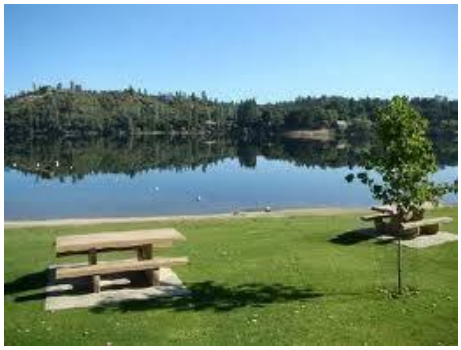
GROVELAND COMMUNITY SERVICES DISTRICT



2015 URBAN WATER MANAGEMENT PLAN

October 2016

Prepared by:

AM Consulting Engineers, Inc – 5150 N Sixth Street, Suite 124 – Fresno CA 93710 – P: 559.473.1371 – F: 559.513.8449

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ABBREVIATIONS

AF	Acre-Feet
AWS	Alternative Water Supply
CASGEM	California Statewide Groundwater Elevation Monitoring
CWC	California Water Code
District	Groveland Community Services District
DWR	Department of Water Resources
EDU	Equivalent Dwelling Unit
GAL	Gallons
GCSD	Groveland Community Services District
GPM	Gallons per Minute
CCF	hundred cubic feet
MG	Million Gallons
MGD	Million Gallons per Day
MG/L	Milligrams per liter
MF	Microfiltration
ml/l-hr	Milliliter per liter hour
MID	Modesto Irrigation District
PML	Pine Mountain Lake
PMLA	Pine Mountain Lake Association
PWS	Public Water System
SFPUC	San Francisco Public Utilities Commission
TID	Turlock Irrigation District
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Plan Act

CHAPTER 1 INTRODUCTION AND OVERVIEW

1.1. Background and Purpose

The California Water Code requires all urban water suppliers within the state to prepare and adopt Urban Water Management Plans (UWMP) for submission to the California Department of Water Resources (DWR). The UWMPs must be updated every five years and satisfy the requirements of the Urban Water Management Planning Act of 1983 including amendments that have been made to the Act. The UWMPA requires urban water suppliers servicing 3,000 or more connections, or supplying more than 3,000 acre feet (AF) of water annually, to prepare an UWMP.

The purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. This report, which was prepared in compliance with the California Water Code, and as set forth in the guidelines and format established by the DWR, is the Groveland Community Services District (GCSD) 2015 UWMP.

1.2. Urban Water Management Planning and the California Water Code

Water planning is an essential function of water suppliers, but is critical as California grapples with ongoing drought and expected long-term climate changes. Prior to the adoption of the Urban Water Management Planning Act (UWMPA), there were no specific requirements that water agencies conduct long-term resource planning. While many water agencies had conducted long-term water supply and resource planning prior to the Act, those who had not were left vulnerable to supply disruptions during dry periods or catastrophic events.

1.2.1. Urban Water Management Planning Act of 1983

In 1983, State Assembly Bill (AB) 797 modified the California Water Code Division 6, by creating the UWMPA. Several amendments to the original UWMPA, which were introduced since 1983, have increased the data requirements and planning elements to be included in 2015 UWMP.

Initial amendments to the UWMPA required that total projected water use be compared to water supply sources over the next 20 years, in 5-year increments. Recent DWR guidelines also suggest projecting through a 25-year planning horizon to maintain a 20-year timeframe until the next UWMP update has been completed and for use in developing Water Supply Assessments.

Other amendments require that UWMPs include provisions for recycled water use, demand management measures, and a water shortage contingency plan, set forth therein. Recycled water was added in the reporting requirements for water usage and figures prominently in the requirements for evaluation of alternative water supplies, when future projections predict the need for additional water supplies. Each urban water purveyor must coordinate the preparation of the water shortage contingency plan with other urban water purveyors in the area, to the extent practicable. Each water

supplier must also describe their water demand management measures that are being implemented, or scheduled for implementation.

In addition to the UWMPA and its amendments, there are several other regulations that are related to the content of the UWMP. In summary, the key relevant regulations are:

- AB 1420: Requires implementation of demand management measures (DMMs)/best management practices (BMPs) and meeting the 20 percent reduction by 2020 targets (mandated by SBx7-7) to qualify for water management grants or loans.
- AB 1465: Requires water suppliers to describe opportunities related to recycled water use and stormwater recapture to offset potable water use.
- Amendments Senate Bill (SB) 610 (Costa, 2001), and SB 221 (Daucher, 2001), which became effective beginning January 1, 2002, require counties and cities to consider information relating to the availability of water to supply new large developments by mandating the preparation of further water supply planning (Daucher) and Water Supply Assessments (Costa).
- SB 1087: Requires water suppliers to report single family residential (SFR) and multifamily residential (MFR) projected water use for planned lower income units separately.
- Amendment SB 318 (Alpert, 2004) requires the UWMP to describe the opportunities for development of desalinated water, including but not limited to, ocean water, brackish water, and groundwater, as long-term supply.
- AB 105 (Wiggins, 2004) requires urban water suppliers to submit their UWMPs to the California State Library.
- SBx7-7: Requires development and use of new methodologies for reporting population growth estimates, base per capita use, and water conservation. This water bill also extended the 2010 UWMP adoption deadline for retail agencies to July 1, 2011.

The UWMPA is included for reference in Appendix A.

1.2.2. Applicable changes to the Water Code since 2010

Table 1-1 provides a summary of the changes to the California Water Code (CWC) since 2010:

Table 1-1 Changes to the CWC since 2010

Topic	CWC Section	Legislative Bill	Summary
Demand Management Measures	10631 (f)(1) and (2)	AB 2067 Weber 2014	Requires water suppliers to provide narratives describing their water demand management measures, as provided. Requires retail water suppliers to address the nature and extent of each water demand management measure implemented over the past 5 years and describe the water demand management measures that the supplier plans to implement to achieve its water use targets.

Table 1-1 Changes to the CWC since 2010

Topic	CWC Section	Legislative Bill	Summary
Submittal Date	10621 (d)	AB 2067 Weber 2014	Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.
Submittal Format	10644 (a) (2)	SB 1420 Wolk 2014	Requires the plan, or amendments to the plan, to be submitted electronically to the department.
Standardized Forms	10644 (a) (2)	SB 1420 Wolk 2014	Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.
Water Loss	10631 (e) (1) (J) and (e) (3) (A) and (B)	SB 1420 Wolk 2014	Requires a plan to quantify and report on distribution system water loss.

1.2.3. Water Conservation Act of 2009 (SB X7-7)

The Water Conservation Act of 2009 required retail urban water suppliers to report in their UWMPs their Base Daily per Capita Water Use (Baseline GPCD), 2015 Interim Urban Water Use Target, 2020 Urban Water Use Target, and Compliance Daily per Capita Water Use. These terms are defined in Methodologies for Calculating Baseline and Compliance Urban per Capita Water Use, DWR 2011 (Methodologies) consistent with SB X7-7 requirements.

Beginning in 2016, retail water suppliers are required to comply with the water conservation requirements in SB X7-7 in order to be eligible for State water grants or loans. The complete text of the Water Conservation Act is in Appendix B. Retail water agencies are required to set targets and track progress toward decreasing daily per capita urban water use in their service area, which will assist the State in meeting its 20 percent reduction goal by 2020.

1.3. Urban Water Management Plan in Relation to Other Planning Efforts

Urban suppliers provide information on water management specific to their service areas. However, water management does not happen in isolation; there are other planning processes that integrate with the UWMP to accomplish urban planning. Some of these plans include District and county General Plans, Water Master Plans, Recycled Water Master Plans, integrated resource plans, Integrated Regional Water Management Plans, Groundwater Management Plans, and others.

1.4. UWMP Organization

This 2015 UWMP has been organized following the DWR's recommended outline. The following is a description of the Chapters and a brief description of the content in each Chapter:

- **Chapter 1 - Introduction and Overview:** This introductory chapter provides a discussion on the importance and extent of GCSD's water management planning efforts.
- **Chapter 2 - Plan Preparation:** This chapter provides information on the process followed for developing the UWMP, including efforts in coordination and outreach.
- **Chapter 3 - System Description:** This chapter includes maps of the service area, a description of the service area and climate, the Public Water System, and GCSD's organizational structure and history.
- **Chapter 4 - System Water Use:** This chapter describes and quantifies the current and projected water uses within GCSD's service area.
- **Chapter 5 - Baselines and Targets:** This chapter describes the method used for calculating the baseline and target water consumption. This chapter also demonstrates that GCSD has achieved the 2015 interim water use target, and GCSD's plans for achieving the 2020 water use target.
- **Chapter 6 - System Supplies:** This chapter describes and quantifies the current and projected sources of water available to the agency. This chapter also includes a description and quantification of potential recycled water uses and supply availability.
- **Chapter 7 - Water Supply Reliability:** This chapter describes the reliability of GCSD's water supply and project the reliability out 20 years. This description is provided for normal, single dry years and multiple dry years.
- **Chapter 8 - Water Shortage Contingency Planning:** This chapter provides GCSD's staged plan for dealing with water shortages, including a catastrophic supply interruption.
- **Chapter 9 - Demand Management Measures:** This chapter communicates GCSD's efforts to promote conservation and to reduce demand and specifically addresses several demand management measures.
- **Chapter 10 - Plan Adoption, Submittal, and Implementation:** This chapter describes the steps taken to adopt and submit the UWMP and to make it publicly available. This chapter also includes a discussion of GCSD's plan to implement the UWMP.

CHAPTER 2 PLAN PREPARATION

2.1. Introduction

This chapter provides the basis for preparing the 2015 UWMP and describes the various levels of regional coordination that GCSD has employed. It also describes the reporting period and the units of measure used by GCSD to report water volumes throughout the 2015 UWMP.

Finally, this chapter also provides a description of the coordination and outreach efforts followed in the preparation of the 2015 UWMP. Coordination and outreach are key elements to developing a useful and accurate UWMP.

2.2. Basis for Preparing a Plan

CWC 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…*

CWC 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.*

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

The Groveland Community Services District (GCSD) supplies water for municipal purposes to its estimated population of 3,147[(1)] through a total of number of 3,230 service connections. Thus, GCSD is classified as an "urban water supplier" as defined in Section 10617 of the CWC. In accordance with the CWC, as an urban water supplier, GCSD is required to update its urban water management plan every five years. In 2010, GCSD submitted a UWMP to the Department of Water Resources (DWR). This 2015 UWMP will be the second UWMP submitted by GCSD.

[(1)] American Community Survey Demographic and Housing Elements: 2010-2014 American Community Survey 5-Year Estimates.

2.2.1. Public Water Systems

CWC 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.

CWC 10608.52

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

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24… 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.

GCSD owns and operates a public water system (PWS#5510009) that is regulated by the State Water Resources Control Board, Division of Drinking Water (SWRCB-DDW). The SWCRB-DDW requires reporting on public water systems.

GCSD files electronic Annual Reports to the Drinking Water Program (eARDWP) to the Board, which include annual reports of water usage and other information. The information provided in this UWMP is consistent with the data reported in the eARDWP.

2.2.2. Agencies Serving Multiple Service Areas/Public Water Systems

GCSD serves only one PWS. Information about that PWS is shown below in Table 2-1.

Table 2-1 Public Water Systems (Standard Table 2-1)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied in 2015 (MG)
CA551009	Groveland Community Services District	3,230	119

2.3. Individual or Regional Planning and Compliance

GCSD is the only urban water supplier in the area and a regional planning processes seemed unfeasible. While regional reporting is an option in the future, GCSD has chosen Individual Reporting for this 2015 UWMP.

GCSD is a member of the Tuolumne-Stanislaus Integrated Regional Water Management Plan (TS-IRWMP). As a member of TS-IRWMP GCSD anticipates a much greater coordination with other regional water suppliers and users in the near future.

GCSD has developed this 2015 UWMP covering only its agency service area and addressing all requirements of the Water Code. Table 2-2 shows that GCSD has developed an individual UWMP.

Table 2-2 Plan Identification (Standard Table 2-2)		
☒	Individual UWMP	
☐	Regional UWMP (RUWMP)	
	Select One:	
	☐	RUWMP includes a Regional Alliance
	☐	RUWMP does not include a Regional Alliance

2.4. Fiscal or Calendar Year and Units of Measure

CWC 1608.20

(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

Water suppliers may report on either a fiscal or calendar year basis. DWR prefers that agencies report on a calendar year basis in order to ensure UWMP data is consistent with data submitted to other reports to the State. GCSD is reporting on a calendar year basis. All data included in this 2015 UWMP is consistent with the calendar year basis.

2.4.2. Reporting Complete 2015 Data

The 2015 UWMPs are required to include the water use and planning data for the entire calendar year of 2015, if an agency is reporting on a calendar year basis. This 2015 UWMP contains information for the entire 2015 year.

2.4.3. Units of Measure

Water agencies use various units of measure when reporting water volumes, such as acre-feet (AF), million gallons (MG), or hundred cubic feet (CCF). Agencies may report volumes of water in any of these units, but must maintain consistency throughout the UWMP. GCSD is reporting water volumes in million

gallons (MG). Table 2-3 shows the type of agency, type of reporting year, and the units of measurement used throughout the 2015 UWMP.

Table 2-3 Agency Identification (Standard Table 2-3)	
Type of Agency	
☐	Agency is a wholesaler
☒	Agency is a retailer
Fiscal or Calendar Year	
☒	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Day that the Fiscal Year Begins (dd/mm)	
NA	
Units of Measure Used in UWMP	
Unit	Million Gallons (MG)
NOTES:	

2.5. Coordination and Outreach

CWC 10631

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

2.5.1. Wholesale and Retail Coordination

When a water supplier relies upon a wholesale agency for a water supply, both suppliers are required to provide each other with information regarding projected water supply and demand. The projections should be consistent with each agency's supply and demand projections.

