2015 Urban Water Management Plan

for the Westborough Water District

June 2016

westborough water district

Erler & Kalinowski, Inc.

TABLES

FIGURES

APPENDICES

ABBREVIATIONS

BAWSCA	Bay Area Water Supply and Conservation Agency
Census	United States Census
CII	commercial, industrial, and institutional
CWC	California Water Code
DMM	demand management measures
DRT	Drought Response Tool
DSS Model	Demand Management Decision Support System Model
DWR	Department of Water Resources
EKI	Erler & Kalinowski, Inc.
EOP	Emergency Operations Plan
ETo	reference evapotranspiration
GPCD	gallons per capita per day
gpf	gallons per flush
Guidebook	*2015 Urban Water Management Plans Guidebook for Urban Water Suppliers*
HET	High-Efficiency Toilet
ISA	Interim Supply Allocation
ISG	Individual Supply Guarantee
ISL	Interim Supply Limitation
MCL	Maximum Contaminant Level
MG	million gallons
MGD	million gallons per day
gpm	gallons per minute
Methodologies	*Methodologies for Calculating Baseline and Compliance Urban Per Capita Water, California Department of Water Resources Division of Statewide Integrated Water Management Water Use and Efficiency Branch*
MWELO	Model Water Efficient Landscape Ordinance
NCCWD	North Coast County Water District
PG&E	Pacific Gas & Energy
R-GPCD	residential gallons per capita per day
RWS	Regional Water System
SFPUC	San Francisco Public Utilities Commission
Strategy	BAWSCA Long Term Reliable Water Supply Strategy
SWRCB	State Water Resources Control Board
Target	water use target
TDS	total dissolved solids
Title 22	California Code of Regulations, Title 22
USEPA	United States Environmental Protection Agency
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
WQD	Water Quality Division
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WSAP	Water Shortage Allocation Plan
WSIP	Water System Improvement Program
WWD	Westborough Water District

1. INTRODUCTION AND PLAN PREPARATION

In 1983, the California Legislature enacted the Urban Water Management Planning Act (UWMP Act) (California Water Code Sections 10610 – 10657). The UWMP Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of water service reliability to meet the needs of its customers during normal, dry, and multiple dry years. Historically, the UWMP Act required urban water suppliers to update their Urban Water Management Plan (UWMP or Plan) for submittal to the Department of Water Resources (DWR) in years ending in five and zero. However, because of recent changes in UWMP Act requirements, State law has extended the deadline for the 2015 Plans to 1 July 2016. On behalf of the Westborough Water District (WWD or District), Erler & Kalinowski, Inc. (EKI) has prepared this 2015 update to WWD's UWMP in accordance with the UWMP Act.

1.1 COMPLIANCE WITH THE UWMP ACT, INCLUDING CHANGES SINCE 2010

> *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.*

In 2015, the WWD provided water to more than 3,882 connections (see Table 1-1), and is therefore subject to requirements of the UWMP Act.

Table 1-1 – Public Water Systems (DWR Table 2-1)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied in 2015 (MG)
CA4110027	Westborough Water District	3,882	302

As indicated in Table 1-2, the WWD's 2015 UWMP is an individual UWMP that describes how the current and future water resources and demands within the WWD service area will be managed to provide an adequate and reliable water supply. Additionally, and as applicable, WWD's 2015 UWMP reflects the following significant revisions to the UWMP Act that have been made since 2010.

- Demand Management Measures – California Water Code (CWC) Section 10631(f)(1) and (2) Assembly Bill 2067, 2014;
- Submittal date – CWC Section 10621(d) and Assembly Bill 2067, 2014;
- Electronic submittal – CWC Section 10644(a)(2) and Assembly Bill 2067, 2014;
- Standardized forms – CWC Section 10644(a)(2) and Assembly Bill 2067, 2014;
- Water Loss – CWC Section 10631(e)(1)(J) and (e)(3)(A) and (B) Senate Bill 1420, 2014;

- Estimating future water savings – CWC Section 10631(e)(4) and Senate Bill 1420, 2014;
- Voluntary reporting of energy intensity – CWC Section 10631.2(a) and (b) Senate Bill 1036, 2014; and
- Defining water features – CWC Section 10632(b) and Assembly Bill 2409, 2010.

Table 1-2 – Plan Identification (DWR Table 2-2)

☒	Individual UWMP
☐	Regional UWMP

The WWD's 2015 UWMP has been prepared in general accordance with the format suggested in DWR's *2015 Urban Water Management Plans Guidebook for Urban Water Suppliers*, dated March 2016 (Guidebook; DWR, 2016a). Text from the UWMP Act has been included in text boxes at beginning of relevant sections of this UWMP. The information presented in the respective UWMP sections and the associated text, figures, and tables are collectively intended to fulfill the requirements of that sub-section of the UWMP Act. To the extent practicable, supporting documentation has also been provided in Appendices A through M. Other sources for the information contained herein are provided in the references section of the document.

Per CWC Section 10644(a)(2), selected information for the 2015 UWMP updates must be presented in standardized tables for electronic submittal to DWR. The tables presented in this UWMP have been re-numbered, but the content has been preserved and the original DWR table numbers are included in parentheses in the table titles.

1.2 COORDINATION AND OUTREACH

As described below, this UWMP has been prepared in coordination with the Bay Area Water Supply and Conservation Agency (BAWSCA), the BAWSCA member agencies, the San Francisco Public Utilities Commission (SFPUC), the public, and other appropriate entities.

1.2.1 Role of BAWSCA and the UWMP Common Language

Among its other functions, BAWSCA represents WWD and the 25 other water districts, cities, and utilities, collectively referred to as the "Wholesale Customers", in negotiations and other coordination efforts with the SFPUC. Together with the SFPUC, BAWSCA developed common language for inclusion in each Wholesale Customers' 2015 UWMP regarding the following common issues:

- Description of BAWSCA;
- Regional Water Demand and Conservation Projections;
- Long Term Reliable Water Supply Strategy;
- Tier 1 and Tier 2 Water Shortage Allocations;
- SFPUC Regional Water System (RWS);
- Individual Supply Guarantees (ISGs);
- The 2018 Interim Supply Limitation (ISL);
- Interim Supply Allocations (ISAs);

- Environmental Enhancement Surcharge;
- 2018 SFPUC Decisions;
- Quantity and reliability of SFPUC's Wholesale Water Supply;
- Climate Change; and
- The Current Drought (2012 to Present).

For clarification purposes, and as shown below, the common language provided by BAWSCA is shown in grey font and has been indented for emphasis; it is otherwise presented unchanged from the original text provided by BAWSCA. As a result, there may be some redundancy in the information presented and the number of times that certain terms are abbreviated or defined. A description of BAWSCA's role generally and related to the 2015 UWMP development process is provided below.

> BAWSCA provides regional water reliability planning and conservation programming for the benefit of its 26 member agencies that purchase wholesale water supplies from the San Francisco Public Utilities Commission. Collectively, the BAWSCA member agencies deliver water to over 1.74 million residents and nearly 40,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara Counties.
>
> BAWSCA also represents the collective interests of these wholesale water customers on all significant technical, financial and policy matters related to the operation and improvement of the SFPUC's Regional Water System (RWS).
>
> BAWSCA's role in the development of the 2015 UWMP updates is to work with its member agencies and the SFPUC to seek consistency among the multiple documents being developed.

1.2.2 Wholesale Coordination

> *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).*

As indicated in Table 1-3, the SFPUC is a wholesale water supplier to all of the BAWSCA member agencies, and is the only wholesale water supplier to the WWD. As part of the coordination effort for the 2015 UWMP, and in compliance with CWC Section 10631(j), WWD supplied BAWSCA with its water demand projections through 2040 for transmittal to the SFPUC.[1]

[1] Email from WWD to BAWSCA dated 9 February 2016, see Appendix M.

Table 1-3 – Water Supplier Information Exchange (DWR 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

Additionally, as described in more detail in Section 6, WWD has relied upon the water supply reliability projections provided by the SFPUC for the purposes of analyzing the reliability of its SFPUC supplies during normal and dry years through 2040[2].

1.2.3 Agency Coordination

> *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.*

As a member of BAWSCA and the BAWSCA Water Management Representative Committee, WWD has coordinated closely with BAWSCA and its 25 other member agencies throughout the update of WWD's UWMP. On 26 January 2016, WWD attended a webinar on supply reliability hosted by BAWSCA. During the webinar, BAWSCA and the member agencies reviewed the water supply reliability projections provided by the SFPUC, as well as the updated dry year supply allocations described in Section 6. The WWD also attends monthly water management meetings with BAWSCA and its member agencies that, among other topics, include discussion of items pertinent to the preparation of the 2015 UWMPs.

In addition, WWD notified local and regional water retailers and public agencies of WWD's intent to prepare this 2015 UWMP and the associated public hearing. A total of four entities received notices as listed in Table 1-4, including the cities of Daly City and South San Francisco, the North Coast County Water District (NCCWD), and the San Mateo County. A sample copy of the notice is provided in Appendix A.

[2] Email from BAWSCA dated 6 January 2016, and information provided by the SFPUC, Appendix F.

Table 1-4 – Notification to Cities, Agencies, and Counties (DWR Table 10-1)

Agency, City, or County Name	60 Day Notice	Notice of Public Hearing
Cities		
City of Daly City	☒	☒
City of South San Francisco	☒	☒
Agencies		
North Coast County Water District	☒	☒
Counties		
County of San Mateo	☒	☒

1.2.4 Public Participation

> *10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.*

The WWD maintains a website as part of its communication with its customers. A copy of the Draft 2015 UWMP was posted on this website for public review on 26 May 2016.

On 26 May 2016 and 2 June 2016, the WWD published notices in the *San Mateo County Times* informing the public that the Draft 2015 UWMP would be available for public review and that the 2015 UWMP public hearing would be held at WWD's offices on 9 June 2016. These notices are consistent with requirements of California Government Code 6066[3]. Copies of the newspaper announcements are included in Appendix B.

1.3 UWMP STRUCTURE, STANDARD UNITS, AND BASIS FOR REPORTING

Per CWC Section 10644(a)(2), selected information for the 2015 UWMP updates must be presented in standardized tables for electronic submittal to DWR. The tables presented in this

[3] Government Code section 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.

UWMP have been re-numbered, but the content has been preserved and the original DWR table numbers are included in parentheses in the table titles.

Per the Guidebook, the UWMP preparer is requested to complete a checklist of specific UWMP requirements to assist the DWR review of the submitted UWMP. The completed checklist is included in Appendix C.

As indicated in Table 1-5, information presented in this UWMP is reported on a calendar year basis. The unit of measure for reporting water volumes is million gallons (MG) and is maintained consistently throughout the Plan, unless otherwise noted.

Table 1-5 – Agency Identification (DWR Table 2-3)

Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	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)	
N/A	
Units of Measure Used in UWMP	
Unit	MG

Further, consistent with the Guidebook, the terms “water use”, “water consumption”, and “water demand” are used interchangeably in this UWMP.

2. SERVICE AREA AND SYSTEM DESCRIPTION

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
10631. (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

The WWD serves approximately 20% of the population of the City of South San Francisco (City) and is located in northern San Mateo County, about nine miles south of San Francisco (Figure 2-1). Other purveyors within City limits include the California Water Service Company. Figure 2-2 shows the WWD service area.

The District was formed in 1961 under the County Water District Act of California and serves the Westborough area of South San Francisco. The Westborough area was developed primarily in the in the 1960s and early 1970s, shortly before Interstate 280 was built, and is primarily a residential community with local-serving commercial uses. It encompasses about one square mile of land. The WWD is located on the eastern slopes of the coastal mountains overlooking San Bruno Mountain, South San Francisco and San Francisco Bay, and features hilly terrain, with elevations ranging from 400 to 600 feet above sea level.

The WWD is a member of BAWSCA and purchases all of its potable water from the SFPUC RWS. The WWD is governed by a five-member Board of Directors and is an independent special district. The WWD has no locally developed surface or groundwater supplies, and no recycled water or desalinated water is distributed in its service area by the WWD or others.

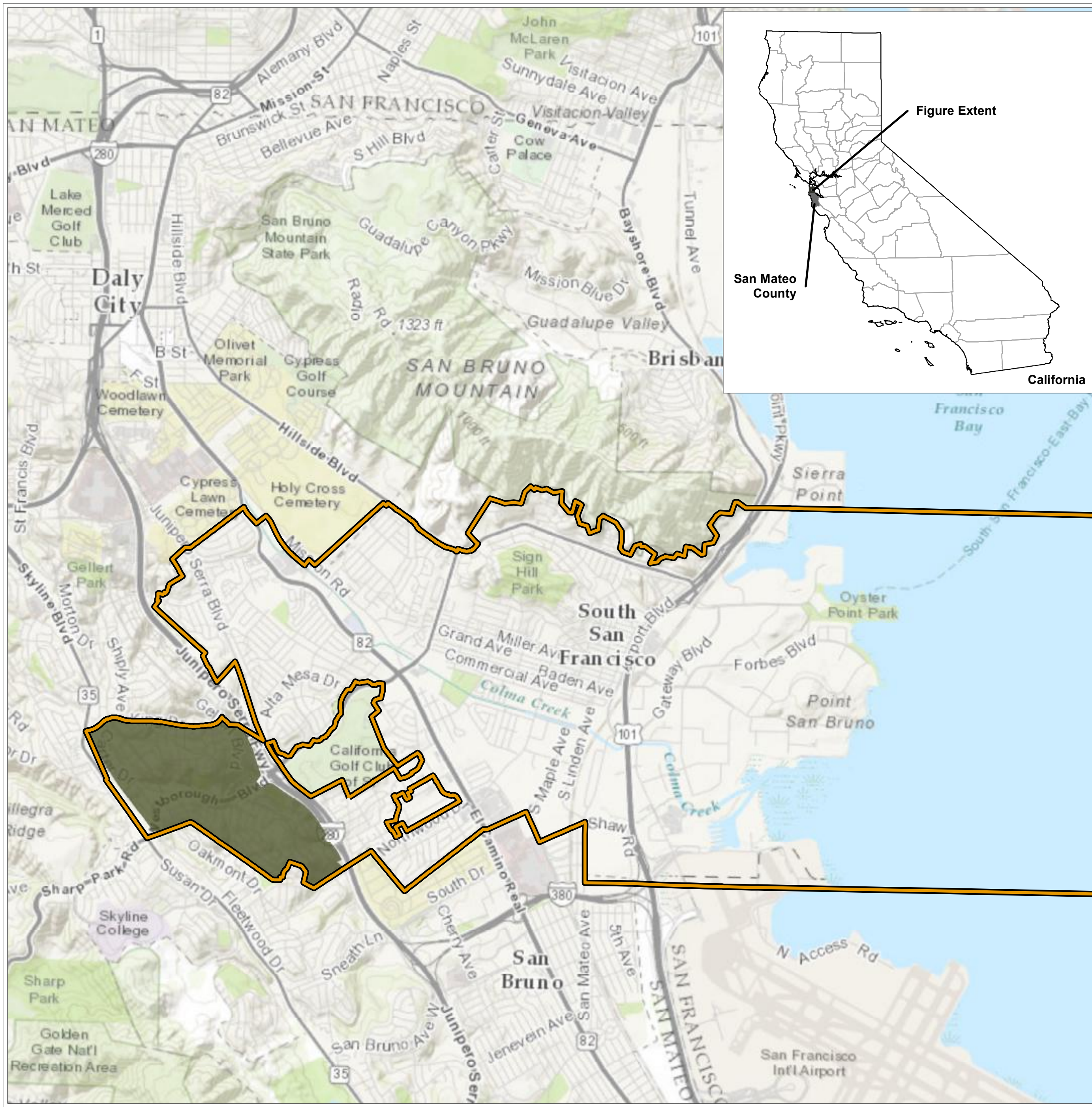
As required by the UWMP Act, specific information about the WWD service area, population, and climate is provided below. A brief description of WWD's potable water distribution system is also included herein.

2.1 POPULATION AND EMPLOYMENT TRENDS WITHIN THE WWD SERVICE AREA

The WWD's water distribution system currently provides water retail service to a population of 12,481 through 3,882 connections. The current and projected population and employment data from 2015 through 2040 within the WWD service area are shown in Tables 2-1 and 2-2. Consistent with DWR requirements, the current population served by WWD has been estimated herein using the DWR population tool as documented in Section 4.1.

2.1.1 Future Population Growth

The WWD service area is largely built-out and has a very stable population, with limited opportunities for future growth. Most of the easily developable land in the Westborough area



Legend

South San Francisco

Westborough Water District

Notes

1. All locations are approximate.

Erler & Kalinowski, Inc.

Regional Vicinity Map

Westborough Water District
2015 Urban Water Management Plan
South San Francisco, CA
June 2016
EKI B50086.00
Figure 2-1

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(Approximate Scale in Miles)

Sources

World Topographic base map provided by ArcGIS Online (ESRI, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBease, IGN, Kadaster NL, Ordinance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, OpenStreetMap contributors, and the GIS User Community), obtained 13 June 2016.

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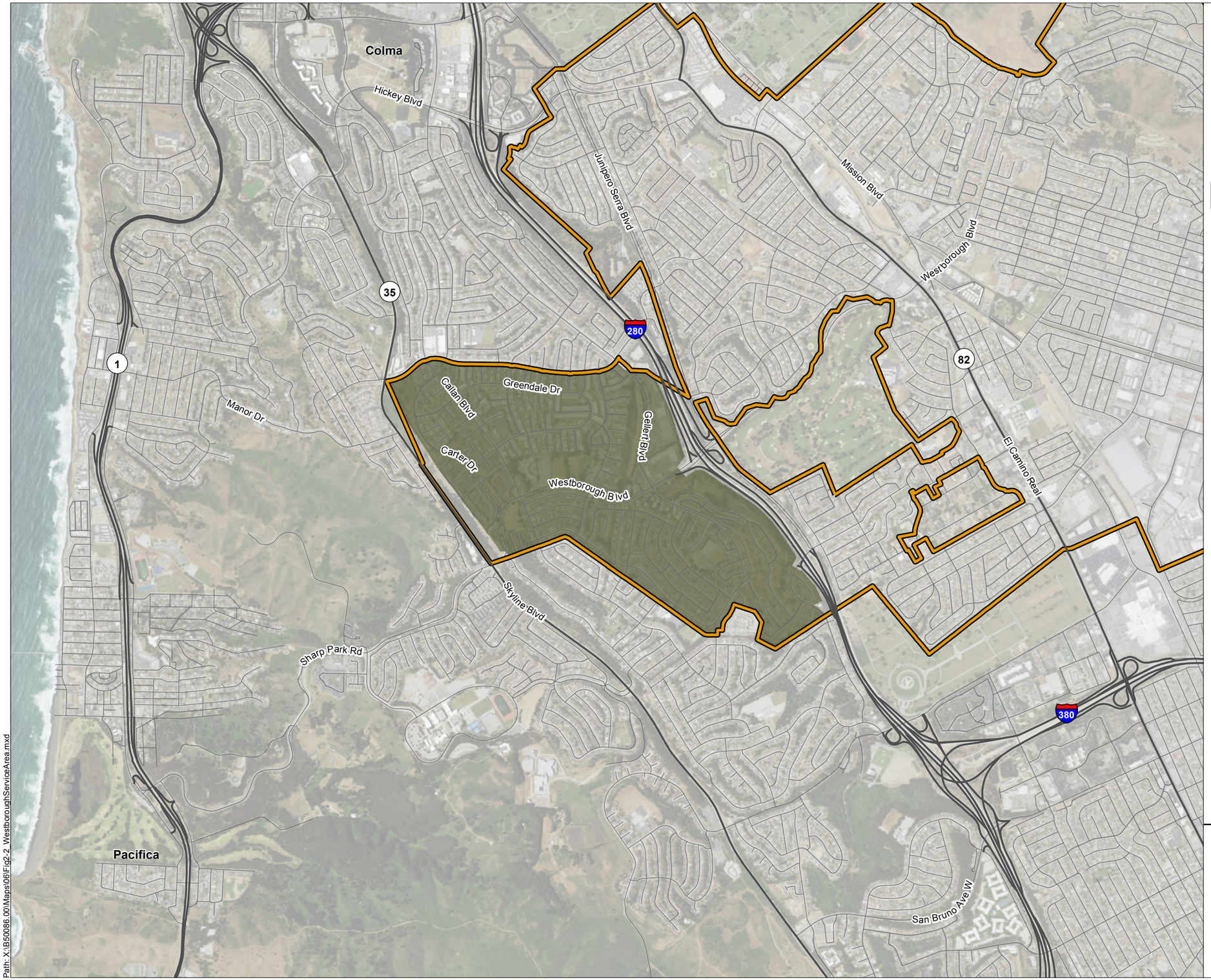

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(Approximate Scale in Feet)

Legend

South San Francisco

Service Areas

Westborough Water District

Streets

Highway

Road

Notes

1. All locations are approximate.
2. Service area data was provided by Westborough Water District on 16 February 2016.

Sources

Aerial base map provided by ArcGIS Online (ESRI, DigitalGlobe, GeoEeye, Earthstar Geopgrpahics, CNES/Airbus DS, USDA, AEX, Getmapping, Aerigrid, IGN, IGP, swisstopo, and the GIS User Community), obtained 13 June 2016.

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Westborough Water District
Service Area

Westborough Water District
2015 Urban Water Management Plan
South San Francisco, CA
June 2016
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Figure 2-2

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has been utilized since the early 1980s. The WWD served a population of 12,291[4] in 1990, only 190 less than the current population of 12,481. Overall, the population of the District is not expected to increase significantly over the next 25 years.

Consistent with projections made in the 2010 UWMP, the total projected population within the WWD service area is expected to be 14,020 by 2040, which is equivalent to a 0.5% average annual increase over 25 years relative to the 2015 population of 12,481.

Table 2-1 – Population – Current and Projected (DWR Table 3-1)

	2015	2020	2025	2030	2035	2040*(opt)*
Population Served	12,481	12,791	13,101	13,411	13,721	14,020
NOTES: The 2015 population is calculated using the DWR population tool, as discussed in Section 4.1. Projected population in 2040 is consistent with WDD's 2010 UWMP; projected population between 2015 and 2040 is interpolated.						

2.1.2 Future Employment Growth

The District also supplies water to its commercial customers, which were collectively estimated to provide 1,610 jobs within the WWD service area. The District has only 46 commercial accounts, and the number of commercial accounts has remained relatively constant over time[5]. The job growth in the WWD service area is expected to be nominal over the planning horizon, because only a limited amount of new commercial space is available. As such, the number of jobs within the WWD service area is anticipated to remain stable at 1,610 through 2040.

Table 2-2 – Employment – Current and Projected

	2015	2020	2025	2030	2035	2040*(opt)*
Total Jobs	1,610	1,610	1,610	1,610	1,610	1,610

2.2 CLIMATE

The WWD service area is located within a region characterized by a Mediterranean climate with cool, wet winters and warm, dry summers. As shown in Table 2-3, rainfall in the area averages 20 inches per year and is generally confined to the wet season from late October to early May. The average reference evapotranspiration (ETo) for the region is 35 inches per year. The ETo is a standard measurement related to the water demand by plants in a specific region. Because

[4] 1990 U. S. Census data, Census Tracts 6025 and 6026. Source: South San Francisco Planning Department.
[5] The commercial sector reported prior to 2012 also included multi-family residential accounts. The District has reported multi-family residential accounts as a unique sector since 2012.

the average annual ETo is approximately 15 inches more than the average annual precipitation, and because 91% of the annual precipitation occurs between the months of November and April, growing turf or other plantings in this region requires some amount of irrigation during the dry season. This irrigation demand contributes to the observed small seasonal variation in water demand throughout the WWD service area (see Section 7.3).

Table 2-3 – Climate Characteristics

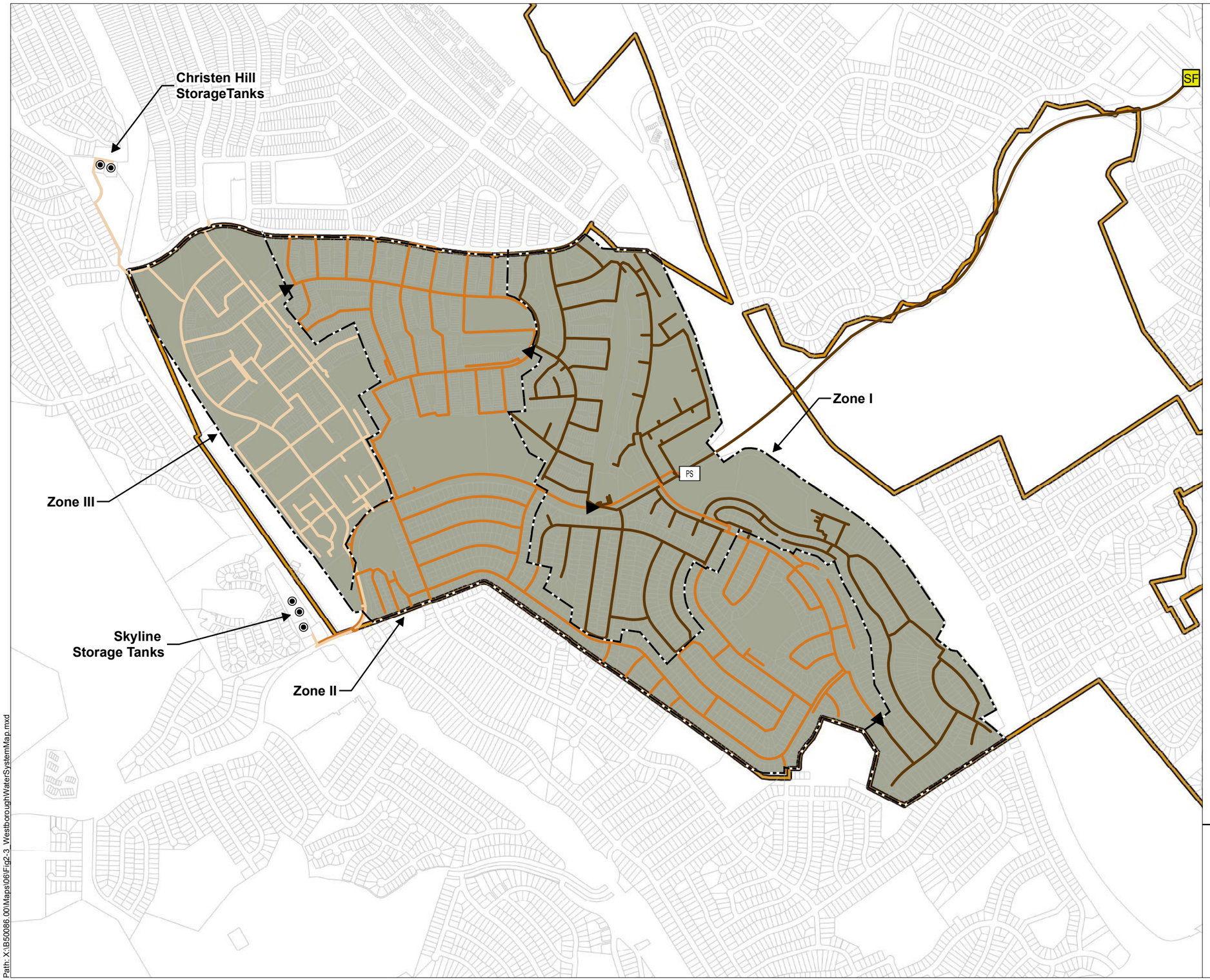
Month	Reference Evapotranspiration, ETo (a) (inches)	Average Rainfall (b) (inches)	Average Temperature (b)	
			Min (°F)	Max (°F)
January	1.5	4.31	42.6	55.8
February	1.3	3.58	45.0	59.1
March	2.4	2.88	46.2	61.2
April	3.0	1.38	47.7	63.8
May	3.7	0.39	50.2	66.7
June	4.6	0.13	52.8	70.0
July	4.9	0.02	54.1	71.4
August	4.8	0.04	55.0	72.0
September	4.1	0.17	54.8	73.4
October	2.8	1.00	52.1	70.2
November	1.3	2.31	47.4	62.9
December	0.7	3.73	43.3	56.4
Annual	**35.1**	**19.94**	**49.3**	**65.2**

NOTES: (a) Reference evapotranspiration data for San Francisco from Appendix A of California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance, December 18, 2015.
(b) Rainfall and temperature data for San Francisco International Airport monitoring station, from Western Regional Climate Center; July 1945 to January 2015.

2.3 WWD WATER DISTRIBUTION SYSTEM

Water from the SFPUC RWS is delivered to the District's main pump station via a 14-inch pipeline in Westborough Boulevard, which is connected to the SFPUC's transmission pipeline near West Orange Avenue. The District operates and maintains a distribution system that includes three pressure zones, five pumps, three water tanks, and four pressure regulating valves (Figure 2-3). The system includes many miles of water mains with fire hydrants at regular intervals along all the streets in the service area. The District has the ability to transfer water between pressure zones either in a pump up or flow down mode.

The WWD has three storage tanks with a capacity of 5.8 MG and uses a portion of a fourth tank that is owned by the NCCWD. This tank supplies 0.5 MG of additional working storage for the WWD, pursuant to a joint agreement between the two Districts. The current storage capacity provides an adequate reserve for fire defense and is sufficient to supply six days of emergency



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(Approximate Scale in Feet)

Legend

- South San Francisco
- Westborough Water District
- Parcel
- Pressure Zone Boundary

Pipelines by Pressure Zones

- Pipeline-Zone 1
- Pipeline-Zone 2
- Pipeline-Zoon 3
- SF — SFPUC Turnout
- Storage Tank
- PS — Pump Station
- Pressure Regulating Valve

Abbreviations

SFPUC = San Francisco Public Utilities Commission

Notes

1. All locations are approximate.
2. Water system data was provided by Westborough Water District on 16 February 2016.

Sources

Aerial base map provided by ArcGIS Online (ESRI, DigitalGlobe, GeoEeye, Earthstar Geopgrpahics, CNES/Airbus DS, USDA, AEX, Getmapping, Aerigrid, IGN, IGP, swisstopo, and the GIS User Community), obtained 13 June 2016.

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Westborough Water District
Water Sysetm

Westborough Water District
2015 Urban Water Management Plan
South San Francisco, CA
June 2016
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Figure 2-3

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water supply based on the current level of demand. The WWD's storage tank capacities are listed below in Table 2-4.

