

## Appendix A

---

Tuolumne Utilities District Board Resolution



RESOLUTION NO. 28-11  
TUOLUMNE UTILITIES DISTRICT  
ADOPTION OF THE URBAN WATER MANAGEMENT PLAN

The Board of Directors of the Tuolumne Utilities District does hereby resolve as follows:

WHEREAS This Urban Water Management Plan (UWMP) has been prepared for Tuolumne Utilities District (TUD or District) in compliance with Division 6, Part 2.6, of the California Water Code, Sections 10608 through 10657 as last amended by Senate Bill No. 7 (SBX7-7), Water Conservation Act of 2009. The original bill requiring preparation of an UWMP was enacted in 1983. SBX7-7, which became law in November 2009, requires increased emphasis on water demand management and requires the State of California (State) to achieve a 20 percent reduction in urban per capita water use by 31 December 2020.

WHEREAS the District is a supplier of water providing water to over 12,000 customers; and

WHEREAS the Plan shall be periodically reviewed at least once every five years, and that the District shall make any amendments or changes to its Plan which are indicated by the review; and

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

WHEREAS the District has therefore, prepared and circulated for public review the Draft Urban Water Management Plan, and a properly noticed public hearing regarding said Plan was held by the District on June 21, 2011; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Tuolumne Utilities District as follows:

1. The 2010 Urban Water Management Plan is hereby adopted with any necessary amendments and ordered filed with the California Department of Water Resources within 30 days after this date;
2. Establishes 187 gallons per capita per day (gpcd) as TUD's baseline water use, and adopts Method 3 for determining TUD's 2015 interim water use target of 176 gpcd and 2020 compliance water use target of 165 gpcd.
3. The General Manager is hereby authorized and directed to implement the Water Conservation Programs as set forth in the 2010 Urban Water Management Plan.

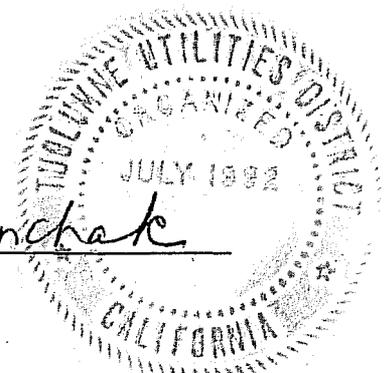
PASSED AND ADOPTED by the Board of Directors of Tuolumne Utilities District on June 28, 2011, by the following vote:

AYES: Behee, Balen, Day, Rotelli  
NOES: None  
ABSENT: Retherford  
ABSTAINED: None

  
Robert M. Behee, President  
Board of Directors

ATTEST

  
Casey Prunchak,  
District Secretary





## Appendix B

---

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	<a href="#">10610-10610.4</a>
CHAPTER 2.	DEFINITIONS	<a href="#">10611-10617</a>
CHAPTER 3.	URBAN WATER MANAGEMENT PLANS	
Article 1.	General Provisions	<a href="#">10620-10621</a>
Article 2.	Contents of Plans	<a href="#">10630-10634</a>
Article 2.5.	Water Service Reliability	<a href="#">10635</a>
Article 3.	Adoption and Implementation of Plans	<a href="#">10640-10645</a>
CHAPTER 4.	MISCELLANEOUS PROVISIONS	<a href="#">10650-10656</a>

### 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 C

---

### Documentation of Agency Coordination and Notices





## TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • Fax (209) 536-6485

### DIRECTORS

Barbara Balen  
Robert M. Behee  
Joseph Day, PhD  
Ralph Retherford, MD  
Delbert Rotelli

March 10, 2011

Tuolumne County Board of Supervisors  
2 South Green Street  
Sonora, CA 95370

Subject: Tuolumne Utilities District, Urban Water Management Plan 2010 Update

Dear Board of Supervisors,

The Tuolumne Utilities District (TUD) is updating its Urban Water Management Plan (UWMP), which will be submitted to the State of California's Department of Water Resources (DWR) once the TUD Board of Directors has adopted a final version of the Plan.

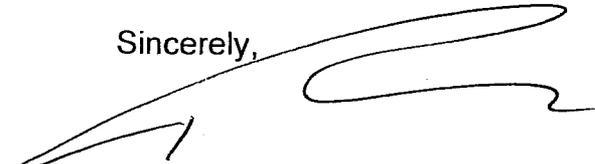
TUD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years. The UWMP provides an overview of TUD's water supply sources and usage, recycled water and water conservation programs. The UWMP is part of TUD's long-range resource planning program to ensure water service reliability for TUD customers, especially during multiple-year drought periods or other natural or man-made supply interruptions.

In compliance with the California Water Code, TUD is providing this notice to encourage your agency's cooperation and involvement in the update of the UWMP.

The current status of the UWMP 2010 update is that it is in the drafting and data collection and analysis mode. A public review period and a public hearing will be held to provide an opportunity to provide formal comment on the Draft UWMP 2010.

If you have any questions or if you would like additional information please contact Pete Kampa at (209) 532-5536 ex. 480.

Sincerely,



Peter J. Kampa  
General Manager

cc: TUD Board of Directors

7009 6009 3410 0000 3947 6952

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ .44
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.54

Sent To Muller Mutual

Street, Apt. No., or PO Box No. \_\_\_\_\_

City, State, ZIP+4 \_\_\_\_\_

PS Form 3800, August 2006 See Reverse for Instructions

First-Class Mail  
 Postage & Fees Paid  
 USPS  
 Permit No. G-10

ZIP+4 in this box •

7009 6009 3410 0000 3947 6962

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ .44
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.54

Sent To Leisure Pines

Street, Apt. No., or PO Box No. \_\_\_\_\_

City, State, ZIP+4 \_\_\_\_\_

PS Form 3800, August 2006 See Reverse for Instructions

First-Class Mail  
 Postage & Fees Paid  
 USPS  
 Permit No. G-10

ZIP+4 in this box •

7009 6009 3410 0000 3947 6924

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ .44
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.54

Sent To City of Sonora

Street, Apt. No., or PO Box No. \_\_\_\_\_

City, State, ZIP+4 \_\_\_\_\_

PS Form 3800, August 2006 See Reverse for Instructions

First-Class Mail  
 Postage & Fees Paid  
 USPS  
 Permit No. G-10

ZIP+4 in this box •

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Muller Mutual  
Water Company  
P.O. BOX 716  
Tuolumne, Ca 95379

2. Article Number  
(Transfer from service label)

7009 3410 0000 3947 6955

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

*[Signature]*  Agent  
 Address

B. Received by (Printed Name)

M. JUE TRIPP 3/11/11  Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Certified Mail  Express Mail
- Registered  Return Receipt for Merchandise
- Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Leisure Pines Mutual  
Water Company  
P.O. BOX 366  
Twain Harte, Ca 95383

2. Article Number  
(Transfer from service label)

7009 3410 0000 3947 6962

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

*[Signature]*  Agent  
 Address

B. Received by (Printed Name)

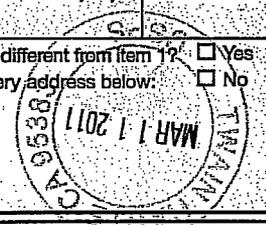
*[Signature]*  Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Certified Mail  Express Mail
- Registered  Return Receipt for Merchandise
- Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Sonora City Council  
94 North Washington  
Sonora, Ca 95370

2. Article Number  
(Transfer from service label)

7009 3410 0000 3947 6924

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

*[Signature]*  Agent  
 Address

B. Received by (Printed Name)

Tracy Skelly 3/11/11  Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Certified Mail  Express Mail
- Registered  Return Receipt for Merchandise
- Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

7009 3410 0000 3947 6937

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ .44
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.54



Sent To Sonora Water  
 Street, Apt. No.,  
 or PO Box No.  
 City, State, ZIP+4

PS Form 3800, August 2006 See Reverse for Instructions

First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

ZIP+4 in this box •

7009 3410 0000 3947 6948

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ .44
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.54



Sent To Sonora Meadows  
 Street, Apt. No.,  
 or PO Box No.  
 City, State, ZIP+4

PS Form 3800, August 2006 See Reverse for Instructions

First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

ZIP+4 in this box •

**RECEIVED**  
MAR 16 2011  
TULUMNE UTILITIES  
DISTRICT

7009 3410 0000 3947 6917

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ .44
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 5.54



Sent To Tuolumne County  
 Street, Apt. No.,  
 or PO Box No.  
 City, State, ZIP+4

PS Form 3800, August 2006 See Reverse for Instructions

First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

ZIP+4 in this box •

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Sonora Water Company  
 P.O. Box 996  
 Sonora, Ca 95370

2. Article Number  
(Transfer from service label)

7009 3410 0000 3947 6931

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *[Signature]*  
 B. Received by (Printed Name)  
 Scott Livell

Agent  
 Address

C. Date of Delivery  
3/17/11

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

- Certified Mail
- Registered
- Insured Mail
- Express Mail
- Return Receipt for Merchandise
- C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Sonora Meadows  
 Water Company  
 P.O. Box 1176  
 Sonora, Ca 95370

2. Article Number  
(Transfer from service label)

7009 3410 0000 3947 6948

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *[Signature]*  
 B. Received by (Printed Name)  
 Lisa Murray

Agent  
 Address

C. Date of Delivery  
3-15-11

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

- Certified Mail
- Registered
- Insured Mail
- Express Mail
- Return Receipt for Merchandise
- C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Tuolumne County  
 Board of Supervisor's  
 2 South Green Street  
 Sonora, Ca 95370

2. Article Number  
(Transfer from service label)

7009 3410 0000 3947 6917

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *[Signature]*  
 B. Received by (Printed Name)  
 Peggy Sears

Agent  
 Address

C. Date of Delivery  
3/11/11

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

- Certified Mail
- Registered
- Insured Mail
- Express Mail
- Return Receipt for Merchandise
- C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

Tuolumne County Board of Supervisors  
2 South Green Street  
Sonora, CA 95370

Sonora City Council  
94 North Washington Street  
Sonora, CA 95370

Sonora Water Company  
P.O. Box 996  
Sonora, CA 95370

Sonora Meadows Water Company  
P.O. Box 1176  
Sonora, CA 95370

Muller Mutual Water Company  
P.O. Box 716  
Tuolumne, CA 95379

Leisure Pines Mutual Water Company  
P.O. Box 366  
Twain Harte, CA 95383



# TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • Fax (209) 536-6485

## DIRECTORS

Barbara Balen  
Robert M. Behee  
Joseph Day, PhD  
Ralph Retherford, MD  
Delbert Rotelli

June 1, 2011

Sonora City Council  
94 North Washington Street  
Sonora, CA 95370

Subject: Public Hearing for TUD Urban Water Management Plan 2010 Update

Dear Council Members,

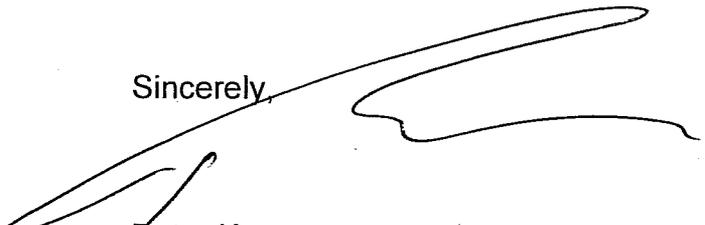
NOTICE IS HEREBY GIVEN that a public hearing will be held by the Board of Directors of the Tuolumne Utilities District (TUD) on Tuesday, June 21, 2011 at 7:00 p.m., in the Board room at the District office at 18885 Nugget Blvd., Sonora, California, for consideration of the 2010 update of TUD's Urban Water Management Plan.

The objective of this meeting will be to inform and receive public input regarding the 2010 update to the Urban Water Management Plan. The meeting will present information about the Urban Water Management Plan for review by the public and will also provide an opportunity for the public to comment.

The draft Urban Water Management Plan is available for review at the TUD office, 18885 Nugget Blvd., Sonora and on the District website at [http://www.tudwater.com/news features/publications and reports.htm](http://www.tudwater.com/news/features/publications%20and%20reports.htm)

If you have any questions or if you would like additional information please contact Glen Nunnelley at (209) 532-5536 ex. 514.

Sincerely,



Peter Kampa,  
General Manager

cc: TUD Board of Directors



# TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • Fax (209) 536-6485

## DIRECTORS

Barbara Balen  
Robert M. Behee  
Joseph Day, PhD  
Ralph Retherford, MD  
Delbert Rotelli

June 1, 2011

Tuolumne County Board of Supervisors  
2 South Green Street  
Sonora, CA 95370

Subject: Public Hearing for TUD Urban Water Management Plan 2010 Update

Dear Board of Supervisors,

NOTICE IS HEREBY GIVEN that a public hearing will be held by the Board of Directors of the Tuolumne Utilities District (TUD) on Tuesday, June 21, 2011 at 7:00 p.m., in the Board room at the District office at 18885 Nugget Blvd., Sonora, California, for consideration of the 2010 update of TUD's Urban Water Management Plan.

The objective of this meeting will be to inform and receive public input regarding the 2010 update to the Urban Water Management Plan. The meeting will present information about the Urban Water Management Plan for review by the public and will also provide an opportunity for the public to comment.

The draft Urban Water Management Plan is available for review at the TUD office, 18885 Nugget Blvd., Sonora and on the District website at [http://www.tudwater.com/news features/publications and reports.htm](http://www.tudwater.com/news/features/publications_and_reports.htm)

If you have any questions or if you would like additional information please contact Glen Nunnelley at (209) 532-5536 ex. 514.

Sincerely,



Peter Kampa,  
General Manager

cc: TUD Board of Directors

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  <input checked="" type="checkbox"/> Tracy Kelly <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) Tracy Kelly C. Date of Delivery 6/2/11</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes            If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>1. Article Addressed to:            Sonora City Council            94 North Washington St.            Sonora, Ca 95370</p>	<p>3. Service Type  <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) 7009 3410 0000 3947 6986</p>		
PS Form 3811, February 2004	Domestic Return Receipt	102595-02-M-1540

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature  <input checked="" type="checkbox"/> Peggy Selts <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) Peggy Selts C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes            If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>1. Article Addressed to:            Tuolumne County Board            of Supervisors            2 South Green Street            Sonora, Ca 95370</p>	<p>3. Service Type  <input type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	
<p>2. Article Number (Transfer from service label) 7009 3410 0000 3947 6979</p>		
PS Form 3811, February 2004	Domestic Return Receipt	102595-02-M-1540



## Appendix D

---

Public Advisory Committee and Board Committee Meeting Documentation



## **Glen Nunnelley**

---

**From:** Melissa McMullen  
**Sent:** Friday, April 29, 2011 1:40 PM  
**To:** City of Sonora-Rachelle Kellogg; County of Tuolumne-Mike Laird; Glen Nunnelley; John Maciel; Rick Breeze-Martin; Sierra Club-Jon Sturtevant; TC Economic Development Authority-Larry Cope; TuCare-Melinda Fleming; Tuolumne County Association of Realtors-Karen Burkhardt; Tuolumne County Farm Bureau-Jesse Cover; Tuolumne MeWuk Tribal Council-Emily Stevens  
**Subject:** Public Advisory Committee Meeting  
**Attachments:** Agenda 5-5-11 GN.docx

### Public Advisory Committee (PAC)

Please find attached the agenda for the PAC kick off meeting of the Urban Water Management Plan 2010 Update (UWMP) for Thursday May 5, 2011 at Tuolumne Utilities District.

We have also included two links to the Department of Water Resources (DWR) web site for background information. The first link will open an Adobe pdf file of the DWR Guidelines for preparing the 2010 UWMP Update and the second link will open a pdf file of "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use"

These documents are extensive and it is not necessary to print these out or review them in any detail. We will be discussing elements of these guidelines. These are the guidelines that many water agencies including TUD have been following in preparation of the UWMP updates.

<http://www.water.ca.gov/urbanwatermanagement/guidebook/>

<http://www.water.ca.gov/wateruseefficiency/sb7/committees/urban/u3/>

Thank you once again for your participation in this PAC and we look forward to meeting you at the first meeting!

**Melissa McMullen**  
Tuolumne Utilities District  
Administrative Technician  
18885 Nugget Blvd.  
Sonora, CA 95370  
(209) 532-5536, ext 510

**Melissa McMullen**  
Tuolumne Utilities District  
Administrative Technician  
18885 Nugget Blvd.  
Sonora, CA 95370  
(209) 532-5536, ext 510

**Urban Water Management Plan  
Public Advisory Committee**

**County of Tuolumne** - land use planning agency - one member

Mike Laird  
[mlaird@co.tuolumne.ca.us](mailto:mlaird@co.tuolumne.ca.us)  
533-5961

**City of Sonora** - land use planning agency - one member

Rachelle Kellogg  
[rkellogg@sonoraca.com](mailto:rkellogg@sonoraca.com)  
532-3508

**TC Economic Development Authority** - economic interest - one member

Larry Cope  
[larry.cope@tceda.net](mailto:larry.cope@tceda.net)  
989-4058

**Tuolumne County Farm Bureau** - agriculture - one member

Jesse Cover  
[jcover5@juno.com](mailto:jcover5@juno.com)  
840-2674

**Economic and Housing Interest** - one member

Karen Burkhardt  
[karenmburkhardt@aol.com](mailto:karenmburkhardt@aol.com)  
532-3432

**Customers / general public** - two members

Rick Breeze-Martin  
[rick@breeze-martin.com](mailto:rick@breeze-martin.com)  
533-1874

John Maciel  
[bj.maciel@hotmail.com](mailto:bj.maciel@hotmail.com)  
586-9156

**Conservation groups** - various conservation interests - two members

Melinda Fleming, TuCare  
[resources\\_4\\_all@sbcglobal.net](mailto:resources_4_all@sbcglobal.net)  
352- 8012

Jon Sturtevant, Sierra Club  
[js3060@yahoo.com](mailto:js3060@yahoo.com)  
928-3010

**Tribal Interests** - from within the TUD service area – one member

Emily Stevens  
[estevens@mewuk.com](mailto:estevens@mewuk.com)  
928-5364

## **AGENDA**

TUOLUMNE UTILITIES DISTRICT  
18885 NUGGET BLVD.  
SONORA, CALIFORNIA

URBAN WATER MANAGEMENT PLAN  
**THURSDAY, MAY 5, 2011**  
**1:00 P.M.**

1. Introductory and overview of why to implement the UWMP and what it means to the District.
2. Current UWMP Schedule
3. Overview of the Districts operations
4. Information on urban water use within the District
5. The Districts proposed method to determine its urban water use target pursuant to the Water Code, Base Daily Per Capita Water use.
6. Existing water conservation measures
7. Recommended course of action for the establishment of urban water use for the purpose of compliance with the target objective of 95% (of the objective) for the San Joaquin
8. Questions



MEETING REPORT  
URBAN WATER MANAGEMENT PLAN  
PUBLIC ADVISORY COMMITTEE  
THURSDAY, MAY 5, 2011  
1:00 P.M.

Glen Nunnelley	Tuolumne Utilities District
Tom Scesa	Tuolumne Utilities District
Melissa McMullen	Tuolumne Utilities District
Chris Garnin	Tuolumne County Association of Realtors
Mike Laird	Tuolumne County Community Development Department
Jon Sturtevant	Tuolumne Group Sierra Club
Emily Stevens	Tuolumne Mi-Wuk Tribal Council
Larry Cope	Tuolumne County Economic Development Authority
John Maciel	

**Introductory and overview of why to implement the UWMP and what it means to the District**

Glen Nunnelley referred to an item included in the PAC package consisting of the Introduction page extracted from the "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use". This Introduction page provides a good overview of recent legislation on Water Use Efficiency and refers to specific documents, water code and agencies as to why TUD is preparing the 2010 UWMP. Mr. Nunnelley stated that the goal of the legislation is to achieve a 20% reduction in per capita water use by the year 2020. The legislation outlines specific methods to compute a per capita water use as a measure of water use efficiency. TUD is implementing this effort not only for water conservation but to also remain eligible to receive state funding. Without the 2010 Update, as an example, TUD would not be eligible to over \$600,000 pending through the IRWMP process.

**Current UWMP Schedule**

Glen Nunnelley distributed a schedule to each PAC member with the following dates:

- May 5, 2011 PAC meeting #1
- June 2, 2011 Draft 2010 Update to PAC
- June 6-8, 2011 PAC meeting #2
- June 8, 2011 Comments to Kennedy/Jenks
- June 21, 2011 Final 2010 UWMP update available for review
- June 28, 2011 TUD Board approval
- July 15, 2011 Submit final 2010 update to Department of Water Resources

**Overview of the Districts operations**

Tom Scesa provided an overview of the TUD Water System Infrastructure. The primary "take-away" is that the TUD system is the sum total of many individual systems that were developed independently over the decades and slowly merged in with TUD as each small system became outdated or failed to deliver safe reliable water to its customers. TUD received several of these systems by State Receivership. Although, TUD has made significant progress in replacing and repairing outdated infrastructure, much of the infrastructure remains in poor condition.

Larry Cope inquired if the one of the goals of making system improvements was consolidation. Tom Scesa stated that consolidation was definitely part of the over-all plan.

**Information on urban water use within the District**

Glen Nunnelley referred the group to the Technical Memorandum prepared by Kennedy Jenks dated 3 May 2011. Specifically, Table 1 presents the Base Daily Per Capita Water Use. The table presents total TUD connections, Population and Total water use in Gallons Per Capita per Day (gpcd) and Million Gallons (MG)/yr. The goal of the 20X2020 legislation is to achieve a 20 percent reduction in water use per capita. The water usage by TUD customers in 2010 reflects 158 gpcd. This level of usage is below the 2020 requirement of 165 gpcd. However, water demand in 2010 was unusually low for many water purveyors and may not reflect demand in a hotter dryer year. Likely, additional water conservation may be required, but it is anticipated that significant conservation will come from improving and updating the water system infrastructure.

John Maciel inquired if part-time residents or vacation homes were included in this study. Tom Scesa responded that only full time residents were included.

Mike Laird inquired what was used to estimate the population in the study. Glen Nunnelley responded that it was a combination of the Blue Print Project, amount of TUD connections and data from the Department of Finance. Tom Scesa reminded the group that population growth does not amount to water usage growth.

Chris Garnin stated that since the treated water systems are multiple and cover a large area how was it possible to define specific usage for households. Glen Nunnelley stated that it was determined through using the census. Tom Scesa stated that census block data and GIS data was also used.

**The Districts proposed method to determine its urban water use target pursuant to the Water Code, Base Daily per Capita Water use**

Method 3 is outlined in on page 11 of the "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use" and consists of reaching the regional target of 95% of the San Joaquin region 174 gpcd or 165 gpcd

**Existing water conservation measures**

Glen Nunnelley briefly reviewed the list of Demand Management Measures (DMM) 1-14 and touched on conservation that TUD has and currently promotes. Each DMM will be discussed at length in the 2010 Update as some of these are not cost effective.

**Recommended course of action for the establishment of urban water use for the purpose of compliance with the target objective of 95% (of the objective) for the San Joaquin**

Glen Nunnelley stated that the recommended course of action for the establishment of urban water use for the purpose of compliance with the target objective of 95% for the San Joaquin will come primarily from system infrastructure improvements as the bases of reducing water loss. There are a limited number of customers (500-1000 customers that would be considered as high users) For this customer base, depending on individual circumstances, it may make since that many of these water users employ better water conservation measures.

The next Public Advisory Committee meeting is scheduled for Tuesday, June 7, 2011 at 1:00 p.m. at Tuolumne Utilities District.

## **Glen Nunnelley**

---

**From:** Melissa McMullen  
**Sent:** Thursday, June 02, 2011 11:53 AM  
**To:** City of Sonora-Rachelle Kellogg; John Maciel; Rick Breeze-Martin; Sierra Club-Jon Sturtevant; TC Economic Development Authority-Larry Cope; TuCare-Melinda Fleming; TUD-Glen Nunnelley; Tuolumne County Association of Realtors-Karen Burkhardt; Tuolumne County Community Development - Mike Laird; Tuolumne County Farm Bureau-Jesse Cover; Tuolumne MeWuk Tribal Council-Emily Stevens  
**Subject:** Public Advisory Committee

Hello Public Advisory Committee,

We have the draft 2010 UWMP ready for pickup at the TUD office at 18885 Nugget Blvd.

An electronic version is also available on-line at:

[http://www.tudwater.com/news/features/publications\\_and\\_reports.htm](http://www.tudwater.com/news/features/publications_and_reports.htm)

Also, attached is the Agenda for the June 7<sup>th</sup> meeting and the minutes from the May 5<sup>th</sup> meeting for your review.

Thank you again for taking time to review the UWMP. We understand that this is a fast turn around and we very much appreciate your time and thoughts. We look forward to receiving and discussing your comments and recommendations on June 7th.

Have a wonderful day,

**Melissa McMullen**

Tuolumne Utilities District  
Administrative Technician  
18885 Nugget Blvd.  
Sonora, CA 95370  
(209) 532-5536, ext 510



## **AGENDA**

TUOLUMNE UTILITIES DISTRICT  
18885 NUGGET BLVD.  
SONORA, CALIFORNIA

URBAN WATER MANAGEMENT PLAN  
**TUESDAY, JUNE 7, 2011**  
**1:00 P.M.**

1. Introductions and review schedule.
2. Receive and discuss recommendations related to the UWMP and work towards consensus on each.



MEETING REPORT  
URBAN WATER MANAGEMENT PLAN  
PUBLIC ADVISORY COMMITTEE  
TUESDAY, JUNE 7, 2011  
1:00 P.M.

Glen Nunnelley	Tuolumne Utilities District
Tom Scesa	Tuolumne Utilities District
Melissa McMullen	Tuolumne Utilities District
Dennis Dahlin	Tuolumne County Association of Realtors
Mike Laird	Tuolumne County Community Development Department
Jon Sturtevant	Tuolumne Group Sierra Club
Emily Stevens	Tuolumne Mi-Wuk Tribal Council
Jesse Cover	Tuolumne County Farm Bureau
Rachelle Kellogg	City of Sonora

### **Introductions and review schedule**

Tom Scesa stated that TUD must develop an Urban Water Management Plan every five years to qualify for state funding. Mr. Scesa stated that even with the state deficits there is a program called State Revolving Fund (SRF) which federal money is passed to the state and then the state distributes those funds. TUD has received substantial funding through this program.

### **Receive and discuss recommendations related to the UWMP and work towards consensus on each**

Tom Scesa began discussion and review of the UWMP. Mr. Scesa stated that in Chapter 3, page 3-5, Table 3-3 gives a ten year history of the average annual daily per capita water use in *gallons per capita per day* (gpcd). On page 3-6 there is a table that demonstrates a five year average of the gpcd. Mr. Scesa stated that these numbers are important because it helps to show where TUD stands on a regional perspective on meeting the states conservation measure of conserving water by 20% by 2020. On page 3-8 and 3-9 the table shows that by 2020 TUD must demonstrate that the customers are using an average of 165 gallons per capita per day or less. Mr. Scesa stated that if you look at the previous table on page 3-3 it shows that last year (2010) TUD was at 158 gpcd. Although this is below the 165 gpcd target, it is still anticipated that further water conservation measures will be required, as 2010 was designated as a wet year and demand for water was relatively low in that year.

Tom Scesa stated that in Chapter 4, regarding Water Supply, that the section answers the questions

1. does TUD have enough water for projects
2. does the plan make sense
3. what is TUD doing with its recycled water

Mr. Scesa stated that historically TUD has used 24,500 acre feet of water conservatively as the minimum amount available to TUD in the worst year on record, although analysis in a 1999 study has demonstrated that up to 27,000 acre-feet would be available.

Dennis Dahlin asked why the ditch system was not included in this plan, would TUD receive any type of credit for making ditch improvements, and if placing turn-off valves on the ditch for water conservation would be beneficial under this plan. Tom Scesa stated that the ditches were specifically not included (*as allowed under the DWR Methodologies Guidelines*) and consequently would not be an area that would help in the 20% conservation by 2020. Further discussions included the topic that each water purveyor specifically defines their system. Staff gave an example that another water agency specifically defined their system boundary to include only a

URBAN WATER MANAGEMENT PLAN  
PUBLIC ADVISORY COMMITTEE  
TUESDAY, JUNE 7, 2011

small component of their open ditch system and omit the majority of their open ditch system from their UWMP.

Not specifically part of the discussion but for clarification to the PAC members:

*The Urban Water Management Plan guidelines provide a format that each water purveyor may define the boundaries of their own water system. These guidelines are outlined in the "Methodologies for Calculating Baseline and Compliance Urban Per Capita water Use" October 1, 2010. TUD defines the TUD system as the system bounded by the water treatment plants and the customer water meters. The intent is that the system boundary definition remains consistent from the baseline period to 2020 in calculating the gpcd.*

Emily Stevens inquired if there was a management plan that took into consideration the ditch system. Tom Scesa responded by stating that TUD is currently implementing a study for the ditch system called The Ditch Sustainability Project through a grant received from the Sierra Nevada Conservancy. Mr. Scesa also mentioned that a study called the Ditch Optimization Plan was implemented in part in the past but that funding was later pulled by TUD's Board prior to its completion. Within the Ditch Sustainability Project, there are three significant elements;

1. Determine if the ditches are eligible for registration on the National Register for Historic Places
2. Develop a capital improvement plan
3. Development of a plan to reduce water loss.

Rachelle Kellogg inquired if the 20% by 2020 was really a conservation measure or a way for the state to figure out the amount of water each area has so that it may take any water that the state feels that area does not need and send it down south. Tom Scesa stated that Ms. Kellogg's statement maybe accurate.

Jon Sturtevant inquired about TUD's toilet rebate program. Mr. Sturtevant stated that he felt the rebate should be unlimited to customers as it is for businesses. If true water conservation is the key to this program then by making the rebate unlimited it will help encourage people to use it, which in turn will save water. Mr. Sturtevant stated that he feels the public is not as aware of this program as it should be.

Mike Laird stated that to help inform the public of TUD's toilet rebate program maybe a bill insert could be distributed. Mr. Laird commented that the insert should only be a few sentences explaining the program since people tend not to read lengthy advertisements.

Emily Stevens inquired as to why in Section 8 there were only three stages (or phases) in Table 8-1 as related to water shortage conditions. Instead of three stages shouldn't there be more increments or phases in water conservation in the event of a water shortage. Was the table part of the requirements of the UWMP approach also? Tom Scesa stated that this is from the TUD's Water, Rules and Regulations and to change would require a Board of Director approval and that may be due for review and revision. Mr. Scesa stated that there would be a fourth stage that will be included. It will cover an emergency response plan for the main canal in case of failure. Ms. Stevens stated that since there were only three stages included in the current plan, more of the prohibitions should be included in phase two.

URBAN WATER MANAGEMENT PLAN  
PUBLIC ADVISORY COMMITTEE  
TUESDAY, JUNE 7, 2011

Rachelle Kellogg suggested that the Board explore the idea of using winter rate and a summer rate for water fees.

Rachelle Kellogg inquired if TUD had any discounts to help assist low income customers. Tom Scesa stated that TUD is unable to offer such a program due to the fact that TUD is a Special District not a public utility, so all customers must be treated the same. Mr. Scesa stated that instead TUD does a conservation rate, so if the customer uses less than a certain amount on a twelve month average the customer gets a reduction on their base and consumption rate.

Rachelle Kellogg stated that it was important to make sure that any landscape plans be carefully thought out to help our communities stay balanced and looking nice as restrictions in water use may result in uncontrolled "zero-scape". For example, some home owners may place unsightly ground covering thus degrading the quality of the neighborhood appearances.

Mike Laird commented on the education DMM (*DMM H*) and stated that he felt dollar for dollar the most beneficial was the school education program because the education taught to the children at the younger ages tends to stick with them for life. Mr. Laird stated that as of now, the program is geared toward third grade but would like to see it expanded to the fifth grade level as well.

Discussion further included the idea that the Master Gardeners who attend the local Farmers Market provide information regarding water conservation at this event too.

Mike Laird inquired how the 19% figure was arrived at for water loss on the DMM. Glen Nunnelley explained that each of the fourteen separate water systems have variety of ages, condition, water treatment processes and possible errors in volume readings. Not only do production and customer readings come in to play, but a sometimes complicated system of intertie water transfers can potentially distort actual system losses. A more formal structure of water system audit will be implemented to better evaluate true system losses. Tom Scesa stated that from an engineering perspective 15% would be a very "tight" system.

Further discussion was heard regarding ideas for rebates for Low Flow Toilets where point of sale information could be implemented with local vendors to better inform the public that a rebate is available. The idea was discussed that if a High Efficiency Washing Machine rebate is offered, that this local rebate format be used as well.

The following comments were submitted by PAC member John Maciel by email and handed out to each PAC member in attendance. Although not discussed at length, TUD provides comments for each in *italics* below each. The UWMP section number is sited before each comment.

Comment: 4.1.1 Surface water: The open ditch/flume that is the conveyance system for raw water has the most vulnerability in maintaining a water supply. That needs to be put into the plan for reliable water system needs.

*Response: This is discussed in section 8.3.1 of the UWMP.*

Comment: 6.1.3 Recycled Wastewater: Why reduce recycle water for Agricultural use; it saves storage for winter flows into Woods Creek. The sewage system will go down some, but not much. So, why cut the irrigation system off??

URBAN WATER MANAGEMENT PLAN  
PUBLIC ADVISORY COMMITTEE  
TUESDAY, JUNE 7, 2011

*Response: The disinfected secondary wastewater is projected to be less in dry years due to climatic changes. .*

Comment: 7.3.1 Fee Rate: The third and fourth tier rate on the fee schedule should pay more than .25% for higher water usage that will reduce water usage.

*Response: Staff will defer to the Board of Directors to provide direction to staff regarding evaluation of this suggestion*

Comment: 7.3.1.2 Conservation: BMP or TUD operating plans may already have these suggestions: Flushing hydrants or Water tank flushing should be connected to some type of recycling the water, put back into the ditch or into construction water trucks for a lower meter rate.

*Response: Staff will defer to the Board of Directors to provide direction to staff regarding evaluation of this suggestion*

Comment: 7.4.3.1 Landscape conservation: Expand the landscape program by offering to buy existing lawn areas, which would be removed by the owner and replaced with drought plants. The city of Las Vegas has a program like this.

*Response: Staff will defer to the Board of Directors to provide direction to staff regarding evaluation of this suggestion*

## **Glen Nunnelley**

---

**From:** Melissa McMullen  
**Sent:** Monday, June 20, 2011 8:26 AM  
**To:** City of Sonora-Rachelle Kellogg; John Maciel; Rick Breeze-Martin; Sierra Club-Jon Sturtevant; TC Economic Development Authority-Larry Cope; TuCare-Melinda Fleming; TUD-Glen Nunnelley; Tuolumne County Association of Realtors-Karen Burkhardt; Tuolumne County Community Development - Mike Laird; Tuolumne County Farm Bureau-Jesse Cover; Tuolumne MeWuk Tribal Council-Emily Stevens  
**Subject:** June 7th Minutes  
**Attachments:** Mins 6-7-11gwn final edits.docx

Public Advisory Committee,

The staff at Tuolumne Utilities District would like to express their appreciation for your participation in the Urban Water Management Plan (UWMP) Public Advisory Committee (PAC). Your comments were constructive, thoughtful and very useful.

Please find attached the minutes from the June 7<sup>th</sup> PAC meeting.

The minutes were brought to the TUD Board for their review, and the TUD staff will be presenting the Draft UWMP to the TUD Board Tuesday, June 21<sup>st</sup> and then for approval by the Board on Tuesday, June 28<sup>th</sup>.

Again thank you for your time, comments and participation. Have a wonderful day.

**Melissa McMullen**

Tuolumne Utilities District  
Administrative Technician  
18885 Nugget Blvd.  
Sonora, CA 95370  
(209) 532-5536, ext 510

## **Glen Nunnelley**

---

**From:** Melissa McMullen  
**Sent:** Tuesday, June 21, 2011 3:37 PM  
**To:** City of Sonora-Rachelle Kellogg; John Maciel; Rick Breeze-Martin; Sierra Club-Jon Sturtevant; TC Economic Development Authority-Larry Cope; TuCare-Melinda Fleming; TUD-Glen Nunnelley; Tuolumne County Association of Realtors-Karen Burkhardt; Tuolumne County Community Development - Mike Laird; Tuolumne County Farm Bureau-Jesse Cover; Tuolumne MeWuk Tribal Council-Emily Stevens  
**Subject:** TUD Public Advisory Committee

The minutes of the PAC meetings and written comments were distributed to the TUD board prior to the June 21<sup>st</sup> hearing for their review. Comments and discussion from the PAC meetings, two committee meetings and general public comments have resulted in TUD including clarifying discussion in the UWMP.

We have revised or added additional discussion for:

1. Numerical water use factors (used to calculate projected water use) and related tables.
2. Revisions to DMM K, Retail Conservation Pricing.
3. Provided approximate annual cost figures for conservation implementation at approximately \$305,000.
4. Prepared additional descriptions of the Cost Benefit analysis in appendix.
5. Various editorial changes and additions to address word usage and to add clarifying language.

Minutes and comments from the PAC will be included in the UWMP that will be submitted to the Department of Water Resources (DWR) and local public outlets including Tuolumne County and City of Sonora offices.

Comments from the PAC and other general public comments regarding Conservation Program modification that require TUD Board action/approval have prompted the formation of future TUD Board presentation(s) where each will be presented to the Board for consideration after the 2010 UWMP has been adopted.

TUD very much appreciates the input and contributions from the PAC. This is beneficial to the community and improves the quality of the UWMP.

### **Melissa McMullen**

Tuolumne Utilities District  
Administrative Technician  
18885 Nugget Blvd.  
Sonora, CA 95370  
(209) 532-5536, ext 510

---

## Board Committee Meeting Minutes

MEETING REPORT  
WATER COMMITTEE  
TUESDAY, JUNE 7, 2011  
8:00 A.M.

Directors: Ralph Retherford  
Barbara Balen

Public: Ron Ringen  
Rebecca Cremeen, CSERC

Staff: Tom Scesa  
Glen Nunnelley  
Casey Prunchak

**Review the Draft Urban Water Management Plan**

Tom Scesa reported that the Urban Water Management Plan (UWMP) has been prepared for TUD in compliance with Division 6, Part 2.6, of the California Water Code, Sections 10608 through 10657 as last amended by Senate Bill No. 7 (SBX7-7), Water Conservation Act of 2009. The original bill requiring preparation of an UWMP requires increased emphasis on water demand management and requires the State of California to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. Mr. Scesa explained that urban water suppliers having more than 3,000 service connections or supplying more than 3,000 acre-feet per year (ac-ft/yr) at retail or wholesale are required to submit a UWMP every five years to the DWR. The UWMP typically must be submitted by December 31 of years ending in 0 and 5. However SBX7-7 extended the UWMP deadline to July 1, 2011 to provide DWR time to develop evaluation methodologies for determining water demand reduction targets. Mr. Scesa noted that TUD has prepared UWMP in 1985, 1990, 1995, 2000, and 2005, noting that the 2010 UWMP is an update to the 2005 plan.

Director Retherford suggested that District staff provide the Regional Water Systems map, June 2011 to the public during the next Home and Garden Show.

Tom Scesa reported that the simulation analysis of the South Fork Stanislaus River System Report summarizes the results for conservation modeling performed to determine TUD's surface water availability under historical drought conditions. The modeling was developed to maintain a minimum target storage levels within Lyons Reservoir and Pinecrest Lake according to water planning which include a minimum targeted storage level of 1,200 ac-ft at Lyons Reservoir and 3,500 ac-ft at Pinecrest Lake. Based on these minimum targeted storage levels, the report estimates TUD's available surface water supply during multiple-dry water years to be between 26,600 and 27,650 ac-ft. TUD has historically used 24,500 ac-ft as the minimum volume of available surface water and has thus elected to continue to use 24,500 ac-ft in this UWMP update as a conservative minimum available surface water volume.

Glen Nunnelley explained that the District is using compliance method 3 calculation summary for the urban water use target by multiplying the respective hydrologic region target by 95 percent. TUD is located in the San Joaquin River hydrologic region, which has a hydrologic region target of 174 gpcd. 95% of the hydrologic region target results in a 2020 compliance target of 165 gpcd.

District staff responded to questions from the Committee members and the public.

The recycle water plan was discussed, noting a large portion of the wastewater in the County is collected, treated and used for irrigation of agricultural lands through TUD's regional wastewater system and water reclamation system.

Tom Scesa indicated that the conservation program and demand management measures includes a summary of current and planned demand management measures implementation and also provides an overview of the proposed TUD program for compliance with SBX7-7, which requires 20 percent statewide reduction in urban water use by 2020.

The group reviewed in detail the description of each water demand management measure that is currently being implemented, or scheduled for implementation. Large landscape conservation programs and incentives includes water meter reading instruction, assistance in tracking a high water bill through a smart meter, and notification of unusually high meter readings. Large landscape usage makes up less than 10 percent of the total water production, no devices or programs are offered specifically to large landscape customers; however TUD plans to implement a proactive program to contact customers from all sectors that have unusually high water usage.

Director Balen suggested the TUD continue to pursue partnerships and providing policies with the County of Tuolumne.

Glen Nunnelley reported that TUD has been implementing their Public Information Program since 1991, noting that part of this program includes regularly attending the local annual home and garden show where information packages are made available to the local community. Water conservation information and kits are made available at the front counter at the TUD main office. Water conservation kits consist of toilet dye tablets, faucet and showerhead flow restrictors, and information how to find and fix common leaks. Mr. Nunnelley indicated that since 2006, TUD has contracted annually with the University of California Agriculture and Natural Resources Cooperative Extension (UCCE) Program to provide public information regarding water conservation gardening and landscaping and TUD contracts with a local coordinator from the Tuolumne County Master Gardener program to provide classroom presentation to all third grade classes in Tuolumne County.

Director Retherford suggested the TUD schedule a Board workshop for three to four times a year to address how customers can lower their water bill, noting that customers really don't know all the water conservation methods to reduce their water consumption.

Director Retherford requested that District staff present the totals of "what was" and "what is" the flow diversions at the same time with District staff presents the current TUD surface water supply status.

MEETING REPORT  
FISCAL COMMITTEE  
THURSDAY, JUNE 9, 2011  
8:00 A.M.

Directors: Bob Behee  
Joseph Day

Public: Ron Ringen

Staff: Tom Scesa  
Glen Nunnelley  
Casey Prunchak

**Review the Draft Urban Water Management Plan**

Tom Scesa reported that the Urban Water Management Plan (UWMP) has been prepared for TUD in compliance with Division 6, Part 2.6, of the California Water Code, Sections 10608 through 10657 as last amended by Senate Bill No. 7 (SBX7-7), Water Conservation Act of 2009. The original bill requiring preparation of an UWMP requires increased emphasis on water demand management and requires the State of California to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. Mr. Scesa explained that urban water suppliers having more than 3,000 service connections or supplying more than 3,000 acre-feet per year (ac-ft/yr) at retail or wholesale are required to submit a UWMP every five years to the DWR. The UWMP typically must be submitted by December 31 of years ending in 0 and 5. However SBX7-7 extended the UWMP deadline to July 1, 2011 to provide DWR time to develop evaluation methodologies for determining water demand reduction targets. Mr. Scesa noted that TUD has prepared UWMP in 1985, 1990, 1995, 2000, and 2005, noting that the 2010 UWMP is an update to the 2005 plan.

Glen Nunnelley explained that the District is using compliance method 3 calculation summary for the urban water use target by multiplying the respective hydrologic region target by 95 percent. TUD is located in the San Joaquin River hydrologic region, which has a hydrologic region target of 174 gpcd. 95% of the hydrologic region target results in a 2020 compliance target of 165 gpcd.

Tom Scesa indicated that when calculating sustained pumping amounts for the TUD groundwater wells during a critical dry year, TUD assumes that District wells could sustain 50 percent of the total potential annual yield, equating to approximately 656 ac-ft/yr. TUD assumes a 50 percent reduction in groundwater availability due to the lack of available data on Sierra foothills wells. Mr. Scesa explained that Table 6-1 shows each isolated groundwater system has adequate supply to meet the dry weather condition assumption of 50 percent reduction in the well system's potential annual yield to meet demand projections through the year 2035.

Director Day expressed his concern with the study only showing the demand projects through the year 2035, suggesting that the comparison projects should be extended through the year 2050 in order to have the ability to use the water.

Tom Scesa reported that the simulation analysis of the South Fork Stanislaus River System Report summarizes the results for conservation modeling performed to determine TUD's surface water availability under historical drought conditions. The modeling was developed to maintain a minimum target storage levels within Lyons Reservoir and Pinecrest Lake according to water planning which include a minimum targeted storage level of 1,200 ac-ft at Lyons Reservoir and 3,500 ac-ft at Pinecrest Lake. Based on these minimum targeted storage levels, the report estimates TUD's available surface water supply during multiple-dry water years to be between 26,600 and 27,650 ac-ft. TUD has historically used 24,500 ac-ft as the minimum volume of available surface water and has thus elected to continue to use 24,500 ac-ft in this UWMP update as a conservative minimum available surface water volume.

Director Behee indicated that he appreciated Appendix G which addresses the projected 20-year growth rates in active water service connections by water service areas.

Tom Scesa explained that the data contained in the projected 20-year growth rate shall serve as the basis for projecting the future water demands to be used in the Treated Water Systems Optimization Plan. Through the process, it has been determined that the annual growth rate for the next 20 years (0-20) is assumed to be 2.27%. If growth within the District's current wholesalers is excluded, the annual growth rate is assumed to be 2.34%. For purposes of the Treated Water Systems Optimization Plan an annual growth rate of 2.27% will be used.

District staff responded to questions from the Committee members and the public.

Tom Scesa indicated that the conservation program and demand management measures includes a summary of current and planned demand management measures implementation and also provides an overview of the proposed TUD program for compliance with SBX7-7, which requires 20 percent statewide reduction in urban water use by 2020.

The group reviewed in detail the description of each water demand management measure that is currently being implemented, or scheduled for implementation. Large landscape conservation programs and incentives includes water meter reading instruction, assistance in tracking a high water bill through a smart meter, and notification of unusually high meter readings. Large landscape usage makes up less than 10 percent of the total water production, no devices or programs are offered specifically to large landscape customers; however TUD plans to implement a proactive program to contact customers from all sectors that have unusually high water usage.

Discussion ensued on determining the water use target and consumption cost.

Minor revisions and suggestions were addressed by the Committee members.

## Appendix E

---

Public Hearing Documentation





**TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • Fax (209) 536-6485

**DIRECTORS**  
Barbara Dalton  
James Castello  
Joseph Day, PhD  
Ralph Rasmussen, M.D.  
Delbert Rozell

**NOTICE OF PUBLIC HEARING  
OF THE  
TUOLUMNE UTILITIES DISTRICT  
REGARDING ADOPTION OF THE 2010  
URBAN WATER MANAGEMENT PLAN**

NOTICE IS HEREBY GIVEN that a public hearing will be held by the Board of Directors of the Tuolumne Utilities District (TUD) on Tuesday, June 21, 2011 at 7:00 p.m. in the Board room at the District office at 18885 Nugget Blvd., Sonora, California, for consideration of the 2010 update of TUD's Urban Water Management Plan.

The objective of this meeting will be to inform and receive public input regarding the 2010 update to the Urban Water Management Plan. The meeting will present information about the Urban Water Management Plan for review by the public and will also provide an opportunity for the public to comment.

The draft Urban Water Management Plan is available for review at the TUD office, 18885 Nugget Blvd., Sonora and on the District website at [http://www.tudwater.com/news\\_features/publications\\_and\\_reports.htm](http://www.tudwater.com/news_features/publications_and_reports.htm)

*Casey Prunchak*

Dated: May 24, 2011

Casey Prunchak, District Secretary

126856-09-08-11

126856 TUD 06-08-11 3x8.indd 1

Fax

6/1/11 2:57:22 PM

**The Union Democrat  
AD PROOF**

Thank you for placing your ad with us.  
*Please have your corrections or changes  
to us by the deadline below.*

Day/Date Friday 6-03 Time 1:00

**Phone 588-4561  
FAX 532-5139**







# TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • Fax (209) 536-6485

## DIRECTORS

Barbara Eden  
James Costello  
Joseph Day, PhD  
Ralph Retherford, M.D.  
Delbert Rotelli

## NOTICE OF PUBLIC HEARING OF THE TUOLUMNE UTILITIES DISTRICT REGARDING ADOPTION OF THE 2010 URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that a public hearing will be held by the Board of Directors of the Tuolumne Utilities District (TUD) on Tuesday, June 21, 2011 at 7:00 p.m. in the Board room at the District office at 18885 Nugget Blvd., Sonora, California, for consideration of the 2010 update of TUD's Urban Water Management Plan.

The objective of this meeting will be to inform and receive public input regarding the 2010 update to the Urban Water Management Plan. The meeting will present information about the Urban Water Management Plan for review by the public and will also provide an opportunity for the public to comment.

The draft Urban Water Management Plan is available for review at the TUD office, 18885 Nugget Blvd., Sonora and on the District website at [http://www.tudwater.com/news\\_features/publications\\_and\\_reports.htm](http://www.tudwater.com/news_features/publications_and_reports.htm)

Dated: May 24, 2011

Casey Prunchak, District Secretary



**TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • Fax (209) 536-6485

**DIRECTORS**

Barbara Balen  
James Costello  
Joseph Day, PhD  
Ralph Retherford, M.D.  
Delbert Rotelli

**NOTICE OF PUBLIC HEARING  
OF THE  
TUOLUMNE UTILITIES DISTRICT  
REGARDING ADOPTION OF THE 2010  
URBAN WATER MANAGEMENT PLAN**

NOTICE IS HEREBY GIVEN that a public hearing will be held by the Board of Directors of the Tuolumne Utilities District (TUD) on Tuesday, June 21, 2011 at 7:00 p.m. in the Board room at the District office at 18885 Nugget Blvd., Sonora, California, for consideration of the 2010 update of TUD's Urban Water Management Plan.