GCSD receives water from the San Francisco Public Utilities Commission. GCSD provides SFPUC the water demand projections and has provided SFPUC with a copy of the Draft 2015 UWMP for review and

comment. Standard Table 2-4 is included below indicating that GCSD has informed SFPUC of projected water use in accordance with CWC 10631.

Table 2-4 Water Supplier Information Exchange (Standard Table 2-4)
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name
San Francisco Public Utilities Commission

2.5.2. Coordination with Other Agencies and the Community

CWC 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.

CWC 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 the preparation this 2015 UWMP GCSD has coordinated with other appropriate agencies in the area, to the extent practicable. GCSD has contacted with the following agencies in the preparation of this 2015 UWMP.

- San Francisco Public Utilities Commission
- City of Sonora
- Tuolumne County
- Turlock Irrigation District

Copies of the letters sent to each of those agencies are included in Appendix C.

2.5.3. Notice to Cities and Counties

CWC 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 District or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

Agencies must notify cities and counties within which they serve water that the UWMP is being updated and reviewed. As indicated above, the City of Sonora and Tuolumne County have been notified of the preparation of the 2015 UWMP and invited to participate in the process.

CHAPTER 3 SYSTEM DESCRIPTION

3.1. General Description

CWC Section 10631 (a)

Describe the service area of the supplier…

GCSD is a special District formed by the State of California, spanning approximately 15 square miles in southern Tuolumne County, located in the Central Sierra Nevada Mountains. The District is bounded on the north by the Tuolumne River, on the south by Mariposa County, on the east by Stanislaus National Forest, and on the west by Moccasin. The District consists of three areas of concentrated population: Groveland, Big Oak Flat, and Pine Mountain Lake.

Since the early California Gold Rush days, the Groveland area was a center of gold mining activity. However, from its beginnings the area has not had sufficient water to support these activities. Over the years, many have undertaken efforts to bring water to Groveland and Big Oak Flat, and have met with varying and usually limited successes. On August 19, 1953, the Groveland Community Services District was formed to bring much needed utility services to the Groveland area and later (1964) to the Big Oak Flat area. At first, GCSD tried to meet its growing water needs by tapping into groundwater from flooded mine shafts and tunnels that lay beneath the town. This water was of generally poor quality, and contained an abundance of iron and manganese. In 1964 GCSD secured the rights to pump water from the City and County of San Francisco's Hetch Hetchy Mountain Tunnel Aqueduct, which runs beneath GCSD's service area.

Through the course of its history, GCSD has primarily served the residential and commercial sectors of the community. GCSD is the owner and operator of the Groveland Water System, which treats and distributes water to the populated areas of Big Oak Flat, Groveland, and Pine Mountain Lake. GCSD's water supply and distribution system includes three water treatment plants, five storage reservoirs, and approximately 70 miles of distribution piping. GCSD provides treated water supply to approximately 3,147 full-time residents. GCSD also owns and operates a regional wastewater collection, treatment, and regional recycled water system, which provides sewer service to 1549 connections within GCSD's service area.

According to the American Community Survey Demographic and Housing Estimates: 2010-2014 American Community Survey 5-Year Estimate, the Groveland and Pine Mountain Lake areas boasts a combined population of approximately 3,147 full-time residents. However, this number often triples during the summer months, as visitors are attracted to both the areas surrounding beauty and may recreation opportunities offered nearby.

3.2. Service Area Maps

A Service Area Map is included in Appendix D of this 2015 UWMP. The service area map contains the boundaries of the District's service area, which includes the potable water service area boundary.

3.3. Service Area Climate

CWC Section 10631 (a)

Describe the service area of the supplier, including… climate…

The Western Regional Climate Center (WRCC) has maintained historical climate records for the past 100 years for the Groveland area. According to the WRCC, the climate of Groveland is dry, warm in the summer and cold in the winter. Typically, the majority of precipitation falls during the period of October through May. Rainfall during the summer is rare and very light.

At an elevation of 2,846 feet, snowfall is a typical occurrence in Groveland. The area receives on average approximately 32 inches per year, mainly during the period of December through May. Temperatures typically reach the low 30's in the winter and mid to high 90's during the summer. The WRCC 100-year data for Groveland has been included in Table 3-1.

Similar to the WRCC, the California Irrigation Management Information System (CIMIS) web site tracks and maintains records of evapotranspiration (ET_o) for select cities only. Since there are no CIMIS stations located in Tuolumne County, the ET_o statistics used for Groveland come from the foothill region. It assumed that the foothill region stations (Camino, Browns Valley, Auburn, Plymouth, and Diamond Springs) will be representative of the Groveland distribution area. The average ET_o included in Table 3-1 is calculated from these foothill stations.

Table 3-1 Climate Data

Month	Avg. Precipitation[1] (in)	Avg. Snowfall[1] (in)	Avg. Max Temp[1] (°F)	Avg. Min Temp[1] (°F)	Avg. ET_o[2] (in)
January	11.27	11.1	49.3	29.5	1.46
February	4.03	5.3	53.8	31.3	1.93
March	8.25	3.8	58.6	34.8	3.26
April	2.46	1.0	64.2	38.6	4.58
May	1.46	5.0	72.3	44.1	6.21
June	0.45	0.0	90.0	51	7.66
July	0.05	0.0	90.0	55.5	8.55
August	0.01	0.0	92.0	55.8	7.91
September	0.39	0.0	79.4	50.9	5.86
October	1.35	0.0	69.9	42.9	3.84
November	2.99	0.5	62.0	36.8	1.88
December	5.98	5.2	51.7	29.3	1.23
Annual Total/Average	**38.7**	**31.9**	**69.43**	**41.7**	**54.35**

NOTES:
[1] Western Regional Climate Center Record Monthly Climate Summary for Groveland CA.
[2] California Irrigation Management Information System Monthly Average ETo Report for the Sierra Foothill Stations (Camino, Browns Valley, Auburn, Plymouth, and Diamond Springs).

3.4. Service Area Population

CWC Section 10631 (a)

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.

In 1990, the combined population of Groveland, Big Oak Flat and Pine Mountain Lake (Groveland-Big Oak Flat CDP) was 2,753 full-time residents. According to the 2000 Census, the combined population of Groveland-Big Oak Flat CDP was 3,388 full-time residents. The 2010 Census separated Pine Mountain Lake, from Groveland-Big Oak Flat CDP. According to the 2010 Census, the combined population of Groveland-Big Oak Flat CDP and Pine Mountain Lake was 3,397 (601 + 2,796).

Table 3-2 shows the Groveland-Big Oak Flat CDP total population counts for years 1990, 2000, and 2010 and the observed annual growth rates between 1990 and 2000 and between 2000 and 2010.

Table 3-2 US Census Population and Observed Annual Growth

Year	1990	2000	2010
Groveland-Big Oak Flat CDP	2753	3388	3397
Annual Growth rate		2.10%	0.03%

According to the Tuolumne County Economic Forecast, population in the County is expected to remain approximately unchanged for the foreseeable future. According to population projections by the California Department of Finance, population is expected to grow at an annual rate of 0.25 percent through year 2030. An annual growth rate of 0.25 percent is used in this Plan to project population growth within the Groveland CSD service area. Table 3-3 shows the population projections for Groveland-Big Oak Flat CDP and GCSD's Service Area through year 2040 in five year increments.

Table 3-3 Population - Current and Projected (1) (Standard Table 3-1)

Population Served	2015(2)	2020	2025	2030	2035	2040
	3,147	3,187	3,227	3,268	3,309	3,351

NOTES:
(1) According to population projections by the California Department of Finance, population is expected to grow at an annual rate of 0.25% through year 2030. An annual growth rate of 0.25% is used to project population growth within the Groveland CSD service area through 2040.
(2) Based on the 2010-2014 American Community Survey 5-Year Estimates total population of 3,147 for both Groveland CDP and Pine Mountain Lake CDP.

CHAPTER 4 SYSTEM WATER USE

4.1. Introduction

This chapter provides a description and quantifies GCSD's current water use and water use projections through the year 2040. The data provided in this section allows GCSD to accurately analyze the use of the water resources and conduct good resource planning. The future demand estimates allow GCSD to manage the water supply and appropriately plan their infrastructure investments. The terms "water use" and "water demand" will be used interchangeably. These terms will also be used to refer to all the demand sectors listed in Section 4.2.

4.2. Recycled versus Potable and Raw Water Demand

GCSD's water supply is exclusively surface water. Recycled water produced by GCSD's wastewater treatment plant (WWTP) is used to irrigate the Pine Mountain Lake Association's golf course and spray fields owned by GCSD.

4.3. Water Use by Sector

CWC 10631(e)

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

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

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

This 2015 UWMP includes past, current, and projected water use in five-year increments. GCSD will determine the reliability of their projected water supply based upon that information. This 2015 UWMP also identifies the water use by sector. GCSD breaks down metered water deliveries into single family

residential and commercial/industrial. Tables 4-1 and 4-2 contain the actual and projected water demands respectively.

Table 4-1 Retail: Demands for Potable and Raw Water – Actual (Standard Table 4-1)

Use Type	2015 Actual		
	Additional Description	Level of Treatment When Delivered	Volume (MG)
Single Family	3,141 Connections	Drinking Water	81.2
Commercial/Industrial	89 Connections	Drinking Water	5.8
Losses	Un accounted Water	Drinking Water	32.0
		TOTAL	**119.0**

Table 4-2 lists the projected number of connections by user type. The number of connections where projected using a 0.25 percent growth rate consistent with the population growth.

Table 4-2 Projected Number of Connections by User Type

Use Type	2015	2020	2025	2030	2035	2040
Single Family	3,141	3,180	3,220	3,260	3,301	3,342
Commercial/Industrial	89	90	91	92	93	94
Total	**3,230**	**3,270**	**3,311**	**3,352**	**3,394**	**3,436**

Table 4-3 lists the projected water demands through years 2040. The projected water demands were obtained by multiplying the number of projected connections by the user's average annual consumption.

Table 4-3 Retail: Demands for Potable and Raw Water - Projected (Standard Table 4-2)

Use Type	Additional Description	Projected Water Use				
		2020	2025	2030	2035	2040
Single Family		82	83	84	85	86
Commercial/Industrial		6	6	6	6	6
Losses		32	32	32	32	32
	TOTAL	**120**	**121**	**122**	**123**	**124**
NOTES:						

Table 4-4 lists provide a summary of the District's potable water demand projections.

Table 4-4 Retail: Total Water Demands (Standard Table 4-3)

	2015	2020	2025	2030	2035	2040
Potable and Raw Water *from Standard Tables 4-1 and 4-2*	119	120	121	122	123	124
Recycled Water Demand *from Standard Table 6-4*	42	42	43	43	43	43

Table 4-4 Retail: Total Water Demands (Standard Table 4-3)						
TOTAL WATER DEMAND	**161**	**163**	**164**	**165**	**166**	**167**

4.4. Distribution System Losses

CWC 10631(e)(1) and (2)

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

CWC 10631 (e)(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.

Water distribution system losses is a crucial part of water demand management. Distribution system loss is the volume of water that is produced and distributed but not sold or metered to customers. Leakage is usually the largest component of distribution loss. In addition to leakage, the following are other sources of water loss:

- Slow meters
- Theft
- Fire Protection
- Unmetered construction water used for flushing pipelines and dust control
- Unmetered water used for flushing dead ends within the system to maintain water quality
- Irrigation of parks and landscape which are not metered

Table 4-5 contains the 12-month water loss audit reporting for 2015.

Table 4-5 12 Month Water Loss Audit Reporting (Standard Table 4-4)	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (MG)
01/2015	32

The actual losses in 2015 is approximately 27 percent of the total water produced. The District will continue to actively pursue repairs of the distribution system in order to reduce future water losses.

4.5. Future Water Savings

CWC 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.

The water use projections are calculated using 2015 consumption data as the baseline. The 2015 consumption is considered to be a year that includes a lot of the water conservation measures that GCSD implemented as a consequence of the ongoing drought. Additional water savings will be realized in the future by reducing leaks and the system and replacing old water fixtures. However, those future water savings have not been included in water use projections. GCSD recently adopted a water shortage emergency ordinance that amends GCSD's water ordinance adding an article on water conservation. It is still unclear how much savings the new ordinance will deliver in future years.

4.6. Water Use for Lower Income Households

CWC 10631.1(a)

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

Urban water suppliers are required to identify water demand required for lower income housing in its water use projections. Pursuant to Government Code Section 65589.7, it is GCSD's policy to grant a priority to those developments seeking water or sewer service which include housing units affordable to lower income households. To further this policy, GCSD adopted the procedures described below.

GCSD will not deny or condition the approval of an application for services to, or reduce the amount of service for, a proposed development that includes housing units affordable to lower income households unless GCSD makes a specific written finding that the denial, condition, or reduction is necessary due to the existence of one or more of the following:

1. GCSD does not have "sufficient water supply" as defined in paragraph (2) of subdivision (a) of Section 66473.7, or is operating under a water shortage emergency as defined in Section 350 of the Water Code, or does not have sufficient water treatment or distribution capacity to serve the needs of the proposed development, as demonstrated by a written engineering analysis and report.
2. GCSD is subject to a compliance order issued by the SWRCB-DDW that prohibits new water connections.
3. If the proposed development seeks sewer service, and if GCSD does not have sufficient collection treatment or reclamation capacity, as demonstrated by a written engineering analysis and report on the condition of the collection treatment, or reclamation works, to serve the needs of the proposed development.
4. If the proposed development seeks sewer service, and if GCSD is under an order issued by the Regional Water Quality Control Board that prohibits new sewer connections.
5. If the applicant fails to agree to reasonable terms and conditions relating to providing service generally applicable to development projects seeking service from GCSD, including but not limited to the requirements of local, state, or federal laws, and regulations or payment of a fee or charge.

