



2015
URBAN WATER
MANAGEMENT PLAN



Tahoe City
Public Utility District

June 30, 2016

AUERBACH
ENGINEERING CORP

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CHAPTER 1 INTRODUCTION AND OVERVIEW

1.1 BACKGROUND AND PURPOSE

To comply with the California Urban Water Management Planning Act of 1983 (Act) including amendments that have been made to the Act, urban water suppliers must submit an Urban Water Management Plan to the California Department of Water Resources (DWR) every five years. Under the Act, “urban water suppliers” 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. The Tahoe City Public Utility District (TCPUD) fits the definition of a *retail* urban water supplier since it provides potable municipal water to more than 3,000 end users and is therefore required to submit an Urban Water Management Plan (UWMP) to DWR. The TCPUD and Auerbach Engineering Corporation (AEC) project team prepared the 2015 Urban Water Management Plan (2015 UWMP) to comply with the Act. The project team followed the guidance provided in DWR’s, “2015 Urban Water Management Plans Guidebook for Urban Water Suppliers.”

1.2 URBAN WATER MANAGEMENT PLANNING AND THE CALIFORNIA WATER CODE

Sections 10610 through 10656 of the California Water Code (CWC) detail the information that must be included in this report. The UWMP Act of 1983 has been modified over the years in response to the State’s water shortages, droughts, and other factors. In 2009, the Water Conservation Act of 2009 (also known as SB 7X-7) was adopted. This legislation created additional requirements regarding urban water management plans. This Act requires agencies to establish water use targets for 2015 and 2020 that would result in statewide savings of 20 percent by 2020.

1.3 URBAN WATER MANAGEMENT PLANS IN RELATION TO OTHER PLANNING EFFORTS

In development of the UWMP the TCPUD reviewed or incorporated planning information found in the following documents:

- *Tahoe City Public Utility District Water Master Plan*, prepared by; West Yost & Associates, dated; April 2002. (Master Plan)
- *Placer County Water Agency Northwest Lake Tahoe Area Water System Master Plan Project*, prepared by; ECO:Logic, dated; February 2010, Revision 1. (PCWA Plan)
- *Homewood Mountain Resort Water Supply Assessment*, prepared by Nichols Consulting Engineers, dated September 2011.
- *TRPA Regional Plan Update*, prepared by the Tahoe Regional Planning Agency, dated December 2012.



1.4 UWMP ORGANIZATION

The outline of this UWMP follows the “2015 Urban Water Management Plans Guidebook for Urban Water Suppliers”, dated March 2016, developed by the DWR. The sections and subsections following the guidebook and all information requested in the UWMP guidelines and Code are described herein.

1.5 UWMP AND GRANT OR LOAN ELIGIBILITY

TCPUD must have a current UWMP on file that has been determined by DWR address the requirements of CWC to be eligible for any water management grant or loan administered by DWR. Furthermore, an UWMP may also be required in order to be eligible for other State funding, depending on the conditions.

CWC Code Section 10608.56

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

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

CCR Section 596.1

(b)(2) “disadvantaged community” means a community with an annual median household income that is less than 80 per cent of the statewide annual median household income.



Changes to California law require that beginning in 2016, urban retail water suppliers must comply with water conservation requirements established by the Water Conservation Act of 2009 in order to be eligible for State water grants or loans.

Suppliers may still be eligible if either of the below requirements are met:

1. The urban retail water supplier submits a schedule, financing plan, and budget, for achieving the per capita reductions; and/or
2. The urban retail water supplier submitted to DWR, for DWR's approval, documentation demonstrating that its entire service area qualifies as a disadvantaged community.

If an agency met its 2015 Interim Target, or met either of the exceptions above, and is participating in a multiagency water project or an Integrated Regional Water Management Plan, it shall remain eligible to receive grants or loans even though one or more of the other participating agencies is not in compliance with the SB X7-7 requirements.

1.6 DEFINITIONS

There are five related terms that are used throughout this document. In order to properly understand the issues facing the TCPUD in the future, it is necessary that these terms are defined:

- **Water Consumption:** the amount of water used by customers and billed as sales. In the TCPUD's case, this is the amount that would be billed as sales with all the meters in use.
- **Water Demand:** the amount of water used within a water distribution system. Water demand is comprised of two components: water consumed (billed as sales) and unaccounted-for water.
- **Water Production:** the amount of water introduced into the water system. System-wide water demand should equal the total water production. Discussions of water production capacity involve facilities such as wells and treatment plants used to introduce water into the distribution system to meet demand.
- **Water Supply:** the total amount of water available to be used on an annual basis, provided that sufficient water production capacity exists.
- **Gross Water Use:** The total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding recycled water; additions to long-term storage; conveyances for use by another urban water supplier, and water delivered for agricultural use.



CHAPTER 2 **PLAN PREPARATION**

2.1 **BASIS FOR PREPARING A PLAN**

Code Section 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...

Code Section 10620:

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

Code Section 10621:

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

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

During the 2015 calendar year, the TCPUD provided 334 million gallons (1,193 acre-feet) of water to 4,194 service connections. TCPUD is an urban water supplier.

2.1.1 **Public Water Systems**

Code Section 10644:

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

Code Section 10608.52:

(a) The department, in consultation with the board, the California Bay-Delta or its successor agency, the State department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier’s compliance with conservation targets pursuant to Section 10608.24... The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.



California Health and Safety Code 116275:

(h) “Public Water System” means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

The TCPUD service area currently consists of five separate and distinct sub-regional water systems, as follows:

- Tahoe City Main
- Rubicon
- McKinney/Quail
- Alpine Peaks
- Tahoe-Truckee Forest Tract

Additional information on each system is provided in Section 3.1 General Description.

2.1.2 Agencies Serving Multiple Service Areas/Public Water Systems

Table 2-1 below provides the public water system number, name, number of municipal connections and volume of water supplied in 2015 for each Public Water System that is managed by the TCPUD.

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3110010	Tahoe City Main	2,899	257
0910012	Rubicon	620	34
3110011	McKinney/Quail	559	37
3110044	Alpine Peaks	96	4
-	Tahoe-Truckee Forest Tract	20	3
TOTAL		4,194	335
NOTES:			

Table 2.1 – TCPUD’s Public Water Systems.

2.2 REGIONAL PLANNING

TCPUD has chosen to submit an individual UWMP and not participate in a Regional Alliance.



2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

The TCPUD has to prepare an individual UWMP that reports solely on its service area and address all the requirements of the CWC. The TCPUD has notified appropriate agencies within the region of the UWMP.

2.3.1 Regional UWMP

Code Section 10620:

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

TCPUD has chosen to prepare an individual UWMP.

2.3.2 Regional Alliance

Code Section 10608.20:

(a)(1) ...Urban retail water suppliers may elect to determine and report progress towards achieving these targets on an individual or regional basis as provided in subdivision (a) of Section 10608.28...

Code Section 10608.28:

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

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

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

TCPUD has chosen not to participate in a Regional Alliance.



Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i> <i>drop down list</i>
<input checked="" type="checkbox"/>	Individual UWMP	
<input type="checkbox"/>	Water Supplier is also a member of a RUWMP	
<input type="checkbox"/>	Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)	
NOTES:		

Table 2.2 – Plan Identification

2.4 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

Code Section 10608.20:

(a)(1) Urban retail water suppliers... may determine the targets on a fiscal year or calendar year basis.

2.4.1 Fiscal or Calendar Year

The TCPUD reports data on a calendar year.

2.4.2 Reporting Complete 2015 Data

The TCPUD reports data on a calendar year and all 2015 data is included in the 2015 UWMP.

2.4.3 Units of Measurement

The TCPUD uses million gallons (MG) to report water volumes.



Table 2-3: Agency Identification	
Type of Agency (select one or both)	
<input type="checkbox"/>	Agency is a wholesaler
<input checked="" type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables Are in Calendar Years
<input type="checkbox"/>	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	MG
NOTES:	

Table 2.3 – Agency Identification

2.5 COORDINATION AND OUTREACH

Code Section 10631:

(j) An urban water supplier that relies upon a wholesale agency for a source of water shall provide 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).

2.5.1 Wholesale and Retail Coordination

The TCPUD does not receive a water supply from any wholesalers as defined by CWC 10608.12 (r).



Table 2-4 Retail: Water Supplier Information Exchange	
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.	
Wholesale Water Supplier Name <i>(Add additional rows as needed)</i>	
N/A	
NOTES:	

Table 2.4 – Water Supplier Information Exchange

2.5.2 Coordination with Other Agencies and the Community

Code Section 10620:

(d)(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.

Code Section 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...

In accordance with Code Section 10642, the 2015 UWMP, the TCPUD conducted a public hearing on the matter during a Board Meeting on June 17, 2016. Notices of the public hearing were published in a local newspaper two times prior to the public hearing date. Draft copies of the UWMP were also made available for public review at the TCPUD’s office at 221 Fairway Drive, Tahoe City, California and on their website. In addition, the TCPUD provided notices of the time and place of hearing to Placer and El Dorado Counties. A copy of the Notice of Public Hearing is included in the Appendix, Attachment E.



2.5.3 Notice to Cities and Counties

Code Section 10621:

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water suppliers that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

Notification was sent to all appropriate agencies on March 29, 2016. Below is a list of the agencies notified. The notification letter sent out is included in Appendix, Attachment D.

- NTPUD
- STPUD
- PCWA
- Placer County, Department of Public Works
- El Dorado County, Department of Public Works
- TDPUD
- SVPSD
- Alpine Springs Company Water District



CHAPTER 3 **SYSTEM DESCRIPTION**

3.1 **GENERAL DESCRIPTION**

Code Section 10631:

Describe the service area of the supplier.

The TCPUD was established in 1938 and is authorized under the State of California Public Utility District Act with all powers and functions of a utility district. The TCPUD provides water, sewer, and recreational facilities and services to a portion of the west and north shore areas of Lake Tahoe encompassing unincorporated portions of Placer and El Dorado counties. The TCPUD currently serves water to 3,967 active residential connections. All water connections have been metered since 2010. TCPUD's entire water service area is depicted on Figure 3-1.

The TCPUD service area currently consists of five separate and distinct sub-regional water systems, as follows:

- Tahoe City Main
- Rubicon
- McKinney/Quail
- Alpine Peaks
- Tahoe-Truckee Forest Tract

The Tahoe City Main system provides water to service connections in an area that extends from Dollar Point to Tahoe Tavern. Major water system facilities for the Tahoe City Main system are shown in Figure 3-2. The North Tahoe Public Utility District (NTPUD) is a water purveyor northeast of Tahoe City and receives supplemental water from the TCPUD through a service connection in the Highlands area. The Tahoe City Main system now includes an area previously served by the Lake Forest Water Company (LFWC) an investor-owned utility located near Dollar Point.¹

The Rubicon system serves the area between Meeks Bay and Bliss State Park, including the Meeks Bay Vista system and the former Tamarack Mutual Water System (acquired during the 1990's). Major water system facilities for the Rubicon system are shown in Figure 3-3.

The McKinney/Quail system extends from Homewood, south and east along the shoreline to McKinney Creek. The areas north of Homewood and south of Tahoma are not served by TCPUD at this time. Major water system facilities for the McKinney/Quail system are shown in Figure 3-3. The McKinney/Quail system now includes an

¹ The TCPUD supplied retail water to the LFWC from 2001 through 2010. The TCPUD was granted operational possession of the LFWC on January 14, 2011, through eminent domain proceedings. TCPUD was granted full ownership of the LFW on January 1, 2013.



area previously served by the Tahoma Meadows Water Company a mutually owned water system located near the McKinney Estates area.²

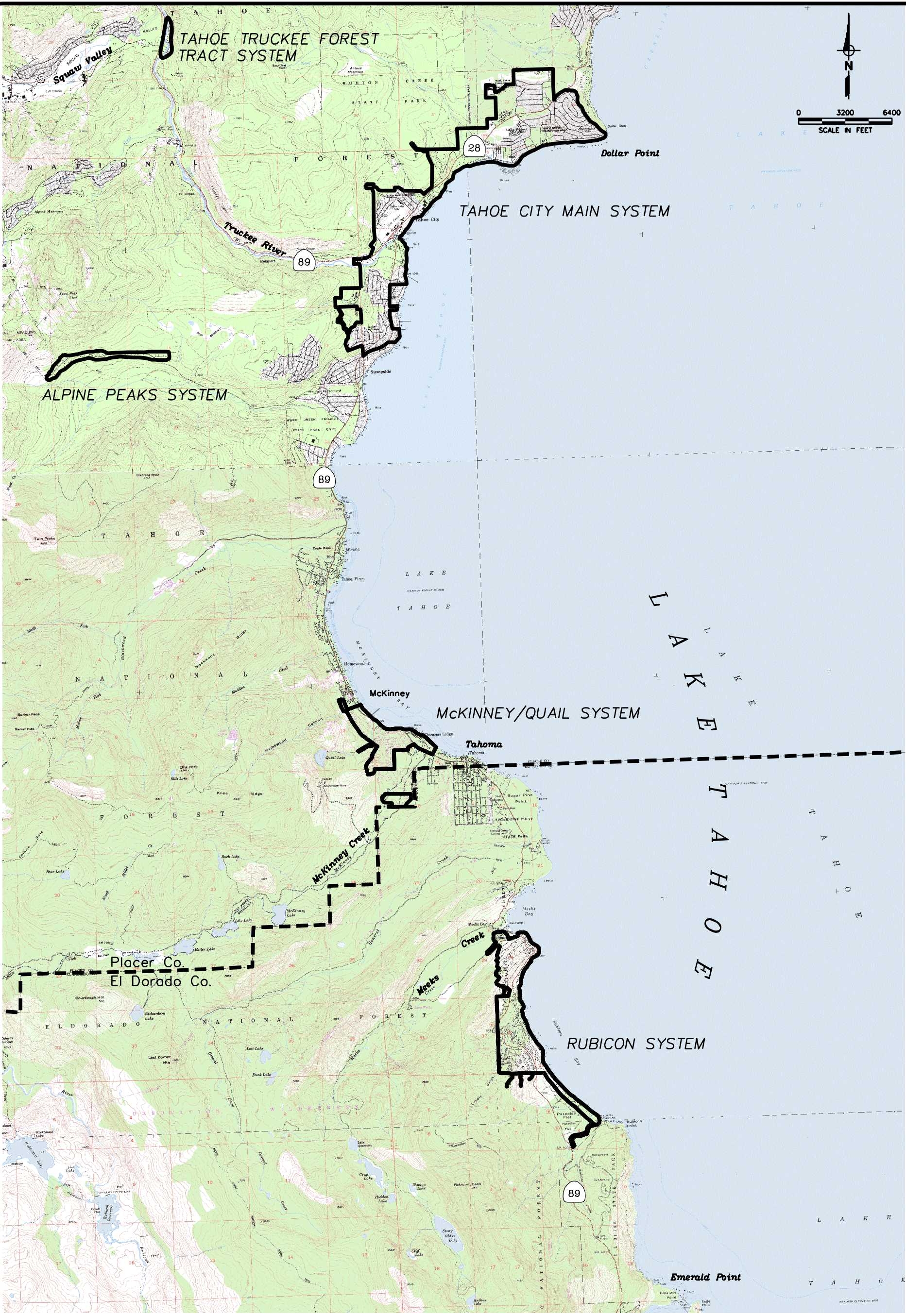
The Tahoe-Truckee Forest Tract system was added to the TCPUD service area in 1998 and serves properties along State Route 89 to the eastern end of Squaw Valley Road. The TCPUD operates and maintains the water delivery system, but the Squaw Valley Public Service District supplies water to this system as shown in Figure 3-4.

The Alpine Peaks system is a small system about 5 miles west of Tahoe City, serving the area west of Tahoe Tavern. The Alpine Peaks system provides water from Riley's Spring as shown in Figure 3-5.

3.2 SERVICE AREA BOUNDARY MAPS

Service area boundary maps have been included for reference.

² The TCPUD acquired the Tahoma Meadows Water Company on October 18, 2013.

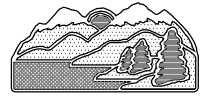


LEGEND:

- COUNTY BOUNDARY
- WATER SERVICE AREA BOUNDARY

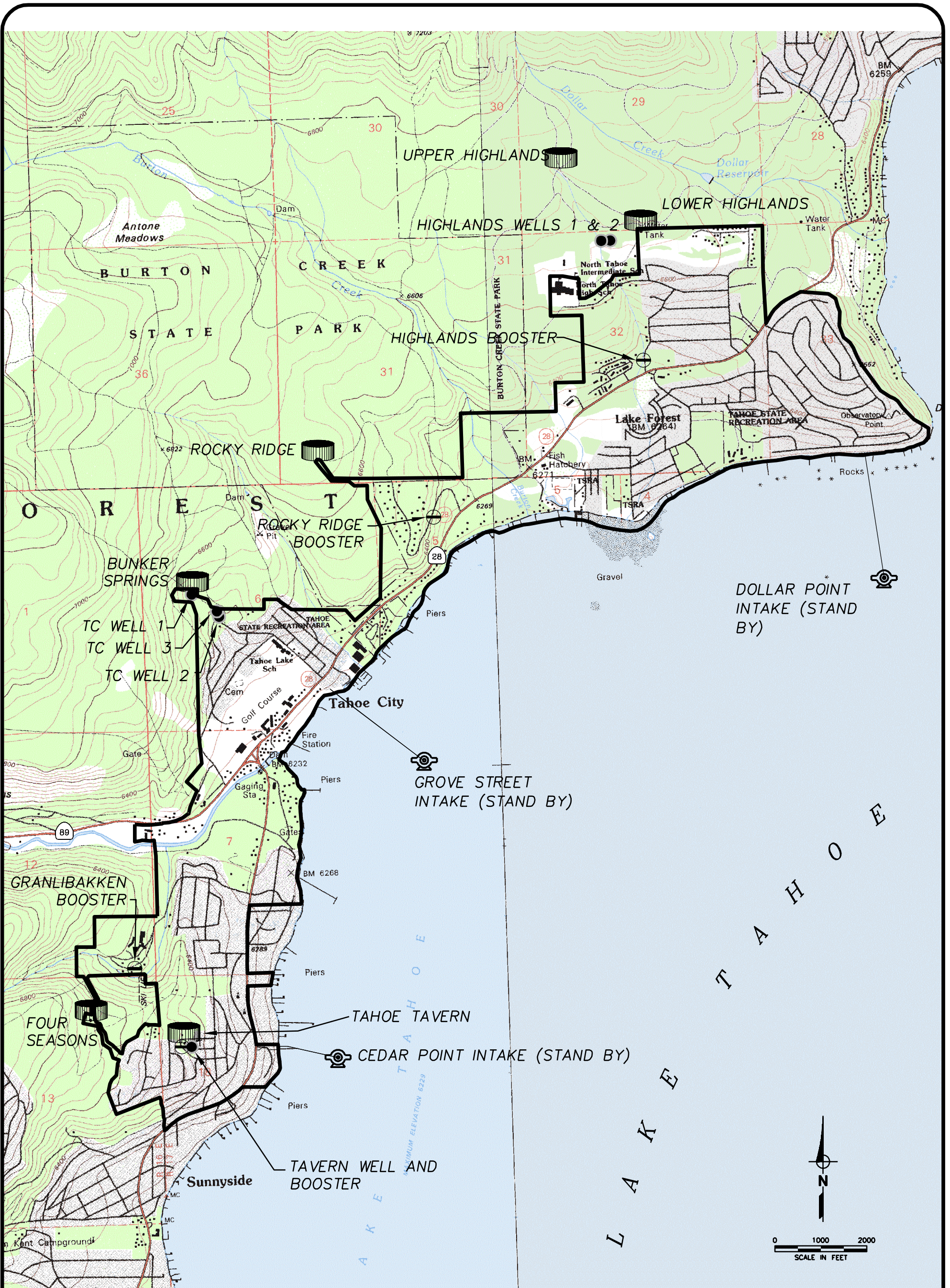
NOTES:

QUADRANGLE BASE MAPS ARE USGS DIGITAL RASTER GRAPHICS (DRG) IMAGE FILES.
 WATER SERVICE AREA BOUNDARY IS APPROXIMATE.



Tahoe City
Public Utility District

**WATER SERVICE AREA
Figure 3-1**



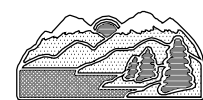
LEGEND:

- | | | | |
|--|-----------------------------|--|-----------------------------|
| | TANK | | BOOSTER PUMPING STATION |
| | SURFACE WATER (LAKE) INTAKE | | WATER SERVICE AREA BOUNDARY |
| | WELL / SPRING | | |

NOTES:

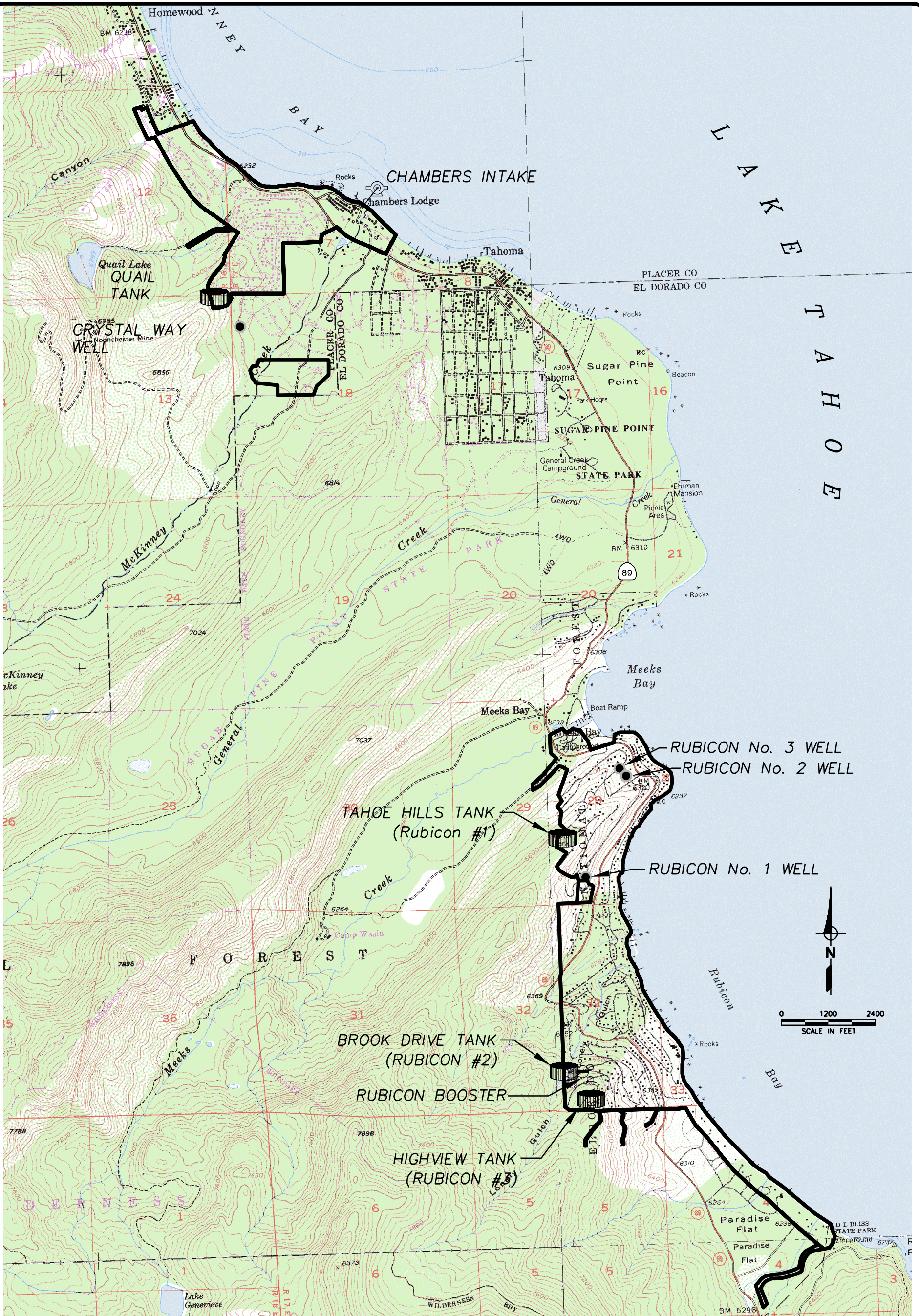
QUADRANGLE BASE MAPS ARE USGS DIGITAL RASTER GRAPHICS (DRG) IMAGE FILES.
 WATER SERVICE AREA BOUNDARY IS APPROXIMATE.

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Tahoe City
Public Utility District

WATER SYSTEM FACILITIES
Figure 3-2



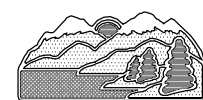
LEGEND:

- | | | | |
|-------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|-----------------------------|
|  | TANK |  | BOOSTER PUMPING STATION |
|  | SURFACE WATER (LAKE) INTAKE |  | WATER SERVICE AREA BOUNDARY |
|  | WELL / SPRING | | |

NOTES:

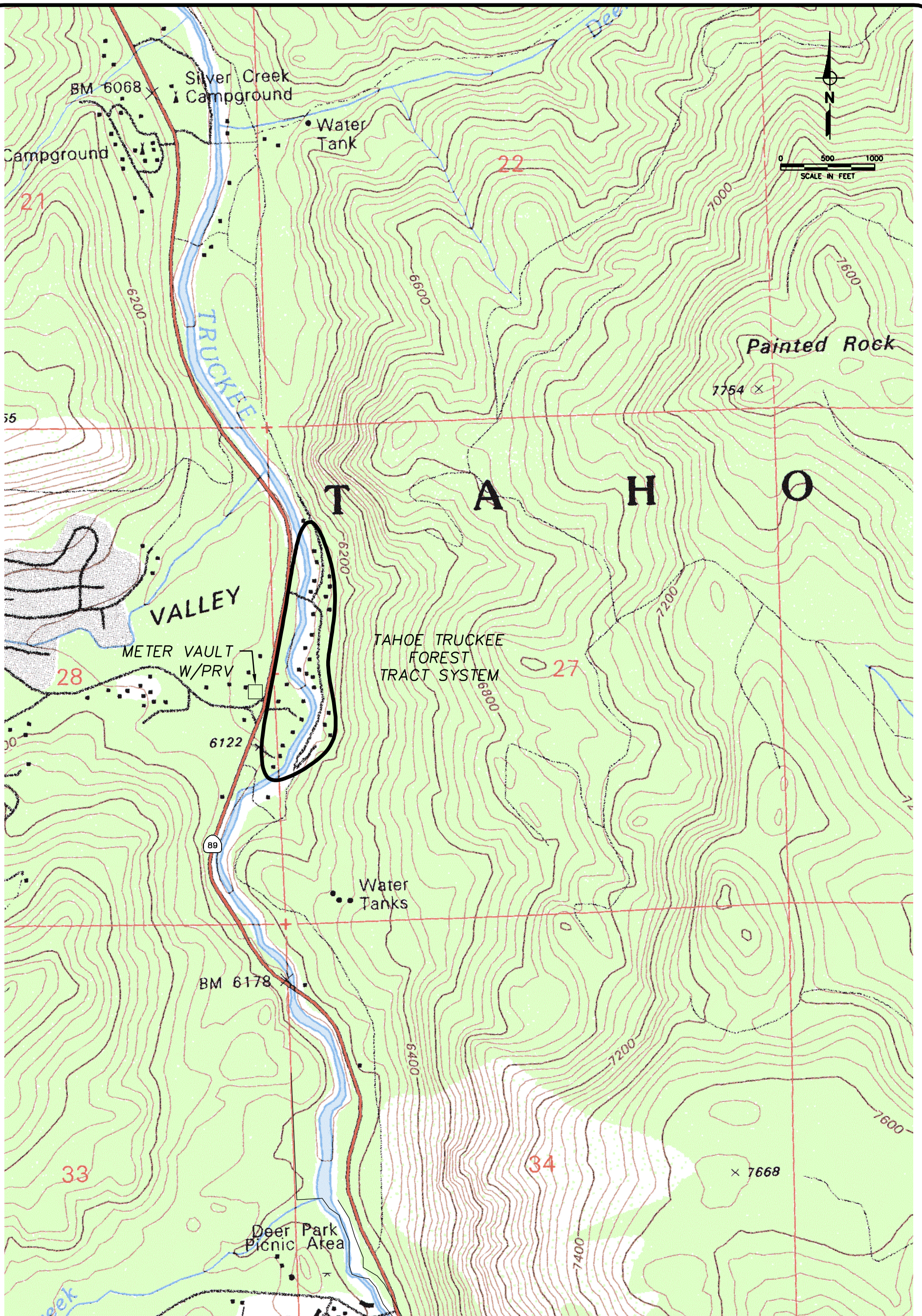
QUADRANGLE BASE MAPS ARE USGS DIGITAL RASTER GRAPHICS (DRG) IMAGE FILES.
 WATER SERVICE AREA BOUNDARY IS APPROXIMATE.

