increased production requiring increased water;

**6.** Water uses during new construction;

**7.** Adjustments to water use caused by emergency health or safety hazards;

**8.** First filling of a permit-constructed swimming pool; and

**9.** Water use necessary for reasons related to family illness or health.

**D.** In order to be considered, an application for relief must be filed with the City of Manhattan Beach within twenty (20) days from the date of the mailing of the water bill which is the subject matter of the application. No relief shall be granted unless the customer shows that he or she has achieved the maximum practical reduction in water consumption other than in the specific areas in which relief is being sought.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91; Ord. No. 1866, Amended, 01/19/93)*

## 7.44.070 - Failure to comply.

**A.** For each violation by any customer of the water use curtailment provisions of Sections 7.44.030(C), 7.44.040(C), 7.44.050(C), 7.44.053(C) or 7.44.056(C), a surcharge upon the customer's regular water

bill shall be imposed in an amount equivalent to the unit rate charged to the City by the Metropolitan Water District for excess water purchased. This amount shall be charged to the customer on that portion of the bill in excess of the limitations of this chapter.

**B.** Penalties for a violation by any customer of the water use prohibitions of subsection (B) of Sections 7.44.030, 7.44.040, 7.44.050, 7.44.053 or 7.44.056 shall be as follows:

**1.** **First Violation.** The City shall issue a written notice to the customer of the fact of a first violation of any water shortage emergency whether it be Phase I, Phase II, Phase III, Phase IV or Phase V.

**2.** **Second Violation.** For a second violation during any water shortage phase, whether it be Phase I, Phase II, Phase III, Phase IV or Phase V, the City shall impose a surcharge of $25.00 upon the customer's regular water bill.

**3.** **Third and Subsequent Violations.** For a third and each subsequent violation during any water shortage, whether it be Phase I, Phase II, Phase III, Phase IV or Phase V, the City shall install a flow restricting device of one (1) gallon per minute capacity for services up to one (1) inch size, and comparatively sized restrictors for larger services, on the service of the customer at the premises at which the violation occurred for a period of not less than forty-eight (48) hours. The City shall charge the customer the reasonable costs incurred for installing and for removing the flow-restricting devices and for restoration of normal service. The charge shall be paid before normal service can be restored. In addition, a surcharge of $50.00 shall be imposed upon the customer's regular water bill.

**C.** The City shall give notice of violation to the customer committing the violation as follows:

**1.** Notice of violation of the water use curtailment provisions of first violations of water use prohibitions of Section 7.44.020 or of subsection (B) of Sections 7.44.030, 7.44.040, 7.44.050, 7.44.053 or 7.44.056 shall be given in writing by regular mail.

**2.** Notice of second or subsequent violations of the water use prohibitions of Section 7.44.020 or of subsection (B) of Sections 7.44.030, 7.44.040, 7.44.050, 7.44.053 or 7.44.056 shall be given in writing in the following manner:

**a.** By giving the notice to the customer personally; or

**b.** If the customer is absent from or unavailable at the premises at which the violation occurred, by leaving a copy with some person of suitable age and discretion at the premises and sending a copy through the regular mail to the address at which the customer is normally billed; or

**c.** If a person of suitable age or discretion cannot be found, by affixing a copy in a conspicuous place at the premises at which the violation occurred and also sending a copy through the regular mail to the address at which the customer is normally billed.

**D.** The notice shall contain a description of the facts of the violation, a statement of the possible penalties for each violation, and a statement informing the customer of the right to a hearing on the merits of violation pursuant to Section 7.44.080

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91; Ord. No. 1866, Amended, 01/19/93)*

## 7.44.080 - Hearing regarding violations.

**A.** Any customer receiving notification of violation of Section 7.44.030(B), 7.44.040(B), 7.44.050(B), 7.44.053(B) or 7.44.056(B) shall have a right to a hearing by the City Manager of the City of Manhattan Beach within fifteen (15) days of mailing or other delivery of the notice of violation.

**B.** The customer's timely written request for a hearing shall automatically stay installation of a flow-restricting device on the customer's premises until the City Manager renders his or her decision.

**C.** The customer's timely written request for a hearing shall not stay the imposition of a surcharge. If it is determined that the surcharge was wrongly charged and paid, the City shall credit any amount due to the unpaid water bill.

**D.** The decision of the City Manager shall be final.

**E.** The City Manager may delegate duties and responsibilities under this section.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91; Ord. No. 1866, Amended, 01/19/93)*

## 7.44.090 - Repealed.

Repealed § 2, Ord. 2122, eff. July 2, 2009 and § 2, Ord. 2131, eff. December 31, 2009

## 7.44.100 - Public health and safety not to be affected.

Nothing in this chapter shall be construed to require the City to curtail the supply of water to any customer when such water is required by that customer to maintain an adequate level of public health and safety.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91)*

### 7.44.110 - Severability.

If any part of this chapter or the application thereof to any person or circumstances is for any reason held invalid by a court of competent jurisdiction, the validity of the remainder of the chapter or the application of such provision to other persons or circumstances shall not be affected.

*(Ord. No. 1833, Enacted, 01/15/91; Ord. No. 1836, Rep&ReEn, 03/19/91)*

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# APPENDIX L

# REVISED WATER SHORTAGE CONTINGENCY PLAN

Draft

# REVISED

# WATER SHORTAGE CONTINGENCY

# PLAN

CITY OF MANHATTAN BEACH
1400 HIGHLAND AVENUE
MANHATTAN BEACH, CALIFORNIA
90266

SEPTEMBER 21, 1992

RESOLUTION NO. 4965

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH, CALIFORNIA, ADOPTING A REVISED WATER SHORTAGE CONTINGENCY PLAN IN CONFORMANCE WITH THE GUIDELINES ESTABLISHED BY THE CALIFORNIA STATE DEPARTMENT OF WATER RESOURCES

WHEREAS, Assembly Bill 11 signed into law by Governor Wilson on October 13, 1991, requires that each urban water supplier must prepare and adopt a Water Shortage Contingency Plan; and

WHEREAS, in April, 1992, the City of Manhattan Beach City Council adopted a Water Shortage Contingency Plan prepared by the West Basin Municipal Water District; and

WHEREAS, the State Department of Water Resources, the enforcement agency for Assembly Bill 11, has determined that revisions need to be made to the previously adopted plan; and

WHEREAS, the appropriate changes are included in the Revised Water Shortage Contingency Plan.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Manhattan Beach adopts a Revised Water Shortage Contingency Plan in conformance with the guidelines established by the California State Department of Water Resources.

PASSED, APPROVED and ADOPTED this 3rd day of November, 1992.

Ayes: Barnes, Sieber, Napolitano, Lilligren, Mayor Stern
Noes: None
Absent: None
Abstain: None

/s/ Dan Stern
Mayor, City of Manhattan Beach
California

/s/ LaVonne M. Harkless
Assistant City Clerk

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## INTRODUCTION.