For the purposes of this Section, the following definitions apply:

1. "Proposed developments that include housing units affordable to lower income households" means that dwelling units will be sold or rented to lower income households, as defined in Section 50079.5 of the Health and Safety Code, at an affordable housing cost, as defined in Section 50052.5 of the Health and Safety Code, or an affordable rent, as defined in Section 50053 of the Health and Safety Code.
2. "Water or sewer services" means supplying service through a pipe or other constructed conveyance for a residential purpose, and does not include the sale of water for human consumption by a water supply to another water supplier for resale. As used in this section, "water service" provided by a public agency applies only to water supplied from public water systems subjected to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

All proposed development projects including housing units affordable to lower income households, to which none of the above exceptions apply, will be required to submit a cover sheet outlining both the number and percentage basis number of housing units affordable to lower income households included in the proposal.

Table 4-6 Inclusion in Water Use Projections (Standard Table 4-5)	
Are Future Water Savings Included in Projections?	No
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.	

Table 4-6 Inclusion in Water Use Projections (Standard Table 4-5)	
Are Lower Income Residential Demands Included in Projections?	Yes

4.7. Climate Change

DWR Guidelines recommend that the 2015 UWMP include a discussion of potential climate change impacts on projected demand. There is mounting scientific evidence that global climate conditions are changing and will continue to change as a result of the continued build-up of greenhouse gases (GHGs) in the Earth's atmosphere. Changes in climate can affect municipal water supplies through modifications in the timing, amount, and form of precipitation, as well as water demands and the quality of surface runoff. These changes can affect all elements of water supply systems, from watersheds to reservoirs, conveyance systems, and treatment plants.

Indications of climate change have been observed over the last several decades throughout California. Statewide average temperatures have increased by about 1.7°F from 1895 to 2011, with the greatest warming in the Sierra Nevada. Although the State's weather has followed the expected pattern of a largely Mediterranean climate throughout the past century, no consistent trend in the overall amount of precipitation has been detected, except that a larger proportion of total precipitation is falling as rain instead of snow.

The correlation between temperature and water demand is well documented and understood. GCSD's largest percentage of the water demand is driven by outdoor irrigation. Higher temperatures will increase evapotranspiration rates and increase demands. Higher temperatures will also extend the duration of the outdoor landscaping growing season increasing the maximum day demands on the spring and fall seasons.

It is evident that climate change adds new uncertainties to the challenges of planning. Changes in weather could significantly affect water supply planning. Since climatic pressures could potentially affect supply reliability, continual attention to this issue will be necessary in the future.

CHAPTER 5 BASELINES AND TARGETS

5.1. Introduction

With the adoption of the Water Conservation Act of 2009, also known as the SB X7-7, (see Appendix B), the State is required to set a goal of reducing urban water use by 20 percent by the year 2020. Each retail urban water supplier must determine baseline water use during their baseline period and also target water use for the years 2015 and 2020 in order to help the State achieve the 20 percent reduction.

In the 2015 UWMP, water agencies must demonstrate compliance with their established water use target for the year 2015. This also demonstrates whether or not the agency is currently on track to achieve its 2020 target. Compliance is verified by DWR's review of the SB X7-7 Verification Form included in Appendix F of this 2015 UWMP.

5.2. Updating Calculations from 2010 UWMP

CWC 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 2010, 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.

As indicated earlier in the 2015 UWMP, GCSD is considered an Urban Water Supplier and filed a 2010 UWMP in December of 2013. This 2015 UWMP contains undated calculations from the 2010 UWMP regarding water use targets and population estimates.

5.2.1. Target Method

CWC 10608.20 (b)

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

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

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

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

Target Method 1 has been selected by GCSD as the preferred compliance method to determine water use targets. Target Method 1 is calculated as a 20% reduction of the baseline daily water use.

5.2.2. SBX7-7 Verification Form

To satisfy the provisions of SB X7-7, GCSD must establish a per capita water use target for the year 2020 as well as an interim target. DWR has provided guidelines for determining these targets in its Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use and also in the 2015 UWMP Guidebook. GCSD's baseline water use is based on GCSD's historic water use and is determined by procedures identified in the following sections.

All retail agencies, whether updating their baselines and targets from 2010, or calculating these for the first time in 2015 UWMPs, are required to submit the standardized tables in the SB X7-7 Verification Form with their 2015 UWMPs. These standardized tables were not available in 2010 and are required to demonstrate compliance with the Water Conservation Act of 2009.

The tables in the SB X7-7 Verification Form are distinguished from the other standardized tables in this 2015 UWMP by their name, which will state "SB X7-7", followed by the table number.

5.3. Baseline Periods

CWC 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).

GCSD is responsible for determining both a 10 or 15-year baseline and a 5-year baseline in accordance with DWR's guidelines.

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

CWC 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.

GCSD's recycled water does not offset the retail water deliveries since the Pine Mountain Lake Golf Course does not use GCSD potable water for irrigation. Thus, the District did not meet at least 10% of its 2008 measured retail water demand through recycled water. For this reason, the baseline must be calculated over a 10-year period. This 2015 UWMP uses the period between January 1st, 2001 and December 31st, 2010 as the 10-year baseline period.

5.3.2. Determination of the 5 Year Baseline (Target Confirmation)

CWC 10608.12 (b)

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

The UWMPA requires urban water suppliers to calculate water use, in GPCD, for a 5-year baseline period. The 5-year baseline period is used to confirm that the selected 2020 target meets the minimum water use reduction requirements in accordance with CWC 10608.22. The selected 5-year Baseline Period for the 2015 UWMP is January 1st, 2006 through December 31st, 2010.

5.4. Service Area Population

CWC 10608.20

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

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

CWC 10644 (a)(2)

The plan… shall include any standardized forms, tables, or displays specified by the department.

To obtain an accurate estimate of the annual per capita consumption, the 2015 UWMP must estimate population of the area actually served. The population estimates must include each baseline year in both of the baseline periods and for the 2015 compliance year. The methods available for estimating GCSD's population are provided in Methodology 2 of the Methodologies document. The following is a description of the methodology used in this 2015 UWMP to estimate the District's population.

5.4.1. Population Methodology

Agencies whose service area boundaries correspond by 95 percent or more with the boundaries of a District during the baseline period and the compliance year 2015 will be able to obtain population estimates from tables prepared by the Department of Finance (DOF).

GCSD's service area boundaries correspond with the boundaries of the Big Oak Flat CDP and Groveland-Pine Mountain Lake CDP during the baseline and compliance years. US Census population estimates have been used to estimate the service area population. The service area population for each of the baseline years is shown in Table 5-1.

Table 5-1 Service Area Population (SB X7-7 Table 3)

Year		Population
10 to 15 Year Baseline Population		
Year 1	2001(1)	3,389
Year 2	2002(1)	3,390
Year 3	2003(1)	3,391
Year 4	2004(1)	3,392
Year 5	2005(1)	3,393
Year 6	2006(1)	3,394
Year 7	2007(1)	3,395
Year 8	2008(1)	3,396
Year 9	2009(1)	3,397
Year 10	2010(2)	3,397
5 Year Baseline Population		
Year 1	2006(1)	3,394
Year 2	2007(1)	3,395
Year 3	2008(1)	3,396
Year 4	2009(1)	3,397
Year 5	2010(2)	3,397
2015 Compliance Year Population		
2015(3)		3,147

Notes:
(1) Population is based on the U.S. Census total population of 3,388 for 2000 (for both Groveland CDP and Pine Mountain Lake CDP) and the annual growth rate of 0.03 percent.
(2) From the 2010 U.S. Census.
(3) Based on the 2014 ACS Demographic and Housing Estimates total population of 3,147 for both Groveland CDP and Pine Mountain Lake CDP.

5.5. Gross Water Use

CWC 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 supplier

(2) The net volume of water that the urban retail water supplier places into long term storage

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

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 calculation of its gross water use to avoid a disproportionate burden on another customer sector

Gross water use is a measure of water that enters GCSD's distribution system over a 12-month period with certain allowable exclusions. These exclusions are:

- Recycled water delivered within the service area
- Indirect recycled water
- Water placed into long term storage
- Water conveyed to another urban supplier
- Water delivered for agricultural use
- Process water

Gross water use is accurately measured at the point that water enters the distribution system. Measuring at this point ensures that all the water, including losses and other non-revenue water (i.e., firefighting, line flushing, etc.) is accounted for. Gross water use is calculated for each baseline year and the 2015 Compliance Year. Gross Water Use is shown in Table 5-2.

Table 5-2 Annual Gross Water Use (SB X7-7 Table 4)								
	Baseline Year	Volume into Distribution System (MG)	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage	Indirect Recycled Water	Water Delivered for Agricultural Use	Process Water -	
10 to 15 Year Baseline - Gross Water Use								
Year 1	2001	167.47	0	0	0	0	0	167
Year 2	2002	169.02	0	0	0	0	0	169
Year 3	2003	160.18	0	0	0	0	0	160
Year 4	2004	170.27	0	0	0	0	0	170
Year 5	2005	163.10	0	0	0	0	0	163
Year 6	2006	163.03	0	0	0	0	0	163
Year 7	2007	164.52	0	0	0	0	0	165
Year 8	2008	172.43	0	0	0	0	0	172
Year 9	2009	164.02	0	0	0	0	0	164
Year 10	2010	157.64	0	0	0	0	0	158
10 - year baseline average gross water use								**165**
5 Year Baseline - Gross Water Use								
Year 1	2006	163.03	0	0	0	0	0	163
Year 2	2007	164.52	0	0	0	0	0	165
Year 3	2008	172.43	0	0	0	0	0	172
Year 4	2009	164.02	0	0	0	0	0	164
Year 5	2010	157.64	0	0	0	0	0	158
5-year baseline average gross water use								**164**
2015 Compliance Year - Gross Water Use								
2015		119.24	0	0	0	0	0	**119**

5.6. Baseline Daily per Capita Water Use

The final step in baseline calculations is to determine the water used per person per day GPCD in each of the baseline years. This is done for each baseline year by dividing the gross water use by the service area population. Each baseline year is shown in Table 5-3.

Table 5-3 Gallons Per Capita Per Day GPCD (SB X7-7 Table 5)				
Baseline Year		Service Area Population	Annual Gross Water Use (MG)	Daily Per Capita Water Use GPCD
10 to 15 Year Baseline				
Year 1	2001	3,389	167	135

Table 5-3 Gallons Per Capita Per Day GPCD (SB X7-7 Table 5)				
Baseline Year		Service Area Population	Annual Gross Water Use (MG)	Daily Per Capita Water Use GPCD
Year 2	2002	3,390	169	137
Year 3	2003	3,391	160	129
Year 4	2004	3,392	170	138
Year 5	2005	3,393	163	132
Year 6	2006	3,394	163	132
Year 7	2007	3,395	165	133
Year 8	2008	3,396	172	139
Year 9	2009	3,397	164	132
Year 10	2010	3,397	158	127
10-15 Year Average Baseline				**133**
5 Year Baseline				
Year 1	2006	3,394	163	132
Year 2	2007	3,395	165	133
Year 3	2008	3,396	172	139
Year 4	2009	3,397	164	132
Year 5	2010	3,397	158	127
5 Year Average Baseline				**133**
2015 Compliance Year				
2015		3,147	119	**104**

Table 5-4 provides a summary of the calculated baselines and 2015 consumption based on the data provides in Table 5-3.

Table 5-4 Summary of baselines and current consumption (SB X7-7 Table 6)	
10-15 Year Baseline GPCD	133
5 Year Baseline GPCD	133
2015 Compliance Year GPCD	104
NOTES:	

5.7. 2015 and 2020 Targets

CWC 10608.20(e)

An urban retail water supplier shall include in its urban water management plan due in 2010. . . urban water use target, interim urban water use target, along with the bases for determining

those estimates, including references to supporting data (10608.20(e)).

CWC 10608.20

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

The UWMPA requires urban water suppliers to determine the 2020 Urban Water Use Target. Four target methods have been developed, and identify the specific steps water suppliers shall follow to establish these targets. These methods are as follows:

- Target Method 1: 80% of 10- to 15- Year Baseline
- Target Method 2: Performance Standards
- Target Method 3: 95% of Hydrologic Regional Target
- Target Method 4: Savings by Water Sector

Once the 2015 plan is submitted, the Target Method may not be changed in any amendments to the 2015 Plan or in the 2020 Plan.

5.7.1. Target Method

GCSD's 2015 UWMP will be utilizing Target Method 1. The 2020 Urban Water Use Target is calculated as 80 percent of the base daily per capita water use. This 20 percent reduction of the 10-15 Year Baseline was determined to be 107 GPCD as shown Table 5-5.

Table 5-5 Target Method 1 20% Reduction (SB X7-7 Table 7-A)

10-15 Year Baseline	2020 Target GPCD
133	107

5.7.2. Target Confirmation – Use of 5 Year Baseline

CWC 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 must reduce GCSD's 2020 water use by a minimum of 5% from the 5-year baseline. Table 5-6 shows that the Confirmed 2020 water use target is below that minimum at 107 GPCD.

Table 5-6 Confirm Minimum Reduction for 2020 Target (SB X7-7 Table 7-F)			
5 Year Baseline GPCD	Maximum 2020 Target*	Calculated 2020 Target	Confirmed 2020 Target
133	126	107	107
** Maximum 2020 Target is 95% of the 5 Year Baseline GPCD*			

5.7.3. 2015 Interim Urban Water Use Target

The 2015 Interim Target is the value halfway between the 10-to 15-year Baseline and the Confirmed 2020 Target. The District's 2015 Interim Target of 120 GPCD is shown in Table 5-7 below.

Table 5-7 2015 Interim Target GPCD (SB X7-7 Table 8)		
Confirmed 2020 Target	10-15-year Baseline GPCD	2015 Interim Target GPCD
107	133	120
NOTES:		

5.7.4. Baselines and Targets Summary

A summary of baselines and targets is shown in Table 5-8 below.

Table 5-8 Baselines and Targets Summary (Standard Table 5-1)					
Baseline Period	Start Year	End Year	Average Baseline *	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	2001	2010	133	120	107
5 Year	2006	2010	133		
*All values are in Gallons per Capita per Day GPCD					

5.8. 2015 Compliance Daily per Capita Water Use

CWC 10608.12 (e)

"Compliance daily per-capita water use" means the gross water use during the final year of the reporting period…

CWC 10608.24 (a)

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

CWC 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.