J:\22.63B\Dwg\Figures\Fig 3-3.dwg





Tahoe City
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WATER SYSTEM FACILITIES
Figure 3-3



LEGEND:

-  WATER SERVICE AREA BOUNDARY
-  METER VAULT

NOTES:

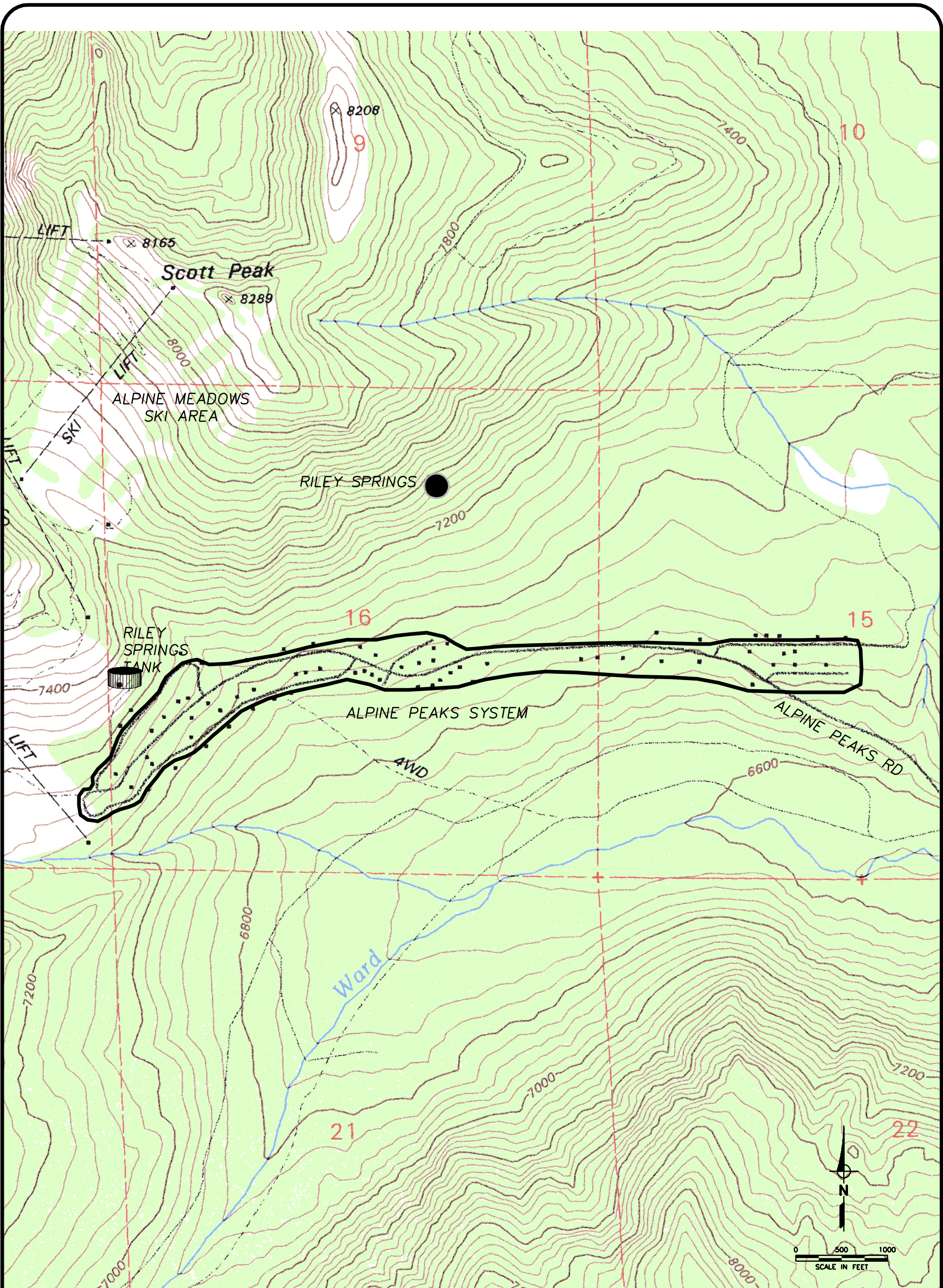
QUADRANGLE BASE MAPS ARE USGS DIGITAL RASTER GRAPHICS (DRG) IMAGE FILES.
 WATER SERVICE AREA BOUNDARY IS APPROXIMATE.

J:\22.63B\Dwg\Figures\Fig 3-4.dwg



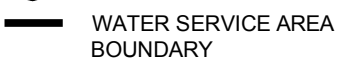


Tahoe City
Public Utility District

WATER SYSTEM FACILITIES
Figure 3-4



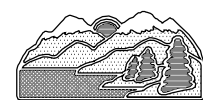
LEGEND:

-  TANK
-  WELL / SPRING
-  WATER SERVICE AREA BOUNDARY

NOTES:

QUADRANGLE BASE MAPS ARE USGS DIGITAL RASTER GRAPHICS (DRG) IMAGE FILES.
 WATER SERVICE AREA BOUNDARY IS APPROXIMATE.

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Tahoe City
Public Utility District

WATER SYSTEM FACILITIES
Figure 3-5



3.3 SERVICE AREA CLIMATE

Code Section 10631:

Describe the service area of the supplier including... climate...

The topography of the Lake Tahoe region consists chiefly of steeply sloping mountains surrounding moderately sloping areas near the Lake where most development has occurred. Elevations of the peaks surrounding Lake Tahoe range from 8,000 feet to almost 11,000 feet above sea level. Long, relatively mild winters and short, dry summers characterize the climate of the region. The majority of precipitation falls in the form of snow during the winter months. The TCPUD service area receives about 32 inches of average annual precipitation. Climate characteristics that can affect water supply and management in the TCPUD service area are provided in Figure 3-6.

Figure 3.6 TCPUD Service Area Climatic Data TCPUD 2015 UWMP				
Month	Standard Monthly Average Eto¹	Average Rainfall (inches)²	Average Snowfall (inches)²	Average High Temperatures (°F)²
January	0	5.29	35.9	39.9
February	0	5.21	37.0	40.9
March	0	4.19	29.5	44.6
April	0	2.02	14.4	50.2
May	4.27	1.25	2.9	57.9
June	5.23	0.66	0.3	64.6
July	5.98	0.28	0	69.4
August	5.35	0.41	0	68.1
September	3.16	0.7	0.3	63.8
October	1.57	1.94	2.5	56.8
November	0	3.79	15.0	47.6
December	0	5.43	36.1	41.1

Notes:

1. Eto = Estimated Evapotranspiration (inches). Western Regional Center (<http://www.wrcc.dri.edu/climatedata.html>)
2. NOAA National Weather Service (<http://www.weather.gov/climate/xmacis.php?wfo=rev>). The data is for Tahoe City, CA 96145 and is an average from years 1971-2016

Figure 3.6. TCPUD Service Area Climatic Data

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

Code Section 10631:

Describe the service area of the supplier including current and projected population... 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.



Population estimates within the service area are complicated by a number of factors, the least of which is the lack of correlation between census tracts and service area in portions of El Dorado County. TCPUD’s water service area is split by two counties, Placer and El Dorado. Census data has been acquired to present the historical perspective of population changes for the service area. In accordance with California Department of Water Resource’s Population Tool, AEC uploaded .kml files that reflect Tahoe City Public Utility District’s boundaries in 1990, 2000, and 2010 to the Water Use Efficiency Data website. The population calculated for TCPUD service area, number of connection for each year, and persons per connection are shown in the following table.

Year	Service Area Population ¹	Connections ²	Persons per Connection
1990	1,915	3,572	0.54
2000	2,282	3,672	0.62
2010	1,838	3,772	0.49
Notes:			
1. Service area population per WUEdata population tool.			
2. Connections per TCPUD records.			

Figure 3.7. TCPUD Service Area Population and Connections

The above figure illustrates two unique characteristics of the TCPUD service area. First, population growth over the last 25-years has been flat or negative. Second, the large number of second homes and vacation homes in the area skew the calculated number of persons per connection to an unreasonably low number.

The lack of population growth in the TCPUD service area can be attributed to the relatively fixed housing stock, which is due to strict land use controls imposed on the area by the Tahoe Regional Planning Agency (TRPA). The total number of residential connections within the service area has not grown nor is expected to grow significantly from new construction or even redevelopment of the existing housing stock due to these controls. Projections of population growth in the region were developed by the TRPA as part of their Threshold Evaluation process in 2000. This was estimated at 0.4% annual growth. Since 2000, there has been relatively drastic reductions in permanent full-time population since those estimates were made, and considering the lack of growth in housing stock of any kind due to environmental regulations, it seems reasonable that projections of population growth over the next 20 years should stay within the realm of the peak population already counted in 2000. Furthermore, the 2012 TRPA Regional Plan and the Draft Tahoe Basin Area Plan were reviewed during preparation of the UWMP and they support the conclusion that increases in water demands due to growth in the service area will be negligible.

In some parts of TCPUD’s service area, over half of their connections serve second homes and vacation homes. The U.S. Census population data only captures permanent residents, so it skews the persons per connection and doesn’t account for the people who use water in the area on a consistent, but seasonal, basis, which can include significant amounts of irrigation. As such, in order to obtain an accurate population of the service area,



the TCPUD utilized a variation of the Persons-Per-Connection method to determine the population in both the 2010 and 2015 UWMP's.

TCPUD calculated residential population by multiplying the number of active regularly used residential connections by the average residential occupancy rate per household obtained from the 2010 Census information. The number of active regularly used residential connection was determined after reviewing TCPUD's water meter records from January 2011 to December 2015. Any water service with a demand greater than 1,000 gallons was considered to be active.

Population Based on Residential Occupancy												
Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
# of Units Not Occupied (Demand < 1,000 gallons)	934	1356	1510	1529	1286	753	335	378	670	992	1930	1543
# of Units Occupied ¹ (Demand > 1,000 gallons)	2,901	2,479	2,325	2,306	2,549	3,082	3,500	3,457	3,165	2,843	1,905	2,292
% of Units Occupied	76%	65%	61%	60%	66%	80%	91%	90%	83%	74%	50%	60%
Residential Population ²	6,092	5,206	4,883	4,843	5,353	6,472	7,350	7,260	6,647	5,970	4,001	4,813
Average Total Population (2011-2015)	5,741											
Notes:												
1. Average number of residential connections in the service area during period = 3,835												
2. Average residential occupancy is 2.10 persons per unit based on Placer County Census Tracts 201.4, 222, 221,												
3. Based on District provided data from 2011 - 2015.												

Figure 3.8. TCPUD Service Area Population and Connections

Growth of residential service connections in the District would have an effect on population, based on the analysis above. The TCPUD reports approximately 10 new service connections per year. Based on Figure 3.7, 1.5 persons (for the purposes of water demand projections utilizing per capita demand targets) are generated for each new connection in the District. Every 5 years this translates to an increase in population of 75 persons.

Population based on residential occupancy been projected through 2035 at five year increments as shown in Table 3.1.

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040(opt)
	5,741	5,816	5,891	5,966	6,041	

NOTES: Assumes 10 new service connection per year.

Table 3.1. TCPUD Service Area Population – Current and Projected



3.4.1 Other Demographic Factors

Code Section 10631:

Describe the service area of the supplier, including... other demographic factors affecting the supplier's water management planning.

Water demand will change more significantly in response to weather patterns and economic conditions than it will to changes in the resident population. This has a limit, of course, in the sense that should all the seasonal housing stock at some point be taken out of the rental and vacation market and converted to full-time residential uses, this would have a significant impact on service area population. This has never been the trend in the region, and as explained in the discussion under demographics, Tahoe is primarily a vacation destination, and the majority of homes in the region were built as vacation properties and not full time residences.

CHAPTER 4 SYSTEM WATER USE

4.1 RECYCLED VERSUS POTABLE AND RAW WATER DEMAND

Recycled water is not feasible within the District's water service area. The wastewater treatment plant is located over 17 miles away from the District's water service area and current environmental regulation require all sewage and treated effluent be exported from the Tahoe Basin. Refer to Section 6.5 for more information on the lack of feasibility of recycled water in the TCPUD service area.

4.2 WATER USES BY SECTOR

Code Section 10631:

(e)(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivisions (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) Multi-family.*
- (C) Commercial.*
- (D) Industrial.*
- (E) Institutional and governmental.*
- (F) Landscape*
- (G) Sales to other agencies.*
- (H) Saline water intrusions 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).



Water demand projections are based on demographic population projections for single family, multi-family, commercial, and institutional/governmental users. No growth is expected in commercial or institutional water demands as those land uses are built out and any changes would be the result of redevelopment of existing services. As discussed previously in Section 3.4, residential population will increase slightly based on a small increase in the number of residential units. The water supplied to North Tahoe Public Utility District is anticipated to increase at the same rate as population over the same period.

Within the TCPUD service area, water is primarily used for residential and commercial purposes. There is no significant industrial, manufacturing or agricultural use of water in the TCPUD service area. Residential water use is primarily to provide for indoor needs. Landscape irrigation demands are generally very low, except in mid to late summer. After 2008, institutional/governmental entities were metered. The industrial, manufacturing, and agricultural use of water use is not expected to grow due to the fact that there is no significant industrial, manufacturing or agricultural use of water in the TCPUD service area. As previously stated, TCPUD also supplies North Tahoe Public Utility District with water.

In 2015, the TCPUD served approximately 227 commercial service connections, 3,967 active residential connections. Commercial use accounts for about 17% of the total water demand and is not expected to change significantly because it is assumed that the District’s commercially zoned area is at build out. Except for the parks, there is very little recreational water demand. The golf course located in the service area has a private water supply, and some snow-making water is delivered by TCPUD.

Table 4-1 presents the actual water deliveries from 2015 as metered by the TCPUD.

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type <i>(Add additional rows as needed)</i>	2015 Actual		
<i>Drop down list</i> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description <i>(as needed)</i>	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family	Includes Multi-Family	Drinking Water	220
Commercial		Drinking Water	53
Sales/Transfers/Exchanges to other agencies	NTPUD	Drinking Water	23
Losses		Drinking Water	38
		TOTAL	334
NOTES:			

Table 4.1. TCPUD Demands for Potable and Raw Water - Actual



The projected water demands at five year increments between 2020 and 2035 have been calculated below. Water demand projections are based on demographic population projections for single family, multi-family, commercial, and institutional/governmental users. No growth is expected in commercial or institutional water demands as those land uses are built out and any changes would be the result of redevelopment of existing services. As discussed previously, residential population is anticipated to increase slightly over this time period. Residential and NTPUD water demand is anticipated to increase at a rate equivalent to the population increase. Unmetered/non-revenue water use is currently 12.7% of total production. The losses can be attributed to system flushing, leak repair flushing, hydrant leaks, leaking valves, unmetered use, and leaking pipes. The TCPUD expects this percentage to lower every year due to their ongoing program to identify and repair District leaks, the DMMs, and replacement of older steel water mains. Therefore, the projected additional water loss as a percentage of the total water demand has not been increased over the next 20 years. Table 4-2 presents the project water demands for 2020 – 2035.

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
<u>Drop down list</u> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata</i> <i>online submittal tool</i>		2020	2025	2030	2035	2040-opt
Single Family		222	233	245	257	
Commercial		53	53	53	53	
Sales/Transfers/Exchanges to other agencies	Sale to NTPUD	24	25	27	28	
Losses		38	38	38	38	
TOTAL		337	349	363	376	0

NOTES:

Table 4.2. TCPUD Demands for Potable and Raw Water - Projected



Table 4-3 summarizes the total water demand within TCPUD’s water service boundaries for 2020 – 2035.

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 (opt)
Potable and Raw Water <i>From</i> <i>Tables 4-1 and 4-2</i>	326	337	349	363	376	0
Recycled Water Demand* <i>From</i> <i>Table 6-4</i>	0	0	0	0	0	0
TOTAL WATER DEMAND	326	337	349	363	376	0
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						
NOTES:						

Table 4.3. TCPUD Total Water Demands.

4.3 DISTRIBUTION SYSTEM WATER LOSSES

Code Section 10631:

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

(J) Distribution system water loss

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

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

Table 4-4 presents the TCPUD’s total water loss for 2015. The water loss was calculated in accordance with DWR’s Water Audit Method found in Appendix L of the Guidebook.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	38
<i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i>	
NOTES:	

Table 4.4. TCPUD Water Loss Summary



4.4 ESTIMATING FUTURE WATER SAVINGS

Code Section 10631:

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

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections. (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

TCPUD recently adopted Ordinance 288 “Water Conservation and Drought Response Standards”. Within this ordinance there are a number of provisions that will result in lower water demand for new and future customers when compared to historical customer. This future water savings on a per capita basis was not taken into account when projecting future water demand.



4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

Code Section 10631.1:

(a) The water use projections required by Section 10631 shall include projected water use for single family and multi-family 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.

California Health and Safety Code 50079.5

(a) "Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families... in the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

The expected water use for future low income housing was taken into account when projecting future water demand. Future new development within the Tahoe Basin is limited by strict land use controls imposed on the area by the Tahoe Regional Planning Agency (TRPA).

Table 4-5 Retail Only: Inclusion in Water Use Projections	
<p style="text-align: center;">Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i></p>	No
<p>If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.</p>	
<p style="text-align: center;">Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i></p>	Yes
NOTES:	

Table 4.5. Inclusion in Water Use Projections



CHAPTER 5 SB X7-7 BASLINE AND TARGETS

5.1 GUIDANCE FOR WHOLESALE AGENCIES

TCPUD is not a wholesale agency.

5.2 UPDATING CALCULATIONS FROM 2010 UWMP

Code Section 10608.20:

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to part 2.6 (commencing with Section 10610)

Methodologies DWR 2011, Methodology 2 Service Area Population

Page 27 – Water suppliers may revise population estimates for baseline years between 2000 and 2010 when 2010 census information becomes available. DWR will examine discrepancy between the actual population estimate and DOF’s projections for 2010; if significant discrepancies are discovered, DWR may require some or all suppliers to update their baseline population estimates.

5.2.1 Update Target Method

The TCPUD has elected to use Target Method 1 – 80 percent of 10- to 15- Year Baseline GPCD. This is the same method used in the 2010 UWMP.

5.2.2 Required Use of 2010 U.S. Census Data

TCPUD utilized the DWR population tool to calculate the population within TCPUD’s service area. This tool uses the 2010 U.S. Census data.

5.2.3 SB X7-7 Verification Form

TCPUD has completed the SB X7-7 Verification Forms. These forms are included in the Appendix of this report.

5.3 BASELINE PERIODS

Code Section 10608.20:

(e) An urban retail water supplier shall include in its urban water management plan due in 2010... the baseline daily per capita water use... along with the bases for determining those estimates, including references to supporting data.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with section 10610).



5.3.1 Determination of the 10-15 Year Baseline Period (Baseline GPCD)

Code Section 10608.12:

(b) "Base daily per capita water use" means any of the following:

- (1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.*
- (2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004 and no later than December 31, 2010.*

TCPUD elected to use the 10-year period between January 1, 1998 and December 31, 2007, as their baseline GPCD period.

5.3.2 Determination of the 5-Year Baseline Period (Target Confirmation)

Code Section 10608.12 (b):

- (3) For the purpose of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007 and no later than December 31, 2010.*

The TCPUD elected to use the 5-year period between January 1, 2003 and December 31, 2007, as their target confirmation GPCD period.

5.4 SERVICE AREA POPULATIONS

Code Section 10608.20:

- (e) An urban retail water supplier shall include in its urban water management plan due in 2010... the baseline daily per capita water use... along with the bases for determining those estimates, including references to supporting data.*
- (f) When calculating the per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.*

Code Section 10644:

- (a)(2) The plan... shall include any standardized forms, tables or displays specified by the department.*



5.4.1 Population Methodologies

The TCPUD used the U.S. Census data to calculate the service area population data. The U.S. Census data for 2010 shows a decrease in population for TCPUD’s service area when compared to 2000. This can be attributed to the poor economy and a rise in out of town home owners. It is anticipated that the area’s population will rebound over time but given the strict land use and planning laws forecasted population growth is fairly slow. For the purposes of this report we assumed population would recover linearly to 2000 levels by 2025 from the low in 2010.

SB X7-7 Table 2 below depicts the method TCPUD used for the population estimate.

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other DWR recommends pre-review
NOTES:	

SB X7-7 Table 2. TCPUD Population Estimate Method



SB X7-7 Table 3 below depicts the population estimate for TCPUD service area for the baseline GPCD and target confirmation periods.

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1998	5,741
Year 2	1999	5,741
Year 3	2000	5,741
Year 4	2001	5,741
Year 5	2002	5,741
Year 6	2003	5,741
Year 7	2004	5,741
Year 8	2005	5,741
Year 9	2006	5,741
Year 10	2007	5,741
5 Year Baseline Population		
Year 1	2003	5,741
Year 2	2004	5,741
Year 3	2005	5,741
Year 4	2006	5,741
Year 5	2007	5,741
2015 Compliance Year Population		
2015		5,741
NOTES:		

SB X7-7 Table 3. TCPUD’s Service Area Population

5.5 GROSS WATER USE

Code Section 10608.12:

(g) “Gross Water Use” means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

- (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water suppliers.
- (2) The net volume of water that the urban retail water supplier places into long term storage
- (3) The Volume of water the urban retail water supplier conveys for use by another urban water supplier
- (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of section 10608.24.



California Code of Regulations Title 23 Division 2 Chapter 5.1 Article

Section 596 (a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculations of its gross water use to avoid a disproportionate burden on another customer sector.

5.5.1 Gross Water Tables

Volumes of water entering the TCPUD for each water source during the baseline and 2015 compliance year are provided in the tables below.

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)				
Complete one table for each source.				
Name of Source		Tahoe City Well #2		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	41	-	41
Year 2	1999	99		99
Year 3	2000	206		206
Year 4	2001	207		207
Year 5	2002	185		185
Year 6	2003	103		103
Year 7	2004	186		186
Year 8	2005	185		185
Year 9	2006	178		178
Year 10	2007	198		198
5 Year Baseline - Water into Distribution System				
Year 1	2003	103		103
Year 2	2004	186		186
Year 3	2005	185		185
Year 4	2006	178		178
Year 5	2007	198		198
2015 Compliance Year - Water into Distribution System				
	2015	99		99
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Tahoe City Well #2 – Source 1



SB X7-7 Table 4-A: Volume Entering the Distribution System(s)				
Complete one table for each source.				
Name of Source		Tahoe City Well #3		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	316		316
Year 2	1999	292		292
Year 3	2000	172		172
Year 4	2001	201		201
Year 5	2002	202		202
Year 6	2003	253		253
Year 7	2004	180		180
Year 8	2005	181		181
Year 9	2006	176		176
Year 10	2007	194		194
5 Year Baseline - Water into Distribution System				
Year 1	2003	253		253
Year 2	2004	180		180
Year 3	2005	181		181
Year 4	2006	176		176
Year 5	2007	194		194
2015 Compliance Year - Water into Distribution System				
	2015	123		123
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Tahoe City Well #3 – Source 2



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Highlands Well		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	18		18
Year 2	1999	19		19
Year 3	2000	37		37
Year 4	2001	52		52
Year 5	2002	55		55
Year 6	2003	50		50
Year 7	2004	49		49
Year 8	2005	49		49
Year 9	2006	37		37
Year 10	2007	37		37
5 Year Baseline - Water into Distribution System				
Year 1	2003	50		50
Year 2	2004	49		49
Year 3	2005	49		49
Year 4	2006	37		37
Year 5	2007	37		37
2015 Compliance Year - Water into Distribution System				
2015		20		20
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Highland Well – Source 3



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Tahoe Tavern Well		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>		Volume Entering Distribution System	Meter Error Adjustment * <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	95		95
Year 2	1999	66		66
Year 3	2000	76		76
Year 4	2001	77		77
Year 5	2002	74		74
Year 6	2003	70		70
Year 7	2004	75		75
Year 8	2005	75		75
Year 9	2006	60		60
Year 10	2007	53		53
5 Year Baseline - Water into Distribution System				
Year 1	2003	70		70
Year 2	2004	75		75
Year 3	2005	75		75
Year 4	2006	60		60
Year 5	2007	53		53
2015 Compliance Year - Water into Distribution System				
	2015	15		15
* <i>Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Tahoe Tavern Well – Source 4



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Riley's Spring		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	9		9
Year 2	1999	11		11
Year 3	2000	10		10
Year 4	2001	12		12
Year 5	2002	13		13
Year 6	2003	13		13
Year 7	2004	13		13
Year 8	2005	14		14
Year 9	2006	15		15
Year 10	2007	18		18
5 Year Baseline - Water into Distribution System				
Year 1	2003	13		13
Year 2	2004	13		13
Year 3	2005	14		14
Year 4	2006	15		15
Year 5	2007	18		18
2015 Compliance Year - Water into Distribution System				
	2015	4		4
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Riley's Spring – Source 5



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Crystal Way Well		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>		Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	76		76
Year 2	1999	86		86
Year 3	2000	95		95
Year 4	2001	93		93
Year 5	2002	89		89
Year 6	2003	80		80
Year 7	2004	60		60
Year 8	2005	42		42
Year 9	2006	37		37
Year 10	2007	32		32
5 Year Baseline - Water into Distribution System				
Year 1	2003	80		80
Year 2	2004	60		60
Year 3	2005	42		42
Year 4	2006	37		37
Year 5	2007	32		32
2015 Compliance Year - Water into Distribution System				
	2015	23		23
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Crystal Way Well – Source 6



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Interim WTP		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	0		0
Year 2	1999	0		0
Year 3	2000	0		0
Year 4	2001	0		0
Year 5	2002	0		0
Year 6	2003	0		0
Year 7	2004	19		19
Year 8	2005	32		32
Year 9	2006	25		25
Year 10	2007	38		38
5 Year Baseline - Water into Distribution System				
Year 1	2003	0		0
Year 2	2004	19		19
Year 3	2005	32		32
Year 4	2006	25		25
Year 5	2007	38		38
2015 Compliance Year - Water into Distribution System				
	2015	14		14
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Interim WTP – Source 7



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Rubicon Well #1		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	21.7		22
Year 2	1999	34.5		35
Year 3	2000	64.1		64
Year 4	2001	65		65
Year 5	2002	62.2		62
Year 6	2003	64.5		65
Year 7	2004	69.1		69
Year 8	2005	68.7		69
Year 9	2006	56.8		57
Year 10	2007	53.4		53
5 Year Baseline - Water into Distribution System				
Year 1	2003	64.5		65
Year 2	2004	69.1		69
Year 3	2005	68.7		69
Year 4	2006	56.8		57
Year 5	2007	53.4		53
2015 Compliance Year - Water into Distribution System				
	2015	31.0		31
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Rubicon Well #1 – Source 8



SB X7-7 Table 4-A: Volume Entering the Distribution			
Name of Source		Rubicon Well #2	
This water source is:			
<input checked="" type="checkbox"/>	The supplier's own water source		
<input type="checkbox"/>	A purchased or imported source		
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System			
Year 1	1998	52.5	52.5
Year 2	1999	40.6	40.6
Year 3	2000	14.7	14.7
Year 4	2001	31.3	31.3
Year 5	2002	24.6	24.6
Year 6	2003	17.2	17.2
Year 7	2004	16.9	16.9
Year 8	2005	16.9	16.9
Year 9	2006	19.9	19.9
Year 10	2007	23.1	23.1
5 Year Baseline - Water into Distribution System			
Year 1	2003	17.2	17.2
Year 2	2004	16.9	16.9
Year 3	2005	16.9	16.9
Year 4	2006	19.9	19.9
Year 5	2007	23.1	23.1
2015 Compliance Year - Water into Distribution System			
2015	1		1
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>			
NOTES:			

SB X7-7 Table 4.A. TCPUD's Rubicon Well #2 – Source 9



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Rubicon Well #3		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	0		0
Year 2	1999	0		0
Year 3	2000	0		0
Year 4	2001	0		0
Year 5	2002	0.3		0.3
Year 6	2003	1.3		1.3
Year 7	2004	0.4		0.4
Year 8	2005	0.4		0.4
Year 9	2006	0		0
Year 10	2007	0.9		0.9
5 Year Baseline - Water into Distribution System				
Year 1	2003	1.3		1.3
Year 2	2004	0.4		0.4
Year 3	2005	0.4		0.4
Year 4	2006	0		0
Year 5	2007	0.9		0.9
2015 Compliance Year - Water into Distribution System				
	2015	1		1
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Rubicon Well #3 – Source 10



SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Forest Tract		
This water source is:				
<input type="checkbox"/>		The supplier's own water source		
<input checked="" type="checkbox"/>		A purchased or imported source		
Baseline Year <i>Fm SB X7-7 Table 3</i>		Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	6		6
Year 2	1999	6.4		6.4
Year 3	2000	5.8		5.8
Year 4	2001	5.6		5.6
Year 5	2002	4.3		4.3
Year 6	2003	4.8		4.8
Year 7	2004	4.9		4.9
Year 8	2005	4.9		4.9
Year 9	2006	4.3		4.3
Year 10	2007	4.4		4.4
5 Year Baseline - Water into Distribution System				
Year 1	2003	4.8		4.8
Year 2	2004	4.9		4.9
Year 3	2005	4.9		4.9
Year 4	2006	4.3		4.3
Year 5	2007	4.4		4.4
2015 Compliance Year - Water into Distribution System				
	2015	3		3
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4.A. TCPUD's Forest Tract – Source 11



5.6 **BASELINE PERIODS**

The daily per capita water use has been calculated for each of the baseline years and the 2015 compliance year. SB X7-7 Table 5 below shows the GPCD for each year.

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1998	5,741	617	295
Year 2	1999	5,741	629	300
Year 3	2000	5,741	654	312
Year 4	2001	5,741	716	342
Year 5	2002	5,741	680	325
Year 6	2003	5,741	628	300
Year 7	2004	5,741	647	309
Year 8	2005	5,741	646	308
Year 9	2006	5,741	586	280
Year 10	2007	5,741	623	297
10-15 Year Average Baseline GPCD				307
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2003	5,741	628	300
Year 2	2004	5,741	647	309
Year 3	2005	5,741	646	308
Year 4	2006	5,741	584	279
Year 5	2007	5,741	623	297
5 Year Average Baseline GPCD				299
2015 Compliance Year GPCD				
2015		5,741	311	148
NOTES:				

SB X7-7 Table 5. TCPUD's GPCD



5.7 **2015 AND 2020 TARGETS**

Code Section 10608.20:

(e) An urban retail water supplier shall include in its urban water management plan due in 2010... the baseline daily per capita water use... along with the bases for determining those estimates, including references to supporting data (10608.20(e)).

Code Section 10608.20:

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan...

5.7.1 **Select and Apply a Target Method**

The TCPUD has elected to use Target Method 1 – 80 percent of 10- to 15- Year Baseline GPCD. This is the same method used in the 2010 UWMP.

SBX7-7 Table 7-A calculates the 2020 Target GPCD.

SB X7-7 Table 7-A: Target Method 1	
20% Reduction	
10-15 Year Baseline GPCD	2020 Target GPCD
307	245
NOTES:	

SB X7-7 Table 7.A. TCPUD’s 2020 Target – Method 1, 20% Reduction



5.7.2 Year Baseline – 2020 Target Confirmation

Code Section 10608.22:

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

The 2020 water use target reduces the TCPUD's 2020 water use greater than 5 percent from the 5-year baseline. This is confirmed in SB X7-7 Table 7-F.