The City of Manhattan Beach has a service area of 3.89 square miles. The City is located about twenty miles Southwest from downtown Los Angeles and has a footage on the Pacific Ocean of two and one-quarter miles. The City is a member agency to the West Basin Municipal Water District. West Basin has five representing members on the Metropolitan Water District of Southern California Board of Directors. The City provides service to approximately 32,140 water customers.

## SECTION 1.

## SOURCES OF SUPPLY.

The City of Manhattan Beach depends on MWD to provide 85 percent of it's annual water requirements. The total maximum capacity through this single connection is 9.68 MGD.

The City draws ground water from the West Coast Basin with adjudicated rights to pump 1,131 acre feet per year. The well has an average capacity of approximately 2.08 MGD. The well provides approximately 15 percent of the City's annual water requirements.

The City intends to drill another well in the near future. The advantages of a second well are: the City could purchase water in times of wet years, and inject it into the groundwater aquifers. Then during dry years, in times of emergencies or high demands it could be pumped out.

**TABLE 1 - PURCHASED AND GROUNDWATER JAN. to DEC. 1986 - 1991 (ACRE FEET/YR)**

| YEAR | PURCHASED | | GROUNDWATER | | TOTAL |
|---|---|---|---|---|---|
| 1986 | 5,807 | 84% | 1,142 | 16% | 6,949 |
| 1987 | 6,252 | 88% | 873 | 12% | 7,125 |
| 1988 | 6,073 | 84% | 1,141 | 16% | 7,214 |
| 1989 | 6,524 | 88% | 894 | 12% | 7,419 |
| 1990 | 6,185 | 86% | 1,014 | 14% | 7,199 |
| 1991 | 4,626 | 83% | 927 | 17% | 5,553 |

## COORDINATION OF WATER SHORTAGE CONTINGENCY PLAN WITH OTHER AGENCIES.

Under the provisions of the Assembly Bill 11X water retailers and wholesalers are required to prepare water shortage contingency plans. The Metropolitan Water District of Southern California, West Basin Municipal Water District, and the Water Replenishment District of Southern California, are primary resources for the implementation of the City's water conservation plan. Information provided by these agencies was used in the preparation of the City's Water Shortage Contingency Plan.

The City also participates in drought coordination meetings held by West Basin, and has attended numerous workshops sponsored by this wholesale water agency. Attendance at these meetings keeps department personnel abreast of the changing drought conditions.

## COORDINATION OF DISASTER PLANNING WITH OTHER AGENCIES.

Should the need arise to provide emergency service to adjoining water agencies, West Basin has compiled information on emergency interconnections with all water agencies in the basin. The City of Manhattan Beach and the City of El Segundo have two emergency interconnections between the two systems. One connection is located at Highland Avenue and 45th Street, the other is located at Rosecrans Avenue and Redondo Avenue. These two connections could supply either agency with water in the event of a water supply problem or could be used to transport additional water supplies during drought conditions.

An additional emergency interconnection between the City of Manhattan Beach and the Los Angeles County Flood Control District is located at Manhattan Beach Boulevard and Redondo Avenue.

Certain Cities in the West Basin region have meet to begin drafting a proposal that would allow participating members to share ground water and surface water in the case of emergencies and/or drought conditions.

The City is currently drafting a Master Disaster Plan which should be operational in the very near future.

## SECTION 2.

## PAST, CURRENT AND PROJECTED WATER USE 1991 - 1994.

The City of Manhattan Beach is primarily a residential community with a regional shopping area. The community has very little remaining land for development. A major amount of new construction will be the destruction of two bedrooms/ one bath houses and the construction of new houses with four or five bedrooms and four or five baths. There is one major project currently under construction that will also increase the City's water demand in the next several years. This project will involve the construction of 100 units of low income and senior housing.

The following table is a breakdown of projected water usages between 1991 and 1994.

**TABLE 2 - PROJECTED USAGE 1991 -1994 (ACRE FEET)**

| City of Manhattan Beach | Rec. 1991 | Est. 1992 | Est. 1993 | Est. 1994 |
|---|---|---|---|---|
| Number of Services | 12,576 | 12,587 | 12,594 | 12,600 |
| Demand (Sales) Per Serv. (AF/Yr) | 0.419 | 0.461 | 0.483 | 0.471 |
| Annual Demand (Sales) | 5,271 | 5,798 | 6,088 | 5,936 |
| Unaccountable | 282 | 282 | 282 | 282 |
| Total Supply | 5,553 | 6,080 | 6,370 | 6,218 |

## SECTION 3.

## WORST CASE WATER SUPPLY AVAILABILITY FOR 12, 24 AND 36 MONTHS.

The City of Manhattan Beach is located in the West Basin Groundwater Basin, an adjudicated groundwater basin. The ability to pump from this basin has been established on the water rights owned by the water purveyor. The City currently owns 1,131 acre feet of pumping rights within the basin. In a normal water year, this accounts for approximately 15 percent of the City's portable water demand.

The City has the ability to carry-over up to 10 percent of its unused pumping allocation rights to the next water year. Any over-extractions will result in a equal reduction of the pumping allocation for the following year. The City also has the opportunity to lease groundwater extraction rights from other water purveyors within the basin.

The City is dependent upon MWD through West Basin to provide the remaining 85 percent of the City's portable water demand. In a worst case situation where the City received only 50 percent of the normal supply from MWD, a major impact would be felt by all water customers.

The following chart indicates the City's predicted worst case water supply shortages for 12, 24, 36 months. It anticipates a reduction in the purchased water from MWD of 50 percent in Fiscal Year 1993 and 50 percent in Fiscal Year 1994.

**TABLE 3 - SUPPLY SOURCES AND WORST CASE SUPPLY PROJECTIONS. (ACRE FEET)**

| Source | Recorded 1991 | Projected Worst Case 1992 | 1993 | 1994 |
|---|---|---|---|---|
| Total From Well | 927 | 940 | 1,131 (1) | 1,131 (1) |
| Total Purchased Water | 4,626 | 4,701 | 2,313 (2) | 2,313 (2) |
| Total Water Supply | 5,553 | 5,641 | 3,444 | 3,444 |
| Projected Demand | 5,553 | 5,641 | 6,364 | 6,212 |
| Percent Shortage | None | None | 54% | 54% |
| Potable Supply Shortfall (Surplus) | | | 2,920 | 2,768 |

Note:

(1) Maximum adjudicated well water that maybe pumped per year.

(2) A 50% reduction in purchased water from MWD in comparison to 1991.

On March 19, 1991 the Manhattan Beach City Council adopted a Water Conservation Ordinance (See Appendix I) and instituted a Phase II water supply shortage on April 1, 1991.

On April 7, 1992 the City Council revised the mandatory water conservation ordinance and adopted a Voluntary Ten Percent Water Conservation Program (See Appendix I).

## SECTION 4.

## PHASES OF ACTION.

The City of Manhattan Beach has developed a three phase conservation and water restriction plan. The implementation of any phase of the water conservation ordinance is based on the existing predicted water supply outlook as determined by the State Department of Water Resources, the Metropolitan Water District of Southern California, West Basin Municipal Water District, and the Water Replenishment District. The implementation of the water conservation ordinance or movement from one phase to another is accomplished by the adoption of a resolution by the City Council. Such a resolution will enact the appropriate water use restrictions.