Water suppliers must calculate their actual 2015 water use for the calendar year to determine whether or not they have met their per capita 2015 and asses their progress towards meeting their 2020 target water use.

5.8.1. Meeting the 2015 Target

In 2015 the District's daily per capita water use was determined to be 104 GPCD, which is less than the 2015 Interim Target of 120 GPCD and Confirmed 2020 Target of 107 GPCD. Therefore, the District has met their 2015 per capita water use and is already on track to meet the Confirmed 2020 Target. This confirmation can be seen in Table 5-9 in the following section.

5.8.2. Adjustments to Gross Water Use

CWC 10608.24 (d)

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

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

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

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

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 because of changes in distribution area caused by mergers, annexation, and other scenarios that occur between the baseline and compliance years.

For this 2015 UWMP the Groveland Community Services District has achieved their targeted reduction. As shown in Table 5-8 in Section 5.7.4, GCSD is already in compliance with their 2020 Confirmed Target of 107 GPCD.

Table 5-9 2015 Compliance (Standard Table 5-2)

Actual 2015	2015 Interim Target	Optional Adjustments to 2015					2015 GPCD	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events	Economic Adjustment	Weather Normalization	TOTAL Adjustments	Adjusted 2015		
104	120	0	0	0	0	104	104	YES
**All values are in Gallons per Capita per Day GPCD*								

CHAPTER 6 SYSTEM SUPPLIES

6.1. Purchased Water

The Groveland Community Services District receives surface water from the Hetch Hetchy Tunnel under a 1964 Agreement with the City and County of San Francisco. The Agreement was extended in 1984 and expires on March 23, 2034. Under the terms of the Agreement, GCSD is a retail customer of the City and County of San Francisco.

6.2. Groundwater

GCSD does not currently use groundwater as part of its water supply. Groundwater in Tuolumne County is severely limited due to the hard, impermeable bedrock that covers the majority of the County and due to the high naturally occurring iron content of the groundwater.

6.3. Surface Water

As previously stated in Section 6.1, surface water is supplied to Groveland Community Services District from the Hetch Hetchy Mountain Tunnel under an Agreement with the City and County of San Francisco. Under the terms of the Agreement, Groveland Community Services District is a retail customer of the City and County of San Francisco. The agreement expires on March 23, 2034.

The supply source for Hetch Hetchy Reservoir is the Tuolumne River. The majority of this water supply originates in the upper Tuolumne River Watershed high in the Sierra Nevada Mountain Range, remote from human development and pollution. This pristine water source is protected in tunnels until it gets to Groveland Community Services District. GCSD has been approved to use this drinking water source without requiring filtration. GCSD chlorinates, chloraminates, and treats the water with ultraviolet light disinfection. The water meets the criteria of the Long Term 2 (LT2) surface water supply regulations.

The Agreement with SFPUC allows for GCSD to serve up to 16,299 customers (3,651 acre feet per year) by the year 2020 and 22,072 customers (4,944 acre feet per year) by the year 2050. The projection includes a factor of 200 gallons of water per customer per day. A copy of the Agreement is provided in Appendix G. The Agreement defines a contract service area boundary of 25 square miles. GCSD's service area is within the contract area and has not yet reached this sphere of influence boundary. Population, however, has not increased as originally anticipated in the Agreement and is not expected to grow significantly in the near future.

A Water Exchange Agreement was entered into between the City and County of San Francisco's Public Utility Commission (SFPUC), the Modesto Irrigation District (MID) and Turlock Irrigation District (TID) on July 23, 2007. The Agreement allows GCSD to use Pine Mountain Lake as its alternative water supply when the SFPUC shuts down the Hetch Hetchy Mountain Tunnel for durations up to 60 days per year for tunnel repair or during emergencies. The volume of water that will be allowed to be used during the shutdowns is 200 acre-feet. The Water Exchange Agreement is provided in Appendix H.

In November of 2007, GCSD purchased a Pall Aria Microfiltration (MF) Water Treatment System from the Pall Corporation. The Pall MF system enables GCSD to filter and treat water from PML and pump it into the distribution system. PML is a separate water supply source for GCSD. GCSD received an interim permit to operate the Pall MF system from the California Department of Public Health on March 4, 2009. A full operational permit was issued in May of 2013, for a maximum flow rate of 600 gallons per minute (gpm) or (0.86 million gallons per day (MGD) with two membrane racks in service (Water Permit No. 03-11-13P-008, for System No. 5510009).

6.3.1. Existing Water Treatment

According to GCSD's 2001 Water Master Plan, water flows from Hetch Hetchy through a tunnel just south of Groveland into Priest Regulating Reservoir. GCSD draws water from the tunnel prior upstream of Priest Regulating Reservoir; these locations are the Big Creek Shaft (the most upstream) and the Second Garrotte Shaft.

The water treatment facilities at each pump shaft are similar and consist only of disinfection and pH adjustment; the latter mitigates corrosion. The water supply is unfiltered. Water from the tunnel is pumped to the surface and chlorinated using sodium hypochlorite. A static mixer provides necessary mixing of the hypochlorite and the water. The hypochlorite feed is controlled on the basis of a preset residual. The chlorinated water then enters a baffled clearwell where sufficient contact time is provided to meet the CT requirements of the Surface Water Treatment Rule (SWTR). The raw water turbidity, clearwell level and temperature are measured continuously. Water flows from the clearwell to booster pumps, which lift the water into the distribution system. Prior to entering the booster pumps, there is another opportunity to add hypochlorite. Also at this point, lime is added to adjust the pH upward to about 9.5 to 10 to mitigate corrosion. The lime feed is controlled on the basis of maintaining a preset pH. A static mixer is provided at the point of hypochlorite and lime addition. The finished water turbidity, pH and chlorine residual is monitored continuously just downstream of the distribution system booster pumps.

The water source is relatively pristine and, as a result, GCSD has been able to avoid filtration. The City of San Francisco Public Utilities Commission (SFPUC) prepared an application for "filtration avoidance" in 1993. The conclusion was that the Hetch Hetchy water source met all of the eleven criteria for EPA filtration avoidance as of June 29, 1993. SFPUC has provided routine monitoring of the watershed and has avoided the need to provide filtration ever since.

In April of 2014 the SFPUC announced that due to the ongoing Drought, an alternative Raw water source would be introduced in to the mountain tunnel. The new alternative source water from Cherry Lake did not meet the criteria for filtration avoidance. GCSD worked with the State Revolving Fund and the United States Department of Agriculture (USDA) to secure 85% of the funding needed to install a Pall Micro Filtration Trailer to filter the Cherry Lake water.

6.4. Stormwater

GCSD does not have any stormwater recovery systems that provide beneficially used stormwater.

6.5. Wastewater and Recycled Water

6.5.1. Recycled Water Coordination

CWC 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.

GCSD owns and operates the Regional Wastewater System which collects wastewater from about half of the water customers within the principal communities and developed areas within GCSD, and transmits it to the Regional Wastewater Treatment Plant for treatment. The treated wastewater (recycled water) from GCSD is then delivered to the Pine Mountain Lake Association's 18-hole golf course and GCSD's 14 acres of spray fields. GCSD's recycled water supply and the use of such recycled water are more fully described in the following sections.

6.5.2. Wastewater Collection, Treatment, and Disposal

CWC 10633 (a)

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

CWC 10633 (b)

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

The Groveland Community Services District owns and operates the wastewater system servicing the communities of Groveland, Big Oak Flat and Pine Mountain Lake. Located in southern Tuolumne County in the central Sierra Nevada Mountains, the system consists of 16 lift stations, 35 miles of wastewater collection gravity pipelines ranging in size from 6 to 12-inches and 7 miles of pressure pipelines ranging in diameter from 4 to 12 inches. GCSD also operates the Wastewater Treatment Plant (WWTP), two storage reservoirs, and approximately 14 acres of spray fields.

Due to the mountainous terrain and the concentration of residences around the low-lying Pine Mountain Lake, the vast majority of wastewater flows within GCSD require pumping to the WWTP. The treatment plant is located near the highest elevation in the wastewater system. Some wastewater flows can flow through as many as seven lift stations before reaching the treatment plant.

The WWTP conducts primary and secondary treatment of wastewater. Wastewater arrives at the wastewater plant either by force main up from the Pine Mountain Lake system, or by gravity main down from Groveland and Big Oak Flat. The only primary treatment unit is the Roto-strainer, which removes

roots, rags, plastics, and other coarse debris from the incoming wastewater. Wastewater then flows to the Equalization basin where it is aerated. The addition of air freshens the wastewater, removes gasses, adds oxygen, promotes the flotation of grease and oil, and aids in coagulation. The Equalization Basin has a volume of 570,000 gallons, and has a medial berm that allows shutdown of half the basin for maintenance during low flow conditions.

Through the contact basin, wastewater is then introduced into the treatment plant where it is oxygenated and fed to a thriving population of naturally occurring organisms. These organisms feed on organic materials in the wastewater, breaking them down into gasses, liquids, or other stable solid forms. The return activated sludge pump is used to either return settled materials and microorganisms to the treatment process, or to pump them into the aerobic digestion chamber. Reduced solids are pumped into the aerobic digestion chamber where they are thickened with chemical coagulants. Thickened sludge is then pumped into conveyed drying beds. After settling, the liquid portion of the wastewater flows over weirs and into the chlorine contact basin. Chlorine is used to kill any remaining organism in the plant effluent.

Average daily flow into the plant is approximately 0.15 MGD (180,000 gpd). Peak daily flow into the plant has been as high as 0.5 MGD (638,000 gpd). The two 390 gpm variable speed, influent pumps can pump at a continuous rate of 0.7 MGD (850,000 gpd).

Treated effluent is pumped to two storage reservoirs. Reservoir 1 has a volume of 4.5 MG and Reservoir 2 has a volume of 55 MG. Reservoir 1 serves several purposes for the WWTP. First, Reservoir 1 is used to store treated effluent from the WWTP that does not quite meet the WDR permit standards. For example, settleable solids may have been reduced by 95 percent, but fail to meet the daily maximum standard of 1.0 ml/l-hr. The treated wastewater is diverted to Reservoir 1 for a few days until the settleable solids meet the standard. The diverted wastewater is retested and either returned to the Equalization Basin, or is blended with fully treated effluent in the chlorine contact basin and pumped to Reservoir 2.

During extreme wet weather flows, excess inflow is pumped from the Equalization Basin to Reservoir 1. After the storm flows have subsided, the water in Reservoir 1 is returned to the Equalization Basin for full treatment. Reservoir 1 is also used during periods when the effluent in Reservoir 2 is used to irrigate the Pine Mountain Lake golf course or spray fields. This is done to avoid the possibility of applying chlorinated water to the grass. The water diverted to Reservoir 1 is fully treated wastewater. It is blended back into the chlorine contact basin and pumped to Reservoir 2 after the golf course irrigation cycle is complete.

Table 6-1 and Table 6-2 provide the total volume of wastewater collected, treated, and recycled within the service area in 2015.

Table 6-1 Wastewater Collected Within Service Area in 2015 (Standard Table 6-2)						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
47%	Percentage of 2015 service area covered by wastewater collection system					
47%	Percentage of 2015 service area population covered by wastewater collection system					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (MG)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party? *(optional)*
Groveland Community Services District	Metered	42	Groveland Community Services District	Groveland Community Services District	Yes	No
Total Wastewater Collected from Service Area in 2015:		42				

Table 6-2 Wastewater Treatment and Discharge Within Service Area in 2015 (Standard Table 6-3)										
☐	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	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2015 volumes			
							Wastewater Treated (MG)	Discharged Treated Wastewater (MG)	Recycled Within Service Area (MG)	Recycled Outside of Service Area
Groveland Community Services District	PMLA Golf Course & District Spray Fields	Irrigation	5C55100001	Irrigation	No	Secondary Undisinfected	42	42	42	0
						Total	42	42	42	0

6.5.3. Recycled Water System

CWC 10633(c)

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

All of the wastewater in GCSD is collected, treated and used for irrigation on GCSD's spray fields and the Pine Mountain Lake Association (PMLA) golf course. The 6-inch diameter recycled water pressure pipeline to the golf course is 4,200 feet long. A 75-horsepower recycled water pump is used to deliver recycled water to the PMLA. Once the water is delivered to the golf course, the recycled water enters a 3-million-gallon open reservoir operated by the Pine Mountain Lake Association. The Pine Mountain Lake Association then pumps the recycled water to the irrigation system serving the 110-acre golf course.

During the winter months the recycled water is stored in Reservoir 2 and, if necessary, Reservoir 1. The golf course and the spray field irrigation demands account for 100 percent of the recycled water used. When recycled water volume is depleted in the late summer months, typically September or October, the golf course then uses Pine Mountain Lake raw water as their irrigation source.

GCSD treats its wastewater to secondary standards and is permitted to pump treated wastewater to the Pine Mountain Lake Association's maintenance yard pond, where it is blended with raw water from Pine Mountain Lake. This blended water is then used to irrigate the Pine Mountain Lake Golf Course. Additionally, GCSD is permitted to dispose of treated effluent on 14 acres of irrigation fields located on District property.

All recycled water use is metered. Flow rates and totals for each meter are recorded. Isolation valves are used to direct where the water will be delivered.

6.5.4. Recycled Water Beneficial Uses

CWC 10633(d)

(Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial

reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

CWC 10633(e)

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

Essentially, all of the recycled water produced by GCSD every year is utilized. Some of the recycled water does evaporate in the open storage reservoirs. As mentioned previously, the Pine Mountain Lake Golf Course consumes most of the recycled water (23 MG), with the second largest consumer being GCSD's spray fields (19 MG). No potable water produced at GCSD's water treatment plants is utilized for irrigation of the golf course.

According to the agreement between PMLA and GCSD, PMLA golf course could use up to 65 MG of recycled water per year. In addition, a recycled water connection has been installed at GCSD for GCSD tanker trucks to fill up for dust control and construction uses on GCSD's property. In 2008, a connection was also put in so that Cal-Fire could use recycled water for firefighting purposes. Use of recycled water will ultimately help augment potable water supplies and postpone the increased water supply demand.