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
299	284	245	245
¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD ² 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.			
NOTES:			

SB X7-7 Table 7.F. Confirmation of Minimum Reduction for 2020 Target

5.7.3 Calculate the 2015 Interim Urban Water Use Target

The 2015 interim target is the value halfway between the 10-year baseline GPCD and the confirmed 2020 Target. SB X7-7 Table 8 below calculates a 2015 interim target of 799.

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
245	307	276
NOTES:		

SB X7-7 Table 8. TCPUD's Interim 2015 Target GPCD



5.7.4 Baselines and Targets Summary

The entire SB X7-7 Verification Form is included in the Appendix. For reference Table 5-1 provides a summary of the baselines and targets.

Table 5-1 Baselines and Targets Summary					
<i>Retail Agency or Regional Alliance Only</i>					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1998	2007	307	276	245
5 Year	2003	2007	299		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES:					

Table 5.1. TCPUD's Baseline and Target Summary

5.8 2015 COMPLIANCE DAILY PER CAPITA WATER USE (GPCD)

Code Section 10608.12:

(e) "Compliance daily per-capita water use" means the gross water use during the final year of the reporting period...

Code Section 10608.24:

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

Code Section 10608.20:

(e) An urban retail water supplier shall include in its urban water management plan due in 2010... compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

5.8.1 Meeting the 2015 Target

TCPUD has met their 2015 Interim water use target.



5.8.2 2015 Adjustments for 2015 Gross Water Use

Code Section 10608.24:

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

- (A) Difference in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.*
- (B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.*
- (C) Substantial changes to institutional water use resulting from fire suppressions services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.*

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

Methodology Document, Methodology 4

This section discusses adjustments to compliance-year GPCD because of changes in distribution area caused by mergers, annexation, and other scenarios that occur between the baseline and compliance years.

There were no adjustments to TCPUD's 2015 water use to achieve their 2015 Target. In fact, TCPUD has already achieved their 2020 target. The reduction in GPCD can be attributed to installation of residential water meters, implementing a conservation based rate structure, and an aggressive customer leak detection program. The District will now focus on water audits and water loss management strategies as well as all other DMM's discussed in Chapter 9 of this report to maintain compliance with its Urban Water Use targets.

5.9 REGIONAL ALLIANCE

This section does not apply to TCPUD as it is not choosing to comply with SB X7-7 requirements through a Regional Alliance.



CHAPTER 6 **SYSTEM SUPPLIES**

The TCPUD, up until the late 1980's, diverted most of its domestic water directly from Lake Tahoe. In response to stricter water quality requirements for surface water diversions that came about in the late 1980's (i.e. the Surface Water Treatment Rule), the TCPUD chose to reduce its dependence on surface diversions and embarked on a program to develop groundwater sources. With the exception of seasonal diversions from Lake Tahoe to augment supply for the McKinney/Quail System, the TCPUD now relies on groundwater to meet normal demands. During 2015, groundwater provided approximately 95% of the TCPUD's water supply.

Future water supplies are planned for development to augment existing sources. The augmentation projects are included in the TCPUD's Capital Improvement Plan. Table 6.7 and Table 6.8 provides a summary of TCPUD's current and projected water supply sources.

6.1 **PURCHASED OR IMPORTED WATER**

The TCPUD purchases water from the Squaw Valley Public Service District (SVPSD) to serve the Tahoe-Truckee Forest Tract system. The actual volume of water purchased from SVPSD is included in Table 6-8. This small water system was added to the TCPUD service area in 1998 and serves properties along State Route 89 to the eastern end of Squaw Valley Road. Since acquisition of the system, TCPUD has replaced the majority of the water mains and laterals. Since the system is disconnected from TCPUD's other water systems there are ongoing discussion with SVPSD to transfer ownership.

6.2 **GROUNDWATER**

The TCPUD currently operates nine (9) groundwater wells and one (1) spring source.

Three wells (Tahoe City Well #1, McKinney Well #1, and McKinney Well #2) are currently out of service. Tahoe City Well #1 is in the process of being re-drilled to improve the hydraulic output, and McKinney well #2 and #3 have tested with elevated levels of iron and manganese.

In 1995, West Yost & Associates and Luhdorff and Scalmanini prepared a report titled, "Groundwater Resources Investigation of the Tahoe City Main Service Area," hereinafter referred to as Groundwater Resources Investigation. The existing TCPUD wells were found to provide sufficient pumping capacity to satisfy the average demands for ultimate build-out in each of the water supply system areas serviced by TCPUD. There were, however, concerns regarding long-term water supply in the Tahoe City wells (TC-2, and TC-3) in the Tahoe City Main System.



6.2.1 Basin Description

Code Section 10631:

(b) ...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:

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.

The California Department of Water Resources (DWR) defines a groundwater basin as an alluvial aquifer or a stacked series of alluvial aquifers with reasonably well-defined boundaries in a lateral direction and a definable bottom (DWR, 2003). DWR has currently delineated 431 groundwater basins in the State of California and 24 basins are subdivided into sub-basins. Figure 6-1 represents the North Lahontan Hydrologic Basin, which contains all of the TCPUD's groundwater wells.

Groundwater recharge in the Tahoe Basin is primarily from infiltration of snow and precipitation into the soil, faults and fractures in bedrock, and decomposed granite that overlies much of the bedrock, and into unconsolidated basin-fill deposits. Groundwater is recharged over the entire extent of the flow path, except where the land surface is impermeable or where the groundwater table coincides with the land surface. Stream flow also recharges ground water when the water-table altitude is lower than the water surface altitude of the stream.³

6.2.2 Groundwater Management

Code Section 10631:

(b) ...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 ... or any other specific authorization for groundwater management.

(2) ... For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.

The TCPUD completed a Water Master Plan Update in April 2002 (West Yost & Associates, 2002, "Tahoe City Public Utility District Water Master Plan"). The 2002 Master Plan serves as the primary guidance document for managing TCPUD water systems, including its groundwater supplies. Given the size of the 2002 Master Plan, a copy is not included with this UWMP; however, TCPUD will make a copy available upon request from DWR.

³ Thodal, Carl E. 1997. Hydrogeology of Lake Tahoe Basin, California and Nevada, and Results of a Ground-Water Quality Monitoring Network, Water Years 1990-1992. Water- Resources Investigations Report 97-4072. USGS. 53 p.



As most groundwater wells within the basin are fracture flow (not alluvial basins), changes in groundwater storage are difficult to predict. The groundwater in the District's service area basin is not adjudicated; therefore, there are no pumping limitations.

6.2.3 Overdraft Conditions

Code Section 10631:

(b)(2) For basins that have not been adjudicated, (provide) 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.

The DWR has not identified the basin as over-drafted, nor is it projected to become over-drafted. TCPUD's performance with respect to conservation and planning for conversion of sources from groundwater to surface water are indicative of the efforts being made to prevent groundwater overdraft conditions from occurring.

6.2.4 Historical Groundwater Pumping

Code Section 10631:

(b) ...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:

(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.

Table 6-1 provides a summary of the groundwater volumes of water produced from TCPUD wells for the last 5 years.



Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
<i>Add additional rows as needed</i>						
Fractured Rock	Highlands Wells (Tahoe City)	37	44	33	32	20
Fractured Rock	Tahoe City Well #2 (Tahoe City)	118	133	129	119	99
Fractured Rock	Tahoe City Well #3 (Tahoe City)	141	156	169	136	123
Fractured Rock	Tahoe Tavern Well (Tahoe City)	34	50	39	34	15
Fractured Rock	Riley Springs (Alpine Peaks)	5	6	6	5	4
Fractured Rock	Crystal Way Well (McKinney-Quail)	22	27	27	23	23
Fractured Rock	Rubicon Well #1 (Rubicon)	33	38	39	37	31
Fractured Rock	Rubicon Well #2 (Rubicon)	6	6	3	5	1
Fractured Rock	Rubicon Well #3 (Rubicon)	5	5	4	0	1
TOTAL		400	466	448	391	317
NOTES:						

Table 6.1. TCPUD Groundwater pumped.

Groundwater supplies have been adequate to meet all demands over the past 5 years. Metering of all water services has resulted in a significant reduction in total system water demands, as have intensive conservation efforts. While there is a clear correlation between precipitation/snowmelt and groundwater levels in all of TCPUD's wells, the long term average of static groundwater levels has been relatively stable (see Figures 6-1 through 6-9).

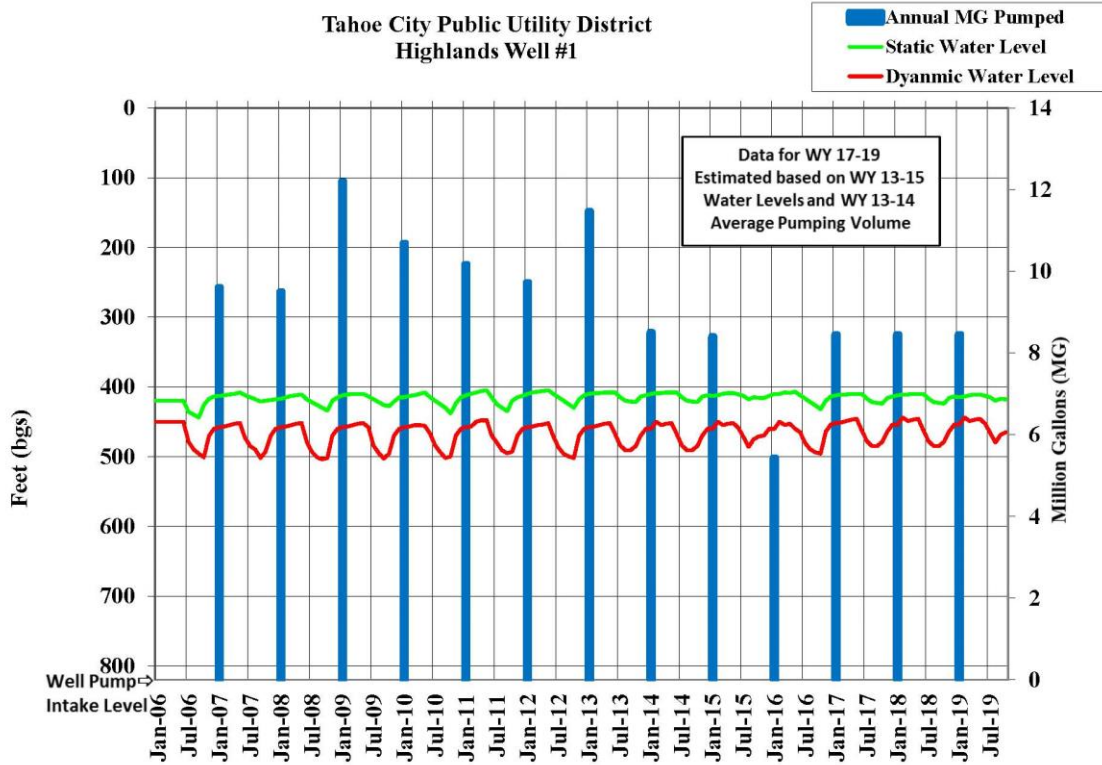


Figure 6.1. Static water level in TCPUD Highland #1 Well.

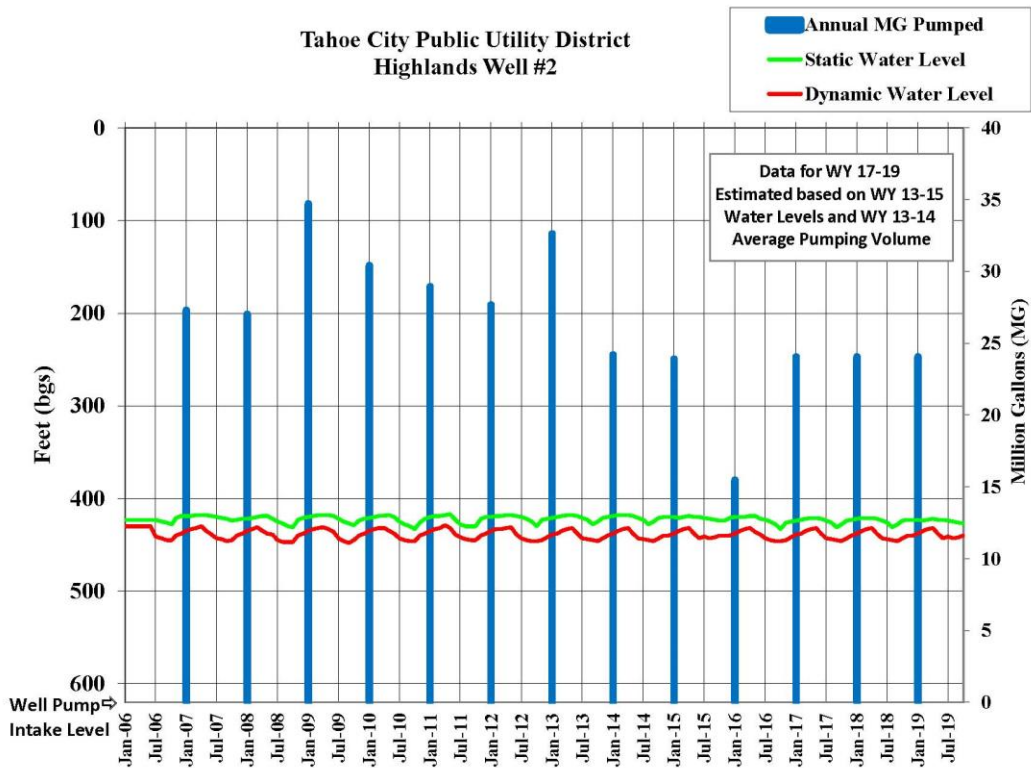


Figure 6.2. Static water level in TCPUD Highland #2 Well.

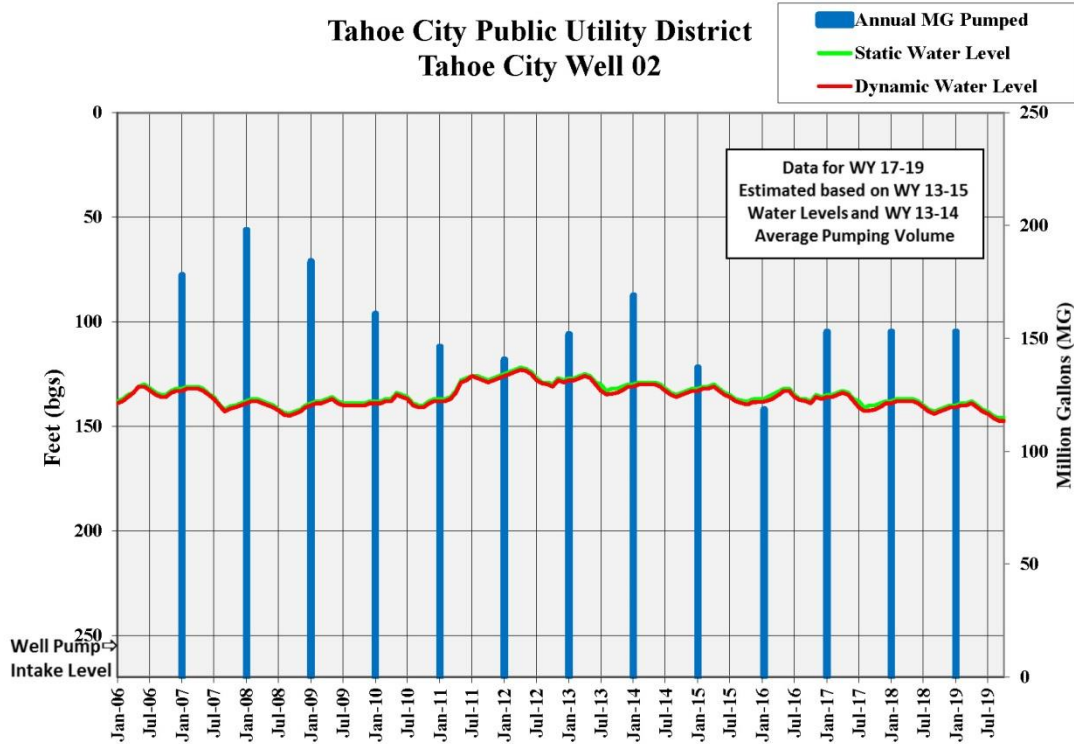


Figure 6.3. Static water level in TCPUD Tahoe City #2 Well.

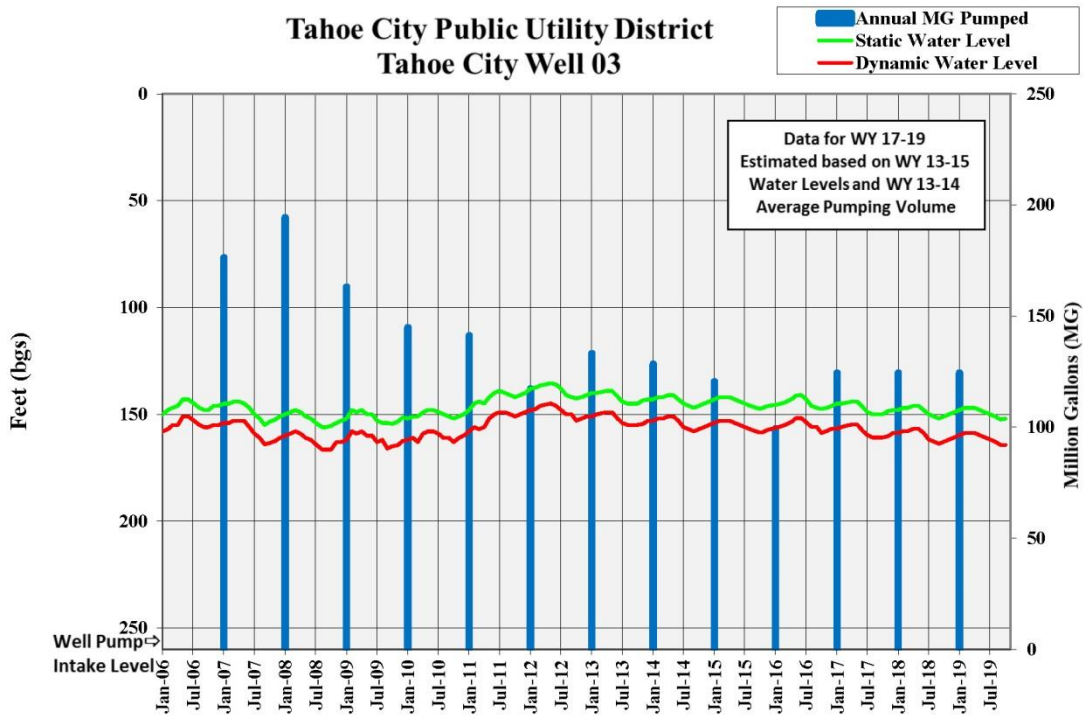


Figure 6.4. Static water level in TCPUD Tahoe City #3 Well.

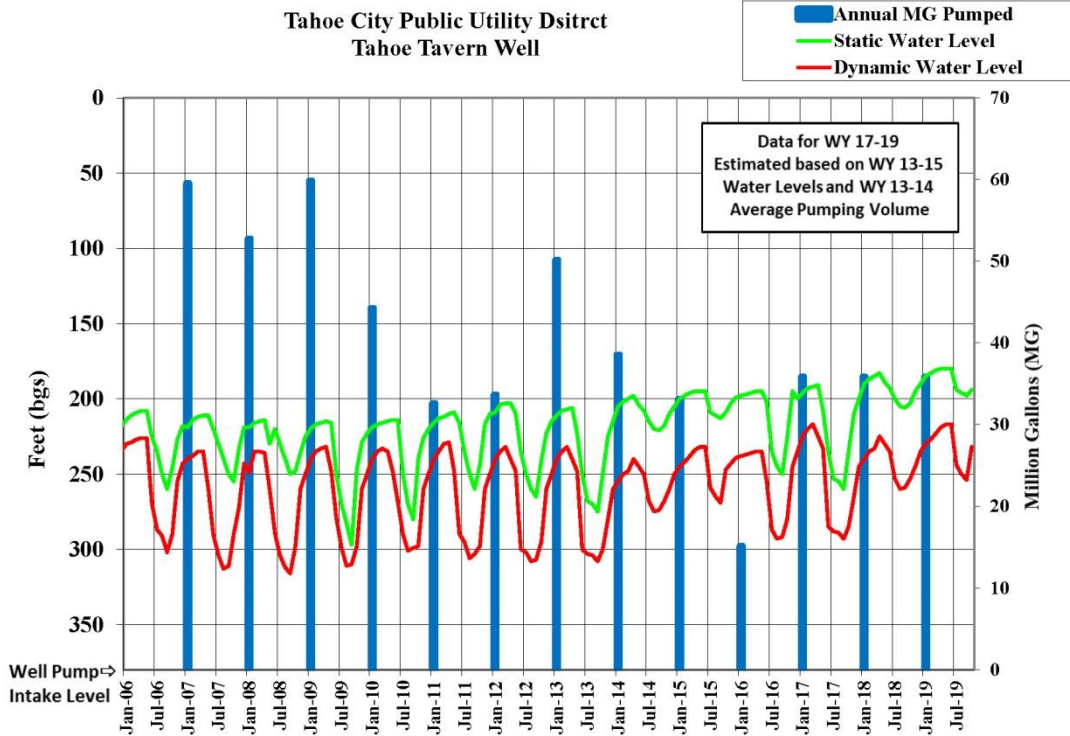


Figure 6.5. Static water level in TCPUD Tahoe Tavern Well.

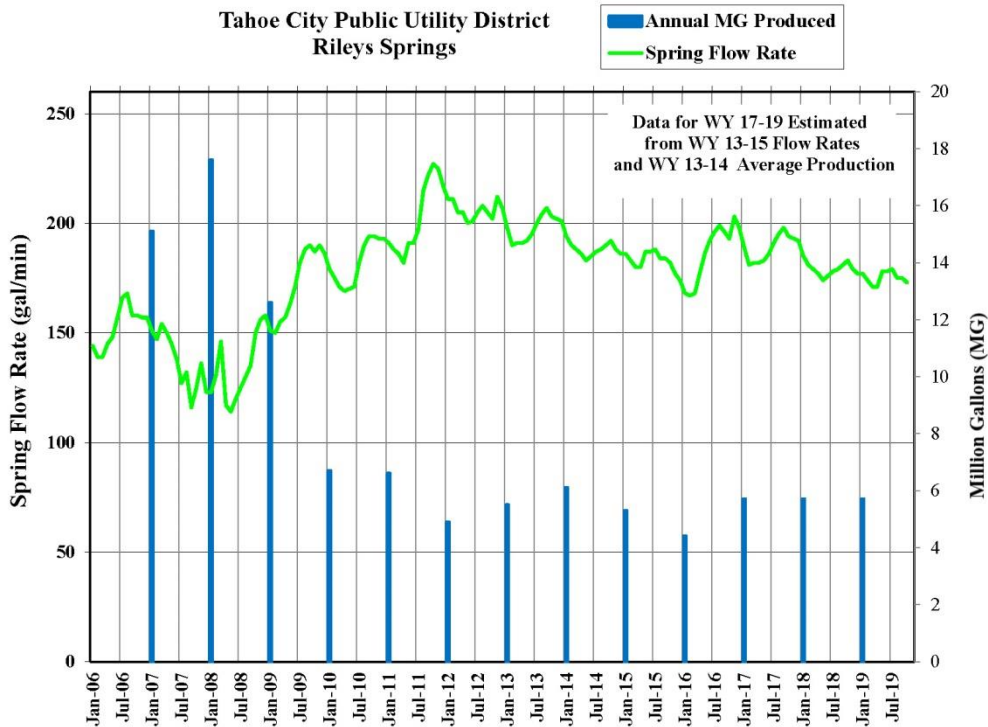


Figure 6.6. Static water level in Riley Springs Well.

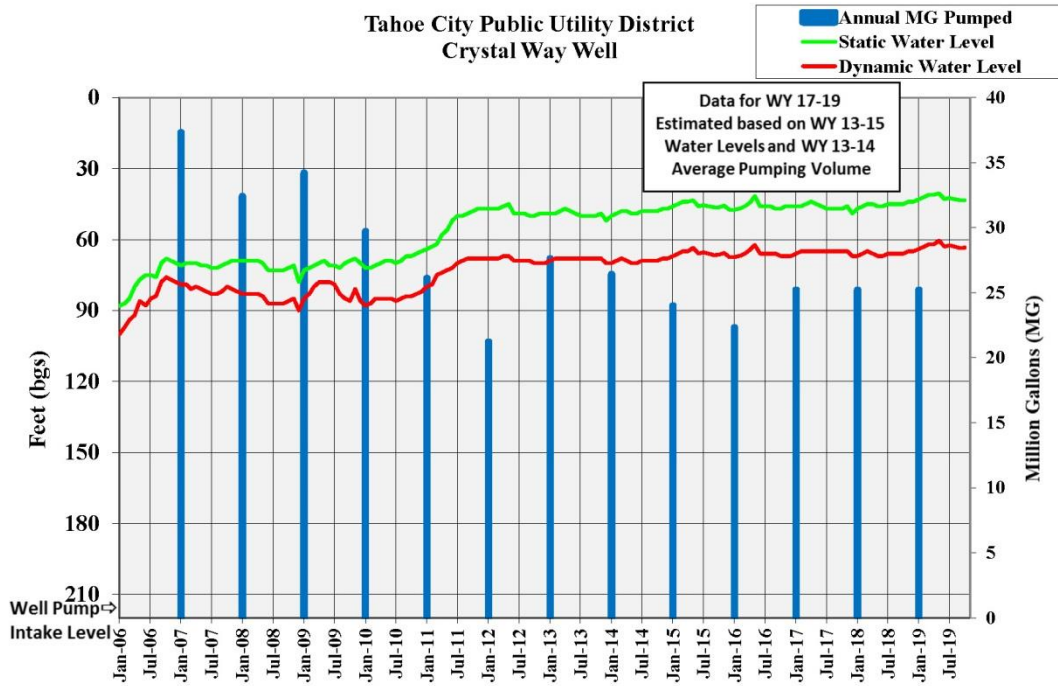


Figure 6.7. Static water level in Crystal Way Well.

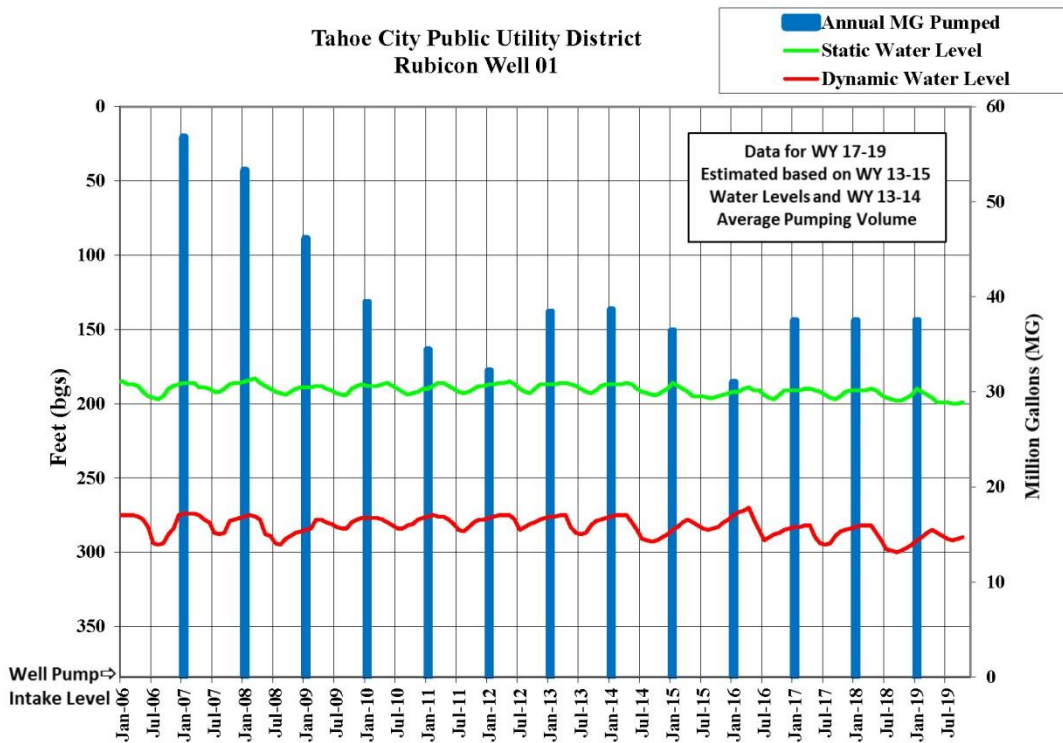


Figure 6.8. Static water level in Rubicon Well #1.

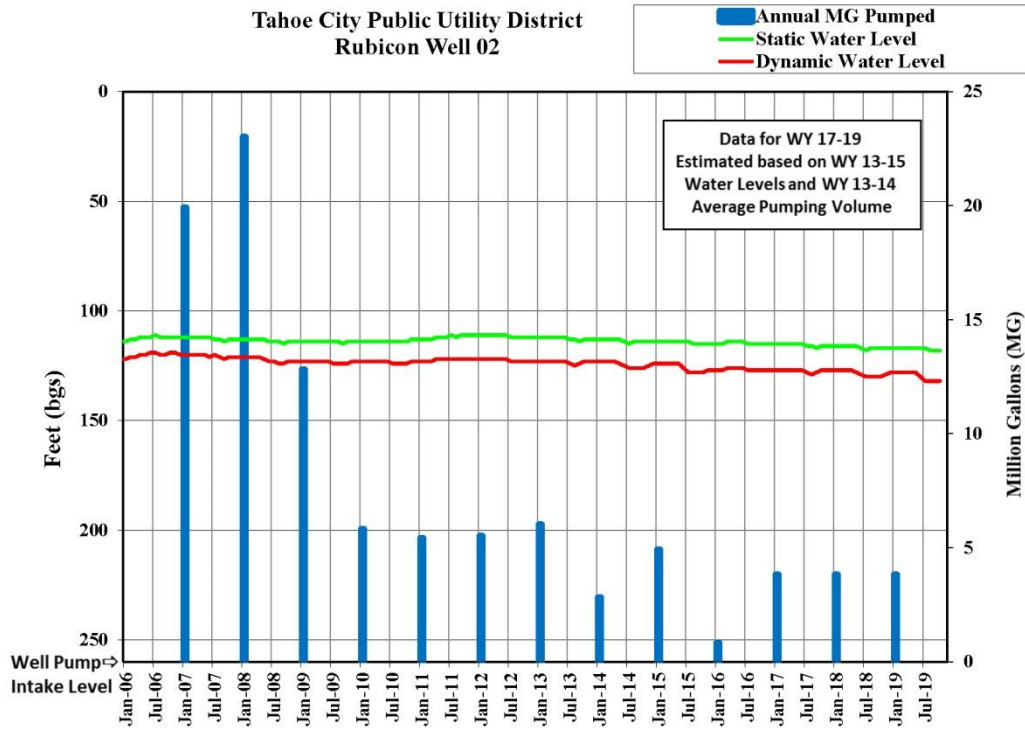


Figure 6.9. Static water level in Rubicon Well #2.