**TABLE 4 - RATIONING PHASES AND REDUCTION GOALS.**

| Shortage | Phase | Demand Reduction Goal | Type of Program |
|---|---|---|---|
| No Shortage | None | 0 | None |
| 0 - 10% | Voluntary | Up to 10% | Voluntary |
| Up to 10% | I | 10% | Mandatory |
| Up to 20% | II | 20% | Mandatory |
| Up to 30% | III | 30% | Mandatory |
| Up to 40% | IV | 40% | Mandatory |
| Up to 50% | V | 50% | Mandatory |

## SECTION 5.

## SUPPLY SHORTAGE TRIGGERING LEVELS.

The two water sources for Manhattan Beach are groundwater and imported surface water, coming from Northern California and the Colorado River. When MWD establishes a water rationing program, there is a major impact upon the City. Shortages may trigger a change in phase at any time.

**TABLE 5 - WATER SUPPLY TRIGGERING LEVELS.**

| PHASE | PERCENTAGE OF REDUCTION |
|---|---|
| Phase I | Up to 10% Supply Reduction |
| Phase II | Up to 20% Supply Reduction |
| Phase III | Up to 30% Supply Reduction |
| Phase IV | Up to 40% Supply Reduction |
| Phase V | Up to 50% Supply Reduction |

## SECTION 6.

## MANDATORY PROHIBITIONS.

The City of Manhattan Beach water conservation ordinance includes provisions for restricting water use. The following restrictions are included with the existing conservation ordinance.

### Voluntary Water Conservation Plan

Suggested water conservation practices under a voluntary phase.

- Washing of hard-scape areas should only occur when necessary for sanitation purposes.
- Washing vehicles should only be done when using a bucket and a hose equipped with a positive shut off nozzle.
- Known leaks must be repaired promptly.
- Water of landscape or other turf area should be done between the hours of 5:00 PM to 9:00 AM.
- Decorative fountains must operate with a recirculating water system.
- Water should only be served upon request at public eating establishments.
- Water run-off from landscape areas onto hard-scapes areas should be prevented.
- Installation of water efficient plumbing fixtures.
- Installation of drought-tolerant landscapes.

### Phase I Mandatory Water Conservation Plan

Mandatory water use restrictions.

- Reduced water consumption by at least 10% from the base year.
- Washing of hard-scape areas except as is required for sanitary purposes prohibited.
- Washing of any type of vehicle(s) except with a hand-held bucket or a hose equipped with a positive shut-off nozzle prohibited.
- Water to clean, fill, or maintain levels in decorative fountains must operate with a recycling system or a storm drain system.
- Water should only be served upon request at public eating establishments.
- Leaks must be repaired promptly.
- Residential irrigation only between the hours of 4:00 PM to 10:00 AM Pacific Standard Time.
- Run-off from landscape areas onto hard-scape areas due to incorrectly directed or maintained sprinklers or excessive watering prohibited.

## Phase II Mandatory Water Conservation Plan

Mandatory water use restrictions. All restrictions under Phase I are applicable.

- o Reduced water consumption by at least 20% from the base year.
- o Watering of landscape areas prohibit any person from watering during the hours of 7:00 AM to 6:00 PM Pacific Daylight Time and 7:00 AM to 3:00 PM Pacific Standard Time.
- o An operator or owner of a commercial nursery, golf course, or other water-dependent industry may water any landscape area during the hours 4:00 PM to 10:00 AM. No restrictions on watering with reclaimed water.

## Phase III Mandatory Water Conservation Plan

Mandatory water use restrictions. All restrictions under Phase I and Phase II are applicable.

- o Reduced water consumption by at least 30% from the base year.
- o No watering of any residential landscape irrigation area except by hand carried bucket or drip irrigation system.
- o A drip irrigation system shall be defined as an irrigation system consisting of individual emitters installed at permanent plantings with a capacity to emit no more than one (1) gallon of water per hour of operation.
- o An operator or owner of a commercial nursery, golf course, or other water-dependent industry may water any landscape area during the hours of 6:00 PM to 6:00 AM. No restrictions on watering with reclaimed water.
- o Fire hydrants limited to fire fighting and related activities, and to maintain public health, safety and welfare.

## Phase IV Mandatory Water Conservation Plan

Mandatory water use restrictions. All restrictions under Phase I, Phase II, and Phase III are applicable.

- o Reduced water consumption by at least 40% from the base year.
- o No watering of any residential landscape irrigation area except by hand carried bucket or drip irrigation system, once (1) during a seven (7) day period during the months of June, July, August and September, and prohibited during the hours of 7:00 AM to 6:00 PM.
- o No watering of any residential landscape irrigation area except by hand carried bucket or drip irrigation system, once (1) during a fourteen (14) day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 7:00 AM to 3:00 PM.
- o A drip irrigation system shall be defined as an irrigation system consisting of individual emitters installed at permanent plantings with a capacity to emit no more than one (1) gallon of water per hour of operation.

- Irrigation of commercial nurseries, golf courses, or other water-dependent industries shall be restricted to no more than twice (2) during a seven (7) day period. The irrigation shall be prohibited during the hours of 6:00 AM to 6:00 PM. There shall be no restriction on watering with reclaimed water.

Phase V Mandatory Water Conservation Plan

Mandatory water use restrictions. All restrictions under Phase I, Phase II, Phase III and Phase IV are applicable.

- Reduced water consumption by at least 50% from the base year.
- Residential landscape irrigation shall be restricted to watering only permanent trees and shrubs with a hand carried bucket or drip irrigation system, once (1) during a seven (7) day period during the months of June, July, August and September, and prohibited during the hours of 7:00 AM to 6:00 PM.
- Residential landscape irrigation shall be restricted to watering only permanent trees and shrubs with a hand carried bucket or drip irrigation system, once (1) during a fourteen (14) day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 7:00 AM to 3:00 PM.
- A drip irrigation system shall be defined as an irrigation system consisting of individual emitters installed at permanent plantings with a capacity to emit no more than one (1) gallon of water per hour of operation.
- Irrigation of commercial nurseries, golf courses, or other water-dependent industries shall be restricted to no more than once (1) during a seven (7) day period. The irrigation shall be prohibited during the hours of 6:00 AM to 6:00 PM. There shall be no restriction on watering with reclaimed water.

## SECTION 7.

## CONSUMPTION LIMITS.

Water allocation for each customer is the percentage of the quantity of water used by such customer during the comparable billing periods of the historical base period of 1989 except that residential customers and/or commercial customers with 5/8 inch, 3/4 inch, or 1 inch water meters will not be required to use less than the equivalent of the amount of water allocated per billing period found in TABLE 6.

If there is no water usage in the historical base period, Table 6 will be used to provide the new water allocation for that water customer.