Table 2-4 – WWD Treated Water Storage Facilities

Tank Identification	Capacity (gallons)
Skyline #1	1,500,000
Skyline #2	2,500,000
Skyline #3	1,800,000
Christen Hill tank allocation (a)	500,000
Total	**6,300,000**
NOTES: The WWD has 0.5 MG of storage capacity in this 3.5 MG tank owned by the NCCWD.	

The WWD has interties with the adjoining water systems operated by the NCCWD and the City of Daly City. Water from the SFPUC RWS is routinely transferred and exchanged between the District and NCCWD in the course of operating the shared storage tank. The intertie with Daly City is not frequently used, but is available to either purveyor in the event of a local emergency.

The interties and exchanges with these adjoining purveyors are neither a current or planned source of water supply for the District. The interconnection with the NCCWD is used to manage existing supplies, while both the NCCWD and Daly City interconnections provide potential emergency back-up sources of water.

3. SYSTEM WATER DEMANDS

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
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.*
- *(J) Distribution system water loss.*

10631. (e) (2) The water use projections shall be in the same five-year increments described in subdivision (a).

For the purposes of this UWMP, potable water demand is defined as the volume of potable water that the WWD purchases from the SFPUC RWS. Among other things, water demand is dependent on climate, population, industry, and the types of development present in a community. Sections 3.1 and 3.2 describe the historical and projected water demands for the residential, commercial, and landscape irrigation sectors within the WWD service area (water use sectors A, B, C, F and J per CWC Section 10631(e)(1)). As described in Section 3.3, this discussion does not include demands for water use sectors D, E, and G through I per CWC Section 10631(e)(1) as they are not applicable or present within the WWD service area.

3.1 CURRENT AND HISTORIC TOTAL WATER DEMAND

All demands within the WWD service area are currently met with potable water, which is purchased wholesale from the SFPUC RWS. The following section of the UWMP presents the District's current and historical water demands and projected future demand in 5-year increments between 2020 and 2040. The current and historical total water demands within the WWD service area include the water consumed by metered accounts in the service area ("metered water consumption"), unmetered water consumption including uses for firefighting and training ("unmetered water consumption"), and the water that is lost within the distribution system ("losses").

3.1.1 Current and Historical Potable Water Demand

Total water demand within the WWD service area was approximately 302 MG in 2015. As shown in Table 3-1, water demands increased between 2011 and 2013, which likely reflected improved economic conditions following the previous economic downturn and the drought of 2007-2009. Subsequently, calls for water use cutbacks locally and the mandatory state-wide

restrictions issued by the State Water Resources Control Board (SWRCB)[6] in response to the recent historic drought led to a significant decline in water use in 2014 and 2015 (i.e., a 10% reduction between 2013 and 2015).

Water demand within the WWD service area is measured using water meters that are installed at each customer account. Records of current and historical water use at each account are maintained by WWD. Water demand within the WWD service area is tracked and reported on a bi-monthly basis for the following sectors:

- Single Family Residential;
- Multi-Family Residential;
- Commercial;
- Irrigation; and
- Other.

Table 3-1 – Demands for Potable and Raw Water - Actual (DWR Table 4-1)

Use Type	Historical and Current Water Demand (MG)					
	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family	Drinking Water	209	211	208	198	194
Multi-Family	Drinking Water	--	31	32	30	29
Commercial	Drinking Water	54	22	21	17	15
Landscape	Drinking Water	32	34	42	33	18
Non-Revenue Water	Drinking Water	18	23	32	12	46
TOTAL		**313**	**321**	**336**	**289**	**302**

NOTES: The WWD does not provide raw water.
Prior to 2012, the commercial sector included multi-family residential accounts. The District has reported multi-family residential accounts as an unique sector since 2012.
Totals may not sum exactly due to rounding.

As shown in Table 3-1, water use in the District's service area is predominantly associated with residential use. Residential customers accounted for an average of approximately 73% of the potable water demand in the WWD service area between 2011 and 2015 (i.e., single family residential demands were approximately 65% of the potable water demand, while multi-family

[6] On 28 July 2014, the SWRCB adopted emergency regulations to mandate water agencies, including the WWD, to implement their Water Shortage Contingency Plan and minimum actions to reduce outdoor water use. On 5 May 2015, SWRCB adopted Resolution 2015-0032 to mandate further minimum actions by water suppliers and their customers to reduce potable water use into 2016 and assigns a mandatory water conservation savings goal to each water supplier based on their residential water use. On 2 February 2016, the SWRCB voted to extend the reduction targets through October 2016. The WWD has a SWRCB-mandated reduction target of 8%. To date, the WWD has surpassed its SWRCB-mandated reduction target and has achieved a 25.9% reduction in water demand relative to water demand in 2013.

residential demands accounted for the remaining 8%). The WWD has a small commercial base, which accounted for approximately 8% of potable water demand for the 2011-2015 period. Landscape customers accounted for 10% of potable water demand for the 2011-2015 period.

3.1.2 Current and Historical Non-Potable Water Demand

There are no current or historical water demands that are met with non-potable water supplies within the WWD service area.

3.1.3 Distribution System Water Loss

> *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.*
>
> *10631. (e) (3) (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.*

Distribution system water losses are the physical water losses from the water distribution system and the supplier storage facilities, up to the point of customer consumption. Water losses for 2015 within the WWD service area were estimated using the DWR Water Audit Method. As shown in Table 3-2, of the total demand of 302 MG in 2015, 256 MG were attributable to metered consumption, 4 MG were estimated to be from unmetered consumption, and 42 MG were estimated to be from distribution system water loss.

Table 3-2 – 12 Month Water Loss Audit Reporting (DWR Table 4-4)

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (MG)
01/2015	42
NOTES: Water loss is the "water losses" value calculated in the WWD's 2015 AWWA Water Loss Worksheet.	

Prior to assessing water losses using the DWR Water Audit Method, WWD had recorded the difference between total demand and metered consumption as non-revenue water (i.e., as above, non-revenue water in 2015 was 46 MG). Thus, non-revenue water includes unmetered consumption and distribution system water loss. Between 2011 and 2015, non-revenue water ranged from 12 MG in 2014 to 46 MG in 2015, with a five-year average of approximately 26 MG, or 8% of total water demand. Metering of WWD's distribution system is further discussed in Section 8.2.2.

3.2 PROJECTED TOTAL WATER DEMAND

Per CWC Section 10631(e)(1), potable and non-potable water demand projections are discussed in the following sections.

3.2.1 Projected Potable Water Demand

In 2014, future water demands for the WWD service area were projected by BAWSCA on behalf of WWD in the *Regional Water Demand and Conservation Projections Report* (BAWSCA, 2014). Future water demands were projected using the Demand Management Decision Support System Model (DSS Model) and were based on population and employment projections within WWD's service area, which were in turn developed using population and employment projection data based on the District's 2010 UWMP. A detailed description of the DSS Model and the associated water demand and conservation projection methodology is provided in the *Regional Water Demand and Conservation Projections Report* (BAWSCA, 2014). A brief description of BAWSCA's 2014 demand projections is provided below.

> In September 2014, BAWSCA completed the Regional Water Demand and Conservation Projections Report (Demand Study). The goal of the Demand Study was to develop transparent, defensible, and uniform demand and conservation savings projections for each wholesale customer using a common methodology to support both regional and individual agency planning efforts. The Demand Study projections were incorporated into BAWSCA's Long-Term Reliable Water Supply Strategy (Strategy) discussed below.
>
> Through the Demand Study process, BAWSCA and the wholesale customers (1) quantified the total average-year water demand for each BAWSCA member agency through 2030, (2) quantified passive and active conservation water savings potential for each individual wholesale customer through 2040, and (3) identified conservation programs for further consideration for regional implementation by BAWSCA. The Demand Study projected that by 2040 the collective active conservation efforts of the wholesale customer's would yield an additional 16 MGD in savings beyond what has already been achieved for the BAWSCA service area. Based on the revised water demand projections, the identified water conservation savings, and other actions, the collective purchases of the BAWSCA member agencies from the SFPUC are projected to stay below 184 MGD through 2018.
>
> As part of the Demand Study, each wholesale customer was provided with a demand model that can be used to support ongoing demand and conservation planning efforts, including UWMP preparation.

In 2016, as part of the 2015 UWMP update, WWD's DSS Model was revised to account for several changes since the demand projections were estimated by BAWSCA. The 2016 DSS Model update included revised future population estimates through 2040 as described in Section 2.1.

Total projected potable water demand for each water use sector within the WWD service area is shown in five-year increments through 2040 in Table 3-3. The total projected potable water demand in the WWD service area is estimated to be 275 MG in 2040, as shown in Table 3-3. Projected water savings associated with passive and active conservation (31 MG and 9 MG, respectively in 2040) are also estimated using the DSS Model.

The WWD service area has a per capita demand that is significantly lower than regional peers and the statewide average (see Section 7.3). Moreover, the District experienced a reduction in water use during the current drought period, with water demands dropping 10% from 2013 to 2015 (Table 3-1). It is possible that a portion of the WWD service area may be "demand-hardened," meaning that additional water savings due to passive or active conservation may not be possible; although, the full extent of this demand hardening is not known. If significant demand hardening is experienced in the WWD service area, then active conservation measures in the future may not result in as much water savings as anticipated. Therefore, as a conservative approach, water savings associated with the implementation of active conservation programs are not included in the projected water demands used for planning purposes and in comparisons to available supply (Section 6).

As above, it is estimated that the potable water demand will be approximately 275 MG in 2040 within WWD's service area, which represents a 9% decrease relative to the actual 2015 water demand of 302 MG. Over the same period, population is estimated to increase by 12% in the WWD service area. The decrease in water demands in spite of an increase in the projected population is primarily due to assumptions regarding the increased water efficiency in the residential and non-residential sectors as a result of plumbing code changes (see Section 3.2.4).

Table 3-3 – Demands for Potable and Raw Water - Projected (DWR Table 4-2)

Use Type	Additional Description *(as needed)*	Projected Water Use (MG)				
		2020	2025	2030	2035	2040-opt
Single Family	--	185	185	182	181	181
Multi-Family	--	23	23	23	23	23
Commercial	--	16	16	16	16	16
Landscape	--	31	31	31	31	31
Losses	--	22	23	23	23	24
TOTAL		**278**	**278**	**276**	**275**	**275**

NOTES: Demand projections include passive conservation assumptions discussed in Section 3.2.4, including water conservation that would incur as a result of compliance with existing plumbing codes (i.e., Federal Energy Policy Act of 1992, CALGreen Building Code, AB 715, SB 407). Totals may not sum exactly due to rounding.

Table 3-4 – Inclusion in Water Use Projections (DWR Table 4-5)

Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	Yes
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.	Section 3.2.4
Are Lower Income Residential Demands Included In Projections?	Yes

3.2.2 Projected Non-Potable Water Demand

The WWD does not supply non-potable water and no non-potable water demand projections are available at this point in time.

3.2.3 Water Use for Lower Income Households

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

Per Health and Safety Code 50079.5, a lower income household is defined as a household with lower than 80% of the City's median income. The WWD has identified three multi-family residential accounts serving lower income households within the WWD service area, with a total of 102 units.

According to the City of South San Francisco's 2015-2023 Housing Element (Dyett and Bhatia, 2015), the City has the potential to accommodate new housing during the planning period in three focus areas: Downtown, South El Camino Real, and the Transit Village. The potential sites in all of these areas are projected to be developed at densities of up to 30 units per acre, which are assumed to be able to accommodate lower-income housing.

The Housing Element does not identify any sites in the WWD service area as having the potential for the development of lower income housing. Nevertheless, the water demand in described above and shown in Table 3-3 considers all potential residential growth and water for any lower income units that might be built in the WWD service area.

3.2.4 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans

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

"Passive conservation" refers to water savings resulting from actions and activities that do not depend on direct financial assistance or educational programs implemented by water suppliers. These savings result primarily from: (1) the natural replacement of existing plumbing fixtures with water-efficient models required under current plumbing code standards,[7] and (2) the installation of water-efficient fixtures and equipment in new buildings and retrofits as required under CALGreen Building Code Standards, and (3) inclusion of low-water use landscaping and high-efficiency irrigation systems to minimize outdoor water use in new connections and projects in accordance with the State's Model Water Efficient Landscape Ordinance (MWELO; DWR, 2015).

"Active conservation" refers to water savings resulting from the District's implementation of water conservation programs, education programs, and the offering of financial incentives (e.g., rebates). The District's current and planned active conservation programs are discussed in Section 8).

The potable water demand projections discussed in Section 3.2.1 take into account the effects of passive conservation savings. Additional water savings are expected due to the District's active conservation efforts; however, for conservative planning purposes these conservation savings are not included in the total potable water demand projections. As can be seen in Table 3-5, by 2040, it is estimated that passive conservation savings will reduce total projected water demand by 31 MG within the WWD service area (i.e., the total 2040 demand will be reduced from 306 MG to 275 MG). An additional 9 MG of water savings may be achieved through active conservation.

Table 3-5 – Projected Water Savings due to Passive Conservation

Estimated Water Savings (MG)	2020	2025	2030	2035	2040
Passive Conservation	6	11	19	26	31
Active Conservation	7	9	9	9	9

[7] Including the California Energy Commission Title 20 appliance standards for toilets, urinals, faucets, and showerheads – The appliance standards determine what can be sold in California and therefore will impact both new construction and replacement fixtures in existing homes.

3.2.5 Projected Total Water Demand

The WWD's total projected water demands, including both potable and recycled water demands, are summarized in Table 3-6.

Table 3-6 – Current and Projected Total Water Demands (DWR Table 4-3)

Water Demand (MG)	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water	302	278	278	276	275	275
Recycled Water Demand	0	0	0	0	0	0
Total Water Demand	**302**	**278**	**278**	**276**	**275**	**275**
NOTES: Demand projections include passive conservation assumptions discussed in Section 3.2.4, including water conservation that would incur as a result of compliance with existing plumbing codes (i.e., Federal Energy Policy Act of 1992, CALGreen Building Code, AB 715, SB 407).						

3.3 WATER USE SECTORS NOT INCLUDED IN THE DEMAND PROJECTIONS

Several water use sectors listed in CWC Section 10631(e)(1) are not included in the water demand calculations because they are not applicable to the WWD:

- Industrial;
- Institutional and Governmental;
- Sales to other agencies;
- Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and
- Agricultural.

3.3.1 Industrial

The WWD does not currently, nor does it plan to, provide water for industrial uses.

3.3.2 Institutional and Governmental

The WWD does not currently, nor does it plan to, provide water for institutional and governmental uses.

3.3.3 Sales to Other Agencies

The WWD and NCCWD routinely exchange water through shared use of the Christen Hill tank. However, the WWD does not sell water to other agencies and does not expect to in the future.

3.3.4 Saline Water Intrusion Barriers, Groundwater Recharge, and Conjunctive Use

The WWD does not use water for saline water intrusion barriers and does not currently participate in active groundwater recharge activities or a conjunctive use program.

3.3.5 Agricultural

The WWD does not sell water to agricultural customers and does not expect to in the future.

3.4 COORDINATING WATER USE PROJECTIONS

> *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 WWD provides the SFPUC with water use projections annually as part of reporting to the BAWSCA Annual Surveys and other BAWSCA-led water demand and supply coordination efforts as dictated by the 2009 Water Supply Agreement. As part of the coordination effort for the 2015 UWMP, and in compliance with CWC Section 10631(j), WWD supplied BAWSCA with its water demand projections through 2040 for transmittal to the SFPUC.[8]

[8] Email from WWD to BAWSCA dated 9 February 2016, included in Appendix M

4. BASELINE WATER USE AND WATER CONSERVATION TARGETS

The Water Conservation Act of 2009 (Water Conservation Act) directed the DWR to develop technical methodologies and criteria to ensure the consistent implementation of the Water Conservation Act and to provide guidance to urban retail water suppliers in developing baseline and compliance water use. The Water Conservation Act was incorporated into Division 6 of the CWC commencing with Section 10608 of Part 2.55. The methodologies for developing baseline and compliance water use are established in *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water, California Department of Water Resources Division of Statewide Integrated Water Management Water Use and Efficiency Branch*, March 2016 update (Methodologies; DWR, 2016b)

The Water Conservation Act specifically calls for developing seven methodologies and a set of criteria for adjusting daily per capita water use at the time compliance is required (the 2015 and 2020 compliance years) under CWC Section 10608.20(h):

> *1. The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:*
>
> *A. Methodologies for calculating base daily per capita water use, baseline commercial industrial, and institutional water use, compliance daily per capital water use, gross water use, service area population, indoor residential water use, and landscaped area water use.*
>
> *B. Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.*

The CWC Sections 10608.20 and 10608.28 allow water suppliers the choice of complying individually or regionally by mutual agreement with other water suppliers or regional agencies. The DWR has also developed a methodology for regional compliance. The following calculation methodologies have been developed and are described in Methodologies (DWR, 2016b):

- Methodology 1: Gross Water Use
- Methodology 2: Service Area Population
- Methodology 3: Base Daily Per Capita Water Use
- Methodology 4: Compliance Daily Per Capita Water Use
- Methodology 5: Indoor Residential Use
- Methodology 6: Landscaped Area Water Use
- Methodology 7: Baseline Commercial, Industrial, and Institutional Water Use
- Methodology 8: Criteria for Adjustments to Compliance Daily Per Capita Water Use
- Methodology 9: Regional Compliance

Baselines and water use targets for the WWD service area were presented in the 2010 UWMP in response to the Water Conservation Act. Per requirements of the DWR described in Section 4.1, the 2015 UWMP includes an update to the baseline and water use target calculations using 2010 United States Census (Census) data and analyzes WWD's compliance with its 2015 interim water use target. Water use targets and 2015 compliance data are summarized in Tables 4-1 through 4-3. Detailed calculations are included in Appendix D.

4.1 SERVICE AREA POPULATION

10608.20 (e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.
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).
Methodology 2 Service Area Population. 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. (DWR, 2016b)

The WWD estimated its service area population for baseline periods spanning from 1996 through 2007 in the 2010 UWMP. Per the Methodologies, DWR examined the actual population estimates and the Department of Finance's projections for 2010, and is requiring that water suppliers recalculate their baseline population for the 2015 UWMPs using 2000 and 2010 Census data if a water supplier did not use 2010 Census data for its baseline population calculations in the 2010 UWMP. The WWD is subject to this requirement, as the full 2010 Census data set was not available until 2012, while WWD submitted its 2010 UWMP update in 2011. As a result, WWD must modify its baseline and target gallons per capita per day (GPCD) values in this UWMP.

Per the Methodologies, this 2015 UWMP uses the DWR Population Tool to estimate service area population for the baseline periods and the 2015 compliance year. The DWR Population Tool utilizes Census data, electronic maps of the water supplier's service area, and the number of service connections to calculate population for both census and non-census years. The resultant service area population estimates for the baseline periods and 2015 are shown in Table 4-1. The 2015 population for the WWD service area is estimated to be 12,481. Outputs from the DWR Population Tool are included in Appendix E.

Table 4-1 – SBx7-7 Service Area Population (DWR SBx7-7 Table 3)

Year		Population
10 to 15 Year Baseline Population		
Year 1	1996	11,947
Year 2	1997	12,148
Year 3	1998	12,316
Year 4	1999	12,512
Year 5	2000	12,681
Year 6	2001	12,599
Year 7	2002	12,585
Year 8	2003	12,535
Year 9	2004	12,461
Year 10	2005	12,386
5 Year Baseline Population		
Year 1	2003	12,535
Year 2	2004	12,461
Year 3	2005	12,386
Year 4	2006	12,311
Year 5	2007	12,237
2015 Compliance Year Population		
2015		12,481

4.2 BASELINE WATER USE

To update the per capita water use calculations per DWR requirements, WWD used the revised population estimates described in Section 4.1 and the historical potable water demand information presented in the 2010 UWMP.

Water suppliers must define a 10- or 15-year base (or baseline) period for water use that is then used to develop their future target per capita water use. Water suppliers must also calculate water use over a 5-year baseline period and use that value to determine a minimum required reduction in water use by 2020. Utilizing a 15-year baseline period is only allowed for water suppliers that meet at least 10% of their 2008 measured retail water demand through recycled water; the WWD does not meet this criterion and thus selected a 10-year baseline.

The 10-year baseline water use was calculated using gross per capita water usage data (calculated as total water entering the WWD water distribution system, including uses by commercial and landscape, as well as water loses, divided by total population) for the 10-year period between 1 January 1996 and 31 December 2005. The 10-year baseline water use calculated in WWD's 2010 UWMP was 76 gallons per capita per day (GPCD). After correcting the baseline population, the 10-year base daily per capita water use increased to 84 GPCD. The 5-year baseline water use was calculated using per capita water usage data for the 5-year period between 1 January 2003 and 31 December 2007. The updated 5- and 10-year baseline water uses are shown in Table 4-2 and in Appendix D.

4.3 WATER USE TARGETS

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.

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.

Water use targets were calculated in WWD's 2010 UWMP and are updated below based on the revised population and baseline water use estimates.

The Water Conservation Act requires that agencies calculate their 2020 water use targets (Targets) using one of the following four methods:

- Method 1: Eighty percent of the water supplier's baseline per capita water use;

- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use, landscaped area water use, and commercial, industrial, and institutional uses;
- Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the State's 20x2020 Water Conservation Plan, dated February 2010; or
- Method 4: Total savings subtracted from baseline water use. Savings include metering savings, residential savings, commercial, industrial, and institutional savings, and landscape and water loss savings.

The CWC Section 10608.24 directs that water suppliers must compare their actual water use in 2020 with their calculated Target to assess compliance. In addition, water suppliers must comply with an "Interim Target" in 2015 which is established as the midpoint between the baseline water use and the 2020 Target. The years 2015 and 2020 are referred to in the Methodologies as compliance years.

The WWD's 2020 Target was calculated by Method 3 at 124 GPCD, which is 95% of the 2020 Target for the San Francisco Bay Hydrologic Region (DWR, 2016b). The 2015 Interim Target is calculated as 104 GPCD, which the midpoint between the 10-year baseline and the 2020 Target. Complete Target calculations are included in Appendix D.

The CWC Section 10608.22 requires a minimum allowable cutback in per capita water consumption for all urban water suppliers, except those that have a base daily per capita water use at or below 100 GPCD. WWD is exempt from this requirement as its 10-year base daily per capita water use was 84 GPCD.

Table 4-2 – Individual SBx7-7 Baselines and Targets Summary (DWR Table 5-1)

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target GPCD*	Confirmed 2020 Target GPCD*
10-15 year	1996	2005	84	104	124
5 Year	2003	2007	88	--	--
*All values are in Gallons per Capita per Day (GPCD)					

4.4 2015 TARGET COMPLIANCE

10608.24 (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.
10608.24 (d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:
(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.
(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.
(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.
10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

The CWC Section 10608.24 (a) directs that water suppliers must calculate their actual water use in 2015 to determine whether or not they have met their 2015 Interim Target and to assess their progress toward meeting their 2020 Target. Per the Methodologies (DWR, 2016b), there are several allowable adjustments that can be made to a supplier's 2015 per capita water use calculations as part of evaluating target compliance. However, no adjustments were made to WWD's 2015 per capita water use calculations.

Table 4-3 – Individual 2015 SBx7-7 Compliance (DWR Table 5-2)

Actual 2015 GPCD	2015 Interim Target GPCD	**Optional Adjustments to 2015 GPCD** Enter "0" for adjustments not used *From Methodology 8*					2015 GPCD *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015? (y/n)
		Extraordinary Events	Economic Adjustment	Weather Normaliz-ation	TOTAL Adjustments	Adjusted 2015 GPCD		
66	104	0	0	0	0	66	66	Yes
**All values are in Gallons per Capita per Day (GPCD)*								

As above, in 2015, actual water demand within the WWD service area was 302 MG and the service area population was 12,481. Therefore, the calculated per capita water use in 2015 was 66 GPCD, approximately 63% of WWD's 2015 Interim Target of 104 GPCD (Table 4-3). Therefore, WWD is in compliance with its 2015 Interim Target.

4.5 WATER USE REDUCTION PLAN

The actual water demand within the WWD service in 2015 was well below the 2015 Interim Target. This is both due to water use cutbacks achieved during the recent drought and the conservation efforts that the WWD has supported during the past five years to reduce water use (see Section 8). Based on the current planned growth within WWD, and planned implementation of water conservation programs, WWD is also expected to achieve compliance with its 2020 Target.

5. WATER SYSTEM SUPPLIES

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
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 (a).

The WWD purchases all of its potable water from the SFPUC RWS in accordance with the 2009 Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda, San Mateo and Santa Clara Counties, approved by the Commission on 28 April 2009.

To maintain consistency with the UWMPs prepared by the SFPUC and the other BAWSCA member agencies, much of the language describing the SFPUC wholesale water supply in the following sections is common language provided by BAWSCA, in coordination with the SFPUC.

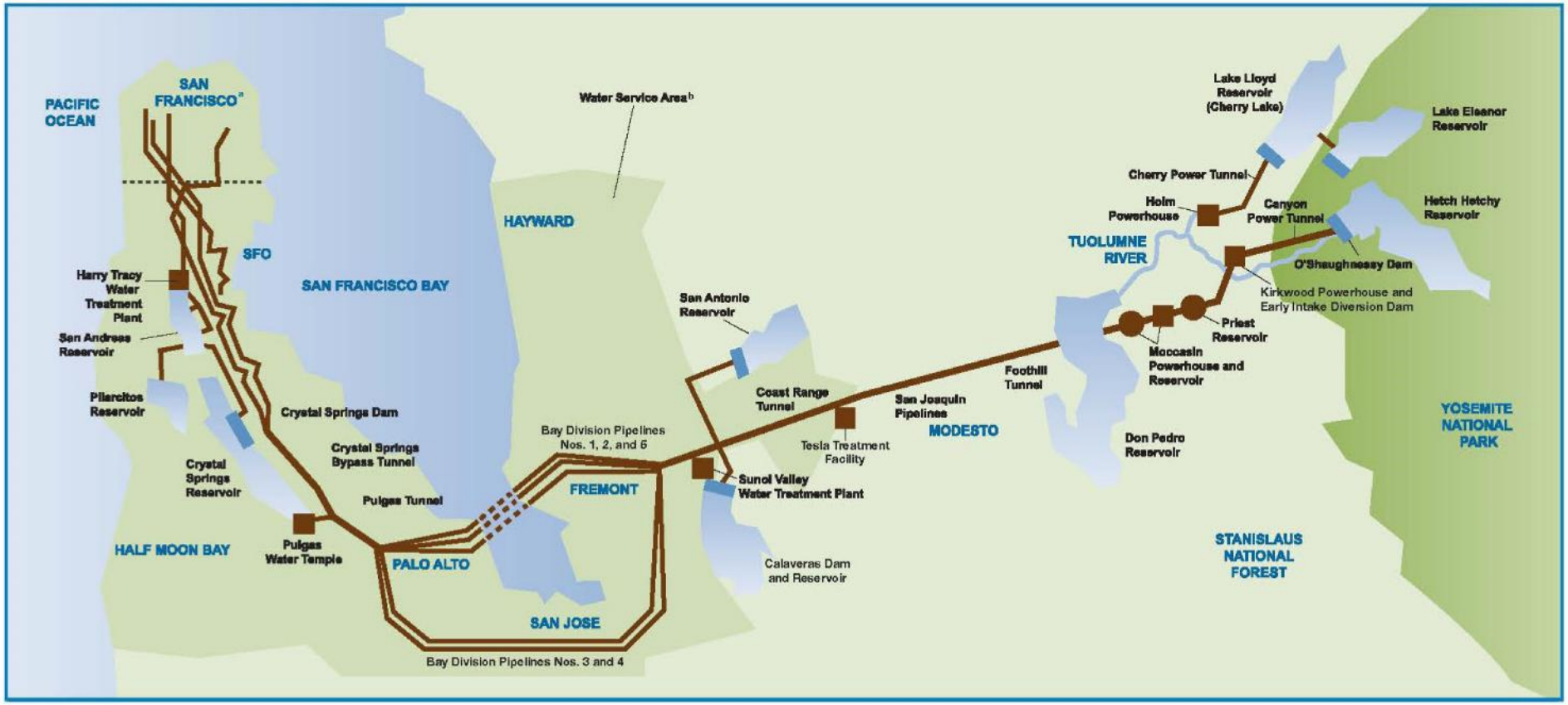
5.1 SFPUC WHOLESALE WATER

This section describes the sources of wholesale water provided by SFPUC, and the process for allocating water between SFPUC, BAWSCA, and wholesale customers,

5.1.1 Description of Wholesale Water Supply

Approximately 85% of the water supply to the SFPUC RWS originates in the Hetch Hetchy watershed, located in Yosemite National Park, and flows down the Tuolumne River into the Hetch Hetchy Reservoir. Water from the Hetch Hetchy watershed is managed through the Hetch Hetchy Water and Power Project. The remaining 15% of the water supply to the SFPUC RWS originates locally in the Alameda and Peninsula watersheds and is stored in six different reservoirs in Alameda and San Mateo Counties. Details of the various components of the SFPUC RWS are provided below and are shown on Figure 5-1.

> The RWS, shown in Figure 5-1, consists of more than 280 miles of pipeline and 60 miles of tunnels, 11 reservoirs, five pump stations, and two water treatment plants. It is geographically delineated between the Hetch Hetchy Project and the Bay Area water system facilities. The Hetch Hetchy Project is generally composed of the reservoirs, hydroelectric generation and transmission facilities, and water transmission facilities from the Hetch Hetchy Valley west to the Alameda East Portal of the Coast Range Tunnel in Sunol Valley. Water system components of the Hetch Hetchy Project are also referred to as the Hetch Hetchy System. The local Bay Area water system is comprised of two parts—the Alameda System and the Peninsula System—generally consisting of the facilities west of Alameda East Portal, including the 63,000-acre Alameda and Peninsula watersheds, storage reservoirs, two water treatment plants, and the distribution system that delivers water to retail and wholesale customers.



Abbreviations

SFPUC = San Francisco Public Utilities Commission
SFO = San Francisco Airport

Notes

1. All locations are approximate.
2. Not to scale.
3. Three pump stations on Treasure Island are not depicted.
4. The water service area of the SFPUC Regional Water System is approximate and for illustrative purposes only.

Sources

SFPUC draft 2015 Urban Water Management Plan, in development.

Erler & Kalinowski, Inc.