Table 6-3 displays the current recycled water uses within GCSD's service area.

Table 6-3 Current and Projected Recycled Water Direct Beneficial Uses Within Service Area (Standard Table 6-4)									
☐	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:		Groveland Community Services District							
Name of Agency Operating the Recycled Water Distribution System:		Groveland Community Services District							
Supplemental Water Added in 2015									
Source of 2015 Supplemental Water									
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015 (MG)	2020 (MG)	2025 (MG)	2030 (MG)	2035 (MG)	2040 (MG)	
Agricultural irrigation									
Landscape irrigation (excludes golf courses)	Irrigation	Secondary, Undisinfected	19	19	19	19	19	19	
Golf course irrigation	Irrigation	Secondary, Undisinfected	23	24	24	24	24	24	
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	-								
		Total:	**42**	**43**	**43**	**43**	**43**	**43**	

6.5.4.1. Planned Versus Actual Use of Recycled Water

CWC 10633(e)

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

According to the 2010 UWMP, GCSD estimated applying 25 MG of treated effluent to GCSD's spray fields and 30 MG to the PMLA golf course. In 2015 GCSD applied approximately 42 MG for landscape irrigation and golf course irrigation. Table 6-4 displays the 2010 UWMP projection for recycled water versus the 2015 actual use.

Table 6-4 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual (Standard Table 6-5)

☐	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
Landscape irrigation (excludes golf courses)	25	19
Golf course irrigation	30	23

6.5.5. Actions to Encourage and Optimize Future Recycled Water Use

CWC 10633(f)

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

CWC 10633(g)

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

GCSD will assist industrial and commercial customers in designing recycling projects conducive to District operations. As part of the educational efforts of the District, recycling and conservation issues are included in school and public education forums. Actions to encourage recycled water use are summarized in Table 6-5.

Table 6-5 Methods to Expand Future Recycled Water Use (Standard Table 6-6)			
☒	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use

GCSD is not currently planning to change its recycled water use in the near term. Given the current usage of treated wastewater for irrigation purposes, there is no hydrological benefits to increasing such recycling use. GCSD will expand the reclamation areas as needed to be able to dispose of 100 percent of the treated effluent. GCSD will encourage commercial customers to implement recycled water use programs within their sites.

6.6. Desalinated Water Opportunities

CWC 10631(i)

Describe the opportunities for development of desalinated water, including, but not limited to,

ocean water, brackish water, and groundwater, as a long-term supply.

The UWMPA requires water agencies to consider options for desalination. GCSD is located a considerable distance from the Pacific Ocean, so constructing a transmission main to move either sea water or desalinated water directly to the GCSD is not feasible and cost prohibitive.

In order to acquire additional water supplies, GCSD may enter into an agreement with SFPUC or a SWP contractor situated in close proximity to the ocean. Under such an arrangement, GCSD could use funds collected from the developer fee to contribute financially to the construction of a desalination facility, and in turn, the partnering agency would trade the portion of desalinated water produced with GCSD funding for local use in the San Francisco seaside area for an equal portion of fresh water from Hetch Hetchy tunnel being made locally available to GCSD and its customers.

6.7. Exchanges or Transfers

CWC 10631(d).

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

A Water Exchange Agreement was entered into between the City and County of San Francisco's Public Utility Commission (SFPUC), Modesto Irrigation District (MID) and Turlock Irrigation District (TID) on July 23, 2007. The Agreement allows GCSD to use Pine Mountain Lake as their alternative water supply when the SFPUC shuts down the Hetch Hetchy Mountain Tunnel for durations up to 60 days per year for planned tunnel repair. This alternative water supply can also be used in the event of an unplanned outage of the Mountain Tunnel or during an emergency within GCSD water treatment system. The Water Exchange Agreement is provided in Appendix H.

6.8. Future Water Projects

CWC 10631(h)

…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.

The Groveland Community Services District currently relies solely on surface water for its water supply. GCSD's water master plan evaluates the feasibility of groundwater use, and due to the impermeable bedrock, groundwater has long been considered unreliable in the Groveland area. The high initial capital costs to add groundwater water make the project unfeasible at this time. GCSD intends to meet its projected water demands through the continued use of surface water alone.

Most facilities in the system are approaching 40-years old and are experiencing more frequent failures, manifesting themselves as sewage spills and discharge permit violations. The existing system was not designed to live far into the 21st Century and GCSD is faced with embarking on a major capital programs designed to satisfy the community's needs and meet regulatory requirements. Currently, GCSD is planning for the construction of miscellaneous water distribution system upgrades to provide better and more reliable water service in downtown Groveland and Big Oak Flat. Once constructed, the upgraded system will provide adequate fire flow throughout GCSD's service area. A new distribution system would experience less water main breaks and less water losses. This will result in an immediate reduction in water purchases by GCSD as well as a significant reduction in operation and maintenance costs.

Table 6-6 Expected Future Water Supply Projects or Programs (Standard Table 6-7)	
☐	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.
☒	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
	Y/N	If, yes provide Agency Name				
Distribution System Improvements	No			NA	Average Year	NA

6.9. Summary of Existing and Planned Sources

CWC 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.

Water pumped from the Hetch Hetchy Mountain tunnel has historically been the only source of potable water supply. The majority of the water distribution system was constructed during the 1970's with the Pine Mountain Lake development. GCSD's municipal water system consist of 2 water supply pumps, a treatment facility with clearwell storage, 5 water tanks, 11 pressure zones, 17 pressure reducing valves (PRVs), 3 intra-system booster pumps, 9 pressure relief valves, and approximately 70 miles of water mains. The challenge presented by this system is balancing the various supply sources (tanks, PRVs) to each zone and minimizing the pumping required to serve each meter within GCSD.

According to their Water Master Plan, GCSD will need to improve the existing distribution system in order to meet GCSD design standards. GCSD is planning to construct miscellaneous upgrades on the existing distribution system. This improvement will provide a better and more reliable water service to the downtown Groveland area and Big Oak Flat.

Once constructed, the upgrade distribution system will provide adequate fire flow throughout GCSD's service area, and the system will experience less water main breaks and less water losses. As a result, GCSD will be able to reduce the amount of water purchases and reduce system operation and maintenance cost.

Table 6-7 Water Supplies (Standard Table 6-8)

Water Supply	Additional Detail on Water Supply	2015	
		Actual Volume (MG)	Water Quality
Surface Water	Purchased from SFPUC	119	Drinking Water
	Total	119	

Table 6-8 Water Supplies — Projected (Standard Table 6-9)

Water Supply	Additional Detail on Water Supply	Projected Water Supply									
		2020		2025		2030		2035		2040	
		Reasonably Available Volume (MG)	Total Right or Safe Yield (MG)	Reasonably Available Volume (MG)	Total Right or Safe Yield (MG)	Reasonably Available Volume (MG)	Total Right or Safe Yield (MG)	Reasonably Available Volume (MG)	Total Right or Safe Yield (MG)	Reasonably Available Volume (MG)	Total Right or Safe Yield (MG)
Surface Water		163	163	164	164	165	165	166	166	167	167
Total		162	163	163	164	164	165	165	166	167	167

6.10. Climate Change Impacts to Supply

The climatic conditions of Central California demand careful water management practices due to the wide range of rainfall and rainy seasons and the high temperatures that frequently occur in the summer months. The northern parts of the Central Valley receive substantially greater precipitation form winter storms which sweep down from the Pacific Northwest, while the southernmost regions are more desert like due to lack of precipitation. The average annual precipitation for the Groveland area is 39 inches. The rainy season runs from October through May, but 90 percent of the rainfall occurs between the beginning of November and the end of April. Drought conditions are not uncommon and can last for multiple years. During summer months, water consumption varies directly with daily temperature maximums and the Groveland region experiences temperatures in the high 90's during the summer months.

During drought periods, declines in surface water flows can be detrimental to an areas water supply. However, the SFPUC has planned to assure a reliable water supply during drought years through the implementation of the Water System Improvement Plan to meet the demands of their customers. Since GCSD is located on the upper part of Hetch Hetchy Aqueduct system, little or no improvement is needed to supply GCSD under drought conditions. That, coupled with the fact that GCSD uses only 0.4 million gallons per day average compared to the 265 million gallons per day that the SFPUC delivers, makes it an insignificant impact to water supply.

Because GCSD has a contract service area agreement with SFPUC until 2034 and GCSD is located on the uppermost portion of their transmission system, GCSD and SFPUC estimate that sufficient quantities of water will be available from the Hetch Hetchy system to meet projected demands over the next twenty years, assuming a projected growth rate of 1.0 percent per year. The SFPUC plans water deliveries anticipating that an unprecedented drought may occur.

CHAPTER 7 WATER SUPPLY RELIABILITY ASSESSMENT

7.1. Introduction

The Urban Water Management Planning Act (UWMPA) requires that the Urban Water Management Plan (UWMP) address the reliability of the agency's water supplies. This includes supplies that are vulnerable to seasonal or climatic variations. The UWMPA also requires that the UWMP include information on the quality of water supplies and how this affects management strategies and supply reliability. In addition, an analysis must be included to address supply availability in a single dry year and in multiple dry years. The relevant sections of the UWMPA are presented below.

7.2. Constraints on Water Sources

CWC 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.*

CWC 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*

There are a variety of factors that can impact water supply reliability. These factors include water quality, legal constraints, and climatic issues. A brief discussion on each of these factors is provided below.

7.2.1. Water Quality

GCSD has experienced periodic short-term outages as a result of water quality events. Due to the fact that Hetch Hetchy water is not filtered, it is subject to strict water quality standards set by the Department of Water Resources (DWR). Due to occasional weather events, turbidity levels of the raw water supply sometimes exceed standards. During those events, GCSD uses its 6.7 million gallons of local reservoir storage to meet the demands of the customers. That is enough local storage to meet approximately 17 days of average annual demand.

7.2.2. Climatic Changes

The climatic conditions of Central California demand careful water management practices due to the wide range of rainfall and rainy seasons and the high temperatures that frequently occur in the summer months. The northern parts of the Central Valley receive substantially greater precipitation from winter

storms which sweep down from the Pacific Northwest, while the southernmost regions are more desert like due to lack of precipitation. The average annual precipitation for the Groveland area is 39 inches. The rainy season runs from October through May, but 90 percent of the rainfall occurs between the beginning of November and the end of April. Drought conditions are not uncommon and can last for multiple years. Summer water consumption varies directly with daily temperature maximums and the Groveland region experiences temperatures in the high 90's during the summer months.

Drought periods reduce the availably of surface water, but the SFPUC has planned to assure a reliable water supply during drought years through the implementation of the Water System Improvement Plan to meet the demands of their customers. Since GCSD is located on the upper part of Hetch Hetchy Aqueduct system, little or no improvement is needed to supply GCSD under drought conditions. That, coupled with the fact that GCSD uses only 0.4 million gallons per day average compared to the 265 million gallons per day that the SFPUC delivers, makes it an insignificant impact to water supply.

7.2.3. Legal Constraints

Legal factors, such as surface water contracts, are capable of affecting the reliability of a water distribution system or water supply. GCSD currently has a contract service area agreement with SFPUC, under which SFPUC agrees to supply water to GCSD at the Second Garrotte and Big Creek shafts until 2034. SFPUC delivers 265 million gallons per day, of which, GCSD uses only 0.4 million gallons per day average. SFPUC has supplied a reliable water source to GCSD since 1965 and will continue to do so until 2034. Due to the current agreement in place, it is highly unlikely that GCSD will experience any legal implications that could affect the reliability of the GCSD's water supply.

Due to the current multi-year drought the Governor signed by Executive Order, California water suppliers must reduce water consumption by 25%. Further regulatory enforcement of this Executive Order may prove to be another example of a regulatory shortage that is legal in nature.

7.3. Reliability by Type of Year

CWC 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.

Based on the available quantity of surface water and SFPUC's Water System Improvement Plan that assure a reliable water supply, it is not anticipated that a single or multiple dry year period will reduce the availability of water supply to GCSD, as shown in Table 7-1. The reliability of water service is subject to proper operation and maintenance of GCSD's water distribution system and its ability to deliver the water. As previously stated, most facilities in GCSD's water distribution system are approaching 40-50-years old and are experiencing more frequent failures, manifesting themselves as sewage spills and

discharge permit violations. The existing system was not designed to live far into the 21st Century and GCSD is faced with embarking on a major capital programs designed to satisfy the community's needs and meet regulatory requirements. GCSD is planning to construct miscellaneous water distribution system upgrades to provide better and more reliable water service in downtown Groveland area and Big Oak Flat. District Improvement Standards are in place and meet or exceed American Water Works Standards.

As the system is upgraded and expanded the Water Master Plan is followed. As a result, system reliability does not diminish as it is expanded into new service areas. Funds to maintain and expand the system to meet the continued growth in water demand are collected through water rates and development fees.

Table 7-1 Basis of Water Year Data (Standard Table 7-1)

Year Type	Base Year	Available Supplies if Year Type Repeats	
		Volume Available	% of Average Supply
Average Year	2015		100%
Single-Dry Year	2015		100%
Multiple-Dry Years 1st Year	2015		100%
Multiple-Dry Years 2nd Year	2015		100%
Multiple-Dry Years 3rd Year	2015		100%

7.4. Supply and Demand Assessment

CWC 10635 (a)

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

7.4.1. Normal Year

The reliability of GCSD's water supply and lack of vulnerability to seasonal or climatic shortage is discussed in Chapter 6. As previously stated, SFPUC has planned to assure a reliable water supply during drought years through the implementation of the Water System Improvement Plan. Assuming a normal year water condition, no deficiencies in water deliveries are anticipated.

Surface water has and will continue to provide drought protection for the City. However, the District has engaged in extensive emergency planning in preparation for potential service interruptions and a Water Shortage Contingency Plan is presented in Chapter 8.

Comparisons of projected supply and demand for normal year through 2040, in five-year increments are presented in Table 7-2.