Any customer that has exceeded their allocation may make a written appeal to the City for a possible adjustment to their allocation. All appeals shall be processed on a case by case basis.

**TABLE 6 EMERGENCY WATER CONSERVATION PLAN, PHASE 1 - PHASE 5.**

| Phase | Customer Type | Billing Units Per Bi-Monthly | Gal/Day |
|---|---|---|---|
| I | Single Family Res. | 26 | 324 |
| | Multi-Family Res./ Duplex Res. | 20 | 249 |
| | Comm./Indust./Bus. | 16 or 95% of base year | |
| II | Single Family Res. | 24 | 299 |
| | Multi-Family Res./ Duplex Res. | 18 | 224 |
| | Comm./Indust./Bus. | 15 or 90% of base year | |
| III | Single Family Res. | 21 | 262 |
| | Multi-Family Res./ Duplex Res. | 15 | 187 |
| | Comm./Indust./Bus. | 13 or 80% of base year | |
| IV | Single Family Res. | 18 | 224 |
| | Multi-Family Res./ Duplex Res. | 13 | 162 |
| | Comm./Indust./Bus. | 11 or 70% of base year | |
| V | Single Family Res. | 15 | 187 |
| | Multi-Family Res./ Duplex Res. | 11 | 137 |
| | Comm./Indust./Bus. | 9 or 60% of base year | |

## SECTION 8.

## PENALTIES OR CHARGES FOR EXCESS USAGE.

- For each violation by any customer of the water use for excessive usage, a surcharge upon the customer's regular water bill shall be imposed in an amount equivalent to the unit rate charged to the City by the Metropolitan Water District for excess water purchased. This amount shall be charged to the customer on that portion of the bill in excess of the limitations.

- Penalties for a violation by any customer of the water use for wasting water shall be as follows:

First Violation: A written notice concerning a violation of Phase I, Phase II or Phase III. Notification will be through the regular mail.

Second Violation: A written notice concerning a violation of Phase I, Phase II or Phase III and a surcharge of $25.00 upon the customer's regular water bill. Notification will be personally presented to the customer, affixing a copy to premises or sending a copy through the regular mail.

Third Violation and Subsequent Violations: A written notice concerning a violation of Phase I, Phase II or Phase III and a surcharge of $50.00 upon the customer's water bill. The installation of a flow restricting device limiting the gallons per minutes. The device to remain in place for at least 48 hours. There will be a service charge for the installation and removal of the flow restricting device. Notification will be personally presented to the customer, affixing a copy to the premises or sending a copy through the regular mail.

Hearing Regarding Violations: Any customer receiving a notification of violation has a right to a hearing by the City Manager within 15 days of mailing or delivery of the notice. The hearing will stay installation of a flow restrictor and any surcharges until after the hearing when a decision has been made. The City Manager may delegate duties and responsibilities.

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## SECTION 9.

## ANALYSIS OF REVENUE AND EXPENDITURE IMPACTS.

Table 7 shows the City of Manhattan Beach's revenues and expenditures and the projected fiscal impacts of reduced sales due to shortages.

## TABLE 7 - REVENUE AND EXPENSES.

### WATER FUND DETAIL SCHEDULE OF VOLUME REVENUES, EXPENDITURES, AND AVAILABLE FUND BALANCES

| | 1992-93 BASED ON 1989-90 | Less 10.00% | Less 20.00% | Less 30.00% | Less 40.00% | Less 50.00% |
|---|---|---|---|---|---|---|
| ACRE FEET INTO SYSTEM | 7,299 | 6,569 | 5,839 | 5,109 | 4,379 | 3,650 |
| WATER SALES | 4,133,800 | 3,847,550 | 3,561,300 | 3,275,040 | 2,988,790 | 2,702,540 |
| PENALTY & RECONNECT | 34,000 | 32,000 | 30,000 | 28,000 | 27,000 | 26,000 |
| SERVICE INSTALLATION | 10,500 | 10,500 | 10,500 | 10,500 | 10,500 | 10,500 |
| CONNECTION FEES | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 |
| CONSTRUCTION & MISC | 6,600 | 6,600 | 6,600 | 6,600 | 6,600 | 6,600 |
| DISSOLUTION/SALE OF PROP | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 |
| CONSERVE REBATE (MWD) | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| CONSERVATION CHARGE | 0 | 0 | 0 | 0 | 0 | 0 |
| INTEREST & RENTS | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL REVENUES | 4,784,900 | 4,496,650 | 4,208,400 | 3,920,140 | 3,632,890 | 3,345,640 |
| CAPITAL PROJECTS | 813,000 | 813,000 | 813,000 | 813,000 | 813,000 | 813,000 |
| PUBLIC WORKS | | | | | | |
| SALARIES | 50,780 | 50,780 | 50,780 | 50,780 | 50,780 | 50,780 |
| EMPLOYEE BENEFITS | 14,040 | 14,040 | 14,040 | 14,040 | 14,040 | 14,040 |
| MATERIALS & SERVICES | | | | | | |
| | 64,820 | 64,820 | 64,820 | 64,820 | 64,820 | 64,820 |
| PUBLIC SERVICES | | | | | | |
| SALARIES | 484,600 | 484,600 | 484,600 | 484,600 | 484,600 | 484,600 |
| EMPLOYEE BENEFITS | 139,240 | 139,240 | 139,240 | 139,240 | 139,240 | 139,240 |
| PURCHASED WATER | 2,226,430 | 1,962,920 | 1,699,420 | 1,435,910 | 1,172,400 | 908,890 |
| POWER- WELLS | 85,900 | 85,900 | 81,900 | 85,900 | 85,900 | 85,900 |
| POWER- DISTRIBUTION | 38,000 | 36,000 | 34,000 | 33,000 | 32,000 | 31,000 |
| LIABILITY/BLDG MAINT | 29,540 | 29,540 | 29,540 | 29,540 | 29,540 | 29,540 |
| ASSESSMENTS- WELLS | 156,460 | 156,460 | 156,460 | 156,460 | 156,460 | 156,460 |
| MATERIALS & SERVICES | 190,000 | 185,000 | 181,000 | 177,000 | 173,000 | 169,000 |
| PURCHASE OF PROPERTY | | | | | | |
| EQUIPMENT | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 |
| VEHICLE LEASE | 38,230 | 38,230 | 38,230 | 38,230 | 38,230 | 38,230 |
| | 3,393,800 | 3,123,290 | 2,849,790 | 2,585,280 | 2,316,770 | 2,048,260 |
| FINANCE | | | | | | |
| SALARIES | 151,020 | 151,020 | 151,020 | 151,020 | 151,020 | 151,020 |
| EMPLOYEE BENEFITS | 40,280 | 40,280 | 40,280 | 40,280 | 40,280 | 40,280 |
| MATERIALS & SERVICES | 47,020 | 47,020 | 47,020 | 47,020 | 47,020 | 47,020 |
| EQUIPMENT | 12,350 | 12,350 | 12,350 | 12,350 | 12,350 | 12,350 |
| VEHICLE LEASE | 3,170 | 3,170 | 3,170 | 3,170 | 3,170 | 3,170 |
| LIABILITY/BLDG MAINT | 25,220 | 25,220 | 25,220 | 25,220 | 25,220 | 25,220 |
| BAD DEBTS | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 |
| UTILITIES | 3,190 | 3,190 | 3,190 | 3,190 | 3,190 | 3,190 |
| | 289,250 | 289,250 | 289,250 | 289,250 | 289,250 | 289,250 |