6.3 SURFACE WATER

The TCPUD currently operates an interim water treatment plant (WTP) at Chambers Landing to provide water supply to the McKinney-Quail water service area during peak demand months (May – September).

Groundwater (Crystal Way Well) is operated during the lower demand months (October – April) and on an as needed basis during peak demand periods. Over the last 5 years, the interim WTP has provided an average of 18.9 MGY from Lake Tahoe.

6.3.1 Water Rights

Public Law 101-618 (Settlement Act) was enacted to provide “for the settlement of water rights claims of the Fallon Paiute Shoshone Indian Tribes and for other purposes.” Section 204 of the Settlement Act would limit California’s total gross diversions in the Lake Tahoe Basin to 23,000 acre-feet per year. Section 205 of the Settlement Act requires the development of an operating agreement for the Truckee River reservoirs, including Lake Tahoe. This agreement is referred to as the Truckee River Operating Agreement (TROA). Among a host of purposes, the TROA provides for operation of the Truckee River Reservoirs and other reservoirs to properly implement the California and Nevada allocations of Lake Tahoe and Truckee River water and enhance fish, wildlife and recreational beneficial uses of water within the Truckee River Basin.

TROA received final approval in 2008 of the Environmental Impact Statement/and Environmental Impact Report (EIR/EIS), completion of other state and federal requirements and ratification by concerned parties. The final TROA was the result of negotiations between the United States Departments of the Interior and Justice, the State of California, the State of Nevada, the Pyramid Lake Paiute Tribe of Indians, Sierra Pacific Power Company, and other entities in the State of California and the State of Nevada.

As mentioned above, the Settlement Act allocates 23,000 acre-feet per year total diversions from the Lake Tahoe Basin to the State of California. This allocation is for use within the Lake Tahoe Basin from all natural sources, including both direct diversions from Lake Tahoe and groundwater. Other than the TCPUD, the major water purveyors on the California side of Lake Tahoe include the South Tahoe Public Utility District and the North Tahoe Public Utility District.

TCPUD maintains legal water rights to divert over 1,000 acre-feet of surface water from Lake Tahoe and surrounding areas.

6.4 STORMWATER

Stormwater is not actively used as a water source. District wide stormwater quality standards are in place that require new construction projects to capture and infiltration runoff from storm events. These standards help recharge the groundwater and maintain the water quality of the surface water sources.



6.5 WASTEWATER AND RECYCLED WATER

Code Section 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, 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.*

The District provides wastewater collection services to approximately 7,800 connections spanning from the Dollar Point area, south to Emerald Bay. The District's wastewater collection system consists of over 180 miles of gravity and forced sewer mains, and 21 sewer pumping stations. The total volume of wastewater collected is shown in Table 6-2. All collected raw sewage is conveyed out of the Lake Tahoe Basin through a large diameter gravity pipeline known as the Truckee River Interceptor (TRI) which is owned and operated by the Tahoe Truckee Sanitation Agency (TTSA). The TRI conveys all raw sewage from the North and West Shores of Lake Tahoe approximately 17 miles to Truckee, California and is treated there by the TTSA at an advanced water reclamation plant. On average the District's sewer collection service area conveys approximately 0.8 million gallons per day (mgd) of raw wastewater to the TTSA treatment facility.



Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
<input type="checkbox"/> There is no wastewater collection system. The supplier will not complete the table below.						
100 Percentage of 2015 service area covered by wastewater collection system (optional)						
100 Percentage of 2015 service area population covered by wastewater collection system (optional)						
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? (optional) <i>Drop Down List</i>
<i>Add additional rows as needed</i>						
TCPUD	Metered	177	Tahoe-Truckee Sanitation Agency	Water Reclamation Plant	No	No
Total Wastewater Collected from Service Area in 2015:		177				
NOTES: The TCPUD provides water service to 4,188 customers but provides sewer service to 7,540 customers.						

Table 6.2. Wastewater collected in TCPUD Service Area.

TTSA also provides wastewater treatment services for the communities of North Lake Tahoe, Alpine Meadows, Squaw Valley, Truckee and Northstar. TTSA is a state-of-the-art 9.6 MGD advanced water reclamation plant and provides primary and secondary treatment, phosphorus removal, biological nitrogen removal, disinfection, and effluent filtration. Because of its location in the pristine Lake Tahoe-Truckee River area, the plant is required to meet some of the most stringent discharge requirements in the country. Final effluent polishing is achieved by routing the effluent through the Soil Aquifer Treatment system, having the soil remove additional constituents as the effluent percolates through it.

Two distinct provisions make the use of recycled water unlikely in the District’s water service area. Much of the sewage systems and wastewater treatment facilities in the area were constructed in response to the passage of the Porter-Cologne Water Quality Control Act (Act) in 1969. In basic terms, the Act mandated that all sewage and/or treated effluent be exported from the Lake Tahoe Basin. In addition to this Act, in November 1990, the Truckee-Carson-Pyramid Lake Water Rights Settlement Act, Title II of Public Law 101-618 [104 Stat. 3289, 3294] was signed into law by the Federal Government. Section 204.C.1.G of the Act essentially prohibits the reduction in return flow of treated wastewater to the Truckee River without the acquisition of preexisting water rights or an offset returning Truckee River basin groundwater to the river or its tributaries.

These two provisions, coupled with the fact that the treatment facility is located over 17 miles away from the District’s service area make the use of recycled water very unlikely in the near future.

Table 6-3, 6-4, 6-5, and 6-6 have been included in the UWMP as recommend by DWR but since no wastewater is treated or disposed of and no recycled water is used or planned to be used in the UWMP service are there is not data to report.



Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
<input checked="" type="checkbox"/> No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
Total							0	0	0	0
NOTES:										

Table 6.3. Wastewater treatment and discharge in TCPUD Service Area.

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area									
<input checked="" type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.									
Name of Agency Producing (Treating) the Recycled Water:									
Name of Agency Operating the Recycled Water Distribution System:									
Supplemental Water Added in 2015									
Source of 2015 Supplemental Water									
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040 (opt)	
Agricultural irrigation									
Landscape irrigation (excludes golf courses)									
Golf course irrigation									
Commercial use									
Industrial use									
Geothermal and other energy production									
Seawater intrusion barrier									
Recreational impoundment									
Wetlands or wildlife habitat									
Groundwater recharge (IPR)*									
Surface water augmentation (IPR)*									
Direct potable reuse									
Other (Provide General Description)									
Total:			0	0	0	0	0	0	
*IPR - Indirect Potable Reuse									
NOTES:									

Table 6.4. Current and projected recycled water in TCPUD Service Area.



Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual			
<input checked="" type="checkbox"/>		Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.	
Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	Type of Use		
Total		0	0
NOTES:			

Table 6.5. 2010 UWMP Recycled Water compared to 2015 Actual

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
Total			0
NOTES: All collected raw sewage is conveyed out of the Lake Tahoe basin through a large diameter gravity pipeline know as the Truckee River Interceptor (TRI) which is owned and operated by Tahoe-Truckee Sanitation Agency (T-TSA).			

Table 6.6. Methods to Expand Future Recycled Water Use.



6.6 DESALINATED WATER OPPORTUNITIES

Code Section 10631:

(i) Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.

There are currently no plans for desalination of groundwater.

6.7 EXCHANGE OR TRANSFERS

Code Section 10631:

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

TCPUD has no ongoing exchange or transfer agreements with adjacent water companies. TCPUD does maintain a few emergency interties to improve water supply reliability, this is discussed further in Chapter 7. In general, the District reviews all opportunities to provide regional water source and distribution solutions where possible.

6.8 FUTURE WATER PROJECTS

Code Section 10631:

(g) ...The urban water supplier shall include a detailed description of expected future projects and programs... that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

TCPUD has adopted a 2016 Capital Improvement Plan that include three project that will increase water supply. The projects are summarized in Table 6-7. The complete Capital Improvement Plan for water projects is included in the Appendix as Attachment A.



Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency
	<i>Drop Down List (y/n)</i>	<i>If Yes, Agency Name</i>				
<i>Add additional rows as needed</i>						
Tahoe City Well #1 Replacement	No		Re-drill Well #1	2016	Average Year	100
West Lake Tahoe Regional Water Treatment Plant	No		New surface water treatment plant	2018	All Year Types	260
Tahoe City Main Water Treatment Plant	No		New surface water treatment plant	2025	All Year Types	520
NOTES: See TCPUD Capital Improvement Plan for a complete project description.						

Table 6.7. Future Water Supply Projects.

Tahoe City Well #1 Replacement includes re-drilling Tahoe City Well #1 in an adjacent location. The existing well is of good water quality however, was not drilled deep enough to produce sufficient yield.

The West Lake Tahoe Regional Water Treatment Plant is currently in design, and needed to replace the interim seasonal plant at Chambers Landing. A failure of the Crystal Way Well could cause a major disruption during the winter months, including a potential emergency boil order if untreated surface water was used. The seasonal plant was intended as an interim solution providing a backup supply to the Crystal Way Well. A permanent secondary source is required. A new surface water treatment plant has been identified as the best solution for this system. Base flow required to supply the existing TCPUD customers in this area is 500 GPM, however, the plant will be sized in Phase 1 to also serve demands in the adjacent private water systems if necessary or if those systems are acquired by the TCPUD. That additional demand would be approximately 150 GPM (total of 650 GPM). Additionally, this facility is intended to be expandable to serve more regional needs including those of all the private water companies on the west shore of Lake Tahoe, a demand of up to 1,000 GPM total.

The Tahoe City Main Emergency Water Supply Project will provide a surface water source for the Tahoe City water system area. The Tahoe City water system area currently relies solely on groundwater wells for drinking water production. In the short term if drought conditions continue, the waterline will provide the District with the ability to utilize the existing Grove Street lake intake as a backup water supply source with the addition of a temporary or interim surface water treatment plant. This project would also supply raw water to a future permanent Tahoe City Main Water Treatment Plant, a planned project several years in the future. Lastly, the



waterline will provide the District with the ability to supply additional raw water to the Tahoe City Golf Course (a TCPUD-owned recreational facility) for irrigation purposes.

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

Code Section 10631:

(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 10631(a).

(4) (Provide 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.

Each source and volume of water produced for 2015 are listed in Table 6.8 below.

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>				
Groundwater	Highlands Well (Tahoe City)	20	Drinking Water	
Groundwater	Tahoe City Well #2 (Tahoe City)	99	Drinking Water	
Groundwater	Tahoe City Well #3 (Tahoe City)	123	Drinking Water	
Groundwater	Tahoe Tavern Well (Tahoe City)	15	Drinking Water	
Groundwater	Riley Springs (Alpine Peaks)	4	Drinking Water	
Groundwater	Crystal Way Well (McKinney-Quail)	23	Drinking Water	
Surface water	Chambers Landing Intake (McKinney-Quail)	14	Drinking Water	
Groundwater	Rubicon Well #1 (Rubicon)	31	Drinking Water	
Groundwater	Rubicon Well #2 (Rubicon)	1	Drinking Water	
Groundwater	Rubicon Well #3 (Rubicon)	1	Drinking Water	
Purchased or Imported Water	Squaw Valley PSD	3	Drinking Water	
Total		334		0
NOTES:				

Table 6.8. TCPUD's Water Supplies.

In future years the existing water supply sources will be supplemented with two additional water sources. These projects (Tahoe City Main Water Treatment Plant and West Lake Tahoe Regional Water Treatment Plant) take advantage of the high quality of Lake Tahoe surface water as a drinking water source—a resource



that has been proven over many decades. These projects will solidify TCPUD’s regional supply reliability in the long term.

Table 6.9 below lists the project water sources available at five (5) year intervals through 2035.

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply Report To the Extent Practicable									
		2020		2025		2030		2035		2040 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
<i>Add additional rows as needed</i>											
Groundwater	Highlands Well (Tahoe City)	39		39		39		39			
Groundwater	Tahoe City Well #1 ² (Tahoe City)	100		100		100		100			
Groundwater	Tahoe City Well #2 (Tahoe City)	155		155		155		155			
Groundwater	Tahoe City Well #3 (Tahoe City)	179		179		179		179			
Groundwater	Tahoe Tavern Well (Tahoe City)	57		57		57		57			
Surface water	Tahoe City Main Water Treatment Plant ³ (Tahoe City)	0		520		520		520			
Groundwater	Riley Springs (Alpine Peaks)	10		10		10		10			
Groundwater	Crystal Way Well (McKinney-Quail)	50		50		50		50			
Surface water	Chambers Landing Intake (McKinney-Quail)	0		0		0		0			
Surface water	West Lake Tahoe Regional Water Treatment Plant ⁴ (McKinney-Quail)	260		260		260		260			
Groundwater	Rubicon Well #1 (Rubicon)	48		48		48		48			
Groundwater	Rubicon Well #2 (Rubicon)	17		17		17		17			
Groundwater	Rubicon Well #3 (Rubicon)	3		3		3		3			
Purchased or Imported Water	Squaw Valley PSD	4		4		4		4			
Total		922	0	1,442	0	1,442	0	1,442	0	0	0

NOTES:
 1. Future well supplies are expected to maintain available volume.
 2. New Tahoe City Well #1 anticipated to produce average volume of 190 GPM or 100 MGY.
 3. New Tahoe City Main Water Treatment Plant surface water source planned at 1,000 GPM maximum flow.
 4. New West Lake Tahoe regional Water Treatment Plant surface water source planned at 500 GPM maximum flow (available to existing TCPUD customers).

Table 6.7. TCPUD’s Future Water Supplies.

CHAPTER 7 WATER SUPPLY RELIABILITY ASSESSMENT

7.1 CONSTRAINTS ON WATER SOURCES

Code Section 10631:

(c)(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.

Code Section 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.



7.1.1 Water Source

The TCPUD has met its historical water demands primarily through groundwater sources. In 2015 approximately 95% of the water supplied was provided by groundwater sources. TCPUD has identified this reliance on groundwater as a potential constraint on their future water supply.

TC-1 (Bunker Well) was drilled in 1956 to a depth of 223 feet. Following installation of TC-2 and TC-3, the static water surface elevation continually dropped until the well was dewatered. In addition, TC-2 and TC-3 experienced significant static water level declines since installation. In 2003, TC-2 had been sufficiently dewatered to entrain air in the water during pumping operation. In late 2003, TC-2 was deepened to approximately the same depth as TC-3, and has maintained reliable operation since.

The concerns regarding the wells in the Tahoe City Main System have been mitigated by the reduction in water production due to system improvements, installation of meters, use of Demand Management Measures and other aggressive conservation efforts. As a result, groundwater levels in all sources have remained virtually stable or above historic 15 year average levels despite the drought conditions experienced during the reporting period. However, to further supplement the supply, TCPUD is nearly complete with the Tahoe City Well #1 Replacement Project, and has included the Tahoe City Main Water Treatment Plant project in the Capital Improvement Plan to provide a future source of surface water for the Tahoe City Main System.

The TCPUD has, in the past, experienced difficulties meeting summer peak water demands with the McKinney/Quail System. The McKinney/Quail System has been served exclusively from the Crystal Way Well until the summer of 2004. The well was installed in 1996 and put online in 1997. Since placed into service, the well experienced a continual drop in both static and dynamic pumping levels until 2003 when air became entrained during pump operation. The well output was decreased to 350 gallons per minute (gpm) from 500 gpm to relieve the air entrainment. To provide additional supply, in late 2004, the TCPUD installed and operated an interim surface water treatment system for the treatment of surface water from Lake Tahoe. About the same time the interim surface water system was brought on line, the Crystal Way Well had begun to entrain air again. Significant recovery of the Crystal Way Well occurred following startup of the surface water system. This clearly indicates that the average annual system demand prior to the implementation of the surface water system was greater than the yield of the aquifer. Currently, the Crystal Way Well is sufficient to meet demands through the winter season. The TCPUD has operated the interim surface water treatment plant successfully to meet summer peak demands since 2004. The TCPUD 5-year CIP earmarks funds for planning, design, and construction of a permanent surface water treatment plant by 2017.

The WLTRWTP project is currently in design, and is expected to be constructed in 2018 and delivering water by 2019. TCPUD plans on running the interim surface water treatment system as necessary to meet peak summer demands until the permanent treatment facility is brought on line.



Additionally, should conditions warrant, water sales to adjoining suppliers could be restricted or terminated, thereby increasing available supply to TCPUD customers. These factors make it highly unlikely that the TCPUD would ever have to import water from other regions.

7.1.2 Water Quality

7.1.2.1 Groundwater

In general, the groundwater quality is very good. Hardness ranges from 40 parts per million (ppm) to approximately 70 ppm as calcium carbonate. Groundwater quality of the District’s current sources is not expected to have any significant effect on the water management strategies or water supply reliability during this period.

Arsenic:

The U.S. Environmental Protection Agency (USEPA) has promulgated new regulations regarding arsenic in drinking water supplies. The new arsenic regulations became effective January 23, 2006 and set the maximum concentration for arsenic at 10 parts per billion (ppb). Figure 7.1 presents 2014 sampling results for arsenic in TCPUD wells.

Figure 7.1 Most Recent Water Quality Sampling Results for Arsenic	
Supply System	Arsenic Concentration (ppb) ₍₂₎
Tahoe City Main:	
Highlands Well No. 1	4.7
Highlands Well No. 2	2.9
Tahoe City Well No. 1 (Bunker)	
Bunker (TC-1)	Not in Service
Tahoe City Well No. 2 (TC-2)	ND ²
Tahoe City Well No. 3 (TC- 3)	3.1
Tahoe Tavern Well	ND
McKinney/Quail:	
Crystal Way Well	ND
Rubicon:	
Rubicon No. 1 (Silvertip)	ND
Rubicon No. 2 (Lakeview)	ND
Rubicon No. 3 (Ridge)	ND
Alpine Peaks:	
Riley’s Spring	ND
<u>Notes:</u>	
1. ppb = parts per billion.	
2. ND = contaminant was not detected above the reporting limit of 2.0 ppb.	

Figure 7.1. Most Recent Water Quality Sampling Results for Arsenic.



From Figure 7.1, the most recent water quality sampling of TCPUD wells did not detect the presence of arsenic in concentrations greater than the newly established maximum contaminant level (MCL) of 10 ppb. At this point in time, it does not appear that arsenic concentrations will affect water supply reliability.

7.1.2.2 Surface Water

The high quality of Lake Tahoe surface water as a drinking water source has been proven over many decades. Prior to the Surface Water Treatment Rule (SWTR), many Utilities around Lake Tahoe used chlorinated, but unfiltered Lake Tahoe water as a primary source. Following the implementation of the SWTR many Utilities converted to groundwater, however, many still use Lake Tahoe as a primary source. Modern filtration techniques are very effective at treating Lake Tahoe water to meet the most current Enhanced SWTR regulations. However, several Utilities still maintain filtration avoidance waivers and serve unfiltered Lake Tahoe water today. Other potential water quality issues associated with Lake Tahoe surface water include Radon, as discussed above. Water quality of Lake Tahoe is not expected to have any significant effect on the water management strategies or water supply reliability during this period.

7.2 RELIABILITY BY TYPE OF YEAR

Code Section 10631:

(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.

Figure 7.2 presents precipitation data for the Tahoe City area, based on information from the Western Regional Climate Center for the past 25 years. Average precipitation is 31.5" annually in the region. Single dry years and multiple dry years have occurred in the period from 1990-1992, 1994, 2001-2004, 2007-2009, and 2011-2015. During the earlier dry periods, overall water production was significantly higher than it is today or is expected to be in the future.

While there is correlation between precipitation and static water levels, low precipitation during the periods of record has not resulted in a notable reduction in supply. As the TCPUD has already experienced single dry and multiple dry years and provided substantially more water to its customers than it does currently or plans to in the future, TCPUD believes that there currently is sufficient supply to provide water during similar single dry and multiple dry years.

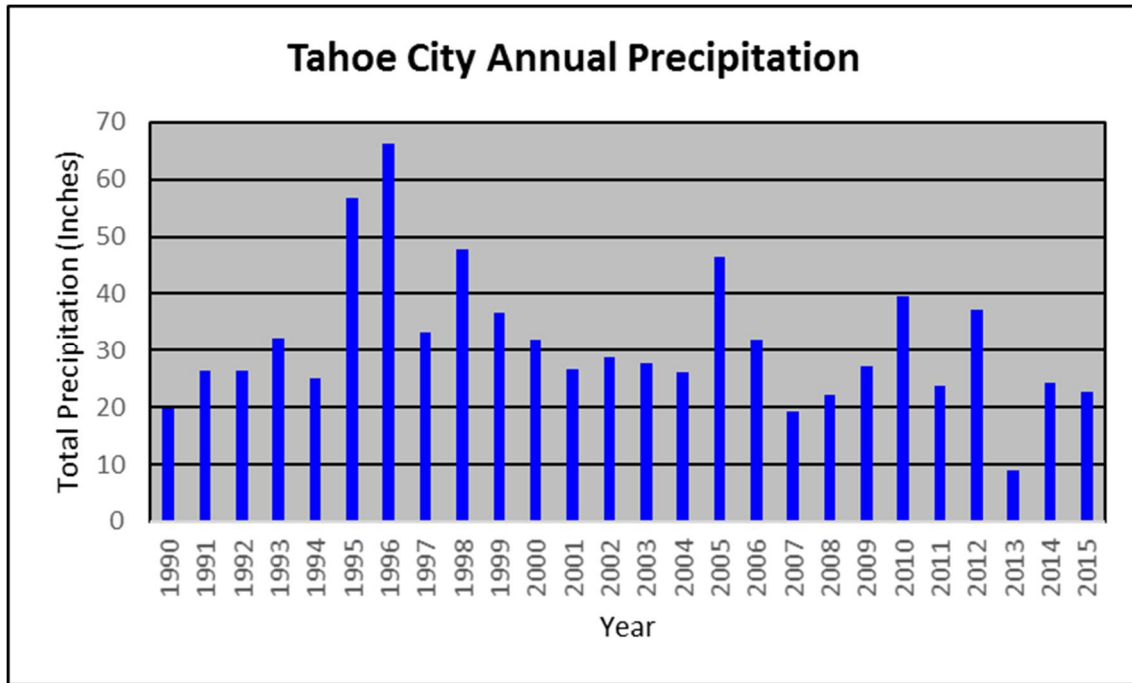


Figure 7.2. Tahoe City Annual Precipitation, 1990 – 2016.

Table 7-1 Retail: Basis of Water Year Data			
Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2000	584	100%
Single-Dry Year	2007	584	100%
Multiple-Dry Years 1st Year	2007	584	100%
Multiple-Dry Years 2nd Year	2008	584	100%
Multiple-Dry Years 3rd Year	2009	584	100%

Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

NOTES:

Table 7.1. TCPUD's Basis of Water Year Data.



7.3 SUPPLY AND DEMAND ASSESSMENT

Code Section 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 increments, for normal water year, a single dry water year, and multiple dry 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.

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals (autofill from Table 6-9)	922	1,442	1,442	1,442	0
Demand totals (autofill from Table 4-3)	337	349	363	376	0
Difference	585	1,093	1,079	1,066	0
NOTES:					

Table 7.2. TCPUD's Normal Year Supply and Demand Comparison.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	922	1,442	1,442	1,442	
Demand totals	337	349	363	376	
Difference	585	1,093	1,079	1,066	0
NOTES:					

Table 7.3. TCPUD's Single Dry and Demand Comparison.



Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	922	1,442	1,442	1,442	
	Demand totals	337	349	363	376	
	Difference	585	1,093	1,079	1,066	0
Second year	Supply totals	922	1,442	1,442	1,442	
	Demand totals	337	349	363	376	
	Difference	585	1,093	1,079	1,066	0
Third year	Supply totals	922	1,442	1,442	1,442	
	Demand totals	337	349	363	376	
	Difference	585	1,093	1,079	1,066	0
NOTES:						

Table 7.4. TCPUD’s Multiple Dry Years Supply and Demand Comparison.

7.4 REGIONAL SUPPLY RELIABILITY

Code Section 10635:

(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.

Management tools and options that the TCPUD is utilizing to maximize resources include the ongoing implementation of DMM’s, and supplementing the existing groundwater sources with new and enhanced surface water sources from Lake Tahoe. Specifically, the West Lake Tahoe Regional Water Treatment Plant is planned to be expandable to provide supply to the entire west shore of Lake Tahoe, including both existing TCPUD customers and those of adjacent private water companies. Additionally, a new raw water lake intake line is currently being designed for the Tahoe City Main System, which would provide a future surface water treatment plant with a reliable supply from Lake Tahoe. That facility would be designed to augment the existing groundwater supply from the TCPUD’s major groundwater sources (Tahoe City Wells #2 and #3). These measures will ensure long term regional supply reliability.



CHAPTER 8 WATER SHORTAGE CONTINGENCY PLANNING

Code Section 10632:

(a) The plan shall provide an urban water shortage contingency analysis that include each of the following elements that are within the authority of the urban water supplier.

8.1 STAGES OF ACTION

Code Section 10632:

(a)(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 which are applicable to each stage.

To preserve water resources during periods of water shortage, the TCPUD adopted Ordinance 288, “Water Conservation and Drought Response Standards” (Appendix B) to reduce the risk and severity of water shortages when drought or natural disaster occurs and to establish a drought preparedness and response plan. Figure 8.1 lists the phases of water restrictions that TCPUD adopted to deal with a water shortage. An emergency water conservation plan is necessary to minimize the effect of the water shortages that can arise on short notice during natural disasters or drought conditions. Upon declaration of a Stage 2, 3, or 4 drought response, the General Manager shall be authorized to implement and enforce any or all of the drought response measures identified herein.

Figure 8.1 Regulations and Restrictions on Water Use in the Event of a Water Shortage
TCPUD 2015 UWMP

Phase	Action
Stage 1	<ul style="list-style-type: none"> • Owners shall not waste water and shall maintain all water service lines, from the point of delivery to the premises served, in good repair. Further, the Owner shall implement the following water conservation measures, under normal, non-emergency conditions. • Metering: Tiered Water Consumption Charges. Owners shall be assessed and pay a flat monthly water rate based upon size of water service as well as a charge for water consumption based upon a tiered billing structure, as identified in the current District water rate schedule. This billing structure is designed to encourage conservation, as the charge per thousand gallons of water consumed increases as water use increases. • Repair of Water Leaks Any leak in plumbing and / or irrigation systems shall be repaired when found, but in any case within ten (10) days of notice by the District to repair. • Water Runoff Use of potable water which results in flooding or runoff in



	<p>gutters, streets or onto adjacent property is not allowed.</p> <ul style="list-style-type: none">• Vehicle Wash Automatic shutoff valves or nozzles will be used whenever a hose is used for cleaning vehicles. This subsection does not apply to any commercial car washing facility that utilizes a recycling system to capture or reuse water. Washing of vehicles is exempted where the health, safety and welfare of the public is dependent upon frequent vehicle cleanings, such as snow removal vehicles and garbage trucks.• Cleaning of Surfaces Automatic shutoff valves or nozzles will be used whenever a hose is used for cleaning or clearing walkways, patios, tennis courts, decks, driveways, parking areas or other improved areas, whether paved or unpaved. Unrestricted hoses may be used to alleviate immediate fire or sanitation hazards.• Construction Water. All water hoses used in connection with any construction activity shall be equipped with an automatic shutoff nozzle.• Fire Hydrant Use Permit. A District Hydrant Use Permit must be obtained before use of any fire hydrant for any purpose other than fire suppression or emergency aid.• Water Pressure. Water pressure shall not exceed 60 psi within residential or non-residential structures. Pressure will be check at final inspection of new construction, reconstruction, and remodel to ensure compliance.• Low-flow Plumbing Fixtures requires on new residential and commercial construction and remodels.• Landscape Irrigation.<ul style="list-style-type: none">○ Winterization of Irrigation Systems○ Landscape Irrigation Controls on New Construction Irrigation Systems must be equipped with rain sensing devices that will halt irrigation during and after measurable precipitation○ New Construction and Rehabilitated Landscaping The installation and planting of landscaping associated with new construction or new or rehabilitated landscaping at existing properties is strongly encouraged to occur in spring or fall. New non-turf landscaping, including bedding plants and trees, shall be on drip, micro sprinkler, or micro sprayer irrigation systems. Overhead watering shall only be allowed for turf areas.○ State Model Water Efficient Landscape Ordinance All residential and commercial landscaping associated with new construction or new or rehabilitated landscaping at existing properties shall conform with the requirements of the Model Water Efficient Landscape Ordinance, per California Code of Regulations, Title 23, Division 2, Chapter 2.7 or applicable local ordinances superseding the State ordinance.
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	<ul style="list-style-type: none"> • Restrictions of Irrigation during times of day, precipitation or low temperatures. • Visitor-Serving Facilities. In order to promote public awareness of the need to conserve water and not waste water, the owner and manager of each hotel, motel, restaurant, convention center and other visitor-serving facility shall display informational material, placards, and/or decals, provided by the District, in places visible to all customers. • Public Entities. In order to promote public awareness of the need to conserve water and not waste water, all public entities shall display informational material, placards, and/or decals, provided by the District, in places visible to all customers.
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Cont. Regulations and Restrictions on Water Use in the Event of a Water Shortage TCPUD 2015 UWMP	
Stage 2	<ul style="list-style-type: none"> • Designated Irrigation Days Established – Three days per week. • New Construction Landscaping Notwithstanding any other provision of this ordinance, water used for irrigating landscaping for new construction shall be limited to new landscaping planted to comply with the Tahoe Regional Planning Agency’s Best Management Practices (BMPs,) defensible space. The Owner, or his/her designee, must request permission from the District in writing for the establishment of new vegetation, and may not proceed with work until approval has been received from the District. <ul style="list-style-type: none"> ○ Newly planted sod may be exempt for thirty (30) days from the date it was installed and shall require approval from the District in accordance with this Section. ○ Planting and seeding for public erosion control and/or environmental restoration projects shall be exempt from these requirements, and shall require approval from the District. ○ Rehabilitation or installation of new landscaping at properties that had been improved with permitted structures more than six (6) months prior to the rehabilitation or installation of the rehabilitated or new landscaping and which do not meet the requirements of Section 2.02.2, requires written approval from the District prior to the rehabilitation or installation and such approval will not change or alter any other provision or requirement of this Ordinance, including but not limited to water consumption reduction requirements for individual properties, potential violations and enforcement actions. • Irrigation of Public Facilities. Where it is in the interest of public health and



	<p>safety or where facilities are open to the public, the General Manager may permit extended periods of irrigation of public facilities.</p> <ul style="list-style-type: none"> • Food Service and Drinking Establishments. All food service and drinking establishments shall serve drinking water to their customers only upon request by the customers. All food service and drinking establishments shall include a placard at each table and/or language on their menu, stating such. • Visitor Accommodations. All visitor accommodations, including, but not limited to, hotels, motels, guest rooms, bed and breakfast establishments, vacation rentals, etc., shall wash guest linens, including towels and sheets, only upon request of their guests, and after guest check out. A placard or notice stating such shall be displayed in each guest room. • Hard Surface Application. The application of water to hard surfaces, including driveways, sidewalks, parking lots, and athletic facilities shall be prohibited, except for pavement resurfacing or sealing, construction services, and/or public health and safety. Any application of water to hard surfaces for these exceptions shall use automatic shutoff nozzles, or require on-site monitoring during manual irrigation. • Decorative Water Features. The use of water in decorative water features that do not recirculate the water is prohibited. • Regulatory Requirements. Other restrictions may apply as mandated by regulatory requirements and may supersede any section of this Ordinance.
<p>Stage 3</p>	<ul style="list-style-type: none"> • Designated Irrigation Days Established – Two Days per Week <ul style="list-style-type: none"> ○ Properties with street addresses that end in an even number may irrigate only on Monday and Thursday; properties with street addresses ending in an odd number may irrigate only on Tuesday and Friday. There will be no irrigation permitted on Wednesday, Saturday, or Sunday. The irrigation day shall be considered to begin at midnight and end at 11:59 pm. ○ Irrigation of non-turf areas which exclusively utilizes drip systems, including micro sprinklers and micro sprayers will be allowed only Monday through Friday and shall be prohibited on Saturdays and Sundays. ○ Properties with large common areas and public facilities may request alternate irrigation schedules based on specific needs or issues. The District will review such requests on a case-by-case and first-come, first-served basis. ○ The District may establish alternate schedules based upon its determination, and will notify affected Owners of such changes. Designated irrigation days may be modified by the District, if needed.