Table 7-2 Normal Year Supply and Demand Comparison (Standard Table 7-2)

	2020 (MG)	2025 (MG)	2030 (MG)	2035 (MG)	2040 (MG)
Supply totals	163	164	165	166	167
Demand totals	163	164	165	166	167
Difference	0	0	0	0	0

7.4.2. Single Dry Year

Dry year effects are simulated through a methodology which assumes that dry year demand will decrease by approximately 10 percent below normal year demands as a consequence of mandatory water use restrictions. As previously stated, the SFPUC delivers approximately 265 mgd (of which GCSD's portion is 0.4 mgd) all of which can be met through existing resources. Also, the SFPUC plans its water deliveries anticipating that a drought worse than the 1987 through 1992 drought may occur. Therefore, it is not anticipated that a single or multiple dry year period will reduce the availability of water supply to GCSD.

Projected supplies were compared to the decreased demands for dry years and are presented in Table 7-3.

Table 7-3 Single Dry Year Supply and Demand Comparison (Standard Table 7-3)

	2020 (MG)	2025 (MG)	2030 (MG)	2035 (MG)	2040 (MG)
Supply totals	147	148	148	149	150
Demand totals	147	148	148	149	150
Difference	0	0	0	0	0

7.4.3. Multiple Dry year

Table 7-4 shows water supply and demands during multiple dry year events over the planning period. GCSD assumes, conservatively, that surface water supplies from the SFPUC will be reduced by 25% during the second and third dry years. To offset reduced surface water supplies and to meet water demands during this period, the SFPUC plans to identify 10 mgd of groundwater, recycled water, and conservation programs to reduce the need for rationing when demand levels increase in the future. This

will decrease the amount of conservation required in a drought and is currently estimated to be a 10 percent reduction.

Table 7-4 Multiple Dry Years Supply and Demand Comparison (Standard Table 7-4)

		2020 (MG)	2025 (MG)	2030 (MG)	2035 (MG)	2040 (MG)
First year	Supply totals	147	148	148	149	150
	Demand totals	147	148	148	149	150
	Difference	0	0	0	0	0
Second year	Supply totals	130	131	132	133	134
	Demand totals	130	131	132	133	134
	Difference	0	0	0	0	0
Third year	Supply totals	114	115	115	116	117
	Demand totals	114	115	115	116	117
	Difference	0	0	0	0	0

As shown in Tables 7-2, 7-3, and 7-4, anticipated supplies surface water is sufficient to meet all demands through year 2040 even under drought conditions. In order to continue to utilize surface water, it is essential that GCSD continue its current efforts towards conservation.

7.5. Regional Supply Reliability

CWC 10620 (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.

GCSD recognizes the importance of maintaining a high quality, reliable water supply. Although water is a renewable resource, there is a limit on the amount of water that can be sustainably drawn from a given supply source. But because of GCSD's location and the lack of other available supply sources, the use of surface water as a primary water supply source is expected to continue through 2040.

Through the implementation of the Water System Improvement Plan, SFPUC has guaranteed GCSD a reliable water supply that will meet demand even during periods of drought. Due to GCSD's proximity to the Hetch Hetchy Aqueduct system, little or no improvements is needed to supply GCSD under drought conditions. Because GCSD has a contract service area agreement with SFPUC until 2034 and GCSD is located on the uppermost portion of their transmission system, GCSD and SFPUC estimate that sufficient quantities of water will be available from the Hetch Hetchy system to meet projected demands over the next twenty years

CHAPTER 8 WATER SHORTAGE CONTINGENCY PLANNING

8.1. Introduction

CWC 10632

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

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

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

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

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

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

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

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

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

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

Water shortage contingency planning is a strategic planning process to prepare for and respond to water shortages. Good planning and preparation can help agencies maintain reliable supplies and reduce the impacts of supply interruptions.

This chapter provides a description of the water shortage contingency planning efforts at GCSD. Guidance is included for reporting the staged response to a water shortage, such as a drought, that occurs over a period of time, as well catastrophic supply interruptions which occur suddenly.

A water shortage contingency plan (WSCP) is a document that can be created separately from the UWMP and amended as needed without amending the corresponding UWMP. However, the most current version of the WSCP must be included as part of the UWMP when the UWMP is submitted to DWR.

8.2. Phases of Action

CWC 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.

GCSD has developed a four-phase conservation plan. Each phase includes specific water conservation actions and use restrictions designed to reduce water use. Implementation of each phase is cumulative; meaning that implementation of a higher phase shall also include implementation of all previous phases. Shortage conditions for each phase are based on a percent reduction of water supply.

During natural disasters or if the health and safety of persons within GCSD's service area is jeopardized, GCSD may need to skip phases to address the emergency water shortage. The water shortage plan and resolution are designed to be flexible so that GCSD can respond to the specific situation occurring at a particular time.

Section 18.04 of GCSD's amended Water Ordinance describes the following four conservation phases

I. <u>Phase 1 - Ongoing Water Conservation</u>

Phase 1 calls for a low level of informational outreach and enforcement of the permanent water use ordinances. Customers of GCSD are directed to limit the amount of water used on a year round basis. GCSD shall implement the following Phase 1 water conservation measures at all times regardless of the existence of a water shortage emergency:

1. Education programs.
2. Promotion of water-saving landscaping.
3. Requirement of low-flow fixtures in new developments.
4. Meter and/or flow control for all customer accounts and plant production activities.
5. Maintain tiered water rates for treated water.
6. Prohibit wasteful use of water.
7. Review water measuring and/or metering devices for accuracy.
8. Promotion of rainwater and stormwater capture, sequester, and storage.
9. Promotion of Water Re-Use such as Graywater and Recycled Water.

II. Phase 2 – Voluntary Conservation Measures

Upon the findings of the Board of Directors in accordance with Section 18.03 that there is a potential threat of an emergency or water shortage based on forecasted precipitation, snowpack and reservoir levels, or if SFPUC calls for Phase 2 conservation measures, GCSD shall adopt a resolution that implements the following measures:

1. Increase public awareness.
2. Prohibit fire hydrant flow testing
3. Restaurants shall serve water only upon customer request
4. Water customers will be notified that it is a low water year and will be requested to reduce water usage from the previous year's usage. GCSD will provide information on conservation methods.
5. GCSD will contact the highest water users to encourage use of water conservation methods.

III. Phase 3 – Mandatory Water Conservation Measures

Upon the findings of the Board of Directors in accordance with Section 18.03 that there is a potential threat of an emergency or water shortage based on forecasted precipitation, snowpack and reservoir levels, or if the SFPUC calls for Phase 3 conservation measures, GCSD shall adopt a resolution that implements the following measures:

1. If the SFPUC has declared Phase 3 conservation measures, GCSD's water reduction goal must match or exceed the water reduction goal identified by the SFPUC. The water reduction goal will be defined as a percentage reduction of the prior year's water usage and may be updated as conditions change.
2. Prohibit watering of lawns, gardens and other outdoor vegetation by use of irrigation systems, hoses, faucets or other outlets connected to the public water supply.
3. Watering lawns is allowed whenever the water reduction goal is forty percent (40%) or less.
4. Properties with addresses ending in an even number may irrigate only on Tuesday and Thursday.
5. Properties with addresses ending in an odd number may irrigate only on Wednesday and Fiday.
6. Prohibit irrigation which results in water running onto driveways, gutters, streets, adjoining property, and/or any other water runoff.
7. Prohibit washing of cars, boats, trailers, equipment or other vehicles by hose or by use of water directly from faucets or outlets connected to the public water supply. Washing such vehicles may occur at District approved commercial washing facilities that utilize water recycling capabilities.
8. Prohibit washing of sidewalks, walkways, driveways, patios, parking lots, graveled areas, tennis courts or other hard-surfaced areas, including residential and commercial

establishments, by hose or by use of water from faucets or other outlets connected to the public water supply.

9. New construction service applications shall be granted upon condition that water shall be used only for interior purposes and landscaping that does not require watering. Any landscaping requiring the use of water shall be delayed until repeal of Phase III restrictions.
10. Prohibit use of water in decorative fountains, pools, recreational ponds and the like is limited to the minimum necessary to preserve aquatic life if present.
11. Prohibit use of water for dust control, earth compaction, and other outdoor construction activities.
12. Prohibits filling of new or existing swimming pools, spas and recreation ponds.
13. Immediately notify appropriate media outlets, and post local road signage notifying the public of the current water use restrictions.

IV. Phase 4 – Mandatory Conservation Measures for Extreme Emergency

Upon the findings of the Board of Directors in accordance with Section 18.03 that an extreme emergency or water shortage exists based on forecasted precipitation, snowpack and reservoir levels, or an emergency event, or if the SFPUC calls for Phase 4 conservation measures, GCSD shall adopt a resolution that implements the following measures:

1. Prohibit excessive water use, without reasonable cause as determined by GCSD.

The UWMP requires that agencies manage water supplies to minimize the social and economic impact of water shortages. The UWMP must be designed to provide a minimum 50 percent of normal supply during a severe or extended water shortage. As the water purveyor, GCSD must provide the minimum health and safety water needs of the community at all times. Table 8-1 summarizes the Phases of the District's current Water Conservation Plan and the Water supply condition that would determine when a particulate phase must be implemented.

Table 8-1 Phases of Water Shortage Contingency Plan (Standard Table 8-1)

Phase	Complete Both	
	Percent Supply Reduction[1]	Water Supply Condition
1	10	❖ Average (or above average) Precipitation for the last 12-24 months ❖ Total production capacity in operation at 100 percent ❖ Adequate pressures in the system during PHF periods
2	10	❖ Below Average Precipitation for the last 12-24 months ❖ Total production capacity loss of up to 10 percent
3	20	❖ Below Average Precipitation for the last 24-36 months ❖ Total production capacity loss of up to 20 percent
4	50	❖ Below Average Precipitation for the last 36-48 months ❖ Total production capacity loss greater than 20 percent.

[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*

Each phase includes a water reduction objective, in percent of normal water demands. The rationing plan includes voluntary and mandatory conservation measures that are dependent on the cause, severity and anticipated duration of the water supply shortage. A combination of voluntary and mandatory water conservation measures would be used to reduce water usage in the event of water shortages.

8.3. Prohibitions on End Uses

CWC 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.

Section 18.04 of GCSD's Water Ordinance contains provisions with regards to water conservation including prohibition on end uses during the various phases of water conservation. Table 8-2 lists the mandatory prohibitions against specific water activities during times of water shortages, especially during droughts. The prohibitions include specific changes in water use and educational components. The levels are additive and the higher levels of drought response are inclusive of the lower levels requirements.

Table 8-2 Restrictions and Prohibitions on End Uses (Standard Table 8-2)

Phase	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other	Requirement of low-flow fixtures in new developments	Yes
2	Other	Prohibit fire hydrant flow testing	Yes
2	CII - Restaurants may only serve water upon request	Restaurants shall serve water only upon customer request	Yes
3	Landscape - Prohibit certain types of landscape irrigation	Watering of lawns, gardens and other outdoor vegetation by use of irrigation systems, hoses, faucets or other outlets connected to the public water supply is prohibited	Yes

Table 8-2 Restrictions and Prohibitions on End Uses (Standard Table 8-2)

Phase	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Landscape - Other landscape restriction or prohibition	Individual garden plants or trees may be irrigated only by the use of buckets, containers or properly maintained irrigation drip systems	Yes
3	Landscape - Limit landscape irrigation to specific days	Properties with addresses ending in an even number may irrigate only on Tuesday and Thursday	Yes
3	Landscape - Limit landscape irrigation to specific days	Properties with addresses ending in an odd number may irrigate only on Wednesday and Friday	Yes
3	Landscape - Limit landscape irrigation to specific times	Irrigation may occur only between 7:00 p.m. and 9:00 a.m.	Yes
3	Landscape - Restrict or prohibit runoff from landscape irrigation	Irrigation which results in water running onto driveways, gutters, streets, adjoining property, and/or any other water runoff is prohibited	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of cars, boats, trailers, equipment or other vehicles by hose or by use of water directly from faucets or outlets connected to the public water supply is prohibited.	Yes
3	Other - Prohibit use of potable water for washing hard surfaces	Washing of sidewalks, walkways, driveways, patios, parking lots, graveled areas, tennis courts or other hard-surfaced areas, including residential and commercial establishments, by hose or by use of water from faucets or other outlets connected to the public water supply is prohibited.	Yes

8.3.1. Landscape Irrigation

Section 18.04(C)(3)(iv) of GCSD's Water Ordinance requires all users of water within GCSD limits of the Groveland Community Services District to be subject to the following regulation:

A. Addresses ending in an even number may irrigate only on Tuesday and Thursday.
B. Addresses ending in an odd number may irrigate only on Wednesday and Friday.
C. Irrigation may occur only between 7:00 p.m. and 9:00 a.m.

8.3.2. Commercial, Industrial, Institutional (CII)

Section 18.04(C)(3)(xiv)(d) of GCSD's Water Ordinance requires all users to comply with water use restrictions as determined by GCSD. Commercial and industrial users are subject to outdoor irrigation watering restrictions starting in Phase 2 of the conservation plan.

8.3.3. Water Features and Swimming Pools

The use of decorative fountains or reflection ponds is prohibited in Groveland starting with Phase 3 of the water conservation plan. Filling newly constructed or drained swimming pools with District water is also prohibited at Phase 3 of the Water Conservation Plan.

8.3.4. Defining Water Features

CWC 10632 (b)

Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

Health and Safety Code Section 115921

As used in this article the following terms have the following meanings:

(a) "Swimming pool" or "pool" means any structure intended for swimming or recreational bathing that contains water over 18 inches deep. "Swimming pool" includes in-ground and aboveground structures and includes, but is not limited to, hot tubs, spas, portable spas, and non-portable wading pools.

Section 18.04(C)(3)(ix) of GCSD's Water Ordinance prohibits the use of any decorative water feature unless they use recirculating water.