22

| | 1992-93 BASED ON 1989-90 | Less 10.00% | Less 20.00% | Less 30.00% | Less 40.00% | Less 50.00% |
|---|---|---|---|---|---|---|
| PURCHASING/WAREHOUSE | | | | | | |
| SALARIES | 12,560 | 12,560 | 12,560 | 12,560 | 12,560 | 12,560 |
| EMPLOYEE BENEFITS | | | | | | |
| MATERIALS & SERVICES | | | | | | |
| LIABILITY/BLDG MAINT | | | | | | |
| | --- | --- | --- | --- | --- | --- |
| | 12,560 | 12,560 | 12,560 | 12,560 | 12,560 | 12,560 |
| NON-DEPARTMENTAL | | | | | | |
| CCA RENT | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| IN LIEU | 127,000 | 118,000 | 109,000 | 100,000 | 91,000 | 82,000 |
| MISC | | | | | | |
| | --- | --- | --- | --- | --- | --- |
| | 137,000 | 128,000 | 119,000 | 110,000 | 101,000 | 92,000 |
| TOTAL EXPENDITURES | 4,710,430 | 4,430,920 | 4,148,420 | 3,874,910 | 3,597,400 | 3,319,890 |
| EXCESS (DEFICIT) OF REVENUES/EXPENDITURES | 74,470 | 65,730 | 59,980 | 45,230 | 35,490 | 25,750 |
| BEGINNING BAL | 421,689 | 421,689 | 421,689 | 421,689 | 421,689 | 421,689 |
| ENDING BALANCE | 496,159 | 421,689 | 481,669 | 466,919 | 457,179 | 447,439 |

## SECTION 10.

## IMPLEMENTING THE PLAN.

Phase I of the conservation ordinance became effective on March 19, 1991 and Phase II of the ordinance became effective April 1, 1992. A revised water conservation ordinance was adopted on September 24, 1991 and became effective immediately. A voluntary resolution became effective on April 7, 1992.

Appendix 1 provides a copy of Ordinance 1836 relating to water conservation, Resolution 4789 instituting a 20% mandatory water conservation program and Resolution 4892 adopted by City Council concerning the current voluntary 10 percent water conservation program.

Once the City's water conservation ordinance is revised to include Phase IV 40% reduction, and Phase V 50% reduction, the City Council may order the implementation of any of the five Phases.

## SECTION 11.

## WATER USE MONITORING PROCEDURES.

### Normal Monitoring Procedures

In normal water supply conditions, production figures are recorded daily, totals are reported monthly to the Utility Superintendent, and Finance Department. A report is forwarded to Metropolitan Water District informing them of the water consumption for a particular billing period. A second report is forwarded to West Basin concerning the amount of water pumped from the well.

The City maintains water use records on each individual customer accounts. Exceptionally high usage is identified at meter reading time by the Finance Department personnel. These accounts are investigated for potential water loss or abuse problems.

### Monitoring Procedures During Periods of Water Shortages

During all stages of a water shortage, daily production figures are to be reported to and monitored by the Utility Superintendent.

# APPENDIX M

# 2009 ANNUAL WATER QUALITY REPORT

Draft

# CITY OF MANHATTAN BEACH
# 2010 ANNUAL WATER QUALITY REPORT

**Results are from the most recent testing performed in accordance with state and federal drinking water regulations**

## PRIMARY STANDARDS MONITORED AT THE SOURCE-MANDATED FOR PUBLIC HEALTH

| | GROUNDWATER | | MWD'S SURFACE WATER | | PRIMARY | MCLG | MAJOR SOURCES IN DRINKING WATER |
|---|---|---|---|---|---|---|---|
| | AVERAGE | RANGE | AVERAGE | RANGE | MCL | or (PHG) | |
| **INORGANIC CHEMICALS** | | | | | | | |
| Aluminum (mg/l) | ND | ND | 0.11 | 0.08-0.15 | 1 | 0.6 (a) | Erosion of natural deposits; residue from surface water treatment processes |
| Arsenic (µg/l) | ND | ND | 2.4 | 1.9-2.9 | 10 | 0.004 (a) | Erosion of natural deposits; glass/electronics production wastes; runoff |
| Barium (mg/l) | ND | ND | 0.09 | 0.11-0.12 | 1 | 2 (a) | Oil drilling waste and metal refinery discharge; erosion of natural deposits |
| Fluoride (mg/l) | 0.31 | 0.27-0.35 | 0.09 | 0.09 | 2.0 | 1 (a) | Erosion of natural deposits, water additive that promotes strong teeth |
| Nitrate (mg/l as NO3) | ND | ND | 2.1 | 1.4-2.8 | 45 | 45 (a) | Runoff and leaching from fertilizer use/septic tanks/sewage, natural erosion |
| **RADIOLOGICAL - (pCi/l)** | | | | | | | |
| Gross Alpha (c) | 1.8 | ND-5.4 | 4.7 | ND-9.3 | 15 (d) | 0 | Erosion of natural deposits |
| Gross Beta | NA | NA | 2.8 | ND-9.7 | 50 (d) | 0 | Decay of natural and man-made deposits |
| Uranium | ND | ND | 2.7 | 1.6-3.7 | 20 (d) | 0.43 (a) | Erosion of natural deposits |

## PRIMARY STANDARDS MONITORED IN THE DISTRIBUTION SYSTEM - MANDATED FOR PUBLIC HEALTH

| | DISTRIBUTION SYSTEM | | PRIMARY | MCLG | |
|---|---|---|---|---|---|
| **MICROBIALS** | AVERAGE % POSITIVE | RANGE % POSITIVE | MCL | or (PHG) | |
| Total Coliform Bacteria | 0.0 | 0% | 5% | 0% | Naturally present in the environment |
| Fecal Coliform and E.Coli Bacteria | 0% | 0% | 0% | 0% | Human and animal fecal waste |
| No. of Acute Violations | 0 | 0 | - | - | |

| **DISINFECTION** | DISTRIBUTION SYSTEM | | PRIMARY | MCLG | |
|---|---|---|---|---|---|
| **BY-PRODUCTS** (f) | AVERAGE | RANGE | MCL | or (PHG) | |
| Chlorine/chloramine Residual (mg/l) | 1.3 | 0.1-3.4 | 4.0 (g) | 4.0 (h) | Drinking water disinfectant added for treatment |
| Trihalomethanes-TTHMS (µg/l) | 38 | **1.8-121.5 (l)** | 80 | - | By-product of drinking water disinfection |
| Haloacetic Acids (µg/l) | 11 | ND-38 | 60 | - | By-product of drinking water disinfection |

| | DISTRIBUTION SYSTEM | | PRIMARY | MCLG | |
|---|---|---|---|---|---|
| **INORGANICS** | AVERAGE | RANGE | MCL | or (PHG) | |
| Fluoride (mg/l) | 0.31 | 0.27-0.35 | 2 | 1 (a) | Added to help prevent dental caries in consumers. |

| **LEAD AND COPPER AT THE TAP** | DISTRIBUTION SYSTEM | | PRIMARY | MCLG | |
|---|---|---|---|---|---|
| 30 sites sampled in 2010 | **90%ILE** | **# SITES ABOVE AL** | MCL | or (PHG) | |
| Copper (mg/l) | 0.12 (i) | 0 | 1.3 AL | 0.3 (a) | Internal corrosion of household plumbing, erosion of natural deposits |
| Lead (µg/l) | 7.2 (i) | 0 | 15 AL | 0.2 (a) | Internal corrosion of household plumbing, industrial manufacturer discharges |