SFPUC Regional Water System

Westborough Water District
2015 Urban Water Management Plan
South San Francisco, CA
June 2016
EKI B50086.00

Figure 5-1

Path: X:\B50086.00\Maps\06\Fig5-1_WestboroughSFPUC_RegionalWaterSystem.mxd

5.1.1.1 Hetch Hetchy Watershed and System

In the Hetch Hetchy System, water is diverted from Hetch Hetchy Reservoir into a series of tunnels and aqueducts from the Sierra Nevada to the San Joaquin Pipelines that cross the San Joaquin Valley to the Coast Range Tunnel, which connects to the Alameda System at the Alameda East Portal. Hetch Hetchy System water is disinfected at the Tesla Treatment Facility.

5.1.1.2 Alameda Watershed and System

The Alameda System includes two reservoirs, San Antonio Reservoir and Calaveras Reservoir, which collect water from the San Antonio Creek, Upper Alameda Creek, and Arroyo Hondo watersheds in Alameda County. San Antonio Reservoir also receives water from the Hetch Hetchy System. Conveyance facilities in the Alameda System connect the Hetch Hetchy System and Alameda water sources to the Peninsula System. The BDPLs cross the South Bay to the Peninsula System delivering water to customers along the pipeline route. The Sunol Valley Water Treatment Plant (SVWTP) filters and disinfects water supplied from San Antonio Reservoir and Calaveras Reservoir.

5.1.1.3 Peninsula Watershed and System

The Peninsula System includes conveyance facilities connecting the BDPLs to the in-City distribution system and to other customers on the Peninsula. Two reservoirs, Crystal Springs Reservoir and San Andreas Reservoir, collect runoff from the San Mateo Creek watershed. Crystal Springs Reservoir also receives water from the Hetch Hetchy System. A third reservoir, Pilarcitos Reservoir, collects runoff from the Pilarcitos Creek watershed and directly serves one of the Wholesale Customers, the Coastside County Water District (which includes the City of Half Moon Bay), along with delivering water to Crystal Springs and San Andreas Reservoirs. The Harry Tracy Water Treatment Plant (HTWTP) filters and disinfects water supplied from Crystal Springs Reservoir and San Andreas Reservoir before it is delivered to customers on the Peninsula and the in-City distribution system.

5.1.1.4 Water Treatment

The Hetch Hetchy Reservoir is the largest unfiltered water supply on the West Coast, and one of only a few large unfiltered municipal water supplies in the nation. The water originates from spring snow melt flowing down the Tuolumne River to Hetch Hetchy Reservoir, where it is stored. This high-quality water source comes from well-protected wilderness areas in Yosemite National Park and meets or exceeds all federal and State criteria for watershed protection. Water from Hetch Hetchy Reservoir is protected in pipes and tunnels as it is conveyed to the Bay Area, and requires pH adjustment to control pipeline corrosion and disinfection for bacteria control. Based on the SFPUC's disinfection treatment practice, extensive bacteriological quality monitoring, and high operational standards, the U.S. Environmental Protection Agency (USEPA) and the SWRCB Division of Drinking Water (DDW) determined that the Hetch Hetchy water source meets federal and State drinking water quality requirements without the need for filtration.

A new USEPA regulation took effect in 2012 requiring secondary disinfection for all unfiltered drinking water systems to control the waterborne parasite cryptosporidium. To comply with this regulation, the SFPUC completed construction of a new ultraviolet (UV)

treatment facility in 2011. The Tesla Treatment Facility is a key component of the Water System Improvement Program (WSIP) and enhances the Hetch Hetchy System's high water quality. The facility has a capacity of 315 mgd, making it the third largest UV drinking water disinfection facility in the U.S.

All water derived from sources other than Hetch Hetchy Reservoir is treated at one of two treatment plants: the SVWTP or the HTWTP. The SVWTP primarily treats water from the Alameda System reservoirs and has both a peak capacity and sustainable capacity of 160 mgd. Treatment processes include coagulation, flocculation, sedimentation, filtration, and disinfection. Fluoridation, chloramination, and corrosion control treatment are provided for the combined Hetch Hetchy System and SVWTP water at the Sunol chloramination and fluoridation facilities. The HTWTP treats water from the Peninsula System reservoirs and has a peak capacity of 180 mgd and a sustainable capacity of 140 mgd. Treatment processes include ozonation, coagulation, flocculation, filtration, disinfection, fluoridation, corrosion control treatment, and chloramination. Major upgrades to the SVWTP were completed in 2013 and to the HTWTP in 2015.

5.1.1.5 Water Storage

The majority of the water delivered by the SFPUC is supplied by runoff from the upper Tuolumne River watershed on the western slope of the central Sierra Nevada. Three major reservoirs collect runoff: Hetch Hetchy Reservoir, Lake Lloyd, and Lake Eleanor (see table below). A "water bank" in Don Pedro Reservoir is integrated into system operations.[9] Don Pedro Reservoir is jointly owned and operated by Modesto Irrigation District and Turlock Irrigation District (the Districts), and is located on the Tuolumne River downstream of the Hetch Hetchy System.

As a by-product of water delivery and water supply management, hydroelectric power is generated by the Hetch Hetchy Water and Power System. Water stored in Hetch Hetchy Reservoir is used for hydroelectric generation and also satisfies instream flow requirements when released downstream. Normally, only Hetch Hetchy Reservoir water supplies are exported to the Bay Area, while releases from Lake Eleanor and Lake Lloyd are used to satisfy instream flow requirements, satisfy Raker Act entitlements to the Districts downstream, and produce hydroelectric power. The Hetch Hetchy Water and Power System is comprised of three major hydroelectric powerhouses along the Tuolumne River—Holm, Kirkwood, and Moccasin—that have a collective generating capacity of nearly 400 megawatts.

[9] Turlock and Modesto Irrigation Districts have senior water rights to the SFPUC for the Tuolumne River water and are entitled to the first increment of flow in the basin. Water bank provides a credit and debit system which allows the SFPUC to divert water upstream while meeting its obligations to Modesto and Turlock Irrigation Districts. Through this mechanism the SFPUC may pre-deliver the Districts entitlements and credit the water bank so that at other times the SFPUC may retain water upstream while the Districts debit water bank.

Regional Water System Storage Capacity

Reservoir	Storage	
	Acre-Feet (AF)	**Billions of Gallons (BG)**
Up-Country[a]		
Hetch Hetchy	360,360	117.4
Lake Lloyd[b]	273,300	89.1
Lake Eleanor	27,100	8.8
Subtotal Up-Country	**660,760**	**215.3**
Local		
Calaveras (East Bay)[c]	96,800	31.5
San Antonio (East Bay)	50,500	16.5
Crystal Springs (Peninsula)[d]	69,300	22.6
San Andreas (Peninsula)	19,000	6.2
Pilarcitos (Peninsula)	3,100	1.0
Subtotal Local	**238,700**	**77.8**
Total Regional Water System[e]	**899,460**	**293.1**

a Three other regulating reservoirs are also part of the RWS: Early Intake, Priest, and Moccasin Reservoirs.
b Storage capacity shown includes flashboards, which are structures placed in a spillway to increase the capacity of a reservoir.
c Calaveras Reservoir was constructed with a storage capacity of 96,800 AF. Since December 2001, in response to safety concerns about the seismic stability of the dam and a directive from the Division of Safety of Dams (DSOD), the SFPUC has held the maximum water level at approximately 37,800 AF (roughly 40% of its maximum capacity), pending construction of a new comparably sized replacement dam downstream, expected to be completed in 2018.
d Crystal Springs Reservoir has a maximum storage capacity of 22.1 BG (at 291.8 feet). When the Lower Crystal Springs Dam Improvement is complete, the reservoir will be operated normally at 287.8 feet (4 feet below capacity) based on permit conditions.
e This includes 63,700 AF in dead storage (i.e., the volume in a reservoir below the lowest controllable level). In addition, the SFPUC may draw against a credit of up to 570,000 AF in storage in a water bank account in Don Pedro Reservoir, for total storage for planning purposes of 1,469,460 AF.

Downstream of the Hetchy Hetchy System, the SFPUC utilizes local watersheds in the Bay Area. On the Peninsula, the Crystal Springs, San Andreas, and Pilarcitos Reservoirs located in San Mateo County capture local watershed runoff. In the Alameda Creek watershed in Alameda County, the SFPUC operates Calaveras and San Antonio Reservoirs. In addition to using these facilities to capture local runoff, San Andreas, San Antonio, and Crystal Springs Reservoirs also provide storage for the Hetch Hetchy System and, along with Calaveras Reservoir, are an important water supply in the event of an interruption to Hetch Hetchy System deliveries.

Calaveras Reservoir is currently operating at one-third of its capacity due to restrictions imposed by the Division of Safety of Dams (DSOD). The Calaveras Dam Improvement Project is currently in construction to return the reservoir to its full capacity.

5.1.2 Individual Supply Guarantees

San Francisco has a perpetual commitment (Supply Assurance) to deliver 184 mgd to the 24 permanent wholesale customers collectively. San Jose and Santa Clara are not included in the Supply Assurance commitment and each has temporary and interruptible water supply contracts with San Francisco. The Supply Assurance is allocated among the 24 permanent wholesale customers through Individual Supply Guarantees (ISG), which represent each wholesale customer's allocation of the 184 mgd Supply Assurance.

The WWD's ISG is 1.32 million gallons per day (MGD), or approximately 482 MG per year.

5.1.3 2018 Interim Supply Limitation

As part of its adoption of the Water System Improvement Program (WSIP) in October 2008, discussed separately herein, the SFPUC adopted a water supply limitation, the Interim Supply Limitation (ISL), which limits sales from San Francisco Regional Water System (RWS) watersheds to an average annual of 265 mgd through 2018.

All 26 wholesale customers and San Francisco are subject to the ISL. The wholesale customers' collective allocation under the ISL is 184 mgd and San Francisco's is 81 mgd. Although the wholesale customers did not agree to the ISL, as further discussed below, the WSA provides a framework for administering the ISL.

5.1.4 Interim Supply Allocations

The Interim Supply Allocations (ISAs) refer to San Francisco's and each individual wholesale customer's share of the Interim Supply Limitation (ISL). On December 14, 2010, the SFPUC established each agency's ISA through 2018. In general, the SFPUC based the wholesale customer allocations on the lesser of the projected fiscal year 2017-18 purchase projections or Individual Supply Guarantees. The ISAs are effective only until December 31, 2018 and do not affect the Supply Assurance or the Individual Supply Guarantees, both discussed separately herein. San Francisco's ISA is 81 mgd.

As stated in the WSA, the wholesale customers do not concede the legality of the Commission's establishment of the ISAs and Environmental Enhancement Surcharge, discussed below, and expressly retain the right to challenge either or both, if and when imposed, in a court of competent jurisdiction.

The WWD's ISA is 1.082 MGD, or 394 MG per year.

5.1.5 Environmental Enhancement Surcharge

As an incentive to keep Regional Water System (RWS) deliveries below the ISL of 265 mgd, the SFPUC adopted an Environmental Enhancement Surcharge for collective deliveries in excess of the ISL effective at the beginning of fiscal year 2011-12. This volume-based surcharge would be unilaterally imposed by the SFPUC on individual wholesale customers and San Francisco retail customers, when an agency's use exceeds their ISA and when sales of water to the wholesale customers and San Francisco retail customers, collectively, exceeds the ISL of 265 mgd. Actual charges would be determined based on each agency's respective amount(s) of excess use over their ISA. To date, no Environmental Enhancement Surcharges have been levied.

5.1.6 2018 SFPUC Decisions

In the WSA, there are three decisions the SFPUC committed to making before 2018 that will affect water supply development:

- Whether or not to make the cities of San Jose and Santa Clara permanent customers,
- Whether or not to supply the additional unmet supply needs of the wholesale customers beyond 2018, and
- Whether or not to increase the wholesale customer Supply Assurance above 184 mgd.

Additionally, there have been recent changes to instream flow requirements and customer demand projections that will affect water supply planning beyond 2018. As a result, the SFPUC has developed a Water Management Action Plan (Water MAP) to provide necessary information to address the 2018 decisions and to begin developing a water supply program for the 2019 to 2035 planning horizon. The water supply program will enable the SFPUC to continue to meet its commitments and responsibilities to wholesale and retail customers, consistent with the priorities of the SFPUC.

The Water MAP was presented by the SFPUC staff to its Commission in May 2016. The discussion resulting from the questions described in the Water MAP will help guide the water supply planning objectives through 2035. While the Water MAP is not a water supply program, it presents pertinent information that will help develop the SFPUC's future water supply planning program. At this time, and for purposes of long-term planning, it is assumed that deliveries from the RWS to San Francisco's wholesale customers will not be in excess of 184 mgd.

5.2 GROUNDWATER

> *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.*

To date, WWD has not utilized groundwater as a potable water source (i.e., as described above, the sole source of WWD's potable water has been wholesale water supplied by the SFPUC RWS) and does not expect to utilize groundwater as a regular potable water source in the future. Therefore, as indicated in Table 5-1, the WWD has not completed DWR Table 6-1.

Table 5-1 – Groundwater Volume Pumped (DWR Table 6-1)

☑	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type	Location or Basin Name	Groundwater Production				
		2011	2012	2013	2014	2015
--	--	--	--	--	--	--
TOTAL		**--**	**--**	**--**	**--**	**--**

5.3 WASTEWATER AND RECYCLED WATER

> *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.*

Recycling water involves treating wastewater to an acceptable level such that it can be reused for irrigation, cooling, and other non-potable applications. A key benefit of water recycling is its potential to offset the use of potable supplies. The regulatory requirements for recycled water are defined in the California Code of Regulations, Title 22, Article 3 (Title 22) and differ for different uses (e.g. irrigation for food crops, landscape, and recreation). Because recycled water is treated wastewater, its availability is closely linked to the location and treatment capability of the wastewater treatment plant that receives and treats wastewater from a water supplier's service area. The WWD does not currently use recycled water and does not have plans to use recycled water in the future. The following section describes wastewater collection and treatment for the WWD service area.

5.3.1 Wastewater Collection, Treatment, and Disposal

10633. (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
10633. (b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

The WWD operates and maintains the sewage collection system that serves all of its customers. The collected sewage is delivered to the North San Mateo County Sanitation District (Sanitation District), a subsidiary of the City of Daly City. The Sanitation District operates a wastewater treatment plant in Daly City at 153 Lake Merced Boulevard. Table 5-2 summarizes the volume of wastewater collected within the WWD service area in 2015.

Table 5-2 – Wastewater Collected Within Service Area in 2015 (DWR Table 6-2)

100	Percentage of 2015 service area covered by wastewater collection system (optional)					
100	Percentage of 2015 service area population covered by wastewater collection system (optional)					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 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?
Westborough Water District	Estimated	**238**	North San Mateo County Sanitation District	Daly City Wastewater Treatment Plant	No	No
Total Wastewater Collected from Service Area in 2015		**238**				

The Daly City wastewater treatment plant has a permitted capacity of 8 MGD (dry weather flows) and a design capacity of 10.3 MGD. It serves the City of Daly City and portions of South San Francisco, including the WWD service area. The plant provides secondary treatment and discharges to the Pacific Ocean through an ocean outfall pipe. Because wastewater collected from the WWD service area is treated and disposed of outside of the WWD service area, as indicated in Table 5-3, the WWD has not completed DWR Table 6-3.

Table 5-3 – Wastewater Treatment and Discharge Within Service Area in 2015 (DWR 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	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
--	--	--	--	--	--	--	--	--	--	--
						Total	--	--	--	--

A portion of the wastewater treatment plant's secondary effluent is diverted to a tertiary treatment plant that was completed in 2004. This plant provides reclaimed wastewater for irrigation use in the City of Daily City and for in-plant use.

The WWD is at the opposite end of the Sanitary District's collection system, more than 4.5 miles from the wastewater treatment plant, and at a higher elevation. Although there are likely some potential recycled water application sites in the WWD service area, they have not been inventoried or investigated because it is not currently be feasible to transport the recycled water from the wastewater treatment plant to the District's service area. At this time the District has concluded that there are no sources of recycled water that are likely to become available within the WWD service area in the foreseeable future.

5.3.2 Current and Projected Uses of Recycled Water

10633. (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
10633. (d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
10633. (e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years.

As indicated in Table 5-4, there is no current or projected future recycled water use within the WWD service area.

Table 5-4 – Current and Projected Recycled Water Direct Beneficial Uses Within Service Area (DWR 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.								
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015	2020	2025	2030	2035	2040
--	--	--	--	--	--	--	--	--
		Total:	**--**	**--**	**--**	**--**	**--**	**--**

5.3.3 Comparison of Previously Projected Use and Actual Use

10633. (e) A description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

Currently there is no recycled water use in the WWD service area and there were no recycled water use projections made for 2015 in previous WWD UWMPs. Therefore, as indicated in Table 5-5, the WWD has not completed DWR Table 6-5.

Table 5-5 – 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual (DWR 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
--	**--**	**--**
Total	**--**	**--**

5.3.4 Promoting Recycled Water Use

10633. (f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
10633. (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

Currently there are no financial or other incentives to WWD's customers to encourage use of recycled water, as recycled water is not available within the WWD service area. If and when

recycled water becomes available within the WWD service area in the future, appropriate financial incentives would be considered to encourage recycled water use.

Table 5-6 – Methods to Expand Future Recycled Water Use (DWR 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.		
Section 5.3.4	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
--	--	--	--
		Total	--

5.4 DESALINATED WATER

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
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.

Opportunities to develop desalinated water supplies from ocean water, brackish surface, and brackish groundwater are being investigated by the BAWSCA as part of Phase II of its Long Term Reliable Water Supply Strategy (Strategy, see Section 6.1). According to BAWSCA, there are high costs and intensive permitting requirements associated with desalination, however, it does potentially provide a substantial yield given the limited options for generating significant new water supplies for the region. Aside from its support to date for the development of BAWSCA's Strategy, the WWD is not pursuing desalination at this time.

5.5 WATER TRANSFERS

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
10631(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

The District has interties with the adjoining water systems operated by NCCWD and the City of Daly City. The WWD shares a water storage tank with the NCCWD and water from the SFPUC RWS is routinely exchanged between the District and NCCWD in the course of operating this storage tank. The interties and exchanges with these adjoining purveyors are neither a current or planned source of water supply for WWD. The interconnection with the NCCWD is used to manage existing supplies, while both the NCCWD and Daly City interconnections provide potential emergency backup sources of water.

There are other potential transfer and exchange opportunities within and outside of the SFPUC RWS. The WWD does not presently anticipate the need for water right transfers during normal year conditions. However, should that condition change in the future, it is possible that WWD could purchase water from another agency or entity either within or outside of the SFPUC RWS.

Within the SFPUC RWS, it is possible to transfer water entitlements and / or banked water among agencies. The Water Shortage Allocation Plan (WSAP) adopted by all BAWSCA agencies and the SFPUC provides the basis for voluntary transfers of water among BAWSCA agencies during periods when mandatory rationing is in effect on the SFPUC RWS (see Section 6.3.1). Some BAWSCA agencies have the capacity to rely on groundwater or other sources during dry years and thus may be willing to transfer a portion of their wholesale water entitlement to other BAWSCA agencies in need of supply above their allocations.

Securing water from willing sellers outside the SFPUC RWS is a more complex process than transfers within the RWS, which requires both a contract with the seller agency and approval by the SFPUC. BAWSCA has the authority to plan for and acquire supplemental water supplies, and continues to evaluate the feasibility of water transfers as part of its implementation of the Strategy (see Section 6.1).

5.6 POTENTIAL WATER SUPPLY PROJECTS AND PROGRAMS

> *10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:*
> *10631 (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.*

Currently there are no planned future water supply projects or programs that would provide a quantifiable increase to the WWD's water supply. Therefore, as indicated in Table 5-7, the WWD has not completed DWR Table 6-7.

Table 5-7 – Expected Future Water Supply Projects or Programs (DWR 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.					
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)	Agency Name				
--	--	--	--	-	--	--

5.7 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

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).
10631. (b) (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

The WWD purchases potable water from the SFPUC RWS to meet all of the water demands within the WWD service area. The WWD purchased approximately 302 MG in 2015 from the SFPUC RWS. The WWD's water supplies in 2015 are summarized in Table 5-8.

Table 5-8 – Water Supplies — Actual (DWR Table 6-8)

Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume (MG)	Water Quality	Total Right or Safe Yield
Purchased or Imported Water	SFPUC RWS	302	Drinking Water	482
Total		**302**	**--**	**482**

The WWD plans to continue to purchase wholesale water from the SFPUC RWS and does not anticipate developing additional long-term water supplies from other sources in the near future. Water supplies from the SFPUC RWS through 2040 are projected to be equivalent to WWD's ISG of 482 MG. The WWD's ISG is WWD's contractual entitlement to SFPUC wholesale water, which survives in perpetuity. The WWD's total water supply projections are shown in Table 5-9 in five-year increments through 2040.

Table 5-9 – Water Supplies — Projected (DWR Table 6-9)

Water Supply	Additional Detail on Water Supply	Projected Water Supply (MG)				
		2020	**2025**	**2030**	**2035**	**2040**
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Purchased or Imported Water	SFPUC RWS	482	482	482	482	482
Total		**482**	**482**	**482**	**482**	**482**

6. WATER SUPPLY RELIABILITY

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.
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.

As described in Section 5, all of WWD's potable water supply is purchased from the SFPUC RWS. This section describes the constraints on that potable water supply (also referred to by SFPUC as wholesale water), as well as the management strategies that the WWD and other affected agencies have employed or will employ to address these constraints. This section also provides an estimate of the supply volumes available to the WWD and the corresponding supply and demand reliability assessments in normal years, single dry years, and multiple dry year periods.

6.1 BAWSCA'S LONG TERM RELIABLE WATER SUPPLY STRATEGY

BAWSCA's Strategy was developed to quantify the water supply reliability needs of the BAWSCA member agencies through 2040, identify the water supply management projects and/or programs (projects) that could be developed to meet those needs, and prepare an implementation plan for the Strategy's recommendations. Successful implementation of the Strategy is critical to ensuring that there will be sufficient and reliable water supplies for the BAWSCA member agencies and their customers in the future.

Phase II of the Strategy was completed in February 2015 with release of the Strategy Phase II Final Report. The water demand analysis done during Phase II of the Strategy resulted in the following key findings:

- There is no longer a regional normal year supply shortfall.
- There is a regional drought year supply shortfall of up to 43 mgd.

In addition, the project evaluation analysis done during Phase II of the Strategy resulted in the following key findings:

- Water transfers score consistently high across the various performance measures and within various portfolio constructs and thus represent a high priority element of the Strategy.
- Desalination also potentially provides substantial yield, but its high effective costs and intensive permitting requirements make it a less attractive drought year supply alternative. However, given the limited options for generating significant yield for the region, desalination warrants further investment in information as a hedge against the loss of local or other imported supplies.
- The other potential regional projects provide tangible, though limited, benefit in reducing dry year shortfalls given the small average yields in drought years.

BAWSCA is now implementing the Strategy recommendations in coordination with BAWSCA member agencies. Strategy implementation will be adaptively managed to account for changing conditions and to ensure that the goals of the Strategy are met efficiently and cost-effectively.

Due to the size of the supply and reliability need, and the uncertainty around yield of some Strategy projects, BAWSCA will need to pursue multiple actions and projects in order to provide some level of increased water supply reliability for its member agencies. On an annual basis, BAWSCA will reevaluate Strategy recommendations and results in conjunction with development of the work plan for the following year. In this way, actions can be modified to accommodate changing conditions and new developments.

6.2 RELIABILITY OF THE REGIONAL WATER SYSTEM

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
10631 (k) Urban water suppliers that rely upon a wholesale agency for a source of water, shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water -year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

Information regarding the reliability of the SFPUC RWS was provided by BAWSCA in coordination with the SFPUC, and is presented verbatim below.

The SFPUC's Water System Improvement Program (WSIP) provides goals and objectives to improve the delivery reliability of the Regional Water System (RWS) including water supply reliability. The goals and objectives of the WSIP related to water supply are:

Program Goal	System Performance Objective
Water Supply – *meet customer water needs in non-drought and drought periods*	• Meet average annual water demand of 265 million gallons per day (mgd) from the SFPUC watersheds for retail and wholesale customers during non-drought years for system demands through 2018. • Meet dry-year delivery needs through 2018 while limiting rationing to a maximum 20 percent system-wide reduction in water service during extended droughts. • Diversify water supply options during non-drought and drought periods. • Improve use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers.

The adopted WSIP had several water supply elements to address the WSIP water supply goals and objectives. The following provides the water supply elements for all year types

and the dry-year projects of the adopted WSIP to augment all year type water supplies during drought.

6.2.1 Water Supply – All Year Types

The SFPUC historically has met demand in its service area in all year types from its watersheds. They are the:

- Tuolumne River watershed
- Alameda Creek watershed
- San Mateo County watersheds

In general, 85 percent of the supply comes from the Tuolumne River through Hetch Hetchy Reservoir and the remaining 15 percent comes from the local watersheds through the San Antonio, Calaveras, Crystal Springs, Pilarcitos and San Andreas Reservoirs. The adopted WSIP retains this mix of water supply for all year types.

6.2.2 Water Supply – Dry-Year Types

The adopted WSIP includes the following water supply projects to meet dry-year demands with no greater than 20 percent system-wide rationing in any one year:

Calaveras Dam Replacement Project

Calaveras Dam is located near a seismically active fault zone and was determined to be seismically vulnerable. To address this vulnerability, the SFPUC is constructing a new dam of equal height downstream of the existing dam. The Environmental Impact Report was certified by the San Francisco City Planning Commission in 2011, and construction is now ongoing. Construction of the new dam is slated for completion in 2018; the entire project should be completed in 2019.

Alameda Creek Recapture Project

The Alameda Creek Recapture Project will recapture the water system yield lost due to instream flow releases at Calaveras Reservoir or bypassed around the Alameda Creek Diversion Dam and return this yield to the RWS through facilities in the Sunol Valley. Water that naturally infiltrates from Alameda Creek will be recaptured into an existing quarry pond known as SMP (Surface Mining Permit)-24 Pond F2. The project will be designed to allow the recaptured water to be pumped to the Sunol Valley Water Treatment Plant or to San Antonio Reservoir. The project's Draft Environmental Impact Report will be released in the spring of 2016, and construction will occur from spring 2017 to fall 2018.

Lower Crystal Springs Dam Improvements

The Lower Crystal Springs Dam Improvements were substantially completed in November 2011. While the project has been completed, permitting issues for reservoir operation have become significant. While the reservoir elevation was lowered due to Division of Safety of Dams restrictions, the habitat for the Fountain Thistle, an endangered plant, followed the lowered reservoir elevation. Raising the reservoir elevation now requires that new plant populations be restored incrementally before the reservoir elevation is raised. The result is that it may be several years before the original reservoir elevation can be restored.

Regional Groundwater Storage and Recovery Project

The Groundwater Storage and Recovery Project is a strategic partnership between SFPUC and three San Mateo County agencies: the California Water Service Company (serving South San Francisco and Colma), the City of Daly City, and the City of San Bruno. The project seeks to balance the management of groundwater and surface water resources in a way that safeguards supplies during times of drought. During years of normal or heavy rainfall, the project would provide additional surface water to the partner agencies in San Mateo County, allowing them to reduce the amount of groundwater that they pump from the South Westside Groundwater Basin. Over time, the reduced pumping would allow the aquifer to recharge and result in increased groundwater storage of up to 20 billion gallons.

The project's Final Environmental Impact Report was certified in August 2014, and the project also received Commission approval that month. The well station construction contract Notice to Proceed was issued in April 2015, and construction is expected to be completed in spring 2018.

2 mgd Dry-year Water Transfer

In 2012, the dry-year transfer was proposed between the Modesto Irrigation District and the SFPUC. Negotiations were terminated because an agreement could not be reached. Subsequently, the SFPUC is having ongoing discussions with the Oakdale Irrigation District for a one-year transfer agreement with the SFPUC for 2 mgd (2,240 acre-feet).

In order to achieve its target of meeting at least 80 percent of its customer demand during droughts at 265 mgd, the SFPUC must successfully implement the dry-year water supply projects included in the WSIP.

Furthermore, the permitting obligations for the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements include a combined commitment of 12.8 mgd for instream flows on average. When this is reduced for an assumed Alameda Creek Recapture Project recovery of 9.3 mgd, the net loss of water supply is 3.5 mgd. The SFPUC's participation in regional water supply reliability efforts, such as the Bay Area Regional Desalination Project (BARDP), additional water transfers, and other projects may help to make up for this shortfall.

6.2.3 Projected SFPUC Regional Water System Supply Reliability

The SFPUC has provided the attached table [Appendix F; Table 3] presenting the projected RWS supply reliability. This table assumes that the wholesale customers purchase 184 mgd from the RWS through 2040 and the implementation of the dry-water water supply projects included in the WSIP. The numbers represent the wholesale share of available supply during historical year types per the Tier One Water Shortage Allocation Plan. This table does not reflect any potential impact to RWS yield from the additional fishery flows required as part of Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project.

6.2.4 Impact of Recent SFPUC Actions on Dry Year Reliability

As noted earlier, in adopting the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project, the SFPUC committed to providing fishery

flows below Calaveras Dam and Lower Crystal Springs Dam, as well as bypass flows below Alameda Creek Diversion Dam. The fishery flow schedules for Alameda Creek and San Mateo Creek represent a potential decrease in available water supply of an average annual 9.3 mgd and 3.5 mgd, respectively with a total of 12.8 mgd average annually. The Alameda Creek Recapture Project, described above, will replace the 9.3 mgd of supply lost to Alameda Creek fishery flows. Therefore, the remaining 3.5 mgd of fishery flows for San Mateo Creek will potentially create a shortfall in meeting the SFPUC demands of 265 mgd and slightly increase the SFPUC's dry-year water supply needs.

The adopted WSIP water supply objectives include (1) meeting a target delivery of 265 mgd through 2018 and (2) rationing at no greater than 20 percent system-wide in any one year of a drought. As a result of the fishery flows, the SFPUC may not be able to meet these objectives between 2015 and 2018. Participation in the BARDP and additional water transfers, as described earlier, may help manage the water supply loss associated with the fishery flows.

As a result of the Individual Supply Guarantees described above, the SFPUC has a responsibility to provide 184 mgd to its wholesale customers in perpetuity, regardless of demand. Therefore, the current projections for purchase requests through 2018 remain at 265 mgd, which includes wholesale and retail demand. However, in the last decade including the current drought, SFPUC deliveries have been below this level, as illustrated in the table below.