The objective of this meeting will be to inform and receive public input regarding the 2010 update to the Urban Water Management Plan. The meeting will present information about the Urban Water Management Plan for review by the public and will also provide an opportunity for the public to comment.

The draft Urban Water Management Plan is available for review at the TUD office, 18885 Nugget Blvd., Sonora and on the District website at [http://www.tudwater.com/news\\_features/publications\\_and\\_reports.htm](http://www.tudwater.com/news_features/publications_and_reports.htm)

*Casey Prunchak*

Dated: May 24, 2011

Casey Prunchak, District Secretary



2010 Urban Water Management Plan  
Public Hearing

**Tuolumne Utilities District (TUD)**

**21 June 2011**

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---



Urban Water Management Plans (UWMPs)

- UWMP Act (Act) was adopted in 1983
- Purpose of Act is to assist with long range planning efforts to ensure adequate and reliable water supplies are available to meet existing and projected water demands
- 25-year planning horizon
- Updated every 5 years
- Current focus is on Conservation Act SBx7-7 with a goal of a 20% reduction in CA urban per capita water use by 2020.
- Need approved UWMP to receive State grant and loan funding

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---



Treated Water System  
Historical Population & Growth Rates

- TUD serves a large portion of Tuolumne County
  - Approximately 29,000 residents in 2010

Year	Residential Connections	% Increase Due to			TUD Projected Population based on 2000 Census
		Non-Acquisition	Acquisition	Combined	
1992	7,708				19,558
2000	9,756				24,755
2010	11,428				28,997
Total Annual Growth		1.08%	1.28%	2.16%	

- Assumption: TUD will acquire surrounding systems within the next 20 years, therefore:
  - Combined Growth Rate = **2.34%**, used for 2010-2030
  - Non-acquisition Growth Rate = **1.08%**, used for 2030-2035

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

### Projected Number of Connections

(updated since Draft UWMP submitted)

Customer Type	2010	2015	2020	2025	2030	2035
Single Family Residential <sup>3</sup>	11,137	12,510	14,047	15,767	17,690	18,669
Multi-Family Residential <sup>2</sup>	291	354	430	523	636	671
Commercial <sup>2</sup>	858	963	1,080	1,212	1,360	1,435
Industrial <sup>2</sup>	19	20	20	21	21	22
Institutional/Government <sup>2</sup>	384	400	417	435	453	472
Landscape <sup>2</sup>	70	74	78	82	86	91
<b>Total Connections<sup>1</sup></b>	<b>12,759</b>	<b>14,320</b>	<b>16,072</b>	<b>18,039</b>	<b>20,246</b>	<b>21,360</b>

<sup>1</sup> Total Connections uses growth rate of 2.34% (2010-2030) and 1.08% (2030-2035)  
<sup>2</sup> Multi-family, commercial, industrial, institutional, and landscape connections were projected using their own historic growth rates  
<sup>3</sup> Single family residential makes up the difference between projected Total Connections and all other category projections

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### Water Use Factors

(updated since Draft UWMP submitted)

Year	Single Family	Multi-Family	Commercial	Industrial	Institutional	Landscape	Total
<b>Historical Water Use (ac-ft)</b>							
2005	3,486	356	347	3	390	80	4,662
2006	3,485	357	370	3	389	80	4,684
2007	3,543	363	376	3	396	81	4,762
2008	3,664	375	389	3	409	84	4,924
2009	3,388	347	360	3	379	77	4,554
2010	3,106	319	351	3	347	71	4,197
<b>Average Water Use Factor (ac-ft/connection)</b>							
	<b>0.313</b>	<b>1.231</b>	<b>0.431</b>	<b>0.167</b>	<b>1.009</b>	<b>1.131</b>	<b>4.282</b>

▪ Water Use Factor is historical water use divided by number of connections, by category

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### Current & Projected Treated Water Use

(updated since Draft UWMP submitted)

Water Use Type, AF/Y	2010	2015 <sup>1</sup>	2020 <sup>1</sup>	2025 <sup>1</sup>	2030 <sup>1</sup>	2035 <sup>1</sup>
Single Family Residential	3,106	3,916	4,397	4,935	5,537	5,843
Multi-Family Residential	319	436	530	644	783	826
Commercial	351	415	465	522	586	618
Industrial	3	3	3	3	4	4
Institutional/Government	347	404	421	439	457	476
Landscape	71	83	88	93	98	103
Other Uses <sup>2</sup>	15	17	19	21	24	25
Unaccounted-for Water <sup>3</sup>	911	1,000	1,123	1,263	1,420	1,497
<b>Total</b>	<b>5,123</b>	<b>6,274</b>	<b>7,046</b>	<b>7,920</b>	<b>8,909</b>	<b>9,392</b>

<sup>1</sup> Water use projections are based on an average of 2005 to 2010 data  
<sup>2</sup> Other Uses include: fire dept hydrant testing, flushing & construction  
<sup>3</sup> Unaccounted-for water is assumed to be 16% based on 2005 to 2010 data

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### Treated Water Use Targets Background

- Senate Bill 7 (20 x 2020)
  - Signed by Governor in November 2009
  - Calls for CA per capita water use reduction of 20% by 2020
    - Interim 10% reduction by 2015
  - Requires water agencies to determine
    - Baseline water use (based on 10-year average starting no earlier than 1994)
    - Interim water use target
    - Compliance water use target
  - Allows water agencies to choose 1 of 4 Methods to calculate water use targets

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

### TUD's Treated Water Use Targets

- Method 3: 95% of hydrologic region goal (174 gpcd) as set by the State
- TUD is proposing to adopt Method 3
  - Baseline: 187 gallons per capita daily (gpcd)
    - 10-year average 1999-2008
  - Method 3 Interim Target: 176 gpcd
  - Method 3 Compliance Target: 165 gpcd (95% of 174 gpcd)
  - Current Water Use: 158 gpcd in 2010 and 174 gpcd in 2009

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

### Projected and Target Treated Water Use

(updated since Draft UWMP submitted)

Year	Population Projection	Water Use Demand Projections <sup>1</sup> (AF/Y)	SBx7-7 Target GPCD	Water Use based on GPCD Targets (AF/Y)	Additional Conservation Required (AF/Y)
2010	28,997	5,123	-	5,123	-
2015 Interim Target	32,743	6,274	176	6,438	0
2020 Final Target	36,842	7,046	165	6,802	244
2025	41,446	7,920	165	7,653	267
2030	46,617	8,909	165	8,610	299
2035	49,199	9,392	165	9,087	305

<sup>1</sup> Water use projections are based on average of 2005 to 2010 water use data

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

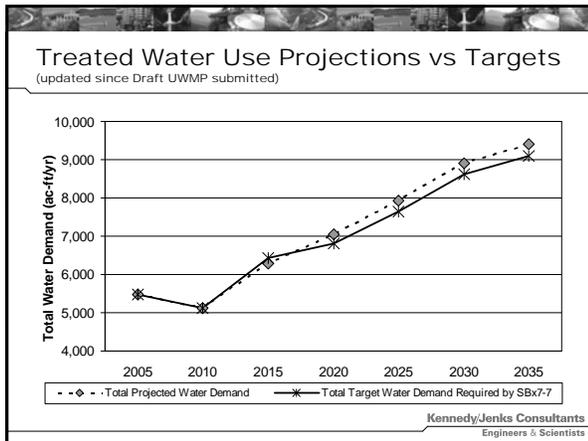
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

---

---

### Conservation Program Background

- TUD is a signatory to California Urban Water Conservation Council (CUWCC)
  - CUWCC assists TUD in meeting state requirements
- State established 14 conservation programs and activities to help meet water use reductions targets
  - State calls these Demand Management Measures (DMMs)
  - CUWCC calls these Best Management Practices (BMPs)
  - 8 are considered Foundational and should be implemented
  - 6 are considered Programmatic and should be implemented if cost effective

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### TUD's Conservation Program

BMP	DMM	Name	Implementation	
<b>Foundational – Should be implemented</b>				
1.1.1	L	Conservation Coordinator	Yes	Implemented and ongoing
1.1.2	M	Water Waste Prevention	Yes	Implemented and ongoing
1.1.3	J	Wholesale Agency Assistance Programs	N/A	TUD does not meet state definition
1.2	C	Water Loss Control; Audits, Leak Detection and Repair	Yes	Implemented; additional implementation planned
1.3	D	Metering with Commodity Rates	Yes	Fully implemented
1.4	K	Retail Conservation Pricing	Yes	Implemented using tiered rate structure
2.1	G	Public Information Programs	Yes	Implemented and ongoing
2.2	H	School Education Programs	Yes	Implemented and ongoing
<b>Programmatic – Implement if cost effective</b>				
3.1	A&B	Residential Assistance Program	No	Not cost effective
3.2	A	Landscape Water Survey, Residential	No	Not cost effective
3.3	F	High-Efficiency Washing Machine Rebate Programs	No	Not cost effective
3.4	N	WaterSense Specification (WSS) Toilets	Yes	Ave 22 toilet rebates distributed annually
4	I	Commercial, Industrial, and Institutional Conservation	No	Not cost effective
5	E	Landscape, Conservation & Incentives	No	Not cost effective

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### TUD's Conservation Implementation Plan

- Continue to implement all Foundational BMPs and Toilet Rebate Program
  - Expand Water Loss Control BMP to meet SBX7-7 required water savings
    - Implement AWWA M36 protocol for water system audits
- Annual Cost to implement (based on 2010 expenditures)
  - Approximately \$228,000 for Foundational BMPs
  - Approximately \$77,000 for Programmatic BMPs
  - Approximate Conservation Implementation Total = \$305,000
  - Estimated increase of approximately \$50,000 for implementation of AWWA M36 protocol

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### TUD's Water Supply Sources

- TUD has 3 water supply sources
  - Surface water
    - Water is supplied through PG&E Agreement from the SFSR
    - Annual volume based on water year type
    - Historic available flows during extended drought period are estimated to be 26,600 - 27,650 ac-ft/yr
    - UWMP uses conservative 24,500 ac-ft/yr as minimum supply for normal and dry years
  - Groundwater
    - Based on estimated well capacity
    - Assume 50% capacity for dry-years
  - Recycled Wastewater
    - Based on Small Community Wastewater Grant TUD Regional WWTP and Disposal System Feasibility Report
    - Assume 20% reduction for dry-years

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### TUD's Total Water Demand

Year	Treated Water			Raw and Recycle Water				Water Demand Total
	Treated Water Sales	Additional Treated Water Uses & Losses	Wholesale Deliveries	Agriculture Irrigation as Raw Water	Ag Irrigation as Recycled Water	Wholesale Deliveries	Additional Raw Water Uses & Losses	
2010	4,197	926	208	2,366	1,850	501	5,465	15,513
2015	5,257	1,017	289	2,829	2,308	575	6,645	18,920
2020	5,904	1,142	305	2,985	2,421	607	7,295	20,659
2025	6,636	1,284	321	3,149	2,540	641	8,021	22,592
2030	7,465	1,444	339	3,322	2,664	676	8,831	24,741
2035	7,870	1,522	358	3,505	2,794	713	9,312	26,074

- Additional Treated Water Uses & Losses are assumed to be 16% of total treated water demand
- Additional Raw Water Uses & Losses are assumed to be 40% of Surface Water Supply

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### Water Supply & Demand - Normal Year

Source of Supply (ac-ft/yr)	2010 (actual)	2015	2020	2025	2030	2035
Surface Water	13,500	24,500	24,500	24,500	24,500	24,500
Groundwater	163	1,311	1,311	1,311	1,311	1,311
Recycled Water	1,850	2,308	2,421	2,540	2,664	2,794
Supply Totals	15,513	28,119	28,232	28,351	28,475	28,606
Demand Totals	15,513	18,920	20,659	22,592	24,741	26,074
Water Supply Surplus (Supply Minus Demand)	0	9,200	7,573	6,759	3,735	2,532

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

### Water Supply & Demand - Dry Year

Total Volume (ac-ft/yr)	2015	2020	2025	2030	2035
Supply Total	26,993	27,084	27,182	27,284	27,372
Demand Total	18,920	20,659	22,592	24,741	26,074
Water Supply Surplus (Supply Minus Demand)	8,073	6,425	4,590	2,543	1,298

- TUD has adequate water supply to meet projected normal, dry year, and multiple dry year conditions

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

- ### Public Notices and Opportunities for Input
- 10 March - 60 Day UWMP Preparation Notice to City & County
  - 5 May - Public Advisory Committee (PAC) 1 of 2 meetings
  - 1 June - Notice of Public Hearing provided to City and County
  - 2 June - Draft UWMP released for public review
  - 6 June - Public Notice of Draft UWMP release & 21 June hearing
  - 7 June - PAC 2 of 2 meeting to discuss review comments
  - 7 June - Water Committee Meeting to discuss review comments
  - 9 June - Fiscal Committee Meeting to discuss review comments
  - 13 June - Public Notice for 21 June UWMP Public Hearing
  - 21 June - UWMP Public Hearing
- Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

---

---

Draft UWMP Changes to Date due to Public Comments

- Revised water use factors and projections as discussed
- Other minor editorial changes and additional explanations have been incorporated
- Conservation Program modification comments that require Board action/approval will be presented to the Board for consideration after the 2010 UWMP has been adopted
- Draft UWMP is available for review and comment until 4:00 PM, 22 June 2011
  - Draft UWMP is available online at [www.tudwater.com](http://www.tudwater.com), or for purchase at the District's office and this public hearing

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

Final UWMP Preparation & Schedule

- UWMP must be adopted by 1 July 2011
- UWMP due to the State within 30 days of adoption, but prior to 1 August 2011
- Board adoption of the 2010 UWMP anticipated at the 28 June 2011 Board Meeting
- 2010 UWMP will be available online at [www.tudwater.com](http://www.tudwater.com)

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---

Conclusion

- In order to comply with state requirements, TUD staff will recommend at the 28 June 2011 Board Meeting that the TUD Board of Directors adopt a resolution that:
  - Approves and adopts the 2010 UWMP and authorizes transmittal to the State with any necessary amendments,
  - Establishes 187 gpcd as TUD's baseline water use, and
  - Adopts Method 3 for determining TUD's 2015 interim water use target of 176 gpcd and 2020 compliance water use target of 165 gpcd

Kennedy/Jenks Consultants  
Engineers & Scientists

---

---

---

---

---

---

---

---

---

---



TUOLUMNE UTILITIES DISTRICT  
SPECIAL MEETING  
JUNE 21, 2011

A special meeting of the Board of Directors of Tuolumne Utilities District convened at 7:00 p.m. at the District Office, 18885 Nugget Blvd., Sonora, California.

The following Directors and staff were present:

Bob Behee, President  
Joseph Day  
Ralph Retherford  
Delbert Rotelli

Pete Kampa, General Manager  
Tom Scesa, District Engineer  
Glen Nunnolley, Associate Engineer  
Sheri Barnett, Human Resources Director  
Casey Prunchak, District Secretary

**Call to Order**

**Pledge of Allegiance**

Director Barbara Balen was absent. Members of the press and public were also present.

**I. Public Forum**

Ed Ellefsen addressed the Board reading a prepared statement regarding the historic value of the ditches and how they serve a vital role in supplying our water. Mr. Ellefsen stated that we have had studies done before that have not been fulfilled, noting that previous studies were flawed because they had a hidden agenda and did not focus on keeping the ditches functioning but how to bypass them. Mr. Ellefsen suggested that the District make sure there is a focus on the ditches, since they serve their purpose, they are scenic, are a living history, and people love them. Let's use their historic value by registering them to gain funding.

Glenn Carroll addressed the Board suggesting that the District adopt some sort of incentives for customers adjacent to the ditch system to connect to raw water in order to stop using treated water for irrigation purposes.

**II. Regular Business**

1. Public Hearing to Allow for Community Input Regarding the Urban Water Management Plan 2010 Update Including TUD's Implementation Plan for Compiling with Senate Bill 7 (SBX7-7)

President Behee opened the public hearing at 7:05 p.m. and asked if the Notice of Hearing had been given. Casey Prunchak responded the the Notice of Hearing was published twice in The Union Democrat, and that the proof of publication is in the District files.

Tom Scesa welcomed and introduced Tracie Muller, Project Manager for Kennedy/Jenks Consultants.

Tom Scesa reported that the Urban Water Management Plan (UWMP) has been prepared for TUD in compliance with Division 6, Part 2.6, of the California Water Code, Sections 10608 through 10657 as last amended by Senate Bill No. 7 (SBX7-7), Water Conservation Act of 2009. The original bill requiring preparation of an UWMP requires increased emphasis on water demand management and requires the State of California to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. Mr. Scesa explained that urban water suppliers having more than 3,000 service connections or supplying more than 3,000 acre-feet per year (ac-ft/yr) at retail or wholesale are required to submit a UWMP every five years to the DWR. The UWMP typically must be submitted by December 31 of years ending in 0 and 5. However SBX7-7 extended the UWMP deadline to July 1, 2011 to provide DWR time to develop evaluation methodologies for determining water demand reduction targets. Mr. Scesa noted that TUD has prepared UWMP in 1985, 1990, 1995, 2000, and 2005, noting that the 2010 UWMP is an update to the 2005 plan.

Tom Scesa reported that the population of the area served by the TUD water distribution systems is the defined service area population for this UWMP. Population trends developed by state and federal agencies have

historically been unrepresentative of the TUD service area. Therefore, TUD used its own record connection data; correlated and compared with local County Planning, as the basis for determining population projections for the service area.

Glen Nunnelley presented the following power point presentation to the Board and members of the audience:

#### Urban Water Management Plan (UWMPs)

- UWMP Act (Act) was adopted in 1983
- Purpose of Act is to assist with long range planning efforts to ensure adequate and reliable water supplies are available to meet existing and projected water demands
- 25-year planning horizon
- Updated every five years
- Current focus is on Conservation Act SBX7-7 with a goal of a 20% reduction in California urban per capita water use by 2020
- Need approved UWMP to receive State grant and loan funding

#### Treated Water System Historical Population and Growth Rates

- TUD serves a large portion of Tuolumne County, approximately 29,000 residents in 2010
- Assumption: TUD will acquire surrounding systems within the next 20 years, therefore, combined growth rate - 2.34% used for 2010 through 2030; and non-acquisition growth rate - 1.08% used for 2030 through 2035

#### Projected Number of Connections

- Total connections uses growth rate of 2.34% (2010-2030) and 1.08% (2030-2035)
- Multi-family, commercial, industrial, institutional, and landscape connections were projected using their own historic growth rates

#### Treated Water Use Targets Background

- Senate Bill 7 (20 x 2020)
  - Signed by the Governor in November 2009
  - Calls for California per capita water use reduction of 20% by 2020
    - Interim 10% reduction by 2015
  - Requires water agencies to determine
    - Baseline water use (based on 10-year average starting no earlier than 1994)
    - Interim water use target
    - Compliance water use target
  - Allows water agencies to choose 1 of 4 Methods to calculate water use targets

#### TUD's Treated Water Use Targets

- Methods 3: 95% of hydrologic region goal (174 gpcd) as set by the State
- TUD is proposing to adopt Methods 3
  - Baseline: 187 gallons per capita daily (gpcd), 10-year average 1999-2008
  - Method 3 Interim Target - 176 gpcd
  - Method 3 Compliance - 165 gpcd (95% of 174 gpcd)
  - Current Water Use - 158 gpcd in 2010 and 174 gpcd in 2009

#### Conservation Program Background

- TUD is a signatory to California Urban Water Conservation Council (CUWCC)
  - CUWCC assists TUD in meeting state requirements
- State established 14 conservation programs and activities to help meet water use reductions targets
  - State calls these Demand Management Measures
  - CUWCC calls these Best Management Practices
  - Eight are considered Foundational and should be implemented
  - Six are considered Programmatic and should be implemented if cost effective

Glen Nunnelley reviewed TUD's Conservation Plan and indicated that the Foundational programs that should be implemented have been implemented and are currently ongoing and meets state definitions. Mr. Nunnelley also reviewed the Programmatic programs that should be implemented if cost effective, noting that of the six Programmatic programs, TUD has implemented one and the other programs are not cost effective and have not been implemented.

#### TUD's Conservation Implementation Plan

- Continue to implement all Foundational BMP's and the toilet rebate program

- Expand water loss control BMP to meet SBX7-7 required water savings, implement AWWA M36 protocol for water system audits
- Annual costs to implement (based on 2010 expenditures)
  - Approximately \$228,000 for Foundational BMP's
  - Approximately \$77,000 for Programmatic BMP's
  - Approximate conservation implementation total = \$305,000
- Estimated increase of approximately \$50,000 for implementation of AWWA M36 protocol

#### TUD's Water Supply Sources

- TUD has three water supply sources
  - Surface water
    - Water is supplied through PG&E agreement from the SFSR
    - Annual volume based on water year type
    - Historic available flows during extended drought period are estimated to be 26,600 - 27,650 ac-ft/year
    - UWMP uses conservation 24,500 ac-ft/yr as minimum supply for normal and dry years
  - Groundwater
    - Based on estimated well capacity
    - Assume 50% capacity for dry years
  - Recycled Wastewater
    - Based on Small Community Wastewater Grant TUD Regional WWTP and Disposal System Feasibility Report
    - Assume 20% reduction for dry years

Director Retherford requested that District staff reset the baseline numbers annually, instead of applying five years of 2.34% anticipated growth rate, that each year it be recalculated according to the District's actual figure in order to achieve an accurate projection.

#### Water Supply & Demand

- TUD has adequate water supply to meet projected normal, dry year, and multiple dry year conditions

#### Public Notices and Opportunities for Input

- March 10, 2011 - 60 day UWMP Preparation Notice to the City of Sonora and County of Tuolumne
- May 5, 2011 - Public Advisory Committee one of two meetings
- June 1, 2011 - Notice of Public Hearing provided to the City of Sonora and County of Tuolumne
- June 2, 2011 - Draft UWMP released for public review
- June 6, 2011 - Public Notice of Draft UWMP release and June 21, 2011 public hearing
- June 7, 2011 - PAC two of two meetings to discuss and review comments
- June 7, 2011 - Water Committee meeting to discuss and review comments
- June 9, 2011 - Fiscal Committee meeting to discuss and review comments
- June 13, 2011 - Public Notice for June 21, 2011 UWMP public hearing
- June 21, 2011 - UWMP public hearing

#### Draft UWMP Changes to Date Due to Public Comments

- Revised water use factors and projections as discussed
- Other minor editorial changes and additional explanations have been incorporated
- Conservation program modification comments that require Board action/approval will be presented to the Board for consideration after the 2010 UWMP has been adopted
- Draft UWMP is available for review and comment until 4:00 p.m. on June 22, 2011

#### Final UWMP Preparation & Schedule

- UWMP must be adopted by July 1, 2011
- UWMP due to the State within 30 days of adoption, but prior to August 1, 2011
- Board adoption of the 2010 UWMP anticipated at the June 28, 2011 Board meeting
- 2010 UWMP will be available on the TUD website

#### Conclusion

- In order to comply with state requirements, TUD staff will recommend at the June 28, 2011 Board meeting that the TUD Board of Directors adopt a resolution that:
  - Approves and adopts the 2010 UWMP and authorizes transmittal to the State with any necessary amendments,
    - Establishes 187 gpcd as TUD's baseline water use, and
    - Adopts Method 3 for determining TUD's 2015 interim water use target of 176 gpcd and 2020 compliance water

use target of 165 gpcd

President Behee asked if any Board members have any questions before we hear from the public.

Director Day reminded the other Board members and the public that the Urban Water Management Plan is a working document and not intended to solve all the Districts problems, noting that the objective is to comply with regulations and to qualify for grant funding.

Board members had clarifying questions for District staff.

President Behee asked if any written comments had been received. Casey Prunchak responded that no other written comments were received except the comments provided in the Board packets.

President Behee asked if there are any members of the audience who wish to be heard on the matter.

John Buckley, representing Central Sierra Environmental Resource Center, addressed the Board stating several former TUD General Managers and members of the Board have consistently suggested that water conservation will be addressed "soon" in the future when somehow dollars to do conservation will magically appear. Mr. Buckley noted that TUD fails to apply any meaningful amount of funding to water conservation practices, incentives, and educational advertising. Mr. Buckley indicated that he believes that the draft UWMP markedly exaggerates any realistic water demand for the next 10 to 15 years, noting that the document misleads by ignoring the huge losses in the water system by claiming that the plan only addresses treated water.

John Buckley also indicated that the statement that "TUD is progressing toward implementation of all Foundational BMPs required in the revised MOU and UWMP Act" is highly debatable. TUD only publicized water conservation restrictions during extreme dry years, there are not water conservation management actions taken or promoted during normal years for the bulk of TUD customers. Mr. Buckley indicated that the so called Programmatic DMMs are all basically shunned by TUD as not being cost effective is a very weak claim and should not be ignored by TUD.

John Buckley reported that the same promises were made five years ago and will be made again in five years, noting that the UWMP should reflect far more accurately the true situation and specific actions on how the District will turn around its track record at implementing water conservation, supporting water conservation, educating customers about water conservation, and providing economic incentives for water conservation.

Glenn Carroll addressed the Board questioning when the District anticipates that Tuolumne County will run out of water. Director Retherford responded that TUD will be out of water in approximately 2035 with our current water supply.

Glenn Carroll questioned the future disposal of wastewater how many additional people/homes can be accommodated on land TUD now owns, and how many of these acres are on Williamson Act property. Mr. Carroll also questioned what kind of commitment does the District have with the County of Tuolumne for Ag land use for future planning of wastewater disposal. Director Behee indicated that the District is currently involved in the Small Community Wastewater Grant program to address the wastewater needs of the District.

Tom Scesa reported that all written comments received by the District will become an appendix in the Urban Water Management Plan.

Hearing no additional comments, President Behee closed the public hearing at 8:25 p.m.

President Behee thanked the members of the audience, the Public Advisory Committee members and District staff for their thorough work on the draft Urban Water Management Plan.

### III. Staff Reports

Pete Kampa reported that TUD has prepaid the 2011/12 PERS employer contribution rate of \$1,624,365, saving the District a total of \$38,954 this year.

Pete Kampa reported that the Board was provided a document entitled "Ag-Urban Alternation Delta Plan Talking Points" and a letter to the Delta Stewardship Council from several water agencies and organizations regarding the request to include Alternate Delta Plan as a Project Alternative in the Environmental Impact Report.

**IV. Directors Communication and Reports**

Director Retherford expressed his appreciation to District staff for their work and refinement over the years that was included in the Urban Water Management Plan 2010 update.

Director Retherford also expressed his appreciation to District staff for their continued and ongoing water conservation measures that TUD has accomplished.

The meeting adjourned at 8:45 p.m.

Date: June 28, 2011



Robert M. Behee, President  
Board of Directors

ATTEST:   
Casey Prunchak, District Secretary





## Appendix F

---

### Public Comments and Responses on the UWMP





# COMMUNITY DEVELOPMENT DEPARTMENT

BEV SHANE, AICP  
Director

BUILDING AND SAFETY - PLANNING - GIS - HOUSING - ENVIRONMENTAL HEALTH

48 W. Yaney Avenue, Sonora  
Mailing: 2 S. Green Street  
Sonora, CA 95370  
209 533-5633  
209 533-5616 (fax)  
209 533-5909 (fax - EHD)  
[www.tuolumnecounty.ca.gov](http://www.tuolumnecounty.ca.gov)

Date: June 6, 2011  
To: Tom Sceza  
Glen Nunally  
From: Mike Laird  
Re: Comments on Draft Tuolumne Utilities District  
2010 Urban Water Management Plan (June 2011)

## Page 2-13 – Growth Rate

The non-acquisition growth rate of 1.08% seems accurate, considering that the population of Tuolumne County grew at a rate of approximately 1.3% annually prior to the housing foreclosure crisis and it will require several more years to recover from this problem.

I think you need to explain more thoroughly how the non-acquisition growth rate of 1.08% and the acquisition growth rate of 1.50% combine to an annual growth rate of 2.34%.

## Page 3-8 – Water Use Factor

The water use factor should be defined. Is this the amount (ac-ft/yr) anticipated to be used by each connection in each category?

## Page 3-10 – Section 3.4 Sales to Other Agencies

The annual growth rate of 1.08% seems to be a good average. The Sonora Water Company will add connections. The other four water companies are close to being built out.

## Page 3-14 – Section 3.7.1 Lower Income Water Use Projections

The Housing Element of the Tuolumne County General Plan was last updated in July 2010, not 2009. According to the Housing Element, very low-income households comprise 22% of the housing units in the County, not 21%.

## Page 4-10 – Section 4.6.3 Wastewater Reclamation System Flows and Uses

It would be nice to convert the quantities of recycled wastewater from ac-ft/yr to million gallons per day (mgd) in order to determine how much capacity remains at the Regional Wastewater Treatment Plant and the Jamestown Wastewater Treatment Plant.

## Pages 6-6 and 6-7 – Tables 6-6, 6-7 and 6-8

Does supply increase due to the increase in reclaimed wastewater? A brief explanation would clarify this.

Page 7-6 – Section 7.3.1.4 Water Loss Control (DMM C)

What is the generally accepted industry standard for water loss? This information would be helpful in determining whether 19% is an acceptable threshold to trigger a full water loss audit.

Page 7-8 – Section 7.3.1.6 Retail Conservation Pricing (DMM K)

I would recommend that TUD advertise the conservation rate better. Perhaps a flyer in water bills could alert customers to this measure and provide an incentive to reduce water consumption. The second tier probably consists of larger families. The third tier could probably be increased in price to encourage water conservation.

Page 7-10 – Section 7.3.2.1 Public Information Programs (DMM G)

Providing a water bill comparing water usage to the previous year is a good idea. It would serve to alert residents if their water use is rising significantly absent an apparent reason.

Page 7-11 – Section 7.3.2.2 School Education Programs (DMM H)

I think this is the most valuable demand management measure in the document. If TUD can teach children the importance of water conservation at an early age, when they are still impressionable, it will stay with many of them for a lifetime. If budget allows, I would recommend expanding this program to allow two visits to each student.

Pages 7-12 and 7-13 – Section 7.4.1.1 Residential Assistance Programs (DMM A and B)

In dry years, TUD may want to consider offering this program, at least to Tier 3 water customers.

DMM general comments:

1. The cost/benefit analysis calculations need to be explained. What are the total benefits of each DMM? How is the "cost of water saved" calculated?
2. Using cost/benefit as the criteria to select DMM's is acceptable. TUD must be responsive to its rate payers. However, TUD may want to review certain of the DMM's when water use approaches the available supply (dry years).

Appendix G:

5/30/11 Memo – flow chart – Specific Proposed Developments

I recommend the following land development projects be considered in the final analysis:

Grand Yosemite National Golf and Wetland Preserve  
Wilcox Park  
Parrotts Ferry Village  
Dambacher Subdivision

5/30/11 Memo – Appendix B – Proposed New Development

I recommend the following revisions prior to finalizing any analysis:

Columbia/Gibbs – add Parrotts Ferry Village 36 (35)  
Sonora Jamestown – remove Red Tail Ridge – this project proposes wells

## Responses to Mike Laird's Comments dated June 6, 2011

Comment: Page 2-13

The non-acquisition growth rate of 1.08% seems accurate, considering that the population of Tuolumne County grew at a rate of approximately 1.3% annually prior to the housing foreclosure crisis and it will require several more years to recover from this problem.

I think you need to explain more thoroughly how the non-acquisition growth rate of 1.08% and the acquisition growth rate of 1.50% combine to an annual growth rate of 2.34%.

*Response:* Please refer to the memo included in UWMP Appendix G. The two growth rates cannot be added together to get the combined growth rates as the compounding math is more complicated than that. Each growth rate calculation is recalculated using the starting number of connections and the total number of new connections.

Comment: Page 3-8 - Water Use Factor

The water use factor should be defined. Is this the amount (ac-ft/yr) anticipated to be used by each connection in each category?

*Response:* Yes, the water use factor units are ac-ft/yr and these units have been added to Table 3-10.

Comment: Page 3-10 - Section 3.4 Sales to Other Agencies

The annual growth rate of 1.08% seems to be a good average. The Sonora Water Company will add connections. The other four water companies are close to being built out.

*Response:* Thanks, this provides a good check of our growth rate assumption.

Comment: Page 3-14 - Section 3.7.1 Lower Income Water Use Projections

The Housing Element of the Tuolumne County General Plan was last updated in July 2010, not 2009. According to the Housing Element, very low-income households comprise 22% of the housing units in the County, not 21 %.

*Response:* These corrections have been made

Comment: Page 4-10 - Section 4.6.3 Wastewater Reclamation System Flows and Uses

It would be nice to convert the quantities of recycled wastewater from ac-ft/yr to million gallons per day (mgd) in order to determine how much capacity remains at the Regional Wastewater Treatment Plant and the Jamestown Wastewater Treatment Plant.

Response: The remaining capacity of the WWTP is not applicable to the UWMP.

Comments: Pages 6-6 and 6-7 - Tables 6-6,6-7 and 6-8

Does supply increase due to the increase in reclaimed wastewater? A brief explanation would clarify this.

Response: Yes, this is described in Chapter 4. A footnote has been added to reference the reader to Chapter 4.

Comment: Page 7-6 - Section 7.3.1.4 Water Loss Control (DMM C)

What is the generally accepted industry standard for water loss? This information would be helpful in determining whether 19% is an acceptable threshold to trigger a full water loss audit.

Response: Section 7.5 has been expanded to provide additional explanation of what TUD will be doing to implement additional water audit procedures using the industry standard AWWA M36 protocol. As stated in AWWA M36 there is not an industry standard water loss established for acceptable water loss.

Comment: Page 7-8 - Section 7.3.1.6 Retail Conservation Pricing (DMM K)

I would recommend that TUD advertise the conservation rate better. Perhaps a flyer in water bills could alert customers to this measure and provide an incentive to reduce water consumption. The second tier probably consists of larger families. The third tier could probably be increased in price to encourage water conservation.

*Response: Text has been added to Section 7.3.1.6 to better describe DMM K requirements and TUD's exemption to this DMM. The intent of this DMM is to have the District provide a rate structure such that 70% of the District's revenues come from volumetric water consumption.*

Comment: Page 7-10 - Section 7.3.2.1 Public Information Programs (DMM G)

Providing a water bill comparing water usage to the previous year is a good idea. It would serve to alert residents if their water use is rising significantly absent an apparent reason.

*Response: Thank you for this complementary comment.*

Comment: Page 7-11 - Section 7.3.2.2 School Education Programs (DMM H)

I think this is the most valuable demand management measure in the document. If TUD can teach children the importance of water conservation at an early age, when they are still impressionable, it will stay with many of them for a lifetime. If budget allows, I would recommend expanding this program to allow two visits to each student.

*Response: TUD staff will evaluate this recommendation and possibly recommended it to the Board after the 2010 UWMP has been adopted.*

Comment: Pages 7-12 and 7-13 - Section 7.4.1.1 Residential Assistance Programs (DMM A and 8) In dry years, TUD may want to consider offering this program, at least to Tier 3 water customers.

*Response: TUD staff will evaluate this recommendation and possibly recommended it to the Board after the 2010 UWMP has been adopted.*

DMM general comments:

Comment: 1. The cost/benefit analysis calculations need to be explained. What are the total benefits of each DMM? How is the "cost of water saved" calculated?

*Response: A more complete Cost Effectiveness description has been added to Appendix L - Demand Management Measures Cost Benefit Analysis. The cost of water saved in each year is the volume of conserved water in each year multiplied by the avoided unit cost of water (\$168/AF). The total benefit is the total value of this saved water for the 25 year period.*

Comment: 2. Using cost/benefit as the criteria to select DMM's is acceptable. TUD must be responsive to its rate payers. However, TUD may want to review certain of the DMM's when water use approaches the available supply (dry years).

*Response: Yes, TUD will review the implementation of DMMs on a continual basis and provide updates in subsequent UWMP updates as well as applicable Board Meetings that discuss the conservation program and implementation.*

Comment: Appendix G:

5/30/11 Memo - flow chart - Specific Proposed Developments

I recommend the following land development projects be considered in the final analysis:

Grand Yosemite National Golf and Wetland Preserve

Wilcox Park

Parrotts Ferry Village

Dambacher Subdivision

*Response: Grand Yosemite National Golf and Wetland Preserve project is currently formatted to receive raw water and treated the project location. The raw water for the Yosemite Grand is part of the 1.08% growth expected in the raw water usage and not included in the treated water growth.*

Wilcox Park is already included as active connections

Parrotts Ferry Village is included in the active connections for 2010

Dambacher Subdivision is listed a Peaceful Oaks

Comment: 5/30/11 Memo - Appendix B - Proposed New Development

I recommend the following revisions prior to finalizing any analysis:

Columbia/Gibbs - add Parrotts Ferry Village 36 (35)

Sonora Jamestown - remove Red Tail Ridge - this project proposes wells

*Response: We have noted comments regarding Parrotts Ferry Village and Red Tail Ridge.*





**Central Sierra Environmental Resource Center**  
**Box 396, Twain Harte, CA 95383 • (209) 586-7440 • fax (209) 586-4986**  
Visit our website at: [www.cserc.org](http://www.cserc.org) or contact us at: [johnb@cserc.org](mailto:johnb@cserc.org)

June 9, 2011

Glen Nunnelley, Pete Kampa, and TUD Board of Directors  
Tuolumne Utilities District  
18885 Nugget Blvd.  
Sonora, CA 95370

## **Comments on the draft Urban Water Management Plan**

### **Background summary for these comments**

CSERC is aware that an adequate Urban Water Management Plan is vital to TUD for various reasons, including TUD's eligibility for grants from the State. CSERC is also aware that our Center's concerns about TUD's lack of effective water conservation strategies in the past have been politely received during input for previous UWMP's without resulting in any apparent improvement or changes. Gary Egger, Pete, and members of the Board have consistently suggested that water conservation will be addressed "soon" in the future when somehow dollars to do conservation will magically appear.

Accordingly, it is with years of frustration that our Center once again emphasizes that we believe that TUD continues to neglect strategic opportunities to significantly reduce water waste by TUD customers and to significantly reduce TUD's own massive waste of water through its sieve of a conveyance system. Furthermore, we believe that the repeated claim that certain conservation measures "are not cost effective" fails to analyze alternative options that may be feasibly cost effective. The pittance that TUD spends on water conservation is highly reflective of the low priority given water conservation by the District.

Overall the draft UWMP markedly exaggerates any realistic water demands for the next 10 to 15 years. The document misleads by ignoring the huge losses in the water supply system by claiming that the plan only addresses treated water. And the document fails to provide any innovative or creative leadership that reflects the quality of TUD staff and the quality of TUD board members.

The draft UWMP is a disappointment that reflects an apparent focus on keeping the status quo rather than openly acknowledging key strategic deficiencies that need to be addressed or corrected.

## LACK OF ACCURATE INFORMATION RELATED TO TUD'S WATER SUPPLY/DELIVERIES

As noted on page 1-12 under Resource Optimization, TUD acknowledges the following:

*"Section 10620 (f) of the Act asks urban water suppliers to evaluate water management tools and options to maximize water resources and minimize the need for imported water from other regions. TUD understands the limited nature of water supply in California and is committed to optimizing its available water resources." (Underlining by CSERC for emphasis)*

With all due respect to the document authors, this underlined claim is highly misleading. Unlike most water suppliers in California, TUD relies primarily upon a ditch conveyance system to deliver water from Lyons Reservoir to treatments plants and customers. At many district meetings held in recent years to discuss long-term water supply capacity or district operations, TUD District staff has acknowledged that 45% or more of the water diverted from the South Fork Stanislaus River at Lyons Reservoir never reaches a customer. The water leaks, evaporates, or is otherwise "lost" in the TUD ditch system. There are both negative and positive results of that water loss.

Nowhere in this Urban Water Management Plan report is there a clear, comprehensive description of the loss of up to half the water entering the water supply system from the South Fork Stanislaus River before that water reaches customers, nor is there any comparison of water losses in the overall water supply system in 2010 compared to previous time periods (5 years ago, 10 years ago, 20 years ago).

Instead, the draft TUD UWMP strategically avoids revealing the huge water waste in its water supply system by stating on page 3-2:

*"For the purposes of this UWMP, TUD urban water use is defined as treated water use. Total urban water demand is the total quantity of water produced from the WTPs and groundwater wells within the TUD water distribution systems. TUD also provides untreated water to customers for agriculture irrigation and for water supply to other water system not owned or operated by TUD. The untreated water quantities are not included in TUD's urban water use as these quantities are not a reflection of TUD's residential, commercial, or industrial customer usage. This chapter, therefore, discusses treated urban water use only."*

While TUD may technically have a valid claim to define treated water as urban water use, the State certainly will be misled by a UWMP report that fails to reveal the true extent of water waste resulting from TUD supplying water to customers. Accordingly, CSERC strongly urges that instead of our Center "tattling on TUD" with side comments submitted to the State, that instead TUD openly acknowledges its truly significant water loss problem that is a direct result of supply water to customers. Instead of avoiding scrutiny of that water waste, in this UWMP TUD should provide all pertinent information concerning water losses in the ditch system, show water losses compared to water delivered to customers (both treated and untreated water customers), and spell out exactly what the District has or hasn't firmly committed to do to reduce water losses in the near future.

- The UWMP should fully emphasize the status of water losses through the District's water supply system, provide "water loss" comparisons with previous time periods, and identify what specific actions by the District will reduce that loss by predicted efficiencies in specific time periods. Failing to discuss such a significant water loss in the water supply system misleads State officials and fails to provide a direct connection between water deliveries and "water management" in the supply system.

## **WATER LOSS ACCOUNTING ON PAGE 3-12 MISLEADS BY OMITTING DITCH LOSSES**

Consistent with the objection raised above, the Table on page 3-12 continues to mislead by suggesting that “unaccounted-for-system losses” is only 912 acre-feet in 2010 and will only be 986 in 2015. This completely ignores the vast majority of water losses in the supply system that result from leaks, evaporation, and other losses through the TUD ditch conveyance system.

- The UWMP needs to correct the misleading information in table 3-13 and show both the significant water losses due to the ditch system as well as to show “other” unaccounted-for-system-losses that are now the sole data provided in Table 3-13.

## **HISTORICAL WATER USE SECTION LEAVES OUT IMPORTANT EXPLANATION FOR 2010**

The text in section 3.1 describing water use and the graph Figure 3-1 appears to show a recent (2010) sharp drop in water use that provides potentially misleading information. This graph shows water use fluctuating between 1,800 – 2,000 acre-feet since 2001 except for 2010.

One key reason for such a sharp drop in water use last year was the exceptionally heavy spring precipitation that lasted into early summer as well as a far milder than normal summer season, with cool temperatures. This unusual weather resulted in lush conditions as long as two months later than what would be experienced on average in the foothills where the bulk of TUD customers are located. That resulting reduction in water demand for landscape watering was certainly one factor, yet no information is provided in the UWMP describing that late spring persistent rainfall period as a contributor to the sudden drop in overall water use. The text refers generically to “cool summers” as a contributing factor, which does not spell out the specific unusual late spring-early summer wet weather from last year that affected water use.

Table 3-3 shows the 1999-2010 average annual daily use levels of TUD customers. What is most revealing about that table is not that 2010 is a sudden drop, but that for the last UWMP 5-year period annual water use per capita has stayed very flat in general )174-182 MG per year.

Likewise, Table 3-5 shows that with the exception of year 2010, the average per capita water use has consistently stayed between 182 and 177 gallons. If 2010’s exceptionally wet spring effect on water use is discounted, per capita water use has been generally consistent.

- **The Historical Water Use section should reveal clearly that an unusually wet spring and mild summer in 2010 were important factor in the resulting lower water use that was atypical, rather than reflecting a trend.**

## **PROJECTIONS FOR FUTURE WATER DEMANDS MAY BE EXAGGERATED**

One of the most important aspects of an Urban Water Management Plan is to provide a solid basis for estimating future water demands and an assessment of strategies to meet those demands. As spelled out in the document, TUD has an adequate supply of water from the South Fork Stanislaus River for at least the next 25 years and conceivably far longer if TUD significantly reduces water losses in the ditch conveyance system that brings the water to treatment plants and customers.

Unfortunately, the draft UWMP significantly appears to exaggerate estimated future service connections and

future water use demands in direct conflict with growth rates discussed by TUD staff at various public meetings over recent years. Table 3-11 on page 3-10 for example shows the number of current total accounts in 2010 at 12,749, yet with nearly zero growth and development taking place in Tuolumne County at the current time, the document wildly inflates expected accounts in 2015 to 14,320. By 2020, the number of accounts is estimated to leap to 16,072.

The real-life actual trend condition, as shown from 2005 to 2010, shows a total increase of just 470 accounts over five years. At that trend level, there would be roughly 1,000 additional customers by 2020 compared to 2010, not more than 3,300 new accounts as is wildly predicted in the UWMP. Given the state of the housing market, the difficulties faced by those seeking home loans, and the overall marginal economy, it is highly unlikely that even 1,000 additional accounts will be added by 2020. This is a pivotal error in the UWMP report. A growth rate of no more than 1% (and justifiably far less) should be used for predicting future accounts and water demands for the District.

The same kind of wildly inflated projection of water sales is shown in Table 3-14 on page 3-13, where projected water sales of 4,196 in 2010 are predicted to soar to 5,652 in 2020 and 6,318 in 2025. Yet water sales are shown to have actually DECLINED from 4,662 in 2005 to 4,196 in 2010. Water sales are in a downward trend, rather than an increase, yet the UWMP projects that water sales will actually rise 135% by 2020 and 150% by 2025. These are totally illogical projections that cannot be justified through any recent trend data, economic trend information, or expected market conditions in the future. The UWMP should be utilizing logical assumptions and estimates for future demands. Even if TUD does take over numerous small water companies in future years, it is almost certain that growth from development will be very low for years into the future. New residential and commercial development takes years to plan (and to finance) and years to implement. Even when a new subdivision is approved, it may be many years before build-out is moderately complete. Accordingly, the booms of past growth surges cannot be realistically expected in the next 5 to 10 year period in particular, but also for longer periods into the future.

- **Project water sales and water use should be based on accurate recent trend condition combined with realistic growth expectations over the coming 5-year and 10-year periods. At most, a total maximum of 1% annual growth rate should be used, although CSERC strongly believes all evidence and available housing market data shows that foreclosures, loan difficulties, and the poor national economy will result in a TUD customer growth rate of significantly less than 1% annually for at least the next 5 years and more likely on beyond 10 years.**

## **TUD FAILS TO ACTIVELY ADOPT WATER CONSERVATION MEASURES OR MAKE IT A PRIORITY**

Table 3-14 on page 3-13 reflects vividly how low a priority water conservation is for TUD. In terms of water sales (which as noted above are wildly inflated estimates rather than realistic projections), TUD shows absolutely ZERO savings through water conservation to meet SBX7-7. That zero savings due to water conservation is not just predicted for a five year period, but for every five year period for the next 25 years. THIS IS A TRUE INDICTMENT OF THE FAILURE OF TUD TO COMMIT TO A WATER-THRIFTY CONSERVATION CAMPAIGN TO ENSURE THAT TUD CUSTOMERS USE WATER EFFICIENTLY AND PRUDENTLY TO AVOID WATER WASTE.

As it has for more than a decade, TUD board and management staff both consistently discount any significant role for water conservation by TUD customers or through TUD management changes with water supply facilities or methods.

This appears to fly in direct contradiction with the State's strong directive for water suppliers to strengthen water conservation practices, to look for new ways to reduce water waste, and to significantly improve customer awareness of water conservation benefits. Instead, TUD even fails to attempt to implement the MOU agreement that the District entered into as part of a Water Board requirement for receiving an extension of its NPDES permit.

In section 7.2 of the draft UWMP, the document reads:

***" 7.2 Implementation of BMPs/DMMs***

*TUD is an original MOU signatory but is not participating in BMP reporting. Instead, TUD has met DMM requirements through the UWMP updates with DWR. For the purposes of this UWMP, this chapter includes a summary of BMP implementation activity from 2006 to 2010 chapter. TUD is progressing towards implementation of all Foundational BMPs required in the revised MOU and UWMP Act. The cost effective Programmatic BMPs are currently being implemented through a traditional BMP approach. The SBX7-7 water conservation goals and proposed implementation plans are discussed further in Section 7.5."*

For purposes of emphasis, the sentence claiming that TUD is progressing towards implementation of all Foundational BMPs is underlined. That claim is highly debatable.

First, TUD claims to be in compliance with a BMP for Waste Water Prevention. Yet instead of taking specific management actions in Normal water years, TUD only publicizes water conservation restrictions during extreme dry years. There are not water conservation management actions taken or promoted during normal years for the bulk of TUD customers.

Second, retail conservation pricing by TUD is so marginal and minimal as an incentive that it is of little value to encourage water conservation practices by TUD customers. Much steeper price incentives would be necessary to give it real value. Furthermore, the District does not assertively advertise nor market conservation pricing so as to make it highly visible to TUD customers so that they might get a clue that reducing water use can easily lower water bills through water conservation practices.

Third, the so-called educational programs taken for which TUD takes credit are either solely focused at third grades in local area schools or are primarily Master Gardener presentations, field days, or Master Gardener newspaper columns that come from the Master Gardeners. Whether or not TUD provides some financial assistance for the gardening outreach, TUD's overall educational outreach for "water conservation" reaches only a small fraction of TUD customers each year. The fact that TUD has a booth at an annual Home and Garden event and offers brochures at its front desk at TUD are both very low value overall for broad outreach to convince the public to adopt water conservation measures.