## SECONDARY STANDARDS MONITORED AT THE SOURCE-FOR AESTHETIC PURPOSES

Sampled from 2009 to 2010

| | GROUNDWATER | | MWD'S SURFACE WATER | | SECONDARY | MCLG | |
|---|---|---|---|---|---|---|---|
| | AVERAGE | RANGE | AVERAGE | RANGE | MCL | or (PHG) | |
| Aggressiveness Index (corrosivity) | 13 | 13 | 12.1 | 12.0-12.1 | Non-corrosive | - | Natural/industrially-influenced balance of hydrogen/carbon/oxygen in water |
| Aluminum (µg/l) (j) | ND | ND | 110.00 | 81-145 | 200 | 600 (a) | Erosion of natural deposits, surface water treatment process residue |
| Chloride (mg/l) | 265 | 240-290 | 84 | 74-90 | 500 | - | Runoff/leaching from natural deposits, seawater influence |
| Color (color units) | 4 | ND-8 | 1 | 1 | 15 | - | Naturally-occurring organic materials |
| Conductivity (umhos/cm) | 1450 | 1400-1500 | 784 | 555-909 | 1,600 | - | Substances that form ions when in water, seawater influence |
| Copper (mg/L) (j) | ND | ND | ND | ND | 1 | 0.3 (a) | Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |
| Foaming Agents (µg/l) | ND | ND | ND | ND | 500 | - | Municipal and industrial waste discharges |
| Iron (µg/l) | 90 | ND-180 | ND | ND | 300 | - | Leaching from natural deposits, industrial wastes |
| Manganese (µg/l) | **59** | **57-60 (m)** | ND | ND | 50 | - | Leaching from natural deposits |
| MTBE (µg/l) (j) | ND | ND | ND | ND | 5 | 13 (a) | Leaking underground storage tanks, petroleum/chemical factory discharges |
| Odor (threshold odor number) | ND | ND | 2.3 | 2-3 | 3 | - | Naturally-occurring organic materials |
| Silver (µg/l) | ND | ND | ND | ND | 100 | - | Industrial discharges |
| Sulfate (mg/l) | 145 | 110-180 | 168 | 55-250 | 500 | - | Runoff/leaching from natural deposits, industrial wastes |
| Thiobencarb (µg/l) (j) | ND | ND | ND | ND | 1000 | 70 (a) | Runoff/leaching from rice herbicide |
| Total Dissolved Solids (mg/l) | 885 | 840-930 | 462 | 309-545 | 1,000 | - | Runoff/leaching from natural deposits |
| Turbidity (NTU) | 0.57 | 0.20-0.94 | 0.04 | 0.04-0.05 | 5 | - | Soil runoff |

## SECONDARY STANDARDS MONITORED IN THE DISTRIBUTION SYSTEM-FOR AESTHETIC PURPOSES

| GENERAL | DISTRIBUTION SYSTEM | | SECONDARY | MCLG | |
|---|---|---|---|---|---|
| PHYSICAL CONSTITUENTS | AVERAGE | RANGE | MCL | or (PHG) | |
| Color (color units) | 1 | ND-7.5 | 15 | - | Naturally-occurring organic materials |
| Odor (threshold odor number) | ND | ND | 3 | - | Naturally-occurring organic materials |

## ADDITIONAL CHEMICALS OF INTEREST

Sampled from 2009 to 2010

| | GROUNDWATER | | MWD'S SURFACE WATER | | NOTIFICATION |
|---|---|---|---|---|---|
| | AVERAGE | RANGE | AVERAGE | RANGE | LEVEL (k) |
| Alkalinity (mg/l) | 205.0 | 180-230 | 101 | 87-107 | - |
| Boron (µg/l) | NA | NA | 153 | 120-220 | 1,000 |
| Calcium (mg/l) | 101 | 91-110 | 49 | 28-61 | - |
| Chlorate (µg/l) | NA | NA | 71 | 20-110 | 800 |
| Dichlorodifluoromethane (Freon-12) (µg/l) | ND | ND | ND | ND | 1,000 |
| Hexavalent chromium (µg/l) | NA | NA | 0.18 | 0.06-0.42 | - |
| Magnesium (mg/l) | 38 | 37-39 | 20 | 12-25 | - |
| N-Nitrosodimethylamine (ng/l) | NA | NA | 2.1 | ND-6.8 | 10 |
| pH (standard unit) | 8.2 | 8.1-8.2 | 8.0 | 7.9-8.2 | - |
| Potassium (mg/l) | 10.5 | 9.0-12.0 | 3.7 | 2.6-4.4 | - |
| Sodium (mg/l) | 135 | 130-140 | 80 | 63-89 | - |
| Tert-butyl alcohol (µg/l) | ND | ND | ND | ND | 12 |
| Total Hardness (mg/l) | 410 | 380-440 | 202 | 118-252 | - |
| Vanadium (µg/l) | NA | NA | 3.7 | 2.8-5.2 | 50 |

## FOOTNOTES

**(a)** California Public Health Goal (PHG). Other advisory levels in this column are federal Maximum Contaminant Level Goals (MCLGs).
**(b)** Indicates dates sampled for groundwater sources only.
**(c)** Gross alpha standard also includes Radium-226 standard.
**(d)** MCL compliance based on 4 consecutive quarters of sampling.
**(e)** MCL standard is for combined Radium 226 plus 228.
**(f)** Running annual average used to calculate average, range, and MCL compliance.
**(g)** Maximum Residual Disinfectant Level (MRDL)
**(h)** Maximum Residual Disinfectant Level Goal (MRDLG)
**(i)** 90th percentile from the most recent sampling at selected customer taps.
**(j)** Aluminum, copper, and MTBE have primary and secondary standards
**(k)** Notification Levels are advisory and are not enforceable standards.
**(l)** A single trihalomethane result exceeded the primary MCL in 2010. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.
**(m)** The secondary MCL for manganese was exceeded in 2 wells in 2010. This water is treated using a treament technique know as blending, whereby the well water is mixed with MWD water to reduce the Mn to a level below the MCL. The manganese MCL is set to protect against unpleasant affects such as color, taste, odor, and staining of laundry and plumbing fixtures. A manganese MCL exceedance does not pose a health risk.