8.4. Penalties, Charges, Other Enforcement of Prohibitions

CWC 10632 (a)

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

Section 18.04(C)(3)(xiv)(e) of GCSD's Water Ordinance establishes the following penalties for excessive water use violations:

1. First Violation: Customer will receive a written warning from GCSD that a further violation will result in water restrictions and penalties.
2. Second Violation: Payment of $50 penalty.
3. Third Violation: Payment of a $100 penalty and customer's service will be restricted by a flow restriction device for 30 days.
4. Fourth Violation: Payment of a $500 penalty and customer's water service will be restricted (at the customer's cost) by a flow restriction device until GCSD repeals the state of emergency, threat of emergency or shortage.
5. Continued Violation: Payment of a $500 penalty and continued water service restriction. GCSD may, in its discretion, pursue misdemeanor charges pursuant to Water Code Section 71644 which may result in imprisonment in the county jail for not more than 30 days, or by fine not exceeding $600, or by both.

8.5. Consumption Reduction Methods

8.5.1. Categories of Consumption Reduction Methods

Table 8-3 provides a summary of the consumption reduction methods that will be used by the Groveland Community Services District. The consumption reduction methods in Table 8-3 come from the 2015 UWMP Guidebook for Urban Water Suppliers.

Table 8-3 Phases of Water Shortage Contingency Plan - Consumption Reduction Methods (Standard Table 8-3)

Phase	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
1	Expand Public Information Campaign	
1	Increase Water Waste Patrols	(to known or reported wasters)
2	Expand Public Information Campaign	
2	Increase Water Waste Patrols	
2	Reduce System Water Loss	
3	Expand Public Information Campaign	
3	Increase Water Waste Patrols	(to known or reported wasters)
3	Reduce System Water Loss	
3	Decrease Line Flushing	
4	Expand Public Information Campaign	
4	Increase Water Waste Patrols	(to known or reported wasters)
4	Reduce System Water Loss	

Table 8-3 Phases of Water Shortage Contingency Plan - Consumption Reduction Methods (Standard Table 8-3)		
Phase	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
4	Decrease Line Flushing	
4	Implement or Modify Drought Rate Structure or Surcharge	(on a per gallon wasted rate)

Examples of specific actions that could fall into each category are discussed next. Where deemed helpful, comments regarding GCSD's specific implementations are also inserted into the suggested language from the State's publication.

- Expand Public Information Campaign - Begin or enlarge media campaign. Create bill insert with conservation information. Write articles for local newspaper. Conduct water efficiency workshops for different customer sectors.
- Improve Customer Billing - Increase billing frequency. Change format to report consumption in gallons per capita per day. Add information to the bill comparing the customer's use to similar customers. Show the accumulated annual usage compared to the annual allocation on each bill.
- Offer Water Use Surveys - Actively reach out to high water users to offer water use surveys. Expand water use survey program to include new sectors.
- Provide Rebates or Giveaways of Plumbing Fixtures and devices - Implement new (toilet, clothes washer, etc....) rebate programs. Implement new (shower head, aerator, etc....) giveaway programs. Expand rebates for on-site greywater re-use systems. GCSD will investigate funding sources and implementation of such programs over its next five-year water management planning cycle.
- Provide Rebates for Landscape Irrigation Efficiency - Implement a new landscape efficiency rebate program that provides rebates for landscape conversion, irrigation controllers, sprinkler heads, etc.... Funding for programs of this type has not been available. GCSD will investigate funding sources and implementation of such programs over its next five-year water management planning cycle.
- Decrease Line Flushing - Decrease the length of time for each line flushing. Decrease the frequency of line flushing.
- Reduce System Water Loss - Implement a water audit program and expand the leak repair program to control system losses.
- Increase Water Waste Patrols - For the limited number of known or reported water wasters. Implement a Water Waste Patrol program. Increase authority of Water Waste Patrol.
- Implement or Modify Drought Rate Structure or Surcharge - Implement a drought rate structure or modify a drought rate structure with a drought surcharge on all customers who exceed their Equivalent Dwelling Unit (EDU) allocation per section. The fee shall be on a per gallon basis in excess of the annual allocation.

8.5.2. Rate Structures

"Drought surcharges" are surcharges that are implemented in times of water shortage. A drought surcharge is different from a conservation rate structure, which is in place at all times. Agencies may choose to embed a drought rate structure within their conservation rate structure. GCSD will implement a drought surcharge rate ordinance. Water rates are currently scheduled to be studied in 2017, with new rates, including a drought surcharge to be implemented in late 2017.

It is an important water conservation strategy to set costs that recover the full water program costs. When these costs are ignored the price of water does not reflect its true costs. Traditional economic theories teach that any product that is underpriced will be subject to higher consumption demand than would be the case if fairly priced. This same principle seems to also apply to water.

In GCSD's most recent rate study costs are shifted gradually from the Base Charge to Use Charges over the Study Period. Under the FY 2015/16 cost structure, 76 percent of the monthly residential charger is fixed while 24 percent is variable based on metered consumption. GCSD's current rates also contain a Tiered structure with a higher consumption rate in the upper Tiers which also may encourage water conservation.

8.6. Determining Reductions

CWC 10632(a)

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

GCSD will rely on monthly water meter readings to record the production and consumption of water.

8.7. Revenue and Expenditure Impacts

CWC 10632 (a)

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

Currently a high proportion of GCSD's revenues come from volumetric water rates. As a result, GCSD's revenues vary depending on the phase of water conservation that they District is in. In dry years, local demands will decrease as a consequence of prohibitions on certain water uses, and GCSD may receive lower than anticipated revenues due to reduced sales volumes. In contrast, in wet years, demands increase as prohibitions are lifted, and revenues increase due to higher sales volumes. The water rate study scheduled to be completed and implemented in 2017, will correct this imbalance so that needed operations and maintenance revenue is less dependent on water volume sales.

8.8. Resolution or Ordinance

CWC 10632 (a)(8)

A draft water shortage contingency resolution or ordinance.

GCSD adopted Water Ordinance No. 2-10 in March of 2010. The Ordinance includes the amendment that adds Article 18 with regards to water conservation and education. Amendment No. 1 to Water Ordinance No. 2-10 was adopted in May of 2014. Section 18.04 contains a water conservation plan and outlines the various phases of water conservation. A copy of GCSD's Water Ordinance and Article 18 are included in Appendix I. in future modification to the Water Ordinance the Board of Directors may consider EDU's and Surcharges.

8.9. Catastrophic Supply Interruption

CWC 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.

This section of the UWMP identifies what actions will be taken by GCSD if there is a catastrophic reduction in water supplies. Catastrophic supply interruptions differ from the staged drought responses addressed earlier in this chapter in that catastrophic interruptions occur suddenly and can immediately jeopardize a large portion, or all, of GCSD's water supply.

GCSD purchased a Pall Aria Microfiltration (MF) Water Treatment System from the Pall Corporation in November of 2007. In the event of a catastrophic supply interruption the Pall system, known as the Alternative Water Supply Treatment Plant, or AWS, can be brought online within a matter of hours to produce potable water for GCSD's customers. The Pall Aria MF system is designed and permitted to pump water from Pine Mountain Lake, which is a separate surface water source for GCSD.

The Pall Aria Microfiltration (MF) System is contained within a semi-trailer, allowing the treatment plant to be moved where needed. Two 21,000-gallon mobile chlorine contact tanks, a mobile chemical supply trailer, and a mobile booster pump trailer accompany the MF semitrailer. GCSD has negotiated a site rental agreement with the Pine Mountain Lake Association (PMLA) so as to have a semi-permanent location for the Pall trailer and associated equipment in the PMLA maintenance yard. This precludes the necessity of decommissioning and moving the trailer and equipment back to GCSD property for storage during non-use periods, and then moving the equipment back for re-commissioning when needed.

Possible catastrophic interruptions to GCSDs water supply could occur due to flooding, major fire emergencies, regional power outages, earthquakes, and water contamination, or acts of sabotage. The action stages to be implemented during a catastrophic water supply interruption are described below.

8.9.1. Flooding

GCSD's facilities and water treatment plants, located in the foothills of the Sierra Nevada Mountains, are at low risk from flooding. However, redundancy has been built into the treatment and distribution systems in the event that flooding should incapacitate any of GCSD's facilities. If GCSD's Big Creek water treatment plant was placed out of service due to flooding, production at the Second Garrote water treatment plant would be increased in order to meet demand. Conversely, water production at the Big Creek facility can be increased, should the Second Garrote treatment plant become unusable. Additionally, GCSD's Alternative Water Supply (AWS) microfiltration plant can be activated in a matter of hours should either or both of the permanent water treatment plants become inactive. The AWS treats water from Pine Mountain Lake, which is a separate supply source.

8.9.2. Major Fire Emergencies

GCSD has redundancy in multiple water storage tanks, two separate permanent water treatment plants, and its mobile Alternative Water Supply (AWS) microfiltration plant. The AWS provides an added benefit to GCSD because it utilizes a separate surface water supply source. Should one or the other treatment plant be incapacitated by a major fire emergency, production at other treatment facilities can be increased to compensate. Production at any of the plants can be increased in order to provide additional water for fire protection services.

GCSD has governing authority over the local fire department. In the event of a fire emergency, District personnel maintain contact with local firefighting agencies by telephone or by face to face contact. GCSD maintains five water storage tanks within its distribution system with varying tank volumes. Tank 1 has a maximum storage capacity of 500,000 gallons, Tank 2 - 750,000, Tank 3 - 750,000, Tank 4 - 500,000, and Tank 5 – 140,000 gallons. Additionally, GCSD maintains a 2,000,000 gallon clearwell at its Second Garrote and at its Big Creek water treatment plants. Total storage volume, including the clearwells is equal to 6,640,000 gallons. Tank levels are maintained at near capacity during the fire season. Storage tank levels and water production can be increased immediately by District water treatment personnel. Water treatment plant operators are on call twenty-four hours a day, seven days a week on a rotational basis.

8.9.3. Regional Power Outage

In the event of a regional power outage, GCSD is prepared to meet water demands through the use of backup generators located at both of the permanent water treatment plants, its Alternative Water Supply (AWS) microfiltration plant, storage tanks, and pump stations. Additional power redundancy has been provided for GCSD's radio and SCADA systems.

8.9.4. Earthquake

GCSD's water system infrastructure, including treatment plants, pump stations, storage tanks, and pipelines, could be damaged during a strong earthquake. GCSD is located in USGS Earthquake Zone 3 = 0.30g. Although GCSD is not located within a highly active seismic zone, some facilities could be damaged as the result of an earthquake up to a magnitude of 6.0 on the Richter scale. GCSD has planned for this potential by constructing redundancy into its water system. GCSD has two existing permanent

water treatment plants, a mobile Alternative Water Supply (AWS) microfiltration plant, multiple storage tanks, looped distribution pipelines, and isolation valves, to allow potentially damaged portions of GCSD's system to be isolated and repaired.

8.9.5. Water Contamination or Acts of Sabotage

A catastrophic interruption in water supply could occur if the SFPUC's Hetch Hetchy Reservoir or Mountain Tunnel became contaminated (e.g., due to a chemical spill, act of sabotage, or other environmental incident) or either of GCSDs permanent water treatment plants are shutdown (e.g., due to a treatment process or mechanical failure or an act of sabotage). In such a case, GCSD can rely on its unaffected storage capacity and the Alternative Water Supply (AWS) Microfiltration system to supply water from Pine Mountain Lake.

8.9.6. Emergency Actions

The following emergency actions will be implemented by the District:

Table 8-4 - Emergency Actions from Emergency Response Plan

Situation	Steps to be taken
Leak or Service Interruption (Result of earthquake, etc.)	1. Isolate leak. Turn power or flow off, if necessary, to control leak. 2. Repair or isolate break to allow service to the maximum system population possible. Disinfect as per attached AWWA Standards; increase system disinfectant residual as precaution, until normal service is resumed. 3. Do Bacteriological sampling until 3 good consecutive samples are confirmed. 4. Reestablish normal service.
Low Pressure (Result of earthquake, fire, storm, etc.)	1. Increase production, if possible, to provide maximum system output. 2. Increase disinfectant residual as precaution to potential contamination.
Power outage	1. Generator will automatically go on line to provide continuous water pressure to system. 2. Increase disinfectant residual as precaution to potential contamination.

8.10. Minimum Supply Next Three Years

CWC 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.

GCSD relies solely on surface water for its source of water supply and is therefore is subject to reduction in its water supply.

As discussed in Section 7.5, SEFUC has guaranteed GCSD a reliable water supply that will meet demand even during periods of drought through the implementation of the Water System Improvement Plan. Due to GCSD's proximity to the Hetch Hetchy Aqueduct system, little or no improvements is needed to supply GCSD under drought conditions. Because GCSD has a contract service area agreement with SFPUC until 2034 and GCSD is located on the uppermost portion of their transmission system, GCSD and SFPUC estimate that sufficient quantities of water will be available from the Hetch Hetchy system to meet projected demands over the next twenty years.

Also, the SFPUC plans its water deliveries anticipating that a drought worse than the 1987 through 1992 drought may occur. As a result, the SFPUC system operations are designed to provide sufficient carry-over water in SFPUC reservoirs after six years of drought. This design enables SFPUC to continue to deliver water, although at significantly reduced levels, during and after a drought. Other than the 1976-77 drought, drought sequences in the past have not seriously affected the ability of the SFPUC to maintain full deliveries to its customers.

Table 8-5 Minimum Supply Next Three Years (Standard Table 8-4)

	2016 (MG)	2017 (MG)	2018 (MG)
Available Water Supply	119	120	120

CHAPTER 9 DEMAND MANAGEMENT MEASURES

9.1. Introduction

Demand management measures (DMMs) are specific actions a water supplier takes to support its water conservation efforts. The goal of this Demand Management Measures (DMM) Chapter is to provide a comprehensive description of the water conservation programs that GCSD has implemented, is currently implementing, and plans to implement in order to meet its urban water use reduction targets.