This draft UWMP has some promised upcoming workshops that may reach some in the gardening community and a limited number of members of the general public, but the clear fact is that TUD has done no highly visible public advertising, has provided minimally visible water conservation outreach through mailings, and has discounted the majority of active water conservation measures in the MOU document that might make a substantial difference.

**In particular, the so-called Programatic DMMs are all basically shunned by TUD as "not being cost effective."**

***"7.4.1.1 Residential Assistance Programs (DMM A and B)***

*"TUD is not implementing residential assistance programs because residential water audits and plumbing retrofit kits are not locally cost effective." Page 7-12*

***"7.4.1.2 Landscape Water Surveys (DMM A)***

*"The implementation of residential assistance surveys would include a landscape component including water meter instruction, assistance in tracking a high water bill through a smart meter, and notification of unusually high meter readings. As discussed above, a number of factors have established that implementing the residential assistance DMM is not locally cost effective and would not be successful due to social and customer impact factors." Page 7-14*

- The weak claim that providing residential assistance surveys, residential water audits, and plumbing retrofit kits are not “cost effective” continues to reveal TUD’s use of that cost excuse to ignore one water conservation strategy after another.

***“7.4.1.3 High-Efficiency Washing Machine Rebate Program (DMM F)***

*The District is not currently implementing this DMM and is filing an exemption because it has been determined this DMM is not locally cost effective. It has been considered that this DMM may offer lower incremental costs than expanded or additional water supplies. At this time, TUD does not have any water supply projects planned.*

*Many factors were taken into account when determining the effectiveness of implementing this DMM including economic, environmental, social, health, customer impact, legal authority, and technological factors. When analyzing these factors, it was found that the economic factors lead to an implementation of this DMM that is not cost effective for TUD at this time.” Page 7-14*

- The weak claim that providing a high-efficiency washing machine rebate is not “cost effective” continues to reveal TUD’s use of that cost excuse to ignore one water conservation strategy after another.

***“7.4.1.4 WaterSense Specification (WSS) Toilets (DMM N)***

*TUD provides a Ultra Low Flow Toilet (ULFT) Rebate program and reimburses consumers when they install a ULFT (1.6 gallons per flush or less) in their household that replaces a non-low flow toilet (3.0 gallons per flush or more). The ULFT rebate program started in 1991. Currently customers choosing to use this program receive a \$45 per toilet rebate with a maximum of three toilets per residential customer account. There is no maximum for commercial businesses. The number of ULFT rebates issued in the last five years is listed in Table 7-10.”*

- What TUD does not reveal in the UWMP is that TUD does almost zero advertising for the toilet rebate. In addition, the \$45 per toilet rebate is so low to only be of value to contractors or others who are retrofitting bathrooms and know of the program. Only 109 toilets have been given a rebate in the last five years, with an average of 22 per year. With over 12,000 current accounts, it would take over 500 years for the TUD incentive program to retrofit toilets to be more efficient. The failure of TUD to raise the rebate value and the failure of TUD to openly advertise the rebate combine to produce such minimal results and low water conservation effectiveness.

***“7.4.2 Commercial, Industrial, and Institutional DMMs (DMM I)***

*TUD serves roughly 850 commercial and 400 Institutional/industrial accounts, and CII customers make up roughly 17% of total water use in the District. TUD is currently in the process of evaluating the highest water users amongst these sectors and more accurately defining and sorting these customer sector groups from TUD’s complete customer database. This new information will be the basis for future evaluation of conservation water savings to the CII accounts. TUD currently does not regularly perform water audits to this sector of its customer base. Other CII conservation measures such as rebates for high efficiency washing machines, urinals, and toilets are not currently offered.*

*Many factors were taken into account when determining the effectiveness of implementing this DMM including economic, environmental, social, health, customer impact, legal authority, and*

*technological factors. Analysis has found that the economic factor overwhelmingly leads to an unsuccessful implementation of this DMM.” Page 7-16*

- Once again, TUD claims it isn't "cost effective" to do water audits for commercial, industrial, and institutional customers. This appears to be just another weak excuse for not pursuing effective water conservation opportunities and strategies.

#### ***“7.4.3 Large Landscape (DMM E)***

*The same landscape water use services available to residential customers are provided to CII and Large Landscape customers. Program offerings include water meter reading instruction, assistance in tracking a high water bill through a smart meter, and notification of unusually high meter readings. Since Large Landscape usage makes up less than 10 percent of the total water production, no devices or programs are offered specifically to Large Landscape customers. TUD plans to implement a proactive program to contact customers from all sectors that have unusually high water usage, which is further described in Section 7.5.*

*Many factors were taken into account when determining the effectiveness of implementing this DMM including economic, environmental, social, health, customer impact, legal authority, and technological factors. When analyzing these factors, it was found that the economic factor overwhelmingly leads to an unsuccessful implementation of this DMM.*

*TUD has considered that implementing this DMM may offer lower incremental costs than expanded or additional water supplies. However, TUD does not have any water supply projects planned at this time.”*

- And yet again, TUD claims it isn't "cost effective" to make landscape water use services available to Large Landscape and CII customers. Again and again TUD uses the same weak excuse for not pursuing effective water conservation opportunities and strategies.

Finally, item 7.5.1 reveals:

*“The cost associated with implementing the selected CUWCC programmatic BMPs is estimated at approximately \$2,000 a year. TUD is currently evaluating the annual cost associated with implementing all foundational BMPs based on the existing conservation program and the additions listed in this chapter.”  
Page 7-19*

- Once again, when TUD spends millions of dollars annually for operations, staff benefits, travel, meeting benefits for board members, and a wide range of associated expenses, the extremely low priority given to water conservation is so minimal that no substantial amount of dollars is strategically applied at a scale that would markedly educate customers, motivate customers through incentive programs, or reduce water waste through audits, services, or other TUD water conservation efforts.

## LONG-TERM DISCHARGE OF WASTEWATER INTO WOODS CREEK IS EXPECTED

In NPDES permit applications, TUD has frequently provided the District's intention to end its discharge of treated wastewater into Woods Creek during periods of high precipitation. Past NPDES permits have been granted based on the commitment of TUD to solve its wastewater storage problems and provide capacity to eliminate the need for discharge.

CSERC has been a strong critic of TUD asking the Water Board for NPDES permits to allow further effluent discharges into Woods Creek when TUD consistently fails to take any significant steps to reduce water use that directly results in higher levels of wastewater than Quartz Reservoir is able to handle. The draft UWMP does not accurately acknowledge TUD's failure to reduce wastewater production by TUD customers and to accurately admit that TUD has done little to nothing to promote lower levels of wastewater production by its customers. That is a key reason why there are periods of excess wastewater and a resulting "need" to discharge treated effluent into Woods Creek. Yet instead of working to eliminate such discharges, TUD in the draft UWMP actually expects to continue to discharge treated wastewater at least until 2018 and potentially far beyond.

Rather than address the failure of TUD to curtail excessive wastewater production through education, cost incentives, or other strategic efforts, the UWMP instead attempts to downplay the potential negative harm of continuing to discharge treated sewage effluent into Woods Creek and down into Don Pedro Reservoir.

- The UWMP should fully acknowledge the range of contributing factors that result in excess wastewater being periodically discharged into Woods Creek – including the failure by TUD to adopt any aggressive educational outreach to wastewater customers, or to advertise and market wastewater reduction cost incentives, or to implement any other strategy to encourage reduced levels of wastewater production so as to avoid effluent discharges. The UWMP should also explain how TUD will speedily move to correct its failure to reduce wastewater production by its customers, including through an aggressive educational outreach effort and through a billing incentive program with appropriate marketing.
- Closing Summary

Rather than openly admit that the District believes it has an adequate water supply, that it can reduce its ditch losses if it needs more water, and that the District manages as if water conservation isn't a true priority, the draft Urban Water Management Plan instead spins facts to make it appear that TUD is effectively participating in the CUWCC water conservation campaign and is doing its full share of water conservation outreach and implementation. In reality, if graded fairly and accurately, TUD mostly ignores water conservation except for some minor educational programs to third graders and to gardeners. TUD fails to apply any meaningful amount of funding to water conservation practices, incentives, and educational advertising.

The UWMP should reflect far more accurately the true situation and spell out with timelines and specific actions how TUD will turn around its abysmal track record at implementing water conservation, supporting water conservation, educating customers about water conservation, and providing economic incentives for water conservation. The wildly inflated estimated water demands in the UWMP should be corrected as recommended in these comments. And an accurate acknowledgment of the huge amount of water losses in the water supply ditch conveyance system should be openly admitted up front with a commitment and quantifiable and measurable steps should be described that will reduce the scale of loss during the next 5-year period.

John Buckley, executive director

Responses to CSERC comments dated June 9, 2011

Responses are prepared for specific comments listed in the letter. The complete letter is included for reference.

Comment: Nowhere in this Urban Water Management Plan report is there a clear, comprehensive description of the loss of up to half the water entering the water supply system from the South Fork Stanislaus River before that water reaches customers.

Response: The TUD system does not lose “up to half the water entering the water supply system” as stated by the commenter. The TUD system is defined in accordance with guidelines outlined by the Department of Water Resources (DWR). Senate Bill =7 (SBx7-7) establishes a focus that each Urban Water Management Plan (UWMP) establish gallons per capita per day (gpcd) baselines, targets and methods to reach those targets for a 20% reduction in California urban per capita water use by 2020. The estimated ditch losses are listed in Table 6-5. Additionally, the commenter seems not to understand the intent or the purpose of the UWMP and is using this forum to get unrelated comments into a public record.

Comment: The UWMP should fully emphasize the status of water losses through the District's water supply system, provide “water loss” comparisons with previous time periods, and identify what specific actions by the District will reduce that loss by predicted efficiencies in specific time periods. Failing to discuss such a significant water loss in the water supply system misleads State officials and fails to provide a direct connection between water deliveries and “water management” in the supply system.

Response: See response above

Comment: The UWMP needs to correct the misleading information in table 3-13 and show both the significant water losses due to the ditch system as well as to show “other” unaccounted-for-system-losses that are now the sole data provided in Table 3-13.

Response: The ditch system is not a part of the UWMP scope. However, the fact that the District customer base has increased and the amount of water diverted into the ditch system has reduced is an indication that the significant funds the District expends every year on water conservation improvements to the ditch system is having an impact on water loss. See response above.

Comment: The Historical Water Use section should reveal clearly that an unusually wet spring and mild summer in 2010 were important factor in the resulting lower water use that was atypical, rather than reflecting a trend.

Response: The water demand in 2010 was unusually low and is noted on pages 3-1 to 3-2. Additionally, this was pointed out at all public committee meetings, PAC meetings and the public hearing.

Comment: Project water sales and water use should be based on accurate recent trend condition combined with realistic growth expectations over the coming 5-year and 10-year periods. At most, a total maximum of 1% annual growth rate should be used, although CSERC strongly believes all evidence and available housing market data shows that foreclosures, loan difficulties, and the poor national economy will result in a TUD customer growth rate of significantly less than 1% annually for at least the next 5 years and more likely on beyond 10 years.

Response: The population growth rate takes into account the TUD historical growth rate since TUD's inception in 1992 and growth in TUD anticipated by acquisitions. There is no basis provided to arbitrarily pick a growth rate as suggest. This is discussed in Section 2.4.2.1, under System Growth Rates. Note that the time horizon for the UWMP is 25 years. The computation is assumed linear over this time frame, however it is understood that the actual growth will "stair step" where the actual growth will fall above and below the projected growth for any given year. Adjustments will be made at each five year interval accordingly.

*Several comments by the reader are listed below with regards to DMMs. These are followed by a response that applies to all the following comments.*

Comment: In particular, the so-called Programmatic DMMs are all basically shunned by TUD as "not being cost effective."

Comment: • The weak claim that providing residential assistance surveys, residential water audits, and plumbing retrofit kits are not "cost effective" continues to reveal TUD's use of that cost excuse to ignore one water conservation strategy after another.

Comment: • What TUD does not reveal in the UWMP is that TUD does almost zero advertising for the toilet rebate. In addition, the \$45 per toilet rebate is so low to only be of value to contractors or others who are retrofitting bathrooms and know of the program. Only 109 toilets have been given a rebate in the last five years, with an average of 22 per year. With over 12,000 current accounts, it would take over 500 years for the TUD incentive program to retrofit toilets to be more efficient. The failure of TUD to raise the rebate value and the failure of TUD to openly advertise the rebate combine to produce such minimal results and low water conservation effectiveness.

Comment: • Once again, TUD claims it isn't "cost effective" to do water audits for commercial, industrial, and institutional customers. This appears to be just another weak excuse for not pursuing effective water conservation opportunities and strategies.

Comment: • And yet again, TUD claims it isn't "cost effective" to make landscape water use services available to Large Landscape and CII customers. Again and again TUD uses the same weak excuse for not pursuing effective water conservation opportunities and strategies.

Comment: • Once again, when TUD spends millions of dollars annually for operations, staff benefits, travel, meeting benefits for board members, and a wide range of associated expenses, the extremely low priority given to water conservation is so minimal that no substantial amount of dollars is strategically applied at a scale that would markedly educate customers, motivate customers through incentive programs, or reduce water waste through audits, services, or other TUD water conservation efforts.

Response: TUD must achieve water efficiency under the SBx-7-7 legislation that outlines 2015 interim target and 2020 target gpcd water usage, as outlined throughout the UWMP document. Latitude is provided in the law as to how each agency achieves this goal, as it is recognized that water use across California varies according to region. TUD thoughtfully implements water conservation measures appropriate to the District's customers while maintaining compliance with current regulation. In addition to significant expenditures over the past decade renovating or replacing leaking infrastructure, TUD has spent approximately \$300,000 in 2010 responding to customer requests for leak checks, investigating high meter reads, installing smart meter

replacements, providing for education programs, performing system auditing, and providing rebates for low flow toilets, all of which have a direct correlation to water conservation. Efforts and expenditures of this magnitude take place annually. Section 7.5 discusses additional conservation measures that TUD will be implementing. It should also be pointed out that the law does not require TUD to impose conservation programs that are not cost effective but only to meet the usage goal of SBx7-7.

Comment: The UWMP should fully acknowledge the range of contributing factors that result in excess wastewater being periodically discharged into Woods Creek – including the failure by TUD to adopt any aggressive educational outreach to wastewater customers, or to advertise and market wastewater reduction cost incentives, or to implement any other strategy to encourage reduced levels of wastewater production so as to avoid effluent discharges. The UWMP should also explain how TUD will speedily move to correct its failure to reduce wastewater production by its customers, including through an aggressive educational outreach effort and through a billing incentive program with appropriate marketing.

Response: This comment is in reference to an item not part of the UWMP. Through the conservation efforts of the District and its customers, the average flow into the wastewater treatment plant has reduced while the number of customers has increased. A part of the wastewater flow comes from Infiltration and Inflow (I and I) due to storm water. TUD has implemented a program to evaluate wastewater piping for this and is currently employing a pipe lining program to control I and I. These efforts prove more cost effective at reducing wastewater inflow and infiltration than water conservation measures at this time.

Response: No further responses are provided.



Subject: Urban Water Management Plan

I have questions about the long range planning for wastewater disposal, and how you determine the amount of surplus water for future development.

Background: In the "Opinion" article of the Union Democrat 5/27/11 it stated Tuolumne County's population is projected to grow by 30,000 by the year 2050 - with only an estimated 3 percent of it's acreage available for residential development. Another 10 percent is off limits under the Williamson Act .

1. Does TUD agree with this? If not, what are your figures?

Wastewater

2. For future disposal of waste water how many more people/homes can be accommodated on land TUD now owns, and how many of these acres are on Williamson Act property (which is subject to cancellation)?

3. What is your 20 year plan to handle wastewater disposal for anticipated growth, and is the need for additional acreage reflected in the County's General Plan (approval of developments could supersede TUD's needs)?

4. If existing customers help pay for additional acreage - beyond what is needed for their use - is there payback by future development? A former Manager once said: "Those who benefit pay".

5. Are there plans for tertiary treatment plants combined with gray water irrigation systems for new development?

Surplus Water

6. When you issue a "Will Serve" letter is the entire water demand of said development deducted from your surplus at that time?

7. What is your current surplus - how many homes will it accommodate?

8. Is conservation any part of your surplus? I know of another District that coerced conservation by raising rates then used the water saved to supply new development.

Thank you for the opportunity to express my concerns.



Glenn Carroll  
18099 Via Serena Road  
Sonora, CA 95370  
209-588-9380

cc: P. Kampa, General Manager

To BE HERE 6/21 HEARING

Responses to Glenn Carroll letter dated, 6/5/2011

Comment: I have questions about the long range planning for wastewater disposal, and how you determine the amount of surplus water for future development.

Background: In the "Opinion" article of the Union Democrat 5/27/11 it stated Tuolumne County's population is projected to grow by 30,000 by the year 2050 - with only an estimated 3 percent of it's acreage available for residential development. Another 10 percent is off limits under the Williamson Act. 1. Does TUD agree with this? If not, what are your figures?

Response: The UWMP discusses population growth in terms of water planning as outlined by the Department of Water Resources (DWR) methodologies. Figures are included in section 2.0 and Appendix G. Growth figures are consistent with Federal State and local growth projections In the UWMP process there are no comparisons made to the "Opinion" article.

#### Wastewater

Comments 2-5 are listed with a response that apply to all:

2. For future disposal of waste water how many more people/homes can be accommodated on land TUD now owns, and how many of these acres are on Williamson Act property (which is subject to cancellation)?

3. What is your 20 year plan to handle wastewater disposal for anticipated growth, and is the need for additional acreage reflected in the County's General Plan (approval of developments could supersede TUD's needs)?

4. If existing customers help pay for additional acreage - beyond what is needed for their use - is there payback by future development? A former Manager once said: "Those who benefit pay".

5. Are there plans for tertiary treatment plants combined with gray water irrigation systems for new development?

Response: Waste Water Reclamation System Flows and Uses are discussed in Section 4.6. Comments 2, 3, 4, and 5 are elements not addressed in the UWMP.

#### Surplus Water

Comment: 6. When you issue a "Will Serve" letter is the entire water demand of said development deducted from your surplus at that time?

Response: Yes

Comment: 7. What is your current surplus - how many homes will it accommodate?

Response: The current water supply surplus is discussed in Section 4.1 of the UWMP. For the current 25 year planning horizon, there is sufficient supply for the anticipated growth.

Comment: 8. Is conservation any part of your surplus? I know of another District that coerced conservation by raising rates then used the water saved to supply new development.

Response: No.

## Appendix G

---

### DWR Guidebook Urban Water Management Plan Checklist



**DWR Guidebook Table I-2 Urban Water Management Plan Checklist, Organized by Subject**

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
<b>PLAN PREPARATION</b>					
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)		1.3	1-7 & 1-8
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)		1.3 & Appendix C	1-7 & 1-8
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)		1.4 & Appendix A	1-10
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)		1.4	1-10
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		1.3.1 & 1.3.2	1-8 & 1-9
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		1.3.2 & Appendix E & F	1-9
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		1.4 & Appendix A	1-10
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		1.6	1-10

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
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)		1.4	1-10
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		1.4	1-10
<b>SYSTEM DESCRIPTION</b>					
8	Describe the water supplier service area.	10631(a)		2.1 & 2.2	2-1 to 2-9
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		2.3 & 2.5	2-11, 2-15 & 2-16
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.	2.4	2-11 to 2-15
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.	2.4	2-11 to 2-15
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		2.3	2-11
<b>SYSTEM DEMANDS</b>					
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)		3.2	3-3 to 3-8

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
2	<i>Wholesalers:</i> Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. <i>Retailers:</i> 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 10608.26(a)	Retailers and wholesalers have slightly different requirements	1.3.2 & Appendix E	1-9
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		Not Applicable	
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.	3.1, 3.3 & 3.4	3-2, 3-8 to 3-11
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.	Not Applicable	
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)		3.7	3-14
<b>SYSTEM SUPPLIES</b>					
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.	4.1 & 4.3	4-2 to 4-6

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
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.	4.1.2	4-3 to 4-5
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)		4.1.2	4-5
16	Describe the groundwater basin.	10631(b)(2)		4.1.2	4-3
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		4.1.2	4-5
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)		Not Applicable	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)		4.1.2	4-3
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)		4.1.2	4-5
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.	4.1.2	4-4 & 4-5
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		4.2	4-6

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
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)		4.3	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)		4.5	4-8
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		4.6	4-8 to 4-14
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)		4.6.2 & 4.6.3	4-10 to 4-12
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)		4.6.3	4-10 to 4-12
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)		4.6.2 & 4.6.3	4-10 to 4-12
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)		4.6.4	4-12 & 4-13
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)		4.6.4	4-12 & 4-13
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)		4.6.5	4-13 & 4-14

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
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)		4.6.5	4-13 & 4-14
<b>WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING <sup>b</sup></b>					
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		1.8	1-12
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)		6.1	6-1 to 6-5
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)		6.1.5	6-5
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)		8.1 & Appendix J	8-1 & 8-2
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)		8.2	8-2 & 8-3
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)		8.3 & Appendix M	8-3 & 8-4
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)		8.4 & Appendix J	8-4 to 8-7
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)		8.4 & Appendix J	8-4 to 8-7

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		8.4 & Appendix J	8-4 to 8-7
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)		8.5	8-7
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		8 & Appendix J	8-1
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		8.6	8-7 & 8-8
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	5	5-1 to 5-6
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)		6.3 – 6.5	6-6 to 6-8
<b>DEMAND MANAGEMENT MEASURES</b>					
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.	7.2 to 7.4	7-4 to 7-18
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		7.2 to 7.4	7-4 to 7-18
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)		7.4.1.4	7-15

No.	UWMP Requirement <sup>a</sup>	Calif. Water Code Reference	Additional clarification	UWMP Section	Page Number
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.	7.4 & Appendix L	7-12 to 7-18
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.	N/A	

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 H

---

### Treated Water System Optimization Plan Growth Memo





# Memo

To: **Kennedy Jenks Consultants**

*Project Manager: Tim Williams*

From: **Tuolumne Utilities District**

*District Engineer: Thomas L. Scesa*

Date: 6/23/2011

Re: **Treated Water Systems Optimization Plan**

Projected 20- Year Growth Rates in Active Water Service Connections  
by Water Service Area

---

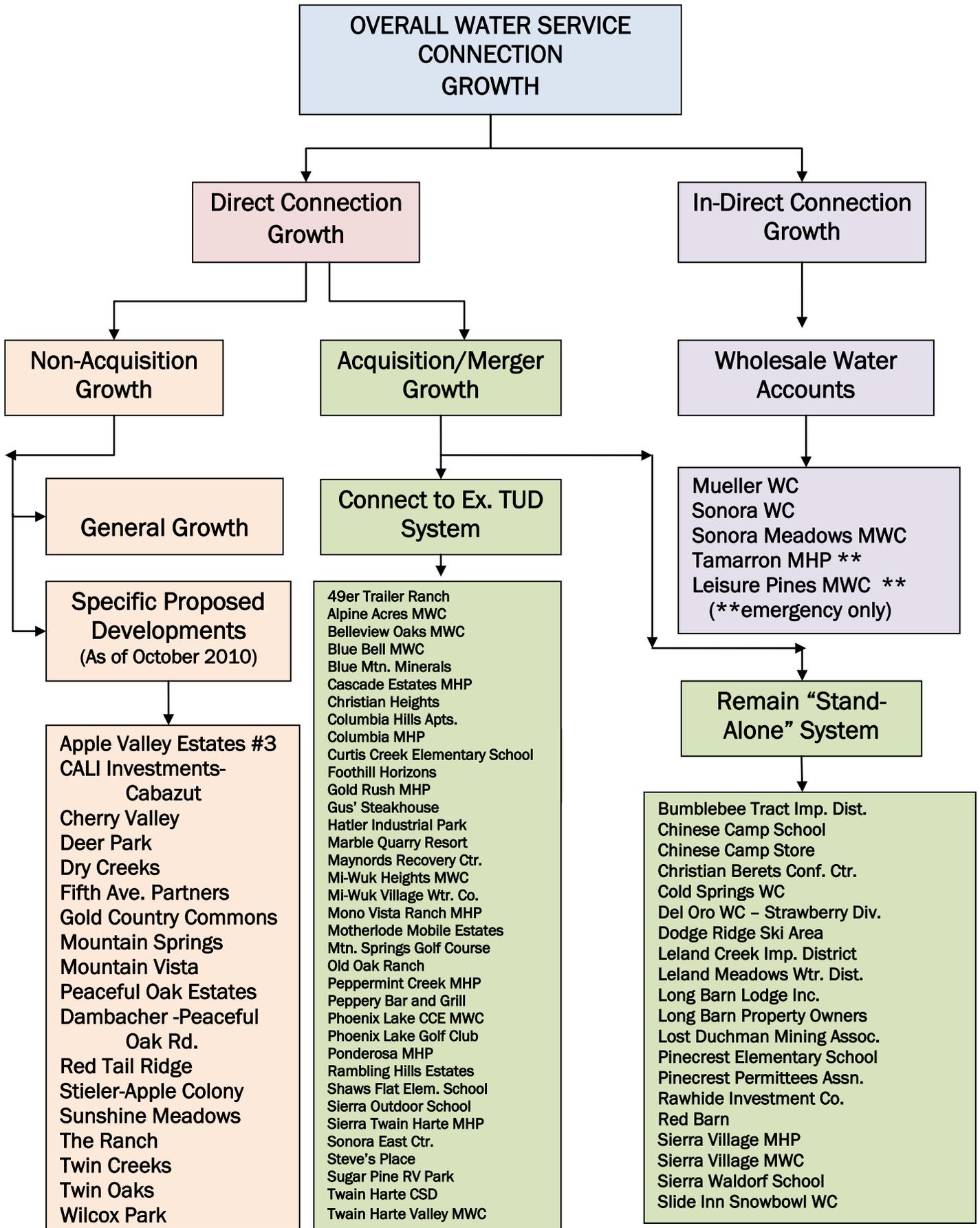
This memorandum will identify historical and projected growth rates in active water service connections for the period of 2010 – 2030. The data contained in this memorandum shall serve as the basis for projecting the future water demands to be used in the Treated Water Systems Optimization Plan. Through the process detailed below, it has been determined that the annual growth rate for the next 20 years (0-20) is assumed to be 2.27%. If growth within the District's current wholesalers is excluded, the annual growth rate is assumed to be 2.34%. ***For purposes of the Treated Water Systems Optimization Plan an annual growth rate of 2.27% will be used.***

Population trends do not correlate well to growth in active water service connections. Since 1993, approximately 55% of the District's growth in water services was associated with acquisition of existing private/mutual water companies.

Water service connection growth is separated into two categories: 1) Direct and 2) Indirect, which includes connections served through wholesale water accounts. Water to wholesale accounts is delivered through a master meter, which is technically counted as one-(1) service connection. Growth in those areas will not register as growth in the number of water service connections and will not be addressed in this memo, but will contribute to an increase in water demands.

Increases in direct connections are further categorized as: 1) Non-Acquisition Growth, which includes specific proposed developments and General Growth resulting from population increases and hookups of parcels previously served by wells to the public water system; and 2) Acquisition/Merger Growth, which is associated with the acquisition/merger of discrete private and mutual water companies, as well as, any community service districts or water districts.

Unit water demands will be addressed in a separate memorandum.



## **Assumptions**

1. Growth in water service connections does not distinguish between a residential, commercial, industrial, or institutional type use. Increases in water demands due to type of use, as well as other factors such as elevation and parcel size, will be addressed in a separate memorandum.
2. Any proposed development that currently has an approved Tentative Subdivision Map or a Recorded Map on file with Tuolumne County will be developed to completion within the next 20 year time period.
3. Private and/or mutual water companies that are acquired by the District are assumed to consist of residential water connections only.
4. The overall growth rate for the entire District is calculated by summing the non-acquisition growth distributed amongst all systems and the acquisition/merger growth derived from private and public water systems.
5. Private and/or mutual water companies that are identified as candidates for acquisition by the District will be assigned to the District water system that is best suited to extending water service. For purposes of the Treated Water Systems Optimization Plan, a growth rate will be assigned that assumes that the District will provide water service to each of those private water companies by the Year 2030. Since, there is now way of knowing when those blocks of new connections will be added to the District, it is assumed that the growth will be spread out over a 20-year planning horizon.

## **Historic Connection Growth**

- *Appendix A* details historic growth statistics.
- The District added 4,078 connections between 1993-2010. Of those, 1,847 (45%) were categorized as non-acquisition growth and 2,231 (55%) were associated with acquisition/merger growth. Non-Acquisition growth from 1993-2010 averaged 1.08% annually.
- After factoring in acquisitions of Sugar Pine, Gibbs, Ponderosa, Mono Village, Big Hill, Monte Grande, Curtis Creek Ranches, and Wards Ferry Ranches Water Systems, the average growth rate from 1993-2010 increases to 2.16% annually.
- The Sonora/Jamestown and Crystal Falls systems accounted for over half, 55%, of the non-acquisition growth.

## Allocation of Growth

- Water systems ranked by projected share of non-acquisition growth:

**TABLE A**

***20-Yr. Non-Acquisition Growth***

	<b><u>%</u></b>	<b><u>(Connections)</u></b>
1. Sonora/Jamestown	42.00%	1366
2. Mono Village	10.50%	341
3. Crystal Falls	10.00%	325
4. Upper Basin	9.00%	293
5. Columbia/Gibbs	8.00%	260
6. Cedar Ridge	5.00%	163
Tuolumne City	5.00%	163
7. Ponderosa Hills	3.75%	122
8. Cuesta Ctr./Lambert Lakes	2.25%	73
9. Apple Valley	1.50%	49
Big Hill	1.50%	49
10. Monte Grande	0.50%	16
Scenic View/Brook	0.50%	16
11. East Sonora	0.20%	7
12. Peaceful Pines	0.10%	3
Phoenix Lake Park	0.10%	3
Wards Ferry Ranches	0.10%	<u>3</u>
		<b>Total 3252</b>

- Water systems ranked by projected share of acquisition growth:

**TABLE B**

	<b>20-Yr. Acquisition Growth</b>	
	<b>%</b>	<b>(Connections)</b>
1. Upper Basin	62.02%	2752
2. Columbia/Gibbs	8.34%	370
3. Cuesta Ctr/Lambert Lakes	6.78%	301
4. Sonora/Jamestown	2.73%	121
5. Scenic View/Brook	2.03%	90
6. Big Hill	1.15%	51
7. Apple Valley	0.34%	15
Monte Grande	0.34%	15
8. Mono Village	0.11%	<u>5</u>
		<b>Total 4437</b>

**Recommended Growth Rate:**

For purposes of this Treated Water System Optimization Plan, the District will use a rate of **2.27% for systemwide annual growth for the next 20 years**, which is allocated by system in accordance with *Appendix D*. The projected growth rate from years 21-40 would be 1.08% assuming all acquisitions would be exhausted in the first 20 year time frame.

*Appendix B* identifies proposed new developments and which District water system would likely provide service.

*Appendix C* identifies all of the private, mutual, community services districts, and mobile home parks whose water systems could be acquired by the District at some time within the next 20 years. The table also distinguishes between those systems that are expected to remain as “stand-alone” service areas and those systems that could connect to one of the District’s existing water systems.



**APPENDIX A**  
HISTORIC WATER CONNECTION GROWTH

Year	# New Connection Notices	Acquisitions	Yearly Total	Estimated Total Active Direct Connections	Annual % Increase in Total Active Connections	Estimated Total Active Connections (Including Wholesale)	Apple Valley	Big Hill	Cedar Ridge	Columbia/Gibbs	Crystal Falls	Cuesta Ctr - Lambert Lks	East Sonora	Mono Village	Monte Grande	Peacetail Pines	Phoenix Lake Park	Ponderosa Hills	Scenic View/Brook	Sonora/Jamestown	Tuolumne City	Upper Basin	Wards Ferry Ranches
1992				8,681		9,526																	
1993	73		73	8,754	0.84%	9,599																	
1994	54		54	8,808	0.62%	9,653																	
1995	58	349	407	9,215	4.62%	10,060																349	
1996	57	585	642	9,857	6.97%	10,702				585													
1997	81		81	9,938	0.82%	10,783																	
1998	104	536	640	10,578	6.44%	11,423												536					
1999	112		112	10,690	1.06%	11,535																	
2000	148		148	10,838	1.38%	11,683																	
2001	149	305	454	11,292	4.19%	12,137	12	235	0	16	28	7	3	-	70	0	0	10	4	52	6	11	-
2002	157		157	11,449	1.39%	12,294	4	-	5	20	36	16	0	-	-	0	2	12	2	47	2	11	-
2003	214		214	11,663	1.87%	12,508	2	-	8	18	86	14	1	-	-	0	2	6	2	53	3	19	-
2004	184	275	459	12,122	3.94%	12,967	3	-	14	8	56	6	2	275	-	0	3	5	6	59	11	11	-
2005	167		167	12,289	1.38%	13,134	1	-	12	28	31	5	1	1	-	0	1	6	1	63	5	12	-
2006	118	181	299	12,588	2.43%	13,433	3	-	6	20	20	7	0	2	158	0	1	7	2	34	2	14	23
2007	78		78	12,666	0.62%	13,511	1	0	4	12	17	10	0	1	1	1	2	0	0	16	1	11	-
2008	56		56	12,722	0.44%	13,567	0	0	3	11	10	5	0	0	0	0	0	6	0	18	0	3	-
2009	22		22	12,744	0.17%	13,589	0	1	0	4	5	4	2	0	0	0	0	2	1	3	0	0	-
2010	15		15	12,759	0.12%	13,604	1			1	1	1		1	1		1	1	1	5		2	
	<b>1847</b>	<b>2231</b>			<b>Avg. Annual Non-Acquisition Growth Rate 1993-2010</b>	<b>1.08%</b>																	
	45%	55%			<b>Avg. Annual Acquisition Growth Rate 1993-2010</b>	<b>1.28%</b>																	
					<b>Avg. Annual Combined Growth Rate 1993-2010</b>	<b>2.16%</b>																	
<b>Water System New Connection Growth 2001-2009</b>																							
	<b>Non-Acquisition Connection Growth 2001-2010</b>						27	1	52	138	290	75	9	5	2	1	10	57	19	350	30	94	0
	<b>% of Total Non-Acquisition Growth</b>						2.33%	0.09%	4.48%	11.90%	25.00%	6.47%	0.78%	0.43%	0.17%	0.09%	0.86%	4.91%	1.64%	30.17%	2.59%	8.10%	0.00%
<b>Water System Acquisition/Merger Growth 1993-2009</b>																							
	<b>Acquisition Growth 1993-2010</b>						0	235	0	585	0	0	0	275	228	0	0	536	0	0	0	349	23



**APPENDIX B**

## PROPOSED NEW DEVELOPMENT

	Proposed New Development	Development Name
System	# Svcs	
Apple Valley	8	Apple Valley Estates Unit #3
	<b>Subtotal</b>	<b>8</b>
Columbia/ Gibbs	19	Wilcox Park
	<b>Subtotal</b>	<b>19</b>
Crystal Falls	34	Sunshine Meadows
	6	Deer Park
	<b>Subtotal</b>	<b>40</b>
Mono Village	306	Peaceful Oak Estates
	18	Peaceful Oak Rd. - Dambacher
	<b>Subtotal</b>	<b>324</b>
Sonora Jamestown	45	The Ranch
	11	Mountain Vista
	305	Dry Creeks
	600	Mountain Springs
	20	CALI Investments - Cabazut
	61	Twin Creeks
	69	Fifth Ave. Partners
	41	Gold Country Commons
	46	Red Tail Ridge
	<b>Subtotal</b>	<b>1198</b>
Tuolumne City	75	Cherry Valley
	9	Stieler-Apple Colony
	<b>Subtotal</b>	<b>84</b>
	<b>TOTAL</b>	<b>1673</b>





**APPENDIX C**  
POTENTIAL ACQUISITIONS/MERGERS

	Number of Connections	IS or assumed WILL BE Connected to TUD System within 30 Yrs.	Remain "Stand-Alone" Service Area	Ex. Wholesale Customer (Active)	Ex. Wholesale Customer (Emergency Only)	Additional Connection Load by TUD System																
						Apple Valley	Big Hill	Cedar Ridge	Columbia/Gibbs	Crystal Falls	Cuesta Center/Lambert Lakes	East Sonora	Mono Village	Monte Grande	Peaceful Pines	Phoenix Lake Park	Ponderosa Hills	Scenic View/Brook	Sonora-Jamestown	Tuolumne City	Upper Basin	Wards Ferry Ranches
<b>FOOTHILL HORIZONS</b> 1100 H STREET MODESTO, CA 95354-2338	15	✓				15																
<b>GOLD RUSH MOBILE HOME PARK</b> P.O. BOX 1639 EL CERRITO, CA 94530	58	✓							58													
<b>GUS S STEAKHOUSE</b> 1183 MONO WAY SONORA, CA 95370	5	✓															5					
<b>HATLER INDUSTRIAL PARK</b> 16732 BIG HILL RD SONORA, CA 95370	10	✓						10														
<b>LEISURE PINES MUTUAL WATER CO</b> 19812 WANITA LN TWIN HARTE, CA 95383	85	✓			✓																	85
<b>LELAND CREEK IMPROVEMENT ASSOC</b> 270 E. Harper St. STOCKTON, CA 95204	22		✓																			
<b>LELAND MEADOW WATER DISTRICT</b> 9406 BAINBRIDGE PL STOCKTON, CA 95209	60		✓																			
<b>LONG BARN LODGE INC.</b> P.O. BOX 100 LONG BARN, CA 95335	15		✓																			
<b>LONG BARN PROPERTY OWNERS</b> P.O. BOX 260 LONG BARN, CA 95335	150		✓																			
<b>LOST DUTCHMAN MINING ASSOC</b> P.O. BOX 1199 COLUMBIA, CA 95310	5	✓							5													
<b>MARBLE QUARRY RESORT</b> 11551 YANKEE HILL ROAD COLUMBIA, CA 95310	87	✓							87													
<b>MAYNARDS RECOVERY CENTER</b> 19325 CHEROKEE RD TUOLUMNE, CA 95379	15	✓										15										
<b>MI-WUK HEIGHTS MWC</b> 20977 LAMA TEUMETE MI WUK VILLAGE, CA 95346	160	✓																				160
<b>MI-WUK VILLAGE MUT WTR CO</b> P.O. BOX 61 MI-WUK VILLAGE, CA 95346	768	✓																				768
<b>MONO VISTA RANCH MHP</b> 12645 MT HAMILTON RD SAN JOSE, CA 95124	30	✓						30														
<b>MOTHER LODE MOBILE ESTATES</b> 14192 TUOLUMNE RD SONORA, CA 95370	76	✓							76													





**APPENDIX D**  
20-YR. ALLOCATED GROWTH BY SYSTEM

Non-Acquisition Growth Rate	# of (N) Svcs over 20 yrs.	20 Year Water Service Growth Projections						
		Non-Acquisition Growth		Total Non-Acquisition Growth	Total Acquisition/Merger Growth <sup>2</sup>	Total Combined Growth <sup>3</sup>	Total Existing Active Connections (incl. wholesale) (2010) <sup>4</sup>	Calculated Annual Growth Rate by System <sup>5</sup>
System	% Allocation of Non-Acquisition Growth <sup>1</sup>	Proposed New Development	General Growth					
<b>1.08%</b>	<b>3252</b>							
Apple Valley	1.50%	8	41	49	15	64	104	2.41%
Big Hill	1.50%		49	49	51	100	217	1.91%
Cedar Ridge	5.00%		163	163		163	622	1.17%
Columbia/Gibbs	8.00%	19	241	260	370	630	1559	1.71%
Crystal Falls	10.00%	40	285	325	717	1042	2610	1.69%
Cuesta Ctr. - Lambert Lakes	2.25%		73	73	301	374	156	6.30%
East Sonora	0.20%		7	7		7	113	0.28%
Mono Village	10.50%	324	0	341	5	346	264	4.28%
Monte Grande	0.50%		16	16	15	31	227	0.65%
Peaceful Pines	0.10%		3	3		3	30	0.52%
Phoenix Lake Park	0.10%		3	3		3	50	0.31%
Ponderosa Hills	3.75%		122	122		122	641	0.87%
Scenic View/Brook	0.50%		16	16	90	106	254	1.76%
Sonora/Jamestown	42.00%	1198	168	1366	121	1487	4632	1.40%
Tuolumne City	5.00%	84	79	163		163	663	1.10%
Upper Basin	9.00%		293	293	2752	3045	1437	5.85%
Wards Ferry Ranches	0.10%		3	3		3	24	0.65%
<b>Systemwide TOTAL</b>	<b>100.00%</b>	<b>1673</b>	<b>1561</b>	<b>3252</b>	<b>4437</b>	<b>7689</b>	<b>13604</b>	<b>2.27%</b>
				42%	58%	<b>Total Est. Active Connections (2030)</b>	<b>21293</b>	

**Notes:**

- <sup>1</sup> Allocations were originally based upon historic growth from 2001-2010 and assuming future development will mimic that pattern. However several developments have been proposed that require the growth allocation to be adjusted. Most proposed developments fall within Sonora/Jamestown and Mono Village. These larger developments will result in a higher growth allocation being assigned to those areas and a smaller growth allocation being assigned to the remaining systems. Furthermore, projections required an iterative process to ensure that the projected in-fill growth did not exceed the current count on vacant parcels.
- <sup>2</sup> Based on most recent data from CDPH regarding number of connections for regulated water systems in Tuolumne County. Excludes connections in systems where the District already wholesales water (ie. Sonora Meadows) and systems that would remain as isolated, discrete water service areas, and would not likely connect to an existing TUD system.
- <sup>3</sup> Total combined growth is growth in all classes of service connections (residential, commercial, industrial, and institutional). The District does not have growth numbers by customer class broken out by individual system. The reality is that most growth in commercial and institutional services will occur in the Sonora/Jamestown system which has been allocated 42% of all non-acquisition growth for the next 20 years.
- <sup>4</sup> Existing services by system are based data from 2010 and include the number of active connections within wholesale accounts.
- <sup>5</sup> Historically the District has seen an overall annual growth rate of 2.16% from 1993-2010. Approximately, 55% of that growth has been associated with system acquisition. The District would expect this trend to continue. We expect system acquisition/merger to account for approximately 58% of all new services over the next 20 years.



## Appendix I

---

Simulation Analysis of the South Fork Stanislaus River System Report



# Tuolumne Utilities District

## Simulation Analysis of the South Fork Stanislaus River System

April 1999

Submitted To:

Tuolumne Utilities District  
P.O. Box 3728  
13144 Mono Way  
Sonora, CA 95370

Prepared By:

HDR Engineering, Inc.  
271 Turn Pike Drive  
Folsom, CA 95630



# INTRODUCTION

HDR Engineering, Inc. was retained by the Tuolumne Utilities District (TUD) to conduct an operational study of the South Fork Stanislaus River watershed. This work expands upon the 1996 study previously conducted by HDR. For background information on the study area and system components refer to HDR's April, 1996 report.

The objective of this study was to assess the South Fork Stanislaus system's response to potential increases in consumptive demand levels within TUD downstream of Lyons Reservoir, while employing an operational strategy that places top priority on maintaining Lyons Reservoir's target storage levels. To perform this analysis, a new simulation model was created. This model was used to perform a sensitivity analysis in which TUD's annual consumptive demands at Lyons Reservoir<sup>1</sup> were increased in successive simulation runs. Analyses were performed for two historic low flow periods: June 1, 1976 to May 31, 1978 and June 1, 1985 to September 30, 1996. This process provided insight into how the system, if operated as simulated, might respond to future demand increases during future low flow conditions.

## MODEL OVERVIEW

Several changes were made to the simulation model of the South Fork Stanislaus system previously developed as part of HDR's 1996 operational study. An important aspect of the new simulation model is that its operational priorities differ from current practices. In this model, Strawberry Reservoir's primary operational objective is to meet Lyons Reservoir's minimum storage requirements. Strawberry Reservoir makes supplemental releases to meet Lyons Reservoir's requirements while Philadelphia Canal demands were considered to be secondary in order to maximize Lyons Reservoir's system yield.

Model input parameters were updated utilizing historic hydrologic data from water years 1992 to 1996. Local inflows into each reservoir were back-calculated from daily historic data on streamflow and reservoir storage. The model was further modified to calculate reservoir releases at a monthly time step and allow end-of-month storage targets to be specified for each reservoir. Several targets were incorporated into the model to track system response in each month. Table 1 provides an overview of the simulation model's parameters.

---

<sup>1</sup> The water available to TUD is diverted from the South Fork Stanislaus River into the Main Canal at Lyons Reservoir. "Consumptive demands" at Lyons Reservoir means the water delivered to TUD, as measured at diversions from the South Fork Stanislaus at Lyons Reservoir.

Table 1. Overview of South Fork Stanislaus Simulation Model Parameters

Model Component	Description	Value
Strawberry Reservoir Capacity	Maximum Quantity of Water Stored.	18,312 acre-feet
Lyons Reservoir Capacity	Maximum Quantity of Water Stored.	5,507 acre-feet
Lyons Reservoir Minimum Storage Target.	TUD requests free supplemental releases or purchases water from PG&E as needed to maintain levels at or above this minimum storage target.	1,200 acre-feet <sup>1</sup>
Strawberry Reservoir Minimum Storage Targets	Target minimum storage to reflect PG&E historic operations.	3,500 acre-feet <sup>2</sup>
Strawberry Reservoir Summer Storage Targets	Storage targets established to reflect PG&E historic operations.	Full pool throughout June. Uniform drawdown between July 1 and Labor Day. Three feet below full pool on Labor Day. (3 ft = 17,400 ac ft) <sup>3</sup>
Lyons Reservoir Demand	Combined TUD consumptive and instream flow demands on Lyons Reservoir. Spill that is used for power generation at the Phoenix Powerhouse is not assumed to be part of the demand.	The annual demand level is specified at the start of each run. Monthly demands are calculated as fixed percentages of the annual base as listed in Table 2.
Philadelphia Canal Demand	The amount of water diverted to Philadelphia Canal for power generation at the Spring Gap and Stanislaus hydroelectric projects.	0 acre-feet. <sup>4</sup>
Free Supplemental Supply	Strawberry Reservoir storage that can be released to Lyons Reservoir upon TUD's request. This supplemental supply is provided to TUD without charge under the 1983 Agreement. The free supplement is calculated by PG&E each spring for the current calendar year based on observed and forecasted inflows.	The annual values of available free supplemental supply values are summarized Table 3. The actual amount used is determined during the simulation.
Purchased Supplemental Water	Strawberry Reservoir storage that is purchased by TUD under the 1983 Agreement for its needs and to maintain Lyons Reservoir at or above minimum storage targets. Water is purchased on a monthly basis only after the free supplement has been fully utilized.	The amount of water purchased is determined during the simulation. It is assumed that TUD will purchase what is required in order to meet demand.
Hydrologic Record	Daily hydrologic data was provided by TUD. Local inflows into each reservoir were back-calculated from daily historic data on streamflow and reservoir storage.	June 1, 1976 to May 31, 1978 and June 1, 1985 to September 30, 1996.

<sup>1</sup>The minimum storage target of 1,200 AF at Lyons Reservoir was set by TUD as a practical limit for water quality deterioration (turbidity).

<sup>2</sup>The minimum storage target of 3,500 AF at Strawberry Reservoir was set by PG&E as a practical limit for winter maintenance flushing of the Philadelphia Canal.

<sup>3</sup>FERC Project 2130, Article 29 states: "Licensee shall, consistent with operational demands, maintain the maximum surface water elevation in Strawberry Reservoir during the period from June 1 to September 15 and maintain a minimum pool of about 10 acres with a depth of not less than 10 feet at all other times, except under emergency conditions."

<sup>4</sup>It is recognized that water that would otherwise spill below Lyons could be diverted instead to the Philadelphia Canal for power generation.

Monthly demands were calculated as a fixed percentage of the annual demand according to the demand pattern given in Table 2. Monthly demand patterns were specified by TUD and are representative of the historic monthly demand variations observed in water years 1986-1996.

**Table 2. TUD Monthly Demand Patterns**

Month	% of Annual Demand
October	9.9%
November	8.1%
December	7.3%
January	6.6%
February	5.7%
March	6.0%
April	6.4%
May	7.3%
June	8.8%
July	11.0%
August	12.0%
September	11.1%

Historic values for free supplemental supply available to Lyons Reservoir from Strawberry Reservoir storage were used when available. In other years, (1976, 1977, 1978 and 1985), the free supplemental supply value was calculated based on cumulative local inflows to Lyons Reservoir from January 1 to May 31 in each calendar year, using the regression relationship developed in HDR's 1996 study. Table 3 summarizes the values used in the simulation for free supplemental supply.

**Table 3. Annual Free Supplement**

Calendar Year	Free Supplement Available (acre-feet)	Historic or Calculated Value ?
1976	7,982	Calculated
1977	8,300	Calculated
1978	5,087	Calculated
1985	7,604	Calculated
1986	2,076	Historic
1987	8,151	Historic
1988	8,119	Historic
1989	6,471	Historic
1990	7,734	Historic
1991	7,502	Historic
1992	7,503	Historic
1993	3,577	Historic
1994	7,717	Historic
1995	1,357	Historic
1996	4,171	Historic

## Analysis overview

Separate analyses were performed for June 1, 1976 to May 31, 1978, the critical period of record; and June 1, 1985 to September 30, 1996, an extended drought period. All simulation runs were begun on June 1, assuming that both Strawberry and Lyons reservoirs were at full storage capacity and that no supplemental releases had previously been made.