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# APPENDIX N

# ORDINANCE NO. 2138 (TOILET RETROFIT REQUIREMENTS)

Draft

ORDINANCE NO. 2138

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH, CALIFORNIA, AMENDING CHAPTERS 24 AND 36 OF THE MANHATTAN BEACH MUNICIPAL CODE TITLE 9 TO AMEND TOILET RETROFIT REQUIREMENTS TO ALLOW EXCEPTIONS.

THE CITY COUNCIL OF THE CITY OF MANHATTAN BEACH, CALIFORNIA, DOES ORDAIN AS FOLLOWS:

SECTION 1. The City Council of the City of Manhattan Beach, California, hereby finds as follows:

A. The State of California has adopted the California Building Standard Codes that must in turn be adopted or utilized by each city or county. Certain of the provisions of these Codes are inappropriate for use within the City of Manhattan Beach because of unique climatic, geological and topographical conditions prevailing within the City. The California Health and Safety Code Sections 17958, 17985.7 and 17958.5 provide for certain amendments to the California Building Standard Codes provided findings of necessity can be made. The findings are:

1. Adverse climate conditions such as salt fog air and strong winds such as those in existence in the City of Manhattan Beach increase the likelihood of fire spreading (conflagration) from one building to another. Additionally, we must reduce potential impact to climate change through energy efficient materials and sustainable practices.

2. Geological conditions of the City of Manhattan Beach are affected by the nearby locations of earthquake faults that can create tremendous loss of life and structures in the City.

3. Topographical conditions of the City of Manhattan Beach coupled with the density of buildings, limited setbacks, narrow access to buildings, small lots and narrow streets would potentially create a problem for governmental agencies to respond to emergency conditions.

4. There is a need for proposing certain amendments in the California Building Standard Codes because of climatic, geological and topographical conditions.

B. This project will not have a significant effect on the environment, and is therefore exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15061 (b)(3) of the CEQA Guidelines.

C. On November 16, 2010, City Council conducted a public hearing adopting Ordinance No. 2136 for the 2010 California construction codes and City amendments to be effective on January 1, 2011. Council directed staff to bring back an amendment for toilet retrofit exceptions.

D. On December 7, 2010, City Council introduced Ordinance 2138 to amend the toilet retrofit requirements, waived further reading, and scheduled it for public hearing on December 21, 2010.

E. On December 21, 2010, City Council conducted a public hearing regarding the toilet retrofit amendments and approved adding the toilet retrofit exceptions to the Manhattan Beach Municipal Code.

SECTION 2. Chapter 9.24 of Title 9 of the Manhattan Beach Municipal Code is hereby amended for the climatic findings above as follows:

Chapter 24. REPORT OF RESIDENTIAL BUILDING RECORDS

Certified to be a true copy of said document on file in my office.

TA

City Clerk of the City of Manhattan Beach

**Toilet Retrofit requirements upon sale of residential real property.** All existing residential buildings shall, at the time of sale before change of ownership, be retrofitted, if not already so, with high efficiency toilets, that meet the most current U.S. Environmental Protection Agency Water Sense program requirements, with a maximum standard of 1.28 gallons per flush. See also Chapter 9.36.110 Water Efficiency. Retrofits shall be in accordance with the toilet replacement procedure of the Community Development Department. Exceptions to this requirement shall be as follows:

1. Toilets with prior valid Toilet Retrofit Certificates
2. When a change of ownership occurs as a result of:
   a. Foreclosure
   b. A transfer from one family member or co-owner to another family member or co-owner.
   c. A decree of dissolution of marriage
3. When Seller and Buyer agree that the Buyer will assume responsibility to retrofit toilets within 180 calendar days from title transfer date. A refundable deposit is required and will be forfeit after said 180 calendar days if no valid Toilet Retrofit Certificate is submitted to the City.
4. When a proposed demolition permit application is submitted within 180 calendar days from title transfer date. A refundable deposit is required and shall be forfeit after said 180 calendar days if demolition permit application is not enacted.
5. When a UL listed or other recognized listing/testing agency retrofit kit is installed that meets the maximum 1.28 gpf standard.
6. Existing Toilets that are 1.6 gallons per flush or less will be exempt until January 1, 2014.
7. Other exemptions as determined by the Director of Community Development.

SECTION 3. Chapter 9.36 of Title 9 of the Manhattan Beach Municipal Code is hereby amended for the climatic findings above as follows:

Chapter 36. SUSTAINABLE GREEN BUILDING PROGRAM AND ENERGY EFFICIENCY STANDARDS

**9.36.110 Water Efficiency**

**Section 4.303.4 of the California Green Building Standards Code is hereby amended for the climatic findings above as follows:**

**4.303.4 Toilet Retrofit requirements upon sale of residential real property.** All existing residential buildings shall, at the time of sale before change of ownership, be retrofitted, if not already so, with high efficiency toilets, that meet the most current U.S. Environmental Protection Agency Water Sense program requirements, with a maximum standard of 1.28 gallons per flush. See Chapter 9.24.040 Report of Residential Building Records.

SECTION 4. Any provisions of the Manhattan Beach Municipal Code, or appendices thereto, or any other ordinances of the City, to the extent that they are inconsistent with this ordinance, and no further, are hereby repealed.

SECTION 5. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid or unconstitutional.

**Certified to be a true copy of said document on file in my office.**

TA

City Clerk of the City of Manhattan Beach

SECTION 6. If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid or unconstitutional.

SECTION 7. Any provisions of the Manhattan Beach Municipal Code, or appendices thereto, or any other ordinances of the City, to the extent that they are inconsistent with this ordinance, and no further, are hereby repealed.

SECTION 8. This notice shall be published by one insertion in *The Beach Reporter*, the official newspaper of the City, and this ordinance shall take effect and be in full force and operation thirty (30) days after its final passage and adoption.

SECTION 9. The City Clerk shall certify to the adoption of this ordinance; shall cause the same to be entered in the book of original ordinances of said City; shall make a minute of the passage and adoption thereof in the records of the meeting at which the same is passed and adopted; and shall within fifteen (15) days after the passage and adoption thereof cause the same to be published by one insertion in *The Beach Reporter*, the official newspaper of the City and a weekly newspaper of general circulation, published and circulated within the City of Manhattan Beach hereby designated for that purpose.

SECTION 10. The City Clerk shall cause a summary of this Ordinance to be published as provided by law. The summary shall be published and a certified copy of the full text of this Ordinance shall be posted in the Office of the City Clerk at least five (5) days prior to the City Council meeting at which this Ordinance is to be adopted. Within fifteen (15) days after the adoption of this Ordinance, the City Clerk shall cause a summary to be published with the names of those City Council members voting for and against this Ordinance and shall post in the Office of the City Clerk a certified copy of the full text of this Ordinance along with the names of those City Council members voting for and against the Ordinance.