Water Deliveries in San Francisco Regional Water System Service Area[10]

Fiscal Year	Total Deliveries (mgd)
2005-06	247.5
2006-07	257.0
2007-08	254.1
2008-09	243.4
2009-10	225.2
2010-11	219.9
2011-12	220.5
2012-13	223.9
2013-14	222.3
2014-15	196.0

Under the current drought to date, the SFPUC has called for, but has not mandated, a 10 percent system-wide reduction since January 2014. The SFPUC has not yet been compelled to declare a water shortage emergency and impose mandatory system-wide rationing because its customers have exceeded the 10 percent voluntary system-wide reduction in conjunction with the state-wide mandatory reductions assigned by the State Water Resources Control Board. If current drought conditions worsen between 2015 and 2018, and the SFPUC determines that system-wide rationing would need to be imposed, then the SFPUC would issue a declaration of a water shortage emergency in accordance

[10] Reference: SFPUC FY 9-10 and FY 2014-15 J-Tables Line 9 "Total System Usage" plus 0.7 mgd for Lawrence Livermore National Laboratory use and 0.4 mgd for Groveland. No groundwater use is included in this number. Non-revenue water is included.

with Water Code Section 350 and implement rationing in accordance with the WSA and WSAP as described above.

6.3 TIER 1 AND TIER 2 WATER SHORTAGE ALLOCATIONS

The following is a discussion regarding the Tier 1 Drought Allocation between SFPUC and BAWSCA and the Tier 2 Drought Allocation amongst the BAWSCA agencies. As above, this language was provide by BAWSCA in coordination with SFPUC and is presented verbatim below.

6.3.1 Tier 1 Drought Allocations

In July 2009, the wholesale customers and San Francisco adopted the Water Supply Agreement (WSA), which includes a Water Shortage Allocation Plan (WSAP) to allocate water from the Regional Water System (RWS) to retail and wholesale customers during system-wide shortages of 20 percent or less (the Tier One Plan). The WSAP has two components:

- The Tier One Plan, which allocates water between San Francisco and the wholesale customers collectively; and
- The Tier Two Plan, which allocates the collective wholesale customer share among the wholesale customers

The Tier One Plan allocates water between San Francisco and the wholesale customers collectively based on the level of shortage:

Level of System-Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Wholesale Customers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The Tier One Plan allows for voluntary transfers of shortage allocations between the SFPUC and any wholesale customer and between wholesale customers themselves. In addition, water "banked" by a wholesale customer, through reductions in usage greater than required, may also be transferred.

The Tier One Plan will expire at the end of the term of the WSA in 2034, unless mutually extended by San Francisco and the wholesale customers.

The Tier One Plan applies only when the SFPUC determines that a system-wide water shortage exists and issues a declaration of a water shortage emergency under California Water Code Section 350. Separate from a declaration of a water shortage emergency, the SFPUC may opt to request voluntary cutbacks from San Francisco and the wholesale customers to achieve necessary water use reductions during drought periods. During the current drought to date, the SFPUC has requested, but has not mandated, a 10 percent

system-wide reduction since January 2014. The SFPUC has not yet been compelled to declare a water shortage emergency and implement the Tier One Plan because its customers have exceeded the 10 percent voluntary system-wide reduction in conjunction with the state-wide mandatory reductions assigned by the State Water Resources Control Board.

6.3.2 Tier 2 Drought Allocations

The wholesale customers have negotiated and adopted the Tier Two Plan, the second component of the WSAP, which allocates the collective wholesale customer share among each of the 26 wholesale customers. This Tier Two allocation is based on a formula that takes into account multiple factors for each wholesale customer including:

- Individual Supply Guarantee;
- Seasonal use of all available water supplies; and
- Residential per capita use.

The water made available to the wholesale customers collectively will be allocated among them in proportion to each wholesale customer's Allocation Basis, expressed in millions of gallons per day (mgd), which in turn is the weighted average of two components. The first component is the wholesale customer's Individual Supply Guarantee, as stated in the WSA, and is fixed. The second component, the Base/Seasonal Component, is variable and is calculated using the monthly water use for three consecutive years prior to the onset of the drought for each of the wholesale customers for all available water supplies. The second component is accorded twice the weight of the first, fixed component in calculating the Allocation Basis. Minor adjustments to the Allocation Basis are then made to ensure a minimum cutback level, a maximum cutback level, and a sufficient supply for certain wholesale customers.

The Allocation Basis is used in a fraction, as numerator, over the sum of all wholesale customers' Allocation Bases to determine each wholesale customer's Allocation Factor. The final shortage allocation for each wholesale customer is determined by multiplying the amount of water available to the wholesale customers' collectively under the Tier One Plan, by the wholesale customer's Allocation Factor.

The Tier Two Plan requires that the Allocation Factors be calculated by BAWSCA each year in preparation for a potential water shortage emergency. As the wholesale customers change their water use characteristics (e.g., increases or decreases in SFPUC purchases and use of other water sources, changes in monthly water use patterns, or changes in residential per capita water use), the Allocation Factor for each wholesale customer will also change. However, for long-term planning purposes, each wholesale customer shall use as its Allocation Factor, the value identified in the Tier Two Plan when adopted.

The current Tier Two Plan will expire in 2018 unless extended by the wholesale customers.

6.4 WWD SUPPLY RELIABILITY BY TYPE OF YEAR

> *10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:*
> *10631. (c) 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:*
> *(1) An average water year.*
> *(2) A single dry water year.*
> *(3) Multiple dry water years.*

The WWD's available water supply volume by type of year is shown in Table 6-1.

A normal year represents an averaged range of years that most closely represents the median water supply available to WWD. As discussed above, in accordance with the SFPUC's perpetual obligation to WWD's Supply Assurance, WWD has an ISG of 1.32 MGD, or 482 MG per year. The SFPUC is obligated to provide the WWD with up to 100% of WWD's ISG during normal years.

Dry-year supply estimates are based on the delivery estimates provided by BAWSCA and SFPUC as part of the 2015 UWMP update process (SFPUC, 2016; BAWSCA, 2016; Appendix F) and per hypothetical application of the Tier 1 and Tier 2 allocation processes described above. While these are the best available data for use at this time, these supply reliability estimates do not take into account: (1) hydrologic data reflective of the recent historic drought of 2012-2015; (2) climate change impacts on the SFPUC RWS (see Section 6.7); and (3) potential delays in full completion of the Water System Improvement Program (WSIP) 2019 (see Section 6.2.1). These estimates further do not take into account the fact that the Tier 2 Plan will expire from its current form in 2018 unless the Wholesale Customers unanimously vote to extend it, and that, given the interdependencies built into the Tier 2 Plan, future drought allocations will be highly dependent on an agency's actual water use prior to the next drought and that of the other BAWSCA agencies.

Table 6-1 – Basis of Water Year Data (DWR Table 7-1)

Year Type	Base Year	Available Supplies if Year Type Repeats	
		Volume Available (MG)	% of Average Supply
Average Year	1988	482	100%
Single-Dry Year	1990	351	73%
Multiple-Dry Year 1st Year	1990	351	73%
Multiple-Dry Year 2nd Year	1991	314	65%
Multiple-Dry Year 3rd Year	1992	314	65%

As shown in Table 6-1, during single dry years between 2020 and 2040, the annual supply available to the WWD is estimated to be reduced to 351 MG. During multiple dry years between 2020 and 2040, the annual supply available to the WWD is estimated to be reduced to 351 MG

during the first year of a multi-year drought and to 314 MG during the second and third years of a multi-year drought.

6.5 SUPPLY AND DEMAND ASSESSMENT

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.

The WWD's projected potable water demands are compared to potable water supply projections in normal years, single dry years, and multiple dry year periods, as presented in Tables 6-2 through 6-4. As described in Section 3.2.4, WWD's future water demand was estimated accounting for future water savings as result of passive water conservation.

As shown in Table 6-2, demand within the WWD service area is not expected to exceed WWD's ISG in any normal year between 2020 and 2040. As such, WWD is expected to have adequate water supplies during normal years to meet its projected demands through 2040.

Table 6-2 – Normal Year Supply and Demand Comparison (DWR Table 7-2)

	Water Supplies and Demands (MG)				
	2020	2025	2030	2035	2040
Total Projected Supplies	482	482	482	482	482
Total Projected Demands	278	278	276	275	275
Difference	*203*	*204*	*206*	*207*	*206*
Deficit as Percentage of Demand	--	--	--	--	--

As shown in Tables 6-3 and 6-4, the WWD's projected water supplies are also sufficient to meet its projected water demands during a single dry year and multiple dry years through 2040.

Table 6-3 – Single Dry Year Supply and Demand Comparison (DWR Table 7-3)

	Water Supplies and Demands (MG)				
	2020	2025	2030	2035	2040
Total Projected Supplies	351	351	351	351	351
Total Projected Demands	278	278	276	275	275
Difference	*72*	*73*	*75*	*76*	*76*
Deficit as Percentage of Demand	--	--	--	--	--

Table 6-4 – Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)

		Projected Supplies and Demands (MG)				
		2020	2025	2030	2035	2040
Multiple Dry Year First Year Supply	Total Projected Supplies	351	351	351	351	351
	Total Projected Demands	278	278	276	275	275
	Difference	*72*	*73*	*75*	*76*	*76*
	Deficit as Percentage of Demand	--	--	--	--	--
Multiple Dry Year Second Year Supply	Total Projected Supplies	314	314	314	314	314
	Total Projected Demands	278	278	276	275	275
	Difference	*35*	*36*	*38*	*39*	*38*
	Deficit as Percentage of Demand	--	--	--	--	--
Multiple Dry Year Third Year Supply	Total Projected Supplies	314	314	314	314	314
	Total Projected Demands	278	278	276	275	275
	Difference	*35*	*36*	*38*	*39*	*38*
	Deficit as Percentage of Demand	--	--	--	--	--

6.6 WATER QUALITY IMPACTS ON RELIABILITY

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.

As discussed in Section 5, the majority of the water supply to the SFPUC RWS is from the Hetch Hetchy Reservoir in the Sierra Nevada Mountains. The Hetch Hetchy Reservoir is considered a very high quality water source due to low total dissolved solid (TDS) concentrations and other factors. Additional water supplies from the Alameda and Peninsula sources come from areas with restricted access to protect the source water quality.

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the RWS to ensure that the SFPUC's water meets or exceeds federal and state drinking water standards. In 2014, the WQD conducted more than 52,000 drinking water tests in the transmission and distribution systems. This is in addition to the extensive treatment process control monitoring performed by the SFPUC's certified operators and online instruments. The SFPUC also has online instruments providing continuous water quality monitoring at numerous locations.

Additionally, the WWD collects water quality samples and monitors water quality within its own distribution system. A copy of the WWD 2014 Annual Water Quality Report, which contains water quality sampling data from 2014, and the SFPUC 2014 water quality report is included as

Appendix G. As can be seen in Appendix G, all of the analyzed constituents were detected at concentrations below the Maximum Contaminant Level (MCL).

The results of WWD's and SFPUC's water quality assessments show that SFPUC RWS watersheds have very low levels of contaminants, and that those contaminants that are found at low levels are associated with wildlife and, to a limited extent, human recreation. For the purposes of this UWMP, it is anticipated that this high-quality potable water source will continue to be available to the WWD through the planning horizon ending in the year 2040. Water quality is expected to be similar for 2015, 2020, 2025, 2030, 2035, and 2040.

6.7 CLIMATE CHANGE IMPACTS TO SUPPLY

Information regarding the impacts of climate change to the SFPUC RWS supply was provided by BAWSCA in coordination with SFPUC and is provided verbatim below:

> The issue of climate change has become an important factor in water resources planning in the State, and is frequently considered in urban water management planning purposes, though the extent and precise effects of climate change remain uncertain. There is convincing evidence that increasing concentrations of greenhouse gasses have caused and will continue to cause a rise in temperatures around the world, which will result in a wide range of changes in climate patterns. Moreover, observational data show that a warming trend occurred during the latter part of the 20th century and virtually all projections indicate this will continue through the 21st century. These changes will have a direct effect on water resources in California, and numerous studies have been conducted to determine the potential impacts to water resources. Based on these studies, climate change could result in the following types of water resource impacts, including impacts on the watersheds in the Bay Area:
>
> - Reductions in the average annual snowpack due to a rise in the snowline and a shallower snowpack in the low and medium elevation zones, such as in the Tuolumne River basin, and a shift in snowmelt runoff to earlier in the year;
> - Changes in the timing, intensity and variability of precipitation, and an increased amount of precipitation falling as rain instead of as snow;
> - Long-term changes in watershed vegetation and increased incidence of wildfires that could affect water quality and quantity;
> - Sea level rise and an increase in saltwater intrusion;
> - Increased water temperatures with accompanying potential adverse effects on some fisheries and water quality;
> - Increases in evaporation and concomitant increased irrigation need; and
> - Changes in urban and agricultural water demand.
>
> Both the SFPUC and BAWSCA participated in the 2013 update of the Bay Area Integrated Regional Water Management Plan (BAIRWMP), which includes an assessment of the potential climate change vulnerabilities of the region's water resources and identifies climate change adaptation strategies. In addition, the SFPUC continues to study the effect of climate change on the Regional Water System (RWS). These works are summarized below.

6.7.1 Bay Area Integrated Regional Water Management Plan

Climate change adaptation was established as an overarching theme for the 2013 BAIRWMP update. As stated in the BAIRWMP, identification of watershed characteristics that could potentially be vulnerable to future climate change is the first step in assessing vulnerabilities of water resources in the Bay Area Region (Region). Vulnerability is defined as the degree to which a system is exposed to, susceptible to, and able to cope with or adjust to, the adverse effects of climate change. A vulnerability assessment was conducted in accordance with the Department of Water Resources' (DWR's) Climate Change Handbook for Regional Water Planning and using the most current science available for the Region. The vulnerability assessment, summarized in the table below, provides the main water planning categories applicable to the Region and a general overview of the qualitative assessment of each category with respect to anticipated climate change impacts.

Summary of BAIRWMP Climate Change Vulnerability Assessment

Vulnerability Areas	General Overview of Vulnerabilities
Water Demand	**Urban and Agricultural Water Demand** – Changes to hydrology in the Region as a result of climate change could lead to changes in total water demand and use patterns. Increased irrigation (outdoor landscape or agricultural) is anticipated to occur with temperature rise, increased evaporative losses due to warmer temperature, and a longer growing season. Water treatment and distribution systems are most vulnerable to increases in maximum day demand.
Water Supply	**Imported Water** – Imported water derived from the Sierra Nevada sources and Delta diversions provide 66 percent of the water resources available to the Region. Potential impacts on the availability of these sources resulting from climate change directly affect the amount of imported water supply delivered to the Region. **Regional Surface Water** – Although future projections suggest that small changes in total annual precipitation over the Region will not change much, there may be changes to when precipitation occurs with reductions in the spring and more intense rainfall in the winter. **Regional Groundwater** – Changes in local hydrology could affect natural recharge to the local groundwater aquifers and the quantity of groundwater that could be pumped sustainably over the long-term in some areas. Decreased inflow from more flashy or more intense runoff, increased evaporative losses and warmer and shorter winter seasons can alter natural recharge of groundwater. Salinity intrusion into coastal groundwater aquifers due to sea-level rise could interfere with local groundwater uses. Furthermore, additional reductions in imported water supplies would lead to less imported water available for managed recharge of local groundwater basins and potentially more groundwater pumping in lieu of imported water availability.

Vulnerability Areas	General Overview of Vulnerabilities
Water Quality	**Imported Water** – For sources derived from the Delta, sea-level rise could result in increases in chloride and bromide (a disinfection by-product (DBP) precursor that is also a component of sea water), potentially requiring changes in treatment for drinking water. Increased temperature could result in an increase in algal blooms, taste and odor events, and a general increase in DBP formation **Regional Surface Water** – Increased temperature could result in lower dissolved oxygen in streams and prolong thermocline stratification in lakes and reservoirs forming anoxic bottom conditions and algal blooms. Decrease in annual precipitation could result in higher concentrations of contaminants in streams during droughts or in association with flushing rain events. Increased wildfire risk and flashier or more intense storms could increase turbidity loads for water treatment. **Regional Groundwater** – Sea-level rise could result in increases in chlorides and bromide for some coastal groundwater basins in the Region. Water quality changes in imported water used for recharge could also impact groundwater quality.
Sea-Level Rise	Sea-level rise is additive to tidal range, storm surges, stream flows, and wind waves, which together will increase the potential for higher total water levels, overtopping, and erosion. Much of the bay shoreline is comprised of low-lying diked baylands which are already vulnerable to flooding. In addition to rising mean sea level, continued subsidence due to tectonic activity will increase the rate of relative sea-level rise. As sea-level rise increases, both the frequency and consequences of coastal storm events, and the cost of damage to the built and natural environment, will increase. Existing coastal armoring (including levees, breakwaters, and other structures) is likely to be insufficient to protect against projected sea-level rise. Crest elevations of structures will have to be raised or structures relocated to reduce hazards from higher total water levels and larger waves.
Flooding	Climate change projections are not sensitive enough to assess localized flooding, but the general expectation is that more intense storms would occur thereby leading to more frequent, longer and deeper flooding. Changes to precipitation regimes may increase flooding. Elevated Bay elevations due to sea-level rise will increase backwater effects exacerbating the effect of fluvial floods and storm drain backwater flooding.

Vulnerability Areas	General Overview of Vulnerabilities
Ecosystem and Habitat	Changes in the seasonal patterns of temperature, precipitation, and fire due to climate change can dramatically alter ecosystems that provide habitats for California's native species. These impacts can result in species loss, increased invasive species ranges, loss of ecosystem functions, and changes in vegetation growing ranges. Reduced rain and changes in the seasonal distribution of rainfall may alter timing of low flows in streams and rivers, which in turn would have consequences for aquatic ecosystems. Changes in rainfall patterns and air temperature may affect water temperatures, potentially affecting coldwater aquatic species. Bay Area ecosystems and habitat provide important ecosystem services, such as: carbon storage, enhanced water supply and quality, flood protection, food and fiber production. Climate change is expected to substantially change several of these services. The region provides substantial aquatic and habitat-related recreational opportunities, including: fishing, wildlife viewing, and wine industry tourism (a significant asset to the region) that may be at risk due to climate change effects.
Hydropower	Currently, several agencies in the Region produce or rely on hydropower produced outside of the Region for a portion of their power needs. As the hydropower is produced in the Sierra, there may be changes in the future in the timing and amount of energy produced due to changes in the timing and amount of runoff as a result of climate change. Some hydropower is also produced within the region and could also be affected by changes in the timing and amount of runoff.

Source: 2013 Bay Area Integrated Regional Water Management Plan (BAIRWMP), Table 16-3.

6.7.2 SFPUC Climate Change Studies

The SFPUC views assessment of the effects of climate change as an ongoing project requiring regular updating to reflect improvements in climate science, atmospheric/ocean modeling, and human response to the threat of greenhouse gas emissions. Climate change research by the SFPUC began in 2009 and continues to be refined. In its 2012 report "Sensitivity of Upper Tuolumne River Flow to Climate Change Scenarios," the SFPUC assessed the sensitivity of runoff into Hetch Hetchy Reservoir to a range of changes in temperature and precipitation due to climate change. Key conclusions from the report include the following:

- With differing increases in temperature alone, the median annual runoff at Hetch Hetchy would decrease by 0.7-2.1 percent from present-day conditions by 2040 and by 2.6-10.2 percent from present-day by 2100. Adding differing decreases in

precipitation on top of temperature increases, the median annual runoff at Hetch Hetchy would decrease by 7.6-8.6 percent from present-day conditions by 2040 and by 24.7-29.4 percent from present-day conditions by 2100.

- In critically dry years, these reductions in annual runoff at Hetch Hetchy would be significantly greater, with runoff decreasing up to 46.5 percent from present day conditions by 2100 utilizing the same climate change scenarios.
- In addition to the total change in runoff, there will be a shift in the annual distribution of runoff. Winter and early spring runoff would increase and late spring and summer runoff would decrease.
- Under all scenarios, snow accumulation would be reduced and snow would melt earlier in the spring, with significant reductions in maximum peak snow water equivalent under most scenarios.

Currently, the SFPUC is planning to conduct a comprehensive assessment of the potential effects of climate change on water supply. The assessment will incorporate an investigation of new research on the current drought and is anticipated to be completed in late 2016 or early 2017.

6.8 WATER MANAGEMENT TOOLS

Per California Water Code Section 10631 (c)(2), water suppliers are required to describe the management strategies that have been, or will be, employed to address the constraints on water sources. The supply versus demand assessment presented in Section 6.5 has shown that, based on the delivery estimates of the SFPUC wholesale water and WWD's future water demand estimates, the WWD is expected to have adequate water supplies during normal years and dry years to meet its projected demands through 2040.

The WWD has been implementing, and plans to continue to implement, the demand management measures described in Section 8. At a regional level, the WWD maintains active involvement in work that BAWSCA and the SFPUC are doing with respect to BAWSCA's Long Term Reliable Water Supply Strategy (see Section 6.1) and SFPUC's Water Management Action Plan, including supporting the investigation and pursuit of additional water supplies.

Further, in response to potential future dry-year shortfalls, the WWD has developed a robust WSCP that systematically identifies ways in which WWD can reduce water demands. The WSCP is included in Section 7.

7. WATER SHORTAGE CONTINGENCY PLANNING

This section presents WWD's Water Shortage Contingency Plan (WSCP), which has been developed to serve as a flexible framework of planned response measures to mitigate future water supply shortages. This WSCP builds upon and supersedes the current WSCP that was presented in the 2010 UWMP. Updates to the current WSCP reflect lessons learned during the recent drought and are intended to improve WWD's ability to respond effectively and efficiently in the event of a future water supply shortage or emergency.

7.1 GUIDING PRINCIPLE

Given WWD's low per capita water use (i.e., 66 GPCD in 2015), significant drought reductions may be difficult to achieve. As such, the WWD developed this WSCP based on the following guiding principle:

> *Eliminate water waste, prioritize the reduction of non-essential water uses, and preserve water uses that are essential to the health, safety, welfare, and economic vitality of WWD's customers during periods of water shortage.*

Practically, this principle guides WWD to ask for a shared contribution from all of its customers towards meeting water use reduction goals during periods of water shortage. It further directs WWD to focus its water conservation efforts on reducing discretionary water uses such as outdoor irrigation, while attempting to minimize economic and other impacts to its residential and commercial customers.

7.2 METHODOLOGY

To assist in development of the WSCP, WWD used the Drought Response Tool (DRT)[11], an Excel spreadsheet model. The DRT provides a quantitative framework that allows the WWD to:

- Evaluate a pre-drought baseline water use by each water use sector and major end use (i.e., indoor versus outdoor water use);
- Identify water use sectors and end uses to target for water savings;
- Evaluate a menu of drought response actions to implement in each stage of action; and
- Estimate the water savings potential of the responses selected for each stage of action based on assumed implementation and water savings rates.

Data inputs to the DRT are largely consistent with data that has been reported herein and to the SWRCB in response to Resolution 2015-0032 via the DRINC Portal (www.drinc.ca.gov), including total production, residential water use and population. The Drought Response Actions section of the DRT is designed to be highly modifiable, in order to allow users to explore the potential water savings associated with implementing different sets of actions, based on varying levels of implementation, and their understanding of their own community and the water savings potential. A detailed Drought Response Tool User's Guide is provided in Appendix H, which

[11] © 2015 Erler & Kalinowski, Inc.

walks the user through the model structure, and the key input parameters, assumptions and calculations that form the basis for the DRT.

7.3 BASELINE WATER USE PROFILE

Using the DRT, WWD developed a pre-drought baseline water use profile that reflected usage patterns within the WWD service area by major water use sector between 2010 and 2014 (selected as a representative "pre-drought" period) and that was used to guide development of the WSCP. Key findings from this analysis are presented below.

Residential Per Capita Demand

The WWD's baseline residential gallons per capita per day (R-GPCD) demand between 2010 and 2014 was approximately 51 R-GPCD. This R-GPCD is significantly less than the average BAWSCA-wide average of 77 R-GPCD[12] and the statewide average of 109 R-GPCD[13]. The WWD has among the lowest residential per capita water use of the BAWSCA agencies and across the State.

Proportion of Outdoor Water Use

As shown on Table 7-1, outdoor water use, which can generally be considered as a "discretionary water use", was estimated to be approximately 13% of the WWD's total consumption during this pre-drought time period. Dedicated irrigation meters accounted for 10% of the total irrigation demand, indicating that the majority of outdoor water use within the WWD service area is separately metered and can be directly tracked and targeted. The seasonal variation in baseline water use reflects increased irrigation demands during the summer and fall months. Therefore, the greatest potential for reductions in non-essential water use is expected during these months.

[12] Average BAWSCA R-GPCD between 2010 and 2014 calculated from data provided in BAWSCA FY 2013-2014 Annual Survey (BAWSCA, 2015).
[13] Average state-wide R-GPCD for 2013 calculated using state-wide residential water use and population provided in the California SWRCB Water Conservation Portal (SWRCB, 2016).

Table 7-1 Baseline (2010-2014) Water Use Profile

Sector	End-Use	Baseline (2010-2014) Average Water Use (MG)							Annual % of Total by Sector
		January - February	March - April	May - June	July - August	September - October	November - December	Annual	
Residential	Indoor	36	38	38	38	38	38	225	97%
	Outdoor	0.6	0	3	2	2	0.4	8	3%
	Subtotal Residential	*37*	*38*	*40*	*40*	*40*	*38*	*233*	-
CII	Indoor	3	3	3	3	3	3	16	88%
	Outdoor	0.1	0.1	0.7	0.8	0.6	0	2	12%
	Subtotal CII	*3*	*3*	*3*	*4*	*3*	*3*	*19*	-
Dedicated Irrigation	Outdoor	2	3	9	10	8	1	32	100%
Non-Revenue	Non-Revenue	3	2	2	9	5	7	28	100%
Total	Indoor	39	40	40	41	40	40	242	77%
	Outdoor	2	3	12	12	11	2	42	13%
	Non-Revenue	3	2	2	9	5	7	28	9%
	Total	**44**	**45**	**55**	**62**	**56**	**49**	**312**	-

NOTES: Indoor water use was estimated to be the lowest monthly water use for each sector, accounting for the number of days in each month. Outdoor water use for each sector was estimated to be the difference between the total water use and the estimated indoor water use.

Historical Drought Response

As described below, water savings achieved by WWD during 2015 in response to the recent historic drought support the findings of the baseline water use profile (i.e., that discretionary uses can be targeted to achieve necessary water savings).

On 1 April 2015, Governor Brown issued the fourth in a series of Executive Orders regarding actions necessary to address California's severe drought conditions. Executive Order B-29-15 directed the SWRCB to impose the first ever mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage through February 2016.[14] The Executive Order also requires commercial, industrial, and institutional (CII) users to implement water efficiency measures, prohibits irrigation with potable water of ornamental turf in public street medians, and prohibits irrigation with potable water outside newly constructed homes and buildings that is not delivered by drip or microspray systems, along with numerous other directives.

On 5 May 2015, the SWRCB adopted Resolution 2015-0032 that mandates minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigns a

[14] Executive Order B-29-15 located online at https://www.gov.ca.gov/docs/11.13.15_EO_B-36-15.pdf, accessed 2 March 2016.

mandatory water conservation savings goal to each water supplier based on their R-GPCD. The Office of Administrative Law approved the regulations and modified the CWC on 18 May 2015. On 2 February 2016, the SWRCB voted to extend the emergency regulations until October 2016 with some modifications.[15] On 9 May 2016, the Governor issued Executive Order B-37-16, which directed the SWRCB to extend the emergency regulations through the end of January 2017 as well as make certain water use restrictions permanent. On 18 May 2016, the SWRCB adopted Resolution 2016-0029 that adjusts the water conservation savings goal and replaces the February 2016 emergency regulation. The SWRCB is expected to take separate action to make some of the requirements of the regulations permanent in response to the Executive Order.

The mandatory conservation standards included in CWC Section 865(c) range from 8% for suppliers with an R-GPCD below 65 R-GPCD, up to 36% for suppliers with an R-GPCD of greater than 215 GPCD. As with previous emergency drought regulations adopted by the SWRCB in 2014, the new water conservation regulation was primarily intended to reduce outdoor urban water use. Based on their R-GPCD, WWD was required to reduce water use by 8% relative to its 2013 water use.

Prior to the 2015 SWRCB Resolution, the WWD Board of Directors adopted Ordinance No. 64 (see Appendix J) to respond to the 2014 SWRCB actions. Ordinance No. 64 put forth various prohibitions that targeted water waste and placed restrictions on discretionary outdoor uses, including limiting landscape irrigation to two days a week, for 15 minutes a day. The Ordinance remained in place to meet the 2015 SWRCB-mandated reduction target. As of March 2016, WWD's performance in response to the drought exceeded Statewide and Bay Area water savings by as much as 18% (SWRCB, 2016).

7.4 STAGES OF ACTION

> *10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.*

As described in the supply versus demand analysis presented Section 6.5, it is unlikely that the WWD will experience water shortages in reasonably foreseeable drought conditions over the planning horizon. However, WWD could be required to respond to a voluntary or mandatory cutback by the SFPUC or another governing authority (e.g., the SWRCB) in the event of a drought. For example, the SFPUC called for voluntary 10% rationing in 2007-2009, 2014, and 2015 and the SWRCB established mandatory water use reduction targets in response to the recent drought.

[15] Adopted text of the extend Emergency Regulations located online at http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/emergency_reg/final_reg_enacted.pdf accessed on 2 March 2016

Consequently, WWD has updated the stages of action to be taken in response to water supply shortages based on lessons learned during the recent historic drought. This WSCP establishes four stages of increasingly restrictive stages of action to be implemented in response to water supply reductions, including a 50% supply reduction as required by CWC Section 10632(a). Table 7-2 summarizes the water supply reductions and supply conditions associated with each stage of action.

Table 7-2 – Stages of Water Shortage Contingency Plan (DWR Table 8-1)

Stage	Percent Supply Reduction[1]	Water Supply Condition
1	Up to 5%	Declaration by the Board of Directors upon the determination that the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use due to water supply shortages or an emergency.
2	Up to 10%	
3	Up to 20%	
4	Up to 50%	
[1] One Stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		

As shown in Table 7-2, each stage of action is implemented with a formal declaration by the Board of Directors upon the determination that the SFPUC or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use due to a water supply shortage or emergency.