For each successive run, Lyons Reservoir demand was increased in 50 acre-foot increments from a base level of 15,600 acre-feet up to 37,000 acre-feet. A run was made at a 17,583 acre-foot demand level to assess the impacts of increasing existing demands by approximately 2,000 acre-feet. System response was monitored to determine the demand where the following events were observed during the simulation:

- Water purchase begins
- Strawberry Reservoir storage drops below its Summer Storage Targets
- Strawberry Reservoir fails to refill
- Strawberry Reservoir Storage drops below 3500 acre-feet
- Lyons Reservoir Storage drops below 1,200 acre-feet
- Lyons Reservoir Storage drops below 300 acre-feet

## Simulation Results: 1976-1978

As shown in Figures 1 and 2 and in Table 4, all storage targets are met in both Strawberry and Lyons Reservoirs for demands up to 19,350 acre feet. Water purchase begins when demands reach 18,150 acre-feet. At demands of 19,400 acre-feet and above, Strawberry Reservoir's targeted summer storage is not maintained, first dropping below its Labor Day storage target of 17,400 acre feet in 1977. When demands exceed 26,600 acre-feet, Strawberry Reservoir fails to refill in 1977. Strawberry Reservoir drops below its minimum storage target of 3,500 acre-feet when demands reach 26,650 acre-feet. As demands increase further, Strawberry Reservoir remains below its minimum storage target of 3,500 acre feet from February to March 1977 and November to December 1977. Once Strawberry Reservoir storage drops to zero acre-feet, Lyons Reservoir storage drops below 1,200 acre-feet in the end of November 1977, at a demand level of 29,850 acre-feet.

Water purchase begins when Lyons Reservoir's demand reaches 18,150 acre-feet. As Table 5 and Figures 3 and 4 show, the amount of free supplemental water used and supplemental water purchased in each year increases with increasing demand. Conversely, Lyons Reservoir spill decreases as its demands are increased (Table 6, Figure 5).



Figure 2. Strawberry Reservoir Storage  
 South Fork Stanislaus Simulation  
 June 1, 1976 to May 31, 1978

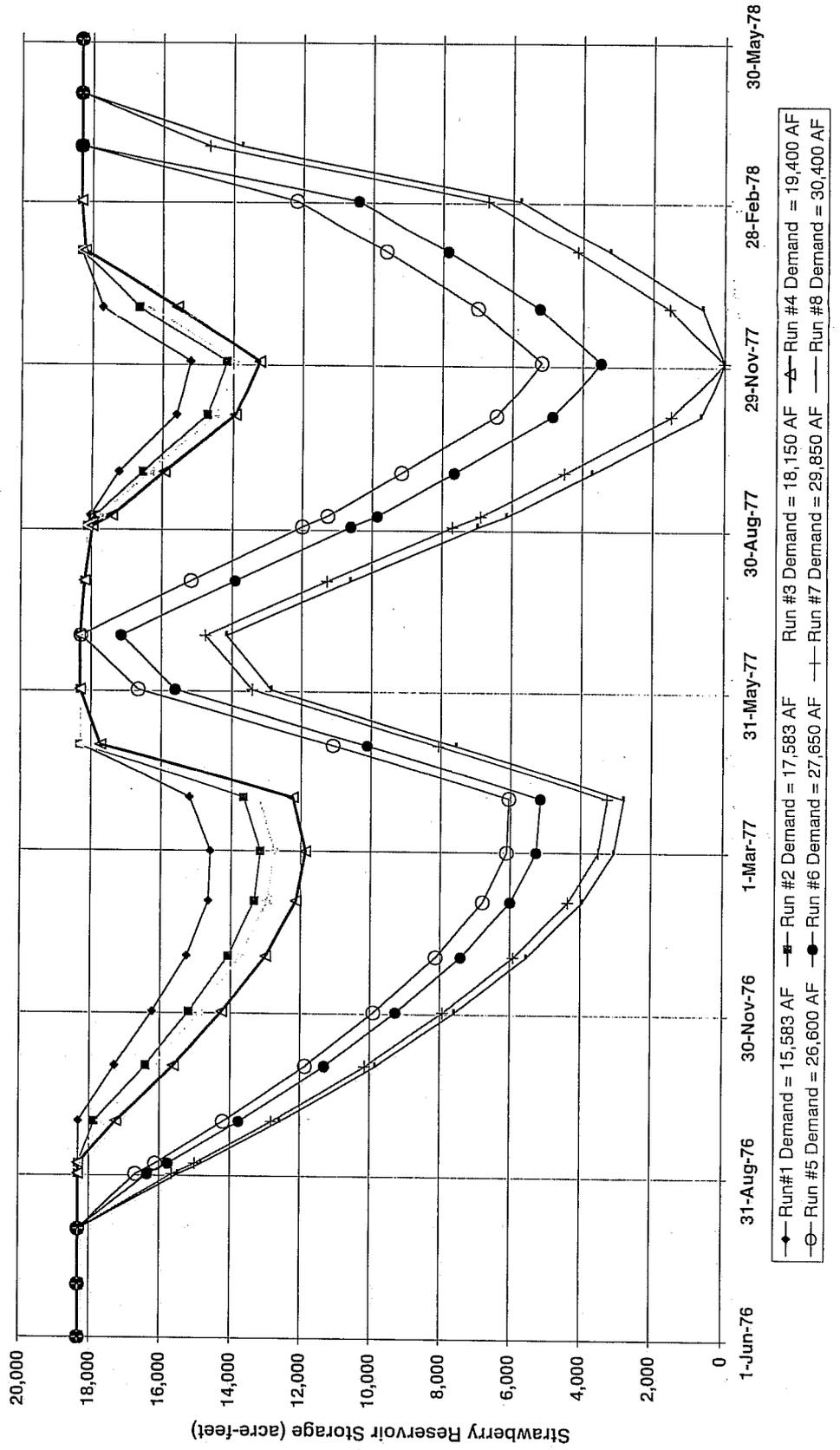


Figure 3. Free Supplement Used (acre-feet) 1976 - 1978

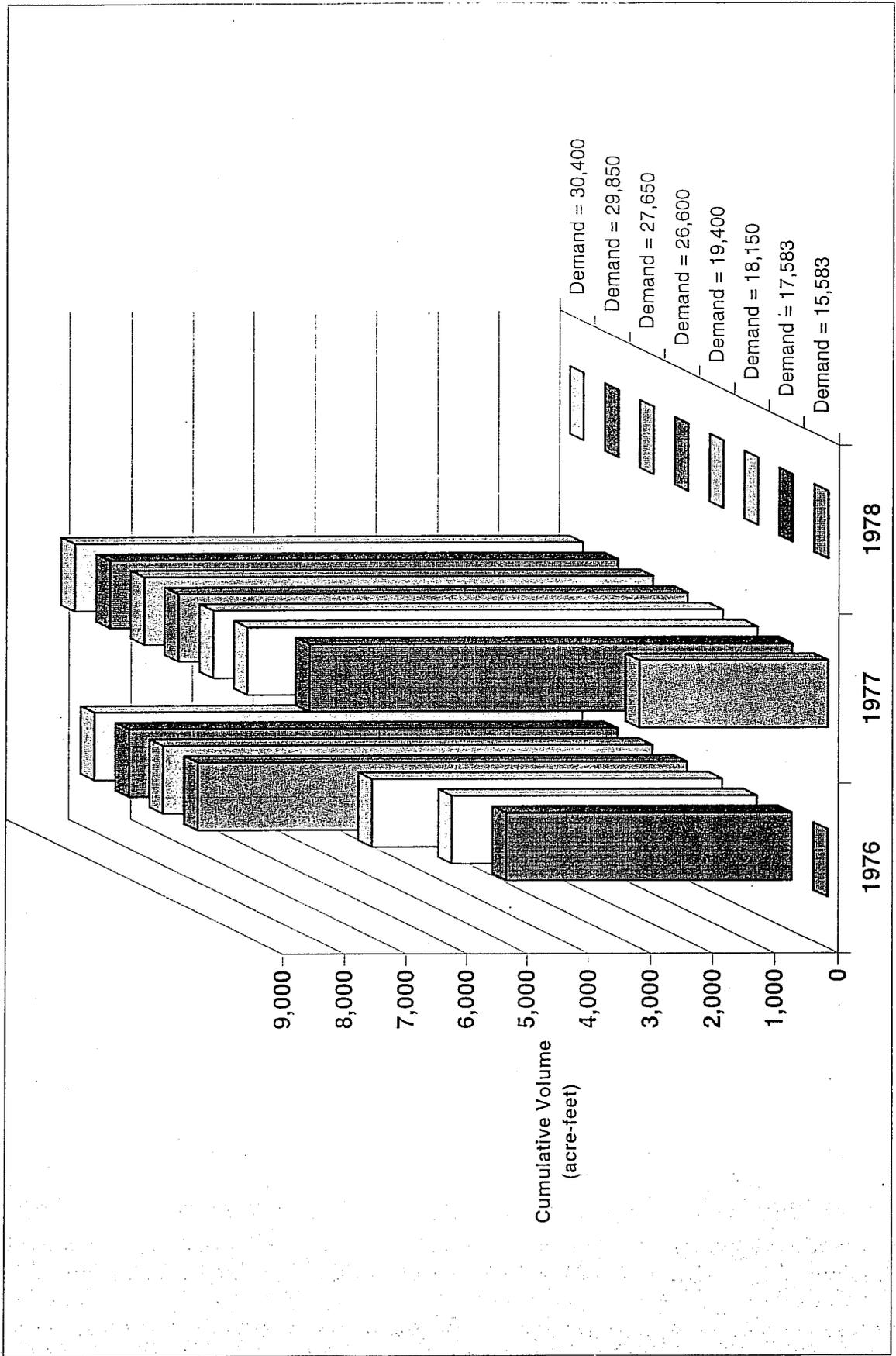
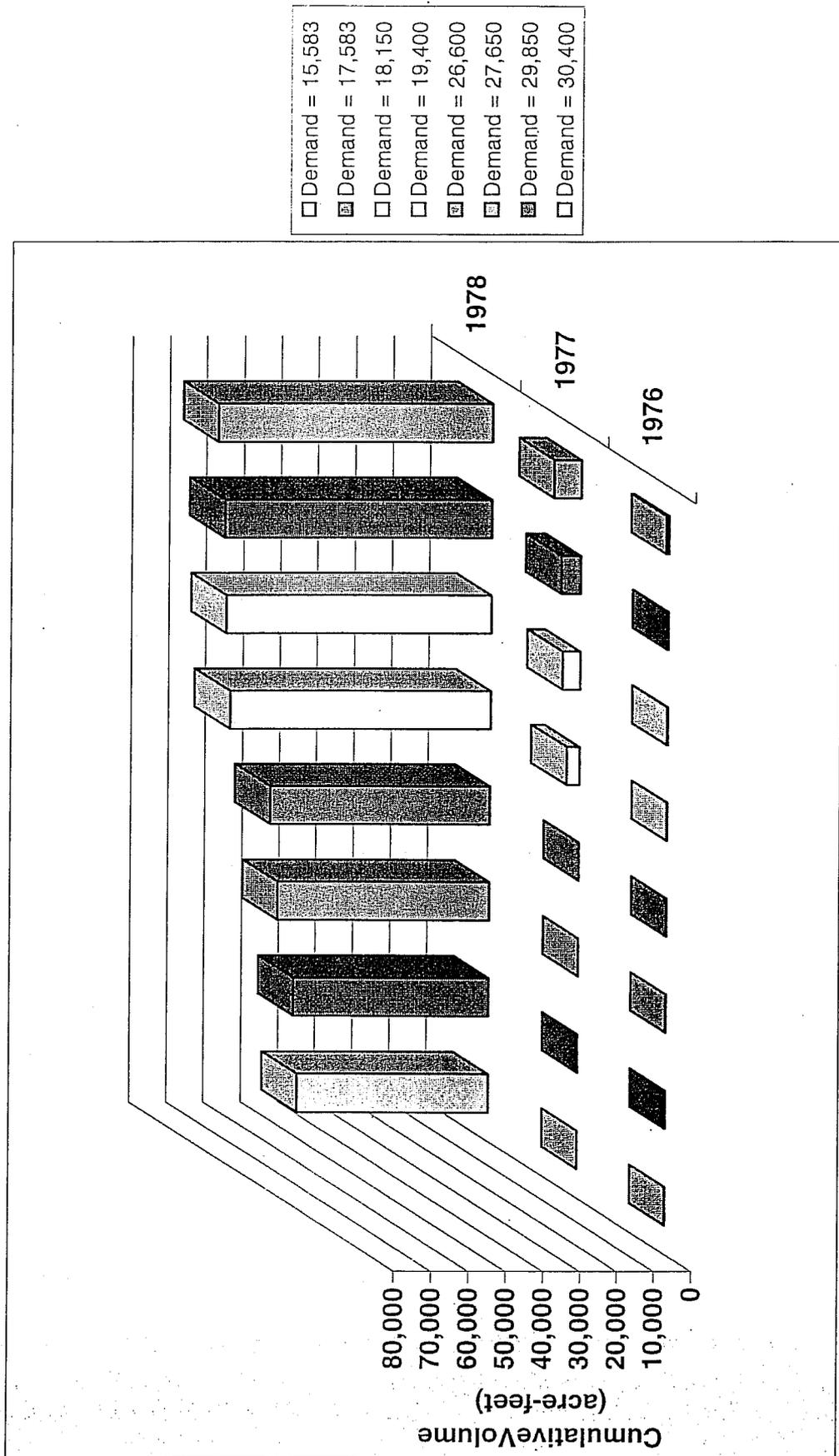


Figure 4. Water Purchased (acre-feet) 1976 - 1978



Figure 5. Lyons Spill (acre-feet) 1976 - 1978



## Simulation Results: 1985-1996

Tables 7 through 9 and Figures 6 through 9 provide an overview of system performance during this extended simulation period. All targets are met until the demand at Lyons reaches 19,250 acre-feet, when Strawberry Reservoir drops below its Labor Day target of 17,400 acre feet in 1987. Water purchase begins by the end of December 1987 at a slightly lower demand level of 15,950 acre-feet. Strawberry Reservoir storage drops below 3,500 acre-feet in 1991 when Lyons Reservoir demands reaches 27,500 AF. As demands are further increased to 32,350 acre-feet, Strawberry Reservoir storage drops to zero during the simulation and Lyons Reservoir cannot maintain its minimum storage target of 1,200 acre-feet. Lyons Reservoir storage drops below 300 acre-feet when demands reach 33,600 acre feet. Strawberry Reservoir refills in every year for the entire range of demands simulated.

As was observed in 1976-78, the amount of free supplement used and water purchased in each year increases with increasing Lyons demand, while Lyons Reservoir spill decreases.

## Implications for Water Supply Planning

This analysis shows that changing the operational priorities of the South Fork Stanislaus system to favor Lyons Reservoir has the potential to significantly increase the water available to meet consumptive demands at Lyons Reservoir. As TUD reviews options for meeting projected future water demands, operational changes may provide an attractive alternative.

**Table 4. System Response to Lyons Reservoir Demand Increases: June 1, 1976 to May 31, 1978 Simulation**

	Demand = 15,583 AF	Demand = 17,583 AF	Demand = 18,150 AF	Demand = 19,400 AF	Demand = 26,600 AF	Demand = 27,650 AF	Demand = 29,850 AF	Demand = 30,400 AF
Water is Purchased	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Strawberry Summer Storage Targets Met	Yes	Yes	Yes	No	No	No	No	No
Strawberry Refills Each Year	Yes	Yes	Yes	Yes	No	No	No	No
Strawberry Reservoir Above 3500 AC-FT	Yes	Yes	Yes	Yes	Yes	No	No	No
Lyons Reservoir above 1200 AC-FT	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Strawberry Reservoir Above 0 AC-FT	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Lyons Reservoir above 300 AC-FT	Yes	No						

**Table 5. Free Supplement Used and Water Purchased: June 1, 1976 to May 31, 1978 Simulation**

	Demand = 15,583 AF	Demand = 17,583 AF	Demand = 18,150 AF	Demand = 19,400 AF	Demand = 26,600 AF	Demand = 27,650 AF	Demand = 29,850 AF	Demand = 30,400 AF
June 1 - Dec. 31, 1976								
Free Supplement Used	400	4,600	5,000	8,000	8,000	8,000	8,000	8,000
Water Purchased	0	0	0	2,900	3,600	5,100	13,500	
Jan. 1 - Dec. 31, 1977								
Free Supplement Used	3,000	7,800	8,300	8,300	8,300	8,300	8,300	8,300
Water Purchased	0	0	30	13,100	15,300	18,600	19,200	
Jan. 1 - May 31, 1978								
Free Supplement Used	0	0	0	0	0	0	0	0
Water Purchased	0	0	0	0	0	0	0	0

**Table 6. Lyons Reservoir Spill: June 1, 1976 to May 31, 1978 Simulation**

	Demand = 15,583 AF	Demand = 17,583 AF	Demand = 18,150 AF	Demand = 19,400 AF	Demand = 26,600 AF	Demand = 27,650 AF	Demand = 29,850 AF	Demand = 30,400 AF
June 1 -Sept. 30, 1976	700	200	100	30	0	0	0	0
Oct. 1, 1976 - Sept. 30, 1977	7,300	5,300	4,700	3,500	0	0	0	0
Oct. 1, 1977 - May 30 1978	73,500	71,700	71,200	70,000	59,100	57,000	52,600	51,500

**Table 7. System Response to Lyons Reservoir Demand Increases: June 1, 1985 to Sept. 30, 1996 Simulation**

	Demand = 15,583 AF	Demand = 15,950 AF	Demand = 17,583 AF	Demand = 19,250 AF	Demand = 27,500 AF	Demand = 32,350 AF	Demand = 33,600 AF
Water is Purchased	No	Yes	Yes	Yes	Yes	Yes	Yes
Strawberry Summer Storage Targets Met	Yes	Yes	Yes	No	No	No	No
Strawberry Reservoir Refills Each Year	Yes						
Strawberry Reservoir above 3500 AC-FT	Yes	Yes	Yes	Yes	No	No	No
Lyons Reservoir above 1200 AC-FT	Yes	Yes	Yes	Yes	Yes	No	No
Strawberry Reservoir Above 0 AC-FT	Yes	Yes	Yes	Yes	Yes	No	No
Lyons Reservoir above 300 AC-FT	Yes	Yes	Yes	Yes	Yes	Yes	No

**Table 8. Lyons Reservoir Spill - June 1, 1985 to Sept. 30, 1996 Simulation**

	Demand = 15,583 AF	Demand = 15,950 AF	Demand = 17,583 AF	Demand = 19,250 AF	Demand = 27,500 AF	Demand = 32,350 AF	Demand = 33,600 AF
June 1, 1985 - Sept. 30, 1985	4,700	4,600	4,500	4,300	3,600	3,200	3,100
Oct. 1, 1985 - Sept. 30, 1986	143,800	143,400	141,600	139,800	130,600	125,200	123,800
Oct. 1, 1986 - Sept. 30, 1987	26,100	25,800	24,300	22,800	16,000	12,000	11,100
Oct. 1, 1987 - Sept. 30, 1988	28,600	28,300	26,600	25,000	16,200	11,000	9,600
Oct. 1, 1988 - Sept. 30, 1989	69,600	69,200	67,600	65,900	57,700	52,800	51,600
Oct. 1, 1989 - Sept. 30, 1990	36,200	36,000	34,200	32,600	24,300	19,400	18,200
Oct. 1, 1990 - Sept. 30, 1991	43,400	43,000	41,400	39,700	31,400	26,600	25,300
Oct. 1, 1991 - Sept. 30, 1992	37,400	37,000	35,200	33,300	24,200	19,700	18,600
Oct. 1, 1992 - Sept. 30, 1993	133,600	133,200	131,600	129,900	121,600	115,800	114,300
Oct. 1, 1993 - Sept. 30, 1994	32,000	31,700	30,200	28,700	21,400	17,100	15,900
Oct. 1, 1994 - Sept. 30, 1995	201,100	200,600	198,600	196,600	186,400	180,500	178,900
Oct. 1, 1995 - Sept. 30, 1996	121,300	121,000	119,500	118,100	110,800	106,800	105,900

**Table 9. Free Supplement Used & Water Purchased: June 1, 1985 to Sept. 30, 1996 Simulation**

	Demand = 15,583 AF	Demand = 15,950 AF	Demand = 17,583 AF	Demand = 19,250 AF	Demand = 27,500 AF	Demand = 32,350 AF	Demand = 33,600 AF
<u>June 1 – Dec. 31, 1985</u>							
Free Supplement Used	30	300	1,800	3,700	7,600	7,600	7,600
Water Purchased	0	0	0		3,400	8,800	9,800
<u>Jan. 1 – Dec. 31, 1986</u>							
Free Supplement Used	1,900	2,100	2,100	2,100	2,100	2,100	2,100
Water Purchased	0	20	800	1,600	5,700	8,600	9,400
<u>Jan. 1 – Dec. 31, 1987</u>							
Free Supplement Used	5,500	5,900	7,400	8,200			
Water Purchased	0	0	0	700	6,700	10,900	12,000
<u>Jan. 1 – Dec. 31, 1988</u>							
Free Supplement Used	2,400	2,700	3,800	5,500	8,100	8,100	8,100
Water Purchased	0	0	0	0	4,500	8,300	9,300
<u>Jan. 1 – Dec. 31, 1989</u>							
Free Supplement Used	500	600	1,200	4,100	6,500	6,500	6,500
Water Purchased	0	0	0	0	5,700	9,100	10,000
<u>Jan. 1 – Dec. 31, 1990</u>							
Free Supplement Used	5,900	6,100	7,100	7,700	7,700	7,700	7,700
Water Purchased	0	0	0	500	7,400	10,800	11,760
<u>Jan. 1 – Dec. 31, 1991</u>							
Free Supplement Used	2,100	2,600	5,300	7,100	7,500	7,500	7,500
Water Purchased	0	0	0	0	5,800	9,200	10,000
<u>Jan. 1 – Dec. 31, 1992</u>							
Free Supplement Used	1,100	1,500	3,400	4,300	7,500	7,500	7,500
Water Purchased	0	0	0	0	2,300	5,300	6,300
<u>Jan. 1 – Dec. 31, 1993</u>							
Free Supplement Used	1,500	1,700	2,700	3,500	3,600	3,600	3,600
Water Purchased	0	0	0	0	4,100	6,400	7,100
<u>Jan. 1 – Dec. 31, 1994</u>							
Free Supplement Used	3,800	4,200	5,500	7,000	7,700	7,700	7,700
Water Purchased	0	0	0	0	6,800	9,600	10,500
<u>Jan. 1 – Dec. 31, 1995</u>							
Free Supplement Used	0	0	0	240	1,400	1,400	1,400
Water Purchased	0	0	0	0	2,400	4,400	4,900
<u>Jan. 1 – Sept. 30, 1995</u>							
Free Supplement Used	0	0	0	40	1,900	3,700	4,200
Water Purchased	0	0	0	0	0	0	400

Figure 7. Lyons Reservoir Storage  
 South Fork Stanislaus Simulation  
 June 1, 1985 to September 30, 1996

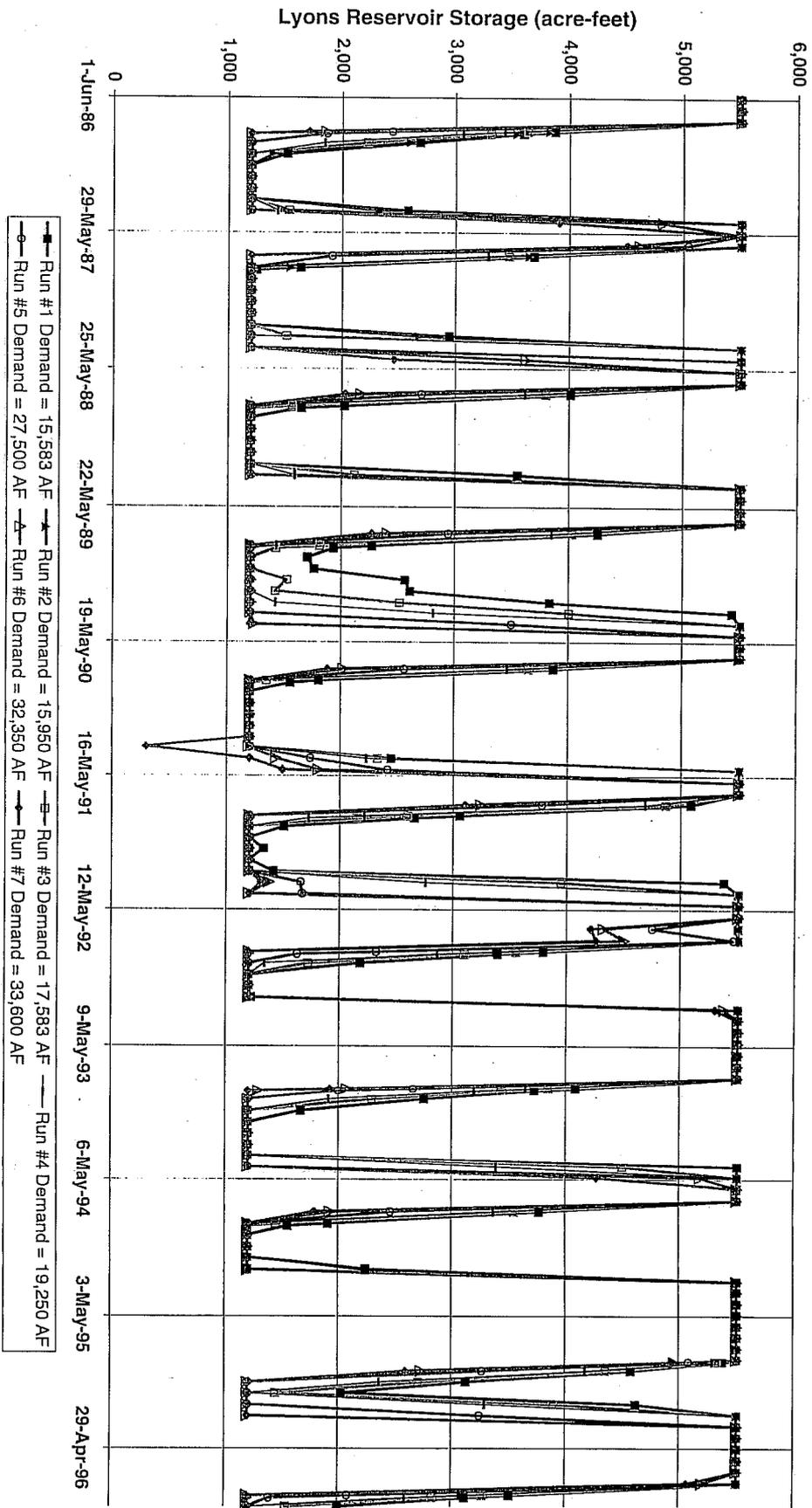


Figure 6. Strawberry Reservoir Storage  
 South Fork Stanislaus Simulation  
 June 1, 1985 to September 30, 1996

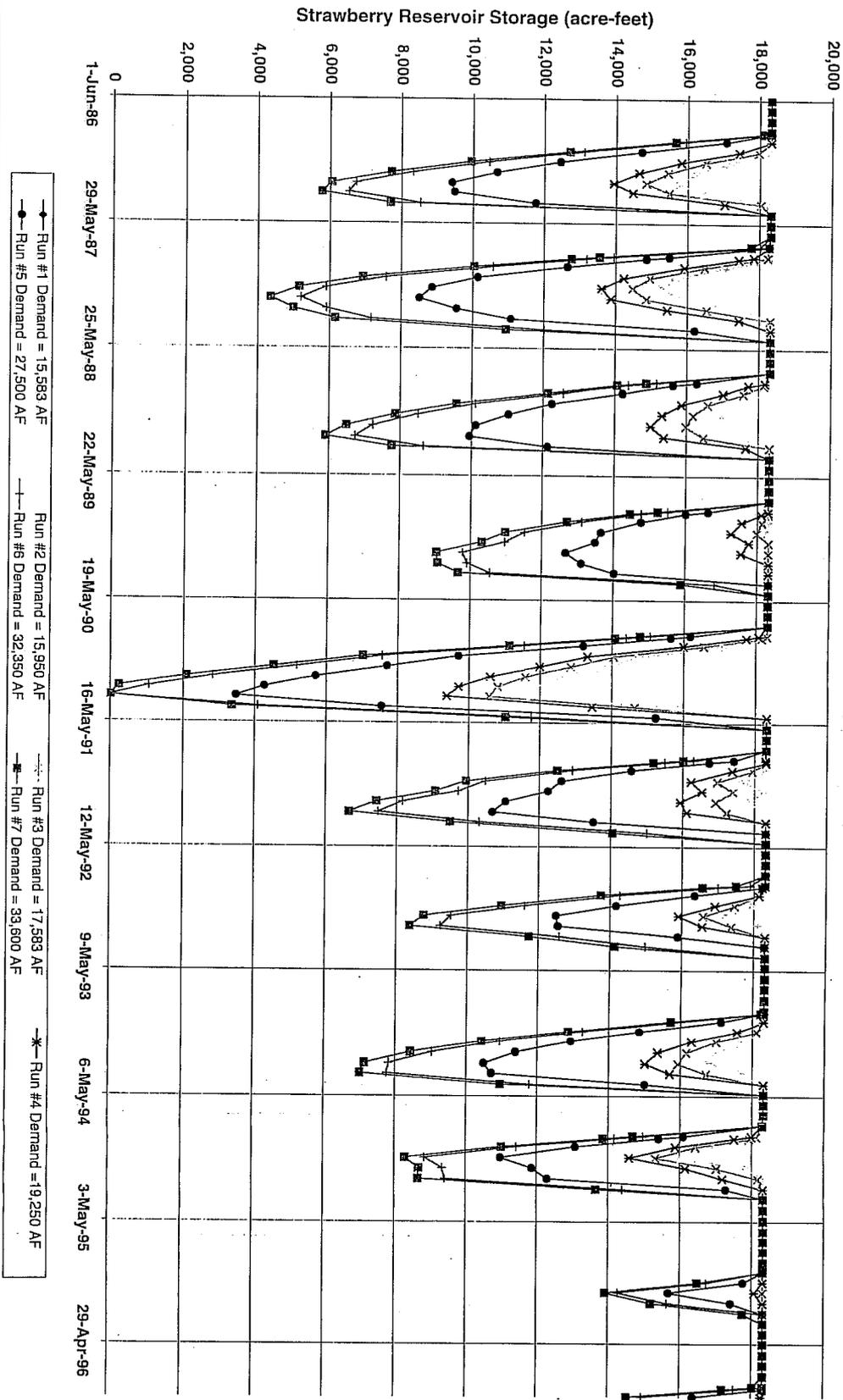


Figure 8. Free Supplement Used (acre-feet) 1985-1996

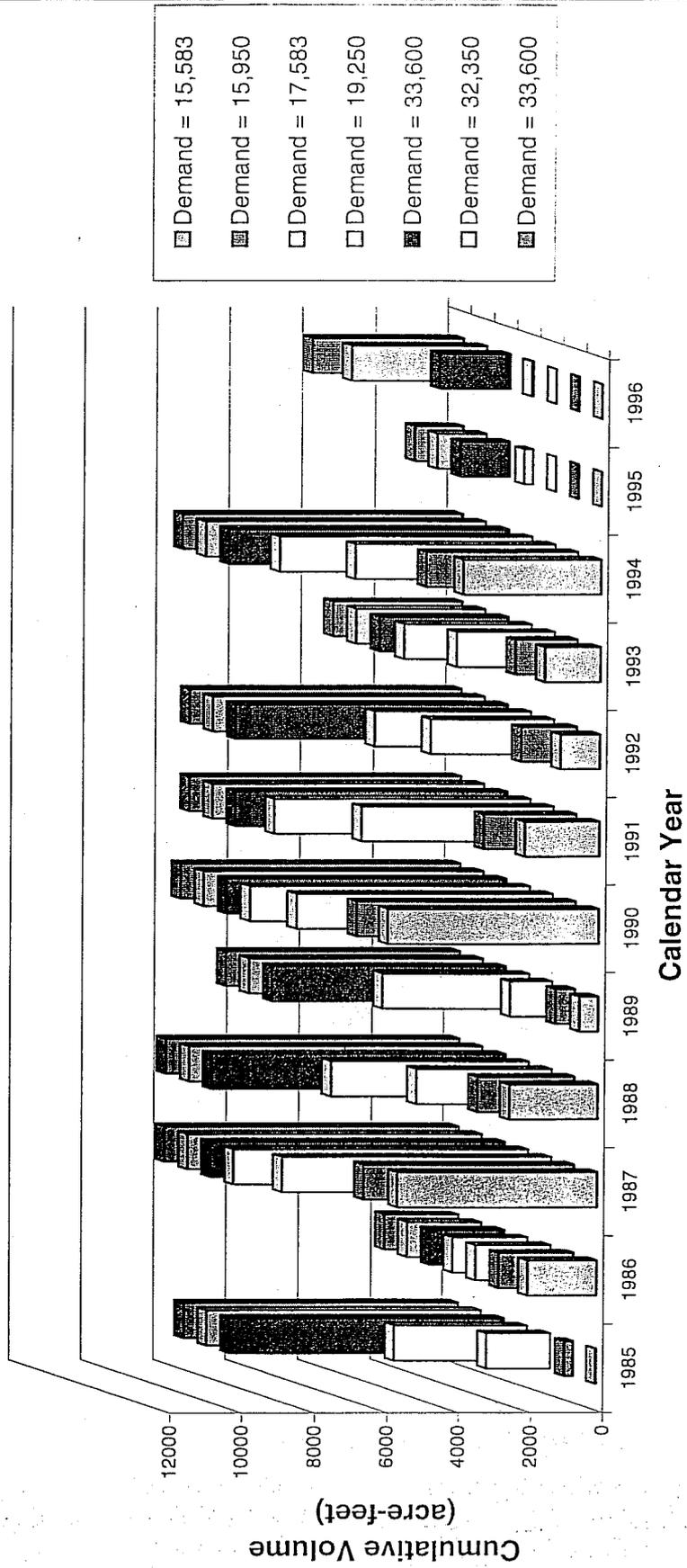


Figure 9. Water Purchased (acre-feet) 1985 - 1996

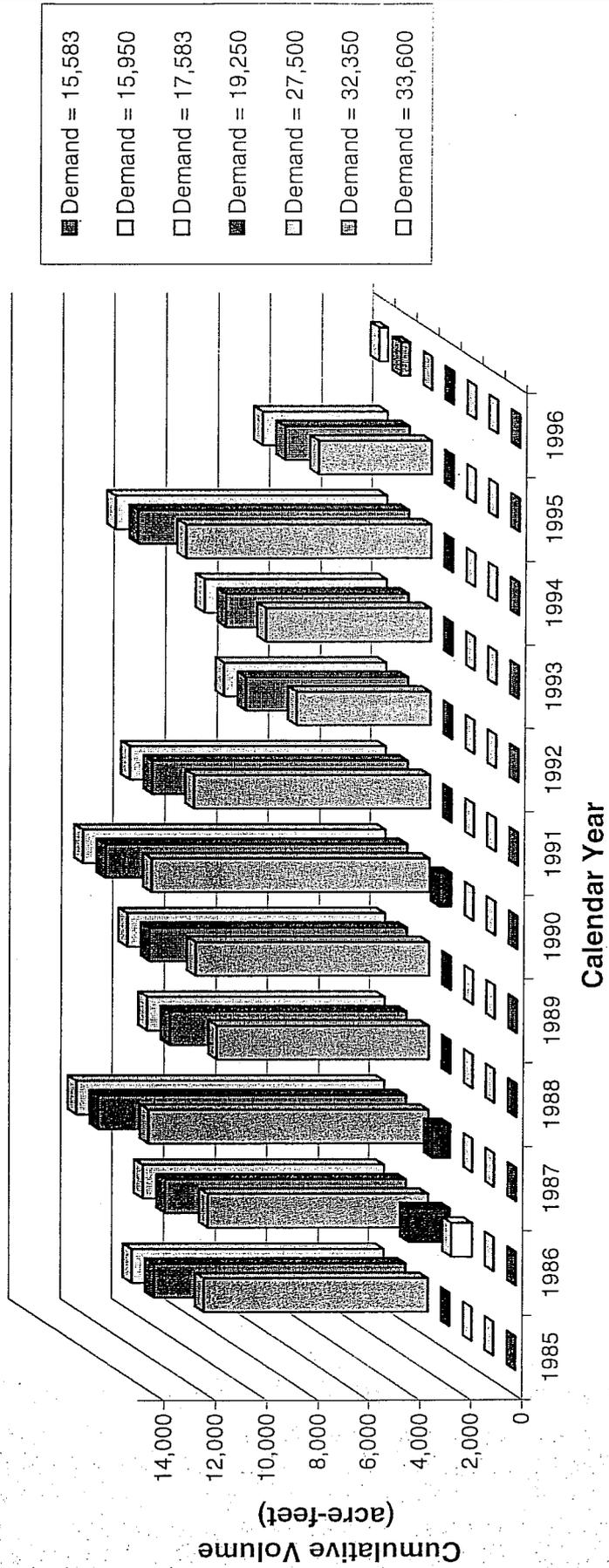
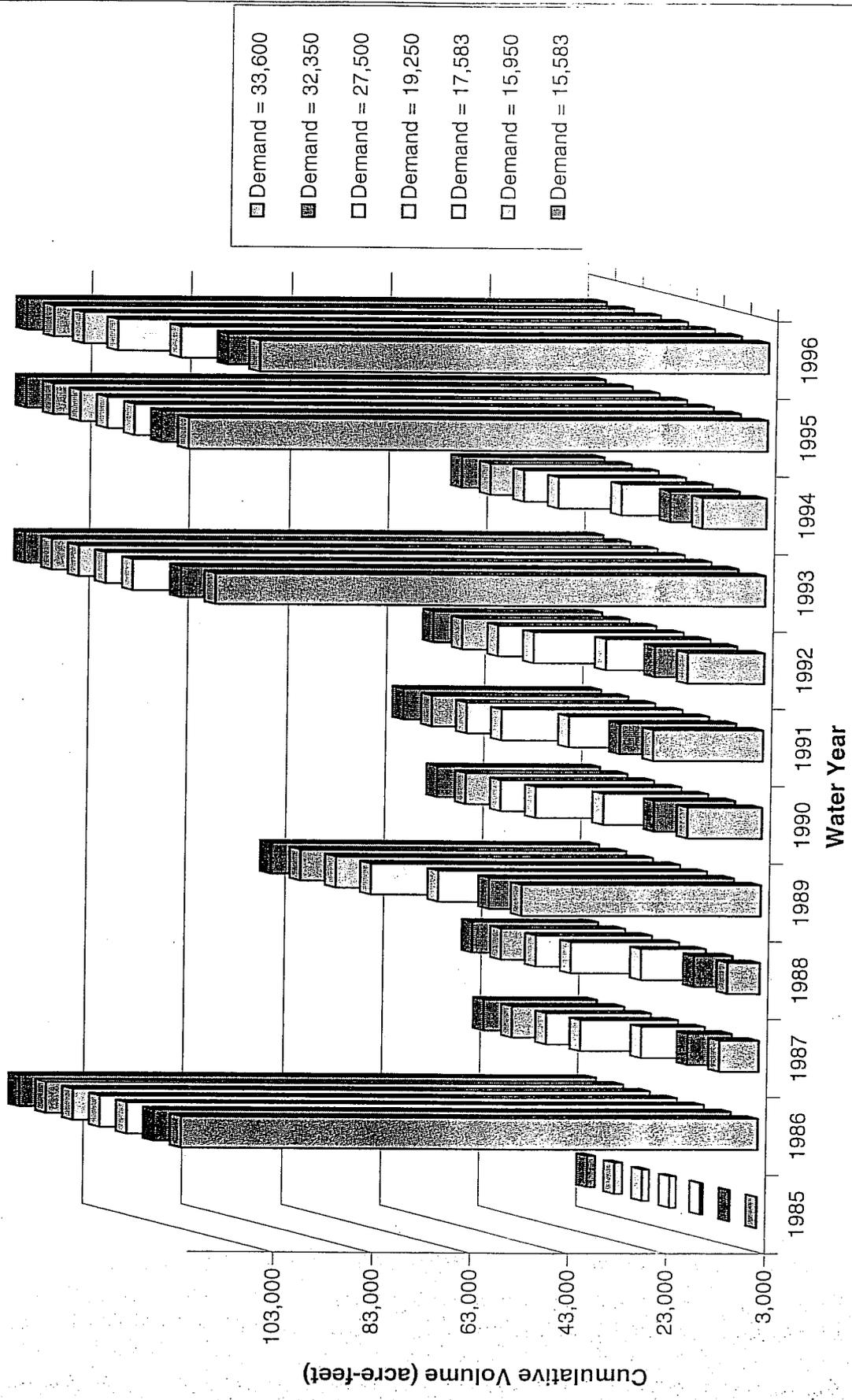


Figure 10. Lyons Spill (acre-feet) 1985 - 1996





## Appendix J

---

TUD Water Rules and Regulations, Regulation No. 12,  
Conservation



## REGULATION NO. 12

### CONSERVATION

#### **12.01 General**

It is the District's Policy to take reasonable and prudent measures to conserve all natural resources and to adopt and implement a conservation program. It is further the District's policy to take reasonable and prudent measures to conserve water and energy in the operations and development of the District.

#### **12.02 Specific Concerns**

The District in its operation shall:

1. Develop pricing structures to encourage conservation of water and energy.
2. Promote through public relations a public consciousness of the need to conserve.
3. Assist customers to optimize efficient use of water.
4. Maintain facilities to conserve water.
5. Design facilities with conservation of water and energy in mind.
6. Construct facilities to conserve or retrieve water and energy.
7. Seek to halt all illegal use of water.

#### **12.03 Water Conservation Programs to be Activated in Phases**

The District shall have the power to restrict use of District water during any shortage or other emergency, upon the making of any findings or the taking of any other actions that may be authorized or required by law, including Sections 350-358 and 31026-31029 of the Water Code.

##### **12.03.1 Phase I - Ongoing Water Management**

- a. Education programs including County Schools programs.
- b. Ultra low-flow toilet rebate program. Water customers of the District shall be eligible to receive a \$45.00 conservation rebate, up to a maximum of three toilets per residential customer account, and with no maximum for a commercial business, for the replacement of toilets that were designed to use in excess of 3.0 gallons per flush, with District approved low-flow models using 1.6 gallons per flush or less. Participants must register a purchase receipt for each rebate and authorize District inspection of the completed replacement before payment shall be made.
- c. Promotion of water-saving landscaping.
- d. Community education programs;
  - i. Mailings (i.e. distribute "Lawn Watering Guide")
  - ii. Demonstrations (Xeriscape Garden, Home Improvement Event)

- iii. Seminars
- iv. Video library
- v. Public speaking
- e. Requirement of low-flow fixtures in new developments.
- f. Water audit and retrofit programs.
  - i. Low flow showerhead distribution
  - ii. Water conservation kit distribution
- g. Signatory to and implementation of Best Management Practices Memorandum of Understanding.
- h. Meter and/or flow control for all customer accounts and plant production activities.
- i. Maintain tiered water rates for treated water.
- j. Prohibit wasteful use of water.
- k. Review for accuracy water measuring and/or metering devices.
- l. "Agricultural Enterprise Water Rate" customers shall be required to design, construct, operate and maintain irrigation water systems in such a manner as to contain and put to beneficial use all delivered water.
- m. Raw water "General Metered Service" accounts, in which an open flowing ditch is the point of service, shall be converted to a "General Irrigation Service" account, and the mechanical meter serving the property shall be replaced with an open flow measuring devices and water shall be billed at the appropriate comparable rate. "General Metered Service" accounts with a point of service and meter connection from a pressurized (minimum pressure at point of service 20 psi) delivery system shall not be converted to a "General Irrigation Service" account under this action.
- n. It is desirable that all properties served by raw water measured by the miners inch have on site storage equipped with an automatic shutoff device. Minimum storage for property receiving winter raw water should equal seven (7) days of usage (300 cubic feet).

### **12.03.2 Phase II - Conservation Measures During Low Water Years**

Immediately upon the completion of the March snow survey of the South Fork of the Stanislaus River a forecast of anticipated annual yield will be undertaken and rated as a percent of normal. When such forecast, or any subsequent survey, projects a water runoff yielding less than 50% of normal the District Board of Directors shall find that a threat of an emergency or shortage exists and the following measures shall be implemented:

#### **System Wide**

1. Increase public awareness:

District to hold additional landscape and irrigation seminars; prepare radio announcements, newspaper articles and ads; and send notices to Tuolumne County

teachers, school boards, local businesses, restaurants, community service groups, Chamber of Commerce, Board of Supervisors, Board of Realtors, Building Department, etc., stressing the need to conserve water and request methods of support.

2. Fire hydrant flow testing is prohibited.
3. Restaurants shall serve water only upon customer request.

#### Treated Water Accounts

1. Voluntary reduction in usage:

District to mail special notices to all water customers advising of low water year and requesting reduction from previous years usage if possible, and containing information on conservation methods as well as advising customers of the financial impact.

2. Contact high water users:

District to send notices to high water use customers and initiate a water usage audit.

3. Monitor and police outside water use:

District to educate the public to recognize and remedy excessive water use and waste.

4. Household use:

Customers should obtain conservation kits from the District and should request assistance from the District and local plumbing supply companies on availability of low-use fixtures.

5. Outside use:

Customers shall eliminate water runoff; use drip or spot irrigation methods; shut off faucet when hose is not in actual use; modify existing watering schedule and request assistance from Master Gardeners and local nurseries to promote low water use (native) plants.

#### Raw Water Accounts - Voluntary Reductions

Notice of voluntary reduction:

District to mail special notices to all raw water customers advising of low water year and requesting reduction from previous years usage if possible.

#### Industrial and Commercial

District to send notices to high water use customers requesting any possible water conservation measures and initiate a water usage audit.

#### Resale Service - Treated and Raw Water

District to mail notices advising of low water year and requesting a reduction in individual water use. Notice to include copy of District's Conservation Policy along with a request to implement similar action.

### **12.03.3 Phase III - Critical Years - Restricting Use of Potable Water**

A public hearing shall be held during which customers shall have the opportunity to be heard to protest against the declaration of the water shortage emergency condition and to present their respective needs to the Board.

Following a public hearing the Board of Directors may implement Phase III conservation measures whenever it determines that the amount of available water supply may be less than the projected water system demand.

District shall proclaim through resolution that a state of emergency exists and shall remain in effect until projected water availability exceeds projected demand for both the short and long term period.

#### **System Wide - In Addition to those Measures Contained within Phase II**

1. Determine system reduction goals (a function of projected runoff weighed against previous years usage) and update as conditions warrant.
2. Curtail to life maintenance the watering of lawns, gardens and any other irrigation. Individual plants or trees must be irrigated by the use of buckets or other containers or properly maintained irrigation drip systems. Water use which results in water running onto driveways, gutters, streets, adjoining property, and/or any other water runoff is prohibited.
3. Washing of cars, boats, trailers, or other vehicles by hose or by use of water directly from faucets or outlets connected to the public water supply is prohibited.
4. Washing of sidewalks, walkways, driveways, patios, parking lots, tennis courts or other hard-surfaced areas, including commercial establishments, by hose or by use of water from faucets or other outlets connected to the public water supply is prohibited.
5. New construction service applications shall be granted upon condition that water shall be used only for interior purposes and landscaping shall be delayed until repeal of Phase III restrictions. Installation of landscaping prior to the repeal of Phase III restrictions shall be a violation of this regulation and customer's service shall be restricted to life line rates by a device installed by the District. The device shall remain in place until the Board of Directors repeals the state of emergency or threat of emergency or shortage and upon payment of \$500.00 penalty.
6. Use of water in decorative fountains, pools, recreational ponds and the like shall be limited to the minimum necessary to preserve aquatic life if present.
7. Dust control, earth compaction, and other construction use of raw or potable water is prohibited. Reclaimed water may be used for such purposes if authorized by the District in accordance with regulations.
8. Filling of new or existing swimming pools is prohibited.
9. Excessive water usage is prohibited and shall be remedied by restriction of the customer's service to life line water delivery rates by a device installed by the District or discontinuance of water service until the excessive usage is remedied, or the Board of Directors repeals the Phase III water restrictions, and the payment of a \$500 penalty. Excessive water usage is defined as:

1. Allowing plumbing system leaks, including sprinkler and drip systems, to remain un-repaired for fourteen (14) calendar days following written notification by the District.
2. Without reasonable cause, water usage in excess of 200% of the prior year's usage during the same month of the year.

Treated Water and Raw Water (Metered) Domestic Accounts

1. Both raw and treated water metered customers, (where water is sold by the cubic foot) shall be required to restrict outside water usage between the period 12 noon and 7 p.m. and shall restrict usage to alternating days. Those accounts with a property address ending in an even number shall confine their outside usage to Tuesday, Thursday, and Saturday; those with an odd number shall confine their outside usage to Wednesday, Friday, and Sunday. There shall be no restriction on Monday.
2. Implement Emergency Water Delivery Rate Schedule predicated upon current established rates:
  - i. A life line rate shall be established covering the first 500 cubic feet of water usage per month. The cost per cubic foot within the life line rate shall remain at the lowest bracket of the then current rate schedule.
  - ii. Water consumption charges shall be based upon actual water used per month times the rate factors below.
  - iii. Life Line Rate
 

First 500 cu ft.	Current lowest tier price of established rate
next 500 cu ft.	1.25 times life line rate
next 500 cu ft.	1.50 times life line rate
next 3,000 cu ft.	1.75 times life line rate
over 4,500 cu ft.	2.00 times life line rate

Raw Water Accounts

1. All raw water accounts with the exception of domestic accounts shall be reduced to an amount equal to the system wide reduction goal.
2. Raw water domestic accounts which are not metered will be restricted by the District to the extent possible up to the system wide reduction goal.
3. All interruptible accounts shall be reduced to sustained maintenance quantities.
4. Agricultural (irrigation/stock watering) water rate accounts:
 

All "agricultural (irrigation/stock watering) water rate" accounts shall be reduced by a minimum of 1.25 times the System Wide Reduction Goal. The maximum reduction under this section shall not exceed fifty percent (50%) of previous years delivery. All interruptible accounts shall be reduced by a factor of fifty percent (50%).
5. Postponing irrigation season:
 

Irrigation season shall be postponed, provided Lyons Reservoir is not spilling or projected to spill, to begin no earlier than May 1st and last no longer than September 31st.