The section of the CWC addressing DMMs was significantly modified in 2014, based on recommendations from the Independent Technical Panel (ITP) to the legislature. The ITP was formed by DWR to provide information and recommendations to DWR and the Legislature on new demand management measures, technologies and approaches to water use efficiency.

In its report to the Legislature, the ITP recommended that the UWMP Act should be amended to simplify, clarify, and update the DMM reporting requirements. The ITP recommended, and the legislature enacted, streamlining the retail agency requirements from 14 specific measures to six more general requirements plus an "other" category.

GCSD realizes the importance of DMMs to ensure a reliable future water supply. GCSD is committed to implementing water conservation programs to maximize sustainability in meeting future water needs for its customers. Due to the continued effective water conservation measures implemented by GCSD, the 2015 per capita water use has dropped to roughly 104 gallons per capita per day (GPCD) from 130 GPCD in 2005.

A description of GCSD's DMMs follows.

9.2. Demand Management Measures for Retail Agencies

CWC 10631 (f)

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

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

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

9.2.1. Water Waste Prevention Ordinance

This DMM consists of adopting and enforcing a water waste ordinance that explicitly states that the waste of water is to be prohibited. The ordinance must prohibit specific actions that waste water, such as excessive runoff from landscape irrigation, or use of a hose outdoors without a shut off nozzle.

GCSD adopted Amendment No. 1 to Water Ordinance 2-10 in May 2015 that amends the existing Water Ordinance. More specifically, the Amendment adds Article 18 – Water Shortage Emergencies. Section 18.04 describes water conservation phases. In response to the current drought and state's actions, the GCSD Board of Directors declared a State 4 Drought Emergency on June 3, 2015 b the adoption of Resolution 6-15. This declaration moves GCSD into a 33 percent mandatory reduction in water consumption.

As shown in Chapter 8, GCSD has recently been more pro-active in response to water wasting. As part of the water conservation efforts GCSD has expanded its public outreach and education on water conservation and has increased enforcement of water waste prohibitions. The increased vigilance and enforcement by GCSD has been reflected in the per capita water use associated with residential users. The per capita water use has declined 25% from 126 GPCD in 2010 to 104 GPCD in 2015.

9.2.2. Metering

CWC 526

(a) Notwithstanding any other provisions of law, an urban water supplier that, on or after January 1, 2004, receives water from the Federal Central Valley Project under a water service contract or subcontract... shall do both of the following:

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings... located within its service area.

CWC 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.

This DMM requires that water meters be installed for all new connections to allow billing by volume of use. This program also applies to retrofitting any existing unmetered connections. Article 4 Section 4.05 of District's Water Ordinance requires installation of a water meter prior to approval of building permits obtained for construction, renovation, addition or alterations of structures.

GCSD's water systems are fully metered. GCSD evaluates customer records and conducts water audits prioritized by high consumption to initiate action to reduce water usage by these customers.

9.2.3. Conservation Pricing

A conservation pricing structure is already in place and is not dependent upon a water shortage. GCSD's rate structure is designed to promote conservation by providing a 3,300-gallon monthly consumption-rate per Equivalent Dwelling Unit (EDU) at $0.0068 per gallon. Water usage of 3,301 gallons and above is billed at the Peak Demand Rate of 0.01345 per gallon. Water Rates will be revised by the end of year 2017 to make EDU proportional annual allocations during a drought the fair and equitable water efficiency standard, including per gallon surcharges on water use exceeding the annual allocation.

9.2.4. Public Education and Outreach

GCSD distributes public information regarding water issues in mass mailings to all water service customers, through GCSD's Internet website, and directly to walk-in customers at the GCSD administration building. Also, when warranted, time-critical public information is dispersed through the local print media, radio station announcements, public events and large bar graphs showing conservation status along major roadways.

Water use regulations and the annual Drinking Water Consumer Confidence Report (water quality report) are mailed each year to all customers. GCSD takes advantage of these mailings when necessary to provide its customers additional information on water conservation and other demand management measures.

Display cases and bulletin boards at District facilities augment the mailings by providing a permanent posting of the most current District mailings.

GCSD monthly water bill distributed to all water service customers is another vehicle used by GCSD for public education purposes, including relevant water consumption bar graphs comparing amount use to baseline period. The bill mailing also contains public service announcements that are used to remind citizens of conservation and demand management measures.

9.2.5. Programs to Assess and Manage Distribution System Real Loss

GCSD recognizes distribution system leakage can be a primary type of loss. While it is essential to control losses, the initial step is to assemble a water audit to identify the nature and volumes of losses and financial impacts that these losses exert.

9.2.6. Water Conservation Program Coordination and Staffing Support

GCSD's General Manager is the designated Water Conservation Coordinator. In addition, staff supports the coordinator and the water conservation activities of GCSD and its customers. The Water Conservation Coordinator's responsibilities include:

- Coordination with internal District departments and the community at large to promote the principles of responsible water resource stewardship.
- Monitoring the practice and application of DMMs.
- Supervising the activities of the Water Patrol (only if in place).
- Planning and participating in community water conservation education projects.

The Water Conservation Committee has authorized use of District funds to support water conservation efforts.

9.2.7. Other Demand Management Measures

9.2.7.1. Low-Flow Toilet Rebate Program

This program benefits existing customers by reducing their water consumption while minimizing the impact of their lifestyle. State legislation requires the installation of efficient plumbing in new construction, and effective 1994 requires that only Ultra Low Flush Toilets be sold in California.

Several studies suggest that savings resulting from miscellaneous interior retrofit fixtures can range between 25 and 65 gallons per day per housing unit. The studies also suggest that installation of retrofit fixtures in older single-family homes tend to produce more savings, while newer multi-family homes tend to produce less savings per housing unit.

On June 16, 2014, the GCSD Board of Directors approved this Low-Flow Toilet Rebate Program for the 2014/15 Budget Year with a total allocation $7750 for the program is available to all GCSD customers on a first come first serve basis.

9.2.7.2. Greywater Rebate Program

The District currently offers a greywater rebate program of $100 for a laundry to landscape system, and $200 for a whole house “simple system”. To qualify for this rebate program, customers must attend a sponsored GCSD seminar.

9.2.7.3. Low-Flow Shower Head Rebate Program

This program generally provides a financial incentive (rebate offer) to qualifying customers who install low-flow shower heads in their home. The GCSD Board of Directors also approved the Low-Flow Shower Head Rebate Program on June 16, 2014 for the 2014/15 Budget Year with a total allocation $7750 ($15,500 for both the Low-Flow Toilet and Shower Head Rebate Programs). This program is also offered to all GCSD customers on a first come first serve basis.

9.2.7.4. Low Water Use Discount on Water and Sewer Bill

GCSD has both Sewer and Water Rate Studies in progress that include options to implement rate structures that reduces the fixed monthly portion of water bills for customers who use less water, hence putting less demand on the infrastructure. This reward is an incentive for customers already using low volumes of water to possible conserve even more.

9.3. Implementation over the Past Five Years

CWC 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.

GCSD following is a description of the water conservation efforts that GCSD has been implementing over the last five years:

I. Ordinance

In 2014 GCSD revised its Water Ordinance to enhance it and GCSD moved from Phase 3 to Phase 4 in the Water Conservation Phases.

II. Metering

Over the past five years GCSD completed the metering of all accounts, including recycled water, through the use of an automated meter reading system. Conservation Pricing

A drought conservation rate was adopted in 2014

III. Public Education and Outreach

The programs described above and in Chapter 8 were either expanded or started in the last five years.

IV. Water Distribution System Losses

GCSD will begin a more systematic approach to reconciling the water pumped to the water delivered since 2010.

V. Water Conservation Program Coordination and Staffing Support

As discussed above and in Chapter 8 GCSD added the Water Conservation Committee to enforce water conservation measures. GCSD has also enlisted the assistance of all staff in any District department that is in the field for purposes of reporting running water or potential waste. These outside working staff are to report such observations to water department staff. GCSD has begun working closely with school districts and other agencies within GCSD to secure their cooperation with regard to conservation.

9.4. Planned Implementation to Meet Water Use Targets

CWC 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.

As discussed just above, GCSD has implemented, either totally or in part, all of the demand management measures described in California Water Code 10631. GCSD is also in progress with regard to imposing

full cost rate structuring so that all water users pay their fair proportionate share of the services received. These services include the regulatory costs and burdens imposed with regard to the resource management needed to continue to provide water. This economic incentive should be helpful in controlling water consumption.

GCSD is on target to meet its target of 107 GPCD in 2020, having already exceeded its goal at the 2015 midpoint (achieved 104 GPCD versus the 120 GPCD 2015 goal).

9.5. Members of the California Urban Water Conservation Council

CWC 10631 (i)

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

In 1991 (amended September 16, 1999), an MOU regarding urban water conservation in California was made that formalizes an agreement between the Department of Water Resources (DWR), water utilities, environmental organizations, and other interested groups to implement DMMs and make a cooperative effort to reduce the consumption of California's water resources. This MOU is administered by the California Urban Water Conservation Council (CUWCC). GCSD is not currently a signatory of the MOU and is therefore not a member of CUWCC. GCSD may consider becoming a member of the CUWCC in the future.

However, GCSD realizes the importance of the Best Management Practice's (BMPs)to ensure a reliable future water supply. GCSD is committed to implementing water conservation programs to maximize sustainability in meeting future water needs for its customers. Due to the continued effective water conservation measures implemented by GCSD, the 2015 per capita water use has dropped to roughly 104 gallons per capita per day (GPCD) from 130 GPCD in 2005. GCSD will continue to monitor and adjust as necessary to achieve the target by 2020.

CHAPTER 10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

10.1. Inclusion of all 2015 Data

This 2015 UWMP includes the water use and planning data for the entire year of 2015.

10.2. Notice of Public Hearing

Water suppliers must hold a public hearing prior to adopting the 2015 UWMP. The public hearing provides an opportunity for the public to provide input to the plan before it is adopted. GCSD Council shall consider all public input before the 2015 UWMP is adopted.

10.2.1. Notice to Cities and Counties

CWC 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 District 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.

CWC 10642

The urban water supplier shall provide notice of the time and place of hearing to any District or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.

GCSD is the sole water supplier and water management agency for the area. For this reason, GCSD did not participate in an area, regional, watershed, or basin wide UWMP. While preparing the 2015 UWMP, however, GCSD coordinated its efforts with relevant agencies to ensure that the data and issues discussed in the plan are presented accurately.

GCSD provided formal written notification to Tuolumne County that GCSD's UWMP was being prepared 2015. Copies of the Notification letters are included in Appendix C. Copies of the final UWMP will be provided to Tuolumne County no later than 30 days after its submission to DWR.

10.2.2. Notice to the Public

CWC 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.

Copies of GCSD's draft UWMP were made available for public review at District Administrative Office and the local public library in GCSD. GCSD noticed a public hearing to review and accept comments on the draft plan with more than two weeks in advance of the hearing. The notice of the public hearing was published in the local press and mailed to District Clerk. On December 12, 2016, GCSD will hold a noticed public hearing to review and accept comments on the draft plan. Notice of the public hearing was published in the local press and a copy of the Notice to the Public is included in Appendix K.

As required by the Act, the 2015 UWMP is being provided by GCSD to the California Department of Water Resources, the California State Library, and the public within 30 days of GCSD's adoption.

10.3. Public Hearing and Adoption

CWC 10642

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

CWC 10608.26

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

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target. (RETAIL AGENCIES ONLY)

Pursuant to the requirements of the UWMPA, this section summarizes the adoption, submittal, and implementation of GCSD's 2015 UWMP.

10.3.1. Adoption

CWC 10642

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

GCSD prepared the 2015 UWMP during the spring and summer of 2016. The plan was updated after the public hearing and adopted by its District Board on _____, 2016. A copy of the adopting resolution is provided in Appendix L.

Table 10-1 Notification to Cities and Counties (Standard Table 10-1)		
City Name	60 Day Notice	Notice of Public Hearing
City of San Francisco	☒	☒
County Name	60 Day Notice	Notice of Public Hearing
Tuolumne County	☒	☒

10.4. Plan Submittal

CWC 10621(d)

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

CWC 10644(a)

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

CWC 10635 (b)

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

10.4.1. Submitting a UWMP to DWR

GCSD submitted the UWMP to the DWR on _____ using the electronic WUEdata submittal tool developed by DWR. A copy of the completion checklist is included in Appendix M.

10.4.2. Submitting UWMP to the California State Library

Within 30 days of submitting the UWMP to DWR the adopted UWMP was made available for public review during normal business hours at the locations specified for the viewing of the Draft 2015 UWMP and copies of the UWMP were submitted to the California State Library and Tuolumne County.

10.4.3. Submitting UWMP to the Cities and Counties

Within 30 days of submitting the UWMP to DWR the adopted UWMP will be submitted to SFPUC, Tuolumne County, and the City of Sonora.

10.5. Public Availability

CWC 10645

Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and

the department shall make the plan available for public review during normal business hours.

The adopted 2015 UWMP will be made available for public review at the Groveland Community Services Administration Building. Public may review the 2015 UWMP during regular business hours. In addition, a copy of the 2015 UWMP will also posted on GCSD's website.

10.6. Amending an Adopted Plan

CWC 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).

CWC 10644(a)

Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any District or county within which the supplier provides water supplies within 30 days after adoption.

If major changes are made to this 2015 UWMP, GCSD will hold an additional public hearing and District Board will readopt the plan.

Appendix A

URBAN WATER MANAGEMENT PLAN ACT

Appendix B

WATER CONSERVATION ACT (SB X7-7)

Appendix C

NOTIFICATION LETTERS

Appendix D

SERVICE AREA MAP

Appendix E

SB X7-7 VERIFICATION FORM

Appendix F

AGREEMENT WITH SFPUC

Appendix G

WATER EXCHANGE AGREEMENT BETWEEN SFPUC AND TID

Appendix H

WATER ORDINANCE

Appendix I

NOTICE OF PUBLIC HEARING

(not included in this Draft Version)

Appendix J

ADOPTING RESOLUTION

(not included in this Draft Version)

Appendix K

UWMP COMPLETION CHECKLIST