	<ul style="list-style-type: none"> • New Construction Landscaping. Notwithstanding any other provision of this Ordinance, water used for irrigating landscaping associated with new construction or new or rehabilitated landscaping at existing properties shall be limited to new or rehabilitated landscaping planted to comply with the Tahoe Regional Planning Agency’s Best Management Practices (BMPs) or defensible space. The Owner, or his/her designee, must request permission from the District in writing for the establishment of new vegetation, and may not proceed with work until approval has been received from the District. <ul style="list-style-type: none"> ○ No new sod or lawns shall be allowed to be installed during summer months (June, July, and August), or when daytime temperatures exceed 80 degrees Fahrenheit. • Snow Making Water Limitations on snow making water may be imposed by the District, depending on time of year, weather, and/or availability of water. • Regulatory Requirements. Other restrictions may apply as mandated by regulatory requirements and may supersede any section of this Ordinance.
<p>Stage 4</p>	<ul style="list-style-type: none"> • Prohibition of Water Use Except for Domestic and Commercial Non-Irrigation. Use The use of water for other than domestic and commercial non-irrigation use is prohibited, except that irrigation of public facilities may be permitted pursuant to review and approval by the District. Irrigation of ornamental landscapes, turf, and new construction landscaping is expressly prohibited. The application of water to hard surfaces and for decorative water features is also prohibited. • Mandatory Water Rationing. The District may implement mandatory water rationing through the use of rolling outages, or other methods, should the situation require. Affected customers will be notified via public outreach, local media, written notice posted at the property, mail, and/or personal contact. • Regulatory Requirements Other restrictions may apply as mandated by regulatory requirements and may supersede any section of this Ordinance.



Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
<i>Add additional rows as needed</i>		
1	-	Normal Conditions
2	0-35	Significant water shortage
3	35-50	Severe water shortage. A Stage 3 drought response is triggered by deterioration in local water service area indicators in conjunction with a drought status above normal for the Lake Tahoe Basin, a failure of key water service area components, regulatory requirements, and/or a failure to significantly reduce water demand in Drought Response Stage 2.
4	50+	Water Shortage Emergency. A Stage 4 drought response is triggered by deterioration in local water service area indicators in conjunction with a drought status above normal for the Lake Tahoe Basin, a failure of key water service area components, regulatory requirements, and/or a failure to significantly reduce water demand in Drought Response Stages 2 and 3.
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES:		

Table 8.1. TCPUD’s Stages of Water Shortage Contingency Plan.

Drought Response Stages 2, 3, and 4 will be declared by the Board of Directors. In emergency situations the General Manager may declare a Drought Response Stage 2, 3, or 4 initially, to be followed up with Board of Directors’ declaration as soon as reasonably possible. Each drought response stage will be triggered by specific conditions related to the operating capacities of the TCPUD’s water sources and the water distribution system. Examples may include but not limited to severe local drought conditions, significant depletion of pumping capacity due to mechanical failure or aquifer depletion, major distribution system failures such as water or transmission main failure, water tank failure, natural disasters such as fire, weather or earthquake events, or long term power outages. The drought response stage chosen will vary on the severity of the situation.

Following the declaration of any drought response stage, the TCPUD will implement appropriate response actions. If emergency conditions warrant the rationing or emergency conservation of water, Owners will be notified through local media news releases, public postings and billing inserts. Implementation of Stage 2 or 3 may result in an increased level of monitoring by TCPUD’s staff to ensure compliance. The District will



continually monitor drought conditions and promptly recommend that the drought response stage level increase if conditions worsen. The General Manager will rescind Stage 2, 3, or 4 levels if warranted by improved conditions.

Based on the severity and longevity of a water shortage condition, TCPUD may activate standby lake pumps. An emergency operations agreement has been established with the State Water Resources Control Board Division of Drinking Water (DDW) to allow the existing lake diversions to be used. Chlorination equipment with metering pumps would be installed on each of the intakes to meet DDW requirements. TCPUD keeps this equipment and hypochlorite solution in stock at all times. The lake intakes with the chlorination equipment can be activated in one day, if needed. The only service areas that do not have a standby lake intake is the Rubicon System and the Alpine Peaks System. If lake intakes are not available or functional, TCPUD would contract to have potable water hauled from a fully operational water system to storage tanks in the affected system. TCPUD keeps a file on sources of emergency generators, water tanks, and other equipment that could be needed in a water shortage emergency.

In addition, TCPUD's agreement with the North Tahoe Public Utility District allows TCPUD to restrict service as necessary to North Tahoe, and enforce all applicable water shortage restrictions upon them and their customers.

8.2 PROHIBITIONS OF END USES

Code Section 10632:

(a)(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.



Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
<i>Add additional rows as needed</i>			
1	Other - Require automatic shut of hoses	2.01.5	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	2.01.3	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	2.01.2	Yes
1	Landscape - Prohibit certain types of landscape irrigation	2.01.10	Yes
1	Landscape - Limit landscape irrigation to specific times	2.01.11	Yes
2	Landscape - Limit landscape irrigation to specific days	2.02.1	Yes
2	CII - Restaurants may only serve water upon request	2.02.4	Yes
2	CII - Lodging establishment must offer opt out of linen service	2.02.5	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	2.02.6	Yes
2	Water Features - Restrict water use for decorative water features, such as fountains	2.02.7	Yes
3	Landscape - Other landscape restriction or prohibition	2.03.1	Yes
3	CII - Other CII restriction or prohibition	2.03.3	Yes
4	Landscape - Prohibit all landscape irrigation	2.04.1	Yes
4	Other	2.04.2	Yes
NOTES: 1. Other: Mandatory Water Rationing			

Table 8.2. TCPUD's Restrictions and Prohibitions on End Uses



8.3 PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

Code Section 10632:

(a)(6) Penalties or charges for excessive use, where applicable.

In order to protect the health safety and welfare of the community, the District shall serve any Owner found to be violating any provision of TCPUD Ordinance 288 with written notice, in accordance with Section 3, stating the nature of the violation and providing a reasonable time limit for the satisfactory correction. If a violation is not corrected within the time limit prescribed, the General Manager shall exercise his/her authority to restrict the water service to the property, correct the violation, or disconnect the water service from the District's system, based upon the severity of the violation. Disconnect and reconnect fees shall be assessed per the District's fee schedule, as well as any other applicable fees and/or penalties. The complete enforcement language is presented in Section 3 of Ordinance 288, Appendix C.

8.4 CONSUMPTION REDUCTION METHODS

Code Section 10632:

(a)(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.



Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>		
1	Expand Public Information Campaign	Yes
1	Increase Frequency of Meter Reading	Yes
1	Offer Water Use Surveys	Section 4.02
1	Provide Rebates on Plumbing Fixtures and Devices	Section 4.01.1, 3, 4
1	Provide Rebates for Landscape Irrigation Efficiency	Section 4.01.2
1	Reduce System Water Loss	Yes
NOTES:		

Table 8.3. TCPUD’s Stages of Water Shortage Contingency Plan.

8.5 DETERMINING WATER SHORTAGE REDUCTIONS

Code Section 10632:

(a)(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

TCPUD performs monthly and annual water audits of its system using AWWA guidance from Manual M36 and the AWWA Water Loss Control Committee (WLCC) Free Water Audit Software v5. A full discussion of this audit is included in Demand Management Measure – 3 in Chapter 9.



8.6 REVENUE AND EXPENDITURE IMPACTS

Code Section 10632:

(a)(7) An analysis of the impacts of each of the actions and conditions described in subdivisions (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.

A significant reduction in consumption due to a water shortage event would not significantly impact TCPUD revenue. In the past three years, 23% of total water revenue received was from water consumption charges. Expenditures related to a water shortage event are not anticipated to be impactful and would be absorbed by existing staff time and existing operational budgets.

8.7 RESOLUTION OR ORDINANCE

Code Section 10632:

(a)(8) A draft water shortage contingency resolution or ordinance.

TCPUD has adopted Ordinance 288, “Water Conservation and Drought Response Standards” (Appendix C) to reduce the risk and severity of water shortages when drought or natural disaster occurs and to establish a drought preparedness and response plan.

8.8 CATASTROPHIC SUPPLY INTERRUPTION

Code Section 10632:

(a)(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.

In the event of a natural disaster or a threat to public health, TCPUD would coordinate its actions with the Placer and El Dorado County Public Health Departments and other relevant agencies. Disaster response would be consistent with the District’s Water System Emergency Response Plan, the Standardized Emergency Management System and the California State Office of Emergency Services’ Guidance for California’s Mutual Aid System.

The District maintains backup power capability for all major supply sources, and can maintain supply indefinitely in the event of a regional power outage.



8.9 MINIMUM SUPPLY NEXT THREE YEARS

Code Section 10632:

(a)(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.

The estimate of the minimum supply for the next three years is based upon the average available supply from all existing sources over the past 17 years, with the addition of new supply from Tahoe City Well #1 in 2016 and the West Lake Tahoe Regional Water Treatment Plant in 2018.

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	662	662	922

Table 8.4. TCPUD's Minimum Supply Next Three Years.

CHAPTER 9 DEMAND MANAGEMENT MEASURES

9.1 DEMAND MANAGEMENT MEASURES FOR WHOLESALE AGENCIES

The TCPUD is not considered a wholesale agency.

9.2 DEMAND MANAGEMENT MEASURES FOR RETAIL AGENCIES

Code Section 10631:

(f)(A) ... The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

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

- (i) Water waste prevention ordinances.*
- (ii) Metering.*
- (iii) Conservation pricing.*
- (iv) Public education and outreach.*
- (v) Programs to assess and manage distribution system real loss.*
- (vi) Water conservation program coordination and staff support.*
- (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.*



The following Demand Management Measures (DMM's) (i.e. water conservation measures) have been implemented by the TCPUD. TCPUD has estimated the ongoing cost of the water conservation DMM's at approximately \$15,000 per year, plus the cost of the leak detection program discussed below.

DMM-1. Water Survey Programs for Single-family Residential and Multi-family Residential Customers.

During previous drought years, TCPUD performed audits on several multi-family units. As a general service to its customers, TCPUD provides conservation recommendations upon request from single-family residences and multiply-family residences. In addition, procedures require that a survey be performed prior to rebate processing.

DMM-2. Residential Retrofits. TCPUD requires the installation of water conserving fixtures for all new construction and remodeling. This applies to toilets, showerheads, and faucets. This requirement is included in the TCPUD's Ordinance 288. The following excerpt from Section 6.22 pertains to new construction and remodeling:

WATER CONSERVATION – Pursuant to TCPUD Ordinance 288, Section 2.01.9 Low-Flow Plumbing Fixtures, the maximum discharge flow rates for plumbing fixtures fittings shall be in accordance with applicable standards listed in Chapter 2 of the UPC. In addition, flush volumes for low consumption and water saver water closets and urinals shall be in accordance with applicable standards listed in Chapter 2 of the UPC. All plumbing fixtures for new construction shall meet the following low flow requirements as per Water Conservation Ordinance No. 288.

Toilets — 1.28 gallon/flush (gpf) or less

Showers — 2.0 gallon/minute (gpm) or less

Residential Lavatory Faucets — 1.2 gpm or less

Residential Kitchen Faucets -1.8 gpm or less

Water pressure shall not exceed 60 psi within residential or non-residential structures.

Pressure will be checked at final inspection of new construction, reconstruction and remodel to ensure compliance.

TCPUD has implemented a Water Conservation Rebate Program. This includes an appliance program, an irrigation efficiency program and a high efficiency toilet program. These programs and descriptions discussed further below are in the Appendix, Attachment C.

System Water Audits, leak detection, and repair. TCPUD performs monthly and annual water audits of its system using AWWA guidance from Manual M36 and the AWWA Water Loss Control Committee (WLCC) Free Water Audit Software v4.2 and has recently upgraded to version 5. The TCPUD audits all water service areas monthly which are broken down into thirteen District Metered Areas (DMA's). TCPUD performs an additional audit using the AWWA software monthly, using a running annual calculation. TCPUD has an active leak detection and line repair program. Any reported or suspected visible leaks are verified by testing the leaking water for chlorine residual. The leak is then located using sonic equipment, excavated, and repaired. Annual leak surveys are provided by an outside consultant and consist of ten days of fieldwork. The emphasis is on areas of historical leakage as well as areas of steel pipe in the water system. On the average



approximately 30-60 gallons per minute of leakage are detected and corrected annually. The 2002 Water Master Plan recommended a steel pipe replacement program to target suspected old and leaking pipes. Pipe replacement is often prioritized according to the results of leak detection surveys. TCPUD has begun leak detection surveys (see above) with good results and will continue to actively search for water system leaks. Since 2000 the District has replaced over 15,000 LF of steel water main. TCPUD has budgeted \$10,000 each year for leak detection investigations using a professional consultant.

- DMM-3. Customer Leak Detection: The TCPUD also uses its automated meter reading (AMR) system to notify customers of potential customer side leaks. The TCPUD AMR system is capable of detecting usage indicative of a leak on the customer side and set's an electronic flag to indicate a potential customer leak. This flag is downloaded from the AMR system into the TCPUD accounting/billing program and, if the flag is present, provides the customer with a distinct leak notification on their monthly billing statement as well as information on how to correct leaks. In addition, monthly water meter read and leak detection data is reviewed within 48 hours of the read and any accounts with significant usage and/or leaks are immediately investigated.
- DMM-4. Metering with commodity rates for all new connections and retrofit of existing connections. The TCPUD installed 100% of the water meters on all residential services, commercial services and institutional/governmental services within their service area between 2007 and 2009. As stated above, the installation of meters has resulted in a substantial decline in water production due to customer side leak detection and conservation through consumption billing.
- Large landscape conservation programs and incentives. TCPUD has implemented a Water Conservation Rebate Program. This includes an appliance program, an irrigation efficiency program and a high efficiency toilet program. These programs and descriptions are in the Appendix, Attachment E.
- DMM-5. High-efficiency washing machine rebate programs. TCPUD has implemented a Water Conservation Rebate Program. This includes an appliance program, an irrigation efficiency program and a high efficiency toilet program. These programs and descriptions are in the Appendix, Attachment E.
- DMM-6. Public Information programs. TCPUD provides public education and information programs on water conservation through a number of means:
- During the most recent Emergency Drought Regulations, TCPUD has developed a water use calculator for all of its customers to view their required reduction targets online based on 2013 water use data and the Districts required conservation target. The calculator is accessible online and has received over 4,500 hits since May of 2015.
 - A Conservation Website was implemented in 2015 which resulted in over 850 site visits.
 - TCPUD provides lists of recommended drought resistant plants to the local nurseries and flyers suggesting the use of drip irrigation systems versus overhead spray irrigation systems.
 - TCPUD includes articles on water conservation in its spring quarterly newsletter to customers discouraging the unnecessary watering of natural vegetation.
 - TCPUD has distributed information on the plumbing code revisions that mandate water-conserving fixtures in new buildings and additions.



- TCPUD mails letters of “notice to repair” to specific homeowners when a water leak on their service line is found and timely repair is not performed.
- The presence of the leak indicator on a customer meter is provided on customer’s monthly billing.
- TCPUD mails an annual newsletter and annual Consumer Confidence Report to all its customers. The annual newsletter typically contains suggestions for water conservation.
- TCPUD representatives occasionally attend the homeowners’ association meetings within the service area and always encourage homeowners to participate and support water conservation efforts.
- TCPUD provides information on water conservation programs and practices to local service organizations such as Rotary International, Resort Associations, Kiwanis, and others upon request.

The implementation of this DMM is ongoing and no measure of effectiveness has been developed to quantify water savings. Costs are included in the overall \$15,000 TCPUD conservation budget.

- DMM-7. School education programs. The TCPUD has contracted with the Sierra Watershed Education Partnership (SWEP) to provide a conservation, education and outreach program in the schools. Their goal is to develop a youth led service learning project within the service area. The TCPUD’s contact and scope of work with SWEP has been included in the Appendix, Attachment F.
- DMM-8. Conservation programs for commercial, industrial, and institutional accounts. TCPUD provides audits and conservation recommendations in response to requests from commercial businesses, and during rebate requests. TCPUD staff usually reviews commercial conservation efforts during any routine inspection, whether it is for sewer or water issues. Cost of this DMM is included in the general TCPUD conservation budget.
- DMM-9. Wholesale agency programs. TCPUD is a water retailer, not a water wholesaler, and therefore this DMM is not applicable.
- DMM-10. Conservation pricing. Consumption billing began in 2009 when all residential service meters were installed. An increasing block rate structure has been adopted by the Board. A breakdown of the 2015 billing rates is included in the Appendix, Attachment F.
- DMM-11. Water conservation coordinator. TCPUD has designated an existing employee as the Water Conservation Coordinator. The Water Conservation Coordinator’s certifications have been included in the Appendix, Attachment H.
- DMM-12. Water waste prohibitions. TCPUD has the authority to discontinue water service to those connections considered “chronic water wasters”. The connections are subject to a standard fee to re-initiate service. This authority is used only during critical periods of the year. This DMM does not cost TCPUD much to maintain and is included in the overall conservation budget.
- DMM-13. Residential ultra-low-flush toilet replacement programs. TCPUD has implemented a Water Conservation Rebate Program. This includes an appliance program, an irrigation efficiency program and a high efficiency toilet program. These programs and descriptions are in the Appendix, Attachment E.



In conclusion, all the DMM's have been implemented to varying degrees, and have contributed to the success of the water conservation efforts. This is evidenced by the substantial decline in water demands after the installation of meters, initiation of the increasing block rate structure, and leak detection programs made possible by customer metering.

9.2.1 Water Waste Prevention Ordinances

Included in in Stage 1 of TCPUD's Ordinance 288, "Water conservation and Drought Response Standards" is an action that states; "Owners shall not waste water and shall maintain all water service lines, from the point of delivery to the premises served, in good repair. Further, the Owner shall implement the following water conservation measures, under normal, non-emergency conditions."

9.2.2 Metering

Code Section 527:

(a) An urban water supplier that is not subject to Section 526 shall do both the following:

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

All municipal and industrial service connections within TCPUD's service area are metered. The TCPUD currently employs a full Automatic Meter Reading (AMR) system that reads on a monthly basis and more frequently as needed. The TCPUD has recently implemented a pilot program to evaluate new cellular based AMR technology. The meter reading data is transmitted via cellular carrier once daily and includes hourly reads, potential leak notifications as well as other data. The information can be accessed via the internet and on mobile devices and includes the ability to email or text water leak information to the District or directly to the customer.

9.2.3 Conservation Pricing

Consumption billing began in 2009 when all residential service meters were installed. An increasing block rate structure has been adopted by the Board since 2008 and updated annually since. A breakdown of the 2015 billing rates is included in the Appendix, Attachment F.

9.2.4 Public Education and Outreach

DMM-5 through 8 are intended to engage and educate the public about the water agencies ongoing conservation and management efforts.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

DMM-3 details TCPUD's monthly and annual water audits to detect leaks within their system.



9.2.6 Water Conservation Program Coordination and staff Support

A rebate program has been established to encourage owners to replace older toilets with more efficient toilets, to install high efficiency clothes washers, to install high efficiency dishwashers and to install irrigation controls that conserve water. The current staff person responsible for management of the water conservation program is Barbara Smith.

9.3 IMPLEMENTATION OVER THE PAST FIVE YEARS

Code Section 10631:

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

(1)(A) ... a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

All DMM's described above have been implemented to varying degrees over the past 5 years, and water production to meet system demands has decreased correspondingly.

DMM-1. Water Survey Programs for Single-family Residential and Multi-family Residential Customers.

TCPUD has performed approximately 117 conservation inspections over the past 5 years.

DMM-2. Residential Retrofits. The TCPUD has required water conserving fixtures in all new construction and remodel projects for at least the past 5 years.

DMM-3. System Water Audits, leak detection, and repair. TCPUD has maintained monthly and annual water audits of its system for the past 5 years, and continued to monitor residential meter accounts for potential customer leaks.

DMM-4. Metering with commodity rates for all new connections and retrofit of existing connections. As of 2009, all connections have been metered and subject to TCPUD's increasing block rate billing program.

Large landscape conservation programs and incentives. TCPUD has implemented a Water Conservation Rebate Program. This includes an appliance program, an irrigation efficiency program and a high efficiency toilet program. These programs and descriptions are in the Appendix, Attachment C.

DMM-5. High-efficiency washing machine rebate programs. TCPUD has provided high efficiency washing machine rebates to 51 customers in the last 5 years.

DMM-6. Public Information programs. The implementation of this DMM is ongoing.

DMM-7. School education programs. The TCPUD has maintained their contract with Sierra Watershed Education Partnership (SWEP) to provide a conservation, education and outreach program in the schools.

DMM-8. Conservation programs for commercial, industrial, and institutional accounts. These programs are identical to the residential program, and the number of inspections is included in the 117 total under DMM-1.



DMM-9. Wholesale agency programs. This DMM is not applicable.

DMM-10. Conservation pricing. Consumption billing began in 2009, and has been ongoing for at least the past 5 years.

DMM-11. Water conservation coordinator. This program has been ongoing for at least the past 5 years.

DMM-12. Water waste prohibitions. This DMM has not yet been utilized, but would be in the appropriate circumstances.

DMM-13. Residential ultra-low-flush toilet replacement programs. Approximately 216 rebates have been issued under this program in the last 5 years.

9.4 PLANNED IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

Code Section 10631:

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

(1)(A) ... The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

All DMM's will continue to be implemented going forward to further reduce demands.

9.5 MEMBERS OF THE CALIFORNIA URBAN WATER CONSERVATION COUNCIL

Code Section 10631:

(i) For the purposes of this part, urban water supplies that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provision 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.

TCPUD is a member of the California Urban Water Conservation Council (CUWCC) but does not supply annual reports.

CHAPTER 10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

10.1 INCLUSION OF ALL 2015 DATA

The TCPUD has included all on the 2015 data for the entire year of 2015.



10.2 NOTICE OF PUBLIC HEARING

10.2.1 Notice to Cities and Counties

Code Section 10621:

(b) Every urban water supplier required to prepare a plan shall... at least 60 days prior to the public hearing on the plan... notify any city or county within which the supplier provides waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

Code Section 10642:

...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 areas...

10.2.1.1 60 Day Notification

Notification of preparation of the 2015 UWMP was sent to list of agencies presented in Table 10-1 on March 29, 2016.

10.2.1.2 Notice of Public Hearing

Notification of a public hearing on the 2015 UWMP was sent to list of agencies presented in Table 10-1 on May 31, 2016.

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
NTPUD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
STPUD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PCWA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TDPUD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SVPSD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alpine Springs Company Water District	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
Placer County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
El Dorado County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Notes:		

Table 10.1 – Notification to Cities and Counties



10.2.2 Notice to the Public

Code Section 10642:

...Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection... 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...

Government Code 6066:

Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

Notices of the public hearing were published in a local newspaper two times prior to the public hearing date. Draft copies of the UWMP were also made available for public review at the TCPUD's office at 221 Fairway Drive, Tahoe City, California. A copy of the notification letter in the newspaper is included in the Appendix, Attachment D.



10.3 PUBLIC HEARING AND ADOPTION

Code Section 10642:

...Prior to adopting a plan, the urban water supplier shall hold a public hearing thereon.

Code Section 10608.26:

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

- (1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.*
- (2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.*
- (3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target.*

The public hearing was held during TCPUD's regularly scheduled Board Meeting on June 17th. The public hearing was included on the agenda. During the public hearing, the TCPUD provided information on their baseline values, water use targets, and implementation plan required in the Water Conservation Act of 2009.

10.3.1 Adoption

Code Section 10642:

...After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

The 2015 UWMP was adopted by the TCPUD at the June 17, 2016 Board of Directors meeting. Resolution 16-22 is included as Attachment H in the Appendix.

10.4 PLAN SUBMITTAL

Code Section 10621:

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

Code Section 10644:

(a)(1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption.

Code Section 10635:

(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 not later than 60 days after the submission of its urban water management plan.



10.4.1 Submitting a UWMP to DWR

The 2015 UWMP was adopted by the TCPUD on June 17, 2016 and submitted to DWR on _____.

10.4.2 Electronic Data Submittal

Upon adoption, TCPUD's 2015 UWMP will be submitted electronically to DWR.

10.4.3 Submitting a UWMP to the California State Library

Upon adoption, a hard copy or a CD of TCPUD's 2015 UWMP will be provided to the California State Library.

10.4.4 Submitting a UWMP to Cities and Counties

Upon adoption, TCPUD's 2015 UWMP will be provided to all water districts to which TCPUD provides water.

10.5 PUBLIC AVAILABILITY

Code Section 10645:

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

TCPUD's 2015 UWMP will be available for review at the District's Office front counter at 221 Fairway Dr., Tahoe City, California.

10.6 AMENDING AN ADOPTED UWMP

Code Section 10621:

(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).

Code Section 10644:

(a)(1) 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.

The requirements for amending an adopted UWMP are noted.