### Industrial and Commercial

Customers shall reduce consumption to the lowest possible amount which would allow continued operation. Conservation measures to be taken shall be established on an individual basis by the District.

### Resale Service - Treated and Raw Water

1. Mandatory reduction in percent of usage equal to District's reduction goal.
2. Resaler shall restrict all outside water usage within his area of service to alternating days in a manner consistent with the policy established herein.

### **12.04 Enforcement**

In addition to, and/or exercise of, any and all lawful remedies, violations of this section shall result in the following penalties:

#### First Violation:

Written warning from District that further violation will result in possible water restrictions and imposing of fines.

#### Second Violation:

Customers water service shall be restricted by a device installed by the District for a period of thirty days and the device will be removed upon payment of a \$200.00 penalty.

#### Third Violation:

Customers water service shall be restricted to life line or life sustaining rates by a device installed by the District. The device shall remain in place until the Board of Directors repeals the state of emergency or threat of emergency or shortage and upon payment of \$500.00 penalty.

### **12.05 Variances**

Variances may be granted from any of the above regulations upon application in writing stating in detail the circumstances meriting special consideration. Appeals of decisions by the General Manager may be taken to the Board of Directors.

### **12.06 Low Water Use Plumbing Fixtures Required**

All applicants for new water service connections for new construction shall be required to furnish proof of installation in residential, commercial and/or industrial buildings, ultra low flow toilets with a maximum tank size or flush capacity of 1.6 gallons and shower heads with a maximum flow capacity of 3 gallons per minute.

### **12.07 Water Conserving Landscape Requirements**

All applicants for new or amended water service connections for governmental, public, commercial or industrial premises shall be required to utilize California native plant materials or approved low water demand plant materials in landscaping designs.

## Appendix K

---

TUD Water Rules and Regulations, Regulation No. 3,  
Water Service Charges and Rates



## REGULATION NO. 3

### WATER SERVICE CHARGES AND RATES

#### **3.01 Charge for Water Service**

A monthly charge for treated water service per meter size as established in Exhibit B.1 shall, irrespective of quantity used, be applied to all connections, except for master metered users. Where more than one existing single family residence or commercial building share a single water meter, a separate monthly service charge shall be required for each such building.

#### **3.01.2 Quantity Charge**

A usage charge, per hundred cubic feet, shall be applied to all connections for water delivered as determined in Exhibit B.1.1.

#### **3.01.3 Surcharges**

A monthly surcharge as established in Exhibit B.3 shall be applied to all connections in the areas designated, to fund acquisition costs or special improvements needed to provide service to those areas. Where more than one existing single family residence or commercial building share a single water meter, except for master metered users, a separate surcharge shall be required for each such building.

#### **3.01.4 Wholesale usage - Master Meter Service**

Per agreement as authorized by Board of Directors.

#### **3.01.5 Bulk Usage from Fire Hydrant**

Where bulk water usage is required, i.e. for construction purposes, the District shall charge for metering and usage as specified in Exhibit B.5

#### **3.01.6 Gateway Beautification Projects**

Monthly base rate charges shall be waived for irrigation of District approved "Gateway Beautification Projects" which are less than 400 square feet in size, and which are located on public property. Quantity usage charges as established in Exhibit B.1.1 shall apply.

#### **3.01.7 Conservation Water Rate**

Single family residences may qualify for the Conservation Water Rate described herein. Where District residential water customers use an average of 500 cubic feet of water per month or less, a reduced base rate for metered water service is available as provided in Exhibit B.1.2. Customers that qualify for this rate are required to complete an application form at the District's main office. Before this rate can be approved, the historical average of the customer's account will need to show that the average water usage per month has been 500 cubic feet or less during the most recent twelve (12) month period. The District shall periodically monitor all accounts approved for the Conservation Water Rate, and will reclassify accounts to the normal residential water rate category when water consumption exceeds the 500 cubic feet average per month usage for two consecutive billing periods or more.

### **3.02 Monthly Service Charge for Privately Owned Fire Protection Systems**

A monthly charge shall be paid for fire service connections to the District's water distribution system which supplies water to privately owned and maintained sprinklers and fire hydrants used exclusively for fire fighting, and based on the minimum service charge for a 3/4" meter as specified in Exhibit B.6. Bypass lines, including meters and backflow prevention devices shall be retrofitted at the customer's expense on all fire sprinkler backflow assemblies where such bypass lines do not already exist.

### **3.03 Miscellaneous Services Provided**

Miscellaneous services provided by the District to any person or agency shall be compensated on the basis of cost. The District may participate in joint projects or cooperative arrangements by which direct compensation is not required.

### **3.04 Request for Service Location, Temporary Shut Off or Turn On, Suspension of Service**

Each time the District is required to locate the customer's service connection or make a temporary shut off or turn on, a service charge, in accordance with Exhibit B.7, shall be paid by the user. Water service shall be terminated between 8:00 a.m. and 3:00 p.m. on any business day (not a Saturday, Sunday or holiday) requested by the customer, provided that the request is received by the District not later than two business days prior to the date of termination. The customer will be responsible for the costs of all services furnished by the District prior to the suspension of his service. The District may allow a maximum six month suspension of monthly service charges for meters that have been shut-off at the request of the customer if all of the following conditions are met:

1. The service has been continuously utilized and maintained by the customer, and in an active billing status for at least one-year.
2. Any applicable monthly surcharges under Exhibit B.3 shall be charged to the customer's account and be payable during any suspension period.
3. The request is the result of a catastrophic event such as fire where the structure is uninhabitable.

Upon written request of the property owner and written agreement with the General Manager, such suspension period may be extended on a month to month basis up to a total of three additional months in the event of documentable delays in reconstruction of the structure with circumstances beyond the control of the property owner.

#### **3.04.1 Inactivation of Service**

A customer may, by written request, permanently inactivate service in the event of demolition or removal of all habitable structures on the property. Upon approval by the General Manager of the request for permanent inactivation of service, the General Manager shall order the removal or permanent decommissioning of the water service connection serving the property and shall discontinue all regular monthly fees and charges for water service, including surcharges. Once service is permanently inactivated on a property, such parcel shall be treated as if it were a vacant parcel and the District's connection fees and charges shall apply for any new service as detailed in Section 3.05 herein.

### **3.05 Connection Fees**

Charges for new services or change of service will be as follows:

### **3.05.1 Capital Reserve Charge**

Every applicant for connection to the District's water system, and applicants for connections to water systems served by the District through a master meter shall be required to pay a Capital Reserve Charge in addition to any other fee, cost, reimbursement or separate agreement entered with the District. The reserve fund so established shall be used to replace capacity and facilities used up by new applicants for service upon connection to the water system and to provide for the continuous capability to serve new applicants for water service. The Board shall establish the amount from time to time as required to provide the continuous capability of serving applicants for water service.

The Capital Reserve Charge shall be computed by reference to the user classification schedule on Exhibit A as applied at the sole discretion of the District. The Capital Reserve Charge for one equivalent single family residence is specified on Exhibit B.8.

### **3.05.2 Meter**

- a. District charges for installation and setting of meter(s) shall consist of the District's actual cost as established on Exhibit B.9.
- b. Performance of accuracy tests on meters in accordance with Regulation 7.06 of this Ordinance shall incur a service charge as shown on Exhibit B.10.

### **3.05.3 Service Line Charge**

The applicant shall be responsible for the costs incurred by the District for the installation of service line(s) from the existing mainline to the applicant's property. The applicant shall deposit with the District an amount equal to the District's estimate of such work. All costs in excess of the estimate shall be payable by the applicant upon completion of work. Such costs shall equal the District's actual cost of materials, installation, labor, equipment, encroachment permit and overhead rate. The applicant may have the service connection line constructed by others with prior written permission from the District. All such work shall be done by licensed California contractor approved by General Manager. All work shall be inspected and approved before acceptance by the District, and any construction completed or covered up before such inspection shall not be acceptable for connection with District's distribution pipes. The actual connection to District's mainline pipe shall be accomplished by District personnel only, and under no conditions shall any other person interfere with District facilities in any way. The applicant will be charged by the District for inspection and connection to main equal to actual costs incurred for such work.

### **3.05.4 Service Line Relocation**

The District's charges for the relocation of the District's service line and water meter from an existing site on the applicant's property to another requested location shall be equal to the District's actual costs of materials, installation, labor, equipment encroachment permit and normal overhead charges. Such relocations shall be subject to District approval.

### **3.05.5 Charges for Reimbursement of Oversized Facilities**

Charges may include the payment of a prorata share of previously constructed main or line extensions, when required under District reimbursement agreements as described in Regulation 8.14. Additional charges to the District for certain facilities, either proposed or previously constructed, are listed on Exhibit C.

### **3.05.6 Capacity Charges - Water Supply, Treatment, Storage, Transmission - Exhibit B-13**

These charges are instituted to insure that all applicants pay a fair share of the cost burden to provide for essential components of water service infrastructure. They are generally established as a one-time charge levied against developments or new water accounts as a way to recover a part or all of the cost of additional system capacity. Capacity Charges are imposed upon applicants (or parcels) where sufficient water supply, treatment and storage facilities have not been provided by a developer or by an assessment on those parcels to cover those costs, and for service to any parcels that do not have a District water main in a street or right of way fronting the Applicant's property. The charges are specified on Exhibit B. 13.

In those areas where adequate supply, treatment and storage facilities have been provided by the developer or by an assessment on each parcel, water service equivalent to one single-family residence (ESFR) on each parcel shall be allowed without payment of capacity charges. In areas where connection fee surcharges are in effect to repay loans for water treatment or storage improvements, and the surcharge amount is less than those specified on Exhibit B.13, the lower amount shall be applicable for water service for one equivalent single-family residence on an existing lot or parcel. Water service for improvements that result in more than one ESFR per parcel (i.e., due to a parcel split or duplex construction), shall require payment of commensurate capacity charges specified in Exhibit B.13. Parcels within the City of Sonora and within the townsites of Tuolumne, Columbia and Jamestown, which were in existence and are shown on the Tuolumne County Assessor's 1992 assessment maps as a separate assessor's parcel (1992 being the year in which TUD came into existence), shall not be subject to payment of capacity charges for one ESFR for each such parcel. If the boundaries of a lot in such townsites does not match the boundary of an assessor's parcel on the 1992 County Assessor's Map, that lot will not be credited with one ESFR and water service will be subject to payment of the capacity charge. Where property line adjustments are made that do not result in a greater number of assessor's parcels than shown on the 1992 Assessor's map, the resulting parcels may be entitled to the one ESFR credit against capacity charges. The appropriateness of the capacity charges shall be analyzed on a case-by-case basis and determined by the General Manager.

All applicable Capacity charges must be paid to the District before service will be provided. All District agreements with developers of subdivisions with six or more lots shall provide that all applicable Capacity charges for water service must be paid to the District before District acceptance of developer-constructed facilities for the development and before any proof of service or other documentation is given by the District indicating that such facilities are accepted or that service shall be provided. The District will make no agreements with developers, or amendments to agreements with developers to allow deferment of payment of the applicable charges or payment by installments or otherwise. This shall not apply to other connection charges payable for actual hook-up of individual units in such development, which must be paid before the individual connections for service.

Supply. This fee shall apply to applicants for water service, where the property involved has not been provided with water supply by previous dedication of supply, agreement or assessment. The standard charge shall be computed on an estimated average annual water demand per single family equivalent (ESFR) of 0.42 acre feet, as determined by the District's Engineer, at the rate shown on Exhibit B.13.

Treatment. This fee shall apply to new applicants for water service, which require a treated water supply which has not been previously provided by dedication of treatment capacity, agreement or assessment. The standard charge for treatment cost mitigation shall be computed on estimated maximum daily flow plus 96 hours storage tank refill as required by County Ordinance (Fire Safety Standards - Section 15.20.010 (f)(2) or as may be amended), as determined by District's Engineer, at the rate shown on Exhibit B.13.

Storage. This fee shall apply to new applicants for water service in an area that has not been previously provided with adequate water storage facilities by dedication of storage, agreement or assessment. The standard charge for mitigation of storage construction shall be computed at the rate shown on Exhibit B.13 and based on a combination of the estimated annual average daily gallonage of consumption over a seven day period and required fireflow or the estimated maximum daily gallonage of usage over a three day period of usage and required fireflow as determined by District's Engineer.

Transmission. This fee shall be the actual cost of construction, or reimbursement share of prior construction cost, as required in Regulation 8.

Change in Use. The foregoing fees shall also be applicable to a change of use on an existing service connection under Regulation 6.03 where such fees were payable on the existing connection.

### **3.05.7 Connection Charges in Specific Areas**

Applicants for water service in those certain areas listed on Exhibit C shall be required to pay the specific charges in addition to the connection fees described above.

## **3.06 Standby Assessments**

Standby Assessments shall be calculated and levied against all parcels in any subdivision containing fifty parcels or more and receiving approval by the Board of Directors after adoption of this regulation. Such assessments shall be a condition of approval of providing service to the subdivision to fund the cost of maintaining the water system and its capacity in a readiness to serve status for the benefit of unimproved parcels of land.

The District shall direct the preparation of the necessary Assessment Engineer's Report and conduct the required election in accordance with the applicable provisions of the State Constitution. All costs associated with the preparation of the Engineer's Report and conduct of the election, including reasonable District administrative expenses, shall be paid by the project developer. The standby fee or charge will be detailed in the Agreement between the Developer and the District. Standby Assessments shall terminate for each parcel upon application for water service and payment of applicable connection fees and charges.

### **New or Increased Charges, Assessments, etc.**

The District may from time to time increase its rates and charges or adopt new charges, standby charges, surcharges, improvement district assessments, or other charges pursuant to the applicable provisions of law relating thereto.

## **3.07 Security Deposits**

### **3.07.1 Determination of Satisfactory Credit**

For the purposes of this regulation, determination of whether the credit of a customer is satisfactory shall be made solely by the District. The credit of a customer, who has paid all rates and charges without default for twelve months, last past, shall be deemed satisfactory. In the event that the General Manager or Finance Director determines that a customer's credit is less than satisfactory, the District shall require a security deposit for the account.

### **3.07.2 Amount: Residential or Business**

The amount of the deposit shall be in the amounts detailed in Exhibit B.12.

### **3.07.3 Application of Deposit**

The District will apply the security deposit to any account owing to the District that is delinquent for more than 30 days and will notify the customer of such application. Service may be discontinued if the account is not fully paid and the security deposit restored within 10 days after such notice.

### **3.07.4 Refunds**

The security deposit will be returned to the customer without interest, upon termination of the service and payment of all rates and charges owed to the District by the customer, or at such earlier time as the District may determine that the credit of the customer is satisfactory. Deposits that remain unclaimed after the expiration of two (2) years from the date the deposit shall be credited to the account for which the deposit was originally paid.

## **3.08 Direct Billing of Tenants**

Owners that rent or lease the property with water service may have the service billing sent directly to the tenant or tenant's agent. To accomplish this, the owner shall first fill out an Owner - Water & Sewer Application. The tenant is also required to fill out a Tenant - Water & Sewer Application and pay the amount of the security deposit as detailed in Exhibit B.12 prior to the District changing the billing name and address. The owner will be responsible, however, for all billings to the tenant that are not paid promptly by the tenant and any penalties thereon. The owner shall have access to information regarding the account status of their tenant upon request.

### **3.08.1 Deposit Amount**

A deposit shall be required for all accounts billed directly to tenants or a tenant's agent. The amount of the deposit shall be in the amounts detailed in Exhibit B.12.

### **3.08.2 Application of Deposit**

The District will apply the security deposit to any account owing the District that is delinquent for more than 30 days and will notify the tenant and owner of such application. Service may be discontinued if the account is not fully paid and security deposit restored within 10 days after such notice.

### **3.08.3 Refunds**

The security deposit shall be returned to the customer without interest, upon termination of the service and payment of any charges owed the District by the customer.

### **3.08.4 Delinquent Notices**

Delinquent notices of past due amounts shall be sent to both tenants and property owners of the property receiving water service.

## EXHIBIT B

### WATER SERVICE CHARGES AND RATES

#### **B.1 Charge for Treated Water Service**

Meter Size: Minimum Monthly Service Charges

5/8 by 3/4 inch meter (Conservation)	\$ 16.64
5/8 by 3/4 inch meter	\$ 27.06
3/4 inch meter	\$ 27.06
1 inch meter Residential/Fire Protection	\$ 27.06
1 inch meter	\$ 33.95
1 ½ inch meter	\$ 42.50
2 inch meter	\$ 65.07
3 inch meter	\$ 161.19
4 inch meter	\$ 236.54
6 inch meter	\$ 341.29
8 inch meter	\$ 479.13

Where more than one existing single family residence or commercial building share a single water meter for service from the District, except for master metered users, a separate minimum monthly service charge (per the rates listed above) and/or any special assessment or surcharge affecting such water service (listed on B.3 below) shall be required for each such building or residential dwelling unit.

#### **B.1.1 Quantity Rates**

First 1,500 cu. ft. per 100 cu. ft.	\$ 1.50
Next 3,500 cu. ft. per 100 cu. ft.	\$ 1.61
Over 5,000 cu. ft. per 100 cu. ft.	\$ 1.96

#### **B.1.2 Conservation Rate**

Single Family Residential customers whose average monthly water usage over the most recent twelve (12) months is less than 500 cubic feet may apply for and pay a reduced conservation water rate of \$16.64 minimum monthly service charge and \$1.14 per 100 cu. ft. instead of \$1.50 per 100 cu. ft. See Regulation 3.01.7.

#### **B.2 Charge for Raw Water Service (Untreated)**

##### **B.2.1 Metered Customers**

##### **Monthly Base Service Rates**

Meter Size: Minimum Monthly Service Charges

5/8 by 3/4 inch meter	\$ 10.40
3/4" inch meter	\$ 10.40
1 inch meter	\$ 14.56
1 ½ inch meter	\$ 17.68
2 inch meter	\$ 26.00
3 inch meter	\$ 26.00
4 inch meter	\$ 74.88
6 inch meter	\$106.08
8 inch meter	\$148.72

Exhibit B (continued)

**Quantity Rates – Contract and Supplemental Service**

First 300 cu. ft. per 100 cu. ft.	\$ .14
Next 9,700 cu. ft. per 100 cu. ft.	\$ .17
Over 10,000 cu. ft. per 100 cu. ft.	\$ .20

**B.2.2 Unmetered Rate of Flow Customers**

**B.2.2.1 Residential Service**

**Monthly Base Service Rates**

First ½ miner's inch of contract capacity	\$ 12.00
Additional capacity, per ½ miner's inch	\$ 5.00

**Quantity Rates**

First 23 miner's inch-days per MID.	\$ 3.97
Next 57 miner's inch-days per MID.	\$ 4.07
Over 80 miner's inch-days per MID.	\$ 4.12

**B.2.2.2 Resale Service**

**Monthly Base Service Rates**

First ½ miner's inch of contract capacity	N/A
Additional capacity, per ½ miner's inch	N/A

**Quantity Rates**

First 23 miner's inch-days per MID.	\$ 4.00
Next 57 miner's inch-days per MID.	\$ 4.10
Over 80 miner's inch-days per MID.	\$ 4.25

**B.2.2.3 Industrial Service**

**Monthly Base Service Rates**

First ½ miner's inch of contract capacity	\$12.00
Additional capacity, per ½ miner's inch	\$ 5.00

**Quantity Rates**

First 23 miner's inch-days per MID.	\$ 3.22
Next 57 miner's inch-days per MID.	\$ 3.27
Over 80 miner's inch-days per MID.	\$ 3.32

**B.2.2.4 Irrigation Service - Supplemental**

**Monthly Base Service Rates**

First ½ miner's inch of contract capacity	\$ 6.50
Additional capacity, per ½ miner's inch	\$ 4.60

Exhibit B (continued)

**Quantity Rates**

\$ 2.97 per MID or \$59.89 per ac. ft.

**B.2.2.5 Flat Rate Service**

**Monthly Base Service Rates**

Flat Rate 1	\$ 40.00
Flat Rate 2	\$ 45.00
Flat Rate 3	\$ 50.00

**B.3 Treated Water Surcharges and/or Assessments**

The surcharges listed below are for a 3/4" meter treated water service. Surcharges for meters larger than 3/4" will be based upon the same increase factors for monthly service charges for larger meters. In areas where water systems are interconnected, more than one of the surcharges listed below may apply.

Big Hill	\$ 17.79 per month
Crystal Falls	2.00
Cedar Ridge	7.38
Columbia	2.18
Curtis Creek	36.14
Gibbs Ranch	4.31
Monte Grande	17.79
Monte Grande – Curtis Creek Interconnection Route	26.99
Oak Garden	3.95
Oak Ridge	2.65
Upper Basin (Brentwood, Lakewood, Confidence	2.25
Ponderosa System	6.50
Railbed Road	6.30
Railbed Road w/backflow preventer	11.97
Scenic View / Scenic Brook	7.77
Soulsbyville	9.00
Valle Vista	10.00
Sugar Pine	10.08
Wards Ferry Ranches	25.66

**B.4 Wholesale Usage - Master Meter**

Same as B.1.1 except where there is a special agreement as authorized by Board of Directors.

**B.5 Bulk Usage from Fire Hydrant**

	2½"	1"
Rental charge per day	\$ 5.00	\$ 2.00
Usage per 100 cu. ft.	1.61	1.61
Meter Deposit	1,550.00	200.00

**B.6 Service Charge for Privately Owned Fire Protection Systems**

Same as monthly charge for 3/4" meter - See B.1.

**B.7 Request for Service Location, Temporary Shut Off or Turn On**

Each time the District is required to locate the customer's service connection or make a temporary shut off or turn on, a service charge, in accordance with the following provisions, shall be paid by the user. These charges will not apply when there is an emergency request by the customer due to a leak.

**Exhibit B (continued)**

<b><u>B.7.1</u></b> Service charge with a minimum notice of two (2) full work days and with the location or shutoff to be accomplished between 7:00 a.m. and 4:00 p.m. on a regular day (not including 6-month maximum suspensions):	No Charge
<b><u>B.7.2</u></b> Service charge with less than the required minimum notice and with location or shutoff to be accomplished between 7:00 a.m. and 4:00 p.m. on a regular day:	\$ 50.00
<b><u>B.7.3</u></b> Service charge with the location or shutoff to be accomplished between 4:00 p.m. and 7:00 a.m.:	\$130.00
<b><u>B.7.4</u></b> Service charge with the location or shutoff on Saturday, Sunday or District Holiday:	\$130.00

**B.8 Capital Reserve Charge**

The Capital Reserve Charge shall be used to establish a capital reserve fund that shall be used to replace capacity and facilities used by new applicants for service upon connection to the water system and to provide for the continuous capability to serve new applicants for treated water service. The capital reserve fund would specifically be used to replace equipment and facilities that reach the end of their useful life and to construct improvements necessary to maintain service and capacity in water treatment, storage, transmission, distribution, pumping facilities, and control systems as periodically needed in each of the service areas within the District's jurisdiction.

The Capital Reserve Charge shall be computed by reference to the user classification schedule attached as Exhibit A, applied according to the factors indicated at the sole discretion of the District. The fee stated herein is equivalent to a Factor of 1.0.

Capital Reserve Charge: \$985.00

**B.9 Meter Set Charge**

	Installation of Meter & Valve Only	If New Box & Lids are Also Required
3/4 inch meter	\$296.00	\$422.00
1 inch meter	390.00	517.00
1 ½ inch meter	550.00	676.00
2 inch meter	694.00	843.00
3 & 4 inch meters	Actual Cost	

**B.10 Meter Accuracy Tests**

Customers requesting meter tests shall be charged \$ 50.00 for all tests beyond one test per year.

**B.11 Service Line Charge** Actual cost

**B.12 Security Deposit Amount** \$80.00

**B.13 Capacity Charges**

Water Capacity Charges shall be collected and placed in a fund to construct improvements to any of the water systems described above for the purpose of increasing supply, treatment, storage, or transmission capacity used up by new connections to the water systems. The charges are uniform to all systems and are collected and used to construct improvements as needed in any individual water system. These charges are applied as described below.

**Exhibit B (continued)**

Application criteria: Water capacity charges apply to all applicants for water service whose parcels to be served are located where sufficient water supply, treatment, and storage facilities have not been provided through previous improvement as described in Regulation 3.05.6. For raw water service, only the supply component described below shall apply.

- Supply                               \$ 3,074 per acre foot per year. For raw water service to agricultural and irrigation customers, service will be turned off during the non-irrigation season (October 16<sup>th</sup> through April 14<sup>th</sup>).
- Treatment                         \$2,386 per gallon per minute of maximum daily flow in addition to compliance as may be required by County Ordinance (Fire and Safety Standards 15.20.010.(f)(2) or as may be amended).
- Storage                             \$1.31 per gallon of the greater amount of either: a.) seven days of the estimated annual average consumption, or b.) three days of the maximum daily consumption. Also the storage needs as may be required by County Ordinance (Fire and Safety Standards 15.20.010 (f)(2) or as may be amended) will be in addition to the consumption storage requirement.
- Transmission                     Actual Cost.

**B.14 Water Connection Fees**

Description of TUD Water Systems to Which the Foregoing Charges are Applicable

The water systems serving treated water referred to herein are all located within the boundaries of and under the jurisdiction of the Tuolumne Utilities District. Uniform rates, fees, and charges apply to each and every system except as otherwise noted. Water systems currently serve the communities and surrounding areas of Sonora, Jamestown, Cuesta Serena, Valle Vista, Volponi Acres, Sonora Water Company through a master meter, Columbia, East Sonora, Cuesta Center, Lambert Lakes, Tuolumne, Cedar Ridge, Crystal Falls, Mono Vista, Willow Springs, Camp Sunshine, Ranchos Poquitos, Soulsbyville, Comstock Ranch, Sonora Meadows through a master meter, Oak Garden Estates, Lakewood Park, Brentwood Park, Goldmont Forest, Sonora Vista, Confidence, Forest Vista Estates, Meadowbrook, Sugar Pine, Peaceful Pines, Oak Haven, Apple Valley, Scenic View and Scenic Brook Estates, Phoenix Lake Park, Ponderosa Hills, Muller and Mira Monte through a master meter, Gibbs Ranch and Rancho Sonora Estates, Monte Grande, Big Hill, Mono Village, Curtis Creek Ranch area, and Wards Ferry Ranches. Other communities that could be transferred to or acquired by the District in the future that would be subject to these rates, fees, and charges include, but may not be limited to, Alpine Acres, and Last Chance Water Company Service areas.

Raw water is provided to the following resale customers: Twain Harte Community Services District, Twain Harte Valley Mutual Water District, Mi Wuk Mutual Water Company, Last Chance Water Company, Peppermint Creek Mobile Home Park, Pulpit Rock Water Company, Sawmill Flat Water Association, and Oneta Estates Water Association.

Purpose and Use

The purpose of the rates, fees, and charges stated herein are for meeting operation and maintenance expenses, purchasing or leasing supplies, equipment, or materials, meeting financial reserve needs, and for obtaining funds for capital improvements necessary to maintain service to all customers within the District's existing service areas. The capital improvements include water storage tanks, treatment facilities, water distribution and transmission facilities, and pumping facilities, including related electrical and telemetry control systems.



## Appendix L

---

### Demand Management Measures Cost Benefit Analysis



## Description of Cost Effectiveness Analysis

The local cost to implement each demand management measure (DMM) was compared to the value of the expected water savings that would occur as a result of implementing each DMM. A benefit to cost ratio greater than one demonstrates whether a given DMM would be cost effective for the District to implement. A value less than one is deemed not cost effective. The following documents the assumptions and analysis completed to document the basis for filing cost-effectiveness exemptions for the following DMMs: residential assistance program (DMM A and B), high efficiency washing machine rebate program (DMM F), commercial industrial and institutional (DMM I), and landscape (DMM E).

The cost effectiveness calculations included in this appendix were developed based on the 2009 California Urban Water Conservation Council (CUWCC) Research and Evaluation Committee Report. A summary of the input data and output data for the analysis is provided on the following page. The number of interventions (such as surveys or rebates) assumed to be offered in each analysis is based on CUWCC coverage requirements. In the case for DMM A for example, the CUWCC anticipates that 1.5 percent of all residential connections will receive a water audit survey in a single year which equates to approximately 178 connections. Therefore, the analysis assumes that 178 residential water surveys are required each year.

For the other DMMs, the service offered might be either surveys or rebates. For the purpose of the cost analysis, no additional surveys or rebates are assumed to take place after the first year. This is done to determine the effects of a single year of implementation over a 25 year period. The water savings from this initial year of surveys or rebates will continue each year thereafter for 25 years with some decay rate. The value of conserved water in each year is the annual volume of conserved water multiplied by the avoided unit cost of water. The value of saved water is then totaled for 25 years. This value of saved water is divided by the costs to implement the surveys or rebates in the first year to arrive at the benefits to costs ratio.

The unit cost to implement the first year of surveys or rebates are based on estimates of rebate costs or survey costs and staff time and related costs to support these efforts.

The avoided unit cost of water is the average cost of electricity to pump, and chemicals to treat, one acre-foot of water. For the TUD Treated Water System, this is estimated to be approximately \$168 per ac-ft.

The Real Discount Rate is also identified as the Real Interest Rate. This rate is based on a nominal bond rate of 5 percent minus a projected inflation rate of 2.1 percent. The Real Discount Rate of 2.9 percent is used along with the unit water savings and decay rates taken from published studies offered by CUWCC to calculate the water savings cost effectiveness over time.

**Economic Analysis Inputs**

Real Discount Rate	2.90%
Avoided Water Cost	\$ 168
2020 Population	35,828

**MOU Compliance Inputs**

**Residential**

Current Number of SFR Accounts	11,494
Current Number of MFR Accounts	385

**Landscape**

Number of Dedicated Irrigation Accounts	60
---	----

**CII**

Baseline CII Water Use (2008) (AFY)	703
Current Number of CII Accounts without Dedicated Irrigation Meters	1124

**Other Inputs for CB Analysis**

**Landscape**

Dedicated Irrigation Water Use (AFY)	71
--------------------------------------	----

**CII**

Number of CII Accounts (2008)	1,119
% Indoor Water Use	60%

**MOU Compliance Outputs**

**Residential**

Provide <b><u>residential assistance</u></b> to an average of 1.5% per year of current SFR and MFR accounts	172.41	SFR surveys/yr
	5.775	MFR surveys/yr
Provide <b><u>landscape water surveys</u></b> to an average of 1.5% per year of current SFR accounts	172.41	SFR landscape surveys/yr
Provide <b><u>HECW rebates</u></b> to an average of 1% per year of current SFR accounts	114.94	SFR HECW rebates/yr

**Landscape**

Develop ETo-based <b><u>water budgets</u></b> for an average of 9% of dedicated irrigation accounts per year	5.4	Budgets/yr
Offer assistance annually to all accounts that are 20% over budget within 6 years of implementing water budgets.		
Provide <b><u>irrigation surveys</u></b> to an average of 1.5% per year of current CII accounts without dedicated irrigation meters.	16.86	Irrigation surveys/yr

**CII**

<b><u>Reduce CII water use</u></b> by an average of 1% per year.	7.0277	AFY
--	--------	-----

## Project Groupings

		\$/AF Threshold
Group 1	<=	9
Group 2	<=	99
Group 3	<=	999
Group 4	>	999

	2020 Annual Water Savings (AFY)	Total Water Savings by 2020 (AF)	GPCD Water Savings by 2020	Annual Costs (\$)	Cummulative Costs (\$, PV)	Cummulative Value of Saved Water (\$)	B/C
<b>Group 1</b>	0	0	0.0	\$ -	\$ -	\$ -	-
<b>Group 2</b>	0	0	0.0	\$ -	\$ -	\$ -	-
<b>Group 3</b>	378	2,255	9.4	\$ 304,305	\$ 2,684,746	\$ 789,118	0.3
<b>Group 4</b>	50	320	1.2	\$ 2,359,069	\$ 20,812,992	\$ 86,739	0.0
<b>All Groups</b>	<b>428</b>	<b>2,575</b>	<b>10.7</b>	<b>\$ 2,663,374</b>	<b>\$ 23,497,737</b>	<b>\$ 875,856</b>	<b>0.0</b>



## Conservation Program Designer Studio

Include Program? Program		←-----Inputs-----→									
		Water Savings				Costs		Implementation Level			
		Savings Method	Usage / Customer (AFY)	% Savings	Unit Savings Method (AFY/unit)	Decay Factor	Unit Costs (\$/unit)	Admin Costs (%)	Type of Program	Units/Year (2011-2020)	Unit
Yes	BMP A: Residential Assistance (Surveys)	Unit Savings Method			0.045	10%	\$ 312.83	25%	Constant	178	Surveys
Yes	BMP B: Residential Plumbing retrofit kits	Unit Savings Method			0.012	30%	\$ 12.00	25%	Constant	178	Kits
Yes	BMP F: Residential HE Washer Rebates	Unit Savings Method			0.031	8%	\$ 150.00	25%	Constant	115	Rebates
Yes	BMP I: CII Indoor Surveys	% Savings Method	0.38	12%		10%	\$ 12,000.00	25%	Constant	155	Surveys
Yes	BMP I: CII HE Washer Rebates	Unit Savings Method			0.074	8%	\$ 150.00	25%	Constant	95	Rebates
Yes	BMP N: ULFT Rebates	Unit Savings Method			0.033	4%	\$ 162.50	25%	Constant	214	Rebates
Yes	BMP I: CII HE Urinal Rebates	Unit Savings Method			0.069	3%	\$ 450.00	25%	Constant	101	Rebates
Yes	BMP I: CII ULV Urinal Rebates	Unit Savings Method			0.081	3%	\$ 450.00	25%	Constant	87	Rebates
Yes	BMP I: CII Zero Consumption Urinal Rebates	Unit Savings Method			0.092	3%	\$ 450.00	25%	Constant	77	Rebates
Yes	BMP E: Outdoor Surveys	% Savings Method	0.25	20%		17%	\$ 1,320.00	25%	Constant	16.86	Surveys

<b>Kennedy/Jenks Consultants</b> <b>Engineers &amp; Scientists</b>  <b>Conservation Program</b>  <b>Designer Studio</b>		←-----Outputs-----→									←----CUWCC Method Output----→					
		Water Savings					Costs		Ratios		Groups	Water Savings		Costs	Ratios	
		2020 Annual Water Savings (AFY)	Total Water Savings by 2020 (AF)	GPCD Water Savings by 2020	Lifetime Water Savings (AF)	Cummulative Value of Saved Water (\$)	Average Annual Program Costs (\$)	Cummulative Program Costs (\$, PV)	Benefit / Cost Ratio	\$/AF		Lifetime Water Savings (AF)	Cummulative Value of Saved Water (\$)	Annual Costs (\$)	B/C	\$/AF
Include Program?	Program															
Yes	BMP A: Residential Assistance (Surveys)	52	330	1.3	741	\$ 91,082	\$ 69,678	\$ 614,733	0.1	\$ 829	Group 3	74	\$ 10,324	\$ 69,678	0.1	\$ 940
Yes	BMP B: Residential Plumbing retrofit kits	7	55	0.2	71	\$ 9,900	\$ 2,673	\$ 23,581	0.4	\$ 331	Group 3	7	\$ 1,122	\$ 2,673	0.4	\$ 375
Yes	BMP F: Residential HE Washer Rebates	25	158	0.6	395	\$ 47,376	\$ 21,551	\$ 190,137	0.2	\$ 482	Group 3	39	\$ 5,370	\$ 21,551	0.2	\$ 546
Yes	BMP I: CII Indoor Surveys	46	291	1.1	652	\$ 80,170	\$ 2,331,250	\$ 20,567,557	0.0	\$ 31,530	Group 4	65	\$ 9,087	\$ 2,331,250	0.0	\$ 35,738
Yes	BMP I: CII HE Washer Rebates	50	307	1.2	769	\$ 92,350	\$ 17,889	\$ 157,829	0.6	\$ 205	Group 3	77	\$ 10,468	\$ 17,889	0.6	\$ 233
Yes	BMP N: ULFT Rebates	59	344	1.5	1,124	\$ 127,944	\$ 43,551	\$ 384,231	0.3	\$ 342	Group 3	112	\$ 14,502	\$ 43,551	0.3	\$ 388
Yes	BMP I: CII HE Urinal Rebates	62	354	1.5	1,249	\$ 140,155	\$ 56,917	\$ 502,151	0.3	\$ 402	Group 3	125	\$ 15,886	\$ 56,917	0.3	\$ 456
Yes	BMP I: CII ULV Urinal Rebates	62	354	1.5	1,249	\$ 140,155	\$ 49,012	\$ 432,408	0.3	\$ 346	Group 3	125	\$ 15,886	\$ 49,012	0.3	\$ 393
Yes	BMP I: CII Zero Consumption Urinal Rebates	62	354	1.5	1,249	\$ 140,155	\$ 43,035	\$ 379,675	0.4	\$ 304	Group 3	125	\$ 15,886	\$ 43,035	0.4	\$ 345
Yes	BMP E: Outdoor Surveys	4	30	0.1	50	\$ 6,569	\$ 27,819	\$ 245,434	0.0	\$ 4,880	Group 4	5	\$ 745	\$ 27,819	0.0	\$ 5,531
		428	2,575	10.7	7,548	\$ 875,856	\$ 2,663,374	\$ 23,497,737	0.0	\$ 3,112.94		755	\$ 99,275	\$ 2,663,374	0.0	\$ 3,528

BMP A: Residential Assistance (Surveys)

Potential Program Savings

Worksheet Name:	1
Savings (AFY/Unit)	0.045
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.045
Decay Factor	10%
Unit Costs (\$/unit)	\$ 312.83
Admin Costs	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	178	178	8	\$ 69,678	\$69,678	\$69,678	\$1,341	\$1,341
2012	0	160	7	\$ -	\$0	\$69,678	\$1,207	\$1,173
2013	0	144	6	\$ -	\$0	\$69,678	\$1,086	\$1,026
2014	0	130	6	\$ -	\$0	\$69,678	\$978	\$897
2015	0	117	5	\$ -	\$0	\$69,678	\$880	\$785
2016	0	105	5	\$ -	\$0	\$69,678	\$792	\$687
2017	0	95	4	\$ -	\$0	\$69,678	\$713	\$600
2018	0	85	4	\$ -	\$0	\$69,678	\$642	\$525
2019	0	77	3	\$ -	\$0	\$69,678	\$577	\$459
2020	0	69	3	\$ -	\$0	\$69,678	\$520	\$402
2021	0	62	3	\$ -	\$0	\$69,678	\$468	\$351
2022	0	56	3	\$ -	\$0	\$69,678	\$421	\$307
2023	0	50	2	\$ -	\$0	\$69,678	\$379	\$269
2024	0	45	2	\$ -	\$0	\$69,678	\$341	\$235
2025	0	41	2	\$ -	\$0	\$69,678	\$307	\$206
2026	0	37	2	\$ -	\$0	\$69,678	\$276	\$180
2027	0	33	1	\$ -	\$0	\$69,678	\$249	\$157
2028	0	30	1	\$ -	\$0	\$69,678	\$224	\$138
2029	0	27	1	\$ -	\$0	\$69,678	\$201	\$120
2030	0	24	1	\$ -	\$0	\$69,678	\$181	\$105
2031	0	22	1	\$ -	\$0	\$69,678	\$163	\$92
2032	0	19	1	\$ -	\$0	\$69,678	\$147	\$81
2033	0	18	1	\$ -	\$0	\$69,678	\$132	\$70
2034	0	16	1	\$ -	\$0	\$69,678	\$119	\$62
2035	0	14	1	\$ -	\$0	\$69,678	\$107	\$54
<b>Total</b>	<b>178</b>		<b>74</b>		<b>\$69,678</b>			<b>\$10,324</b>

Notes:

Benefits/Costs \$/AF	0.1 \$940
----------------------	-----------

DWR DMM Review Table	
Cost Effectiveness Summary	
Total Costs	\$69,678
Total Benefits	\$10,324
Discount Rate	2.9%
Time Horizon	25 years
Cost of Water	\$940
Water Savings (AFY)	74

BMP B: Residential Plumbing retrofit kits

Potential Program Savings

Worksheet Name:	2
Savings (AFY/Unit)	0.012
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.012
Decay Factor	30%
Unit Costs (\$/unit)	\$ 12.00
Admin Costs	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	178	178	2	\$ 2,673	\$2,673	\$2,673	\$359	\$359
2012	0	125	1	\$ -	\$0	\$2,673	\$251	\$244
2013	0	87	1	\$ -	\$0	\$2,673	\$176	\$166
2014	0	61	1	\$ -	\$0	\$2,673	\$123	\$113
2015	0	43	1	\$ -	\$0	\$2,673	\$86	\$77
2016	0	30	0	\$ -	\$0	\$2,673	\$60	\$52
2017	0	21	0	\$ -	\$0	\$2,673	\$42	\$36
2018	0	15	0	\$ -	\$0	\$2,673	\$30	\$24
2019	0	10	0	\$ -	\$0	\$2,673	\$21	\$16
2020	0	7	0	\$ -	\$0	\$2,673	\$14	\$11
2021	0	5	0	\$ -	\$0	\$2,673	\$10	\$8
2022	0	4	0	\$ -	\$0	\$2,673	\$7	\$5
2023	0	2	0	\$ -	\$0	\$2,673	\$5	\$4
2024	0	2	0	\$ -	\$0	\$2,673	\$3	\$2
2025	0	1	0	\$ -	\$0	\$2,673	\$2	\$2
2026	0	1	0	\$ -	\$0	\$2,673	\$2	\$1
2027	0	1	0	\$ -	\$0	\$2,673	\$1	\$1
2028	0	0	0	\$ -	\$0	\$2,673	\$1	\$1
2029	0	0	0	\$ -	\$0	\$2,673	\$1	\$0
2030	0	0	0	\$ -	\$0	\$2,673	\$0	\$0
2031	0	0	0	\$ -	\$0	\$2,673	\$0	\$0
2032	0	0	0	\$ -	\$0	\$2,673	\$0	\$0
2033	0	0	0	\$ -	\$0	\$2,673	\$0	\$0
2034	0	0	0	\$ -	\$0	\$2,673	\$0	\$0
2035	0	0	0	\$ -	\$0	\$2,673	\$0	\$0
<b>Total</b>	<b>178</b>		<b>7</b>		<b>\$2,673</b>			<b>\$1,122</b>

Notes:

Benefits/Costs \$/AF	0.4 \$375
----------------------	--------------

DWR DMM Review Table	
Cost Effectiveness Summary	
Total Costs	\$2,673
Total Benefits	\$1,122
Discount Rate	2.9%
Time Horizon	25 years
Cost of Water	\$375
Water Savings (AFY)	7

BMP F: Residential HE Washer Rebates

Potential Program Savings

Worksheet Name:	3
Savings (AFY/Unit)	0.031
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.031
Decay Factor	8%
Unit Costs (\$/unit)	\$ 150.00
Admin Costs	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	115	115	4	\$ 21,551	\$21,551	\$21,551	\$606	\$606
2012	0	106	3	\$ -	\$0	\$21,551	\$557	\$542
2013	0	97	3	\$ -	\$0	\$21,551	\$513	\$484
2014	0	90	3	\$ -	\$0	\$21,551	\$472	\$433
2015	0	82	3	\$ -	\$0	\$21,551	\$434	\$387
2016	0	76	2	\$ -	\$0	\$21,551	\$399	\$346
2017	0	70	2	\$ -	\$0	\$21,551	\$367	\$309
2018	0	64	2	\$ -	\$0	\$21,551	\$338	\$277
2019	0	59	2	\$ -	\$0	\$21,551	\$311	\$247
2020	0	54	2	\$ -	\$0	\$21,551	\$286	\$221
2021	0	50	2	\$ -	\$0	\$21,551	\$263	\$198
2022	0	46	1	\$ -	\$0	\$21,551	\$242	\$177
2023	0	42	1	\$ -	\$0	\$21,551	\$223	\$158
2024	0	39	1	\$ -	\$0	\$21,551	\$205	\$141
2025	0	36	1	\$ -	\$0	\$21,551	\$188	\$126
2026	0	33	1	\$ -	\$0	\$21,551	\$173	\$113
2027	0	30	1	\$ -	\$0	\$21,551	\$160	\$101
2028	0	28	1	\$ -	\$0	\$21,551	\$147	\$90
2029	0	26	1	\$ -	\$0	\$21,551	\$135	\$81
2030	0	24	1	\$ -	\$0	\$21,551	\$124	\$72
2031	0	22	1	\$ -	\$0	\$21,551	\$114	\$65
2032	0	20	1	\$ -	\$0	\$21,551	\$105	\$58
2033	0	18	1	\$ -	\$0	\$21,551	\$97	\$52
2034	0	17	1	\$ -	\$0	\$21,551	\$89	\$46
2035	0	16	0	\$ -	\$0	\$21,551	\$82	\$41
<b>Total</b>	<b>115</b>		<b>39</b>		<b>\$21,551</b>			<b>\$5,370</b>

Notes:

Benefits/Costs \$/AF	0.2 \$546
----------------------	-----------

DWR DMM Review Table	
Cost Effectiveness Summary	
Total Costs	\$21,551
Total Benefits	\$5,370
Discount Rate	2.9%
Time Horizon	25 years
Cost of Water	\$546
Water Savings (AFY)	39

**BMP I: CII Indoor Surveys**  
**Potential Program Savings**

<b>Worksheet Name:</b>	9
<b>Savings (AFY/Unit)</b>	0.045
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	12%
Unit Savings (AFY/unit)	0.045
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.000
<b>Decay Factor</b>	10%
<b>Unit Costs (\$/unit)</b>	\$ 12,000.00
<b>Admin Costs</b>	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	155	155	7	\$ 2,331,250	\$2,331,250	\$2,331,250	\$1,181	\$1,181
2012	0	140	6	\$ -	\$0	\$2,331,250	\$1,063	\$1,033
2013	0	126	6	\$ -	\$0	\$2,331,250	\$956	\$903
2014	0	113	5	\$ -	\$0	\$2,331,250	\$861	\$790
2015	0	102	5	\$ -	\$0	\$2,331,250	\$775	\$691
2016	0	92	4	\$ -	\$0	\$2,331,250	\$697	\$604
2017	0	83	4	\$ -	\$0	\$2,331,250	\$627	\$529
2018	0	74	3	\$ -	\$0	\$2,331,250	\$565	\$462
2019	0	67	3	\$ -	\$0	\$2,331,250	\$508	\$404
2020	0	60	3	\$ -	\$0	\$2,331,250	\$457	\$354
2021	0	54	2	\$ -	\$0	\$2,331,250	\$412	\$309
2022	0	49	2	\$ -	\$0	\$2,331,250	\$371	\$271
2023	0	44	2	\$ -	\$0	\$2,331,250	\$333	\$237
2024	0	40	2	\$ -	\$0	\$2,331,250	\$300	\$207
2025	0	36	2	\$ -	\$0	\$2,331,250	\$270	\$181
2026	0	32	1	\$ -	\$0	\$2,331,250	\$243	\$158
2027	0	29	1	\$ -	\$0	\$2,331,250	\$219	\$138
2028	0	26	1	\$ -	\$0	\$2,331,250	\$197	\$121
2029	0	23	1	\$ -	\$0	\$2,331,250	\$177	\$106
2030	0	21	1	\$ -	\$0	\$2,331,250	\$159	\$93
2031	0	19	1	\$ -	\$0	\$2,331,250	\$144	\$81
2032	0	17	1	\$ -	\$0	\$2,331,250	\$129	\$71
2033	0	15	1	\$ -	\$0	\$2,331,250	\$116	\$62
2034	0	14	1	\$ -	\$0	\$2,331,250	\$105	\$54
2035	0	12	1	\$ -	\$0	\$2,331,250	\$94	\$47
<b>Total</b>	<b>155</b>		<b>65</b>		<b>\$2,331,250</b>			<b>\$9,087</b>

Notes:

<b>Benefits/Costs \$/AF</b>	<b>0.0</b> <b>\$35,738</b>
-----------------------------	-------------------------------

DWR DMM Review Table	
Cost Effectiveness Summary	
Total Costs	\$2,331,250
Total Benefits	\$9,087
Discount Rate	2.9%
Time Horizon	25 years
Cost of Water	\$35,738
Water Savings (AFY)	65