Specific prohibitions and consumption reduction methods in each stage of action are discussed in more detail below. The resultant monthly and cumulative annual water savings associated with each restriction, prohibition and consumption reduction method were quantitatively estimated using the DRT for each stage of action, see Appendix I.

7.5 PROHIBITIONS ON END USES

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.

Restrictions and prohibitions associated with each stage of action are presented below and in Table 7-3. As discussed above, these responses focus on the reduction of non-essential water uses such as ornamental landscape irrigation, and preserve water uses that are vital to the health, safety, welfare, and economic vitality of WWD's customers. Lower stages of the WSCP focus on guiding customer actions through prohibitions on end uses, while subsequent stages of the WSCP include increasingly restrictive prohibitions and conformance with water allocations that will be assigned to each customer account. Table 7-3 also lists WWD's mandatory prohibitions against water waste which are in place at all times (see Section 8.2.1).

- Stage 1: Mandatory program with the goal of up to 5% overall reduction
    - Use of water for recreation toys and equipment is prohibited.
    - Use of water through a hose or pressure washer to clean the exterior of any building, home, or driveway is prohibited, except prior to painting or if required for health or safety purposes.
    - Watering or irrigating of lawn or landscape is prohibited between the hours of 8:00 a.m. and 7:00 p.m.
    - Leaks, breaks, and malfunctions must be repaired in a timely manner.
    - Other measures as may be approved by the Board of Directors.
- Stage 2: Mandatory program with the goal of up to 10% overall reduction
    - Continue with actions and measures from Stage 1 except where superseded by more stringent requirements.
    - Limiting water duration to 15 minutes per day and two days per week.
    - Water use not to exceed voluntary water allocations established by WWD for each customer.
    - Other measures as may be approved by the Board of Directors.
- Stage 3: Mandatory program with the goal of up to 20% overall reduction
    - Continue with actions and measures from Stages 1 and 2 except where superseded by more stringent requirements.
    - Limiting water duration to 10 minutes per day and one day per week.
    - Filling of swimming pools is prohibited.
    - Vehicle washing is prohibited, except at facilities using recycled or recirculating water.
    - Leaks, breaks, and malfunctions must be repaired within 24 hours of notification.
    - No new water-using landscape may be installed by any customer.
    - No new potable water service shall be provided, including new temporary meters or permanent meters.
    - Water use shall not exceed water allocations established by WWD for each customer.
    - Other measures as may be approved by the Board of Directors.
- Stage 4: Mandatory program with the goal of up to 50% overall reduction
    - Continue with actions and measures from Stages 1 through 3 except where superseded by more stringent requirements.
    - Use of potable water for construction and dust control is prohibited.
    - No potable water service is provided to landscape accounts.
    - Other measures as may be approved by the Board of Directors.

Table 7-3 – Restrictions and Prohibitions on End Uses (DWR Table 8-2)

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
Mandatory Prohibition (Ordinance No. 64)	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	The use of water through a commercial meter when the customer has been given a 7-day notice to repair a broken or defective plumbing or sprinkler system is prohibited	Yes
Mandatory Prohibition (Ordinance No. 64)	Landscape - Restrict or prohibit runoff from landscape irrigation	Use of potable water which results in excessive flooding or runoff in gutters, sidewalk, driveway or street is prohibited.	Yes
Mandatory Prohibition (Ordinance No. 64)	Other - Require automatic shut of hoses	Use of potable water for washing any automobiles, motorcycles, RV's, trucks, trailers, and boats without a shut-off nozzle or device attached that causes it to cease dispensing water immediately when not in use is prohibited.	Yes
Mandatory Prohibition (Ordinance No. 64)	CII - Restaurants may only serve water upon request	--	Yes
Mandatory Prohibition (Ordinance No. 64)	Other - Prohibit use of potable water for washing hard surfaces	The use of water for city street sweepers/washers is prohibited, except when approved by the District.	Yes
Mandatory Prohibition (Ordinance No. 64)	Water Features - Restrict water use for decorative water features, such as fountains	The use of water in non-recirculating water fountains and decorative water features is prohibited.	Yes
Mandatory Prohibition (Executive Order B-37-16)	Other - Prohibit use of potable water for washing hard surfaces	Use of potable water for washing sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surface areas is prohibited.	Yes
Mandatory Prohibition (Executive Order B-37-16)	Water Features - Restrict water use for decorative water features, such as fountains	Use of potable water to clean, fill, or maintain levels in fountains, including recirculating fountains is prohibited.	Yes
Mandatory Prohibition (Executive Order B-37-16)	Landscape - Restrict or prohibit runoff from landscape irrigation	The application of potable water to outdoor landscapes is prohibited in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.	Yes

Table 7-3 – Restrictions and Prohibitions on End Uses (DWR Table 8-2)

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
Mandatory Prohibition (Executive Order B-37-16)	Landscape - Other landscape restriction or prohibition	The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall.	Yes
Mandatory Prohibition (Executive Order B-37-16)	Landscape - Other landscape restriction or prohibition	The irrigation with potable water of ornamental turf on public street medians.	Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Use of water for recreation toys and equipment is prohibited.	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Use of water through a hose or pressure washer to clean the exterior of any building, home, or driveway is prohibited, except prior to painting or if required for health or safety purposes.	Yes
1	Landscape - Limit landscape irrigation to specific times	Watering or irrigating of lawn or landscape is prohibited between the hours of 8:00 a.m. and 7:00 p.m.	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	--	Yes
2	Landscape - Limit landscape irrigation to specific days	Limiting water duration to 15 minutes per day and two days per week.	Yes
2	Other	Water use not to exceed voluntary water allocations established by WWD for each customer.	No
3	Landscape - Limit landscape irrigation to specific days	Limiting water duration to 10 minutes per day and one day per week.	Yes
3	Pools - Allow filling of swimming pools only when an appropriate cover is in place.	Filling of swimming pools is prohibited.	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	--	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Leaks, breaks, and malfunctions must be repaired within 24 hours of notification.	Yes

Table 7-3 – Restrictions and Prohibitions on End Uses (DWR Table 8-2)

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Other	No new water-using landscape may be installed by any customer.	Yes
3	Other	No new potable water service shall be provided, including new temporary meters or permanent meters.	Yes
3	Other	Water use shall not exceed water allocations established by WWD for each customer.	Yes
4	Other - Prohibit use of potable water for construction and dust control	--	Yes
4	Landscape - Prohibit all landscape irrigation	No potable water service is provided to landscape accounts.	Yes
NOTES: All water use prohibitions and requirements established in each lower WSCP stage remain in effect in the subsequent WSCP stages.			

As shown above, WWD may develop and prescribe water allocations to each customer account during higher WSCP stages (i.e., Stages 2 through 4). Table 7-4 further describes potential allocations that could be distributed between water use sectors, in order to collectively achieve the target water savings associated with each stage of action.

Table 7-4 – Potential Water Allocations by Customer Sector

Customer Category	Potential Water Allocations			
	Stage 1	Stage 2	Stage 3	Stage 4
Single Family or Multi-Family Unit	--	5.6 ccf / month	5.6 ccf / month	3.7 ccf / month
Commercial Customer	--	90%	90%	70%
Irrigation Customer	--	50%	25%	0%
NOTES: Water Allocations for a commercial and irrigation customer are presented as the percentage of water use compared to the customer's baseline water use.				

7.5.1 Defining Water Features

> *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.*

As required by CWC Section 10632, WWD distinguishes between "decorative water features" such as ponds, lakes, and fountains that are artificially supplied with water and "recreational water features" such as swimming pools and spas. Prohibitions on water use for decorative water features are listed separately from those for recreational water features (see Table 7-3).

7.6 PENALTIES, CHARGES AND OTHER ENFORCEMENT

> *110632. (a) (6) Penalties or charges for excessive use, where applicable.*

Enforcement of WWD's water use restrictions and prohibitions is focused on soliciting cooperation from water customers who are unaware of the restrictions or have failed to comply with the provisions of the WSCP. If discussions with the customer are unsuccessful in obtaining compliance, the WWD is authorized to issue penalties to customers that violate the restrictions and prohibitions per Ordinance No. 64. Actions range from violation notices, a citation, or discontinuance of water service. The WWD may also implement an excess water use charge in coordination with water allocations in higher WSCP stages.

7.7 CONSUMPTION REDUCTION METHODS

> *10632. (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.*

As discussed above, the WSCP lists the consumption reduction methods that WWD will implement during each stage of action to reduce WWD's own water consumption and encourage reduction in water use by its customers. Consumption reduction methods associated with each stage of action are presented in Table 7-5. The monthly and cumulative annual water savings impacts associated with each restriction, prohibition and consumption reduction method were quantitatively estimated using the DRT for each stage of action, see Appendix I.

- Stage 1: Mandatory program with the goal of up to 5% overall reduction
    - Inform customers that there is a water shortage emergency and the list of actions they can take to reduce water use (e.g., via direct mail, bill inserts, etc.).

- Conduct coordination with BAWSCA, SFPUC, and California Water Service Company.
- Schedule staff for enforcement and customer service.

- Stage 2: Mandatory program with the goal of up to 10% overall reduction
  - Continue with actions and measures from Stage 1.
  - Develop a voluntary water allocation program for all accounts and notice those accounts appropriately.
  - Increase public outreach, including information regarding fines or penalties for non-compliance.
  - Increase public outreach, including hosting public events and workshops.
  - Increase leak detection.
  - Accelerate water conservation program implementation.
- Stage 3: Mandatory program with the goal of up to 20% overall reduction
  - Continue with actions and measures from Stages 1 and 2.
  - Develop a mandatory water allocation program for all accounts and notice those accounts appropriately.
  - Impose an excess water use charge with the implementation of water allocations.
  - Require fixture retrofits prior to review of customer hardship exemptions from prohibitions and restrictions.
  - Establish moratorium on new connections and new landscaping.
  - Increase enforcement and water waste patrols.
  - Suspend routing flushing of water mains.
- Stage 4: Mandatory program with the goal of up to 50% overall reduction
  - Continue with actions and measures from Stages 1 through 3
  - Switch to more frequent (e.g. monthly) billing.
  - Suspend water service to landscape accounts.

Table 7-5 – Stages of Water Shortage Contingency Plan - Consumption Reduction Methods (DWR Table 8-3)

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
1	Expand Public Information Campaign	Inform customers that there is a water shortage emergency and the list of actions they can take to reduce water use (e.g., via direct mail, bill inserts, etc.).
1	Other	Conduct coordination with BAWSCA, SFPUC, and California Water Service Company.

Table 7-5 – Stages of Water Shortage Contingency Plan - Consumption Reduction Methods (DWR Table 8-3)

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
1	Increase Water Waste Patrols	Schedule staff for enforcement and customer service.
2	Other	Develop a voluntary water allocation program for all accounts and notice those accounts appropriately.
2	Expand Public Information Campaign	Increase public outreach, including information regarding fines or penalties for non-compliance.
2	Expand Public Information Campaign	Increase public outreach, including hosting public events and workshops.
2	Reduce System Water Loss	Increase leak detection.
2	Provide Rebates on Plumbing Fixtures and Devices	Accelerate water conservation program implementation.
3	Other	Develop a mandatory water allocation program for all accounts and notice those accounts appropriately.
3	Implement or Modify Drought Rate Structure or Surcharge	Impose an excess water use charge with the implementation of water allocations.
3	Other	Require fixture retrofits prior to review of customer hardship exemptions from prohibitions and restrictions.
3	Increase Water Waste Patrols	--
3	Decrease Line Flushing	Suspend routing flushing of water mains.C
4	Increase Frequency of Meter Reading	--
4	Other	Suspend water service to landscape accounts.
4	Moratorium or Net Zero Demand Increase on New Connections	Establish moratorium on new connections and new landscaping.
NOTES: Actions and measures from each lower WSCP stage are continued in subsequent higher WSCP stages.		

A main focus of WWD's planned consumption reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. The public outreach efforts that WWD will implement to respond to a water shortage are described in Section 7.13.2.

Consumption reduction methods also include measures to reduce system losses through a reduction in line flushing, implementation of water allocations and excess water use charges, increased enforcement and patrols, and in certain conditions, enforcing a moratorium on new connections.

7.8 DETERMINING WATER SHORTAGE REDUCTIONS

10632. (a) (9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

The WWD monitors water use through analysis of wholesale water purchases and customer meter readings. The WWD reads meters installed on each of its supply turnouts to monitor wholesale water purchases. In addition, each customer account is metered. Some large landscape sites, including City parks and schools, have irrigation meters to monitor water use for landscape irrigation separately from indoor uses.

The WWD reads all meters read on a bi-monthly basis. During a supply shortage, WWD will continue to monitor water use on this schedule to determine the effectiveness of the customer response to the implementation of this WSCP. If necessary, WWD may increase the frequency of meter readings

7.9 REVENUE AND EXPENDITURE IMPACTS

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.

Implementation of the WSCP will lead to reduced water sales and revenues to WWD. To minimize the potential financial impacts of implementing this WSCP, WWD maintains a capital reserve fund that accumulates during non-drought years. These reserves can be used to offset revenue lost due to reduced water sales in emergency or water shortage conditions. When water allocation programs are implemented, WWD plans to increase water rates or implement an excess water use charge.

The administration of the WSCP will also have an impact on WWD's general and administrative costs. These costs will be considered whenever the District's budget is next adopted. Revenue from excess use charges as result of implementation of the water allocation program can also be applied towards the administration of the WSCP to help offset the revenue shortfalls.

7.10 WATER SHORTAGE CONTINGENCY ORDINANCE AND RESOLUTION

10632 (a) (8) A draft water shortage contingency resolution or ordinance.

The WWD has had actual experience in the implementation of programs similar to Stages 1 through 3 of this WSCP. The ordinances implementing the past water shortage contingency programs will serve as the model ordinances for any future programs. A draft ordinance is included as Appendix J.

7.11 CATASTROPHIC SUPPLY INTERRUPTION PLAN

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.

Catastrophic supply interruptions may be caused by a regional power outage, an earthquake, or other disaster. The WWD benefits from two levels of emergency planning: planning by SFPUC and its own emergency planning work. In the event of a catastrophic supply interruption, the response procedures that the WWD would follow are described in:

- SFPUC Emergency Operations Plan (EOP);
- San Mateo County's Operational Area EOP Potable Water Procurement and Distribution Annex; and
- WWD EOP.

Actions described in the SFPUC EOP focus on maintaining flow within, and from, the RWS pipelines. The WWD EOP specifically addresses several potential emergency response scenarios in the local water distribution system, particularly including earthquakes, major pipeline breaks, and bacterial or chemical contamination of the water supply.

Together, these EOPs provide the framework for responding to major emergencies or disasters associated with natural disasters, technological incidents, and national security/terrorism emergencies. Sections of these EOPs outline specific strategies to prepare for, mitigate, respond to, and recover from an emergency or disaster that affects the water utilities that serve the population within San Mateo County and the WWD service area, in particular.

WWD's emergency planning efforts are summarized below.

7.11.1 WWD Emergency Operations Plan

The WWD has a written EOP, designed to provide guidance and direction for the activities of WWD's staff both during a water supply or water quality emergency and in mobilizing the post disaster response. Key provisions of the EOP are summarized below:

7.11.1.1 Readiness

The WWD's primary emergency operations center would be created at the District office, at 2263 Westborough Boulevard in South San Francisco. The WWD office is equipped with radios, telephones, telemetry equipment for operating the system, spare parts, emergency equipment, and supplementary documents and supplies. Diagrams and summaries for activating the interconnections with adjoining water systems are available. In addition, equipment for portable hydrant systems is available at WWD's office. The emergency operations center would be the central point of coordination for government services, communications, and emergency public information.

Communication protocols have been established and damage evaluation procedures have been defined. In the immediate period following a major disaster, such as an earthquake, WWD's initial task would be to evaluate the water supply system and to isolate breaks in order to minimize water losses as quickly as possible.

The emergency operating center staffing would include the General Manager or his designee plus additional staff to help coordinate disaster control activities and communicate with the public. Other key WWD personnel would be assigned specific roles depending on the magnitude of the emergency as well as the time of occurrence. On non-business days and after hours, WWD maintains 24-hour response capability with the assignment of trained on-call workers who can be summoned by calls from the WWD answering service or the local Police and Fire Departments.

The WWD has assembled an inventory of equipment and spare parts, and maintains key vehicles in a "ready to respond" condition. The WWD also has arrangements with West Valley Construction for emergency backhoe and underground work, in the event there is more damage than WWD staff can manage. West Valley crews would assemble at the WWD Office and be taken to the emergency work site by WWD personnel who would also be responsible for operating the valves to isolate the break and oversee the emergency repair work.

7.11.1.2 Response

The goal of WWD's post disaster response actions is to maintain the water transmission and storage system intact and operational to the greatest extent possible. Emergency response protocols specify the leadership role of the on-call worker if the emergency is in off-hours. The response plan is very specific with regard to operating protocols for the supply pumps and the monitoring of tank levels to ascertain the presence of significant leaks or pipeline breaks. The San Andreas Fault runs through WWD, and WWD must be prepared for the possibility of pipeline breaks due to fault rupture.

Procedures for maintaining communication with the on-site personnel and other emergency service workers such as fire and police operations are established, as are the procedures for activating interconnections with either of two adjoining water distribution systems (i.e., NCCWD and Daly City).

The EOP also calls for staff at the emergency operations center to assemble information logs on the service activities, equipment and material used, estimates of damage, records of mutual aid or assistance requested, financial expenditures, etc. If necessary, the Board of Directors would be contacted for authorization of emergency expenditures.

The repair or shut down work would be coordinated from the WWD Office and field crews would report progress to the emergency operations team. Regular progress reports would then be filed with the appropriate Police and/or Fire Department personnel.

7.11.1.3 Interties and Back-Up Supplies

As noted in Section 2.3, WWD has interties with the adjoining water systems operated by the NCCWD and the City of Daly City, and WWD shares a water storage tank with the NCCWD. Since these agencies are largely supplied by the SFPUC, these sources may not be available during a drought or regional disaster, but they could be used to augment supplies in the event of a local emergency.

7.12 ESTIMATE OF MINIMUM SUPPLY FOR NEXT THREE YEARS

10632 (a) (2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

The minimum water supply available during the next three years during multiple dry years is presented in Table 7-6. The dry-year supply estimates are based on the delivery estimates provided by BAWSCA and SFPUC as part of the 2015 UWMP update process (SFPUC, 2016; BAWSCA, 2016; Appendix F) and per hypothetical application of the Tier 1 and Tier 2 allocation processes described in Section 6. The available water supplies estimated for 2017 and 2018 are less than the multiple dry year supplies scenarios discussed in Section 6, which apply to years 2020 and later. Prior to 2020, the anticipated completion date of the Water System Improvement Program, the SFPUC has projected lower drought year allocations.

Table 7-6 – Minimum Supply Next Three Years (DWR Table 8-4)

	Projected Minimum Water Supply (MG)		
	2016	2017	2018
Available Water Supply	351	297	297

7.13 WATER SHORTAGE CONTINGENCY PLAN IMPLEMENTATION

This section describes how the WSCP will be implemented.

7.13.1 Water Shortage Declaration and Termination Procedures

The provisions of each water shortage stage of action are triggered upon the Board of Director's determination that a Governing Authority has required WWD to achieve a voluntary or mandatory reduction in water use because of water shortage conditions.

The stages of action will become effective after the Board of Directors declares a particular stage of action and WWD has published notice of this determination. Once effective, the provisions of a water shortage stage of action will stay in effect until (1) a different stage of

action is declared; or (2) the Board of Directors determines that the water shortfall condition no longer exists and WWD has published notice of this determination.

After the termination of the water shortage conditions, WWD will oversee any remaining termination and WSCP review activities. These activities could include:

- Publicize gratitude for the community's cooperation.
- Restore water utility operations, organization, and services to pre-event levels.
- Document the event and response and compile applicable records for future reference.
- Collect cost accounting information, assess revenue losses and financial impact, and review deferred projects or programs.
- Debrief staff to review effectiveness of actions, to identify the lessons learned, and to enhance response and recovery efforts in the future.
- Update the WSCP, as needed.

7.13.2 Public Outreach

Even before formal declaration of a water shortage, a public information program will be activated to provide customers with as much advance notice as possible. Following declaration of a shortage, WWD customers would need to be provided notice of water shortage rules and regulations via a variety of media and communications methods.

Coordination between WWD and with other public agencies can begin prior to formal declaration of a water shortage and can be accomplished through regular meetings, e-mail group updates, and presentations. The WWD will coordinate with California Water Service Company which serves portions of the City not included in WWD's service area, to ensure that City residents are aware of which water service area they reside in and the particular water shortage restrictions that apply. In a regional water shortage scenario, WWD would use the public outreach resources and materials provided by BAWSCA and/or the SFPUC. In addition to these materials, WWD may develop its own materials to communicate with customers, such as a dedicated customer service hotline, and expand its normal public outreach to support its water conservation efforts (see Section 8).

7.13.3 Staff Resources

As discussed in Section 8.2.6, WWD currently has two staff members that jointly share the responsibilities for water conservation. Staff time dedicated to water conservation and enforcement action will increase with the severity of a supply shortage. Additional duties may be assigned to current WWD employees or hiring of temporary staff may be considered to meet staffing needs during extreme water shortages.

8. DEMAND MANAGEMENT MEASURES

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.
(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.*

This section provides an overview of WWD's current and planned demand management measures (DMMs), which include specific types and groupings of water conservation measures typically implemented by water suppliers; the DMMs are closely aligned with the California Urban Water Conservation Council Best Management Practices. The WWD administers several of its DMMs through participation in BAWSCA's Regional Water Conservation Program. The following sections describe BAWSCA's Regional Water Conservation Program and the nature and extent of the specific DMMs implemented by WWD.

8.1 REGIONAL WATER CONSERVATION

The WWD participates in BAWSCA's Regional Water Conservation Program, as a part of its overall water conservation program. The BAWSCA Regional Water Conservation Program is a two-tier program, consisting of "Core Programs" and "Subscription Programs," and is open to all member agencies. The BAWSCA Regional Water Conservation Program is implemented consistent with the intent of its Water Conservation Implementation Plan (BAWSCA, 2009), which was developed with input from the member agencies and serves as a coordinated, regional plan for implementing water conservation throughout the BAWSCA service area. Although the program was designed and available at a regional level, most of the implementation of the individual programs within the WWD service area is done by WWD staff.

The Core Programs provided as a part of the Regional Water Conservation Program include conservation measures that benefit from regional implementation and provide overall regional benefit, and are funded through the annual BAWSCA budget. Measures provided across the BAWSCA service area as part of the Core Program include regional messaging, public outreach, landscape water efficiency education classes and tools, native garden tours and

symposiums, support for adoption of local indoor and outdoor water efficiency ordinances, and access to BAWSCA's water conservation database.

The Subscription Programs are conservation measures that individual agencies must elect to participate in, and whose benefits are primarily realized within individual water agency service areas. As such, the Subscription Programs are funded by individual member agencies, based on their participation level. The WWD actively participates in some Subscription Programs, which include:

- High-Efficiency Toilet (HET) Rebates, and
- High-Efficiency Residential Washing Machine Rebates.

The WWD's implementation, and participation in, the Core and Subscription Programs are described in detail below, as they relate to WWD's implementation of the DMMs.

8.2 AGENCY WATER CONSERVATION

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.

The WWD implements each of the DMMs as described below.

8.2.1 DMM 1 – Water Waste Prevention Ordinances

As discussed in Section 7, WWD adopted Ordinance No.64 to prohibit wasteful water use within the District. Prohibitions to prevent water waste are to remain in place at all times, irrespective of water supply conditions. In addition, on 9 May 2016, Governor Brown issued Executive Order B-37-16 that directed the SWRCB to make permanent certain mandatory restrictions that were imposed previously as part of the 2014 and 2015 emergency drought regulations.

Ordinance No. 64 together with the anticipated SWRCB regulations in response to Executive Order B-37-16 prohibits the following water uses on a permanent, year-round basis:

- The use of water through a commercial meter when the customer has been given a 7-day notice to repair a broken or defective plumbing or sprinkler system.
- Use of potable water which results in excessive flooding or runoff in gutters, sidewalk, driveway or street.
- Use of potable water for washing any automobiles, motorcycles, RV's, trucks, trailers, and boats without a shut-off nozzle or device attached that causes it to cease dispensing water immediately when not in use.
- The service of drinking water in restaurants and cafes except upon request.
- The use of water for city street sweepers/washers, except when approved by the District.
- The use of water in non-recirculating water fountains and decorative water features.

- Use of potable water for washing sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surface areas.
- Use of potable water to clean, fill, or maintain levels in fountains, including recirculating fountains.
- The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
- The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall.
- The irrigation with potable water of ornamental turf on public street medians.

8.2.2 DMM 2 – Metering

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.
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.

The WWD has installed water meters on each water service connection, with the exception of fire services. All of the meters within the WWD service area are read on a bi-monthly basis. Some large irrigation sites, including City parks and schools, also have separate irrigation meters to monitor water use for landscape irrigation separately from indoor uses. The State's MWELO requires non-residential projects to install a separate irrigation meter if landscaped areas meet specific size thresholds, as discussed in Section 3. The District's Indoor Water Conservation Regulations (Ordinance No. 58) also requires sub-meters in multi-family residential buildings and separate meters for landscape areas larger than 5,000 square feet.

8.2.3 DMM 3 – Conservation Pricing

The WWD's current water rate structure for all customers includes a fixed service charge plus a uniform water rate for all customers. The service charges are billed bi-monthly by the size of the each customer's meter; the current water rate is $5.91 per unit[16].

8.2.4 DMM 4 – Public Education and Outreach

The WWD implements a number of public education and outreach initiatives with support from the BAWSCA Regional Water Conservation Program. Examples of WWD's public outreach materials are included in Appendix J. Specific initiatives include:

- Water efficient landscape education classes: The WWD advertises the series of Water-Efficient Landscape Education Classes developed by BAWSCA that are free to the

[16] One unit equals to 748 gallons or 100 cubic feet.

public and are designed to introduce homeowners and landscape professionals to the concepts of sustainable landscape design. The classes focus on creating beautiful, water-efficient gardens as an alternative to lawns. Examples of specific class topics include “Lawn Replacement 101”, “Drought Tolerant Plants”, and “From Graywater to Green Garden”, among others.

- Informative website, online tools, or social media: The WWD maintains pages on its website (www.westboroughwater.com) that are dedicated to its water conservation program. The website provides information regarding its rebate programs, water-saving fixture giveaways, water regulations, and conservation tips.

- Media campaigns and other outreach: The WWD encourages water conservation and markets its rebate programs and water-saving fixture giveaways through mailers and newsletters.

8.2.5 DMM 5 – Programs to Assess and Manage Distribution System Real Loss

As discussed in Section 3.1.3, distribution system water loss was estimated to be approximately 8% of the total water demand in the WWD service area between 2010 and 2015. The WWD does not currently implement a specific program to assess and manage distribution system losses.

8.2.6 DMM 6 – Water Conservation Program Coordination and Staffing Support

The WWD’s water conservation program is administered and coordinated by two District staff members. Contact information for the District’s conservation program is listed below:

Phone: 650-589-1435
Email: wwd@westboroughwater.com

8.2.7 DMM 7 – Other DMMs

Other DMMs provided by the WWD, in addition to those discussed above, include the following:

- Water-saving fixtures giveaway: The WWD offers its residential customers free water-saving fixtures. The WWD encourages its customers to pick up and utilize the following free water saving fixtures and items from its office:
    - Low-flow shower head - uses 1.5 gallons per minute (gpm)
    - Bathroom aerator - uses 1 gpm
    - Toilet leak detection dye strips
    - 5-Minute shower timer
    - Kitchen aerator - uses 1.5 gpm
    - Precision spray patterns garden nozzle
    - Laminated card with conservation tips
    - Water conservation booklet

The WWD gave out approximately 1,100 individual water savings fixtures and items in 2015.

- HET Rebates: The WWD locally administers an HET Rebate Program for its residential and commercial customers. The HET Rebate Program was initiated in September 2008 and is one of the Subscription Programs available to BAWSCA member agencies. As part of this program, the WWD offers customers the following rebates for customers replacing a high-volume toilet (i.e., 3.5 gallons per flush (gpf), or more):
    - Up to a $125 Rebate for replacing an existing toilet with a qualifying MaP® Premium model toilet (1.06 gallons or less per flush); or
    - Up to a $75 Rebate per standard HET (i.e., between 1.06 gallons and 1.28 gallons per flush).

  Up to three rebates are allowed per residential account and up to ten rebates are allowed per commercial customer account. Between 2011 and 2015, WWD provided a total of 369 rebates.

- High-Efficiency Residential Washing Machine Rebates: The WWD locally administers a High-Efficiency Residential Washing Machine Rebate program for its residential customers which, through joint participation with Pacific Gas & Electric (PG&E), includes a rebate of up to $150 to customers that purchase a qualifying washing machine.[17] The High-Efficiency Residential Washing Machine Rebate program is one of the Subscription Programs available to BAWSCA member agencies. Between 2011 and 2015, WWD provided 477 washing machine rebates to its customers.

8.3 PLANNED IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

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.

To continue to achieve the SBx7-7 water use targets described in Section 4, the WWD intends to continue to implement the DMMs discussed above and will continue to participate in BAWSCA's Regional Water Conservation Program. In the future, specific program offerings may change as the market evolves. The WWD's 2016 DSS Model, as described in Section 3.2, estimates projected water demands and quantifies passive and active conservation water savings potential. As discussed in Section 4.5, the DSS Model projections demonstrate that WWD is expected to continue achieve its water use targets through, among other things, continued implementation of these DMMs.

[17] PG&E currently contributes $50 of the total $150 rebate. Total rebate value has varied from year to year.

9. PLAN ADOPTION AND SUBMITTAL

Preparation of the UWMP began in October 2015 for completion in July 2016, with notifications and interactions between stakeholders as discussed further below.

9.1 NOTIFICATION OF UWMP PREPARATION

> *110621. (b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.*

On 3 February 2016, the WWD sent a letter to four entities, including the cities of Daly City and South San Francisco, NCCWD, and San Mateo County informing them that the WWD was in the process of updating its UWMP and soliciting their input in the update process. A listed of the entities contacted is provided in Table 1-4. The letter was sent more than 60 days before the public hearing as required by code. A sample outreach letter is included in Appendix A.