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Appendix

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Attachment A
TCPUD Capital Plan

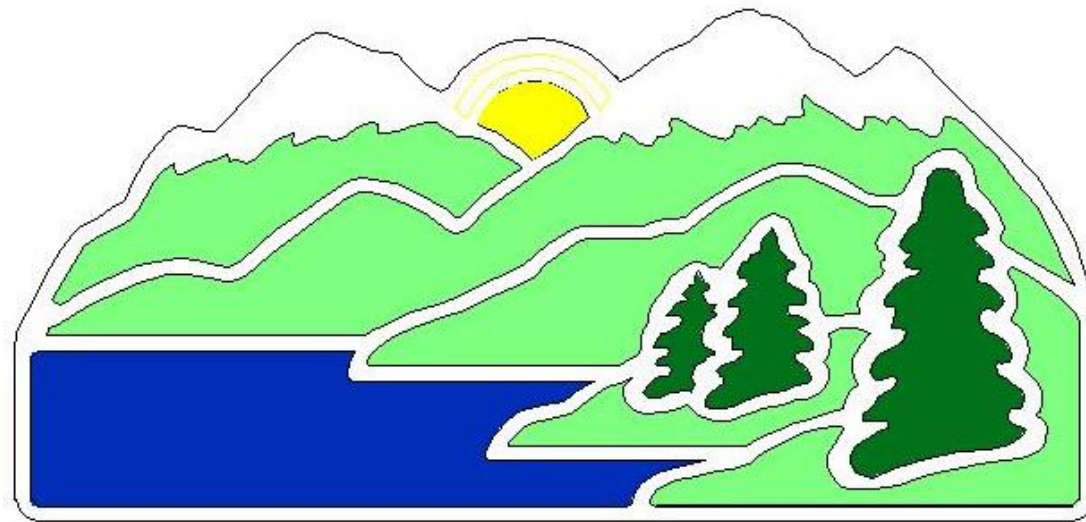
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**TCPUD
Water Capital Plan**

COMPLETED

WATER				2016 Budget		2017		2018		2019		2020		2016 - 2020 Project Subtotal	
				Project Phase	Project Budget	Project Phase	Project Budget	Project Phase	Project Budget	Project Phase	Project Budget	Project Phase	Project Budget		
Asset Category	Upgrade / Replacement	Water System													
ENGINEERING PROJECTS															
	Public Projects Relocations/Upgrades (EIP)	DIST	REPLACE	ALL	P&D/CONST	\$ 41,742	P&D/CONST	\$ -	P&D/CONST	\$ -	P&D/CONST	\$ -	P&D/CONST	\$ -	\$ 41,742
8157	TC Well No. 1 (Bunker) Replacement	SOURCE	REPLACE	TC	CONST	\$ 54,000									\$ 54,000
8126	West Lake Tahoe Regional Water Treatment Plant	SOURCE	UPGRADE	MQ	P&D/CONST	\$ 2,937,852	CONST	\$ 5,793,287							\$ 8,731,138
8151	Bunker Water Tank Replacement	STORAGE	REPLACE	TC	P&D/CONST	\$ 691,764	CONST	\$ 1,652,000							\$ 2,343,764
8144	TC Main Emergency Water Supply Project	SOURCE	UPGRADE	TC	P&D	\$ 40,231	CONST	\$ 706,642							\$ 746,873
81XX	Rubicon Service Line Replacments (Polybutylene)	DIST	REPLACE	RU	P&D/CONST	\$ 472,048									\$ 472,048
81XX	Highlands Easements Service Line Replacements	DIST	REPLACE	TC	P&D	\$ 5,000	CONST	\$ 458,704							\$ 463,704
	Ellis to Lagoon WLR	DIST	REPLACE	MQ			P&D	\$ 63,600	CONST	\$ 375,240					\$ 438,840
	Rubicon Tank No. 1 Water Feed Line Replacement	TRANS	REPLACE	RU			P&D	\$ 19,800	CONST	\$ 116,820					\$ 136,620
	The Drive WLR	DIST	REPLACE	TC			P&D	\$ 37,040	CONST	\$ 218,536					\$ 255,576
	Rubicon Water System Transmission Improvements	S&S, TRANS	67%/33%	RU			P&D	\$ 136,230	P&D	\$ 408,690	CONST	\$ 1,692,120	CONST	\$ 1,692,120	\$ 3,929,160
	Lower Meeks Bay PRV	TRANS	UPGRADE	RU					P&D/CONST	\$ 70,000					\$ 70,000
	Moana Circle WLR	DIST	REPLACE	MQ					P&D	\$ 41,250	CONST	\$ 244,968			\$ 286,218
	Dardanelles WLR	DIST	REPLACE	TC					P&D	\$ 27,360	CONST	\$ 161,424			\$ 188,784
	Water System Master Metering	DIST	UPGRADE	ALL					Prelim/P&D	\$ 40,000	CONST	\$ 250,000			\$ 290,000
	Tahoe City Main Source & Storage Augmentation Projects	SOURCE	75%/25%	TC							PRELIM	\$ 71,156	P&D	\$ 996,187	\$ 1,067,343
															\$ -
	SUBTOTAL					\$ 4,242,636		\$ 8,867,303		\$ 1,297,896		\$ 2,419,668		\$ 2,688,307	\$ 19,515,810
OPERATIONAL PROJECTS															
8149	Quail Tank Recoating (Interior/ Exterior) / Rocky Ridge Roof	STORAGE	REPLACE	MQ	CONST	\$ 50,673									\$ 50,673
8105	Lower Highlands Booster Pump Station Improvements	TRANS	REPLACE	TC	CONST	\$ 40,000									\$ 40,000
8101	Tahoe City Main Production Meter Replacements	TRANS	REPLACE	TC	CONST	\$ 64,605									\$ 64,605
8102	Large Commercial/Domestic Meter Replacement Program	DIST	REPLACE	ALL	CONST	\$ 35,547	CONST	\$ 35,547	CONST	\$ 35,547					\$ 106,641
8161	Rubicon Tank No. 1 Recoating	STORAGE	REPLACE	RU	CONST	\$ 271,100									\$ 271,100
NEW	Cedar Point Condo Water Service Line Replacements	DIST	REPLACE	TC	CONST	\$ 41,000									\$ 41,000
NEW	Rubicon Tank No. 2 Recoating	STORAGE	REPLACE	TC			CONST	\$ 282,000							\$ 282,000
	Lower Highlands Tank Recoating	STORAGE	REPLACE	TC					CONST	\$ 350,000					\$ 350,000
	Lower Highlands Tank Ladder Modifications	STORAGE	REPLACE	TC					CONST	\$ 10,000					\$ 10,000
	Four Seasons Tank Exterior Coating	STORAGE	REPLACE	TC							CONST	\$ 40,000			\$ 40,000
	Riley Springs Vault Rehabilitation	SOURCE	REPLACE	AP							CONST	\$ 62,000			\$ 62,000
	SUBTOTAL					\$ 502,925		\$ 317,547		\$ 395,547		\$ 102,000		\$ -	\$ 1,318,019
	GRAND TOTAL EXPENDITURE				2016	\$ 4,745,562	2017	\$ 9,184,850	2018	\$ 1,693,443	2019	\$ 2,521,668	2020	\$ 2,688,307	\$ 20,833,830
	TOTAL GRANT REIMBURSEMENTS					\$ 1,364,487		\$ 2,896,643		\$ -		\$ -		\$ -	\$ 4,261,130
	NET TOTAL EXPENDITURE					\$ 3,381,075		\$ 6,288,207		\$ 1,693,443		\$ 2,521,668		\$ 2,688,307	\$ 16,572,700

Tahoe City Public Utility District

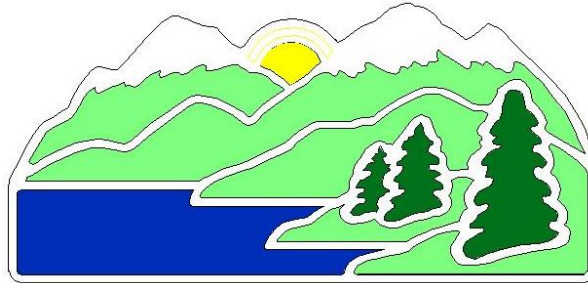


2016 Capital Project Information Sheets

February 12, 2016

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2016 Water Projects



Project Justification Legend

Project Type

- Distribution
- Transmission
- Source
- Storage
- Equipment
- Multiple

Project Type

- Upgrade
- Replace
- Rehab

Justification Category

- Capacity
- Age/Condition
- Safety/Security
- Regulatory
- Vulnerability/Risk
- Best Practice
- Redundancy/Reliability
- Multiple
- Other

Blank

Project Title	Tahoe City Well No. 1 (Bunker) Replacement
Project Manager	Tony Lalotis
Current Phase	CONSTRUCTION
Category	CAPITAL - WATER
Design Consultant	Stantec Consulting
Contract Administrator	Cascade Drilling and District Staff

Project



Project Description
 Drilling of a test well, followed by a permanent domestic well at the current Tahoe City Well No. 1 location.

Background Information
 The Tahoe City Main water system (Dollar Hill to Tavern Heights) relies primarily on the Tahoe City Wells No. 2 and 3 for source water. During the summer months both wells are required to meet maximum day demand. The loss of one of the wells may require the use of a lake intake depending on the time of year. Use of a lake intake would require heavy chlorination and the posting of a boil water advisory. The existing Well No. 1 is of good water quality, however similar to Well No. 2 was not drilled deep enough originally. The well was drilled in 1958 and was not cased below 50'. A new well will need to be drilled, however, all of the existing infrastructure can be reused saving considerable expense on other items. This project could delay the need for the development of another water source (surface water treatment plant)

Project Data

Asset Category:	WATER
Asset Type:	Source
Project Type:	Upgrade
Justification Category:	Capacity
Facility Age (Life):	57 (NA)

Project Cost

Phase	Pre	Design	Construction	Total Project
Preliminary				\$ -
Design	\$ 67,695	\$ 26,989		\$ 94,684
Construction		\$ 741,239	\$ 54,000	\$ 795,239
Total Project				
Net Capital Investment				\$ -

Project Schedule

Design	Oct-13
Construction	Mar-15
Start Construction	Apr-15
Complete Construction	Aug-16

	P
Project Title	West Lake Tahoe Regional Water Treatment Plant
Project Manager	Matt Homolka
Current Phase	DESIGN
Category	CAPITAL - WATER
Design Consultant	Kennedy-Jenks
Contractor	TBD

Project Description

Construction of a permanent surface water treatment plant that would, at a minimum, service the McKinney/Quail water service area, roughly from Moana Circle in the south to Tahoe Ski Bowl Way in the north. This would replace the seasonal interim surface water treatment plant at Chambers Landing, constructed in the spring of 2004.

Justification

Currently this area is supplied by the Crystal Way Well, the seasonal plant at Chambers Landing, and the emergency interconnect to the McKinney Water District. A failure of the Crystal Way Well could cause a major disruption during the winter months, including a potential emergency boil order if untreated surface water was used. The seasonal plant was intended as an interim solution providing a backup supply to the Crystal Way Well. A permanent secondary source is required. A new surface water treatment plant has been identified as the best solution for this system. A plant capable of supplying, or being expanded to serve more regional needs is anticipated. This will allow a lower cost of service per customer as well as planning for future source needs in the broader area currently served by private water systems.

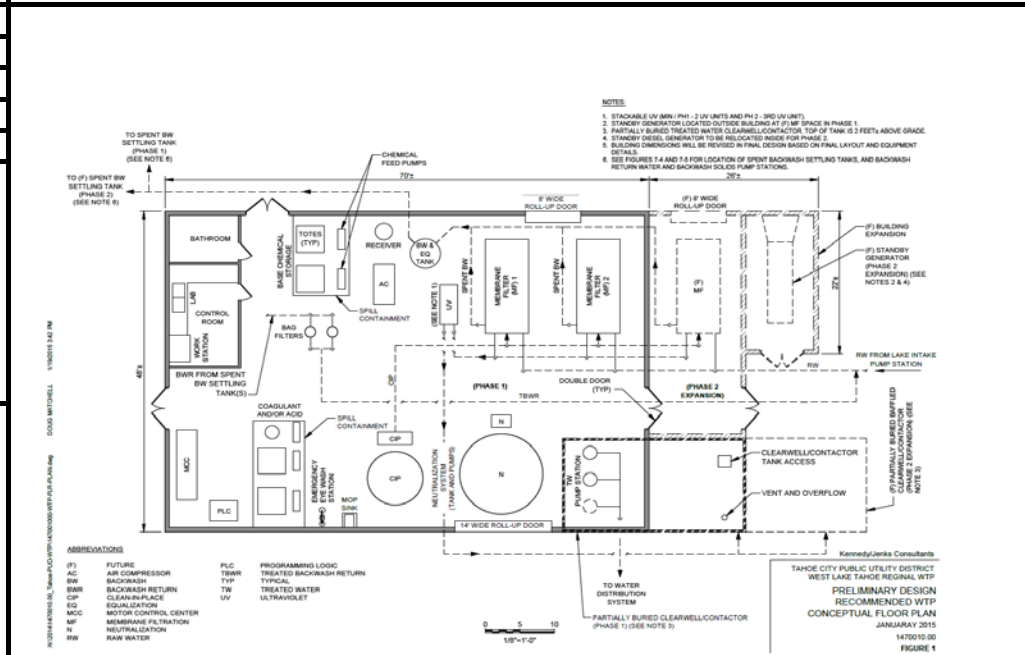
Justification Data

Asset Category:	WATER
Asset Type:	Source
Project Type:	Upgrade
Justification Category:	Capacity
Facility Age (Life):	NA

Project Cost

	Pre	Design	Construction	Total
Preliminary				\$ -
Design	\$ 468,744	\$ 265,709	\$ 1,006,756	\$ 1,741,209
Construction			\$ 1,931,096	\$ 5,793,286
Total Preliminary Design Construction				
Unsecured Outside Funding	\$ 27,500	\$ 280,747	\$ 1,189,801	\$ 2,896,643
Net Capital Investment				

Appendix



Project Schedule

Pre	Design	Construction	Complete
Jan-13	Jan-17	May-17	Jun-18

	P
Project Title	Bunker Water Tank Replacement
Project Manager	Sarah Hussong Johnson
Current Phase	DESIGN
Category	CAPITAL - WATER
Design Consultant	NV5
Contractor	TBD

Project Description

This work will consist of the construction of a new 1.2 million gallon water storage tank to replace the existing undersized and aged redwood tank.

Initiation/Initiate Project

The existing water tank, constructed of redwood in 1960, has a storage capacity of 500k gallons. This project is a high priority due to current deficiencies, including continued water leakage. The aging facility does not meet current seismic or fire regulations, nor does its size allow it to meet current demands. The project will remedy all off these existing problems.

Initiation Data

Asset Category:	WATER
Asset Type:	Storage
Project Type:	Replace
Justification Category:	Age/Condition
Facility Age (Life):	55 (40)

Project Photo



Project Cost

Phase	Pre	ete	et	et	et	Tal
Preliminary	\$ -					\$ -
Design	\$ 108,056	\$ 184,631	\$ 278,764			\$ 571,452
Construction			\$ 413,000	\$ 1,652,000		\$ 2,065,000
Total Project						
LTCFPP - Round 4	\$ 51,257		\$ 134,186	\$ -	\$ -	\$ 185,443
Net Capital						

Project Milestones

Design	Jun-14
Construction	Jan-17
Start Construction	May-17
Complete Construction	Oct-17

	P
Project Title	Tahoe City Main Emergency Water Supply
Project Manager	Sarah Hussong Johnson
Current Phase	DESIGN
Category	CAPITAL - WATER
Design Consultant	Auerbach Engineering Corp.
Contractor	TBD

Project Description

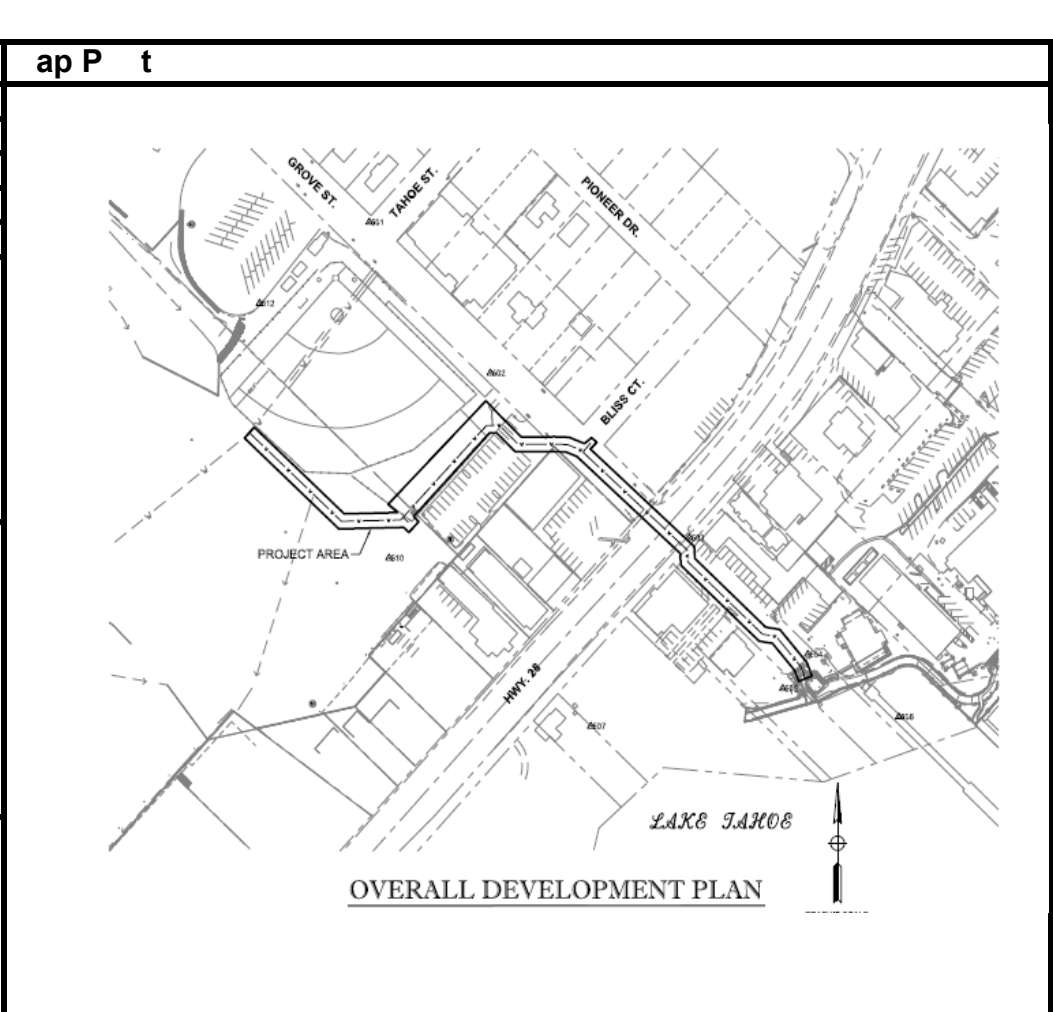
The work consists of constructing approximately 1,400 feet of 12-inch raw water line along Grove Street from the existing Grove Street lake intake to the Tahoe City Golf Course property.

Initiative Description

The Tahoe City water system currently relies on groundwater wells for drinking water production. The waterline will provide the District with the ability to utilize the existing Grove Street lake intake as a backup water supply source, if drought conditions continue. Additionally, the waterline will provide the District with the ability to supply raw water to the golf course for irrigation.

Initiative Data

Asset Category:	WATER
Asset Type:	Distribution
Project Type:	Upgrade
Justification Category:	Redundancy/Reliability
Facility Age (Life):	0 (40)



Project							Project Schedule	
Phase	Pre	ete	et	et	et	Total	Design	Start
Preliminary						\$ -	Apr-14	
Design	\$ 57,300	\$ 46,167	\$ 40,230			\$ 143,696	Mar-17	
Construction				\$ 706,642		\$ 706,642	May-17	
Total Project							Complete	Oct-17
IRWM - Prop 84						\$ -		
Net Capital								

	P
Project Title	Rubicon Service Line Replacements (Polybutylene)
Project Manager	Tony Laliotis
Current Phase	PLANNING
Category	CAPITAL - WATER
Design Consultant	TBD
Contractor	TBD

Project Description

This work will consist of the replacement of the District-owned portion of approximately 150 water services in the Rubicon Water System.

Initiative Description

The service lines located in these areas have experienced significant failures due to polybutylene pipe material becoming brittle and pipe connection methods. Over 25 laterals have been repaired in the last three years. Replacing all of the services at once will save a significant amount of crew time and overall material cost, as well as limiting water loss and property damage due to a known failure type.

Initiative Data

Asset Category:	WATER
Asset Type:	Distribution
Project Type:	Replace
Justification Category:	Age/Condition
Facility Age (Life):	37

Project Photos



Phase	Project					
	Pre	Pr	et	et	et	T
total	ete					tal
Preliminary						\$ -
Design			\$ 5,000	\$ 77,368		\$ 82,368
Construction				\$ 394,680		\$ 394,680
Total Project						
EDCWA Grant				\$ 40,500		\$ 40,500
Net Capital						

Project Milestone	Completion Date
Project Initiation	Mar-16
Design Construction	Aug-16
Start Construction	Sep-16
Complete Construction	Oct-16

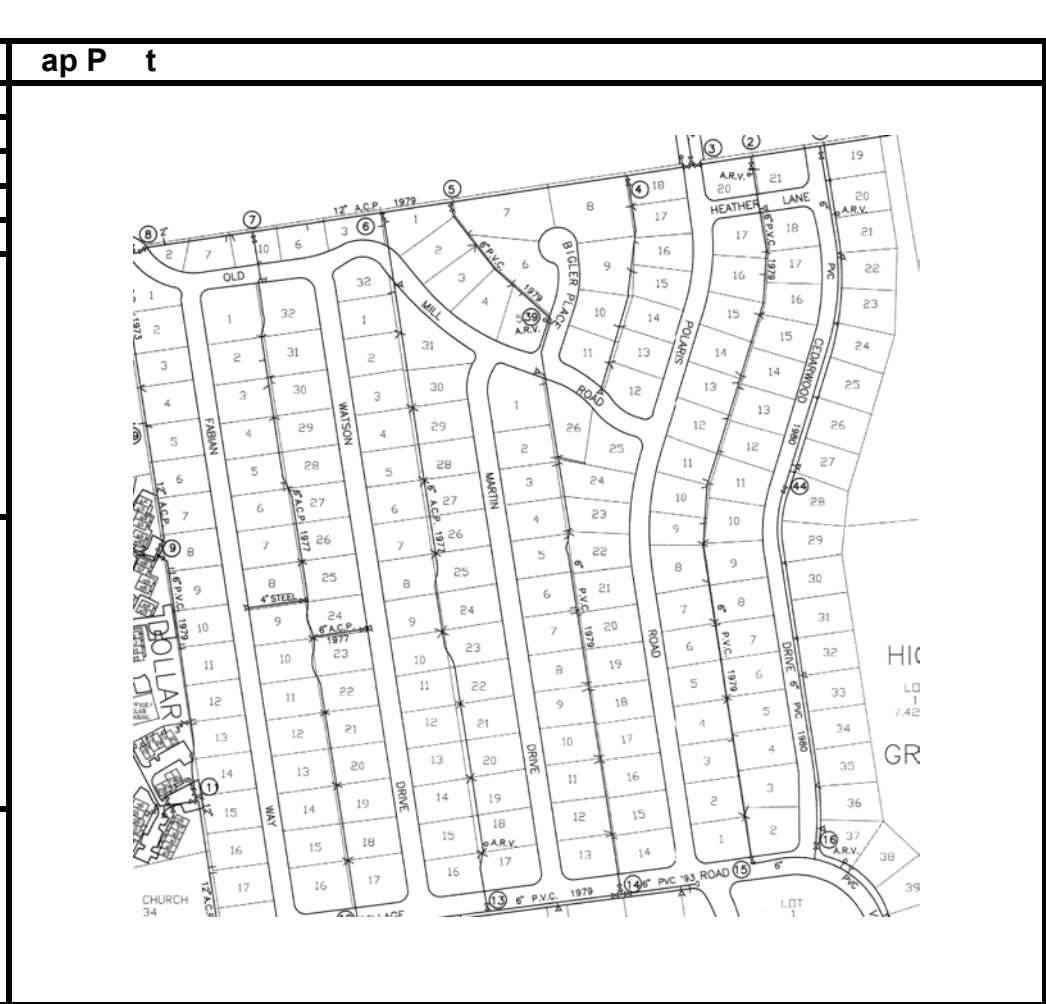
	P
Project Title	Highlands Service Line Replacements (Polybutylene)
Project Manager	Tony Lalotis
Current Phase	PLANNING
Department	CAPITAL - WATER
Design Consultant	TBD
Contractor	TBD

Project Description
 This work will consist of the replacement of the District-owned portion of approximately 139 service lines in the Highlands subdivision. All of the lines are located in easements at the back of the properties.

Background Information
 The service lines located in the easements have experienced significant failures due to polybutylene pipe material becoming brittle and pipe connection methods. Over 25 laterals have been repaired in the last three years. Replacing all of the services at once will save a significant amount of crew time and overall material cost, as well as limiting water loss due to failure.

Information Data

Asset Category:	WATER
Asset Type:	Distribution
Project Type:	Replace
Justification Category:	Age/Condition
Facility Age (Life):	42



Project						Schedule	
Phase	Pre	Pr	et	et	et	T	
Phase	total	ete				total	
Preliminary						\$ -	Feb-17
Design			\$ 5,000	\$ 75,064		\$ 80,064	Apr-17
Construction				\$ 383,640		\$ 383,640	May-17
Total Project							Oct-17
Net Capital Investment						\$ -	

	P
Project Title	Quail Tank Recoating and Rocky Ridge Roof Recoating
Project Manager	Tony Lalotis
Current Phase	CONSTRUCTION
Category	CAPITAL - WATER
Design Consultant	Bay Area Coating Consultants
Contractor	Farr Construction California

Project Description
 This project consists of blasting and recoating the interior and exterior of the Quail Tank and the exterior coat of the Rocky Ridge Tank Roof.

Initiative Description
 Steel water tanks generally require recoating at intervals of 15-30 years depending on the climate and quality of the last recoating. Blasting and recoating of tanks regularly eliminates any corrosion and extends the useful life of a storage tank significantly. The Rocky Ridge Tank roof coating has failed due to poor bonding of the original undercoat which was left in place during the recoating of that tank in 2013.

Initiative Data

Asset Category:	WATER
Asset Type:	Storage
Project Type:	Rehab
Justification Category:	Age/Condition
Facility Age (Life):	21- 25 (Original Coating)

Project



Project Cost

Phase	Pre	ete	et	et	et	Tal
Preliminary						\$ -
Design		\$ 9,266				\$ 9,266
Construction		\$ 221,277	\$ 50,673			\$ 271,950
Total Project						
Net Capital						\$ -

Project Milestone	Completion Date
Design	May-15
Construction	Jul-15
Start Construction	Sep-15
Complete Construction	Jun-16

	P
Project Title	Lower Highlands Booster Pump Station Improvements
Project Manager	Tony Lalotis
Current Phase	CONSTRUCTION
Investment Category	CAPITAL - WATER
Department	NA
Contractor	District

Project

Project Description
 This project will consist of the installation of a backup generator for this facility, along with the installation of piping and control valves to allow for the controlled backflow of water from the Lower Highlands Pressure Zone to the Tahoe City Main Pressure Zone.



Facility Information
 This facility provides a critical source of water to the Upper and Lower Highlands and the Panorama Pressure Zones, which comprises of over 1,000 connections. Loss of power severely limits the Districts ability to provide water to these areas. Likewise, the Upper and Lower Highlands pressure zones store over 1.5 million gallons of water in tanks. Having this storage accessible to the Tahoe City Main system in a controlled fashion is a critical

Facility Data	
Asset Category:	WATER
Asset Type:	Transmission
Project Type:	Upgrade
Justification Category:	Redundancy/Reliability
Facility Age (Life):	41

Project Cost							Project Schedule	
Phase	Pre	Pre	Pre	Pre	Pre	Total	Start	Complete
	liminary	Design	Construction					
			\$ 80,000	\$ 40,000		\$ 120,000		
Total Project								
Net Capital Investment						\$ -		

	P	
Project Title	Tahoe City Main Production Meter Replacements	App P t
Project Manager	Tony Lalotis	
Current Phase	CONSTRUCTION	
Category	CAPITAL - WATER	
Department	NA	
Contract District	DISTRICT	
Project Description		
<p>This project consists of replacing all of the flow meters for District Wells and Booster Pump facilities in the Tahoe City System with modern magnetic style meters, as well as installing modern meter transmitters to allow acquisition of critical flow data remotely.</p>		
Initiative Rationale		
<p>Many of the flow meters in District pumping facilities are reaching their useful life and accuracy has become a concern. In addition, staff can only access flow volume data by either reading flow meters monthly or by physically going to the facility. Magnetic meters have no moving parts and can be easily calibrated, leading to a long useful life. The new meters will allow connection of remote meter transmitters which will provide hourly data reads accessible to District staff via the internet.</p>		
Initiative Data		
Asset Category:	WATER	
Asset Type:	Transmission	
Project Type:	Replace	
Justification Category:	Multiple	
Facility Age (Life):	15-25	



Project Cost							Project Schedule	
Phase	Pre	Pro	o	o	o	Total	Initial Construction	Complete Construction
Preliminary Design						\$ -	NA	
Construction		\$ 198	\$ 64,605			\$ 64,804	NA	May-16
Total Project								Oct-16
Net Capital Investment						\$ -		

	P
Project Title	Large Commercial/Domestic Meter Replacement Program
Project Manager	Tony Laliotis
Current Phase	CONSTRUCTION
Investment Category	CAPITAL - WATER
Department	NA
Contract District	DISTRICT

Project Description
 This project consists of replacement of approximately 25% of the large commercial and Domestic 2-inch meters with more accurate compound meters.

Initiative Rationale
 Leak detection and water audit data have shown that several 2-inch meters are failing to register lower domestic flows. This problem will become more prevalent as meters routinely wear and lose the ability to register low flow. This inaccuracy leads to false water audit data and lost revenue due to unaccounted for water. Many of the commercial meters are approaching 15-18 years of age and are likely to need replacement in the next five years.

Initiative Data

Asset Category:	WATER
Asset Type:	Distribution
Project Type:	Replace
Justification Category:	Age/Condition
Facility Age (Life):	8 to 19

Applicant



Project							Project Schedule	
Phase	Pre	et	et	et	et	T	et	le
Phase	total					total		
Preliminary Design						\$ -		NA
Construction		\$ 41,797	\$ 35,547	\$ 35,547	\$ 35,547	\$ 148,438		NA
Total Project								
Net Capital Investment						\$ -		

Complete Construction Aug-15
Complete Construction Nov-18

	P
Project Title	Rubicon Tank No. 1 Interior Coating
Project Manager	Tony Laliotis
Current Phase	DESIGN
Estimate	CAPITAL - WATER
Design Consultant	Bay Area Coating Consultants
Contractor	TBD

Project Description
 This work will consist of recoating the interior and exterior of the Rubicon Tank No. 1 and the installation of corrosion protection measures.

Justification
 Steel water tanks generally require recoating at intervals of 15-30 years depending on the climate and quality of the last recoating. Blasting and recoating of tanks regularly eliminates any corrosion and extends the useful life of a storage tank significantly.