BMP I: CII HE Washer Rebates

Potential Program Savings

Worksheet Name:	11
Savings (AFY/Unit)	0.074
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.074
Decay Factor	8%
Unit Costs (\$/unit)	\$ 150.00
Admin Costs	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	95	95	7	\$ 17,889	\$17,889	\$17,889	\$1,181	\$1,181
2012	0	88	6	\$ -	\$0	\$17,889	\$1,086	\$1,056
2013	0	81	6	\$ -	\$0	\$17,889	\$999	\$944
2014	0	74	5	\$ -	\$0	\$17,889	\$919	\$844
2015	0	68	5	\$ -	\$0	\$17,889	\$846	\$754
2016	0	63	5	\$ -	\$0	\$17,889	\$778	\$675
2017	0	58	4	\$ -	\$0	\$17,889	\$716	\$603
2018	0	53	4	\$ -	\$0	\$17,889	\$659	\$539
2019	0	49	4	\$ -	\$0	\$17,889	\$606	\$482
2020	0	45	3	\$ -	\$0	\$17,889	\$557	\$431
2021	0	41	3	\$ -	\$0	\$17,889	\$513	\$385
2022	0	38	3	\$ -	\$0	\$17,889	\$472	\$345
2023	0	35	3	\$ -	\$0	\$17,889	\$434	\$308
2024	0	32	2	\$ -	\$0	\$17,889	\$399	\$275
2025	0	30	2	\$ -	\$0	\$17,889	\$367	\$246
2026	0	27	2	\$ -	\$0	\$17,889	\$338	\$220
2027	0	25	2	\$ -	\$0	\$17,889	\$311	\$197
2028	0	23	2	\$ -	\$0	\$17,889	\$286	\$176
2029	0	21	2	\$ -	\$0	\$17,889	\$263	\$157
2030	0	20	1	\$ -	\$0	\$17,889	\$242	\$141
2031	0	18	1	\$ -	\$0	\$17,889	\$223	\$126
2032	0	17	1	\$ -	\$0	\$17,889	\$205	\$112
2033	0	15	1	\$ -	\$0	\$17,889	\$189	\$101
2034	0	14	1	\$ -	\$0	\$17,889	\$173	\$90
2035	0	13	1	\$ -	\$0	\$17,889	\$160	\$80
<b>Total</b>	<b>95</b>		<b>77</b>		<b>\$17,889</b>			<b>\$10,468</b>

Notes:

Benefits/Costs \$/AF	0.6 \$233
----------------------	--------------

DWR DMM Review Table	
Cost Effectiveness Summary	
Total Costs	\$17,889
Total Benefits	\$10,468
Discount Rate	2.9%
Time Horizon	25 years
Cost of Water	\$233
Water Savings (AFY)	77

BMP N: ULFT Rebates  
**Potential Program Savings**

Worksheet Name:	12
Savings (AFY/Unit)	0.033
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.033
Decay Factor	4%
Unit Costs (\$/unit)	\$ 162.50
Admin Costs	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	214	214	7	\$ 43,551	\$43,551	\$43,551	\$1,181	\$1,181
2012	0	206	7	\$ -	\$0	\$43,551	\$1,133	\$1,101
2013	0	198	6	\$ -	\$0	\$43,551	\$1,088	\$1,028
2014	0	190	6	\$ -	\$0	\$43,551	\$1,045	\$959
2015	0	182	6	\$ -	\$0	\$43,551	\$1,003	\$894
2016	0	175	6	\$ -	\$0	\$43,551	\$963	\$834
2017	0	168	6	\$ -	\$0	\$43,551	\$924	\$778
2018	0	161	5	\$ -	\$0	\$43,551	\$887	\$726
2019	0	155	5	\$ -	\$0	\$43,551	\$852	\$678
2020	0	148	5	\$ -	\$0	\$43,551	\$818	\$632
2021	0	143	5	\$ -	\$0	\$43,551	\$785	\$590
2022	0	137	4	\$ -	\$0	\$43,551	\$754	\$550
2023	0	131	4	\$ -	\$0	\$43,551	\$723	\$513
2024	0	126	4	\$ -	\$0	\$43,551	\$694	\$479
2025	0	121	4	\$ -	\$0	\$43,551	\$667	\$447
2026	0	116	4	\$ -	\$0	\$43,551	\$640	\$417
2027	0	112	4	\$ -	\$0	\$43,551	\$614	\$389
2028	0	107	4	\$ -	\$0	\$43,551	\$590	\$363
2029	0	103	3	\$ -	\$0	\$43,551	\$566	\$338
2030	0	99	3	\$ -	\$0	\$43,551	\$544	\$316
2031	0	95	3	\$ -	\$0	\$43,551	\$522	\$295
2032	0	91	3	\$ -	\$0	\$43,551	\$501	\$275
2033	0	87	3	\$ -	\$0	\$43,551	\$481	\$256
2034	0	84	3	\$ -	\$0	\$43,551	\$462	\$239
2035	0	80	3	\$ -	\$0	\$43,551	\$443	\$223
<b>Total</b>	<b>214</b>		<b>112</b>		<b>\$43,551</b>			<b>\$14,502</b>

Notes:

Benefits/Costs \$/AF	0.3 \$388
----------------------	--------------

DWR DMM Review Table	
Cost Effectiveness Summary	
Total Costs	\$43,551
Total Benefits	\$14,502
Discount Rate	2.9%
Time Horizon	25 years
Cost of Water	\$388
Water Savings (AFY)	112

**BMP I: CII HE Urinal Rebates**  
**Potential Program Savings**

<b>Worksheet Name:</b>	13
<b>Savings (AFY/Unit)</b>	0.069
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.069
<b>Decay Factor</b>	3%
<b>Unit Costs (\$/unit)</b>	\$ 450.00
<b>Admin Costs</b>	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	101	101	7	\$ 56,917	\$56,917	\$56,917	\$1,181	\$1,181
2012	0	98	7	\$ -	\$0	\$56,917	\$1,145	\$1,113
2013	0	95	7	\$ -	\$0	\$56,917	\$1,111	\$1,049
2014	0	92	6	\$ -	\$0	\$56,917	\$1,078	\$989
2015	0	90	6	\$ -	\$0	\$56,917	\$1,045	\$932
2016	0	87	6	\$ -	\$0	\$56,917	\$1,014	\$879
2017	0	84	6	\$ -	\$0	\$56,917	\$983	\$828
2018	0	82	6	\$ -	\$0	\$56,917	\$954	\$781
2019	0	79	6	\$ -	\$0	\$56,917	\$925	\$736
2020	0	77	5	\$ -	\$0	\$56,917	\$898	\$694
2021	0	75	5	\$ -	\$0	\$56,917	\$871	\$654
2022	0	72	5	\$ -	\$0	\$56,917	\$845	\$617
2023	0	70	5	\$ -	\$0	\$56,917	\$819	\$581
2024	0	68	5	\$ -	\$0	\$56,917	\$795	\$548
2025	0	66	5	\$ -	\$0	\$56,917	\$771	\$517
2026	0	64	4	\$ -	\$0	\$56,917	\$748	\$487
2027	0	62	4	\$ -	\$0	\$56,917	\$725	\$459
2028	0	60	4	\$ -	\$0	\$56,917	\$703	\$433
2029	0	58	4	\$ -	\$0	\$56,917	\$682	\$408
2030	0	57	4	\$ -	\$0	\$56,917	\$662	\$384
2031	0	55	4	\$ -	\$0	\$56,917	\$642	\$362
2032	0	53	4	\$ -	\$0	\$56,917	\$623	\$342
2033	0	52	4	\$ -	\$0	\$56,917	\$604	\$322
2034	0	50	3	\$ -	\$0	\$56,917	\$586	\$304
2035	0	49	3	\$ -	\$0	\$56,917	\$568	\$286
<b>Total</b>	<b>101</b>		<b>125</b>		<b>\$56,917</b>			<b>\$15,886</b>

Notes:

<b>Benefits/Costs \$/AF</b>	<b>0.3 \$456</b>
-----------------------------	------------------

DWR DMM Review Table	
Cost Effectiveness Summary	
<b>Total Costs</b>	\$56,917
<b>Total Benefits</b>	\$15,886
<b>Discount Rate</b>	2.9%
<b>Time Horizon</b>	25 years
<b>Cost of Water</b>	\$456
<b>Water Savings (AFY)</b>	125

**BMP I: CII ULV Urinal Rebates**  
**Potential Program Savings**

<b>Worksheet Name:</b>	14
<b>Savings (AFY/Unit)</b>	0.081
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.081
<b>Decay Factor</b>	3%
<b>Unit Costs (\$/unit)</b>	\$ 450.00
<b>Admin Costs</b>	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	87	87	7	\$ 49,012	\$49,012	\$49,012	\$1,181	\$1,181
2012	0	85	7	\$ -	\$0	\$49,012	\$1,145	\$1,113
2013	0	82	7	\$ -	\$0	\$49,012	\$1,111	\$1,049
2014	0	80	6	\$ -	\$0	\$49,012	\$1,078	\$989
2015	0	77	6	\$ -	\$0	\$49,012	\$1,045	\$932
2016	0	75	6	\$ -	\$0	\$49,012	\$1,014	\$879
2017	0	73	6	\$ -	\$0	\$49,012	\$983	\$828
2018	0	70	6	\$ -	\$0	\$49,012	\$954	\$781
2019	0	68	6	\$ -	\$0	\$49,012	\$925	\$736
2020	0	66	5	\$ -	\$0	\$49,012	\$898	\$694
2021	0	64	5	\$ -	\$0	\$49,012	\$871	\$654
2022	0	62	5	\$ -	\$0	\$49,012	\$845	\$617
2023	0	60	5	\$ -	\$0	\$49,012	\$819	\$581
2024	0	59	5	\$ -	\$0	\$49,012	\$795	\$548
2025	0	57	5	\$ -	\$0	\$49,012	\$771	\$517
2026	0	55	4	\$ -	\$0	\$49,012	\$748	\$487
2027	0	54	4	\$ -	\$0	\$49,012	\$725	\$459
2028	0	52	4	\$ -	\$0	\$49,012	\$703	\$433
2029	0	50	4	\$ -	\$0	\$49,012	\$682	\$408
2030	0	49	4	\$ -	\$0	\$49,012	\$662	\$384
2031	0	47	4	\$ -	\$0	\$49,012	\$642	\$362
2032	0	46	4	\$ -	\$0	\$49,012	\$623	\$342
2033	0	45	4	\$ -	\$0	\$49,012	\$604	\$322
2034	0	43	3	\$ -	\$0	\$49,012	\$586	\$304
2035	0	42	3	\$ -	\$0	\$49,012	\$568	\$286
<b>Total</b>	<b>87</b>		<b>125</b>		<b>\$49,012</b>			<b>\$15,886</b>

Notes:

<b>Benefits/Costs \$/AF</b>	<b>0.3 \$393</b>
-----------------------------	------------------

DWR DMM Review Table	
Cost Effectiveness Summary	
<b>Total Costs</b>	\$49,012
<b>Total Benefits</b>	\$15,886
<b>Discount Rate</b>	2.9%
<b>Time Horizon</b>	25 years
<b>Cost of Water</b>	\$393
<b>Water Savings (AFY)</b>	125

**BMP I: CII Zero Consumption Urinal Rebates**  
**Potential Program Savings**

<b>Worksheet Name:</b>	15
<b>Savings (AFY/Unit)</b>	0.092
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	0%
Unit Savings (AFY/unit)	0.000
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.092
<b>Decay Factor</b>	3%
<b>Unit Costs (\$/unit)</b>	\$ 450.00
<b>Admin Costs</b>	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	77	77	7	\$ 43,035	\$43,035	\$43,035	\$1,181	\$1,181
2012	0	74	7	\$ -	\$0	\$43,035	\$1,145	\$1,113
2013	0	72	7	\$ -	\$0	\$43,035	\$1,111	\$1,049
2014	0	70	6	\$ -	\$0	\$43,035	\$1,078	\$989
2015	0	68	6	\$ -	\$0	\$43,035	\$1,045	\$932
2016	0	66	6	\$ -	\$0	\$43,035	\$1,014	\$879
2017	0	64	6	\$ -	\$0	\$43,035	\$983	\$828
2018	0	62	6	\$ -	\$0	\$43,035	\$954	\$781
2019	0	60	6	\$ -	\$0	\$43,035	\$925	\$736
2020	0	58	5	\$ -	\$0	\$43,035	\$898	\$694
2021	0	56	5	\$ -	\$0	\$43,035	\$871	\$654
2022	0	55	5	\$ -	\$0	\$43,035	\$845	\$617
2023	0	53	5	\$ -	\$0	\$43,035	\$819	\$581
2024	0	51	5	\$ -	\$0	\$43,035	\$795	\$548
2025	0	50	5	\$ -	\$0	\$43,035	\$771	\$517
2026	0	48	4	\$ -	\$0	\$43,035	\$748	\$487
2027	0	47	4	\$ -	\$0	\$43,035	\$725	\$459
2028	0	46	4	\$ -	\$0	\$43,035	\$703	\$433
2029	0	44	4	\$ -	\$0	\$43,035	\$682	\$408
2030	0	43	4	\$ -	\$0	\$43,035	\$662	\$384
2031	0	42	4	\$ -	\$0	\$43,035	\$642	\$362
2032	0	40	4	\$ -	\$0	\$43,035	\$623	\$342
2033	0	39	4	\$ -	\$0	\$43,035	\$604	\$322
2034	0	38	3	\$ -	\$0	\$43,035	\$586	\$304
2035	0	37	3	\$ -	\$0	\$43,035	\$568	\$286
<b>Total</b>	<b>77</b>		<b>125</b>		<b>\$43,035</b>			<b>\$15,886</b>

Notes:

<b>Benefits/Costs \$/AF</b>	<b>0.4 \$345</b>
-----------------------------	------------------

DWR DMM Review Table	
Cost Effectiveness Summary	
<b>Total Costs</b>	\$43,035
<b>Total Benefits</b>	\$15,886
<b>Discount Rate</b>	2.9%
<b>Time Horizon</b>	25 years
<b>Cost of Water</b>	\$345
<b>Water Savings (AFY)</b>	125

BMP E: Outdoor Surveys  
**Potential Program Savings**

Worksheet Name:	22
Savings (AFY/Unit)	0.050
<b>% Savings Method</b>	
Usage/Customer (AFY)	0
% Savings	20%
Unit Savings (AFY/unit)	0.050
<b>Unit Savings Method</b>	
Unit Savings (AFY/unit)	0.000
Decay Factor	17%
Unit Costs (\$/unit)	\$ 1,320.00
Admin Costs	25%

B/C Analysis - CUWCC Method								
Year	No. of Units/Year	Cummulative Equivalent SFR Accounts Retrofitted	Annual Water Savings (AFY)	Annual Costs (\$)	Annual Costs (\$, PV)	Cummulative Costs (\$, PV)	Annual Costs of Saved Water (\$)	Annual Costs of Saved Water (\$, PV)
2011	17	17	1	\$ 27,819	\$27,819	\$27,819	\$142	\$142
2012	0	14	1	\$ -	\$0	\$27,819	\$119	\$115
2013	0	12	1	\$ -	\$0	\$27,819	\$99	\$93
2014	0	10	0	\$ -	\$0	\$27,819	\$82	\$76
2015	0	8	0	\$ -	\$0	\$27,819	\$69	\$61
2016	0	7	0	\$ -	\$0	\$27,819	\$57	\$50
2017	0	6	0	\$ -	\$0	\$27,819	\$48	\$40
2018	0	5	0	\$ -	\$0	\$27,819	\$40	\$33
2019	0	4	0	\$ -	\$0	\$27,819	\$33	\$26
2020	0	3	0	\$ -	\$0	\$27,819	\$28	\$21
2021	0	3	0	\$ -	\$0	\$27,819	\$23	\$17
2022	0	2	0	\$ -	\$0	\$27,819	\$19	\$14
2023	0	2	0	\$ -	\$0	\$27,819	\$16	\$11
2024	0	2	0	\$ -	\$0	\$27,819	\$13	\$9
2025	0	1	0	\$ -	\$0	\$27,819	\$11	\$7
2026	0	1	0	\$ -	\$0	\$27,819	\$9	\$6
2027	0	1	0	\$ -	\$0	\$27,819	\$8	\$5
2028	0	1	0	\$ -	\$0	\$27,819	\$6	\$4
2029	0	1	0	\$ -	\$0	\$27,819	\$5	\$3
2030	0	1	0	\$ -	\$0	\$27,819	\$4	\$3
2031	0	0	0	\$ -	\$0	\$27,819	\$4	\$2
2032	0	0	0	\$ -	\$0	\$27,819	\$3	\$2
2033	0	0	0	\$ -	\$0	\$27,819	\$3	\$1
2034	0	0	0	\$ -	\$0	\$27,819	\$2	\$1
2035	0	0	0	\$ -	\$0	\$27,819	\$2	\$1
<b>Total</b>	<b>17</b>		<b>5</b>		<b>\$27,819</b>			<b>\$745</b>

Notes:

Benefits/Costs \$/AF	0.0
	\$5,531

DWR DMM Review Table	
Cost Effectiveness Summary	
Total Costs	\$27,819
Total Benefits	\$745
Discount Rate	2.9%
Time Horizon	25 years
Cost of Water	\$5,531
Water Savings (AFY)	5

## Appendix M

---

TUD Emergency Response Plan  
(Sensitive Information Removed)



# Tuolumne Utilities District

## **EMERGENCY RESPONSE PLAN (ERP)**



As Approved by the Tuolumne Utilities District Board of Directors

Resolution No. 81-4

Date: December 14, 2004

Amended: March 3, 2007

**IN THE EVENT OF AN EMERGENCY CALL 911 IF NECESSARY,  
GO TO CHAPTER 2; CALL THE DISTRICT EMERGENCY  
RESPONDERS AND FOLLOW PROCEDURES IN CHAPTERS 4-9.**

Updated: 02/21/07

**TABLE OF CONTENTS**

<b>Chapter</b>	<b>Page</b>
1. INTRODUCTION AND AUTHORITY.....	4
2. EMERGENCY CALL DOWN LIST.....	7
• District Emergency Responders.....	8
• Local & State Responders and Agencies.....	9
• Federal Agencies & Private Vendors.....	10
3. OVERALL OBJECTIVES, DEFINITIONS, ACRONYMS.....	11
4. DISTRICT DISASTER CLASSIFICATIONS & EMERGENCY RESPONSE.....	15
• Classifications.....	16
• Emergency Response.....	17
○ Level I.....	17
○ Level II.....	18
○ Level III.....	20
○ Level IV.....	22
5. PROCEDURES.....	24
• Activation of Plan- Level I or II.....	25
• Activation of Plan- Level III or IV.....	26
• District Staff Assignments & Reporting Procedures.....	28
• Dispatching Personnel.....	29
• Facility Damage Assessments/Inspections.....	30
• Prioritization of Work and Repair.....	31
• Emergency Materials & Equipment.....	32
• Response/Requests for Mutual Aid/Assistance.....	33
• Maps of Critical Components.....	33
• Public Notification/Press Releases.....	33
• Recovery Checklist.....	34
• Required Equipment/Specialized Training.....	35
• Communications and Safety Procedures.....	37
6. NATURAL DISASTERS AND RESPONSE.....	38
• TYPES OF DISASTERS	
○ Wild Fire.....	39
○ Floods.....	39
○ Earthquakes, sinkholes, landslides.....	39
○ Winter Storms.....	39
○ Drought/extreme heat.....	39
○ Erosion.....	39
○ Volcano.....	39
• RESPONSE.....	40
7. HUMAN THREATS/INCIDENTS AND RESPONSE.....	42
• TYPES OF DISASTERS.....	43
○ Spill (also see Appendix A).....	43
○ Vandalism.....	43
○ Sabotage or threats.....	43
○ Terrorism.....	43

- Mechanical Failure.....43
  - Human Error.....43
  - RESPONSE..... 44
- 8. CONSUMER REPORTED INCIDENTS..... 46
  - Discoloration, Taste or Odor in Water..... 47
  - Water Outages, Shortages, Low Pressure..... 47
  - Consumer Reported Illness.....48
- 9. DISTRICT CRITICAL COMPONENTS.....49
  - Community Water systems.....50
  - Sonora Wastewater system.....50
  - Ditches and Reservoirs..... 50
  - Central Office Complex..... 51
- 10. EVALUATION, UPDATES, RESOLUTIONS & CERTIFICATION.....52
  - Evaluation, Updates.....53
  - Resolution (ERP)..... 54a
  - Resolution (NIMS).....54b,c
  - ERP Certification..... 55
- APPENDIX A - Emergency Response to Chemical Spills..... 57
  - Liquid Alum (48% Aluminum Sulfate Solution)..... 58
  - Caustic Soda (50% Sodium Hydroxide Solution).....60
  - Copper Sulfate Pentahydrate.....62
  - Chlorine.....64
  - California OES Hazardous Material Spill Booklet.....66
- APPENDIX B – Forms.....73
  - Action Request..... 74
  - Management Disaster Response Report..... 75
  - Call Out Data Sheet.....76
  - Vehicle Accident Report..... 77
  - Accident Report..... 78
  - Hydrant Maintenance Report..... 79
  - Manhole Leakage Check..... 80
  - Employee Report of Unsafe Condition..... 81
  - Generator Inspection Checklist.....82
  - Sewage Spill to Waters of the State..... 83
  - Water Complaint Information.....84
  - Public Notice-Water Outages or Low Pressure..... 85
  - Public Notice-Unsafe Water Alert ..... 86
  - Public Notice-Boil Water Order..... 87
  - Check List for Inspections.....88
  - Utility Guide for Security Decision Making (NRWA).....89
  - Volunteer’s Release of Liability/Assumption of Risk.....90
  - Emergency Personnel Roster –Blank Form.....91
  - Organization Chart-Emergency Response..... 92
  - Organization Chart-Tuolumne Utilities District .....93
  - Suspicious Activity Report.....94
  - Telephone Threat Checklist..... 96
- APPENDIX C - District Facilities List..... 98
- APPENDIX D – District Personnel Roster with Qualifications..... 99

03/03/09 ed

<b>APPENDIX E – Standard Operating Procedures.....</b>	<b>100</b>
<b>APPENDIX F – Water Quality Notification Ph Numbers.....</b>	<b>101</b>
<b>APPENDIX G– EPA Tier 1,2 &amp; 3 Notification templates &amp; Index.....</b>	<b>102 &amp; 103</b>

# 1

## **Introduction And Authority**



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

## Introduction

---

This **Emergency Response Plan** (ERP or Plan) is designed to assist Tuolumne Utilities District (District) in its response and management of a wide variety of emergencies or disasters.

Tuolumne Utilities District has shown from past practice that it responds effectively to emergencies within its service area boundaries. A series of informal discussions were held with personnel within the District who have managed, inspected, constructed and made repairs to critical components of the District's infrastructure over the past years. This Plan acknowledges those past practices by incorporating the result of those discussions. This Plan was then reviewed by supervisory personnel within the District to assure the guidelines provide accurate assessments of existing response procedures.

By utilizing and documenting the past response procedures, and by assessing response plans to possible natural disasters as well as potential threats or human caused events, this Plan becomes a complete document. The Plan not only reflects past District policies and practices, but it also addresses future needs and concerns as required under current legislation.

A specific response procedure for a specific incident, *i.e.*, which valve to turn on/off, which pump to check, etc. is not delineated in this Plan. Instead, broader response procedures, communications and protocols are outlined, which will direct the District's response in an emergency.

From a utilities perspective, in an emergency or disaster situation there are a series of steps that should be taken to effectively respond and minimize any adverse consequences (from AWWA, *Emergency Planning for Water Utilities*, 2001 ed).

These steps are as follows:

1. Analyze the type and severity of the emergency.
2. Provide emergency assistance to save lives.
3. Reduce the probability of additional injuries or damage.
4. Perform emergency repairs based on priority demand.
5. Return system to normal levels (recovery).
6. Evaluate response and the effectiveness of the emergency response plan.
7. Revise plan as necessary.

The above steps are incorporated in the various chapters of this Plan.

Equipment listings, personnel rosters with phone number (other than first tier emergency personnel), maps of systems and other support or back-up informational lists are readily available at the District's Central Office Complex. Those types of listings are incorporated herein by reference.

## **Authority**

Tuolumne Utilities District (**District**) is a County Water District organized and operating under Division 12 (Section 30,000 et. seq.) of the California Water Code. The **California Emergency Services Act** (Chapter 7, Article 9.5, California Government Code, hereinafter called the Act) authorizes all political subdivisions of the state including Special Districts, cities, and counties to conduct emergency operations.

A **Standardized Emergency Management System (SEMS)** for use by all emergency response agencies is specifically established by Section 8607, et seq. of the Act. Tuolumne Utilities District (**District**) entered into an agreement entitled "Tuolumne County Operational Area Agreement" with the County of Tuolumne, City of Sonora and seven other special Districts on January 16, 1996 which standardized emergency response plans and provided the basis for the SEMS response.

In February, 2005, the President authorized the Secretary of the Department of Homeland Security to develop and administer a **National Incident Management System (NIMS)**, which would provide a consistent nationwide approach for federal, state, local, and tribal governments to work together more effectively and efficiently to prevent, prepare for, respond to, and recover from disasters, regardless of cause, size, or complexity. In 1993, California, through its Office of Emergency Services, was the first state to adopt a statewide **SEMS** for use by every emergency response organization. The California **SEMS** substantially meets the objectives of the Federal **NIMS**. In December, 2004, the District adopted the TUD **Emergency Response Plan (ERP)** which includes standardized responses to a variety of natural and human caused incidents. The District ERP is consistent with **SEMS** adopted by the State of California.

The District also therefore has implemented the **NIMS** as well as **SEMS** outlines for emergency response, and implements this **Emergency Response Plan** to enhance its **NIMS and SEMS** response and to protect the public when an emergency situation occurs or a disaster strikes--the goal being to remedy any adverse impacts as efficiently as possible and return to normal operating procedures.

This Plan is designed to meet **EPA requirements** for ERP certification as specified by Amendments to the Safe Drinking Water Act, titled "The Public Health Security and Bioterrorism Preparedness and Response Act of 2002" (PL 107-188, referred to as the **Bioterrorism Act**). The Bioterrorism Act amends the Safe Drinking Water Act (SDWA) by adding, among other requirements, section 1433. Section 1433(b) requires community water systems (CWS) serving populations greater than 3,300 to either prepare or revise an ERP that incorporates the results of its Vulnerability Assessment (VA).

The ERP must include "plans, procedures, and identification of equipment" that can be implemented or **utilized** in the event of a terrorist or other intentional attack" on the CWS. The ERP also must include "actions, procedures, and identification of equipment" which can obviate or significantly **lessen the impact** of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals."

Tuolumne Utilities District has completed classified **Security Vulnerability Assessments** on its four systems that fall under the above category. Said Assessments were reviewed by the Tuolumne Utilities District Board of Directors in closed session and forwarded to the EPA in June, 2004. This Plan incorporates the results of those assessments in the response plans outlined in the following chapters.

Tuolumne Utilities District has completed a **Local Hazard Mitigation Plan** that addresses natural hazards that may affect the critical components to its system. Said Plan was approved by the District Board of Directors and was forwarded to the County of Tuolumne and State Office of Emergency Services in September, 2004. This Plan incorporates the results of those assessments in the response plans outlined in the following chapters.

# 2

## **Emergency Call-Down List**

**District Emergency Responders**

**Local & State Responders and Agencies**

**Federal Agencies & Private Vendors**



**TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

## Tuolumne Utilities District Emergency Responders

**TUD Phone: (209) 532-5536, After hours: 532-5570, Answering Service: (209) 533-8001**

Call in Order	Title	Individual	Office <b>532-5536</b>	Home (209)	Radio call #	Cell (209)	Contact for:
<b>1</b>	<b>Emergency Response Coordinator (ERC)</b>	Leonard Mauro <b>Operations Manager</b>	Ext 524	928-4958	#3	770-1575	Levels III & IV
<b>2</b>	General Manager <b>Public Info Officer (PIO)</b>	Pete Kampa <b>General Manager</b>	Ext 480	770-1545	#1	770-1545	Levels III & IV
<b>3</b>	Engineering & Mapping <b>Dept. Head Deputy ERC/Operations</b>	Tom Scesa <b>District Engineer</b>	Ext 516	533-2900	#2	770-8901	Levels III & IV
<b>4</b>	Safety Compliance Coordinator <b>Deputy ERC/Admin</b>	Abby Parcon <b>Safety Compliance Coordinator</b>	Ext. 562	588-0135	#68	770-8903	Levels III & IV
<b>5</b>	Construction <b>Dept. Supervisor</b>	Bob Slater <b>Const /Maintenance Superintendent</b>	Ext 530	533-3725	#4	770-1576	Levels II, III & IV
<b>6</b>	Water Operations <b>Dept. Supervisor</b>	Brenda Seldon <b>Water Superintendent</b>	Ext 554	532-1137	#29	770-1570	Water Plants, Wells
<b>7</b>	Sewer Operations <b>Dept. Supervisor</b>	David Boatright <b>Wastewater Superintendent</b>	532-8212	536-0325	#19	770-1571	Sewer problems
<b>8</b>	Ditch Operations <b>Dept. Supervisor</b>	Jerry Whitehead <b>Water Master</b>	Ext 531	928-4867	#33	770-1573	Reservoirs Ditches
<b>9</b>	Communications Alarms Computer Systems	Joe Whitmer <b>Communications Technician</b>	Ext 515	928-3772	#12	768-2175	Alarms, Network Issues
<b>10</b>	Human Resources <b>Dept. Head</b>	Sheri Barnett <b>HR Director</b>	Ext 481	586-9622	Base	770-8900	Levels III & IV
<b>11</b>	Accounting/ Payroll <b>Dept. Head</b>	John Barnhart <b>Finance Director</b>	Ext 482	962-1871	Base	768-7366	Levels III & IV

- ERC will contact the department head or supervisor who supervises the facility or system(s) affected by the emergency. If emergency requires overtime, purchases or additional staff, ERC will contact department heads.
- PIO will handle routine calls for press assistance. PIO will then contact community relations staff to provide additional assistance.
- County OES shall be notified if situation is serious, loss of life or property is imminent, or if emergency crosses District boundaries. SEMS/OES coordinator is Kathleen Rustrum. Phone: 533-5511, ext. 4.

In an emergency, call 911 when necessary.

# 3

**Objectives**

**Definitions**

**Acronyms**



**TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536

Updated: 02/20/07

## **Objectives**

---

The objective of this Emergency Response Plan is to provide **general direction** for District personnel in coordinating and responding to system emergencies or disasters throughout the service area of the District. This Plan defines the District's emergency and disaster response by documenting roles, responsibilities and procedures.

The policies and procedures established in this document are intended solely for **guidance** of District personnel. They are not intended, and cannot be relied upon to create any rights, substantive or procedural, enforceable by any party in litigation with the State of California or any political subdivision thereof.

The District reserves the right to act in variance with these policies and procedures and to change them at any time without public notice as conditions may warrant.

## **Definitions**

---

**Administrative Code** - Administrative Rules of the State of California adopted under authority granted by state statute.

**CACode** - Statutes of the State of California.

**Department Emergency Operations Center (DEOC)** - location where key personnel of DEQ meet for coordinating emergency actions during major emergencies and disasters.

**Disaster** - An event causing, or threatening to cause widespread, social disruption, injury, great loss of life or property damage, resulting from events such as: attack, internal disturbance, natural phenomena, hazardous material (substances or chemicals) releases/spills/discharges, mine accident, train derailment, truck wreck, air crash, radiation accident, environmental pollution, structural fire or explosion which results in a disaster declaration by the Governor and activation of the state's Emergency Operations Center.

**District** - Tuolumne Utilities District, a County Water District, based in Sonora, California.

**District On-Duty/On-Call personnel** - Persons from Tuolumne Utilities District trained to coordinate District emergency and disaster response activities and to receive after hours incident notifications.

**Division of Emergency Services and Homeland Security (DESHS)** in the Department of Public Safety. DESHS serves as the State point-of-contact for emergencies and issues regarding Homeland Security when: (1) interfacing with involved federal agencies, when emergencies and disasters involve significant resource and service requests, (2) when coordinating major emergency and disaster actions between state and local agencies, and (3) when operating the State Emergency Operation Center.

**Emergency** - an incident requiring immediate action (hours to a few days) to abate actual

or potential threats to human health or the environment.

**Emergency Command Center** – The District’s command center, located adjacent to the Board room at the District Central Office Facility at 18885 Nugget Blvd., Sonora, CA 95370

**Emergency Response Coordinator** - The individual staff member of Tuolumne Utilities District appointed to handle emergency response, typically the Operations Manager.

- **Deputy Emergency Response Coordinator/Administration** – The individual staff member of TUD to handle updates and training of the ERP and additional safety training, typically the Administrative Services Manager.
- **Deputy Emergency Response Coordinator/Operations** – Can be directed by ERC to perform ERC functions, or acts as the ERC in the absence of the ERC, typically the District Engineer. Authorizes updates to the TUD facilities list.

**Emergency Response Management Team** - Meets annually or as necessary to review and update ERP. Team consists of the General Manager, Operations Manager, District Engineer, and Administrative Services Manager.

**Incident Manager** – The individual selected by the Emergency Response Coordinator to manage any emergency at the District’s Emergency Command Center, usually at time of a Level IV event.

**Level I - Normal (Routine):** This is the normal operating level for the District. Personnel and equipment presently on duty can handle system installations, repairs, maintenance and improvements. Minor problems are assessed internally and corrected as appropriate for each division within the District. The Emergency Command Center not activated or manned.

**Level II - Alert (Minor Emergency):** Personnel and equipment presently on duty can handle system problems, but may require off duty or additional personnel to be put on alert, be re-routed to other than their normal working areas, or work additional shifts. The "Emergency Command Center" is not activated and manned unless deemed necessary by the ERC.

**Level III - Major Emergency:** Problems somewhat beyond the initial capabilities of the District for repair, and may require a "Declaration of Emergency" to authorize shortcut procedures. May require employees to work additional shifts and may need additional assistance of personnel and equipment, either by mutual aid or private contracts. The "Emergency Command Center" may be activated and manned.

**Level IV - Disaster:** Problems clearly and immediately beyond District’s capability for response and/or Recovery time will exceed one week, costs will be great, large amounts of assistance of personnel and equipment by mutual aid or private contracts will be required, extended shifts will be needed for at least one week. A "Declaration of Emergency" will be required; the "Emergency Command Center" activated and manned.

**Public Information Officer** - The individual staff member of Tuolumne Utilities District appointed to handle information given to the press and general public.

**Release/Spill/Discharge** –Unauthorized spilling, leaking, pumping, pouring, emitting,

emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (air, water, soil, underground) of hazardous materials to include abandonment, or discharging of wastes.

**SEMS-** the Standardized Emergency Management System adopted by the District, Tuolumne County, and the State of California to deal with emergencies.

**State Coordinating Officer** - The Director of the Office of Emergency Operations (OES) who is tasked with the responsibility of coordinating state agency emergency or disaster response.

**State Emergency Operations Center (SEOC)** - Location where key state officials coordinate major emergency and disaster activities.

**System-** Any of the numerous community water systems, the wastewater (sewer) collections system, the two wastewater interceptors, the wastewater transport and reclamation systems, the raw water ditch systems, dams and reservoirs, the central office facilities and any and all other facilities and systems operated by the District.

---

## **Acronyms**

DESHS	Division of Emergency Services and Homeland Security
DE	District Engineer
DD	Division Director
DEOC	Department Emergency Operations Center
DEQ	The Department of Environmental Quality
DERR	The Division of Environmental Response and Remediation
DDW	Division of Drinking Water
DWQ	Division of Water Quality
ECC	Emergency Command Center
ERC	Emergency Response Coordinator
ERMT	Emergency Response Management Team
FERC	Federal Energy Regulatory Commission
FEMA	Federal Emergency Management Agency
IM	Incident Manager
LHD	Local Health Department
LEOC	Local Emergency Operations Center ( 18440 Striker Ct.)
MOU	Memorandum of Understanding
NIMS	National Incident Management System
OSC	On Scene Coordinator
PIO	Public Information Officer
ROC	Regional Operation Center
SEOC	State Emergency Operations Center
SEMS	Standardized Emergency Management System
TUD	Tuolumne Utilities District
USEPA	United States Environmental Protection Agency
WARN	Water/Wastewater Agency Response Network

# 4

## **District Disaster Classifications And Emergency Response**



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

Updated: 02/20/07

---

## Classifications

The classification of the emergency or disaster to levels other than Level I & II will be the decision of the Emergency Response Coordinator (ERC), which will be communicated by radio and/or telephone to the other District personnel. Levels may fluctuate during the course of the emergency, i.e. may advance from a level II to a level III as conditions change. These designations are for TUD's internal management only and do not necessarily reflect emergency level designations by outside agencies. Formal acknowledgement of the level or an absolute determination of the level is not necessarily needed for ER protocol to be implemented.

**Level I - Normal (Routine):** This is the normal operating level for the District. Personnel and equipment presently on duty can handle system installations, repairs, maintenance and improvements. Minor problems are assessed internally and corrected as appropriate for each department within the District. The Emergency Command Center not activated or manned.

**Level II - Alert (Minor Emergency):** Personnel and equipment presently on duty can handle system problems, but may require off duty or additional personnel to be put on alert, be re-routed to other than their normal working areas, or to work additional shifts. The "Emergency Command Center" is not activated and manned unless deemed necessary by the ERC.

**Level III - Major Emergency:** Problems that may tax the capabilities of District personnel and equipment, and may require a "Declaration of Emergency" to authorize shortcut procedures (*i.e.* purchasing policies, permits, etc.). Requires employees to work additional shifts and may need assistance of additional personnel and equipment, either by mutual aid or private vendors or suppliers. Personnel may be shifted from usual crews or assignment to maximize response and facilitate management of the emergency. The "Emergency Command Center" is not activated and manned unless deemed necessary by the ERC.  
**See SOP Admin Staff Notification, Appendix E**

**Level IV - Disaster:** Problems clearly and immediately beyond District's initial capability for response and/or repair. Recovery time may exceed one week, costs will be great, large amounts of assistance of personnel and equipment will be required by mutual aid or private contracts, extended shifts may be needed for at least one week. Personnel may be shifted from usual crews or assignment to maximize response and facilitate management of the emergency. A "Declaration of Emergency" may be required; the "Emergency Command Center" activated and manned. NIMS or SEMS organizational protocol followed.  
**See SOP Admin Staff Notification, Appendix E**

## Emergency Response

### Level I: (Normal)

**Situations:** Typically any emergency only affecting a few customers, including, but not limited to, minor water leaks, minor spills/overflows, sewer backups/plugs, ditch leaks, valve malfunctions, minor taste/odor discrepancies, dirty water, etc.

**Response:** Response to phone-in or field-observed problems is to be handled at the interior level within the Operations Division without direct notification to immediate supervisors unless deemed necessary by responder following normal operating procedures. The on-duty or on-call water treatment operator, distribution lead-person, lead operator, or senior utility worker may be contacted by office or field personnel to respond to incident. “**Action Request**” form is initiated by office personnel, forwarded to responder or supervisor for cause/action. “**Call Out Data Sheet**” form used for all sewer related repairs. See Appendix B for sample copy of forms.

**Roster:** Following standard procedures, each department supervisor (Construction Maintenance Superintendent, Water Master Wastewater Superintendent, or Water Superintendent) will determine **On-duty** and **On-call** roster of employees to accomplish “24-7” response and will forward list to office personnel and answering service. Said rosters are incorporated into this Plan by reference. The current roster for each department is kept available at the phone customer service desks and at the answering service office.

**Damage assessments:** Assessments are likely handled by the first field employee (responder) on site. During **regular** office hours, the individual responding to incident may make assessments, decisions and institute repairs. **After hours**, on-call responder may make assessments, decisions and institute repairs. After 3 hours on-site, responder may call supervisor and advise management with status report as appropriate to the incident.

**Actions:** Appropriate actions are taken at the individual level to assess damage, establish communications, repair damaged components and to restore service. Affected property owners are not usually notified of the situation at the local level. However, the answering service and District incoming phone staff are notified so that correct information can be given to subsequent callers. Contacts to individual property owners may be made at the direction of the emergency response coordinator or department supervisor.

**Follow-up:** Follow-up is accomplished with documentation (completion of “Action Request” form, etc.); Forms are retained and tabulated annually by office personnel and forwarded to appropriate regulatory agencies as part of annual reporting procedures. Discussions and assessments of emergency are handled at weekly staff meetings as per standard operating procedures.

**Example:** Office staff is informed of a minor leak in a main line by phone from a customer; He/she then reports by radio or phone to the on-duty senior utility worker, who inspects area and determines that it can be handled by shutting off the water at a nearby valve. Repairs are accomplished in one hour, service is reestablished. Meanwhile, office staff completes “Action Request” form and places in the in-basket of appropriate supervisor. Supervisor reviews situation with responding worker during normal office hours. Worker and/or supervisor complete “Action Request” form and forward back to office personnel for annual report compilation.

## **Level II: (Alert-Minor)**

**Situations:** Typically, any emergency affecting more than a couple of customers, including, but not limited to water main break, larger spills/overflows, malfunctions to mechanical or electrical equipment, water treatment plant malfunctions, sewer main backups/plugs, ditch break/outage, system wide taste/odor discrepancies or dirty water.

**Response:** Response is initiated by a crew or a series of crews trained in repairing damaged or destroyed system components. Department supervisor may be contacted by crew foreman, depending upon timing and severity of incident. Confirmation of magnitude of damage to be made by foreman or supervisor, as appropriate.

The Emergency Response Coordinator may be contacted and may delegate management of the incident to department supervisor. The supervisor will determine the preliminary damage assessment and repair priorities or delegate those responsibilities according to the severity of the incident. The need to repair, replace, or abandon facilities is made and appropriate personnel are contacted for response.

**Roster:** Following standard operating procedures, each department supervisor (Construction Maintenance Superintendent, Water Master Wastewater Superintendent, or Water Superintendent) will determine **On-duty** and **On-call** roster of employees to accomplish "24-7" response and will forward list to office personnel and answering service. Said rosters are incorporated into this Plan by reference. The current roster for each department is kept available at the phone customer service desks and at the answering service office.

**Damage assessments:** Assessments are likely initiated by the first field employee (responder) on site. Contact is made to immediate supervisor depending on scope of emergency. During regular office hours, the individual responding to incident may contact supervisor to confirm any assessments, decisions and institute repairs based on severity of incident. After hours, On-call responder may make initial assessments and preliminary decisions. Any large scale replacements or repairs or mobilization of crews shall be authorized by supervisor.

**Actions:** Appropriate actions are taken at the senior utility worker, crew foreman or department supervisor's level as appropriate to assess damage, establish communications, repair damaged components and restore service.

Affected property owners are not usually notified of the situation at the local level. However, the answering service and District incoming phone staff is notified so that correct information can be given to subsequent callers. Contacts to individual property owners may be made at the direction of the Emergency Response Coordinator or department supervisor.

**Follow-up:** Follow-up is accomplished with documentation (completion of Action Request Form or Call-Out Data Sheet) listing crew hours, equipment, materials and other items for restocking and accounting purposes;

Discussions are held at department level with appropriate employees and also at management level to discuss procedures. Forms are retained and tabulated annually by office personnel and forwarded to appropriate regulatory agencies as part of annual reporting procedures.

Further discussions and follow-up assessments of emergency are handled at weekly staff meetings as per standard operating procedures.

**Example:** After hours answering service is contacted due to a water main break. Answering service contacts “on-call” personnel. On-call person makes initial assessment and calls department supervisor for additional staffing. Supervisor and additional workers respond. Residents are not notified of potential water shutdown by District personnel, but answering service is notified to handle incoming calls. Water is shut-down to area as necessary; road lane closure is initiated as appropriate; portable lighting brought in, generators, back-hoe and additional rolling stock utilized. Repairs take all night. Water main is recharged and flushed. Water service reinstated to customers; Answering service is notified; crews clean up area and demobilize.

On-call employee completes “Action Request” form listing crews, equipment and materials used in repairs with time sheets. Situation reviewed during following day’s normal office discussions or special meeting as appropriate. Information forwarded to office staff for annual report compilation.

Updated: 02/20/07

## **Level III (Major Emergency)**

**Situations:** Typically, an emergency affecting an entire community water system or portion of system, including, but not limited to large water main breaks, spills into source water including large contaminations, overflows into drainages affecting public health and safety, failure of essential mechanical or electrical equipment, water treatment plant failure, sewer interceptor breakage or failure, ditch break/outage, system wide taste/odor discrepancies.

**Response:** Response is initiated by a crew or a series of crews trained in repairing damaged or destroyed system components. Department supervisor is usually contacted in the early stages of the event to assess conditions, confirm magnitude of damage and manage/prioritize repairs. **See SOP Admin Staff Notification, Appendix E**

The Emergency Response Coordinator is contacted and may elect to manage incident or may delegate management of the incident to department supervisor or foreman onsite. The supervisor or foreman will determine the preliminary damage assessment and discuss the repair priorities with the ERC as appropriate. The need to repair, replace, or abandon facilities is made and District personnel are contacted for response.

**Roster:** Following standard operating procedures, each department supervisor (Construction Maintenance Superintendent, Water Master, Wastewater Superintendent, or Water Superintendent) will determine **On-duty** and **On-call** roster of employees to accomplish "24-7" response and will forward list to office personnel and answering service. Said rosters are incorporated into this Plan by reference. The current roster for each department is kept available at the phone customer service desks and at the answering service office. Personnel may be shifted from usual crews or assignments to maximize response and facilitate management of the emergency.

**Damage assessments:** Assessments are likely initiated by the first field employee (responder) on site. Contact is made to immediate supervisor depending on scope of emergency. During regular office hours, individual responding to incident should contact supervisor to confirm any assessments, decisions and institute repairs. After hours, on-call responder may make initial assessments and preliminary decisions. Any extensive repairs or mobilization of crews shall be authorized by Emergency Response Coordinator or department supervisor.

**Actions:** Appropriate actions are taken at the supervisory management level to assess damage, establish communications, repair damaged components and restore service. Outside assistance may be requested at the direction of the ERC.

In the event an emergency results in a volume of calls that is greater than the ability of the answering service to manage, add'l staff will immediately be utilized to handle the calls.

Affected property owners may be notified of the situation at the local level by direct communication (i.e. phone calls, door hangers, direct conversations) if practical and possible, by additional crew. Office phone staff and answering service is notified.

Local radio is contacted; press release prepared by PIO. Any chemical spills (chlorine, etc) is communicated to property owners and residents in the affected area by first responders prior to or at the same time as incident is assessed and repairs initiated. Backup water supply is initiated as appropriate.

**Follow-up:** Follow-up is accomplished with staff meetings and discussions during and after the emergency, documentation including completion of “Management Disaster Response Report” listing incident, causes, remedies, crew hours, equipment, materials and other items for restocking and accounting purposes.

Discussions are held at department level with appropriate employees and also at management level to discuss procedures. Reports and forms are retained and tabulated annually by office personnel and forwarded to appropriate regulatory agencies as part of annual reporting procedures.

Further discussions and follow-up assessments of emergency are handled at weekly staff meetings as per standard operating procedures.

**Example:** Vehicle accident causes explosion and fire in roadway along major sewer interceptor. Interceptor collapses and line backs-up, flowing into major creek drainage. CDF Dispatch contacts District. Based on severity of incident, department supervisor, Emergency Response Coordinator both respond, and call for sandbags, pump trucks, on duty crew makes initial assessment and calls department supervisor for additional staffing. Supervisor and additional workers respond. Newspaper and radio notified of incident by District personnel. Regulatory agencies contacted as required.

Temporary piping and bypass pumps delivered, and wastewater pumped from manhole above collapsed section to manhole below collapsed section. Replacement sewer lines are transported to site; road lane closure is initiated as appropriate; stage lighting brought in, generators, back-hoe and additional rolling stock utilized. Repairs take all night. Sewer main is repaired and recharged. Sewer service is reinstated to customers; press is notified, crews clean up creek, flush as necessary; local Environmental Health Department and State Regional Water Control Board notified as appropriate. Crews demobilize.

Field supervisors complete “Management Disaster Response Report” listing crews, equipment and materials used in repairs with time sheets. Situation reviewed during following day’s normal office discussions or special meeting as appropriate. Information forwarded to office staff for review and annual report compilation.

## Level IV (Disaster)

Updated: 02/20/07

**Situations:** Typically, an emergency affecting all or a large portion of Tuolumne County including, but not limited to major earthquake, massive fire, major or severe winter storm, blizzard or flood, terrorist attack or massive accident/explosion. The results may be that entire systems are affected, there may be a massive loss to source water and large-scale contaminations of systems occur. There is major failure of system-wide mechanical and electrical equipment, water treatment plant failure, sewer interceptor breakage and failure, massive outages of power, loss of transportation corridors, and loss of life and property.

**Response:** Response is initiated by first responders trained in repairing damaged or destroyed system components. Emergency Response Coordinator (**ERC**) is likely contacted by Federal, State or local OES through implementation of the **NIMS/SEMS** response protocol, and reports to the Local Emergency Operations Center (**LEOC**) in Sonora (18440 Striker Ct.) under the authority of the County OES. District employees are contacted to confirm magnitude of damage as outlined in this section. District employees may first assure safety of immediate family prior to response. **See SOP Admin Staff Notification, Appendix E.**

**District Emergency Command Center:** As the NIMS/SEMS response protocols are initiated, the Emergency Response Coordinator may elect to manage the overall incident from the Sonora LEOC or he/she may send a representative (ERC Deputy/Operations) to the LEOC and manage the incident from the District ECC.

If ERC **manages from the LEOC**, he/she shall communicate with other members within the NIMS/SEMS organization to determine needs and priorities. He/she shall delegate personnel to occupy the District Emergency Command Center (**ECC**) and select a local Incident Manager (**IM**) to supervise District operations and repairs. This **IM** shall have direct supervision of employees and manage the incident. He/she shall communicate all major decisions and/or requests to the ERC, and keep the ERC informed of the status of the incident.

If the ERC **manages from the District ECC**, he/she shall select a representative to represent the District at the LEOC (Deputy ERC/Operations). Said representative shall be fully trained in SEMS protocol.

**Roster:** Following standard operating procedures, each department supervisor (Construction Maintenance Superintendent, Water Master, Wastewater Superintendent, or Water Superintendent) will determine **On-duty** and **On-call** roster of employees to accomplish "24-7" response and will forward list to office personnel and answering service. Said rosters are incorporated into this Plan by reference. The current roster for each department is kept available at the phone customer service desks and at the answering service office.