PASSED, APPROVED and ADOPTED this 21st day of December, 2010.

Ayes: Powell, Cohen, Ward, Tell and Mayor Montgomery.
Noes: None.
Absent: None.
Abstain: None.

/s/ Richard Montgomery
Mayor, City of Manhattan Beach, California

ATTEST:

/s/ Liza Tamura
City Clerk

CITY OF MANHATTAN BEACH CALIFORNIA SUN SAND SEA

Certified to be a true copy of the original of said document on file in my office.

Deputy

City Clerk of the City of Manhattan Beach, California

# APPENDIX O

# COMPLETED URBAN WATER MANAGEMENT PLAN CHECKLIST

Draft

**Table I-2 Urban Water Management Plan checklist, organized by subject**

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| PLAN PREPARATION | | | | |
| 4 | 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. | 10620(d)(2) | | See Section: 1.2.1 |
| 6 | Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, 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. Any city or county receiving the notice may be consulted and provide comments. | 10621(b) | | See Section: 1.2.2 |
| 7 | Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq. | 10621(c) | | See Section: 1.3.1; |
| 54 | Provide supporting documentation that the urban water management 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 this urban water management plan. | 10635(b) | | See Section: 1.2.3 |
| 55 | 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. | 10642 | | See Section: 1.2.4; |
| 56 | Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area. | 10642 | | See Section: 1.2.4; |
| 57 | Provide supporting documentation that the plan has been adopted as prepared or modified. | 10642 | | See Section: 1.3.2; |
| 58 | Provide supporting documentation as to how the water supplier plans to implement its plan. | 10643 | | See Section: 1.3.3 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
|---|---|---|---|---|
| 59 | Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to 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. This also includes amendments or changes. | 10644(a) | | See Section: 1.3.4 |
| 60 | Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours | 10645 | | See Section: 1.3.5 |
| SYSTEM DESCRIPTION | | | | |
| 8 | Describe the water supplier service area. | 10631(a) | | See Section: 2.2.1 |
| 9 | Describe the climate and other demographic factors of the service area of the supplier | 10631(a) | | See Section: 2.2.2 |
| 10 | Indicate the current population of the service area | 10631(a) | Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M. | See Section: 2.3 |
| 11 | Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections. | 10631(a) | 2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents. | See Section: 2.3.1 |
| 12 | Describe other demographic factors affecting the supplier's water management planning. | 10631(a) | | See Section: 2.3.2 |
| SYSTEM DEMANDS | | | | |
| 1 | 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. | 10608.20(e) | | See Section: 3.2 |
| 2 | *Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009. | 10608.36<br>10608.26(a) | Retailers and wholesalers have slightly different requirements | See Section: 3.4 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
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| 3 | Report progress in meeting urban water use targets using the standardized form. | 10608.40 | | See Section: 3.2.5 |
| 25 | Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (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, conjunctive use, and (I) agriculture. | 10631(e)(1) | Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years. | See Section: 3.3.1 |
| 33 | Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types | 10631(k) | Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030. | See Section: 3.3 |
| 34 | Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier. | 10631.1(a) | | See Section: 3.3.1 |
| SYSTEM SUPPLIES | | | | |
| 13 | Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030. | 10631(b) | The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided. | See Section: 4.1 |
| 14 | Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column. | 10631(b) | Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other. | See Section: 4.1 |
| 15 | Indicate whether a groundwater management plan 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. | 10631(b)(1) | | See Section: 4.2.1 |
| 16 | Describe the groundwater basin. | 10631(b)(2) | | See Section: 4.2.2 |
| 17 | Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree. | 10631(b)(2) | | See Section: 4.2.1 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
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| 18 | Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column. | 10631(b)(2) | | See Section: 4.2.1; See Section 4.2.3 |
| 19 | For groundwater basins that are not adjudicated, provide information as to whether DWR 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. If the basin is adjudicated, indicate “not applicable” in the UWMP location column. | 10631(b)(2) | | Not Applicable |
| 20 | 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 | 10631(b)(3) | | See Section: 4.2.3 |
| 21 | Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped. | 10631(b)(4) | Provide projections for 2015, 2020, 2025, and 2030. | See Section: 4.2.4 |
| 24 | Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis. | 10631(d) | | See Section: 4.3 |
| 30 | Include a detailed description of all 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, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project. | 10631(h) | | See Section: 4.6 |
| 31 | Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater. | 10631(i) | | See Section: 4.4 |
| 44 | Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area. | 10633 | | See Section: 4.5.1 |
| 45 | Describe 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. | 10633(a) | | See Section: 4.5.2 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
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| 46 | 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. | 10633(b) | | See Section: 4.5.2 |
| 47 | Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use. | 10633(c) | | See Section: 4.5.3 |
| 48 | Describe and quantify 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. | 10633(d) | | See Section: 4.5.4 |
| 49 | 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. | 10633(e) | | See Section: 4.5.5 |
| 50 | Describe the 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. | 10633(f) | | See Section: 4.5.6 |
| 51 | Provide 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. | 10633(g) | | See Section: 4.5.7 |
| WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b] | | | | |
| 5 | Describe water management tools and options to maximize resources and minimize the need to import water from other regions. | 10620(f) | | See Section: 5.1.1 |
| 22 | Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years. | 10631(c)(1) | | See Section: 5.4.1 |
| 23 | 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. | 10631(c)(2) | | See Section: 5.1.2 |
| 35 | Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage | 10632(a) | | See Section: 5.4.2 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
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| 36 | 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's water supply. | 10632(b) | | See Section 5.4.3 |
| 37 | Identify 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. | 10632(c) | | See Section: 5.2.1 |
| 38 | Identify 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. | 10632(d) | | See Section: 5.2.2 |
| 39 | Specify 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. | 10632(e) | | See Section 5.2.3 |
| 40 | Indicated penalties or charges for excessive use, where applicable. | 10632(f) | | See Section: 5.2.4 |
| 41 | Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments. | 10632(g) | | See Section: 5.2.5 |
| 42 | Provide a draft water shortage contingency resolution or ordinance. | 10632(h) | | See Section: 5.2.6 |
| 43 | Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis. | 10632(i) | | See Section: 5.4.4 |
| 52 | Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability | 10634 | For years 2010, 2015, 2020, 2025, and 2030 | See Section 5.3 |

| No. | UWMP requirement [a] | Calif. Water Code reference | Additional clarification | UWMP location |
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| 53 | 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, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier. | 10635(a) | | See Section: 5.4.5 |
| DEMAND MANAGEMENT MEASURES | | | | |
| 26 | Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided. | 10631(f)(1) | Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules. | See Section: 6.1 |
| 27 | Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP. | 10631(f)(3) | | See Section: 6.1 |
| 28 | Provide 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 ability to further reduce demand. | 10631(f)(4) | | See Section: 6.1 |
| 29 | Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work. | 10631(g) | See 10631(g) for additional wording. | See Section: 6.2 |
| 32 | Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU. | 10631(j) | Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29. | Not Applicable |

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.