9.2 NOTIFICATION OF PUBLIC HEARING

> *10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.*

9.2.1 Notice to Cities and Counties

On 18 May 2016 and 20 May 2016, WWD sent letters to each of the above mentioned entities as well as SFPUC, BAWSCA, and other BAWSCA member agencies informing them of the locations the Draft 2015 UWMP would be available for review and welcoming their input and comments on the document. The Public Review Draft 2015 UWMP was available for public review at the WWD office and on WWD's website. The letter also informed the agencies that the UWMP public hearing would be occurring at WWD's offices on 9 June 2016. Sample copies of the notification letters are included in Appendix A.

9.2.2 Notice to the Public

On 26 May 2016 and 2 June 2016, the WWD published notices in the *San Mateo County Times* informing the public that the 2015 UWMP would be available for public review and that the 2015 UWMP public hearing would be held at WWD's office on 9 June 2016. These notices are consistent with requirements of California Government Code 6066[18]. Copies of the newspaper announcements re included in Appendix B.

9.3 PUBLIC HEARING AND ADOPTION

> *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.*

As described above, the WWD informed the public and the appropriate agencies of (1) its intent to prepare a UWMP, (2) where the UWMP was available for public review, and (3) when the public hearing regarding the UWMP would be held. All notifications were completed in compliance with the California Water Code and the stipulations of Section 6066 of the Government Code, as appropriate.

This UWMP was adopted by Resolution No. 593 by the Board of Directors during its 9 June 2016 meeting. A copy of the resolution is included in Appendix L.

9.4 PLAN SUBMITTAL

> *10621. (d) An urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.*
> *10635. (b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.*
> *10644. (a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption.*
> *10644. (a) (2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically.*

[18] Government Code section 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.

A copy of the adopted 2015 UWMP including any amendments will be provided to the DWR, the California State Library, San Mateo County, and SFPUC within 30 days of the adoption. An electronic copy of the adopted 2015 UWMP will be submitted to the DWR using the DWR online submittal tool.

9.5 PUBLIC AVAILABILITY

> *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.*

A copy of the adopted 2015 UWMP will be available for public review in the WWD office during normal business hours and on the WWD's website within 30 days of filing the plan with DWR.

10. REFERENCES

BAWSCA, 2009. *Water Conservation Implementation Plan.* Bay Area Water Supply and Conservation Association, September 2009.

BAWSCA, 2014. *Regional Water Demand and Conservation Projections,* Bay Area Water Supply & Conservation Agency, dated September 2014.

BAWSCA, 2015. *Bay Area Water Supply and Conservation Agency FY 2013-2014 Annual Survey*, May 2015

BAWSCA, 2016. UWMP Tier 2 Drought Implementation Plan Scenarios, email message to BAWSCA Member Agencies, dated 6 January 2016.

California Building Standards Commission. CAL Green Code, effective 2014 with supplements effective 2015: http://www.bsc.ca.gov/Home/CALGreen.aspx

County of San Mateo, 2004. *San Mateo County/Operational Area Emergency Operations Plan, Potable Water Procurement and Distribution Annex, 3rd Edition*, dated July 2004.

Dyett and Bhatia, 2015. *South San Francisco Housing Element 2015-2023,* prepared for the City of South San Francisco, adopted April 2015.

DWR, 2015. Department of Water Resources Model Water Efficient Landscape Ordinance (California Code of Regulations, Title 23, Division 2, Chapter 2.7), dated July 9, 2015.

DWR, 2016a. *Guidebook for Urban Water Suppliers, 2015 Urban Water Management Plan,* dated March 2016.

DWR, 2016b. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water, California Department of Water Resources Division of Statewide Integrated Water Management Water Use and Efficiency Branch*, updated March 2016

SFPUC, 2016. Regional Water System Long-Term Supply Reliability 2015-2040. Letter to BAWSCA, dated 5 January 2016.

SWRCB, 2016. Drought Actions and Information Webpage: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/, accessed 29 April 2016.

APPENDIX A:
UWMP AGENCY NOTIFICATION LETTERS

February 3, 2016

[AGENCY NAME]
[AGENCY CONTACT]
[AGENCY ADRESS]
[AGENCY CITY, STATE, ZIP]

Re: **Notice of Preparation of Urban Water Management Plan - 2015 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Westborough Water District ("District") to update its Urban Water Management Plan ("UWMP") every 5 years. The District is currently reviewing its existing UWMP, which was updated in 2011, and considering revisions to the document. The updated UWMP is due by July 1, 2016. We invite your agency's participation in this revision process.

A draft of the 2015 UWMP will be made available for public review and a public hearing will be scheduled later this year. In the meantime, if you would like more information regarding the District's 2010 UWMP and the schedule for preparing the 2015 UWMP, or if you would like to participate in the preparation of the 2015 UWMP, please contact Darryl Barrow at:

Westborough Water District
2263 Westborough Blvd
South San Francisco, CA, 94080
(650) 589-1435
(650) 589-5167
wwd@westboroughwater.com

Sincerely,

Darryl Barrow
General Manager

westborough water district

e-mail: wwd@westboroughwater.com

2263 westborough boulevard . p.o. box 2747 . south san francisco, ca 94083-2747 - 650-589-1435 - fax: 650-589-5167

May18, 2016

County of San Mateo
James Porter
Director of Public Works
555 County Center, 5th Floor
Redwood City, CA, 94063

Re: **Notice of Public Hearing to Consider Adopting the Urban Water Management Plan - 2015 Update**

This is to notify you that the Westborough Water District Board will hold a public hearing on Thursday, June 9, 2016 at the District's office, 2263 Westborough Blvd, South San Francisco, at 7:30 p.m. to consider adopting the 2015 Urban Water Management Plan (UWMP). We invite your department's participation in the process.

The draft 2015 UWMP will be available for public review two weeks prior at the District's office. If you have any questions, please contact Darryl Barrow at:

Westborough Water District
2263 Westborough Blvd
South San Francisco, CA, 94080
(650) 589-1435
(650) 589-5167
wwd@westboroughwater.com

Sincerely,

Darryl A. Barrow

Darryl Barrow
General Manager

westborough water district

e-mail: wwd@westboroughwater.com

2263 westborough boulevard . p.o. box 2747 . south san francisco, ca 94083-2747 - 650-589-1435 - fax: 650-589-5167

May18, 2016

City of South San Francisco
Brian McMinn
Public Works Director
550 N. Canal Street
South San Francisco, CA 94080

Re: **Notice of Public Hearing to Consider Adopting the Urban Water Management Plan - 2015 Update**

This is to notify you that the Westborough Water District Board will hold a public hearing on Thursday, June 9, 2016 at the District's office, 2263 Westborough Blvd, South San Francisco, at 7:30 p.m. to consider adopting the 2015 Urban Water Management Plan (UWMP). We invite your department's participation in the process.

The draft 2015 UWMP will be available for public review two weeks prior at the District's office. If you have any questions, please contact Darryl Barrow at:

Westborough Water District
2263 Westborough Blvd
South San Francisco, CA, 94080
(650) 589-1435
(650) 589-5167
wwd@westboroughwater.com

Sincerely,

Darryl A. Barrow

Darryl Barrow
General Manager

westborough
water district

e-mail: wwd@westboroughwater.com

2263 westborough boulevard . p.o. box 2747 . south san francisco, ca 94083-2747 - 650-589-1435 - fax: 650-589-5167

May18, 2016

City of Daly City
Patrick Sweetland
Director, Department of Water and Wastewater Resources
153 Lake Merced Blvd
Daly City, CA 94015

Re: **Notice of Public Hearing to Consider Adopting the Urban Water Management Plan - 2015 Update**

This is to notify you that the Westborough Water District Board will hold a public hearing on Thursday, June 9, 2016 at the District's office, 2263 Westborough Blvd, South San Francisco, at 7:30 p.m. to consider adopting the 2015 Urban Water Management Plan (UWMP). We invite your department's participation in the process.

The draft 2015 UWMP will be available for public review two weeks prior at the District's office. If you have any questions, please contact Darryl Barrow at:

Westborough Water District
2263 Westborough Blvd
South San Francisco, CA, 94080
(650) 589-1435
(650) 589-5167
wwd@westboroughwater.com

Sincerely,

Darryl A. Barrow

Darryl Barrow
General Manager

westborough
water district

e-mail: wwd@westboroughwater.com

2263 westborough boulevard . p.o. box 2747 . south san francisco, ca 94083-2747 - 650-589-1435 - fax: 650-589-5167

May18, 2016

North Coast County Water District
Cari Lemke
General Manager
2400 Francisco Blvd
Pacifica, CA 94044

Re: **Notice of Public Hearing to Consider Adopting the Urban Water Management Plan - 2015 Update**

This is to notify you that the Westborough Water District Board will hold a public hearing on Thursday, June 9, 2016 at the District's office, 2263 Westborough Blvd, South San Francisco, at 7:30 p.m. to consider adopting the 2015 Urban Water Management Plan (UWMP). We invite your agency's participation in the process.

The draft 2015 UWMP will be available for public review two weeks prior at the District's office. If you have any questions, please contact Darryl Barrow at:

Westborough Water District
2263 Westborough Blvd
South San Francisco, CA, 94080
(650) 589-1435
(650) 589-5167
wwd@westboroughwater.com

Sincerely,

Darryl A Barrow

Darryl Barrow
General Manager

Print | Close Window

Subject: Notice of Public Hearing to Consider Adopting the Urban Water Management Plan - 2015
From: wwd@westboroughwater.com
Date: Fri, May 20, 2016 9:04 am
To: steven.inn@acwd.com, robert.shaver@acwd.com, Acarrasco@calwater.com, dsmithson@calwater.com, rbreault@ci.brisbane.ca.us, amorimoto@burlingame.org, alex.ameri@hayward-ca.gov, corinne.ferreyra@hayward-ca.gov, phlowe@menlopark.org, rnino@menlopark.org, peterv@ci.millbrae.ca.us, klim@ci.millbrae.ca.us, sreider@ci.millbrae.ca.us, smachida@ci.milpitas.ca.gov, nhawk@ci.milpitas.ca.gov, gregg.hosfeldt@mountainview.gov, Elizabeth.Flegel@mountainview.gov, Karla.Dailey@CityofPaloAlto.org, jane.ratchye@cityofpaloalto.org, tkyaw@redwoodcity.org, jchapel@redwoodcity.org, jburch@sanbruno.ca.gov, Rrazavi@sanbruno.ca.gov, cdegroot@santaclaraca.gov, jstufflebean@ci.sunnyvale.ca.us, mnasser@ci.sunnyvale.ca.us, ddickson@coastsidewater.org, cmartinez@cityofepa.org, mbozorginia@cityofepa.org, jmoneda@fostercity.org, tammyr@midpeninsulawater.org, rramirez@midpeninsulawater.org, pwalter@purissimawater.org, Jeffrey.provenzano@sanjoseca.gov, juliann@stanford.edu, pwillis@hillsborough.net, pkehoe@sfwater.org, NSandkulla@bawsca.org, psweetland@dalycity.org, clemke@nccwd.com
Cc: "Darryl Barrow" <dbarrow@westboroughwater.com>
Bcc: adutton@ekiconsult.com

This is to notify you that the Westborough Water District Board will hold a public hearing on Thursday, June 9, 2016, at the District's office, 2263 Westborough Blvd, South San Francisco, at 7:30 p.m. to consider adopting the 2015 Urban Water Management Plan (UWMP). We invite your agency's participation in the process.

The draft 2015 UWMP will be available for public review two weeks prior at the District's office. If you have any questions, please contact Darryl Barrow at:

Westborough Water District
2263 Westborough Blvd
South San Francisco, CA, 94080
Telephone (650) 589-1435
Fax (650) 589-5167
wwd@westboroughwater.com

Sincerely,

Darryl Barrow
General Manager

APPENDIX B:
UWMP PUBLIC NOTIFICATION NOTICES

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Subject: Re: Publishing Legal Ads for UWMP Hearing and Update to UWMP
From: "MN, Mercury News" <legals@bayareanewsgroup.com>
Date: Fri, May 20, 2016 8:47 am
To: Patricia Mairena <pmairena@westboroughwater.com>
Cc: Legal Ads <legals@mercurynews.com>, Darryl Barrow <dbarrow@westboroughwater.com>
Attach: Westborough (Update) 5737977.pdf
Westborough (Public Hearing) 5737982.pdf

Good morning Patricia,

I have scheduled the 2 notices to publish May 26 and June 2, 2016 in the San Mateo County Times Legal Notices. Attached are the typeset notices for your review.

1) Update of Urban Water Management Plan
ad# 5737977
total 2 day cost: $135.16

2) Public Hearing on Urban Water
ad# 5737982
total 2 day cost: $159.14

Deadline for changes/corrections/cancellation is Tuesday, May 24, 3:00 p.m.

Thank you.

Gwen Robinson
Bay Area News Group - Legal Advertising
4 N. 2nd St., Suite 800
San Jose, CA 95113
(408) 920-5332
legals@bayareanewsgroup.com

My hours are 8:00 a.m. to 4:00 p.m. Monday through Friday

On Thu, May 19, 2016 at 4:03 PM, Patricia Mairena <pmairena@westboroughwater.com> wrote:

Good afternoon,

We would like to have both attached notices of Public Hearing and Update to Urban Water Management Plan published twice in the San Mateo Times. Kindly publish them on the following dates: Thursday May 26, 2016 and Thursday June 2, 2016.

Please e-mail us back or call us at (650) 589-1435 to confirm receipt of this request.

Thank you,

Patricia Mairena
Assistant General Manager
Westborough Water District
P.O. Box 2747
South San Francisco, CA 94083-2747
650-589-1435

WESTBOROUGH WATER DISTRICT
UPDATE OF URBAN WATER MANAGEMENT PLAN

Westborough Water District is currently reviewing and updating our Urban Water Management Plan. The Plan was last updated in 2011. We encourage all of our customers to participate in this review process. We will make any proposed revisions to the Plan available for public review and will hold a public hearing on June 9, 2016. In the meantime, if you would like to learn more about the current Plan, the schedule for considering changes to it, or how to participate in the process, please contact:

Darryl Barrow
2263 Westborough Boulevard
South San Francisco, CA 94080
Email address:
dbarrow@westboroughwater.com
Phone 650-589-1435
Fax 650-589-5167

Date: May 26, 2016
SMCT#5737977; May 26, June 2, 2016

Westborough Water District
PUBLIC HEARING ON URBAN WATER USE TARGETS IN URBAN WATER MANAGEMENT PLAN

California law requires that, in conjunction with our update to our Urban Water Management Plan, the community be given an opportunity to give input on Westborough Water District's urban water use target in the Urban Water Management Plan, any impacts to the local economy, and Westborough's method of determining its urban water use target. The Westborough Water District Board of Directors will hold a public hearing to adopt an urban water use target and the 2015 update to its Urban Water Management Plan. The hearing will be held:

7:30 p.m. on June 9, 2016
at the District Office
Westborough Water District
2263 Westborough Boulevard
South San Francisco, CA 94080

The proposed update to the Plan is available for public review at District Office located at 2263 Westborough Boulevard, South San Francisco, CA 94080.

Date: May 26, 2016
SMCT#5737982; May 26, June 2, 2016

APPENDIX C:
COMPLETED UWMP CHECKLIST

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	Section 1.1
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	Section 1.2
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	Appendices A and B
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Section 2
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Section 2.2
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Section 2.1
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Section 2.1
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Section 2.1s and 4.1
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Section 3
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	Section 3.1.3
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	Section 3.2.3

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	Section 4.3 and Appendix D
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	Section 4 and Appendix D
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply is the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	Section 4.3
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Section 4.4 and Appendix D
1608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	N/A
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	N/A
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	Section 4.5 and Appendix D
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	Section 5
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Section 5.2

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	N/A
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	N/A
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	N/A
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	N/A
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	N/A
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	N/A
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	System Supplies	Section 6.7	Section 5.5
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	Section 5.6
10631(i)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Section 5.4

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	Appendix M
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	N/A
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	Section 5.3
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	Section 5.3.1
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	Section 5.3.1
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	Section 5.3.2
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	Section 5.3.2
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	Sections 5.3.2

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	Section 5.3.4
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	Section 5.3.4
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	Section 6.8
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	Section 6
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	Section 6.4
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	Section 6.8
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	Section 6.6
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	Section 6.5
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	Section 7

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three- year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	Section 7.12
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	Section 7.11
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Section 7.5
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Section 7.7
10632(a)(6)	Indicate penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Section 7.6
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	Section 7.9
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	Section 7.10
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	Section 7.8
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	Sections 8

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	N/A
10631(j)	CUWCC members may submit their 2013- 2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	N/A
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	Section 9.3 and Appendix L
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	Section 9.1 and Appendix A
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	Appendix M
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Appendix M
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	Appendix M
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	Section 9.2 and Appendix A

CWC Section	UWMP requirement	Subject	Guidebook Location	UWMP Section
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Appendix M
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	Appendix M
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Appendix M
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	Appendix M
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	Appendix M

APPENDIX D:
SBX7-7 COMPLIANCE TABLES

SB X7-7 Table 0: Units of Measure Used in UWMP* *(select one from the drop down list)*
Million Gallons
**The unit of measure must be consistent with Table 2-3*
NOTES:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	399	Million Gallons
	2008 total volume of delivered recycled water	-	Million Gallons
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1996	
	Year ending baseline period range[3]	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[4]	2007	

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

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

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

NOTES:

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

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1996	11,947
Year 2	1997	12,148
Year 3	1998	12,316
Year 4	1999	12,512
Year 5	2000	12,681
Year 6	2001	12,599
Year 7	2002	12,585
Year 8	2003	12,535
Year 9	2004	12,461
Year 10	2005	12,386
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	12,535
Year 2	2004	12,461
Year 3	2005	12,386
Year 4	2006	12,311
Year 5	2007	12,237
2015 Compliance Year Population		
2015		12,481
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual Gross Water Use**
			Exported Water	**Change in Dist. System Storage** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use**	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1996	371			-		-	371
Year 2	1997	353			-		-	353
Year 3	1998	359			-		-	359
Year 4	1999	371			-		-	371
Year 5	2000	375			-		-	375
Year 6	2001	372			-		-	372
Year 7	2002	374			-		-	374
Year 8	2003	360			-		-	360
Year 9	2004	367			-		-	367
Year 10	2005	496			-		-	496
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**380**
5 Year Baseline - Gross Water Use								
Year 1	2003	360			-		-	360
Year 2	2004	367			-		-	367
Year 3	2005	496			-		-	496
Year 4	2006	313			-		-	313
Year 5	2007	446			-		-	446
5 year baseline average gross water use								**396**
2015 Compliance Year - Gross Water Use								
2015		302	-		-		-	**302**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source	SFPUC
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	371		371
Year 2	1997	353		353
Year 3	1998	359		359
Year 4	1999	371		371
Year 5	2000	375		375
Year 6	2001	372		372
Year 7	2002	374		374
Year 8	2003	360		360
Year 9	2004	367		367
Year 10	2005	496		496
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	360		360
Year 2	2004	367		367
Year 3	2005	496		496
Year 4	2006	313		313
Year 5	2007	446		446
2015 Compliance Year - Water into Distribution System				
2015		302		302

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

NOTES:

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1996	11,947	371	85
Year 2	1997	12,148	353	80
Year 3	1998	12,316	359	80
Year 4	1999	12,512	371	81
Year 5	2000	12,681	375	81
Year 6	2001	12,599	372	81
Year 7	2002	12,585	374	82
Year 8	2003	12,535	360	79
Year 9	2004	12,461	367	81
Year 10	2005	12,386	496	110
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**84**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2003	12,535	360	79
Year 2	2004	12,461	367	81
Year 3	2005	12,386	496	110
Year 4	2006	12,311	313	70
Year 5	2007	12,237	446	100
5 Year Average Baseline GPCD				**88**
2015 Compliance Year GPCD				
2015		12,481	302	**66**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	84
5 Year Baseline GPCD	88
2015 Compliance Year GPCD	66
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☑	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-E: Target Method 3				
Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
☐		North Coast	137	130
☐		North Lahontan	173	164
☐		Sacramento River	176	167
☑	100%	San Francisco Bay	131	124
☐		San Joaquin River	174	165
☐		Central Coast	123	117
☐		Tulare Lake	188	179
☐		South Lahontan	170	162
☐		South Coast	149	142
☐		Colorado River	211	200
Target *(If more than one region is selected, this value is calculated.)*				**124**
NOTES:				

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
88	N/A	124	**124**

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

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

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
124	84	**104**
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
66	104	-	-	-	-	66	66	**YES**

NOTES:

APPENDIX E:
DWR POPULATION TOOL OUTPUTS

WUEdata - Westborough Water District

Sign Out

Please print this page to a PDF and include as part of your UWMP submittal.

Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Daniel Gold	Westborough Water District	9429776847	4/14/2016 11:43:01 AM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	WWD_Boundary_Census.kml	889
2000	WWD_Boundary_Census.kml	889
2010	WWD_Boundary_Census.kml	889
1990	WWD_Boundary_Census.kml	889
2000	WWD_Boundary_Census.kml	889
2010	WWD_Boundary_Census.kml	889

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period:	10
Year beginning baseline period range:	1996
Year ending baseline period range[1]:	2005

5-year baseline period

Year beginning baseline period range:	2003
Year ending baseline period range[2]:	2007

[1] The ending year must be between December 31, 2004 and December 31, 2010.

[2] The ending year must be between December 31, 2007 and December 31, 2010.

Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

	Census Block Group Level	Census Block Level						
Year	% Population in SF Housing	Service Area Population	Population in SF Housing (calculated)	Population in MF/GQ Housing (calculated)	# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection
1990	84.16%	10,927	9,196	1,731	3261	14	2.82	123.64
1991	-	-	-	-	-	-	2.86	124.79
1992	-	-	-	-	-	-	2.90	125.94
1993	-	-	-	-	-	-	2.95	127.09
1994	-	-	-	-	-	-	2.99	128.24
1995	-	-	-	-	-	-	3.03	129.39
1996	-	-	-	-	-	-	3.07	130.54
1997	-	-	-	-	-	-	3.11	131.69
1998	-	-	-	-	-	-	3.16	132.84
1999	-	-	-	-	-	-	3.20	133.99
2000	85.08%	12,681	10,789	1,892	3333	14	3.24	135.14
2001	-	-	-	-	-	-	3.18	144.90
2002	-	-	-	-	-	-	3.11	154.67
2003	-	-	-	-	-	-	3.05	164.44
2004	-	-	-	-	-	-	2.99	174.20
2005	-	-	-	-	-	-	2.92	183.96
2006	-	-	-	-	-	-	2.86	193.73
2007	-	-	-	-	-	-	2.80	203.50
2008	-	-	-	-	-	-	2.74	213.26
2009	-	-	-	-	-	-	2.67	223.02
2010	74.75%	12,908	9,649	3,259	3701	14	2.61	232.79
2015	-	-	-	-	-	-	2.29 *	281.61 *

Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year		# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection	SF Population	MF/GQ Population	Total Population
10 to 15 Year Baseline Population Calculations								
Year 1	1996	3294	14	3.07	130.54	10,119	1,828	11,947
Year 2	1997	3309	14	3.11	131.69	10,304	1,844	12,148
Year 3	1998	3313	14	3.16	132.84	10,456	1,860	12,316
Year 4	1999	3326	14	3.20	133.99	10,637	1,876	12,512
Year 5	2000	3333	14	3.24	135.14	10,789	1,892	12,681
Year 6	2001	3327	14	3.18	144.90	10,570	2,029	12,599
Year 7	2002	3346	14	3.11	154.67	10,419	2,165	12,585
Year 8	2003	3354	14	3.05	164.44	10,233	2,302	12,535
Year 9	2004	3354	14	2.99	174.20	10,022	2,439	12,461
Year 10	2005	3354	14	2.92	183.96	9,810	2,576	12,386
5 Year Baseline Population Calculations								
Year 1	2003	3354	14	3.05	164.44	10,233	2,302	12,535
Year 2	2004	3354	14	2.99	174.20	10,022	2,439	12,461
Year 3	2005	3354	14	2.92	183.96	9,810	2,576	12,386
Year 4	2006	3354	14	2.86	193.73	9,599	2,712	12,311
Year 5	2007	3354	14	2.80	203.50	9,388	2,849	12,237
2015 Compliance Year Population Calculations								
2015		3730	14	2.29 *	281.61 *	8,539	3,942	12,481

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QUESTIONS / ISSUES? CONTACT THE WUEDATA HELP DESK

APPENDIX F:
SFPUC REGIONAL WATER SUPPLY RELIABILITY AND BAWSCA TIER 2 DROUGHT IMPLEMENTATION SCENARIOS

San Francisco
Water Power Sewer
Operator of the Hetch Hetchy Regional Water System

525 Golden Gate Avenue, 10th Floor
San Francisco, CA 94102
T 415.554.3271
F 415.934.5770
TTY 415.554.3488

January 5, 2016

Andree Johnson
Water Resources Specialist
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
San Mateo, CA 94402

Dear Ms. Johnson,

Attached please find the information you requested on the Regional Water System's supply reliability for use in the Wholesale Customer's 2015 Urban Water Management Plan (UWMP) updates. The SFPUC has assessed the water supply reliability under the following planning scenarios:

- Projected single dry year supply for base year 2015[1],
- Projected multiple dry year supply beginning with base year 2015, and
- Projected supply reliability for base year 2015 through 2040.

Table 1 summarizes deliveries to the Wholesale Customers for projected single dry year supply for base year 2015 and projected multiple dry year supply beginning base year 2015.

With regards to future demands, the SFPUC proposes to expand their water supply portfolio by increasing the types of water supply resources. Table 2 summarizes the water supply resources assumed to be available by 2040, as well as other assumptions affecting supply. These assumptions differ from those used in the reliability analysis for the previous 2010 UWMP update, and lead to slightly different reliability projections explained further below.

Concerning allocation of supply during dry years, the Water Shortage Allocation Plan (WSAP) was utilized to allocate shortages between the SFPUC and the Wholesale Customers collectively. The WSAP implements a method for allocating water between the SFPUC retail customers and wholesale customers collectively which has been adopted by the Wholesale Customers

[1] Fiscal Year 2015 is used as the base year to run the water supply reliability analysis in the Hetch Hetchy Local Simulation Model (HHLSM). This base year reflects a wholesale Supply Assurance of 184 million gallons per day, as well as Regional Water System reservoir and pipeline capacities and instream flow requirements as they exist in 2015 (pre-Water System Improvement Program [WSIP] completion).

per the July 2009 Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County. The wholesale customers have adopted the Tier Two Plan, the second component of the WSAP, which allocates the collective wholesale customer share among each of the 26 wholesale customers.

Finally, the SFPUC estimated the frequency and severity of anticipated shortages for the period 2015 (base year) through 2040. For this analysis, we assumed that the historical hydrologic period is indicative of future events and evaluated the supply reliability assuming a repeat of the actual historic hydrologic period 1921 through 2011. The results of this analysis are summarized in Table 3.

Compared to the reliability projections that were provided previously for the 2010 UWMP update, Table 1 indicates slightly higher shortages and lower Wholesale allocations for dry years 2 and 3. Also, Table 3 shows slightly higher estimates of required rationing in multi-year droughts as compared to those provided previously. These differences are due to the inclusion of a temporary constraint on Crystal Springs Reservoir storage and an in-stream flow requirement below Crystal Springs Reservoir, which are shown in Table 2, but were not included in the previous reliability analysis.

It is our understanding that you will pass this information on to the Wholesale Customers. If you have any questions or need additional information, please do not hesitate to contact me at (415) 554-0792.

Sincerely,

Paula Kehoe

Paula Kehoe
Director of Water Resources

Table 1: Projected Deliveries for Three Multiple Dry Years

	Base Year 2015 (Non-Dry)	One Critical Dry Year	Deliveries During Multiple Dry Years		
			Year 1	Year 2	Year 3
System-Wide Shortage	0%	10%	10%	22%	22%
Wholesale Allocation (MGD)	184.0	152.6	152.6	129.2	129.2

MGD = million gallons per day

Table 2: Water Supply Modeling Assumptions for Fiscal Years 2015 through 2040

	2015	2020	2025	2030	2035	2040
Water Supply Resource						
Westside Basin Groundwater (AF/yr)		8,100	8,100	8,100	8,100	8,100
Districts Transfer (AF/yr)		2,240	2,240	2,240	2,240	2,240
Crystal Springs Reservoir Capacity (20.3 BG) [1]			x	x	x	x
Calaveras Reservoir at Full Capacity		x	x	x	x	x
Alameda Creek Recapture (9.3 MGD)		x	x	x	x	x
Reservoir Operation Affecting Supply						
Crystal Springs Reservoir Release for In-Stream Flow to San Mateo Creek (3.5 MGD) [2]	x	x	x	x	x	x
Calaveras Reservoir Release and Alameda Creek Diversion Dam Bypass for In-Stream Flow to Alameda Creek (9.3 MGD)		x	x	x	x	x

AF/yr = acre-feet per year, BG = billion gallons, MGD = million gallons per day, x = in operation

Notes:

1. Schedule for restoration of Crystal Springs Reservoir storage is tied to permitting requirements for endangered plants.
2. Release from Crystal Springs Reservoir to meet minimum in-stream flow requirement in San Mateo Creek began in January 2015.