In addition, depending on the scope and severity of disaster, each department supervisor shall prepare an emergency response roster of available employees to manage incident on an extended basis. This typically will be done as employees contact supervisors and determinations are made as to the availability of each employee. Employees may be expected to work outside of their normal job descriptions.

**Damage assessments:** Assessments are initiated by first field responder on site. Contact is made to the Incident Manager (IM) or immediate supervisor depending on scope of emergency. During regular office hours, responder should contact IM or supervisor to confirm any assessments, decisions and repair priorities. After hours, on-call responder may make initial assessments and preliminary decisions. Any repairs or mobilization of crews shall be authorized by emergency response coordinator, incident manager or department supervisor, if possible.

**Actions:** Appropriate actions are taken at the supervisory management level to assess damage, establish communications, repair damaged components and restore service. Affected property owners are notified of the situation at the local level by direct communication by SEMS or through phone calls, door hangers, direct conversations if practical and possible, by additional crew.

In the event an emergency results in a volume of calls that is greater than the ability of the answering service to manage, additional staff will immediately be utilized to handle the calls.

Any chemical spills (chlorine, etc) are communicated to property owners and residents in the affected area by first responders at the same time as incident is assessed. Back up water supply is initiated as appropriate.

**Follow-up:** Follow-up is accomplished with SEMS management debriefing, District staff meetings and discussions during and after the emergency, documentation including completion of "Major Incident Report" listing incident, causes, remedies, crew hours, equipment, materials and other items for restocking and accounting purposes.

Discussions are held at department level with appropriate employees and also at management level to discuss procedures. Reports and forms are retained and tabulated annually by office personnel and forwarded to appropriate regulatory agencies as part of reporting procedures. Further discussions and follow-up assessments of emergency are handled at weekly staff meetings as per standard operating procedures.

**Example:** 100-year winter storm followed by unusual warming spell with 100 year warm rainfall causes massive flooding, washing out the Main Tuolumne Canal, collapsing Phoenix Reservoir's dam and flooding wastewater interceptor and lines. Floods wash out Phoenix Lake Road, and Mono Way at Sullivan's Creek. Other main roads blocked with snow, fallen trees and landslides. Numerous trees collapse under the winter snow-fall on power and phone lines causing widespread power/communication failures; 15,000 residents without water; 4000 residents without sewer. 2000 homes damaged or destroyed in floods or snow fall. Governor declares area a local disaster-requests federal disaster designation. National Guard responds.

**NIMS/SEMS** protocol is initiated. LEOC occupied by Emergency Response Coordinator. Priorities and needs discussed at SEMS management level and requests made by SEMS management to ERC for District response. District ECC manned by IM, emergency call down list activated; department heads, department supervisors and accounting personnel brought in.

Crews contacted by radio and cell phone; respond to areas hardest hit. Portable sewer lines are transported to areas by wastewater personnel using alternate routes. Major water trucking companies contacted by IM to begin transport drinking water to designated sites. Water operations crews begin assessment and repair to water lines. IM supervises dispatch of crews to repair damages to Phoenix Dam. **WARN** activated and generators, back-hoe and additional rolling stock from neighboring counties utilized. Repairs take weeks. Sewer main is repaired/recharged. Sewer service is reinstated to customers; Tuolumne Main Canal is repaired by P G & E; water service reinstated. Roads repaired/opened by county; Crews clean up areas, flush water lines as necessary.

ERC completes "Management Disaster Response Report" listing crews, equipment and materials used in repairs with time sheets. Situation reviewed daily at debriefings. Status reports issued both to SEMS and to District personnel. Labor/materials costs documented with accounting follow-up. Warehouse re-stocked. Specific system information forwarded to staff for report compilation. As District operations return to normal, ERP is reviewed for any needed changes.

# 5

## Procedures



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

## **Activation of Plan - Level I or II**

### **Level I Normal (Routine) or Level II: (Alert-Minor)**

**Activation:** This level of response is activated by the office staff responsible for incoming calls or an after-hours phone answering service. In addition, any District employee who witnesses a leak, line-break or overflow would take appropriate action by contacting the office or a supervisor.

**Communications:** Normal radio transmissions or phone calls are adequate at this stage.

**Documentation:** Follow-through with Action Request form or Call-out Data Sheet as appropriate.

**Standard Operating Procedures** govern most of the incidents in Level I or II.

**Level III Major Emergency:** In the event of a Level III emergency, the Emergency Response Coordinator (ERC) may elect to activate the Tuolumne Utilities District Emergency Command Center (ECC) in order to coordinate actions with additional District emergency personnel. The ERC may elect to manage the incident or delegate responsibilities to other District personnel. Communication will be with normal phone lines if possible, or cellular phones or radios if normal phone lines are not available (accessible). **See SOP Admin Staff Notification, Appendix E.**

**Level IV Disaster:** In the event of a Level IV disaster, the ERC or his designee will report to the Local Emergency Operations Center (LEOC) as per **NIMS/SEMS** protocol in order to coordinate actions with additional OES state and local emergency personnel. The LEOC is at 18440 Striker Ct. Communication will be at the direction of the LEOC Manager. **See SOP Admin Staff Notification, Appendix E.**

**Succession of Responsibility:** If an individual on the call-down list is not available, management responsibilities and duties may shift as deemed necessary.

**Emergency Command Center (ECC):** The District ECC is at 18885 Nugget Blvd. The Deputy ERC/Admin is responsible for inspecting the ECC quarterly for supplies as follows:

- Copy of the ERP
- Updated large scale maps of district facilities, organized by community water systems.
- Laminated county-wide map
- ERP Forms
- Computer terminal
- District communication radio/scanner
- Battery operated FM radio
- Additional supplies as determined by the Emergency Response Management Team

**Communications:** In either case (Level III or IV), the ERC shall announce to employees the activation of the Emergency Response Plan, using radio, telephone, or by any other means. Employees may be directed to respond to specific areas other than the Central Office Facility to effectively manage the incident.

**Documentation:** A written log of messages and directives given during the emergency shall be maintained by District staff. This will help reduce confusion in the Emergency Command Center and will also help in preparing the "Management Disaster Response Report", particularly if outside aid and assistance is/was requested. (Forms, Appendix B).

In the event of a disaster, records shall be kept on all time, mileage and equipment usage for the extent of time and resources utilized in the response effort. At the conclusion of the event the documented time and cost may then be submitted to FEMA for reimbursement. All documentation of disaster and emergency response activities shall be submitted to the ERC and maintained in the Emergency Response file for the incident.

All costs for supplies and equipment shall be documented. Tracking all of the labor performed by system personnel and volunteers is essential in the event an emergency

is declared a disaster. This will help in receiving reimbursement money from state and federal agencies.

**Volunteers:** This Plan shall govern and limit the use of volunteers who may show up and volunteer to assist in the event of a disaster. No volunteer shall be authorized or selected to provide assistance by District employees unless authorized by the ERC or there is an immediate threat or instance of serious personal injury or loss of life. District personnel shall supervise volunteer work to the extent practicable under the circumstances. Volunteers assume all risk of injury or death in assisting the District in emergencies, and each volunteer shall log in and sign a "VOLUNTEER'S RELEASE OF LIABILITY AND ASSUMPTION OF RISK AGREEMENT" form (see Appendix B) prior to commencing any District authorized work. Volunteer work shall be limited to above ground assistance unless there is an immediate threat or instance of serious personal injury or loss of life.

**Inquiries:** Individuals answering and responding to telephone calls and other contacts shall be briefed by either the Emergency Response Coordinator or the Public Information Officer (General Manager) on the proper response to give customers and concerned callers. All information released shall be coordinated through the Emergency Response Coordinator or Public Information Officer. Everyone contacting the District should receive the same information. (See **Appendix E, Pg 100-SOP-Communications**)

**Complaints:** Personnel receiving complaining phone calls shall ask appropriate questions to help clarify the response. This will help the responders have necessary information about the incident for their response and their safety concerns. All vital calls during Level III and Level IV emergencies shall be logged in the standard District Phone Log.

**Threats:** Personnel receiving threatening phone calls shall use District checklist (see Appendix B) and shall ask appropriate questions to help identify the magnitude or seriousness of the threat. All threatening calls shall be logged in the District Phone Log.

**Radio communication:** Use of vehicle radios or hand-held radios shall be limited to vital messages as much as practically possible. A specific radio frequency may be designated by the ERC for management issues with additional frequencies designated for regular incident-related transmissions. Emergency messages shall be predicated by announcing an emergency message is to be sent. "Ham" radio transmitters may be asked to assist in communication.

**Liaison personnel** should report to the proper staging area as determined by the Emergency Response Coordinator, his designee, or the employee's immediate supervisor. Maintain communication with the ECC by making status reports at least once per hour during the emergency, however, some emergencies may require more frequent reporting.

## **District Staff Assignments and Reporting Procedures**

- In the event an employee's assistance is needed by the District, each District employee shall make every effort to assure the **safety** and well-being of his/her **immediate family**, to the extent possible, prior to reporting for assignments.
- The **Emergency Response Coordinator** (ERC) shall, as necessary, activate and report to the District's Emergency Command Center (ECC). The ERC has authority to adopt procedures best suited to respond to any emergency or disaster. The ERC may delegate authority, activate personnel and make assignments as appropriate.
- **Deputy ERCs** shall be available and shall respond as directed and appropriate.
- The **Public Information Officer** (PIO) shall report to the District's Emergency Command Center.
- Department **supervisors** shall communicate their location to the ERC, and then shall report as directed.
- **Crew chiefs** or **foremen** shall communicate their location to their direct supervisor, and then shall report as directed.
- **On-Call** or **On-Duty** emergency personnel shall report to the incident staging area or otherwise, as directed by their immediate supervisor.
- Regular **office** personnel or **field** personnel shall report to their standard work location, during standard working hours, unless directed otherwise.
- In the event of a **Level IV disaster**, all District employees shall report to their immediate supervisor by phone, radio, or in person to determine whether their assistance is needed during the disaster. In the event of widespread communication failure, each employee shall make all reasonable efforts to contact their immediate supervisor, crew chief, or other management personnel.
- Any District **employee** who provides on-site assistance to facilities outside of District responsibility shall obtain clearance from the ERC or direct supervisor if possible. Any District on-site responses must be documented and all reports should be submitted to the ERC and maintained in the Emergency Response File.
- **NIMS/SEMS** or **WARN**: If the disaster or emergency is greater than a local issue and outside technical assistance should be necessary, or if NIMS protocol is instituted on a Federal level, the Emergency Response Coordinator shall contact the County OES or State OES as shown on the call down list in Chapter 2, or enact the WARN system for assistance.

**General Information**

It is essential to chart and document all personnel, equipment and supplies utilized in the emergency or disaster

**Emergency Assignments**

Every District employee shall be aware of the District Emergency Response Plan and their part in it. This awareness shall include the level of emergency, staging areas, lines of authority, and the individual's direct involvement within the emergency organization.

The Emergency Response Coordinator or his designee shall advise the each crew or crew leadperson as to the work assignments. The crew leadperson will assign additional personnel (including volunteers if authorized by the ERC) to the work crews, as needed. Employees may work outside of their standard assignments.

**Emergency Call-Down List (pg. 8 & 9)**

The Emergency Call-down List shall govern the personnel called and the order in which employees are activated. . **See SOP Admin Staff Notification, Appendix E.**

**Emergency Response Roster**

Depending on the scope and severity of disaster, each department head or department supervisor shall prepare an **emergency response roster** of available employees to manage incident on an extended basis. This typically will be done as employees contact supervisors and determinations are made as to the availability of each employee. If necessary, 12 hour shift schedules shall be prepared. Relief shifts shall **arrive 30 minutes early** so that briefings can be conducted on what has occurred, what decisions have been reached, and what problems remain.

**District Personnel Roster (Appendix D, pg. 99)**

The Deputy ERC/Administration shall maintain a list of all personnel with qualifications, duties and contact information so that in the event of an emergency, qualified staff can be contacted for each anticipated function.

All responding personnel shall carry District issued **photo identification** to aid in crossing fire or police lines, to access to private property or to respond to mutual aid and assistance requests. This procedure ensures proper lines of authority are being used. I. D. holders with transparent badge envelopes shall be issued to employees as appropriate so that employee ID can be readily seen.

Ensure that every District employee including all volunteers, are placed on a **personnel roster** which is organized by work crews, and maintained at the Emergency Command Center. This will help ensure all personnel are being rotated for rest, food, and to keep track of where they are within the system should they be needed elsewhere, or if they get injured (Forms, Appendix B, pg. 91).

**Emergency Medical Facilities**

A roster of emergency medical treatment facilities in the District's service area is included in Chapter 2.

## **Facility Damage Assessments/Inspections**

The Emergency Response Coordinator (ERC) or his designee will determine the preliminary damage assessment and determine priorities as appropriate to the incident

This **Assessment** shall include:

1. Assess the status of all physical facilities within or affected by the emergency situation, including any and all critical components to the affected system.
2. The need to repair, replace, or abandon physical facilities.
3. An estimate of manpower and equipment needed to restore the facility in order to help prioritize the repair work.
4. The possible negative affects damages to one system may have on another system.
5. The possible after effects of the repairs or replacement of the facilities on the integrity of the system itself after the emergency.

**Inspections** shall be made to supply, treatment, storage and distribution facilities, including, but not limited to the following (not necessarily listed in order of priority).

Ditches & Reservoirs: Check for seepage, leaks, cracks or problems with the ditches or reservoirs due to landslides, embankment slumps, broken inlet-outlet pipes or under-drains that could effect the stability of the ditch or reservoir. Estimate the remaining amount of water in the reservoir.

Wells and Booster Pumps: Check power supplies, pump or motor failures, physical damage to piping or electrical controls. Check the building or structure for integrity of pump operations.

Storage tanks: Check structural integrity of tanks (roofing and sides) for buckling, cracks, leaks; check foundation for levelness; check valves, pumps, lines, access, etc.

Distribution and Transmission pipelines: Check for visible leaks, cracks, breaks, and pressure loss in pressure zones. Check automatic valve failure (pressure reducing, pressure sustaining, pressure relief, high altitude, solenoid controlled, etc). Check all air vacuum relief valves and all other facilities that would be useful in gauging the integrity of underground piping, including fire hydrants. Identify pressure zone valves and isolation valves in order to supply, divert, or isolate drinking water in the system.

Water Treatment Plant: Check the quality of the influent and surrounding water shed for signs of chemical spills or releases, and any changes in the raw water quality, dosage rates of chemicals, disinfection levels and all equipment. Also check for any structural damage within the facility along with the piping, power supply, electrical equipment and the condition of the mechanical equipment.

Sewer Treatment Plant: Check the condition of sewer collection manholes and lines for leaks; check manholes and blow-offs for backflows or overflows; check integrity of overall treatment system.

**General Information**

After the completion of the preliminary damage assessment the Emergency Response Coordinator or his designee will then decide which damaged facilities receive priority repair or replacement. This process of assessment and response coordination is usually informal and is facilitated by the nature of the emergency.

**Water Use:** Main-line breaks, water treatment plant shut-downs and emergency activities- especially fire-fighting will seriously deplete drinking water supplies. Contamination could be drawn into the drinking water system due to low or negative pressures. If this occurs, notify customers as required (**Appendix F, Page 101 & Appendix G, Page 102**);

- Isolate areas that will take the longest to restore service and arrange for emergency water distribution. Locate water distribution points to serve immediate water needs.
- Establish drinking water distribution points and ration remaining water in areas affected by the incident. Utilize the Districts water tank truck or contact private couriers as necessary.
- Import drinking water from other systems if practical. Plan for contingencies.
- As a worse case scenario, the remaining water in storage shall be preserved. If need be, contact fire fighting agencies and inform them of system's capabilities, especially in critical water shortage areas. Consider using untreated water.

**Repairs:** The Department supervisor for each affected area, or his designee should be involved in prioritizing repairs. The following guidelines should be considered in making repairs.

- Priority is given to restoring service to the greatest number in the shortest time by curtailing points of major water loss, and assessing the location of sequential repairs to assure that the greatest return is achieved for the effort expended.
- Identify the areas that can be served with a minimum of repair. Prioritize the other service areas that will need more extensive repair.
- Plan to restore the service areas one by one, not the entire system at once.
- Get input and advice from other agencies (local, county and state) on essential uses.
- Assess the condition of the transmission lines from the water sources.
- Keep in mind the need for fire fighting (even if it will be limited).
- When the repairs exceed the capabilities of the District, the Emergency Response Coordinator may notify the County or State Emergency Operation Center for assistance and coordination of assistance or initiate the WARN system of assistance.

## **Emergency Materials and Equipment**

- Private companies or manufacturers shall be contacted for assistance as necessary during an emergency. This assistance can be in materials, equipment, vehicles and/or trained personnel. The Emergency Response Coordinator or his designee shall have the latitude to order materials, equipment and/or supplies as necessary during the course of the emergency or disaster up to the total dollar amount authorized by the Board of Directors.
- The District is a member of WARN, the statewide mutual aid network for utility companies. The Emergency Response Coordinator and General Manager have the authority to contact WARN for mutual aid, as appropriate.
- Where practical, District materials shall be used and restocked as soon as possible.

## **Response/Requests for Mutual Aid or Assistance**

- The Emergency Response Coordinator, or his designee is pre-authorized by the adoption of this Plan to request emergency assistance for repairs within the District's service area. During any level of emergency or disaster, this authorization shall have the latitude to include all possible areas of assistance within the District service area, up to the total dollar amount authorized by the Board of Directors.
- This pre-authorization is attached to this Plan as a Resolution and confirms, in writing that the designated person has the authority as specified.

Tuolumne Utilities District will become a member of the **Water Agency Response Network (WARN.)** A bilateral agreement of Emergency Aid and Mutual Assistance will be negotiated with these systems and agencies in the calendar year following adoption of this plan.

Updated: 02/21/07

---

## **Maps of Critical Components**

Updated maps of the community water systems, sewer systems, reclamation systems, telemetry and central office facilities are available in the District's Engineering Department.

Updated large-scale maps of district facilities, organized by community water systems (see page 26) are available in the Districts Emergency Command Center (see page 26).

Full size editions of the maps are located adjacent to the customer service counter in the main office complex. In addition, all supervisory personnel, all engineering personnel, and all field vehicles have copies of the latest maps.

A District Facilities List is included as Appendix C.

---

## **Public Notification/Press Releases**

- The release of information to the public and news media must be accurate and issued through the Emergency Response Coordinator, Public Information Officer or his designee. **See SOP-Communications- Appendix E**
- Centralized news releases and statements shall be utilized to avoid contradictory or confusing statements. Field employees should refrain from commenting to the press.
- Factual responses, without guesses, speculations or exaggerations shall govern the character of response. If an answer to a question is unknown, the Public Information Officer shall respond with a term such as, "I don't know", and then give an indication of when further information will be available.
- In the event of an emergency, field personnel shall direct all questions to supervisory staff.
- In the event of water quality emergencies, the **Notification Plan** (Appendix F, Page 101) shall be utilized as appropriate, as well as the EPA Tier 1, 2 & 3 Notification Templates (Appendix G, Page 102)

- The District Controller or his designee shall document all contracts, agreements and emergency work or materials used during the emergency to ensure proper payments and reimbursements.
- A Department supervisor shall conduct a detailed safety inspection of the system(s) affected by the incident.
- Department supervisors shall coordinate the completion of all emergency repairs and schedule permanent repairs to the service area. In the event of implementation of NIMS/SEMS protocol, proper organizational command structures shall be followed, and repairs shall be as authorized through SEMS.
- Key agencies (local and state health departments) shall be notified of emergency repair status and the scheduled completion of the system repairs. In the event of water quality issues, customers shall be notified as required by EPA (**see Appendix G, EPA Tier 1,2, & 3 templates**)
- The Emergency Response Coordinator or his designee shall release repaired facilities and equipment for normal usage. In the event of implementation of SEMS protocol, proper organizational command structures shall be followed, and any resumption of service shall be as authorized through NIMS/SEMS
- The replacement of, or authorization for, replacement of materials and supplies used during the emergency shall commence as soon as practical and be documented.
- Permanent repairs and replacements of the system facilities shall be completed as soon as practical.

## **Required Equipment and Specialized Training**

### **Equipment**

The District will maintain, for emergency use, the following equipment and supplies:

- A bank of hand-held radio transceivers for emergency response use, which will be assigned by the ERC or written designee in the event of an emergency.
- Desktop computer in the ECC with District Facilities Database, network connections, internet connections, mapping programs and other database (s) as appropriate (see page 26 for additional ECC supplies).
- Chlorine residual test kits and related test kits/equipment for emergency use.
- Bacteriological sampling bottles utilizing presence/absence techniques for quick positive bacteria identification
- Any additional kits & equipment deemed appropriate for rapid detection or sampling of systems.
- Disinfectants for wastewater spills.
- Portable light standards
- Portable generators
- Portable sanitation facilities (porta-potties)
- 3000 gallon potable water supply tank on trailer
- Self contained breathing apparatus for emergency use.
- Burlap sandbags/sand.
- Portable pump(s) on trailers.
- Updated District maps of systems in Emergency Command Center

### **Training**

#### **Management Training**

The District **ERC** and additional employees as designated by the General Manager will attend State, County and District emergency response training and exercises and **NIMS/SEMS** protocols

Other District personnel may participate in training and exercises on an as needed basis, including safety and damage assessment training.

## **Employee Training**

General training for all employees will address:

- a. This ERP and individual roles and responsibilities and procedures
- b. Information about threats, hazards and protective actions
- c. Notification, warning and communications procedures
- d. Means for locating family members in an emergency
- e. Evacuation, shelter and accountability procedures
- f. Location and use of common emergency equipment
- g. Emergency evacuation and shutdown procedures

**Training Activities** – the following activities may be instituted as part of the overall training in emergency response

- a. Orientation and Education Sessions -- These are regularly scheduled discussion sessions to provide information, answer questions and identify needs and concerns.
- b. Tabletop Exercise -- Members of the upper management group meet in a conference room setting to discuss their responsibilities and how they would react to emergency scenarios. This is a cost-effective and efficient way to identify areas of overlap and confusion before conducting more demanding training activities.
- c. Walk-through Drill – The upper management group and response teams actually perform their emergency response functions. This activity generally involves more people and is more thorough than a tabletop exercise.
- d. Functional Drills -- These drills test specific functions such as medical response, emergency notifications, warning and communications procedures and equipment, though not necessarily at the same time. Personnel are asked to evaluate the systems and identify problem areas.
- e. Evacuation Drill -- Personnel walk the evacuation route to a designated area where procedures for accounting for all personnel are tested. Participants are asked to make notes as they go along of what might become a hazard during an emergency, e.g., areas cluttered with debris, smoke in the hallways. Plans are modified accordingly.
- f. Full-scale Exercise -- A real-life emergency situation is simulated as closely as possible. This exercise involves District emergency response personnel, employees, management and community response organizations.

updated 2/28/07

## **Communication and Safety Procedures**

### Communication

Communication procedures in an emergency or disaster situation must be maintained in an orderly and efficient manner with the Public Information Officer handling press releases and conferences. Press releases should also be reviewed by the Emergency Response Coordinator for accuracy unless the situation demands immediate response. **See Appendix E, pg 100-SOP-Communications)**

Staff members must exercise caution in responding to any questions or in making any statements that may be used by the media.

### Safety Procedures

District Staff must exercise caution in working in and around all system facilities such as underground vaults, elevated tanks, and electrical equipment. There are specific safety regulations that address each of these issues and any staff members who may respond to emergency or disaster conditions must be aware of and follow the appropriate regulations in their own actions and in providing recommendations for others to act upon.

**A District employee should never compromise their own safety or the safety of others even in an emergency situation.**

The following safety programs, regulations and trainings should be understood by any staff members responding on-site to system emergencies:

- Confined Space Entry
- Emergency Action Plan
- Exposure Control Plan
- Fall Protection
- Hazard Communication
- Hearing Conservation
- Lock out/Tag out
- Personal Protective Equipment
- Respiratory Protection
- Trenching and Excavation Safety
- Workplace Violence

The procedures outlined in these regulations should be followed at all times. Copies of these regulations are maintained by the District Administrative Services Manager.

# 6

## **Natural Disasters and Response**



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

## **Types of Disasters**

---

**Natural Disasters:** Any incident or event that is not artificial or manufactured by persons that create great harm or damage, which results in a major (multi-day) interruption or disruption in service.

**Wild Fire-** (High risk hazard) A highly destructive fire which may have the capability of destroying infrastructure, taking lives, and leaving millions of dollars worth of damage. Strong winds combined with hot temperatures will dry out fuels to the point that fuel will rapidly ignite and flames will quickly spread.

**Floods/Heavy Rains-** (High risk hazard) A flood is a general and temporary condition of partial or complete inundation of two or more acres, unusual and rapid accumulation or runoff of surface waters from any source, or a mudflow.

**Dam Failure Inundation-** (Low risk hazard) Dam failures can result in the worst flood events. A dam failure is usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake. When a dam fails, a significant quantity of water could be let loose downstream, potentially destroying anything in its path.

**Earthquakes, Sinkholes, Landslides-** (Moderate risk hazard) Although rare, earthquakes occasionally occur in Tuolumne County. A sinkhole is a hazard in areas underlain by carbonate rocks like limestone and dolomite that can disrupt utility services, hamper transportation, and cause severe damage to nearby structures. A landslide is a general term for down-slope mass movement of soil, rock, or a combination of materials on an unstable slope.

**Winter Storms-** (High-risk hazard) Severe winter weather storms can include blizzard conditions, heavy snow, freezing rain, heavy sleet, and extreme cold. A blizzard is a winter storm that lasts for at least three hours with winds of at least 35 mph accompanied by considerable blowing snow, reducing visibility. Heavy snow is defined as four inches or more during a 12-hour period. This results in an abnormally high accumulation of snow and ice on the open ditches, freezing the water, causing stoppage, curtailing or diminishing service.

**Drought/Extreme Heat:** (Moderate risk hazard). A drought is a period of dryness, especially when prolonged, that causes extensive damage to crops or prevents their successful growth

**Erosion:** (Moderate risk hazard) Erosion can be defined as a measure of the susceptibility of an area of land to prevailing agents of water, wind and rain. It is determined by climate, topography, soil erodibility and land use.

**Volcano:** (Low risk hazard) More than 500 volcanic vents have been identified in the State of California. At least 76 of these vents have erupted, some repeatedly, during the last 10,000 years. Hazards would include debris avalanches, pyroclastic flows, directed blasts, pyroclastic surges, and lava flows. There are no active volcanoes in Tuolumne County.

Updated 02/21/07

Generally, in any natural disaster:

- Analyze the type and severity of the emergency
- Provide emergency assistance to save lives.
- Reduce the probability of additional injuries.
- Establish communication with supervisor as appropriate
- Determine what portions of the District's systems have been damaged
- Reduce the probability of additional damage.
- Perform emergency repairs based on priority demand.
- Make permanent repairs & return system to normal levels (recovery).
- Evaluate response and the effectiveness of the Emergency Response Plan.
- Revise Plan as necessary.

The **Emergency Phone List** in Chap. 2 should be utilized in establishing communication. **See SOP-Admin Staff Notif; Appendix E**; The **District Personnel Roster** in Appendix D shall be utilized to contact staff.

The **Emergency Operation Level** (Level I-IV) should be determined as outlined in Chapter 4 based on the severity of the incident,

The **procedures** in Chapter 5 should be utilized for specific responses. Refer to the operation plan as posted in each community's water treatment plant.

**Standard Operating Procedures (SOP)** – are being developed for all the District's critical operations and will be indexed and tabulated as **Appendix E** (pg. 100).

#### **Initial Contact (if emergency is called in):**

(Use Action Request form, Appendix B)

- What is the caller's name, what is the area effected?
- What is the problem?
- What physical facilities have been effected, if known?
- Has the drinking water already been effected?
  - If so, does the caller know what is the contaminating agent?
- If sewer spill, has the environment been effected, or is there an immediate contamination issue?

#### **Criteria to be use in judging the situation**

There are various concerns when a system experiences physical facility damage. These concerns include, but are not limited to:

- What is the direct effect to customers
- What is the "ripple" effect to other systems
- What is the effect on the environment?

**Assessment:** District staff( first responders) should

- Assess the damage
- Determine how long will it take to repair the damaged items
- Notify the public if warranted

- Provide additional assistance on-site as needed
- The public should be notified if any of the following has occurred
  1. The damage has resulted in muddy or discolored water entering the drinking water system.
  2. An accident or damage has occurred which has, or could have, permitted untreated surface water or any other contaminant to enter the drinking water system. Although the water may be clear, contamination may still be present.
  3. Water shortages may result in low pressures or the system going dry which would lead to contamination through unprotected cross connections.
  4. Sewer back-up problems could occur if system is shut-down or lines blocked.

### **Notification action to be taken**

If any of the above water-related events occur, one of the following should be issued: "Contaminated Water Advisory", "Boil Water Order", "Warning of Contaminated Water", or Tier 1, 2 or 3 Notices as mandated by the EPA (**See Appendix G**). **Notify all affected major water users (See Appendix F) (See Appendix E; SOP-Boil Water order)**

Initial information, warnings, public notification or advisories should be cleared through Emergency Response Coordinator or Public Information Officer. (**See Appendix F** for list of major institutions)

Coordinate all press releases with the Emergency Response Coordinator, General Manager, or Public Information Officer.

### **Typical situations/response**

#### Leaks or Service Interruption:

1. Isolate leak; turn off power to pumps or shut flow off
2. Repair or isolate break to allow service to the maximum system population possible.
3. If water main leak or breakage, disinfect as per regulations, increase system disinfectant residual as precaution, until normal service is resumed, and do bacteriological sampling until three (3) good consecutive samples are confirmed.
4. If sewer line break, bypass or shut off sewer flow until leak/break corrected.
5. Re-establish normal service.

#### Low Pressure:

1. Increase production, if possible, to provide maximum service output.
2. Increase system disinfectant residual as precaution to potential contamination.

#### Power Outage:

1. Place emergency generator online to provide minimum pressure to system or to insure pumps/filters, etc continue operation; schedule fuel re-fillings.
2. Increase system disinfectant residual as precaution to potential contamination.

#### Contamination:

1. Identify source and cause of contamination.
2. If contamination is from system source, isolate or treat source.
3. If contamination is an act of sabotage, take appropriate action based on nature of contamination. Contact supervisor or Emergency Response Coordinator. Have law enforcement agencies contacted.
4. If water, shut off system until all contaminants are identified, neutralized, or corrected.
5. If sewer, bypass or shut off sewer flow

# 7

## **Human Caused Threats & Incidents and Response**



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536

## Types of Human Caused Threats, Incidents

**Spill:** Defined as one in which any of the following apply:

- The nature of the material and the hazards are not known or are in question.
- The spill is perceived as an immediate actual or potential threat to human health or the environment.
- Necessary personal protective equipment or cleanup equipment is not readily available.

**Vandalism:** Willful or malicious destruction or defacement of property.

**Sabotage or Threats:** A deliberate act of destruction or disruption in which equipment is damaged to hinder normal operations.

**Terrorism:** The unlawful use of force or violence or threats of violence against persons or property to intimidate or coerce a government. Terrorism can be carried out by individuals, groups, and governments.

**Mechanical Failure:** A condition caused by collapse, break, bending, or fatigue of a piece of machinery or tool, the result being an inability of the machine or tool to continue normal operations.

**Human Error:** A wrong action by a person or mistake by a person attributable to bad judgment or ignorance or inattention. Human error can result from poor training, carelessness, misconduct, curiosity, distraction, fatigue, worry, anger, illness or substance abuse.

**Accident:** An unfortunate incident that happens unexpectedly and unintentionally.

**The sabotage of a public drinking water system, or even the threat to do so, is a federal offense (Title XIV, Section 1432 of the Federal Safe Drinking Water Act P.L. 99-339). Consequently, federal law enforcement authorities can become involved in dealing with the perpetrator(s).**

Generally, in any human caused incident:

- Analyze the type and severity of the incident.
- Provide emergency assistance to save lives.
- Reduce the probability of additional injuries.
- Contact supervisor. Contact law authorities if deemed necessary
- Photograph the scene to preserve evidence if appropriate.
- Avoid compromising the initial point of contact, if possible.
- Determine what portions of the District's systems have been damaged
- Reduce the probability of additional damage.
- Perform emergency repairs based on priority demand.
- Make permanent repairs & return system to normal levels (recovery).
- Evaluate response and the effectiveness of the Emergency Response Plan.
- Revise Plan as necessary.

The **Emergency Phone List** in Chapter 2 should be utilized in establishing communication. **See Appendix E; SOP-Admin Staff Notification)**

The **Emergency Operation Level** (Level I-IV) should be determined as outlined in Chapter 4 based on the severity of the incident,

The **Procedures** in Chapter 5 should be utilized for specific responses.

The **Outline** in Appendix B, **Utility Guide for Security Decision Making** (outline from National Rural Water Association) may be used in assessing and charting response

Generally, any threat to a public drinking water system must be taken seriously. It may be necessary to announce to the public that an incident has been confirmed. In the case of a threat, consult with local and federal authorities on how to proceed.

### **Initial Contact**

**If called in**-Obtain as much information during the call as possible:

- Which system is involved?
- Which physical facility of the system is involved?
- What is the contaminant or type of incident?
- When did, or (if a threat) how soon will the incident occur?
- Who is involved in the incident?
- Has anyone come in contact with or consumed any contaminants?

**If observed by others and/or reported by authorities**-Obtain information as above, plus

- Have authorities investigated the facility? If so, what was found?
- Is the facility secure?
- Have authorities notified anyone else yet? If so, whom?

**Action to be Taken**

updated 02/28/07

Notify your immediate supervisor or Emergency Response Coordinator if the situation warrants. The Emergency Response Coordinator will decide the course of action.

The Emergency Response Coordinator will notify the appropriate law enforcement agency for their assistance in investigating the incident. Sabotage or even a threat against a public drinking water system is a federal offense.

Responders should:

- Dispatch crews to determine if there is evidence of tampering or entry into facilities. Note any suspicious circumstances. **Preserve evidence if possible.**
- Conduct visual inspection of system for damages. If there is evidence of a chemical spill, make a determination whether it is possible for the chemical to enter any drinking water source or protection area.
- Maintain the system in operation (except in unusual circumstances).
- If appropriate, obtain samples from water supply, storage and distribution systems.
- Provide increased or additional water treatment to counteract any contamination
- If appropriate, provide alternate drinking water that is known to be safe. Has the drinking water already been effected? What is the contaminating agent?
- If sewer spill, has the environment been effected, or is there a contamination issue?
- Contact the local and state law enforcement officials as needed.

**Typical Situations/Response**Leaks or Service Interruption:

1. Isolate leak; turn off power to pumps or shut flow off
2. Repair or isolate break to allow service to the maximum population possible.
3. If water main leak or breakage, disinfect as per regulations, increase system disinfectant residual as precaution until normal service is resumed, and do bacteriological sampling until three (3) good consecutive samples are confirmed.
4. If sewer line break, bypass or shut off sewer flow until leak/break corrected.
5. Re-establish normal service.

Low Pressure:

1. Increase production, if possible, to provide maximum service output.
2. Increase system disinfectant residual as precaution to potential contamination.

Power Outage:

1. Place emergency generator online to provide minimum pressure to system or to insure pumps/filters, etc continue operation; schedule fuel re-fillings.
2. Increase system disinfectant residual as precaution to potential contamination.

Contamination:

1. Identify source and cause of contamination. Issue notices as required (**Appendix F & G**)
2. If contamination is from system source, isolate or treat source.
3. If contamination is an act of sabotage, take action based on nature of contamination. Contact supervisor or Emergency Response Coordinator.
4. If water, shut off system until contaminants are identified or neutralized.
5. If sewer, bypass or shut off sewer flow.

# 8

## Consumer Reported Incidents



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-5636

**DISCOLORATION, TASTE OR ODOR IN DRINKING WATER**

**Initial Contact:** Use Action Request form (Appendix B)

- Get the caller's name, address, phone number, and the area involved
- What is the problem? Have the caller describe (be specific), the color, taste or odor which is being noticed (e.g., "milky white," "like coffee," "rotten egg odor").
- How concentrated or intense is the problem (e.g., "very slight," "can notice it in a bathtub full of water but not a glass").
- If the water is cloudy or milky, does the water clear after standing? If so, how long does the water have to stand to clear?
- When was the problem first noticed?
- Can the caller possibly get a sample in a clean glass container?
- Do the neighbors have the same problem?
- Does the caller think anyone has gotten sick because of this problem?
- Has the caller notified the local health department?

**Action to be Taken:**

- The District will dispatch personnel to test the water to determine potability.
- If warranted due to unusual taste, odor or discoloration of the drinking water, they should be advised not to drink the water pending results of the tests.
- If the water tests positive for bacteriological contamination, it shall be tested again in 48 hours. If there is again a positive reading, boil water orders shall be distributed.
- If it appears that a discoloration (but not taste/odor) problem affects a large population, the public must be advised, using notifications as outlined in **Appendices F & G**. Appropriate press releases should be made thereafter until the problem is resolved.

**WATER OUTAGES, SHORTAGES OR LOW PRESSURE**

**Initial Contact:** Use Action Request Form (Appendix B)

- Get the caller's name, address, phone number, and the area involved
- What is the problem? Have the caller describe (be specific) the situation, (e.g., "no water pressure," "no water at all," intermittent water or low pressure").
- When and how often does this occur?
- Have you noticed anything unusual with the water when it is available (e.g., "funny taste," "odors," or "discoloration")?
- When was the problem first noticed?
- Do the neighbors have the same problem?

**Action to be Taken:**

updated 02/28/07

- If the consumer reports that the water, when it is available, exhibits tastes, odors, or discoloration, contact on-duty or on-call personnel as appropriate.
- If the problem is reported by only one consumer, or their neighbors are not experiencing the same problem, it is likely a private lateral problem. Contact on-duty or on-call personnel as appropriate.
- If two or more independent reports are received, contact on-duty or on-call personnel to determine the cause and extent of the problem.
- If the water or pressure shortage is due to high consumption, the District will take appropriate action
- If a drinking water system has gone dry, a "Contaminated Water Advisory" must be issued (**see Appendices F & G**) and bacteriologic samples must be taken. When water is again available, the system must be flushed and the chlorine dosage increased as appropriate.

**CONSUMER REPORTED ILLNESS****Initial Contact:** Use Action Request Form (Appendix B)

- Get the caller's name, address, phone number, and area involved.
- What are the symptoms being experienced, how long, and by whom?
- Have you seen a doctor? If so, what is the doctor's name? What did the doctor say?
- Was there anything unusual about the water when you drank it?
- How long after you drank the water did you become sick?
- Is anyone else in your family sick? Did they drink the same water?
- Have you contacted the state or local health department?

**Action to be Taken:**

- **DO NOT ATTEMPT TO DIAGNOSE THE PROBLEM OR THE DISEASE!** If the caller has not seen a doctor, advise him/her to do so immediately. Ask the caller to have the doctor call you back if the doctor suspects that the problem is waterborne.
- Do not convey your opinion to the caller unless specifically asked (e.g., "Could it be Giardia?"). Even when offering your opinion, stress that you are not a doctor, and advise the caller to consult a doctor.
- Document the call and inform immediate supervisor as soon as possible.
- District will contact department heads and have an internal staff meeting to determine causes and potential remedies.
- District personnel will take bacteriologic samples from the distribution system around the caller's address, and do a sanitary survey of the drinking water system, and inform the supervisor of the results.
- Follow-through as appropriate with system shutdown, chlorination, etc.
- District will notify consumers and regulatory agencies as appropriate.

# 9

## District Critical Components



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

## **Community Water systems**

The TUD water supply and distribution system includes 17 community water systems, eight water treatment plants; approximately 202 miles of distribution piping and approximately ten thousand customers. The total combined TUD service areas include all of Tuolumne County, except the Groveland and Twain Harte vicinities. The total area within TUD boundaries is approximately 1,200 square miles.

System	Approx number of Connections (2007)
Apple Valley (part of Crystal Falls)	137
Big Hill-Big Hill Area	217
Big Hill-Monte Grande Area	69
Cedar Ridge	663
Columbia-Gibbs	1544
Crystal Falls (not including Apple Valley)	2221
Cuesta Center-Lambert Lakes	187
East Sonora	113
Mono Village	271
Oak Haven (part of Crystal Falls)	n/a
Peaceful Pines	30
Phoenix Lake Park	55
Ponderosa	605
Scenic View-Scenic Brook	265
Sonora-Jamestown	4341
Tuolumne	663
Upper Basin	1442

## **The Sonora Regional Wastewater System**

The sewer collection, treatment and disposal system (collectively the Sonora Regional Wastewater system) includes a network of gravity and force main lines, 28 lift stations, five major interceptors, two sewer treatment plants, a holding reservoir and a network of piping collectively known as the reclamation system. The total interceptor length is about 28 miles. There are about 30 sewer lift stations. The reclamation system includes about 10 miles of effluent pipeline in addition to the Quartz Reservoir and related piping and valves. The District also owns 140 acres of land off Algerine Road (West Ranch) which will be utilized for additional storage and disposal of recycled water.

The overall system directly serves about 5000 individual, residential, commercial and industrial customers. In addition about 3000 customers are served through subscriber community systems (Jamestown and Twain Harte).

### **The two treatment plants:**

Sonora Regional – secondary & disinfectant treatment, 1.6 MGD capacity, four major interceptors: Sonora, Columbia, East Sonora and Rancho Poquitos.

Twain Harte – primary treatment only, 0.5 MGD capacity includes the Twain Harte Interceptor which terminates at the Mono Village Interceptor and which in

turn becomes the East Sonora Interceptor, which terminates at the Sonora Regional Plant.

## **The Ditch System**

---

**Ditches/Reservoirs:** Tuolumne Utilities District maintains 56 miles of ditches as part of its water supply/distribution system. This extensive ditch and reservoir system, maintained today for irrigation and domestic water uses, had its origin in the Gold Rush days of the 1850's. Its first units were built to supply water and power to the mines and placer claims in the county. Sources of the supply include the water sheds of the South and Middle forks of the Stanislaus River and their tributaries. Today, the ditches have a variety of channels through which water flows: open, lined (gunnited), piped, and flume.

<b>Ditch</b>	<b>Miles</b>
Algerine	10.0
Kincaid	0.5
Montezuma	6.1
Section IV	2.7
Eureka	8.0
Roaches Camp	2.2
Soulsbyville	4.2
Phoenix	5.1
Shaws Flat	3.8
Shaws Flat Pipeline	4.3
Table Mountain	6.1
Columbia	7.3
San Diego	3.7
Matelot	1.6
Main Tuolumne	14.5 (owned and operated by PG & E)

### **Reservoirs:**

<b>Name</b>	<b>Capacity (Ac ft)</b>
Lyons (owned by PG & E)	5507
Phoenix	850
Kincaid	48.3
O'Neil	16.7
Matelot	6.0
Tuolumne	2.1
Blue Gulch	0.8

## **The Central Office Complex**

---

Opened in June, 2000, at 18885 Nugget Blvd, Sonora, CA and contains the following divisions:

- Administration
- Operations
- Maintenance
- Warehouse
- Communications

# 10

## **EVALUATION UPDATES RESOLUTION CERTIFICATION**



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

Updated: 02/21/07

---

## **Evaluation**

- a. The Emergency Response Management Team (page 13) will evaluate the Emergency Response Plan in an annual meeting. In addition, management and supervisory personnel may offer evaluations and updates as appropriate.
- b. Any problem areas and/or resource shortfalls identified during the year will be addressed as they pertain to the Plan at the annual review
- c. The plan shall be evaluated to reflect lessons learned from drills and actual events, if any.
- d. Management and supervisory personnel shall have a clear understanding of their respective roles in the plan. New employees shall be trained in the use of the Plan.

---

## **Update**

- a. **Physical changes:** The Plan shall be updated to reflect changes in the physical layout of District facilities and infrastructure. New District interconnections, facilities and response processes shall be reviewed.
- b. **Facilities List:** The Plan shall be updated with a new District facilities list as appropriate.
- c. **Training Objectives:** An assessment shall be made to determine if the District is attaining its training objectives in reference to the Plan.
- d. **Hazard Assessment:** An assessment shall be made to determine if the hazards within the District's service area have changed.
- e. **Personnel:** An assessment shall be made to determine if the names, titles and telephone numbers in the Plan are current.
- f. **Additional System Processes:** Steps shall be taken to incorporate emergency management into other system processes, if not included in this Plan.
- g. **Outside Agencies:** County & state agencies will be briefed on the Plan.
- h. **Additional Events:** In addition to a yearly review, the Plan shall be evaluated and modified as follows:
  1. After each training drill or exercise
  2. After each emergency
  3. When key personnel or their responsibilities change
  4. When the layout or design of pertinent District facilities changes
  5. When policies or procedures change

## Resolution

WHEREAS, The California Emergency Services Act (Chapter 7, Article 9.5, California Government Code), authorizes all political subdivisions of the state including Special Districts to conduct emergency operations, and Tuolumne Utilities District is such a Special District organized and operating under Division 12 (Section 30,000 et. seq.) of the California Water Code; and

WHEREAS, The United States Public Health Security and Bioterrorism Preparedness and Response Act of 2002 includes Section 1433(b) which requires community water systems serving populations greater than 3,300 to either prepare or revise an Emergency Response Plan that incorporates the results of its Vulnerability Assessment; and,

WHEREAS, Tuolumne Utilities District has completed its Vulnerability Assessments on each of its systems serving 3,300 or more population, identifying human caused threats and has further completed a Local Hazard Mitigation Plan on all of its system components, identifying natural hazards; and,

WHEREAS, Tuolumne Utilities District is responsible for maintaining an emergency plan and response capability to protect the lives and property of its customers from the effects of both human-caused threats and natural disasters; and,

WHEREAS, Tuolumne Utilities District has prepared this Emergency Response Plan to address the above concerns and to outline procedures and responses to protect the lives and property of its customers from the effects of both human-caused threats and natural disasters, and this Plan meets the criteria for emergency response plans as required by current federal and state legislation; and,

WHEREAS, this plan should be officially adopted by the local governing body and the District General Manager will review and update this Plan annually, or as needed.

Now, therefore, be it resolved, that the Tuolumne Utilities District, hereby adopts this Tuolumne Utilities District Emergency Response Plan as an official plan, to be added to its official policies for operations.

PASSED AND ADOPTED by the Board of Directors of Tuolumne Utilities District on \_\_\_\_\_ by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

\_\_\_\_\_  
Ralph Retherford, President  
Board of Directors

ATTEST:

\_\_\_\_\_  
Casey Prunchak, District Secretary

**EPA Certification of Completion of an Emergency Response Plan****Public Water Name and System ID Number:**

Apple Valley	5510028
Cedar Ridge	5510015
Columbia / Gibbs	5510013
Crystal Falls	5510010
Cuesta Center / Lambert Lake	5510027
East Sonora	5510022
Oak Haven	5510032
Peaceful Pines	5510021
Phoenix Lake Park	5510025
Ponderosa Hills	5510002
Scenic View / Scenic Brook	5510033
Sonora/Jamestown	5510001
Tuolumne City	5510003
Upper Basin	5510012

**City where System is Located:** Incorporated City of Sonora/ unincorporated Co. of Tuolumne

**State:** California

**Printed Name of Person Authorized to Sign this Certification on Behalf of System:** Peter J. Kampa

**Title:** General Manager

**Address:** 18885 Nugget Blvd

**City:** Sonora

**State:** California

**ZIP Code:** 95370

**Phone:** (209) 532-5536

**FAX:** (209) 536-6485

**Email:** petek@tuolumneutilities.com

I certify to the Administrator of the U.S. Environmental Protection Agency that this community water system has completed an Emergency Response Plan that complies with Section 1433(b) of the Safe Drinking Water Act as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV – Drinking Water Security and Safety).

I further certify that this document was prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information (Safe Drinking Water Act (42 U.S.C. 300f *et seq.*)).

The Emergency Response Plan that this Utilities District prepared, on behalf of its community water systems incorporates the results of the vulnerability assessment completed for each system and includes “plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other international attack” on its community water systems. The Emergency Response Plan also includes “actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water provided to communities and individuals.”

This Utility District, on behalf of its community water systems, has coordinated, to the extent possible, with existing Local Emergency Planning Committees established under the Emergency Planning and Community Right-to-Know Act (42 U.S.C. 11001 *et seq.*) when preparing this Emergency Response Plan.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**Primary Contact person that EPA can call if there are questions about this Certification:**

**Name:** Peter J. Kampa, General Manager, Tuolumne Utilities District

**Address** (if different than that of the Authorized Representative): same as above

**Phone:** same as above **FAX:** same as above

**Email:** same as above

**Alternate Contact Person:**

**Name:** Leonard Mauro, Operations Manager, Tuolumne Utilities District

**Address:** same as above

**Phone:** same as above **FAX:** same as above

**Email:** lmauro@tuolumneutilities.com

# APPENDIX A

## Emergency Response Guide to Chemical Spills



Updated 2/27/07

### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

# 1) LIQUID ALUM (48% Aluminum Sulfate Solution)

## **POTENTIAL HAZARDS**

### **HEALTH**

- Toxic; inhalation, ingestion, or skin contact may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic.

### **FIRE OR EXPLOSION**

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.).
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.

## **SAFETY MEASURES**

- CALL emergency response telephone number on shipping paper first. If shipping paper not available or no answer, call (209) 532-5536.
- Isolate spill or leak area immediately for at least 80 to 160 feet in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate enclosed areas.
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing specifically recommended by the manufacturer.
- Structural firefighters' protective clothing is not effective in a spill situation.