Justification Data

Asset Category:	WATER
Asset Type:	Storage
Project Type:	Rehab
Justification Category:	Age/Condition
Last Recoating :	27



Project							Project Schedule	
Phase	Pre	Estimate	Actual	Actual	Actual	Total	Project Milestone	Completion Date
Preliminary						\$ -	Design	Feb-15
Design	\$ 10,803		\$ 9,500	\$ -	\$ -	\$ 20,302	Construction	May-16
Construction	\$ -	\$ -	\$ 261,600		\$ -	\$ 261,600	Complete Construction	Aug-16
Total Project								Oct-16
El Dorado Co. Water Agency	\$ 5,401	\$ -		\$ -	\$ -	\$ 5,401		
Net Capital Expenditure								

Project Title	Cedar Point Condo Water Service Line Replacements
Project Manager	Tony Lalotis
Current Phase	CONSTRUCTION
Project Category	CAPITAL - WATER
Department	NA
Contractor	District

Project Description

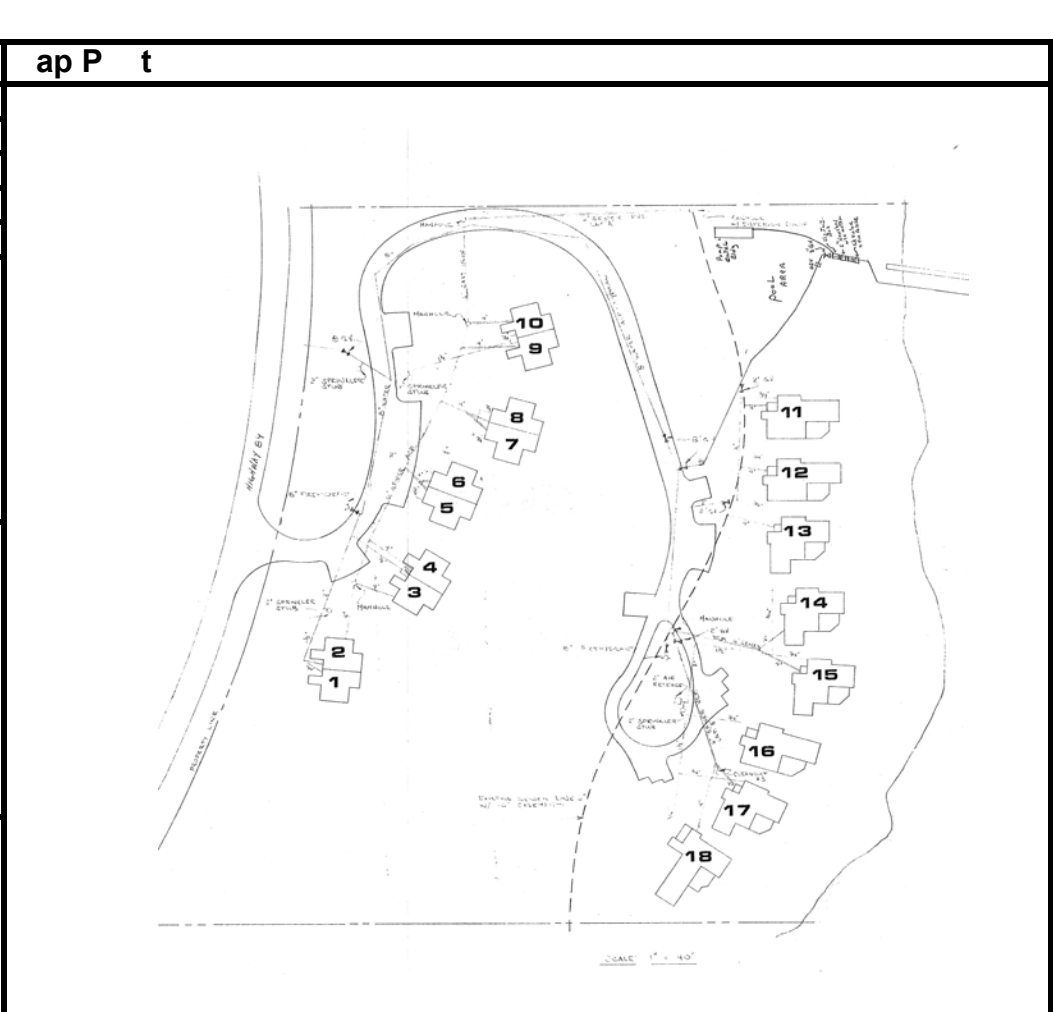
Replacing or slip lining all galvanized steel laterals in the complex between 2" and 1" in size and, based on ownership, install block meters as appropriate.

Initiative Description

Cedar Point steel laterals have experienced major failures over the years causing significant water loss. In the process of replacing or slip lining these the lines, the District will take the opportunity to install block meters. The District never took ownership of 3/4" laterals and water services to individual units when this complex was developed. Therefore, a transition to block meters will now be commensurate with ownership within the complex.

Initiative Data

Asset Category:	WATER
Asset Type:	Distribution
Project Type:	Replace
Justification Category:	Age/Condition
Facility Age (Life):	35



Project							Project Schedule	
Phase	Pre	Pre	et	et	et	T	Complete	Contractor
Phase	total	ete				total		
Preliminary Design						\$ -		NA
Construction			\$ 41,000			\$ 41,000		NA
Total Project								May-16
Net Capital						\$ -		Nov-16

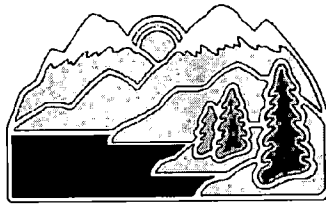
Attachment B
TCPUD Ordinance 288

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Tahoe City Public Utility District

Ordinance 288

**Water Conservation
and
Drought Response Standards**



Adopted March 18, 2016

General Manager
Cindy Gustafson

Board of Directors
Ron Treabess, President
Judy Friedman, Vice President
Erik Henrikson
Dan Wilkins
John Pang

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Section 1

General Policies Governing Water Conservation and Drought Response Standards

1.01 GENERAL

Ordinance 288 of the Tahoe City Public Utility District (hereinafter referred to as "District,") establishes water conservation requirements and drought response standards.

1.02 PURPOSE

The purpose of this Ordinance is to preserve water resources, reduce the risk and severity of water shortages when drought or natural disaster occurs and to establish a drought preparedness and response plan. The prevention of water waste is an environmentally sound way to protect, conserve, and prevent unacceptable diminution of the District's water supplies, while minimizing costs to the District and expense to its customers.

This Ordinance establishes drought response stages and measures to ensure that the water resources available to the District are put to the maximum beneficial use, that unreasonable use or unreasonable method of use is prevented, and that conservation of water is accomplished in the interest of District customers and for the health, safety, and welfare of the public.

This Ordinance provides for the Board of Directors to establish, when funds are available, a rebate program for District customers to encourage conservation and reduce consumer costs.

1.03 WATER WASTE PROHIBITED

No Owner shall waste water or cause, use or permit the use of water received from the District for residential, commercial, industrial, governmental or any other purpose in any manner contrary to any provision in this Ordinance.

Mandatory drought response measures shall be implemented based upon the declaration of drought response stages. No Owner shall use water in quantities in excess of the use permitted by the conservation stage in effect pursuant to this Ordinance.

1.04 METER TAMPERING PROHIBITED

Any type of water meter tampering, modification, alteration, or damage, is expressly prohibited and shall be considered a violation of this Ordinance. Owners with meters that are found to have been tampered with, modified, altered, or damaged, are considered to be in violation of this Ordinance; they may be penalized and shall be dealt with as described in Section 3.03.4 Fourth Violation.

1.05 APPLICATION

This Ordinance applies to all Owners, customers and users who occupy or control water use on any premise within the District's water service area and to those water users and their customers whose parcels are within or outside of District boundaries and who receive service through contract with the District. Certain provisions of this Ordinance also apply to all Owners, customers and users within the District's sewer service area; specifically those provisions related to the installation of low-flow plumbing fixtures, the installation of pressure regulators, and portions of the District's rebate program.

This Ordinance shall apply to potable water use and to non-potable water controlled by the District;

although all Owners, customers, and users with non-potable water sources on their property should consider using the information in this Ordinance as a recommendation on conserving non-potable water as well. This Ordinance may apply to other non-potable water uses depending on regulatory requirements.

1.05.1 Contracted Sales

When the District enters into a contract for the sale of water to a public or private water system or entity, within or outside District boundaries, the system and its customers shall comply with all conditions contained herein. It shall be the responsibility of the system owner or the person signatory to the contract to ensure that all water conservation conditions are satisfied by his/her customers.

1.05.2 Owner Defined

The term "Owner" as used in this Ordinance, shall mean parcel owner, customer, water user, customer under contract or his/her water customers.

1.06 AUTHORITY

Nothing contained within this Ordinance shall be construed to limit the authority of the Board of Directors to amend, supplement, or change this Ordinance or any rules and regulations applicable thereto at any time.

1.07 INTERPRETATION

The General Manager of the District is charged with interpretation, regulation, and enforcement of the provisions of this Ordinance.

1.08 ADMINISTRATION

The provisions of this Ordinance shall be administered and enforced by the District through the General Manager, who may delegate such enforcement to one or more employees or contractors of the District.

1.09 DETERMINATION OF CONSERVATION STAGE

The District operates several separate water service areas. Drought Response Stage 1 applies to all water service areas.

Drought Response Stages 2, 3 and 4 may be called independently by water service area, and shall be based upon supply and demand of available water within each water service area. However, if regional conditions warrant, Drought Response Stages 2, 3, and 4 may be called for all water service areas collectively. Drought Response Stages 2, 3 and 4 shall be determined by the Board of Directors.

1.10 DECLARATION, IMPLEMENTATION AND TERMINATION OF DROUGHT RESPONSE STAGES 2, 3 AND 4

An emergency water conservation plan is necessary to minimize the effect of the water shortages that can arise on short notice during natural disasters or drought conditions. Upon declaration of Drought Response Stage 2, 3 or 4, the General Manager shall be authorized to implement and enforce any or all of the measures identified herein.

Drought Response Stages 2, 3 and 4 will be declared by the Board of Directors. In emergency situations, the General Manager may declare a Drought Response Stage 2, 3 or 4 initially, to be

followed up with a Board of Directors' declaration as soon as reasonably possible. Each drought response stage will be triggered by specific conditions related to the operating capacities of District water sources and the water distribution system, and/or any regulatory mandates. Examples may include, but shall not be limited to, severe local drought conditions, regulatory mandates, significant depletion of pumping capacity due to mechanical failure or aquifer depletion, major distribution system failures such as water or transmission main failure, water tank failure, impacted water quality or water system contamination, natural disasters such as fire, weather or earthquake events, or long term power outages. The drought response stage chosen will vary on the severity of the situation and/or per regulatory mandates.

The District shall monitor the projected supply and demand for water by its customers on a regular basis. Following the declaration of any drought response stage, the District will implement appropriate response actions. If emergency conditions warrant the rationing or emergency conservation of water, Owners shall be notified of the drought response stage by one or more of the following methods:

- a) Door hanger notices delivered to the property served
- b) Mass mailing to Owners, including billing inserts
- c) Email notification to Owners, if such contact information is readily available or on file with the District
- d) Public postings, including signs in affected neighborhoods and subdivisions
- e) Announcements in local media, such as newspapers, radio and television
- f) Announcements via social media and on the District's website
- g) Any other methods deemed appropriate by the General Manager

Implementation of Drought Response Stage 2, 3 or 4 may result in an increased level of monitoring by District staff to ensure compliance.

The District will regularly monitor drought conditions and promptly recommend that the drought response stage level increases if conditions worsen. The General Manager will rescind Drought Response Stage 2, 3 or 4 levels if warranted by improved conditions or reduced regulatory requirements.

1.11 VIOLATIONS

In order to protect the health, safety, and welfare of the community, the District shall serve any Owner found to be violating any provision of this Ordinance with written notice, in accordance with Section 3, stating the nature of the violation, and providing a reasonable time limit for the satisfactory correction. If a violation is not corrected within the time limit prescribed, the General Manager shall exercise his/her authority to restrict the water service to the property, correct the violation, or disconnect the water service from the District's system, based upon the severity of the violation. Disconnect and reconnect fees shall be assessed per the District's fee schedule, as well as any other applicable fees and/or penalties.

1.12 REQUESTS FOR EXEMPTION OR DEVIATION

All requests for exemption or deviation from the provisions of this Ordinance shall be submitted, in writing, by the Owner to the General Manager. The Owner must obtain written permission and not assume that permission will be forthcoming for exemptions or deviations. The District will charge a fee to process the exemption request in accordance with the District fee schedule.

The General Manager may temporarily or permanently exempt Owners from the provisions of this

Ordinance, or impose reasonable conditions in lieu of compliance, if the General Manager finds that any of the following conditions exist:

1.12.1 Serious Economic Hardship

The requirements would cause an unnecessary and undue economic hardship upon the Owner, threatening the Owner's primary source of income as an individual or a business.

1.12.2 Adverse Impact on Health and Safety

Strict compliance would create an emergency condition, as determined by the Board, adversely affecting the health, protection, or safety of the Owner or the public.

1.13 APPEALS

Any person who is dissatisfied with any determination made under this Ordinance may at any time within 30 days after such determination make an appeal. The first appeal will be made to the General Manager. Should the appellant be dissatisfied with the decision of the General Manager, a subsequent appeal may be made to the Board of Directors within 30 days of the General Manager's decision.

1.13.1 Appeal to General Manager

Any person who is dissatisfied with any determination made under this Ordinance may at any time within 30 days after such determination, appeal to the General Manager by giving written notice to the General Manager and to the District Clerk. The appeal shall set forth the events and circumstances leading to the appeal, the nature of the ruling or interpretation from which relief is sought, the nature of the impact of the ruling on the appellant's property or business, together with any other reasons for the appeal.

The General Manager shall investigate the matter appealed and shall make a written decision, which shall be mailed to the appellant within 30 days of receipt of the appeal. If the dispute involves an amount of charges, the appellant shall pay the amount disputed in full when the charges are due. Any charge paid under protest will be refunded to the appellant should the General Manager determine that the charges were wrongfully made.

1.13.2 Appeal to Board of Directors

Any person who is dissatisfied with any determination made by the General Manager may at any time within 30 days after such determination, appeal to the Board of Directors by giving written notice to the General Manager and to the District Clerk. The appeal shall set forth the events and circumstances leading to the appeal, the nature of the ruling or interpretation from which relief is sought, the nature of the impact of the ruling on the appellant's property or business, together with any other reasons for the appeal.

The General Manager shall transmit to the Board of Directors a report upon the matter appealed. The Board of Directors shall cause written notice to be given at least ten (10) days prior to the time fixed for hearing to the appellant of the time and place fixed by the Board of Directors for hearing such appeal. The Board shall consider all testimony and make a decision, which shall be mailed to the appellant within 30 days of the date of the Board action. The Board of Directors may, at any time, upon its own motion, revise any determination made by the General Manager.

If the dispute involves an amount of charges, the appellant shall pay the amount disputed in full when the charges are due. Any charge paid under protest will be refunded to the appellant should

the Board of Directors determine that the charges were wrongfully made.

1.14 SEVERABILITY

If any section, paragraph, sentence, clause, or phrase of this Ordinance or any part thereof is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this Ordinance or any part thereof. The Board hereby declares that it would have passed each section, paragraph, sentence, clause, or phrase thereof, irrespective of the fact that any one or more sections, paragraphs, sentences, clauses, or phrases be declared invalid.

- END OF SECTION -

Section 2

Water Conservation Drought Response Stages

2.01 WATER CONSERVATION REQUIREMENTS

DROUGHT RESPONSE STAGE 1 - NORMAL CONDITIONS

The Owner shall not waste water and shall maintain all water service lines, from the point of delivery to the premises served, in good repair. Further, the Owner shall implement the following measures, under normal, non-emergency conditions:

2.01.1 Metering: Tiered Water Consumption Charges

The Owner shall be assessed and pay a flat monthly water rate based upon size of the water meter as well as a charge for water consumption based upon a tiered billing structure, as identified in the current District water rate schedule. This billing structure is designed to encourage conservation, as the charge per thousand gallons of water consumed increases as water use increases.

2.01.2 Repair of Water Leaks

Any leak or abnormal use in plumbing and/or irrigation systems, including running toilets, or any leak in swimming pools, hot tubs, decorative water features or any other receptacle used to store water, shall be repaired when found, but in any case within ten (10) days of notice by the District to repair.

2.01.3 Water Runoff

Use of water which results in flooding or runoff in gutters, streets or onto adjacent property is not allowed.

2.01.4 Vehicle Wash

Automatic shutoff valves or nozzles will be used whenever a hose is used for cleaning vehicles. This subsection does not apply to any commercial car washing facility that utilizes a recycling system to capture or reuse water. Washing of vehicles is exempted where the health, safety and welfare of the public is dependent upon frequent vehicle cleanings, such as snow removal vehicles and garbage trucks.

2.01.5 Cleaning of Surfaces

Automatic shutoff valves or nozzles will be used whenever a hose is used for cleaning or clearing walkways, patios, tennis courts, decks, driveways, parking areas or other improved areas, whether paved or unpaved. Unrestricted hoses may be used to alleviate immediate fire or sanitation hazards.

2.01.6 Construction Water

All water hoses used in connection with any construction activity shall be equipped with an automatic shutoff nozzle.

2.01.7 Fire Hydrant Use Permit

A District "Water Service from Hydrant Permit" must be obtained before use of any fire hydrant for any purpose other than fire suppression or emergency aid.

2.01.8 Water Pressure

Water pressure shall not exceed 60 psi within residential or non-residential structures. Pressure will be checked at final inspection of new construction, reconstruction, and remodel to ensure

compliance.

2.01.9 Low-Flow Plumbing Fixtures

a) Residential Units, Apartments, and Condominiums

Residential New Construction or Complete Reconstruction

Low-flow fixtures are required in all residential structures that are subject to the new construction or tear down/rebuild District permit process, and shall meet the requirements of the most current California Plumbing Code, the most current Uniform Plumbing Code, regulatory requirements, or the following, whichever is more restrictive:

- i. Showerheads must be 2.0 gallons per minute (gpm) or less
- ii. Toilets must be 1.28 gallons per flush (gpf) or less and shall have a waste extraction score of no fewer than 351 grams, or be high-efficiency (HET)
- iii. Dual flush toilets qualify as HET
- iv. Kitchen faucets must be 1.8 gpm or less and may have the capability to increase to 2.2 gpm momentarily for filling pots and pans
- v. Residential lavatory faucets must be 1.2 gpm or less

b) Residential Units, Apartments, and Condominiums

Residential Remodel or Retrofit

Where a residential structure is subject to the District's remodel permit process, all existing fixtures within the residential unit must be replaced with low-flow fixtures, per Section 2.01.9(a). This applies to all fixtures within the residential unit, not just the ones initially being replaced, per State law and local building code requirements. Exceptions may be granted, per State law and the local building department.

c) Commercial and Public Structures

New Construction or Complete Reconstruction

Low-flow fixtures are required in all new or completely reconstructed commercial and public structures that are subject to the District permit process, and shall meet the requirements of the most current California Plumbing Code, the most current Uniform Plumbing Code, regulatory requirements, or the following, whichever is more restrictive:

- i. Showerheads must be 2.0 gpm or less
- ii. Toilets must be 1.28 gpf or less and shall have a waste extraction score of no fewer than 351 grams, or be high-efficiency (HET)
- iii. Dual flush toilets qualify as HET
- iv. Urinals must be 0.125 gpf or less
- v. Kitchen faucets must be 1.8 gpm or less and may have the capability to increase to 2.2 gpm momentarily for filling pots and pans
- vi. Residential lavatory faucets must be 1.2 gpm or less
- vii. Public restroom lavatory faucets must be 0.5 gpm or less
- viii. Metered faucets required for public transient restroom lavatories must be 0.25 gallons per use or less
- ix. Pre-rinse sink faucets must be 1.6 gpm or less
- x. Spray nozzles must be 1.6 gpm or less

d) Commercial and Public Structure Retrofit

Where a commercial or public structure is subject to the District's remodel permit

process, all existing fixtures within the unit being remodeled must be replaced with low-flow fixtures, per Section 2.01.9(c). This applies to all fixtures within the remodeled unit, not just the ones initially being replaced, per State law and local building code requirements. Exceptions may be granted, per State law and the local building department. Units within a multi-unit commercial structure that are not being remodeled are not subject to retrofit.

2.01.10 Landscape Irrigation

a) Winterization of Irrigation Systems

Operation of irrigation systems shall be discontinued and properly winterized by November 1st every year or earlier depending on temperatures.

b) Landscape Irrigation Controls on New Construction Irrigation Systems

Any new irrigation systems installed within the District, in conjunction with new construction or complete reconstruction, must be equipped with rain sensing devices that will halt irrigation during and after measurable precipitation, and/or moisture sensors that use a probe in the soil to monitor soil water content, and/or freeze sensors that turn off sprinkler valves when the temperature drops below a preset level. These devices must be approved by the District as to number, type, and settings.

c) New Construction and Rehabilitated Landscaping

The installation and planting of landscaping associated with new construction or new or rehabilitated landscaping at existing properties is strongly encouraged to occur in spring or fall. New non-turf landscaping, including bedding plants and trees, shall be on drip, micro sprinkler, or micro sprayer irrigation systems. Overhead watering shall only be allowed for turf areas.

d) State Model Water Efficient Landscape Ordinance

All residential and commercial landscaping associated with new construction or new or rehabilitated landscaping at existing properties shall conform with the requirements of the Model Water Efficient Landscape Ordinance, per California Code of Regulations, Title 23, Division 2, Chapter 2.7 or applicable local ordinances superseding the State ordinance.

2.01.11 Restrictions on Irrigation during Times of Day, Precipitation or Low Temperatures

Landscaping, lawns and open ground must not be watered: (1) between the hours of 9:00 AM and 8:00 PM, (2) at any time while it is raining or snowing and 48-hours after measurable precipitation, and/or (3) where the air temperature is less than 40 degrees Fahrenheit.

2.01.12 Visitor-Serving Facilities

In order to promote public awareness of the need to conserve water and not waste water, the owner and manager of each hotel, motel, restaurant, convention center, and other visitor-serving facility shall display informational material, placards, and/or decals, provided by the District, in places visible to all customers.

2.01.13 Public Entities

In order to promote public awareness of the need to conserve water and not waste water, all public entities shall display informational material, placards, and/or decals, provided by the District, in

places visible to all customers.

2.01.14 Indiscriminate Use

Owners shall not use water in a manner that is wasteful and without reasonable purpose.

2.01.15 Exceptions

The provisions of Section 2 of this Ordinance are not applicable to the uses of water which are necessary to protect public health and safety or for essential governmental services, such as police, fire, and other similar emergency services.

2.02 WATER CONSERVATION REQUIREMENTS – MANDATORY COMPLIANCE – DROUGHT RESPONSE STAGE 2 – SIGNIFICANT WATER SHORTAGE

In addition to Drought Response Stage 1 requirements, Drought Response Stage 2 requires that overall water consumption be reduced up to 35%. Failure to reduce water consumption by the designated percentage shall be considered a violation, per Section 3 of this Ordinance. The specific percent reduction in overall water consumption, as well as the benchmarks used for comparison, may be designated by regulatory requirements or a Resolution adopted by the District's Board of Directors, and will be defined by the District when implementing Drought Response Stage 2. The District may choose to implement, by Board Resolution, varying water consumption reduction requirements for different Owners, based upon factors such as, but not limited to; historical water usage, type of water usage, time of water usage, or any other relevant factor. Specific mandated restrictions in water use during Drought Response Stage 2 are as follows:

2.02.1 Designated Irrigation Days Established – Three Days per Week

- a) Properties with street addresses that end in an even number may irrigate only on Monday, Wednesday, and Friday; properties with street addresses ending in an odd number may irrigate only on Sunday, Tuesday, and Thursday. There will be no irrigation permitted on Saturday. The irrigation day shall be considered to begin at midnight and end at 11:59 pm.
- b) Irrigation of non-turf areas which exclusively utilizes drip systems, including micro sprinklers and micro sprayers, or a hose with an automatic shutoff nozzle, shall be exempt from designated irrigation days.
- c) Properties with large common areas and public facilities may request alternate irrigation schedules based on specific needs or issues. The District will review such requests on a case-by-case and first-come, first-served basis.
- d) The District may establish alternate schedules based upon its determination, and will notify affected Owners of such changes. Designated irrigation days may be modified by the District, if needed.

2.02.2 New or Rehabilitated Landscaping

Notwithstanding any other provision of this Ordinance, water used for irrigating landscaping associated with new construction or new or rehabilitated landscaping at existing properties shall be limited to new or rehabilitated landscaping planted to comply with a Tahoe Regional Planning Agency (TRPA) permit requirement, TRPA Best Management Practice's (BMP) requirement or defensible space. The Owner, or his/her designee, must request permission from the District in writing for the establishment of new vegetation, and may not proceed with work until approval has

been received from the District.

- a) Newly planted sod may be exempt for thirty (30) days from the date it was installed, and shall require approval from the District in accordance with this Section.
- b) Planting and seeding for public erosion control and/or environmental restoration projects shall be exempt from these requirements, and shall require approval from the District.
- c) Rehabilitation or installation of new landscaping at properties that had been improved with permitted structures more than six (6) months prior to the rehabilitation or installation of the rehabilitated or new landscaping and which do not meet the requirements of Section 2.02.2, requires written approval from the District prior to the rehabilitation or installation and such approval will not change or alter any other provision or requirement of this Ordinance, including but not limited to water consumption reduction requirements for individual properties, potential violations and enforcement actions.

2.02.3 Irrigation of Public Facilities

Where it is in the interest of public health and safety or where facilities are open to the public, the General Manager may permit extended periods or alternate schedules of irrigation or application of water to public facilities.

2.02.4 Food Service and Drinking Establishments

All food service and drinking establishments shall serve drinking water to their customers only upon request by the customers. All food service and drinking establishments shall include a placard at each table and/or language on their menu, stating such.

2.02.5 Visitor Accommodations

All visitor accommodations, including, but not limited to, hotels, motels, guest rooms, bed and breakfast establishments, vacation rentals, etc., shall wash guest linens, including towels and sheets, only upon request of their guests, and after guest check out. A placard or notice stating such shall be displayed in each guest room.

2.02.6 Hard Surface Application

The application of water to hard surfaces, including driveways, sidewalks, parking lots, and athletic facilities shall be prohibited, except for pavement resurfacing or sealing, construction services, and/or public health and safety. Any application of water to hard surfaces for these exceptions shall use automatic shutoff nozzles, or require on-site monitoring during manual irrigation.

2.02.7 Decorative Water Features

The use of water in decorative water features that do not recirculate the water is prohibited.

2.02.8 Regulatory Requirements

Other restrictions may apply as mandated by regulatory requirements and may supersede any section of this Ordinance.

2.03 WATER CONSERVATION REQUIREMENTS – MANDATORY COMPLIANCE – DROUGHT RESPONSE STAGE 3 – SEVERE WATER SHORTAGE

A Stage 3 drought response is triggered by deterioration in local water service area indicators in

conjunction with a drought status above normal for the Lake Tahoe Basin, a failure of key water service area components, regulatory requirements, and/or a failure to significantly reduce water demand in Drought Response Stage 2.

During Drought Response Stage 3, Drought Response Stages 1 and 2 restrictions apply. Furthermore, Drought Response Stage 3 requires that overall water consumption be reduced by 35% to 50%. Failure to reduce water consumption by the designated percentage shall be considered a violation, per Section 3 of this Ordinance. The specific percent reduction in overall water consumption, as well as the benchmarks used for comparison, may be designated by regulatory requirements or a Resolution adopted by the District's Board of Directors, and will be defined by the District when implementing Drought Response Stage 3. The District may choose to implement, by Board Resolution, varying water consumption reduction requirements for different Owners, based upon factors such as, but not limited to; historical water usage, type of water usage, time of water usage, or any other relevant factor. The Board may designate specific areas for further restrictions including, but not limited to, the following specific mandated restrictions in water use during Drought Response Stage 3, which are as follows:

2.03.1 Designated Irrigation Days Established – Two Days per Week

- a) Properties with street addresses that end in an even number may irrigate only on Monday and Thursday; properties with street addresses ending in an odd number may irrigate only on Tuesday and Friday. There will be no irrigation permitted on Wednesday, Saturday, or Sunday. The irrigation day shall be considered to begin at midnight and end at 11:59 pm.
- b) Irrigation of non-turf areas which exclusively utilizes drip systems, including micro sprinklers and micro sprayers will be allowed only Monday through Friday and shall be prohibited on Saturdays and Sundays.
- c) Properties with large common areas and public facilities may request alternate irrigation schedules based on specific needs or issues. The District will review such requests on a case-by-case and first-come, first-served basis.
- d) The District may establish alternate schedules based upon its determination, and will notify affected Owners of such changes. Designated irrigation days may be modified by the District, if needed.

2.03.2 New or Rehabilitated Landscaping

Notwithstanding any other provision of this Ordinance, water used for irrigating landscaping associated with new construction or new or rehabilitated landscaping at previously improved properties shall be limited to new or rehabilitated landscaping planted to comply with a Tahoe Regional Planning Agency (TRPA) permit requirement, TRPA Best Management Practice's (BMP) requirement or defensible space. The Owner, or his/her designee, must request permission from the District in writing for the establishment of new vegetation, and may not proceed with work until written approval has been received from the District.

- a) No new sod or lawns shall be allowed to be installed during summer months (June, July, and August), or when daytime temperatures exceed 80 degrees Fahrenheit.

2.03.3 Snow Making Water

Limitations on snow making water may be imposed by the District, depending on time of year,

weather, and/or availability of water.

2.03.4 Regulatory Requirements

Other restrictions may apply as mandated by regulatory requirements and may supersede any section of this Ordinance.

2.04 WATER CONSERVATION REQUIREMENTS – MANDATORY COMPLIANCE – DROUGHT RESPONSE STAGE 4 – WATER SHORTAGE EMERGENCY

A Stage 4 drought response is triggered by deterioration in local water service area indicators in conjunction with a drought status above normal for the Lake Tahoe Basin, a failure of key water service area components, regulatory requirements, and/or a failure to significantly reduce water demand in Drought Response Stages 2 and 3.

During Drought Response Stage 4, Drought Response Stages 1, 2 and 3 restrictions apply. Furthermore, Drought Response Stage 4 requires that overall water consumption be reduced by 50% or more. Failure to reduce water consumption by the designated percentage shall be considered a violation, per Section 3 of this Ordinance. The specific percent reduction in overall water consumption, as well as the benchmarks used for comparison, may be designated by regulatory requirements or a Resolution adopted by the District's Board of Directors, and will be defined by the District when implementing Drought Response Stage 4. The District may choose to implement, by Board Resolution, varying water consumption reduction requirements for different Owners, based upon factors such as, but not limited to; historical water usage, type of water usage, time of water usage, or any other relevant factor. The Board may designate specific areas for further restrictions including, but not limited to, the following specific mandated restrictions in water use during Drought Response Stage 4, which are as follows:

2.04.1 Prohibition of Water Use Except for Domestic and Commercial Non-Irrigation Use

The use of water for other than domestic and commercial non-irrigation use is prohibited, except that irrigation of public facilities may be permitted pursuant to review and approval by the District. Irrigation of ornamental landscapes, turf, and new construction landscaping is expressly prohibited. The application of water to hard surfaces and for decorative water features is also prohibited.