Table 3: Projected System Supply Reliability Based on Hydrologic Period

	Wholesale Demand (MGD)					
	184.0	184.0	184.0	184.0	184.0	184.0
	Projected Wholesale Allocation (MGD)					
Fiscal Year	2015	2020	2025	2030	2035	2040
1920-21	184.0	184.0	184.0	184.0	184.0	184.0
1921-22	184.0	184.0	184.0	184.0	184.0	184.0
1922-23	184.0	184.0	184.0	184.0	184.0	184.0
1923-24	184.0	184.0	184.0	184.0	184.0	184.0
1924-25	152.6	184.0	184.0	184.0	184.0	184.0
1925-26	184.0	184.0	184.0	184.0	184.0	184.0
1926-27	184.0	184.0	184.0	184.0	184.0	184.0
1927-28	184.0	184.0	184.0	184.0	184.0	184.0
1928-29	184.0	184.0	184.0	184.0	184.0	184.0
1929-30	184.0	184.0	184.0	184.0	184.0	184.0
1930-31	184.0	184.0	184.0	184.0	184.0	184.0
1931-32	129.2	152.6	152.6	152.6	152.6	152.6
1932-33	184.0	184.0	184.0	184.0	184.0	184.0
1933-34	184.0	184.0	184.0	184.0	184.0	184.0
1934-35	152.9	184.0	184.0	184.0	184.0	184.0
1935-36	184.0	184.0	184.0	184.0	184.0	184.0
1936-37	184.0	184.0	184.0	184.0	184.0	184.0
1937-38	184.0	184.0	184.0	184.0	184.0	184.0
1938-39	184.0	184.0	184.0	184.0	184.0	184.0
1939-40	184.0	184.0	184.0	184.0	184.0	184.0
1940-41	184.0	184.0	184.0	184.0	184.0	184.0
1941-42	184.0	184.0	184.0	184.0	184.0	184.0
1942-43	184.0	184.0	184.0	184.0	184.0	184.0
1943-44	184.0	184.0	184.0	184.0	184.0	184.0
1944-45	184.0	184.0	184.0	184.0	184.0	184.0
1945-46	184.0	184.0	184.0	184.0	184.0	184.0
1946-47	184.0	184.0	184.0	184.0	184.0	184.0
1947-48	184.0	184.0	184.0	184.0	184.0	184.0
1948-49	184.0	184.0	184.0	184.0	184.0	184.0
1949-50	184.0	184.0	184.0	184.0	184.0	184.0
1950-51	184.0	184.0	184.0	184.0	184.0	184.0
1951-52	184.0	184.0	184.0	184.0	184.0	184.0
1952-53	184.0	184.0	184.0	184.0	184.0	184.0
1953-54	184.0	184.0	184.0	184.0	184.0	184.0
1954-55	184.0	184.0	184.0	184.0	184.0	184.0
1955-56	184.0	184.0	184.0	184.0	184.0	184.0
1956-57	184.0	184.0	184.0	184.0	184.0	184.0
1957-58	184.0	184.0	184.0	184.0	184.0	184.0
1958-59	184.0	184.0	184.0	184.0	184.0	184.0
1959-60	184.0	184.0	184.0	184.0	184.0	184.0
1960-61	152.6	184.0	184.0	184.0	184.0	184.0

	Wholesale Demand (MGD)					
	184.0	184.0	184.0	184.0	184.0	184.0
	Projected Wholesale Allocation (MGD)					
Fiscal Year	2015	2020	2025	2030	2035	2040
1961-62	129.2	152.6	152.6	152.6	152.6	152.6
1962-63	184.0	184.0	184.0	184.0	184.0	184.0
1963-64	184.0	184.0	184.0	184.0	184.0	184.0
1964-65	184.0	184.0	184.0	184.0	184.0	184.0
1965-66	184.0	184.0	184.0	184.0	184.0	184.0
1966-67	184.0	184.0	184.0	184.0	184.0	184.0
1967-68	184.0	184.0	184.0	184.0	184.0	184.0
1968-69	184.0	184.0	184.0	184.0	184.0	184.0
1969-70	184.0	184.0	184.0	184.0	184.0	184.0
1970-71	184.0	184.0	184.0	184.0	184.0	184.0
1971-72	184.0	184.0	184.0	184.0	184.0	184.0
1972-73	184.0	184.0	184.0	184.0	184.0	184.0
1973-74	184.0	184.0	184.0	184.0	184.0	184.0
1974-75	184.0	184.0	184.0	184.0	184.0	184.0
1975-76	184.0	184.0	184.0	184.0	184.0	184.0
1976-77	152.6	184.0	184.0	184.0	184.0	184.0
1977-78	129.2	152.6	152.6	152.6	152.6	152.6
1978-79	184.0	184.0	184.0	184.0	184.0	184.0
1979-80	184.0	184.0	184.0	184.0	184.0	184.0
1980-81	184.0	184.0	184.0	184.0	184.0	184.0
1981-82	184.0	184.0	184.0	184.0	184.0	184.0
1982-83	184.0	184.0	184.0	184.0	184.0	184.0
1983-84	184.0	184.0	184.0	184.0	184.0	184.0
1984-85	184.0	184.0	184.0	184.0	184.0	184.0
1985-86	184.0	184.0	184.0	184.0	184.0	184.0
1986-87	184.0	184.0	184.0	184.0	184.0	184.0
1987-88	152.6	184.0	184.0	184.0	184.0	184.0
1988-89	129.2	152.6	152.6	152.6	152.6	152.6
1989-90	129.2	152.6	152.6	152.6	152.6	152.6
1990-91	129.2	132.5	132.5	132.5	132.5	132.5
1991-92	129.2	132.5	132.5	132.5	132.5	132.5
1992-93	129.2	132.5	132.5	132.5	132.5	132.5
1993-94	184.0	184.0	184.0	184.0	184.0	184.0
1994-95	184.0	184.0	184.0	184.0	184.0	184.0
1995-96	184.0	184.0	184.0	184.0	184.0	184.0
1996-97	184.0	184.0	184.0	184.0	184.0	184.0
1997-98	184.0	184.0	184.0	184.0	184.0	184.0
1998-99	184.0	184.0	184.0	184.0	184.0	184.0
1999-00	184.0	184.0	184.0	184.0	184.0	184.0
2000-01	184.0	184.0	184.0	184.0	184.0	184.0
2001-02	184.0	184.0	184.0	184.0	184.0	184.0
2002-03	184.0	184.0	184.0	184.0	184.0	184.0
2003-04	184.0	184.0	184.0	184.0	184.0	184.0

	Wholesale Demand (MGD)					
	184.0	184.0	184.0	184.0	184.0	184.0
	Projected Wholesale Allocation (MGD)					
Fiscal Year	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
2004-05	184.0	184.0	184.0	184.0	184.0	184.0
2005-06	184.0	184.0	184.0	184.0	184.0	184.0
2006-07	184.0	184.0	184.0	184.0	184.0	184.0
2007-08	184.0	184.0	184.0	184.0	184.0	184.0
2008-09	184.0	184.0	184.0	184.0	184.0	184.0
2009-10	184.0	184.0	184.0	184.0	184.0	184.0
2010-11	184.0	184.0	184.0	184.0	184.0	184.0

MGD = million gallons per day

Agency	Base Year (FY 12-13) SFPUC Purchases	Scenarios for Total Available Supply to Wholesale Customers	
		129.2 MGD	132.5.MGD
ACWD	8.96	8.06	8.51
Brisbane/GVMID	0.59	0.53	0.56
Burlingame	4.00	3.78	3.70
Coastside	1.82	1.65	1.62
CWS Total	31.18	27.81	27.11
Daly City	4.01	3.29	3.39
East Palo Alto	2.07	1.95	1.97
Estero	4.10	3.69	3.92
Hayward	15.48	13.93	14.71
Hillsborough	3.30	3.02	2.91
Menlo Park	3.25	2.92	3.04
Mid Pen WD	2.98	2.81	2.75
Millbrae	2.28	2.05	2.15
Milpitas	6.38	5.75	6.06
Mountain View	9.00	8.10	8.55
North Coast	2.44	2.20	2.32
Palo Alto	11.33	10.20	10.76
Purissima Hills	1.99	1.37	1.51
Redwood City	9.73	8.63	8.45
San Bruno	1.94	1.75	1.84
San José	4.45	3.05	3.38
Santa Clara	2.29	1.57	1.74
Stanford	2.15	1.93	2.00
Sunnyvale	9.28	8.35	8.67
Westborough	0.90	0.81	0.86
Wholesale Total	**145.90**	**129.20**	**132.50**

6-Jan-16

APPENDIX G:
WATER QUALITY REPORTS

westborough water district
e-mail: wwd@westboroughwater.com
2263 westborough boulevard . p.o. box 2747 . south san francisco, ca 94083-2747 - 650-589-1435 - fax: 650-589-5167

June 2015

TO: **Westborough Water District Customers**

FROM: **Westborough Water District Board of Directors**

SUBJECT: **2014 Annual Water Quality Report**

To comply with Section 64463.1, Public Information, of the California Domestic Water Quality and Monitoring Regulations, attached is a copy of the Drinking Water Standards and Typical Concentrations of Constituents found in your water. The information was largely compiled by the San Francisco Water Department.

As you are aware, the District purchases all of our water from the San Francisco Water Department.

If you have any questions about the report, please call Darryl Barrow, General Manager, at (650) 589-1435 or e-mail us at: wwd@westboroughwater.com

We encourage you to make this Water Quality Report available to everyone, including tenants, employees, homeowner association members, etc.

2014 Annual Water Quality Report and Consumer Confidence Report

CONSERVATION ALERT

Following another historically dry winter and in accordance with the new State of California emergency water restrictions, we are asking all customers to reduce their water use by 25%.

The Westborough Water District purchases 100% of its water from the San Francisco Public Utility Commission (SFPUC). The SFPUC supplied an average of 205 MGD water via its Regional Water System to serve 2.6 million people in the Bay Area in 2014. □

Our Drinking Water Sources and Treatment

The sources of drinking water (both tap water and bottled water) include rivers, lakes, oceans, streams, ponds, reservoirs, springs, and wells.

Supplied by the San Francisco Regional Water System (SFRWS), their major water source originates from spring snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The pristine, well protected Sierra water source is exempt from filtration requirements by the United States Environmental Protection Agency (USEPA) and State Water Resources Control Board's Division of Drinking Water (SWRCB). Water treatments provided by the SFRWS, including disinfection by ultraviolet light and chlorine, corrosion control by adjustment of the water pH value, fluoridation for dental health protection, and chloramination for maintaining disinfectant residual and minimizing disinfection byproduct formation, are in place to meet the drinking water regulatory requirements.

The Hetch Hetchy water is supplemented with surface water from two local watersheds. Rainfall and runoff from the 35,000-acre Alameda Watershed in Alameda and Santa Clara counties are collected in the Calaveras and San Antonio reservoirs for filtration and disinfection at the Sunol Valley Water Treatment Plant. Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in the Crystal Springs, San Andreas, and Pilarcitos reservoirs, and are filtered and disinfected at the Harry Tracy Water Treatment Plant.

As in the past, the Hetch Hetchy Watershed provided the majority of our total water supply, with the remainder contributed by the two local watersheds in 2014.□

Protecting Our Watersheds

The SFPUC's annual Hetch Hetchy Watershed Sanitary Survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities with partner agencies including the National Park Service and US Forest Service.

The SFPUC also conducts sanitary surveys every five years to detect and track sanitary concerns for the local watersheds and the approved standby water sources in Early Intake Watershed, which includes Cherry Lake and Lake Eleanor. The latest 5-year surveys were completed in 2011 for the period of 2006-2010. These surveys identified wildlife, stock, and human activities as potential contamination sources. The reports are available for review at the San Francisco District office of SWRCB (510) 620-3474. □

Water Quality

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure the water delivered to you meets or exceeds federal and state drinking water standards. In 2014, WQD staff conducted more than 52,000 drinking water tests in the transmission and distribution systems. This is in addition to the extensive treatment process control monitoring performed by the SFPUC's certified operators and online instruments.

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Such substances are called contaminants.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, the USEPA and SWRCB prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. SWRCB regulations also establish limits for contaminants in bottled water that provide the same protection for public health.□

Contaminants and Regulations

Contaminants that may be present in source water include:

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

More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline **800-426-4791**.□

Key Water Quality Terms

Following are definitions of key terms referring to standards and goals of water quality noted on the adjacent data table.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A water clarity indicator that measures cloudiness of the water, and is also used to indicate the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants.

Cryptosporidium is a parasitic microbe found in most surface water. The SFPUC regularly tests for this waterborne pathogen, and found it at very low levels in source water and treated water in 2014. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. Ingestion of *Cryptosporidium* may produce symptoms of nausea, abdominal cramps, diarrhea, and associated headaches. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.□

Reducing Lead from Plumbing Fixtures

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There are no known lead service lines in the SFRWS. We are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. It is possible that lead levels at your home may be higher than at others because of plumbing materials used in your property.

Reducing Lead from Plumbing Fixtures (cont.)

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead levels in your water, you may wish to have your water tested. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the USEPA's Safe Drinking Water Hotline **800-426-4791**, or at ***www.epa.gov/safewater/lead***. □

Fluoridation and Dental Fluorosis

Mandated by State law, water fluoridation is a widely accepted practice proven to be safe and effective for preventing and controlling tooth decay. Our water has been fluoridated at 0.9 milligram per liter until May 2015, when the new State regulatory guidance was issued. The water is now fluoridated at a new optimal level of 0.7 mg/L. Infants fed formula mixed with water containing fluoride at this level may have an increased chance of developing tiny white lines or streaks in their teeth. These marks are referred to as mild to very mild fluorosis, and are often only visible under a microscope. Even in cases where the marks are visible, they do not pose any health risk. CDC considers it safe to use optimally fluoridated water for preparing infant formula. To lessen this chance of dental fluorosis, you may choose to use low-fluoride bottled water to prepare infant formula. Nevertheless, children may still develop dental fluorosis due to fluoride intake from other sources such as food, toothpaste and dental products. Contact your health provider or SWRCB if you have concerns about dental fluorosis. For additional information visit the SWRCB website ***www.swrcb.ca.gov*** and search for fluoride, or the CDC website ***www.cdc.gov/flouridation***. □

SFPUC'S Regional Groundwater Project Will Kick Off Construction in 2015

The SFPUC's Regional Groundwater Storage and Recovery (GSR) Project is a partnership with the cities of Daly City and San Bruno and the California Water Service Company that can provide 7.2 million gallons of water per day to protect against future droughts and earthquakes. Construction is scheduled to begin in 2015 and be completed in 2018. The GSR project balances the use of both groundwater and surface water in the South Westside Groundwater Basin (northern San Mateo County). During years of normal or heavy rainfall, the project will provide additional surface water to the partner agencies in order to reduce the amount of their groundwater pumping. Over time, the reduced pumping will create a groundwater savings account of up to 60,500 acre-feet of water or 20 billion gallons — a volume equivalent to that of the SFPUC's Crystal Springs Reservoir. In dry years, when less surface water is available, the stored water would be pumped from the new groundwater wells and benefit the 2.6 million people in the Bay Area who rely on the SFRWS. □

Special Health Needs

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline **800-426-4791** or at ***www.epa.gov/safewater***. □

Treatment Plant Improvements:

The Harry Tracy Water Treatment Plant Long-Term Improvements Project is now complete. The $280 million project includes significant upgrades to the ozonation system (an effective oxygen-based method for destroying bacteria, viruses and odors), construction of five new filters and a new 11-million-gallon treated water reservoir. The overall improvements in performance will increase the plant's capacity and reliability for treating drinking water for San Francisco and San Mateo County. It also ensures that the plant can reliably produce 140 MGD of water within 24 hours of a major earthquake. □

The following table lists all 2014 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accord with regulatory guidance. The SFRWS received from the SWRCB a monitoring waiver for some contaminants such that their monitoring frequencies are less than annual. □

westborough
water district

2263 westborough boulevard
south san francisco, ca 94083-2747

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Permit No. 419

2014 ANNUAL WATER QUALITY REPORT ENCLOSED

Translation Languages
This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

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

Tagalog: Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

Chinese (Traditional):

此份有關你的食水報告,內有重要資料和訊息,請找他人為你翻譯及解釋清楚。

Chinese (Simplified):

此份有关你的食水报告,内有重要资料和讯息,请找他人为你翻译及解释清楚。

Westborough Water District - Water Quality Data for Year 2014

1. SFPUC conducted annual monitoring of all volatile organic chemicals (VOCs) in Table 64444-A and inorganic contaminants (except asbestos and cyanide) in Table 64431-A. Radionuclides in Table 6444-2 were also monitored in 2014. All results not shown in the tables below are less than the corresponding DLRs.

2. SFPUC received a monitoring waiver for the period of 2014-2016 from the State for all non-volatile synthetic organic chemicals (SOCs) in Table 64444-A.

3. Since 2011 is the first year of the new 9-year compliance cycle, SFPUC monitored all SOCs (despite the waiver), radionuclides (in Table 64442), cyanide, and asbestos in addition to the annual VOCs and inorganics monitoring in June 2011.

(Data based on Hetch Hetchy water and effluents from both SVWTP and HTWTP)

DETECTED CONTAMINANTS	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
TURBIDITY						
Unfiltered Hetchy Water	NTU	5	N/A	0.2 - 0.6 (2)	[2.8]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU	1 (3)	N/A	-	[0.98]	Soil runoff
	-	Min 95% of samples ≤ 0.3 NTU (3)	N/A	97% - 100%	-	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU	1 (3)	N/A	-	[0.07]	Soil runoff
	-	Min 95% of samples ≤ 0.3 NTU (3)	N/A	100%	-	Soil runoff
DISINFECTION BYPRODUCTS AND PRECURSOR						
Total Trihalomethanes	ppb	80	N/A	15.6-47.8	24.4 (4)	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	5.9-46.1	20.1 (4)	Byproduct of drinking water disinfection
Total Organic Carbon (5)	ppm	TT	N/A	1.3 - 2.8	1.9	Various natural and man-made sources
MICROBIOLOGICAL						
Total Coliform (6)	-	NoP ≤ 5.0% of monthly samples	(0)	-	0 positive	Naturally present in the environment
Giardia lamblia	cyst/L	TT	(0)	<0.01 - 0.04	<0.01	Naturally present in the environment
INORGANICS						
Fluoride (source water) (7)	ppm	2.0	1	ND - 0.8	0.4 (8)	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	1.34-2.78	2.12 (9)	Drinking water disinfectant added for treatment

CONSTITUENTS WITH SECONDARY STANDARDS	Unit	SMCL	PHG	Range	Average	Major Sources of Contaminant
Chloride	ppm	500	N/A	<3 - 15	9	Runoff / leaching from natural deposits
Odor Threshold	TON	3	N/A	ND - 1	ND	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	N/A	32 - 222	151	Substances that form ions when in water
Sulfate	ppm	500	N/A	0.9 - 32	17	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	31 - 120	81	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	0.1 - 0.2	0.1	Soil runoff

LEAD AND COPPER	Unit	AL	PHG	Range	90th Percentile	Major Sources in Drinking Water
Copper	ppb	1300	300	1.3-59.0 (10)	40.5	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	<1.0-5.1 (11)	3.3	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	Unit	ORL	Range	Average
Alkalinity (as $CaCO_3$)	ppm	N/A	8 - 94	37
Bromide (12)	ppb	N/A	ND - 27	5
Calcium (as Ca)	ppm	N/A	3 - 20	11
Chlorate (13)	ppb	800 (NL)	34 - 740	314
Hardness (as $CaCO_3$)	ppm	N/A	7 - 77	46
Magnesium	ppm	N/A	<0.2 - 6.4	3.9
pH	-	N/A	6.9 - 10.2	9.3
Potassium	ppm	N/A	0.2 - 1	0.6
Silica	ppm	N/A	2 - 5	4
Sodium	ppm	N/A	2.4 - 16	10

KEY:

< / ≤	=	less than / less than or equal to
AL	=	Action Level
Max	=	Maximum
Min	=	Minimum
N/A	=	Not Available
ND	=	Non-detect
NL	=	Notification Level
NoP	=	Number of Coliform-Positive Sample
NTU	=	Nephelometric Turbidity Unit
ORL	=	Other Regulatory Level
ppb	=	part per billion
ppm	=	part per million
TON	=	Threshold Odor Number
µS/cm	=	microSiemens/centimeter

Footnotes:

(1) All results met State and Federal drinking water health standards.

(2) These are monthly average turbidity values measured every 4 hours daily.

(3) There is no turbidity MCL for filtered water. The limits are based on the TT requirements for filtration systems.

(4) This is the highest locational running annual average value. (if your system has 4 quarters of locational DBP data obtained under Stage 2 DBPR monitoring)

(5) Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only.

(6) There were 0 positive samples collected.

(7) The SWRCB specifies the fluoride level in the treated water be maintained within a range of 0.8 ppm - 1.5 ppm. In 2014, the range and average of the fluoride levels were 0.6 ppm - 1.2 ppm and 0.9 ppm, respectively.

(8) The natural fluoride level in the Hetch Hetchy supply was ND. Elevated fluoride levels in the SVWTP and HTWTP raw water are attributed to the transfer of fluoridated Hetch Hetchy water into the reservoirs.

(9) This is the highest running annual average value.

(10) The most recent Lead and Copper Rule monitoring was in 2013. 0 of 30 site samples collected at consumer taps had copper concentrations above the action level.

(11) The most recent Lead and Copper Rule monitoring was in 2013. 0 of 30 site samples collected at consumer taps had lead concentrations above the action level.

(12) Bromide was detected in HTWTP effluent only. If you do not receive HTWTP water in 2014, you may exclude this contaminant from this table.

(13) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFPUC for water disinfection.

Note: Additional water quality data may be obtained by calling Darryl Barrow, General Manager, Westborough Water District at (650) 589-1435 or SFPUC Water Quality Bureau at (877) 737-8297.

APPENDIX H:
DROUGHT RESPONSE TOOL USER GUIDE

Drought Response Tool
User's Guide

TABLE OF CONTENTS

1. INTRODUCTION

The Drought Response Tool (DRT) is an Excel spreadsheet model that has been developed to assist water suppliers with:

- Evaluating baseline water use by sector and by indoor/outdoor use;
- Identifying customer sectors (e.g., Residential; Commercial, Industrial and Institutional [CII]; and Dedicated Irrigation) and uses to target for water savings;
- Evaluating a menu of drought response actions and estimate their water savings potential; and
- Tracking progress against the water use reduction goal associated with a stage of action in the supplier's Water Shortage Contingency Plan.

The following sections guide the user through the model structure and the key input parameters, assumptions, and calculations that form the basis of the DRT.

It should be noted that the DRT is only a predictive tool that generates a water savings potential based on an assumed set of water use and savings inputs by the user, including Drought Response Actions, savings estimates, and implementation rates. The DRT in no way guarantees water savings or other performance metrics.

2. DROUGHT RESPONSE TOOL STRUCTURE AND OVERVIEW

- **Structure:** The DRT consists of six, linked Excel worksheets:

  (1) Home
  (2) Water Use Inputs
  (3) Water Use Profile
  (4) Drought Response Actions
  (5) Estimated Water Savings
  (6) Drought Response Tracking

  A detailed guide to each worksheet is provided in Section 3.

- **Navigation:** Users can navigate between worksheets using buttons at the top of each sheet or the tabs at the bottom of the Excel window.

- **Color Coding:** On each worksheet, the cells highlighted in white indicate locations where supplier inputs are required or the user can adjust default values. The model will automatically populate all charts and cells highlighted in light blue based on the input data and associated model calculations. Certain cells will be highlighted in gray to indicate that the value is overridden and will not factor into calculations (cells highlighted in gray are discussed in more detail in Section 3.4).

- **Default Values:** In some cases, the white cells are populated with default values. If a user modifies the default values, the revisions will be displayed as **bold font** so the user can clearly track where they have made modifications within the DRT.

- **Instructions and Tips:** Instructions and tips are provided in cells marked with the symbol ⓘ and also appear in "pop ups" when certain cells are selected.

- **Data Validation.** Throughout the DRT there are a series of data validation checks to provide support to the user.

- **Functionality:** The DRT is designed to run on systems with Microsoft Office 2007 or later versions. For full functionality of the model, the user must enable the use of macros.[1]

[1] To enable the use of macros, click the Microsoft Office Button at the top left hand corner and then click Excel Options. Choose Trust Center from the menu at the left and then Trust Center Settings at the right. Under Macro Settings, select "Enable all macros." Alternatively you can follow instructions from Microsoft Help.

3. DROUGHT RESPONSE TOOL WORKSHEETS

This section provides a brief summary of the key DRT inputs, outputs and assumptions.

3.1 Worksheet 1 – Home

Input the following agency-specific information, as shown in Figure 1:

- **Agency Name:** Type in the water supplier's name.
- **Total Population Served:** Population is assumed to be constant for the purpose of the DRT modeling.
- **Required Conservation Standard**: Enter the percentage water use reduction goal.
- **Number of Accounts by Sector:** The number of accounts for each sector (Residential, CII, and Dedicated Irrigation) is assumed to be constant for the purpose of the DRT modeling. If single-family and multi-family accounts are tracked separately, enter the combined number of accounts under Residential accounts. If CII accounts are tracked separately, enter the combined number of all CII accounts.
- **Baseline Year(s):** The Baseline Year defines the year that corresponds with potable water production and use data that will be

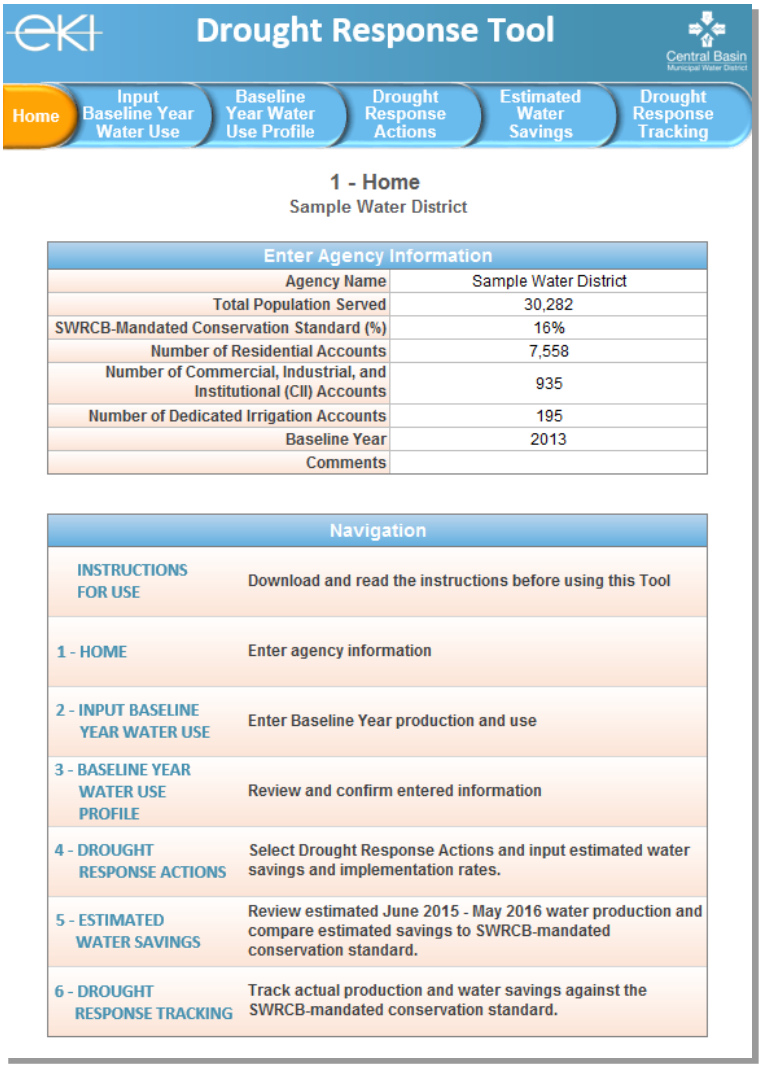


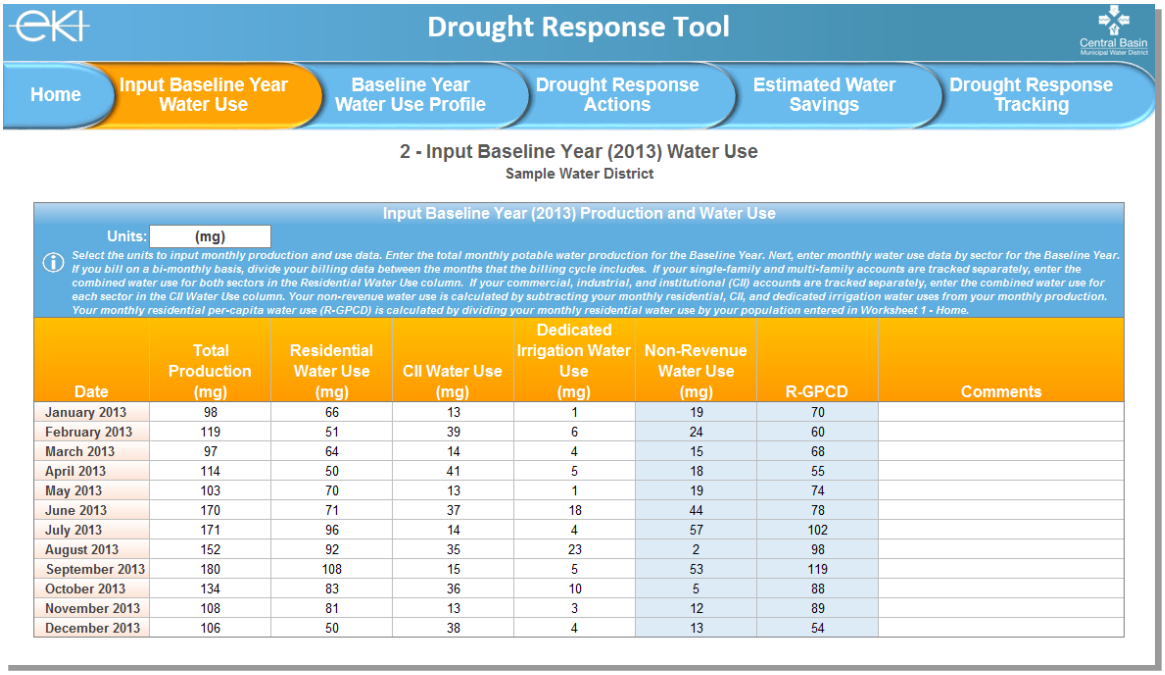
Figure 1: *Worksheet 1 – Home* of the DRT © 2015 Erler & Kalinowski, Inc.

entered in *Worksheet 2 – Water Use Inputs*. The user may enter in a single Baseline Year or an average of several historical years, if desired.

Worksheet 1 – Home also provides users an overview for navigating the DRT and provides a live link to the *Central Basin Drought Response Tool User's Guide*, which is hosted on the Erler & Kalinowski, Inc. website.