## **EMERGENCY RESPONSE**

### **FIRE**

#### **Small Fires**

- Dry chemical, CO2 or water spray

#### **Large Fires**

- Dry chemical, CO2, alcohol-resistant foam or water spray.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.

### **SPILL OR LEAK**

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in area).
- Do not touch damaged containers or material unless wearing protective clothing.
- Stop leak if you can do it without risk.

- Prevent entry into waterways, sewers, basements or confined areas.
- Absorb or cover with dry earth, sand or other material; transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

### **FIRST AID**

- Move victim to fresh air.
- Call emergency medical care.
- Apply artificial respiration if victim is not breathing.
- DO NOT USE MOUTH-TO-MOUTH METHOD IF VICTIM INGESTED OR INHALED THE SUBSTANCE; INDUCE ARTIFICIAL RESPIRATION WITH THE AID OF A POCKET MASK EQUIPPED WITH A ONE-WAY VALVE OR OTHER PROPER RESPIRATORY MEDICAL DEVICE.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## **2) CAUSTIC SODA (50% Sodium Hydroxide Solution)**

### **POTENTIAL HAZARDS**

#### **HEALTH**

- Toxic; inhalation, ingestion, or skin contact with material may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

#### **FIRE or EXPLOSION**

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.).
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.

### **SAFETY MEASURES**

- CALL emergency response telephone number on shipping paper first. If shipping paper not available or no answer, call (209) 532-5536.
- Isolate spill or leak area immediately for at least 80 to 160 feet in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate enclosed areas
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing specifically recommended by the manufacturer.
- Structural firefighters' protective clothing is not effective spill situations.

### **EMERGENCY RESPONSE**

#### **FIRE**

##### **Small Fires**

- Dry chemical, CO2 or water spray

##### **Large Fires**

- Dry chemical, CO2, alcohol-resistant foam or water spray.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.

#### **SPILL OR LEAK**

- Eliminate all ignition sources (no smoking, flares, sparks or flames in area).

- Do not touch damaged containers or material unless wearing protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

### **FIRST AID**

- Move victim to fresh air.
- Call emergency medical care.
- Apply artificial respiration if victim is not breathing.
- DO NOT USE MOUTH-TO-MOUTH METHOD IF VICTIM INGESTED OR INHALED THE SUBSTANCE; INDUCE ARTIFICIAL RESPIRATION WITH THE AID OF A POCKET MASK EQUIPPED WITH A ONE-WAY VALVE OR OTHER PROPER RESPIRATORY MEDICAL DEVICE.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### **3) Copper Sulfate Pentahydrate** (Blue Vitriol or Bluestone)

#### **POTENTIAL HAZARDS**

##### **FIRE OR EXPLOSION**

- Some may burn but none ignite readily.
- Some may polymerize (P) explosively when heated or involved in a fire.
- Containers may explode when heated.
- Some may be transported hot.

##### **HEALTH**

- Inhalation of material may be harmful.
- Contact may cause burns to skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

#### **SAFETY MEASURES**

- CALL emergency response telephone number on shipping paper first. If shipping paper not available or no answer, call (209) 532-5536.
- Isolate spill or leak area immediately for at least 30 to 80 feet in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

#### **EMERGENCY RESPONSE**

##### **FIRE**

###### **Small Fires**

- Dry chemical, CO2 or water spray or regular foam.

###### **Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Do not scatter spilled material with high pressure water streams.
- Dike fire-control water for later disposal.

##### **SPILL OR LEAK**

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent dust cloud.
- Avoid inhalation of asbestos dust.
- With clean shovel place small spill material into clean, dry container and cover loosely; move containers from spill area.

##### **FIRST AID**

- Move victim to fresh air.
- Call emergency medical care.

03/03/09 ed

- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## **4) CHLORINE**

### **POTENTIAL HAZARDS**

#### **HEALTH**

- Toxic; may be fatal if inhaled or absorbed through skin.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

#### **FIRE or EXPLOSION**

- Substance does not burn but will support combustion.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- These are strong oxidizers and will react vigorously or explosively with many materials including fuels.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Some will react violently with air, moist air and/or water.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

#### **SAFETY MEASURES**

- CALL emergency response telephone number on shipping paper first. If shipping paper not available or no answer, call (209) 532-5536.
- Isolate spill or leak area immediately for at least 330 to 660 feet in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed places before entering.
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing which is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural fire fighters' protective clothing is recommended for fire situations ONLY; it is not effective in spill situations.

### **EVACUATION**

#### **Small Spill**

- Isolate 200 feet in all directions
- Then protect downwind during the day .2 miles.
- Then protect downwind during the night .5 miles.

#### **Large Spill**

- Isolate 600 feet in all directions.
- Then protect downwind during the day .5 miles.
- Then protect downwind during the night 2.0 miles

## **EMERGENCY RESPONSE**

### **FIRE**

#### **Small Fires**

- Water only; no dry chemical, CO2 or Halon.
- Contain fire and let burn. If fire must be fought, use water spray or fog nozzle.
- Do not get water inside containers.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

#### **Fire Involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders/monitor nozzles.
- Cool containers with flooding quantities of water until well after the fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from the ends of tanks.
- For massive fire, use unmanned hose holders or monitor nozzles or let burn.

### **SPILL OR LEAK**

- Full covering, vapor protective clothing should be worn for spills/ leaks with no fire.
- Do not touch or walk through spilled material.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Stop leak if you can do it without risk
- Use water spray to reduce vapors or divert vapor cloud drift.
- Do not direct water at spill or source of leak.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.
- Ventilate the area.

### **FIRST AID**

- Move victim to fresh air.
- Call emergency medical care.
- Apply artificial respiration if victim is not breathing.
- DO NOT USE MOUTH-TO-MOUTH METHOD IF VICTIM INGESTED OR INHALED THE SUBSTANCE; INDUCE ARTIFICIAL RESPIRATION WITH THE AID OF A POCKET MASK EQUIPPED WITH A ONE-WAY VALVE OR OTHER RESPIRATORY MEDICAL DEVICE.
- Administer oxygen if breathing is difficult.
- Clothing frozen to the skin should be thawed before being removed.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, flush skin or eyes with running water for 20 minutes.
- Keep victim under observation.
- Keep victim warm and quiet.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved

# California Hazardous Material Spill/Release Notification Guidance

This booklet was produced by  
Governor's Office of Emergency Services  
Hazardous Materials Unit

Governor's Office of Emergency Services  
Hazardous Materials Unit  
P. O. Box 419047  
Rancho Cordova, CA 95741-9047

(Booklet edited and reformatted for this Emergency response Plan)



## Hazardous Materials Unit

### To Report

All significant releases or threatened  
releases of hazardous materials,

**First Call 9-1-1**

(or the local emergency response agency)

### Then Call

the Governor's Office of Emergency  
Services (OES) Warning Center

**1-800-852-7550**

(if in California) or call  
the public number at (916) 845-8911

***It's the Law!***

See following pages for more detailed  
reporting requirements.

*January 2002*

**This guidance summarizes pertinent emergency  
notification requirements.**

**For precise legal requirements,  
review specific laws and regulations.**

**This guidance applies to all significant releases  
of hazardous materials. Refer to the Safe  
Drinking Water and Toxic Enforcement Act of  
1986, better known as Proposition 65, and §9030  
of the California Labor Code for additional  
reporting requirements.**

## SPILL OR RELEASE NOTIFICATION

**Q:** What are the emergency notification requirements in case of a spill or release of hazardous materials?

**A:** All significant releases or threatened releases of a hazardous material, including oil, require emergency notification to government agencies. The law specifies who must notify, what information is needed, which government agencies must be notified, when they must be notified, and the release quantity or basis for the report.

## WHO MUST NOTIFY

**Q:** Who is obligated to notify?

**A:** Requirements for immediate notification of all significant spills or threatened releases cover: owners, operators, persons in charge, and employers. Notification is required regarding significant releases from: facilities, vehicles, vessels, pipelines and railroads.

1. **State law:** Handlers, any employees, authorized representatives, agents or designees of handlers shall, upon discovery, immediately report any release or threatened release of hazardous materials (Health and Safety Code §25507).

2. **Federal law:** Notification is required for all releases that equal or exceed federal reporting quantities:

- (EPCRA) Owners and Operators to report; and
- (CERCLA) Person in Charge to report

## WHAT INFORMATION

**Q:** What information is required?

**A:** State requirements for a spill or threatened release include (as a minimum):

- Identity of caller
- Location, date and time of spill, release, or threatened release
- Substance and quantity involved
- Chemical name (if known, it should be reported if the chemical is hazardous)
- Description of what happened

Federal notification requires additional information for spills (CERCLA chemicals) that exceed federal reporting requirements, which includes:

- Medium or media impacted by the release
- Time and duration of the release
- Proper precautions to take
- Known or anticipated health risks
- Name and phone number for more information

## WHICH AGENCIES

**Q:** Who must be notified?

**A:** Notification must be given to the following agencies:

- The Local Emergency Response Agency (9-1-1 or the Local Fire Dept.),
- The Certified Unified Program Agency (CUPA) /Administering Agency (AA), if different from local fire Phone: \_\_\_\_\_

**and**

- The Governor's Office of Emergency Services Warning Center  
Phone: 1-800-852-7550 or (916) 845-8911

**and, if appropriate:**

- The California Highway Patrol Phone: 9-1-1 (The California Highway Patrol must be notified for spills occurring on highways)

**in addition,** as necessary, one or more of the following:

- **National Response Center**

If the spill equals or exceeds CERCLA Federal reportable quantities:  
Phone: 1- 800 - 424 - 8802

- **United States Coast Guard**

Waterway Spill / Release Marine Safety Offices:

MSO S. F. (Alameda) - (510) - 437 - 3073

MSO LA/Long Beach - (310) - 732-7380

MSO San Diego - (619) - 683 - 6470

- **California Occupational Safety and Health Administration(Cal/OSHA)**

For serious injuries or harmful exposures to workers:

Phone nearest Cal/OSHA District Office (Modesto 576-6260)

- **Department of Toxic Substances Control (DTSC)**

Hazardous waste tank system releases:

Secondary containment releases:

Phone DTSC Regional Office (Sacramento 916- 255-3545)

- **Public Utilities**

Natural gas pipeline releases: Phone (PUC) 415.703.2782

Notification must also be made to the **Governor's Office of Emergency Services Warning Center** for the following:

- Discharges or threatened discharges of oil in marine waters
- Any spill or other release of one barrel or more of petroleum products

- at a tank facility
- Discharges of any hazardous substances or sewage, into or on any waters of the state
- Discharges that may threaten or impact water quality
- Discharges, of oil or petroleum products, into or on any waters of the state
- Hazardous liquid pipeline releases and every rupture, explosion or fire involving a pipeline.

## WHEN TO NOTIFY

**Q:** When must emergency notification be made?

**A:** All significant spills or threatened releases of hazardous materials, including oil, must be **immediately** reported. Notification should be made by telephone.  
Also, written follow-up reports (Section 304) may be required.

## WRITTEN REPORTS

**Q:** When are written reports required?

**A:** Different laws have different time requirements and criteria for submitting written reports. After a spill or release of hazardous materials, including oil, immediate verbal emergency notification should be followed up as soon as possible with a written follow-up report (Section 304) to the following:

- 1) Governor's Office of Emergency Services,  
(Section 304 Follow-up Report)
- 2) The responsible regulating agency such as:
  - Department of Toxic Substances Control,  
(Facility Incident or Tank System Release Report)
  - Cal/OSHA, serious injury or harmful exposure to workers
- 3) U.S. DOT, transportation-related incidents.

## PENALTIES

Federal and state laws provide for penalties of up to \$25,000 per day for each violation of emergency notification requirements. Criminal penalties may also apply.

**Q:** What statutory provisions require emergency notification?

**A:** Many statutes require emergency notification of a hazardous chemical release, including:

- Health and Safety Code §25270.7, 25270.8, 25507
- Vehicle Code §23112.5
- Public Utilities Code §7673  
(PUC General Orders #22-B, 161)
- Government Code §51018, 8670.25.5 (a)
- Water Code §13271, 13272
- California Labor Code §6409.1 (b)

- Title 42, U. S. Code §9603, 11004

**Q:** What are the statutory provisions for written follow-up reports (Section 304)?

**A:** Written reports are required by several statutes, including:

- Health and Safety Code §25503 (c) (9)
- California Labor Code §6409.1 (a)
- Water Code §13260, 13267
- Title 42, U. S. Code §11004
- Government Code § 51018

## STATUTES

In addition to statutes, several agencies have notification or reporting regulations:

- Title 8, CCR, §342
- Title 13, CCR, §1166
- Title 14, CCR, §1722 (h)
- Title 19, CCR, §2703, 2705
- Title 22, CCR, §66265.56 (j), 66265.196 (e)
- Title 23, CCR, §2230, 2250, 2251, 2260
- 49 CFR, Parts 100 - 177, esp. §171.15, and Part 263, §263.30
- 49 CFR, 171.16

## WEB SITES REGULATIONS

### State Regulations

<http://www.leginfo.ca.gov/calaw.html>

<http://www.oes.ca.gov>

### Federal Regulations

<http://www.access.gpo.gov/nara/cfr/index.html/>

See Cal. Labor Code §9030 & the Safe Drinking Water - Toxic Enforcement Act of 1986 (Proposition 65) for other reporting requirements.

## DEFINITIONS

**Q:** What is a “Hazardous Material”?

**A:** “Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or threatened hazard to human health and safety or to the environment, if released into the workplace or the environment” (Health and Safety Code, §25501 (o)).

**Q:** What is a release?

**A:** “Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, unless permitted or authorized by a regulatory agency” (Health and Safety Code, §25501 (s)).

**Q:** What hazardous material releases require notification?

**A:** All significant spills, releases, or threatened releases of hazardous materials must be **immediately** reported. In addition, all releases that result in injuries, or workers harmfully exposed, **must be immediately** reported to Cal/OSHA (CA Labor Code §6409.1 (b)).

Notification covers significant releases or threatened releases relating to all of the following:

- 1) "Hazardous Materials" as defined by §25501, California Health and Safety Code
- 2) "Hazardous Substances" as listed in
  - 40 CFR §302.4;
  - Clean Water Act §307, §311;
  - CERCLA §102;
  - RCRA §3001;
  - Clean Air Act §112;
  - Toxic Substances Control Act §7
- 3) "Extremely Hazardous Substances" as required by: Chapter 6.95 Health and Safety Code, EPCRA §302
- 4) Illegal releases of hazardous waste
- 5) Employee exposures resulting in injuries:  
California Labor Code §6409.1 (b)
- 6) "Sewage" as required by Title 23 §2250  
(Reportable quantity is 1,000 gallons or more for municipal and private utility wastewater treatment plants).

## ACRONYMS

AA-	Administering Agency
Cal/OSHA -	California Occupational Safety and Health Administration
CCR -	California Code of Regulations
CERCLA -	Comprehensive Environmental Response, Compensation, and Liability Act (aka Superfund)
CFR -	Code of Federal Regulations
CHP -	California Highway Patrol
CUPA -	Certified Unified Program Agency
DOGGR -	California Division of Oil, Gas, and Geothermal Resources
DTSC -	Department of Toxic Substances Control
EPCRA -	Emergency Planning and Community Right-to-Know Act (SARA Title III)
HMIS -	Hazardous Material Information System
MSO -	Marine Safety Office, U.S. Coast Guard
OES -	Governor's Office of Emergency Services
PUC -	Public Utilities Commission
RCRA -	Resource Conservation and Recovery Act
U.S.DOT -	Federal Department of Transportation

## CONTRIBUTORS

This guidance was developed with input from the following agencies:

Governor's Office of Emergency Services  
Office of the Attorney General  
Office of the State Fire Marshal  
California Highway Patrol  
California Environmental Protection Agency  
Department of Toxic Substances Control  
State Water Resources Control Board  
Air Resources Board  
Department of Pesticide Regulation  
California Integrated Waste Management Board  
Department of Fish and Game  
Department of Forestry and Fire Protection  
Department of Food and Agriculture  
Department of Industrial Relations  
Cal-OSHA  
Department of Transportation – Cal Trans  
Sacramento County Environmental Management  
Hazardous Materials Division  
U. S. Environmental Protection Agency,  
Region IX  
The Conservation Department Division of Oil, Gas,  
and Geothermal Resources  
Department of Water Resources

This booklet was produced by  
Governor's Office of Emergency Services  
Hazardous Materials Unit

Governor's Office of Emergency Services  
Hazardous Materials Unit  
P. O. Box 419047  
Rancho Cordova, CA 95741-9047

(Booklet edited and reformatted for this Emergency response Plan)

# APPENDIX B

## FORMS



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

# Action Request from

TO \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

SUBJECT \_\_\_\_\_ NO: \_\_\_\_\_

COMPLETED ACTION			AUTHORITY
ASAP	DATE	AT YOUR DISCRETION	1. <input type="checkbox"/> Act on own; Report at Review
			2. <input type="checkbox"/> Act, but advise immediately
			3. <input type="checkbox"/> Advise before taking action

DESCRIPTION \_\_\_\_\_

---



---



---



---



---



---



---



---



---



---

## REVIEWS

DATE	TIME	STATUS

Reorder Item #ACRQ ©EGI, 1982, Printed in U.S.A.

**TUOLUMNE UTILITIES DISTRICT**

# **MANAGEMENT DISASTER RESPONSE REPORT**

**TUOLUMNE UTILITIES DISTRICT**

**Updated 03/21/07**

The purpose of this report is to document events in the case of a Level III or Level IV emergency. Make this report as accurate and thorough as possible. Remember, always follow-up with the appropriate corrective action(s).

Incident Date: \_\_\_\_\_ Time Reported: \_\_\_\_\_.

Incident:  Level I  Level II  Level III  Level IV

System: \_\_\_\_\_

Damages reported by: \_\_\_\_\_

Where did the incident occur?

How did the incident occur?

Describe the injury(s) or damage.

First Response, who, what, when, where

Personnel assigned:

Equipment/materials used:

**CHARGE ACCOUNT NUMBER ASSIGNED** : \_\_\_\_\_

(use for all expenses including materials, payroll, equipment, etc)

Report prepared by: \_\_\_\_\_

Date: \_\_\_\_\_

Report reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

ERP reviewed (date): \_\_\_\_\_

**Call Out Data Sheet**  
**TUOLUMNE UTILITIES DISTRICT**

Date                                      Time Of Call                                      Call Operator  
Call Originator                                      Time Logged On Air With Dispatch  
Alarm / Reason For Call Out  
Time Arrived On Work Site                                      Time Work Completed  
Supervisor called after (3) hours on any call

Work Performed

M-005

**VEHICLE ACCIDENT**  
**TUOLUMNE UTILITIES DISTRICT**

Date of Accident: \_\_\_\_\_ Time: \_\_\_\_\_ a.m. /  
p.m.

Location of Accident:

Description of Accident (use reverse side if necessary):

**B**  
Vehicle No.: \_\_\_\_\_ Year / Make / Model: \_\_\_\_\_ License No.:

Describe Damage:

**EMPLOYEE INFORMATION:**

Name: \_\_\_\_\_ Drivers License No.:

**OTHER DRIVER INFORMATION:**

Name: \_\_\_\_\_ Drives License No.:

Address: \_\_\_\_\_ Home Telephone: (\_\_\_\_\_)  
\_\_\_\_\_ Work Telephone: (\_\_\_\_\_) \_\_\_\_\_

Owner (if different from above):

Address: \_\_\_\_\_ Home Telephone: (\_\_\_\_\_)  
\_\_\_\_\_ Work Telephone: (\_\_\_\_\_) \_\_\_\_\_

Year / Make / Model: \_\_\_\_\_ License No.:

Insurance Company or Agency Name & Policy No.:

Describe Damage:

**INJURED:**

Name: \_\_\_\_\_ Telephone No.:

Name: \_\_\_\_\_ Telephone No.:

**WITNESS(s):**

Name: \_\_\_\_\_ Home Telephone:

Address: \_\_\_\_\_ Work Telephone:  
\_\_\_\_\_

Name: \_\_\_\_\_ Home Telephone:

Address: \_\_\_\_\_ Work Telephone:  
\_\_\_\_\_

Signature: \_\_\_\_\_ Supervisor's Signature:

Date: \_\_\_\_\_ General Manager:

S-012

*(Please provide sketch of overhead view on back)*

**ACCIDENT REPORT FORM**  
**TUOLUMNE UTILITIES DISTRICT**

Employee: \_\_\_\_\_ Social Security No. \_\_\_\_ - \_\_\_\_ - \_\_\_\_

Address: \_\_\_\_\_ Telephone No. \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Where did accident occur?

On District property?

Activity/work being performed when injured? (Be specific, identify tools, equipment or material being used)

How did the accident occur? (Describe fully the event that resulted in injury - what happened and how)

Object / substance directly involved:

Nature of injury / illness and part of body affected:

Date of injury / illness: \_\_\_\_\_ Time of day: \_\_\_\_\_ a.m. /

p.m.

Employee Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Supervisor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

General Manager: \_\_\_\_\_

Date: \_\_\_\_\_

# HYDRANT MAINTENANCE REPORT

TUOLUMNE UTILITIES DISTRICT

Today's Date \_\_\_\_\_

Hydrant Manufacturer \_\_\_\_\_

Casting Date \_\_\_\_\_

Size Main Valve Opening \_\_\_\_\_

Designator Code \_\_\_\_ \_\_\_\_ \_\_\_\_

Hydrant No. \_\_\_\_ \_\_\_\_ \_\_\_\_

TUD Code \_\_\_\_\_

Location \_\_\_\_\_

Yes No

Yes No

Yes No

Caps Missing

Replaced

Greased

Chains Missing

Replaced

Freed

Paint OK

Repainted

Color

Oper. Nut OK Size \_\_\_\_\_

Greased

Replaced

Packing OK

Tightened

Replaced

3' HYD. CLR. OK

Cleared

ST. LOC. MRK.

Painted

Nozzles OK

Sizes \_\_\_\_\_

Replaced

Drainage OK

Breakaway Flange Exposed

Flushed

Hydrant Seat Valve OK

MIN. Flushed \_\_\_\_\_

Control Valve Condition

APPX. GPM. \_\_\_\_\_

Rate Flow

Static PSI.

CL Residual \_\_\_\_\_

Break Away Fittings OK

Repairs Needed

COMMENTS

**Inspected By** \_\_\_\_\_

**Defects Corrected By** \_\_\_\_\_

**Date** \_\_\_\_\_



**EMPLOYEE REPORT OF UNSAFE CONDITION**  
**TUOLUMNE UTILITIES DISTRICT**

This form is for use by employees who wish to provide a safety suggestion or report an unsafe workplace condition or practice.

Description of unsafe condition or practice (location):

Causes or other contributing practices:

Employee's suggestion for improving safety:

Has this matter been reported to supervision?    Yes       No

Employee's Name: (optional)

Department:

Employees are advised that use of this form or other reports of unsafe conditions or practices are protected by law. It would be illegal for the employer to take any action against an employee in reprisal for exercising rights to participate in communications involving safety.

The employer will investigate any report or question as required by the Injury and Illness Prevention Program Standard (8 CCR § 3203) and advise the employee who provided the information or the workers in the area of the employer's response.

**For Administration Use Only**

Date affected workers informed of investigation results:

Date of correction or other completing action:

Abatement verified by:

Description of abatement action:

## GENERATOR INSPECTION CHECKLIST

TUOLUMNE UTILITIES DISTRICT

DATE: \_\_\_\_\_ UNIT# \_\_\_\_\_ HOURS: \_\_\_\_\_ OPERATOR: \_\_\_\_\_

#4	#1	#2	#3
PRE-START - (Switch in off position)			
1. OIL LEVEL - check and add as necessary			
2. COOLING SYSTEM - check and add as necessary			
3. BELTS - check adjustment and condition			
4. HOSES - check condition and leaks			
5. AIR CLEANER - check mounting and tightness			
6. FUEL - check level and leaks ( propane & diesel )			
7. BATTERY - check water level, cleanness and connections			
8. EXHAUST - check condition, leaks, and tightness			
9. VENTILATION - check louvers, make sure they operate			
10. LAMP TEST - check operation of all lamps ( if equipped )			
11. BLOCK HEATER - check operation, is it warm?			
12. BATTERY CHARGER - check operation			
 ENGINE RUNNING CHECKS			
1. GAUGES - check oil pressure, amp/volt, temp			
2. LEAKS - check for oil water or fuel leaks			
3. EXHAUST - check for leaks or loose connections			
4. NOISE - check for unusual noises			
5. TEST UNDER LOAD - ( RESTORE PG&E WHEN DONE)			

DESCRIPTION OF REPAIRS NEEDED

---



---



---



---



---

Notify Mechanics of Any Major Problems: 532-5536 ext. 548

**SEWAGE SPILL TO WATERS OF THE STATE**  
**TUOLUMNE UTILITIES DISTRICT**

Date \_\_\_\_\_

Time Call was Received \_\_\_\_\_ am pm      Time of Response \_\_\_\_\_ am pm

Street Address \_\_\_\_\_

Location where sewage entered receiving waters \_\_\_\_\_

Name of water body affected if applicable \_\_\_\_\_

Estimate volume that entered receiving waters \_\_\_\_\_

Where did overflow originate? MH \_\_\_\_\_ CO \_\_\_\_\_ Other \_\_\_\_\_

Cause of problem? Roots \_\_\_ Grease \_\_\_ Debris \_\_\_ Pipe Problem \_\_\_ Rocks

Unknown Were water samples taken above and below the point of release? \_\_\_\_\_

Dates of re-samples if needed \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Were there signs of contamination at discharge site? \_\_\_\_\_

Was aquatic life affected by spill? \_\_\_\_\_

Describe clean-up \_\_\_\_\_

Comments (Weather, Problems, Special Circumstances) \_\_\_\_\_

Posting of placards for warning of public      Yes \_\_\_\_\_ No

**NOTIFICATIONS**

Any release to receiving water should be called to Environmental Health and the Regional Water Quality Control Board. Office of Emergency Services and the Department of Fish and Game should be called on releases of 1000 gallons or more.

**Tuolumne County Environmental Health - 533-5990**      Contact Person \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_      Comment \_\_\_\_\_

**Regional Water Quality Control Board - \_\_\_\_\_**      Contact Person \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_      Comment \_\_\_\_\_

***For releases of 1000 gallons or greater***

**Office of Emergency Services - 1-800-852-7550**      Contact Person \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_      Case Number \_\_\_\_\_

They will notify all agencies that they feel need to be notified

**Department of Fish and Game, Sacramento Dispatch - 916-445-0045** Notification

Date \_\_\_\_\_ Time \_\_\_\_\_      Comment \_\_\_\_\_

Local contact in Oakdale - Phil McKay - 848-1604

Date \_\_\_\_\_ Time \_\_\_\_\_      Comment \_\_\_\_\_

Local contact in Sonora - \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_      Comment \_\_\_\_\_

# Water Complaint Information TUOLUMNE UTILITIES DISTRICT

Customer Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
Phone \_\_\_\_\_  
Source of Supply \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_  
By \_\_\_\_\_  
Problem First Notice \_\_\_\_\_  
Was Water shut off recently? Yes / No When \_\_\_\_\_  
Meter Number \_\_\_\_\_

- Air and/or Milky Water: \_\_\_\_\_ Pipes/Premises New? \_\_\_\_ In Hot or Cold Water?
- Dirty, Colored or Foreign Particles: Water looks like? \_\_\_\_  
In Hot or Cold Water? \_\_\_\_\_ At all faucets? \_\_\_\_\_
- Hard Water, Scale, Spots on Glassware:  
Means of Measurement: (i.e., soap consumption/suds)
- Sickness or Skin Irritation: Why is water suspect?  
Are all household members affected? Yes/No Out of town recently? Yes/No Doctor consulted? Yes/No
- Tastes and Odors: In Hot or Cold Water? \_\_\_\_\_ Pressurized Hose W/Nozzle in Use? Yes / No
- Worms and/or Bugs: (Customer Description) \_\_\_\_\_ In Hot or Cold Water?
- Aquarium, Fish Problems: When was water last added or changed?  
New Fish, Food, Plants, etc? \_\_\_\_\_ Sprays used nearby?  
Dechlorinating agent used? \_\_\_\_\_ pH Monitored?
- Garden Damage: Use of Fertilizers or Sprays? \_\_\_\_\_ Animal Damage?  
Plants sensitive to Sun / Salt / Water / Frequency of Watering? \_\_\_\_\_ Any prior Damage?
- Other Complaints / Remarks:

<b>Action Taken:</b>	<b>Results</b>
Analysis	
Cl <sub>2</sub> Residual	_____
Bacteriological Sample	_____
Others	_____

Distribution Flushing  
Other

**Customer Notification:** Date: \_\_\_\_\_

Remarks:

System No. \_\_\_\_\_

**PUBLIC NOTICE-WATER OUTAGES OR LOW PRESSURE**  
**Water Complaint Information**

**CONSUMER ALERT**  
**DURING WATER OUTAGES OR PERIODS OF LOW PRESSURE**

1. If you are experiencing water outages or low water pressure, immediately discontinue any non-essential water usage. This includes all outdoor irrigation and car washing. Minimizing usage will reduce the potential for the water system to lose pressure or completely run out of water. Please notify your water system of the outage or low pressure.
2. If the water looks cloudy or dirty, you should not drink it. Upon return of normal water service, you should flush the hot and cold water lines until the water appears clear and the water quality returns to normal.
3. If you are concerned about the water quality or are uncertain of its safety, you may add eight drops of household bleach to one gallon of water and let it sit for 30 minutes or alternatively, if you are able, water can be boiled for one minute at a rolling boil to ensure its safety.
4. Use of home treatment devices does not guarantee the water supply is safe after low pressure situations.
5. Do not be alarmed if you experience higher than normal chlorine concentrations in your water supply since the California Department of Health Services is advising public water utilities to increase chlorine residuals in areas subject to low pressure or outages.
6. The California Department of Health Services has also advised public water systems to increase the bacteriological water quality monitoring of the distribution system in areas subject to low pressure. They may be collecting samples in your area to confirm that the water remains safe. You will be advised if the sampling reveals a water quality problem.
7. Your water system is committed to make certain that an adequate quantity of clean, wholesome, and potable water is delivered to you. We recommend that you discuss the information in this notice with members of your family to ensure that all family members are prepared should water outages or low water pressure occur.

**TUOLUMNE UTILITIES DISTRICT**

Date:

**UNSAFE WATER ALERT**  
**Water Complaint Information**

**Water is possibly contaminated with \_\_\_\_\_**

**DO NOT USE YOUR WATER**

**Failure to follow this advisory could result in illness.**

An unknown substance has been added to the drinking water supplied by **Tuolumne Utilities District** due to:

The California Department of Health Services, Tuolumne Co. Health Department, and Tuolumne Utilities District are advising residents of \_\_\_\_\_ to **NOT USE THE TAP WATER FOR**

- \_\_\_\_\_ DRINKING
- \_\_\_\_\_ COOKING
- \_\_\_\_\_ HAND WASHING OR BATHING

**UNTIL FURTHER NOTICE.**

*What should I do?*

- **DO NOT DRINK OR USE TAP WATER---USE ONLY BOTTLED WATER.** *Bottled water should be used for all drinking (including baby formula and juice), brushing teeth, washing dishes, and food preparation until further notice.*
- **DO NOT TRY AND TREAT THE WATER YOURSELF.** *Boiling, freezing, filtering, adding chlorine or other disinfectants, or letting water stand will not make the water safe.*

**OPTIONS**

- Potable water is available at the following locations: \_\_\_\_\_  
Please bring a clean water container (s)

**We will inform you when tests show that the water is safe again. We expect to resolve the problem within \_\_\_\_\_.**

For more information call:

Tuolumne Utilities District: **532-5536**

California Department of Health Services at: **559-447-3132**

Local County Health Department: **533-5990**

**TUOLUMNE UTILITIES DISTRICT**

Date:

## BOIL WATER ORDER

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

# BOIL YOUR WATER BEFORE USING

**Failure to follow this advisory could result in stomach or intestinal illness.**

Due to the recent \_\_\_\_\_  
the California Department of Health Services in conjunction with the Tuolumne County Health Department, and Tuolumne Utilities District are advising residents of \_\_\_\_\_ to use boiled tap water or bottled water for drinking and cooking purposes as a safety precaution.

***DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a boil, let it boil for one (1) minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking and food preparation until further notice.***

***Boiling kills bacteria and other organisms in the water.  
This is the preferred method to assure that the water is safe to drink***

Optional alternatives:

- An alternative method of purification for residents that do not have gas or electricity available is to use fresh liquid household bleach (Chlorox, Purex, etc.). To do so, add 8 drops (or 1/4 teaspoon) of bleach per gallon of clear water or 16 drops (or 1/2 teaspoon) per gallon of cloudy water, mix thoroughly, and allow to stand for 30 minutes before using. A chlorine-like taste and odor will result from this purification procedure and is an indication that adequate disinfection has taken place.
- Water purification tablets may also be used by following the manufacturer's instructions.
- Potable water is available at the following locations: \_\_\_\_\_  
Please bring a clean water container (5 gallons maximum capacity).

We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within \_\_\_\_\_.

For more information call:

Tuolumne Utilities District: 532-5536

California Department of Health Services

– Drinking Water Field Operations Branch- District Office at 559-447-3132

Local Environmental Health 533-5990

*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

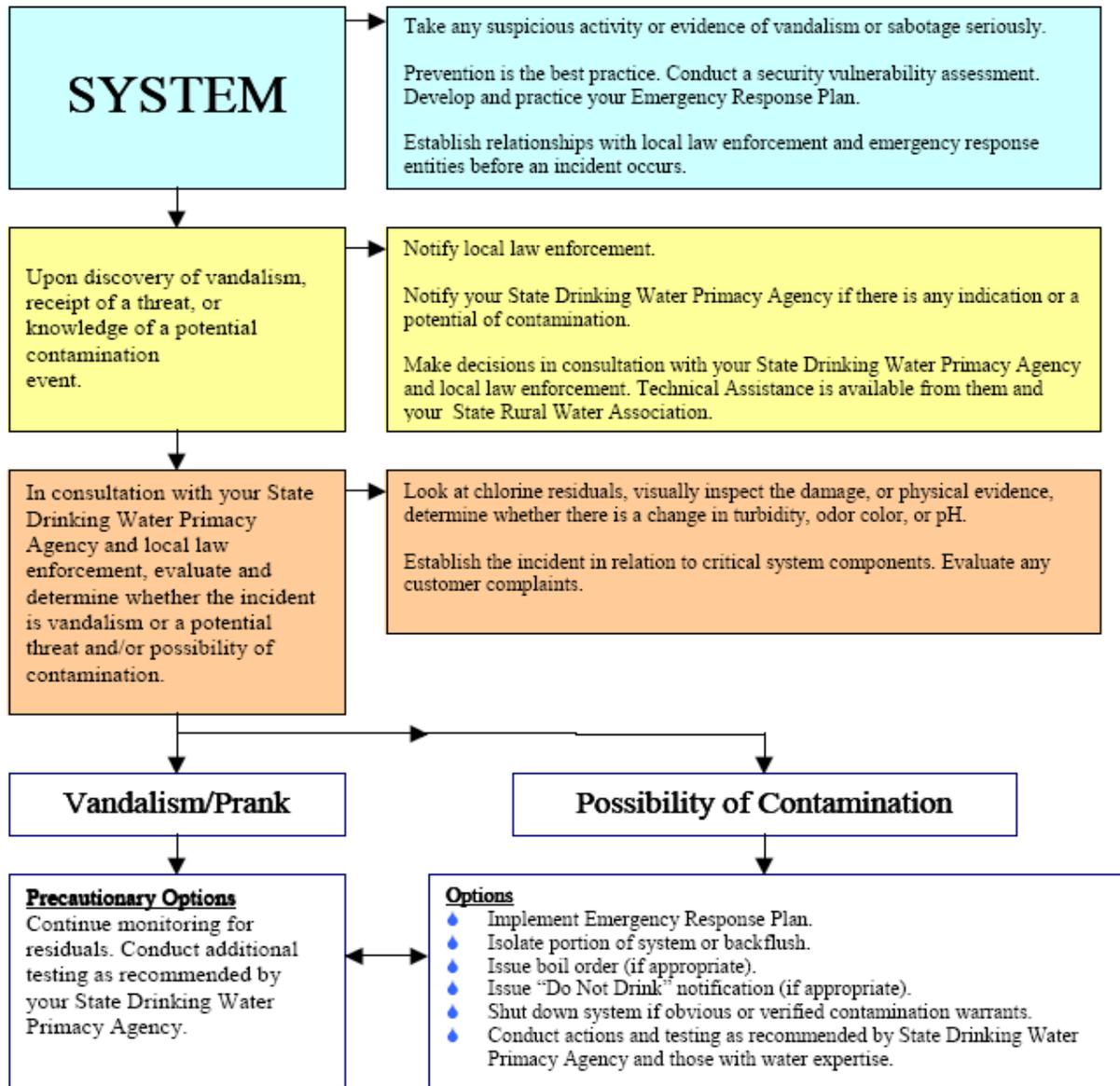
**TUOLUMNE UTILITIES DISTRICT**

## Check list for Inspections TUOLUMNE UTILITIES DISTRICT

- A. Visual inspection of **WELL**
1. Check for the following; leaks, openings, lubricants, electrical hazards, chemical hazards, etc. (record observations and correct problem).
  2. Check the pump for proper operation.
  3. Observations: \_\_\_\_\_  
\_\_\_\_\_
- B. Visual inspection of the **STORAGE TANKS**
1. Inspect for any leaks or damage (record observations and repair as needed).
  2. Record system pressure. Record the pressure the pump turns on, the pressure the pump turns off and the duration of the run time.
  3. Cleaning of storage tank needed?
  4. Observations: \_\_\_\_\_  
\_\_\_\_\_
- C. Visual inspection of **CHLORINATOR PUMP** and disinfection reservoir
1. Inspect the pump for proper operation.
  2. Inspect the disinfectant in the reservoir for concentration and adequate volume for the operational period (record results).  
\_\_\_\_\_
  3. Determine if there is enough disinfectant on hand for one or more weeks.
  4. Observations: \_\_\_\_\_  
\_\_\_\_\_
- D. Measure the **DISINFECTANT RESIDUAL** in the distribution system (free chlorine test kit required).
1. Record the results \_\_\_\_\_
  2. Determine if an adequate level of disinfectant is maintained.
    - a. If disinfectant level is low, determine the reason and correct.
    - b. If no measurable disinfectant, notify owner, determine reason, and remedy. If no disinfectant for 24 hours, notify Department.
    - c. Observations: \_\_\_\_\_  
\_\_\_\_\_
- E. Maintenance of **GAUGES and METERS.**
1. Inspect all gauges and meters for leaks and proper function daily. Repair or replace as needed (keep record of date).
- F. Inspection and **EXERCISING of the VALVES.**
- G. Inspect valves for leaks (record observations, repair or replace if leaking).
- H. Observations: \_\_\_\_\_  
\_\_\_\_\_
- I. Operation and maintenance of **DISTRIBUTION FACILITIES.**
1. Visually inspect the distribution system for leaks.
  2. Flush dead end mains or lines
  3. Observations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## A Utility Guide For Security Decision Making

These guidelines are designed to assist utilities in determining the level of security concern if a break-in or threat occurs at the water system and to assist the utility in appropriate decision making and response actions. These various steps and actions can be adjusted to meet the needs of specific situations and to comply with individual state requirements. **Specific actions should be undertaken in consultation with your State Drinking Water Primacy Agency.** Technical assistance is available from your state drinking water primacy agency and state rural water association for prevention initiatives such as vulnerability assessments, emergency response planning, and security enhancements.



- Do not disturb evidence and document what you see. Keep notes and take photos as you go.
- Collect samples for future analysis and store them appropriately.
- Alert other officials as appropriate and keep the public informed (designate one spokesperson).
- Use the expertise in public drinking water supplies and public health in the decision making process.
- Preventative measures are the best practice to prevent such an incident.
- Prior communication with the local law enforcement authorities and local emergency response entities prevents confusion and defines who has responsibility for what, when an incident occurs.

# **VOLUNTEER’S RELEASE OF LIABILITY AND ASSUMPTION OF RISK AGREEMENT**

**In providing Volunteer Work to Tuolumne Utilities District**

THIS MUST BE SIGNED AND TURNED IN BEFORE ANY VOLUNTEER WORK IS UNDERTAKEN. PLEASE READ THIS BEFORE SIGNING. THIS RELEASE LIMITS YOUR RIGHTS TO RECOVER DAMAGES IN CASE OF AN ACCIDENT ASSOCIATED WITH THIS VOLUNTEER WORK.

In consideration of being allowed to voluntarily participate in any way in assisting Tuolumne Utilities District (District), its Board of Directors or District employees during the emergency incident, the undersigned acknowledges, understands and agrees that:

The risk of injury from the activities involved in work on or adjacent to District utility facilities may be significant, including the potential for serious injuries, permanent paralysis and death, and while rules, equipment, personal precautions and discipline may reduce this risk, the risk of serious injury and death does exist.

NEVERTHELESS, I KNOWINGLY AND FREELY ASSUME ALL SUCH RISKS, both known and unknown, EVEN IF ARISING FROM THE NEGLIGENCE OF the District or its representatives, or others involved in working on the emergency, and I assume full responsibility for such risks for myself and for any of my children.

1. I willingly agree to comply with any stated rules, directions, terms and conditions for assisting the District. Should I observe any significant hazard during my presence or participation, I will remove promptly myself and/or my child from participation and bring such hazard to the attention of a District representative immediately.

2. I, for myself and on behalf of my heirs, assigns, personal representatives and next of kin, HEREBY RELEASE the Tuolumne Utilities District, its officers, directors, agents, and/or employees, and other participants (“Releasees”), WITH RESPECT TO ANY AND ALL INJURY, DISABILITY, DEATH, or loss or damage to property, WHETHER ARISING FROM THE NEGLIGENCE OF THE RELEASEES OR OTHERWISE.

**I HAVE READ THIS RELEASE OF LIABILITY AND ASSUMPTION OF RISK AGREEMENT, FULLY UNDERSTAND ITS TERMS, UNDERSTAND THAT I HAVE GIVEN UP SUBSTANTIAL RIGHTS BY SIGNING IT, AND I FREELY AND VOLUNTARILY SIGN WITHOUT ANY INDUCEMENT.**

---

<b>Participant’s Signature</b>	<b>Print Name</b>	<b>Date</b>
--------------------------------	-------------------	-------------

PARTICIPANTS UNDER THE AGE OF 18 ARE ALSO REQUIRED TO HAVE PARENT SIGN BELOW:  
This is to verify that I as parent/guardian with legal responsibility for this participant, have fully read this Volunteer’s Release of Liability and Assumption of Risk Agreement and hereby consent and agree to his/her release as provided above as to all Releasees, and, for myself, my heirs, assigns and next of kin, I release and agree to indemnify and hold harmless the Releasees from any and all liabilities incident to my minor child’s involvement or participation in the District activities as provided above, even if arising from their negligence.

---

Signature of Parent or Guardian	Print name, relationship to Participant	Date
---------------------------------	---	------



Updated: 02/21/07 This Page for Emergency Response Organizational Chart

Updated: 02/21/07

Organization Chart

**Suspicious Activity Report**

**TUOLUMNE UTILITIES DISTRICT**

In the event personnel (or neighbors) observe suspicious activity, use the following checklist to collect as much detail as possible about the nature of the activity.

**1. Types of Suspicious Activity:**

- Breach of Security Systems (e.g., lock cut, door forced open)
- Unauthorized person(s) on water system property
- Presence of person(s) at the site or facility at unusual hours
- Changes in water quality noticed by customers, (e.g., change in color, odor, taste) that were not planned or announced by the water system
- Manhole overflow
- Visible damage to facility (describe) \_\_\_\_\_
- Other (explain): \_\_\_\_\_

**2. Identification of Person calling (If applicable):**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

**3. System or facility affected (Give Name and Location, if possible):**

\_\_\_\_\_

**4. Location of Suspicious Activity:**

\_\_\_ Distribution Line      \_\_\_ Water Storage Facilities      \_\_\_ Treatment Plant      \_\_\_ Sewer Line

\_\_\_ Ditch/Reservoir      \_\_\_ Treatment Chemicals      \_\_\_\_\_ Other (explain):

\_\_\_\_\_

**5. If Breach of Security, What Was the Nature of the Breach?**

- Lock was cut or broken, permitting unauthorized entry. Specify Location: \_\_\_\_\_
- Lock was tampered with, but not sufficiently to allow unauthorized entry. Specify Location: \_\_\_\_\_
- Door, gate, window, or any other point of entry (vent, hatch, etc.) was open and unsecured.  
Specify Location: \_\_\_\_\_
- Other (explain): \_\_\_\_\_

**Suspicious Activity Report**

**6. Unauthorized Person(s) on Site?**

Specify Location: \_\_\_\_\_

What made them seem suspicious?

Not wearing TUD uniform?

Something else? Specify: \_\_\_\_\_

What were they doing? \_\_\_\_\_

\_\_\_\_\_

**7. Please Describe This Person(s):**

Height \_\_\_\_\_ Weight \_\_\_\_\_ Hair Color \_\_\_\_\_

Clothing \_\_\_\_\_ Facial Hair \_\_\_\_\_

Distinguishing Marks \_\_\_\_\_

**8. Call Received By:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Date Call Received: \_\_\_\_\_

Time of Call: \_\_\_\_\_ a.m. / p.m.

**9. Call Reported To: \_\_\_\_\_**

Date / Time Reported: \_\_\_\_\_

**10. Action(s) Taken Following Receipt of Call:**

\_\_\_\_\_

\_\_\_\_\_

## Telephone Threat Checklist

### TUOLUMNE UTILITIES DISTRICT

In the event you receive a threatening phone call, remain calm and try to keep the caller on the line. Use the following checklist to collect as much detail as possible about the nature of the threat and the description of the caller.

**1. Types of Tampering or Threat:**

Contamination \_\_\_\_\_ Threat to Tamper \_\_\_\_\_ Biological  
 Bombs / Explosives \_\_\_\_\_ Chemical \_\_\_\_\_ Other (explain): \_\_\_\_\_

**2. System Identification:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

**3. Alternate Water Source Available? Yes / No If Yes, Give Name and Location: \_\_\_\_\_**

**4. Location of Suspicious Activity:**

Distribution Line \_\_\_\_\_ Water Storage Facilities \_\_\_\_\_ Treatment Plant  
 Raw Water Source \_\_\_\_\_ Treatment Chemicals \_\_\_\_\_ Other (explain): \_\_\_\_\_

**5. Contaminant Source and Quantity: \_\_\_\_\_**

**6. Date and Time of Tampering or Threat: \_\_\_\_\_ a.m. / p.m.**

**7. Caller's Name / Alias, Address, and Telephone Number: \_\_\_\_\_**

**8. Is the Caller ? (circle all that apply):** Male Female Foul Illiterate  
 Irrational Incoherent Well-Spoken

**9. Is the Caller's Voice ? (circle all that apply):**

Soft Calm Angry Slow Rapid Slurred Laughing  
 Loud Crying Normal Deep Nasal Clear Lisp  
 Old High Young Cracking Excited Stuttering

Familiar (who did it sound like?) \_\_\_\_\_

Accented (which nationality or region?) \_\_\_\_\_

**10. Is the Connection Clear? (Could it have been a wireless or cell phone?)**

**Telephone Threat Checklist**  
**TUOLUMNE UTILITIES DISTRICT**

Page 2

**11. Are there background noises?**

Street Noises (what kind?)

Machinery (what type?)

Children (describe)

Animals (what kind?)

Computer Keyboard, Office

Motors (describe)

Music (what kind?)

Other Noises

**12. Call Received by:**

Name:

Address:

Telephone:

**Date Call Received:** \_\_\_\_\_

**Time of Call:** \_\_\_\_\_  
a.m. / p.m.

**13. Call Reported To:**

**Date / Time Reported:**

**14. Action(s) Taken Following Receipt of Call:**

S-022

# APPENDIX C

## District Facilities List



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

# APPENDIX D

## District Employees and Duties



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

# APPENDIX E

## Standard Operating Procedures



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

# APPENDIX F

## Water Quality Emergency Notification Plan



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

# APPENDIX G

## EPA Tier 1, 2, & 3 Notification Templates



### **TUOLUMNE UTILITIES DISTRICT**

18885 NUGGET BLVD • SONORA, CA 95370  
(209) 532-5536 • FAX (209) 536-6485

# APPENDIX G

## EPA Notices Tier 1, 2, & 3

### *Index*

**(Instructions for each form are on the page before each form)**

<b>Violation type</b>	<b>Form</b>	<b>Page</b>
Nitrate Notice	1-1	G-3
Fecal Coliform or E. Coli Notice	1-2	G-5
Waterborne Disease Outbreak Notice	1-3	G-7
Notice for Turbidity Single Exceedance as Tier 1	1-4	G-9
Chlorine Dioxide MRDL (Tier 1) Notice	1-5	G-11
Tier 1 "Problem Corrected" Notice	1-6	G-13
<b>Tier 2</b>		
Unresolved Total Coliform Notice	2-1	G-16
Resolved Total Coliform Notice	2-2	G-18
Chemical or Radiological MCLs Notice	2-3	G-20
Fluoride MCL Notice	2-4	G-22
SWTR Failure to Filter Notice	2-5	G-24
SWTR Turbidity Exceedance Notice	2-6	G-26
SWTR Disinfection Treatment Notices	2-7	G-28
LCR Failure to Install Corrosion Control	2-8	G-30
<b>Tier 3</b>		
Monitoring Violations Annual Notice	3-1	G-33
Fluoride SMCL Notice	3-2	G-35