2.04.2 Mandatory Water Rationing

The District may implement mandatory water rationing through the use of rolling outages, or other methods, should the situation require. Affected customers will be notified via public outreach, local media, written notice posted at the property, mail, and/or personal contact.

2.04.3 Regulatory Requirements

Other restrictions may apply as mandated by regulatory requirements and may supersede any section of this Ordinance.

- END OF SECTION -

Section 3 Violations

3.01 NOTICE OF VIOLATION

The District may find out that a property is in violation of this Ordinance in a number of ways, including, but not limited to, District monitoring, customer contact, or a complaint. If any person fails or refuses to comply with the provisions of this Ordinance, the General Manager or his/her designee shall provide the Owner with a written notice of the violation and an opportunity to correct the non-compliance. The written notice will:

- a) Be posted or presented at the site of the noncompliance, or be mailed to the Owner
- b) State the time, date and place of the violation
- c) Provide a general description of the violation
- d) State the means to correct the violation
- e) State a date by which correction is required
 - i. The date specified shall be commensurate with the severity of the situation
- f) State the possible consequences of failing to correct the violation

The District shall also make every reasonable attempt to establish personal contact with the Owner via phone, email, and/or in person, if such contact information is readily available or on file with the District.

3.02 CORRECTIVE ACTIONS

If the violation is not corrected to the District's satisfaction within the time limit specified or if conditions are severe enough or warrant immediate action, the District may restrict the water service to the property, correct the violation, or disconnect the water service in accordance with District procedures. In addition to restricting the water service, correcting the violation, or disconnecting the water service, the Owner may be billed administrative fees, as well as any applicable time and maintenance charges on his/her account, in accordance with the District's fee schedule.

If the water service is disconnected, reconnection shall only be permitted when there is reasonable protection against future violations, as determined by the District. Costs associated with disconnection and reconnection will be billed to the Owner.

3.03 PROCEDURES

3.03.1 First Violation

Following adoption of this Ordinance, first violations of any provision within this Ordinance will result in a friendly reminder in the form of a notice posted on or near the front door, personal contact with the Owner and/or a letter advising the Owner of the violation, in accordance with Section 3.01. If not corrected within the time limit specified in the District's notice to the Owner, the District may elect to take corrective actions per Section 3.02, and/or impose the conditions associated with a Second Violation, as outlined in Section 3.03.2, based upon severity of the violation.

3.03.2 Second Violation

For a second violation of any provision within this Ordinance within one calendar year, whether it is the same provision previously violated or a new provision, the Owner will be notified in writing in the form of a notice posted on or near the front door, personal contact with the Owner, and/or a

letter advising the Owner of the violation, in accordance with Section 3.01. If the correction is not made within the time limit specified in the District's notice to the Owner, based upon severity of the violation, a penalty, in the amount as set forth in a Resolution adopted by the District's Board of Directors establishing penalties for violating this Ordinance, as well as any applicable time and maintenance charges, may be assessed in accordance with the District fee schedule. These costs shall be added to the Owner's water service charges at the property where the violation occurred. If not corrected within the time limit specified in the District's notice to the Owner, the District may elect to take corrective actions per Section 3.02, and/or impose the conditions associated with a Third Violation, as outlined in Section 3.03.3, based upon severity of the violation.

3.03.3 Third Violation

For a third violation of any provision within this Ordinance within one calendar year, whether it is the same provision previously violated or a new provision, the Owner will be notified in writing in the form of a notice posted on or near the front door, personal contact with the Owner, and/or a letter advising the Owner of the violation, in accordance with Section 3.01. If the correction is not made within the time limit specified in the District's notice to the Owner, a penalty, in the amount as set forth in a Resolution adopted by the District's Board of Directors establishing penalties for violating this Ordinance, as well as any applicable time and maintenance charges, will be assessed in accordance with the District's fee schedule. These costs will be added to the Owner's water service charges at the property where the violation occurred. If not corrected within the time limit specified in the District's notice to the Owner, the District may elect to take corrective actions per Section 3.02, and/or impose the conditions associated with a Fourth Violation, as outlined in Section 3.03.4, based upon severity of the violation.

3.03.4 Fourth Violation

For the fourth and any subsequent violations of any provision within this Ordinance within one calendar year, whether it is the same provision previously violated or a new provision, the Owner will be notified in writing in the form of a notice posted on or near the front door, personal contact with the Owner, and/or a letter advising the Owner of the violation, in accordance with Section 3.01. If the correction is not made within the time limit specified in the District's notice to the Owner, a penalty, in the amount as set forth in a Resolution adopted by the District's Board of Directors establishing penalties for violating this Ordinance, as well as any applicable time and maintenance charges, will be assessed in accordance with the District's fee schedule. These costs will be added to the Owners' water service charges at the property where the violation occurred. If not corrected within the time limit specified, the District may take corrective actions per Section 3.02, based upon severity of the violation, up to and including disconnection of the water service at the property where the violation occurred.

3.04 CORRECTION AND ENFORCEMENT COSTS

The District may correct any violation of this Ordinance and bill the Owner for costs and expenses in correcting violation(s) and/or enforcing the provisions of this Ordinance, including staff time for investigation, correction of violation(s), and/or monitoring for compliance, if the Owner refuses to comply. The Owner may also be assessed a penalty(ies), as determined by the level of violation and/or regulatory requirements.

Charges shall be added to the Owner's bill for the property where the correction and/or enforcement costs were incurred. The District may also take such action as may be allowed by statute, local or State regulatory requirements.

3.05 TERMINATION OF SERVICE

Failure to correct the violation may result in termination of water service to the parcel on which the violation occurred. Reconnection shall only be permitted when there is reasonable protection against future violations, as determined by the District.

- END OF SECTION -

Section 4

Rebate and Conservation Programs

4.01 REBATE PROGRAM ESTABLISHED

A rebate and conservation program may be established to encourage Owners to implement water efficiency measures at their property. Programs may include, but are not limited to, water use surveys, high efficiency toilet replacements, high efficiency appliance replacements, efficient irrigation control systems and turf removal programs.

To be eligible to participate in any rebate or conservation program, District customers shall be in full compliance with all District Ordinances and current on their utility account. . To be eligible to receive rebates, any outstanding issues on the property must be resolved for District water and sewer customers.

Any device, process or program associated with a rebate given by the District, shall remain in place for a minimum of 5 years, unless that device, process, or program is replaced with a more efficient or equal measure.

Rebates and programs are given only if funding is still available and on a first-come, first-served basis. Applications submitted after funding is exhausted will be processed in the following calendar year in the order received. The individual rebate programs or the water audit program may be suspended, discontinued, expanded, or modified at any time, at the discretion of the General Manager.

- END OF SECTION -

Section 5
Effective Date of Ordinance, and Revocation of Prior Water Ordinances
Inconsistent Herewith

This Ordinance shall become effective thirty (30) days from date of adoption.

Existing fees and charges in effect when this Ordinance is adopted shall remain in effect unless specifically changed by this Ordinance.

District Ordinance 284 is hereby revoked in its entirety and to the extent that any other of the existing and prior ordinances of the District applicable to its water service areas are inconsistent herewith, all such prior ordinances shall be deemed revoked upon this Ordinance becoming effective to the extent that they are inconsistent.

That the Clerk of this District is hereby authorized and directed to cause this Ordinance to be duly published and posted as required by law.

PASSED AND ADOPTED THIS 18th day of March, 2016 at a Regular meeting of the Board of Directors of Tahoe City Public Utility District by the following vote:


AYES: Henrikson, Wilkins, Pang, Friedman, Treabess
NOES: None
ABSENT: None

Tahoe City Public Utility District

By: 

Ron Treabess, Board President

ATTEST:



Terri Viehmann, District Clerk

- END OF SECTION -

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Attachment C
TCPUD Rebate Program

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Water Efficiency Rebates

The Tahoe City Public Utility District (TCPUD) encourages our customers to take advantage of rebate programs through the State and/or the District for a variety of water conservation measures such as removal of turf, or the purchase of water efficient appliances and irrigation controls.

STATE PROGRAMS

Turf Removal Rebates

The State of California's rebate program can be found here: <http://www.saveourwaterrebates.com>

High Efficiency Toilet Rebates

The State of California's rebate program can be found here: <http://www.saveourwaterrebates.com>

Rebates are available for current District customers who are in compliance with all District ordinances and current

TAHOE CITY PUBLIC UTILITY DISTRICT PROGRAMS

on their utility account. For commercial customers or multi-unit customers, please contact the District to discuss special exceptions to the rebate maximums listed below. Rebates are limited and subject to available funds. A copy of the purchase receipt must be included with your application, receipts older than one year will not be accepted. The District may require a site inspection to verify installation.

Energy Star Dishwashers

- TCPUD provides a rebate in the amount of \$75 for District WATER customers or up to \$37.50 for District SEWER ONLY customers.
- Maximum 1 dishwasher rebate per residence or business.
- The dishwasher must be Energy Star rated. Refer to www.energystar.gov/ or <http://www.energystar.gov/productfinder/product/certified-residential-dishwashers/>.

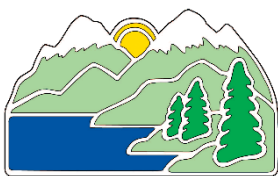
Energy Star Clothes Washers

- TCPUD provides a rebate in the amount of \$100 for District WATER customers or up to \$50 for District SEWER ONLY customers.
- Maximum 1 clothes washer rebate per residence or business.
- The clothes washer must be Energy Star rated. Refer to www.energystar.gov/ or <http://www.energystar.gov/productfinder/product/certified-clothes-washers/results>

Smart Irrigation Sensor and Devices

- Rebates are available for Rain Sensors, Soil Moisture Sensors, and Temperature Sensing Gauges.
- TCPUD provides a rebate in the amount of \$25 per device for District WATER customers.
- Maximum of 3 irrigation control rebates per residence or business.
- The Sensors or Gauges must be purchased, installed calibrated and operational per the manufacturers' specifications prior to application for rebate. Sensors or gauges must affect the entire irrigation system.

TCPUD Rebate Application



Tahoe City Public Utility District

In order to receive a TCPUD rebate, complete the application, attach a copy of your receipt and a picture of the product packaging which clearly shows the manufacturer and model information. Completed applications can be delivered in person to the District office, emailed to conservation@tcpud.org or mailed to TCPUD, Rebate Program, P.O. Box 5249, Tahoe City, CA 96145.

If you have any questions about the District rebate programs, please call: 530-580-6281, or email us at conservation@tcpud.org

**Tahoe City Public Utility District
Water Efficiency Rebate Request**



221 Fairway Drive / P. O. 5249, Tahoe City, CA 96145

Phone (530) 580-6281

www.tcpud.org

Date _____

Owner _____ APN _____

Street Address _____ Daytime Phone _____

Email Address _____ UB Account # _____

Mail rebate to:

Address _____ City _____ State _____ Zip _____

Select one: TCPUD Water & Sewer Customer TCPUD Sewer Customer only

Choose all that apply:

Dishwasher Model # _____ Manufacturer _____

Clothes Washer Model # _____ Manufacturer _____

Dishwasher & Clothes Washer must be high efficiency Energy Star rated

Irrigation Controls: Rain Sensor Temperature Sensing Gauge Soil Moisture Sensor

Rain Sensor must automatically break the circuit to the solenoid valves of the irrigation system during and after precipitation. Temperature Sensing Gauge must disable irrigation when the ambient air temperature drops below 37^oF. Soil Moisture Sensor must be installed to avoid air gaps between the sensor and the soil.

Please attach a copy of the purchase receipt and verification of the irrigation system controls, then mail or hand-deliver this request to the District's address identified at the top of this page.

I certify that I have installed the checked water efficiency items at the property identified above.

(Print Name)

(Sign Name)

.....
For District Use:

Received by _____ Date _____

Attachment D
TCPUD Notification Letters

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TAHOE CITY PUBLIC UTILITY DISTRICT

BOARD OF DIRECTORS

Judy Friedman
Erik Henrikson
John Pang
Ron Treabess
Dan Wilkins

GENERAL MANAGER

Cindy Gustafson

March 29, 2016

North Tahoe Public Utility District
Duane Whitelaw
P. O. Box 139
Tahoe Vista, CA 96145

Subject: Notice of Preparation of Urban Water Management Plan

Dear Duane Whitelaw:

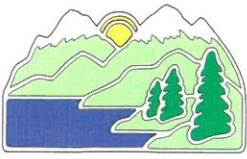
This letter is to inform you that the Tahoe City Public Utility District is currently preparing a 2015 Urban Water Management Plan (UWMP) update. The update, required by the Urban Water Management Planning Act (Water Code Section 10610), describes and evaluates sources of water supply, efficient uses of water, and demand management measures, as well as describes program implementation strategies and schedules. This effort helps ensure we can provide our customers a reliable, high-quality supply of water, now and into the future.

A DRAFT of the 2015 UWMP update will be available for review prior to adoption by TCPUD in June 2016. Prior to adopting the 2015 UWMP update, the TCPUD will make the plan available for public inspection and will hold a public hearing. If you have any questions about the 2015 UWMP, or the process for updating it, please contact Tony Laliotis at 530-580-6053.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Tony Laliotis'.

Tony Laliotis
Director of Utilities



TAHOE CITY PUBLIC UTILITY DISTRICT

BOARD OF DIRECTORS

Judy Friedman
Erik Henrikson
John Pang
Ron Treabess
Dan Wilkins

GENERAL MANAGER

Cindy Gustafson

May 27, 2016

Duane Whitelaw
North Tahoe Public Utility District
P. O. Box 139
Tahoe Vista, CA 96145

Subject: Urban Water Management Plan – Notice of Public Hearing

Dear Duane Whitelaw:

This letter is to inform you that the Tahoe City Public Utility District Board of Directors will hold a public hearing to adopt the 2015 Urban Water Management Plan (UWMP). The public hearing will be held during the regular June Board Meeting, 8:30 am, Friday, June 17, 2016 at Tahoe City Public Utility District, located at 221 Fairway Drive, Tahoe City, California. Comment on the DRAFT 2015 UWMP may be made prior to the public hearing to Tony Laliotis at the address below, or at the public hearing. A DRAFT of the UWMP will be available at the District Office or on the TCPUD's website (<http://www.tahoecitypubd.com>).

If you have any questions regarding the DRAFT 2015 UWMP, please contact:

Tony Laliotis
Director of Utilities
530-580-6053
tlaliotis@tcpud.org

Sincerely,

Tony Laliotis
Director of Utilities

Attachment E
TCPUD Public Hearing

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TAHOE CITY, CA 96145 * Jun 01, 2016 * ad id: 7-0000013712

NOTICE OF PUBLIC REVIEW PERIOD AND PUBLIC HEARING ON THE TAHOE CITY PUBLIC UTILITY DISTRICT 2015 URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that the Board of Directors of the Tahoe City Public Utility District (TCPUD) is considering the adoption of an Urban Water Management Plan. A copy of the 2015 Urban Water Management Plan is available at the TCPUD office, at the address below. On June 17, 2016, the TCPUD Board of Directors will hold a public hearing during their regular meeting at the TCPUD Board Room. At 8:30 AM, or as soon thereafter as possible, the TCPUD Board of Directors will receive public comment on the 2015 Urban Water Management Plan. Interested parties are invited to express their views during the public hearing in written or oral form, or to submit written views prior to the time of the public hearing at the TCPUD offices, by regular mail at the address below or by email to: tviehmann@tcpud.org Notice is further given that upon completion of said public hearing, the TCPUD Board of Directors will consider adopting the Plan as prepared or modified. Terri Viehmann, District Clerk TAHOE CITY PUBLIC UTILITY DISTRICT 221 Fairway Drive P.O. Box 5249 Tahoe City, CA 96145 (530) 580-6052 <http://www.tcpud.org> Pub:June 1, 8, 2016. AD# 000001371

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Attachment E
TCPUD 2015 Water Rates

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**TAHOE CITY PUBLIC UTILITY DISTRICT
2015 WATER RATES
STARTING WITH THE January 1, 2015 BILLING**

WATER SERVICE SIZE	RESIDENTIAL MONTHLY BASE RATES	COMMERCIAL MONTHLY BASE RATES	CONNECTION FEES
METER - .75"	\$ 59.00	\$ 71.00	\$ 2,500.00
METER - 1.00"	\$ 89.00	\$ 113.50	\$ 3,000.00
METER - 1.25"	\$ 114.75	\$ 137.75	\$ 4,500.00
METER - 1.50"	\$ 136.25	\$ 165.25	\$ 6,000.00
METER - 2.00"	\$ 183.50	\$ 221.50	\$ 9,600.00
METER - 2.50"	NA	\$ 276.75	as determined
METER - 3.00"	\$ 277.75	\$ 331.75	\$ 21,000.00
METER - 4.00"	\$ 365.75	\$ 438.75	as determined
METER - 6.00"	\$ 549.25	\$ 657.25	as determined
METER - 8.00"	NA	\$ 879.75	as determined

MONTHLY WATER USAGE RATES

RESIDENTIAL - per 1,000 gallons*

0 -- 8,000	\$	1.91
8,001 -- 20,000	\$	2.61
20,001 -- 40,000	\$	3.88
in excess of 40,001 gallons	\$	8.25

COMMERCIAL - per 1,000 gallons

0 -- 8,000	\$	5.63
in excess of 8,001 gallons	\$	5.73

PRIVATE FIRE SYSTEM (sprinklers) SIZES VARY (size based on point of connection)	\$ 29.70/inch	\$ 1,200.00
FIRE HYDRANT (on private property) SIZES VARY (size based on point of connection)	\$ 29.70/inch	\$ 1,200.00

NOTE: The majority of residential customers have a 3/4" service size.

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Attachment G

TCPUD SB X7-7 Verification Form Tables

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

(select one from the drop down list)

Million Gallons

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

NOTES:

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	595	Million Gallons
	2008 total volume of delivered recycled water	-	Million Gallons
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period ^{1, 2}	10	Years
	Year beginning baseline period range	1998	
	Year ending baseline period range ³	2007	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range ⁴	2007	

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

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

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

NOTES:

SB X7-7 Table 2: Method for Population Estimates

Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other DWR recommends pre-review
<p>NOTES: TCPUD utilized a variation of the Persons-Per-Connection method to determine the population. TCPUD calculated residential population by multiplying the number of active regularly used residential connections by the average residential occupancy rate per household obtained from the 2010 Census information. The number of active regularly used residential connection was determined after reviewing TCPUD's water meter records from January 2011 to December 2015. Any water service with a demand greater than 1,000 gallons was considered to be active.</p>	

SB X7-7 Table 3: Service Area Population

Year		Population
10 to 15 Year Baseline Population		
Year 1	1998	5,741
Year 2	1999	5,741
Year 3	2000	5,741
Year 4	2001	5,741
Year 5	2002	5,741
Year 6	2003	5,741
Year 7	2004	5,741
Year 8	2005	5,741
Year 9	2006	5,741
Year 10	2007	5,741
5 Year Baseline Population		
Year 1	2003	5,741
Year 2	2004	5,741
Year 3	2005	5,741
Year 4	2006	5,741
Year 5	2007	5,741
2015 Compliance Year Population		
	2015	5,741
NOTES:		

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

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Annual Gross Water Use
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
10 to 15 Year Baseline - Gross Water Use							
Year 1	1998	635	18	-	-	-	617
Year 2	1999	655	26	-	-	-	629
Year 3	2000	681	27	-	-	-	654
Year 4	2001	744	28	-	-	-	716
Year 5	2002	709	29	-	-	-	680
Year 6	2003	657	29	-	-	-	628
Year 7	2004	673	26	-	-	-	647
Year 8	2005	669	23	-	-	-	646
Year 9	2006	609	23	-	-	-	586
Year 10	2007	652	29	-	-	-	623
10 - 15 year baseline average gross water use							643
5 Year Baseline - Gross Water Use							
Year 1	2003	657	29	-	-	-	628
Year 2	2004	673	26	-	-	-	647
Year 3	2005	669	23	-	-	-	646
Year 4	2006	609	25	-	-	-	584
Year 5	2007	652	29	-	-	-	623
5 year baseline average gross water use							626
2015 Compliance Year - Gross Water Use							
2015		334	23	-	-	-	311
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3							
NOTES: Exported water entered as zero. As water production data from 2003 is not available.							

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

Complete one table for each source.

Name of Source Tahoe City Well #2

This water source is:

The supplier's own water source

A purchased or imported source

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

10 to 15 Year Baseline - Water into Distribution System

Year 1	1998	41	-	41
Year 2	1999	99		99
Year 3	2000	206		206
Year 4	2001	207		207
Year 5	2002	185		185
Year 6	2003	103		103
Year 7	2004	186		186
Year 8	2005	185		185
Year 9	2006	178		178
Year 10	2007	198		198

5 Year Baseline - Water into Distribution System

Year 1	2003	103		103
Year 2	2004	186		186
Year 3	2005	185		185
Year 4	2006	178		178
Year 5	2007	198		198

2015 Compliance Year - Water into Distribution System

2015	99			99
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source Tahoe City Well #3

This water source is:

The supplier's own water source

A purchased or imported source

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

10 to 15 Year Baseline - Water into Distribution System

Year 1	1998	316		316
Year 2	1999	292		292
Year 3	2000	172		172
Year 4	2001	201		201
Year 5	2002	202		202
Year 6	2003	253		253
Year 7	2004	180		180
Year 8	2005	181		181
Year 9	2006	176		176
Year 10	2007	194		194

5 Year Baseline - Water into Distribution System

Year 1	2003	253		253
Year 2	2004	180		180
Year 3	2005	181		181
Year 4	2006	176		176
Year 5	2007	194		194

2015 Compliance Year - Water into Distribution System

2015		123		123
-------------	--	-----	--	-----

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Highlands Well		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	18		18
Year 2	1999	19		19
Year 3	2000	37		37
Year 4	2001	52		52
Year 5	2002	55		55
Year 6	2003	50		50
Year 7	2004	49		49
Year 8	2005	49		49
Year 9	2006	37		37
Year 10	2007	37		37
5 Year Baseline - Water into Distribution System				
Year 1	2003	50		50
Year 2	2004	49		49
Year 3	2005	49		49
Year 4	2006	37		37
Year 5	2007	37		37
2015 Compliance Year - Water into Distribution System				
2015		20		20
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source Tahoe Tavern Well

This water source is:

- The supplier's own water source
 A purchased or imported source

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

10 to 15 Year Baseline - Water into Distribution System

Year 1	1998	95		95
Year 2	1999	66		66
Year 3	2000	76		76
Year 4	2001	77		77
Year 5	2002	74		74
Year 6	2003	70		70
Year 7	2004	75		75
Year 8	2005	75		75
Year 9	2006	60		60
Year 10	2007	53		53

5 Year Baseline - Water into Distribution System

Year 1	2003	70		70
Year 2	2004	75		75
Year 3	2005	75		75
Year 4	2006	60		60
Year 5	2007	53		53

2015 Compliance Year - Water into Distribution System

2015	15		15
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Riley's Spring		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	9		9
Year 2	1999	11		11
Year 3	2000	10		10
Year 4	2001	12		12
Year 5	2002	13		13
Year 6	2003	13		13
Year 7	2004	13		13
Year 8	2005	14		14
Year 9	2006	15		15
Year 10	2007	18		18
5 Year Baseline - Water into Distribution System				
Year 1	2003	13		13
Year 2	2004	13		13
Year 3	2005	14		14
Year 4	2006	15		15
Year 5	2007	18		18
2015 Compliance Year - Water into Distribution System				
2015		4		4
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Crystal Way Well		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	76		76
Year 2	1999	86		86
Year 3	2000	95		95
Year 4	2001	93		93
Year 5	2002	89		89
Year 6	2003	80		80
Year 7	2004	60		60
Year 8	2005	42		42
Year 9	2006	37		37
Year 10	2007	32		32
5 Year Baseline - Water into Distribution System				
Year 1	2003	80		80
Year 2	2004	60		60
Year 3	2005	42		42
Year 4	2006	37		37
Year 5	2007	32		32
2015 Compliance Year - Water into Distribution System				
2015		23		23
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source Interim WTP

This water source is:

- The supplier's own water source
 A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
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10 to 15 Year Baseline - Water into Distribution System

Year 1	1998	0	0
Year 2	1999	0	0
Year 3	2000	0	0
Year 4	2001	0	0
Year 5	2002	0	0
Year 6	2003	0	0
Year 7	2004	19	19
Year 8	2005	32	32
Year 9	2006	25	25
Year 10	2007	38	38

5 Year Baseline - Water into Distribution System

Year 1	2003	0	0
Year 2	2004	19	19
Year 3	2005	32	32
Year 4	2006	25	25
Year 5	2007	38	38

2015 Compliance Year - Water into Distribution System

2015	14		14
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Rubicon Well #1		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	21.7		22
Year 2	1999	34.5		35
Year 3	2000	64.1		64
Year 4	2001	65		65
Year 5	2002	62.2		62
Year 6	2003	64.5		65
Year 7	2004	69.1		69
Year 8	2005	68.7		69
Year 9	2006	56.8		57
Year 10	2007	53.4		53
5 Year Baseline - Water into Distribution System				
Year 1	2003	64.5		65
Year 2	2004	69.1		69
Year 3	2005	68.7		69
Year 4	2006	56.8		57
Year 5	2007	53.4		53
2015 Compliance Year - Water into Distribution System				
2015		31.0		31
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Rubicon Well #2		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	52.5		52.5
Year 2	1999	40.6		40.6
Year 3	2000	14.7		14.7
Year 4	2001	31.3		31.3
Year 5	2002	24.6		24.6
Year 6	2003	17.2		17.2
Year 7	2004	16.9		16.9
Year 8	2005	16.9		16.9
Year 9	2006	19.9		19.9
Year 10	2007	23.1		23.1
5 Year Baseline - Water into Distribution System				
Year 1	2003	17.2		17.2
Year 2	2004	16.9		16.9
Year 3	2005	16.9		16.9
Year 4	2006	19.9		19.9
Year 5	2007	23.1		23.1
2015 Compliance Year - Water into Distribution System				
2015	1			1
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source Rubicon Well #3

This water source is:

- The supplier's own water source
 A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
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10 to 15 Year Baseline - Water into Distribution System

Year 1	1998	0	0
Year 2	1999	0	0
Year 3	2000	0	0
Year 4	2001	0	0
Year 5	2002	0.3	0.3
Year 6	2003	1.3	1.3
Year 7	2004	0.4	0.4
Year 8	2005	0.4	0.4
Year 9	2006	0	0
Year 10	2007	0.9	0.9

5 Year Baseline - Water into Distribution System

Year 1	2003	1.3	1.3
Year 2	2004	0.4	0.4
Year 3	2005	0.4	0.4
Year 4	2006	0	0
Year 5	2007	0.9	0.9

2015 Compliance Year - Water into Distribution System

2015	1		1
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source Forest Tract

This water source is:

- The supplier's own water source
 A purchased or imported source

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

10 to 15 Year Baseline - Water into Distribution System

Year 1	1998	6	6
Year 2	1999	6.4	6.4
Year 3	2000	5.8	5.8
Year 4	2001	5.6	5.6
Year 5	2002	4.3	4.3
Year 6	2003	4.8	4.8
Year 7	2004	4.9	4.9
Year 8	2005	4.9	4.9
Year 9	2006	4.3	4.3
Year 10	2007	4.4	4.4

5 Year Baseline - Water into Distribution System

Year 1	2003	4.8	4.8
Year 2	2004	4.9	4.9
Year 3	2005	4.9	4.9
Year 4	2006	4.3	4.3
Year 5	2007	4.4	4.4

2015 Compliance Year - Water into Distribution System

2015	3		3
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

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

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1998	5,741	617	295
Year 2	1999	5,741	629	300
Year 3	2000	5,741	654	312
Year 4	2001	5,741	716	342
Year 5	2002	5,741	680	325
Year 6	2003	5,741	628	300
Year 7	2004	5,741	647	309
Year 8	2005	5,741	646	308
Year 9	2006	5,741	586	280
Year 10	2007	5,741	623	297
10-15 Year Average Baseline GPCD				307
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2003	5,741	628	300
Year 2	2004	5,741	647	309
Year 3	2005	5,741	646	308
Year 4	2006	5,741	584	279
Year 5	2007	5,741	623	297
5 Year Average Baseline GPCD				299
2015 Compliance Year GPCD				
2015		5,741	311	148
NOTES:				

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

10-15 Year Baseline GPCD	307
5 Year Baseline GPCD	299
2015 Compliance Year GPCD	148
NOTES:	

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

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

NOTES:

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

20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
307	245

NOTES:

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

5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
299	284	245	245

¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD
² 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
245	307	276

NOTES:

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
148	276	-	-	-	-	148	148	YES
NOTES:								

Attachment H
TCPUD Adopting Resolution

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RESOLUTION No. 16-22
OF
TAHOE CITY PUBLIC UTILITY DISTRICT
ADOPTING THE 2015 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (UWMP), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Tahoe City Public Utility District (TCPUD) is an urban water supplier of water providing water to over 3,000 customers; and

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

WHEREAS, the TCPUD has therefore, prepared and made available for public review a draft 2015 UWMP, and a properly noticed public hearing regarding the 2015 UWMP was held by the TCPUD on June 17, 2016; and

WHEREAS, the UWMP must be adopted after public review and hearing, and submitted to the California Department of Water Resources by July 1, 2016; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the TCPUD, as follows:

1. That the above recitations are true and correct.
2. That the 2015 Urban Water Management Plan is adopted in substantial form as presented.

PASSED AND ADOPTED by the Board of Directors at a meeting duly called and held within the TCPUD on the 17th day of June, 2016 by the following roll call vote:

AYES: Wilkins, Pang, Friedman, Treabess

NOES: None

ABSENT: Henrikson



Ron Treabess, President

ATTEST:



Terri Viehmann, District Clerk

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