3.2 Worksheet 2 – Water Use Inputs

A shown in Figure 2, enter monthly potable water production and water use data for the Baseline Year (e.g., 2013), or the average over multiple historical years (e.g. 2011-2015). A drop down menu is provided in the table header to select the units for the input data (e.g., in million gallons, acre-feet, etc.). Baseline water use inputs include:



Date	Total Production (mg)	Residential Water Use (mg)	CII Water Use (mg)	Dedicated Irrigation Water Use (mg)	Non-Revenue Water Use (mg)	R-GPCD	Comments
January 2013	98	66	13	1	19	70	
February 2013	119	51	39	6	24	60	
March 2013	97	64	14	4	15	68	
April 2013	114	50	41	5	18	55	
May 2013	103	70	13	1	19	74	
June 2013	170	71	37	18	44	78	
July 2013	171	96	14	4	57	102	
August 2013	152	92	35	23	2	98	
September 2013	180	108	15	5	53	119	
October 2013	134	83	36	10	5	88	
November 2013	108	81	13	3	12	89	
December 2013	106	50	38	4	13	54	

Figure 2: *Worksheet 2 – Water Use Data* of the DRT © 2015 Erler & Kalinowski, Inc.

- **Monthly Production Data:** Enter the monthly potable water production for the Baseline Year, in the units selected in the table header.
- **Monthly Water Use Data by Sector:** Enter monthly water use by sector (Residential, CII, and Dedicated Irrigation) for the Baseline Year(s), in the units selected in the table header. Water use data will come from an agency's billing data for the Baseline Year(s). If water use data are collected on a bi-monthly basis, the water use data should be divided between the months that the billing cycle includes. If an agency's single-family and multi-family accounts are tracked separately, enter the combined water use in the Residential column. The same applies for the consolidation of water uses at CII and Dedicated Irrigation accounts, if applicable. If the total water use by

sector exceeds the amount entered for total production for a given month, the row will be highlighted in red.

- **Monthly Non-Revenue Water Use:** The DRT calculates non-revenue water use by subtracting the monthly Residential, CII, and Dedicated Irrigation water use volumes from the total monthly production.
- **R-GPCD:** The DRT calculates the monthly residential gallons per capita per day (R-GPCD) for the Baseline Year(s) by dividing the residential water use by the total population specified in Worksheet 1.

Inputs from Worksheets 1 and 2 are used in the remaining worksheets to estimate water savings potential.

3.3 Worksheet 3 – Water Use Profile

This worksheet provides high-level, graphical summaries of an agency's Baseline Year(s) water use by sector and by major end use (indoor versus outdoor). Users may select the units the data is displayed in from a drop down menu in the table header. By generally estimating how much of an agency's water use can be attributed to indoor use versus outdoor use and by sector, an agency can begin to identify areas and opportunities for water savings, see Figures 3 and 4. These data can also assist an agency is assessing where they can achieve water savings potential with minimal revenue impacts.

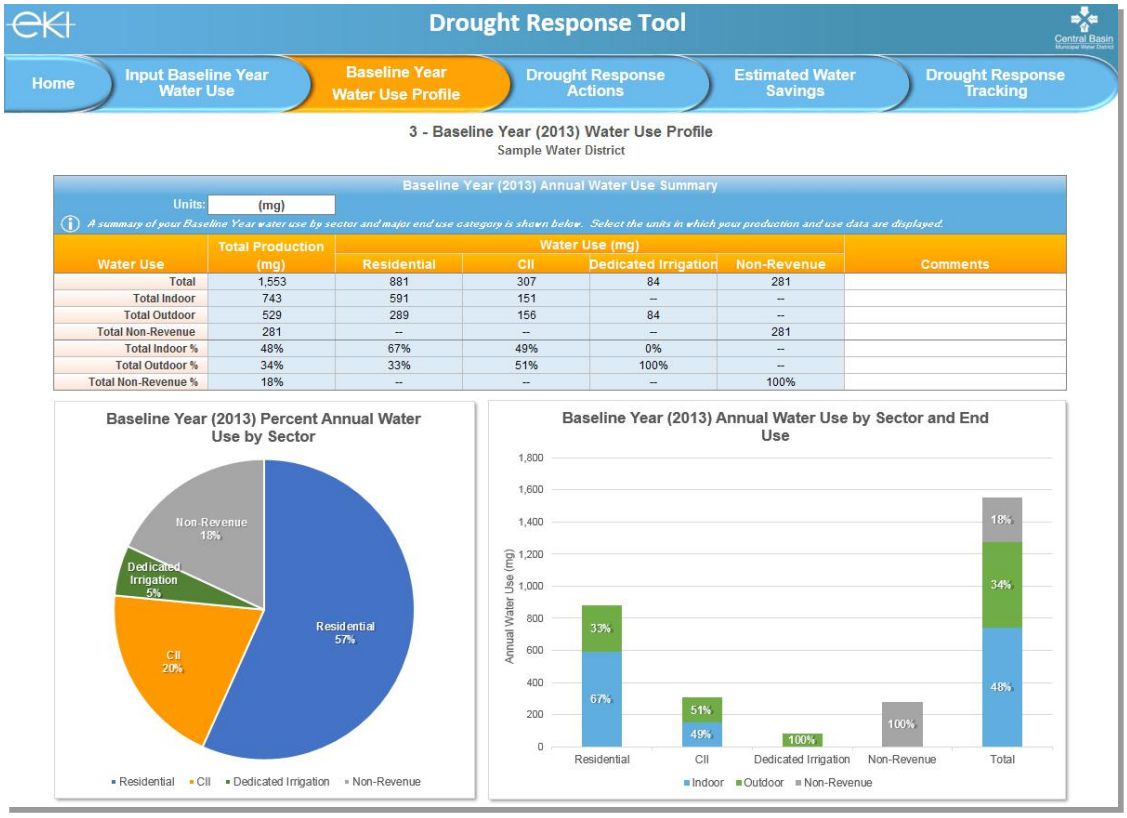
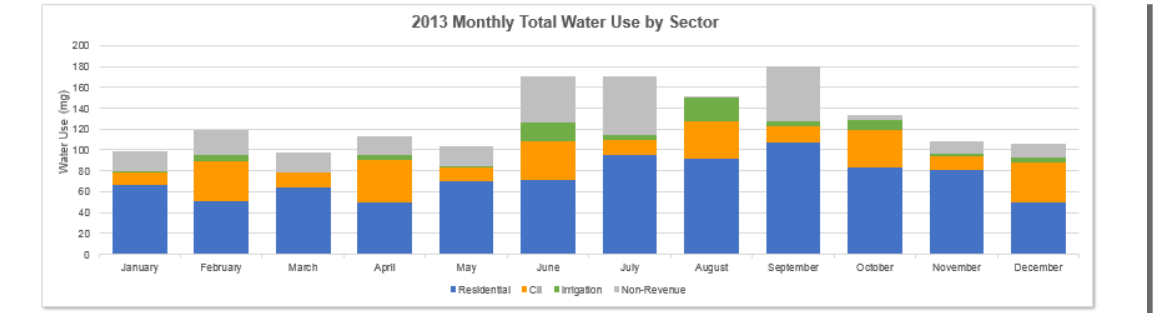


Figure 3: *Worksheet 3 – Water Use Profile* of the DRT © 2015 Erler & Kalinowski, Inc.



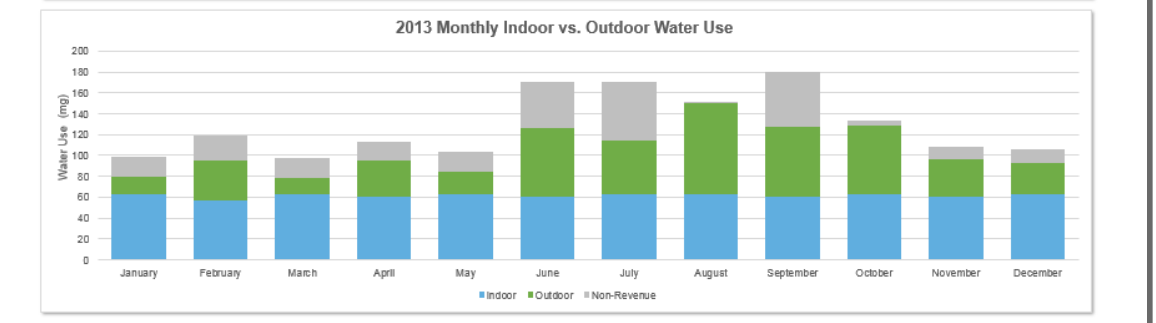


Figure 4: *Worksheet 3 – Water Use Profile* of the DRT © 2015 Erler & Kalinowski, Inc.

The following key assumptions were made in the DRT to support evaluation of supplier water use profiles:

(1) Monthly indoor use for each sector is assumed to be the amount of water used during the lowest water use month, normalized by the number of days in the month, based on the data entered by the user in *Worksheet 2 – Water Use Data*.

(2) Monthly outdoor use for each sector is calculated by subtracting the assumed monthly indoor water use [from (1)] from the total water use data entered by the user in *Worksheet 2 – Water Use Data.*

3.4 Worksheet 4 – Drought Response Actions

This worksheet provides a framework for estimating water savings associated with the implementation and enforcement of various Drought Response Actions. Key inputs include:

- **Maximum Savings Potential**: The DRT allows the agency to establish sector-specific "caps" on the water savings potential that the DRT will estimate. Specifically, these caps limit the potential savings estimated by the DRT based on certain agency-defined criteria. For example, to protect the economic vitality of a City, an agency may want to limit CII indoor reductions to 10%. Therefore, the water savings for indoor water use for the CII sector shown in *Worksheet 5 – Estimated Water Savings* will not exceed 10%, even if the water savings based on the selected indoor CII Drought Response Measures may exceed 10%.

The savings caps in the DRT include:

- Minimum allowable indoor residential use (R-GPCD);
- The maximum percent (%) reductions in residential outdoor use;
- The maximum % reduction in CII indoor use;
- The maximum % reduction in CII outdoor uses; and
- The maximum % reduction in dedicated irrigation use.

Based on the specified sector-specific caps, the DRT calculates the resulting % total maximum annual savings potential.

- **End Use Savings Potential**: Three pie chart graphs are shown towards the top of the worksheet that represent the assumed proportions of major end uses by sector based on published data (see Section 4 and Figure 5). These end use proportions are used in the DRT water savings calculations in two ways:
  - The end use proportions are used in combination with the End-Use Savings Estimates and Implementation Rates to estimate the Drought Response Action-specific water savings; and
  - The end use proportions serve as a "cap" on the potential water savings estimates because the DRT does not allow a Drought Response Action or suite of Actions to "save" more water than the targeted end use uses. For example, no matter how many Actions are implemented that target toilets, the DRT will not attribute a water savings greater than total amount of water assumed to be used by toilets.

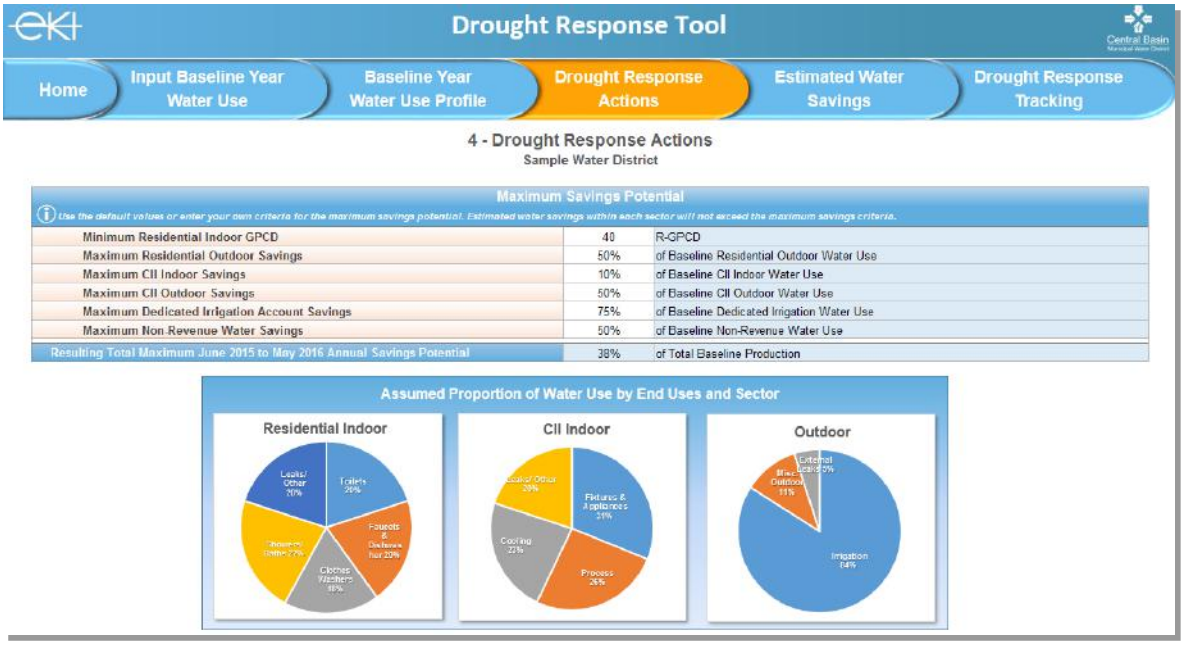
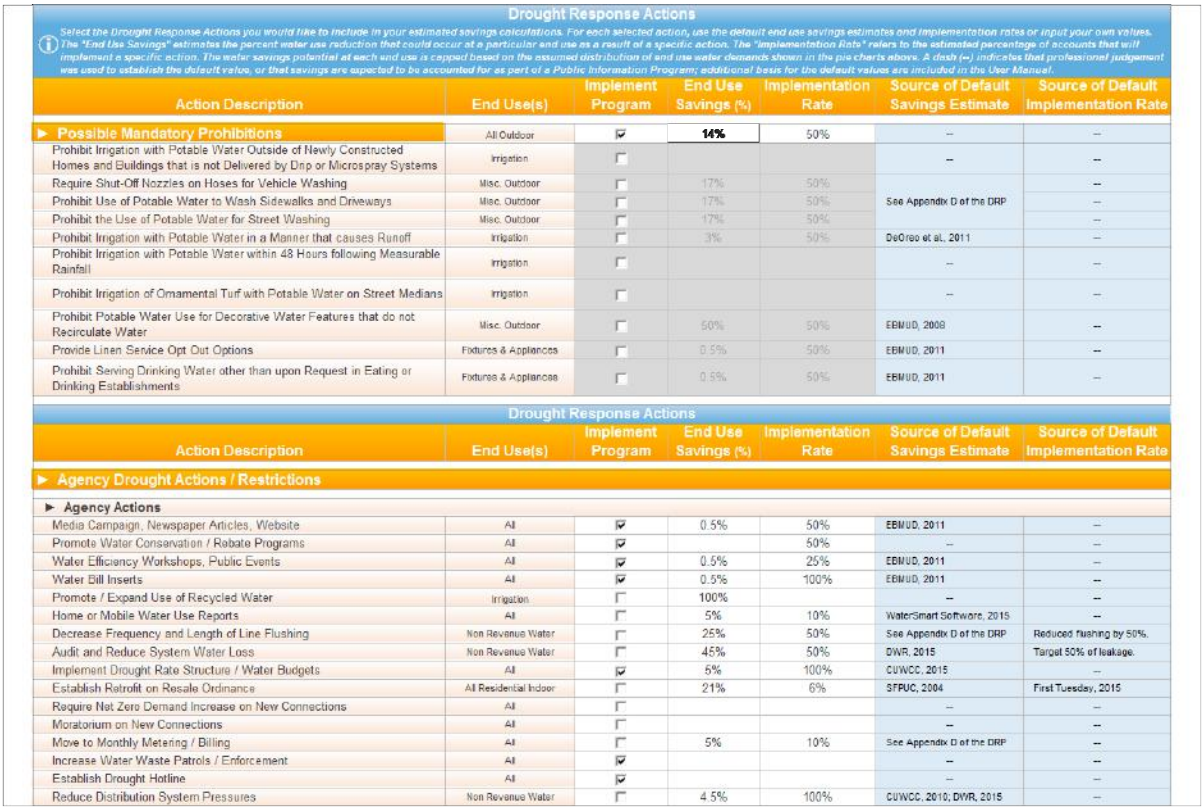


Figure 5: "Maximum Savings Potential" and "End Use Savings Potential" from *Worksheet 4 – Drought Response Actions* of the DRT © 2015 Erler & Kalinowski, Inc.

- **Potential Drought Response Actions**: A customized menu of potential Drought Response Actions or "Actions" is provided for agency consideration (see Figure 6). For each Action the Worksheet lists:
    - The associated end use(s) targeted by that Action;
    - The default estimated savings as a percentage of those end uses compared to baseline uses;
    - The default implementation rate (percentage of accounts that will take advantage of or comply with that Action); and
    - The basis of the default savings and implementation rates.

  Users can select the Drought Response Actions they wish to implement and include in the estimated savings calculations. The Drought Response Actions with cells highlighted in gray indicate that the action is overridden by another selected Action and will not factor into water savings calculations, even if selected.



Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Possible Mandatory Prohibitions	All Outdoor	☑	14%	50%	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☐	17%	50%		--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☐	17%	50%	See Appendix D of the DRP	--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☐	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☐	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☐			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☐			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☐	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☐	0.5%	50%	EBMUD, 2011	--

Drought Response Actions

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Agency Drought Actions / Restrictions						
▶ Agency Actions						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	50%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑		50%	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☐	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☐	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☐	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☑	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☐	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☑			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--

Figure 6: "Passive Residential Savings," "SWRCB Mandatory Prohibitions," and "Accelerate Implementation of Existing Water Conservation Program" actions from Worksheet 4 – Drought Response Actions of the DRT © 2015 Erler & Kalinowski, Inc.

Default values for end use savings and implementation rates are provided based on a variety of local and regional water use studies and generalizations. However, all of these values may be adjusted by users based on their understanding of the

communities they serve and their intended implementation and enforcement actions, wherever possible.

The suites of Actions and associated default water savings and implementation rates are presented in the following groupings and are based on the sources indicated in the Worksheet.

- **SWRCB Mandatory Prohibitions:** The May 2015 SWRCB regulation prohibits certain water uses by water customers (see Figure 6)[2].
- **Agency Drought Actions / Restrictions:** Potential Drought Response Actions and prohibitions that and agency may choose to implement are provided here and shown in Figure 6. These actions and prohibitions are grouped by (1) actions that can be taken by the agency, (2) actions/prohibitions specific to dedicated irrigation accounts, (3) actions/prohibitions that target residential water use, and (4) actions/prohibitions that target CII water use.
- **Customer Actions to Encourage:** These are Actions that the agency may encourage its customers to perform as part of a general education campaign targeting behavioral modifications. These actions are provided for informational purposes; the default savings values assume that the water savings associated with them are captured by an agency's overall public information campaign. Users can, however, adjust the assumed water savings and implementation rates to estimate the amount of additional savings anticipated by aggressively promoting these actions.

3.5 Worksheet 5 – Estimated Water Savings

Worksheet 5 displays the estimated potential monthly water production and savings for the drought year, compared to the Baseline Year(s) production data, and based on the selected suite of Drought Response Actions (and assumed end use savings estimates and implementation rates). As shown on Figure 7, tables and charts display how the estimated savings compare to the specified water use reduction goal by month and cumulatively during the drought year. Users may select the units that the data are displayed in from a drop down menu in the table header. If it appears that an agency will not meet its goal, cells in the Potential Cumulative Savings column will be highlighted in red.

[2] On 5 May 2015, SWRCB adopted Resolution 2015-0032 to mandate minimum actions by water suppliers and their customers to reduce potable water use into 2016 and assigned a mandatory water conservation savings goal to each water supplier based on their residential water use. On 2 February 2016, the SWRCB voted to extend the emergency regulation through October 2016.

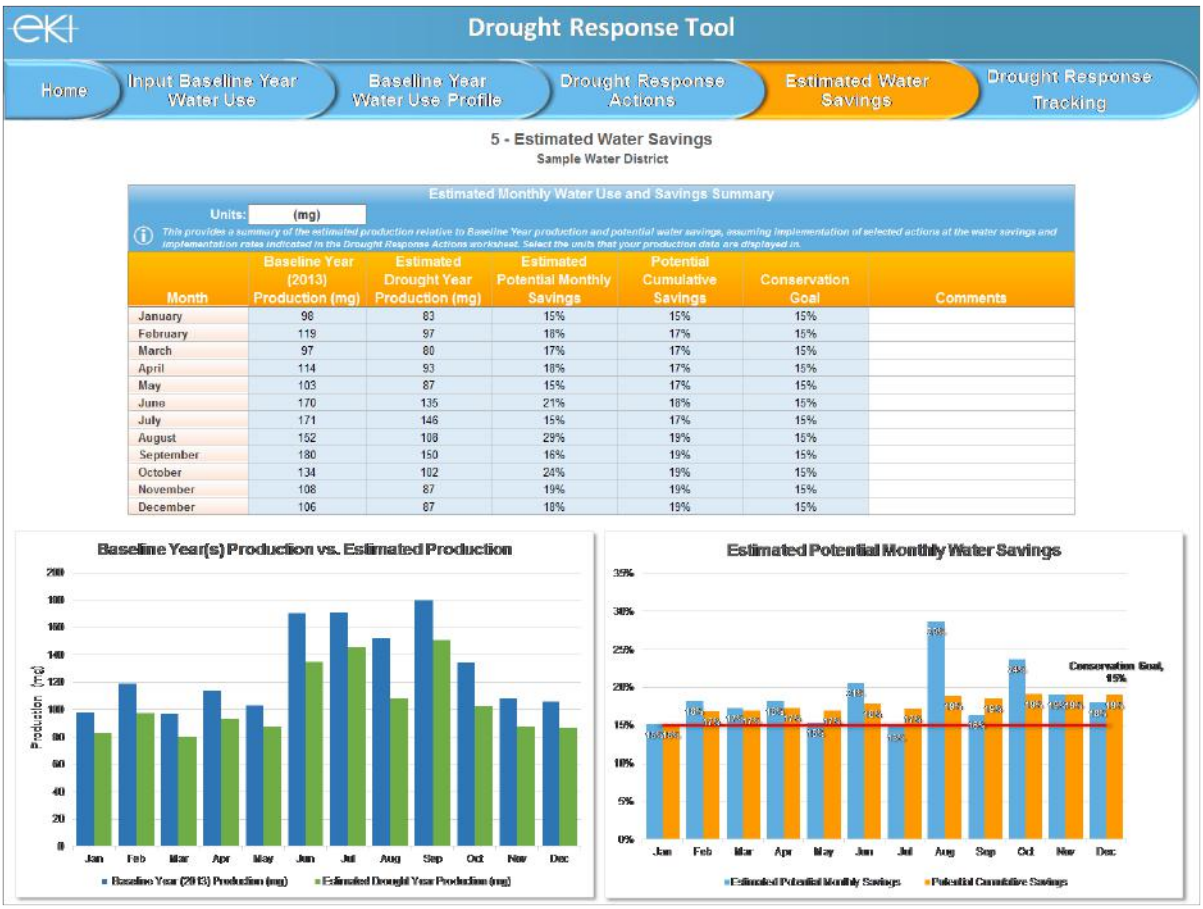


Figure 7: *Worksheet 5 – Estimated Water Savings* of DRT © 2015 Erler & Kalinowski, Inc.

It should be noted that the DRT is only a predictive tool that generates a water savings potential based on an assumed set of water use and savings inputs by the user, including Drought Response Actions, savings estimates, and implementation rates. The DRT in no way guarantees water savings or other performance metrics.

3.6 Worksheet 6 – Drought Response Tracking

Worksheet 6 can be used to track an agency's water production/savings and progress towards meeting its water use reduction goal. Users can input their production data for the drought year. The monthly and cumulative savings compared to the Baseline Year(s) data are then calculated. As shown on Figure 8, tables and charts display these savings compared to the water use reduction goal entered in Worksheet 1. Users may select the units the data are displayed in from a drop down menu in the table header. If an agency did not meet its goal, cells in the Cumulative Savings column will be highlighted in red.

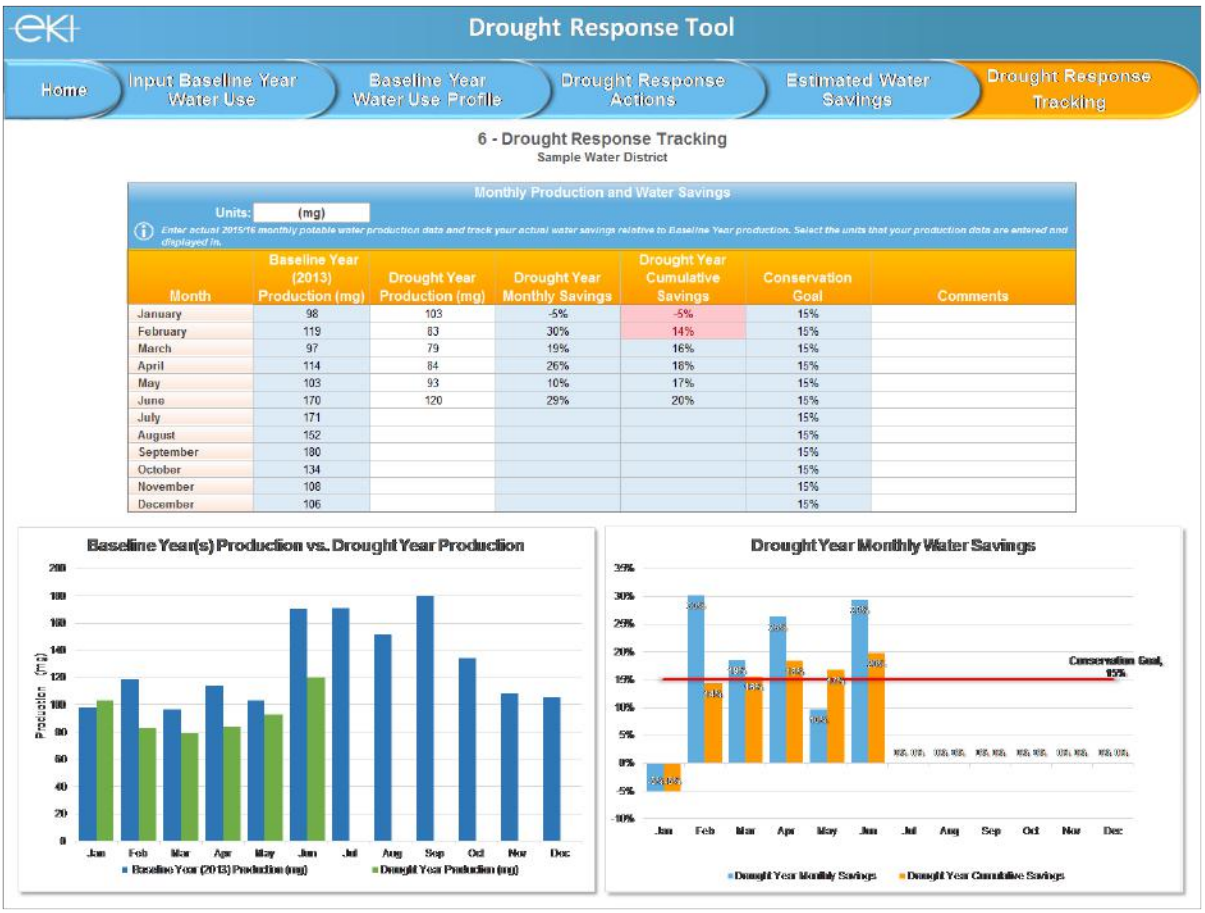


Figure 8: *Worksheet 6 – Drought Response Tracking* of DRT © 2015 Erler & Kalinowski, Inc.

For additional information and guidance, please contact Anona Dutton at adutton@ekiconsult.com or (650) 292-9100.

4. REFERENCES

BAWSCA, 2014. *Regional Water Demand and Conservation Projections*, Bay Area Water Supply & Conservation Agency, September 2014.

Conservation Warehouse. http://www.conservationwarehouse.com/ accessed 27 May 2015.

CUWCC, 2004. *Evaluation of Potential Best Management Practices - Residential and Small Commercial Weather-Based Irrigation Controllers*, California Urban Water Conservation Council, August 2004.

CUWCC, 2008. Memorandum of Understanding Regarding Urban Water Conservation in California, among California Urban Water Conservation Council and undersigned parties. Adopted September 1991, revised December 2008.

CUWCC, 2010. *Evaluation of Potential Best Management Practices – Distribution System Pressure Management*, California Urban Water Conservation Council, June 2010.

CUWCC, 2014. *Evaluation of Potential Best Management Practices - Rotating Nozzles,* California Urban Water Conservation Council, January 2014.

CUWCC, 2015. *Jumpstart Water Shortage Toolkit - Tool #3: Water Shortage Pricing Primer*, California Urban Water Conservation Council, 2015.

DeOreo et al., 2011. *California single-family water use efficiency study*. Aquacraft Water Engineering and Management, Boulder, Colorado, April 2011.

DWR, 2015. Water Audit and Leak Detection. http://www.water.ca.gov/wateruseefficiency/leak/ accessed 27 May 2015.

EBMUD, 2008. *WaterSmart Guidebook – A Water-Use Efficiency Plan Review Guide for New Businesses*, East Bay Municipal Utility District, 2008.

EBMUD, 2011. *East Bay Municipal Utility District Water Conservation Master Plan 2011*, East Bay Municipal Utility District, December 2011.

ENERGY STAR 2011. Products. https://www.energystar.gov/index.cfm?fuseaction=find_a_product accessed 27 May 2015.

EPA, 2012. How to Conserve Water and Use It Effectively. http://water.epa.gov/polwaste/nps/chap3.cfm accessed 27 May 2015.

EPA, 2015. WaterSense Labeled Pre-Rinse Spray Valves. http://www.epa.gov/WaterSense/products/prsv.html accessed 27 May 2015.

First Tuesday, 2015. Los Angeles Housing Indicators. May, 2015. http://journal.firsttuesday.us/los-angeles-housing-indicators-2/29229/ accessed 27 May 2015.

H2OUSE, 2009. Water Saver Home – Home Tour. http://h2ouse.org/tour/index.cfm accessed 27 May 2015.

Maddaus & Mayer, 2001. *Splash or Sprinkle? Comparing the Water Use of Swimming Pools and Irrigated Landscapes,* 2001 American Water Works Association Annual Conference, Washington, DC. 2001.

Pacific Institute, 2003. *Waste not, want not: The potential for urban water conservation in California.* Pacific Institute for Studies in Development, Environment, and Security, November 2003.

SFPUC, 2004. *Wholesale Customer Water Conservation Potential Technical Report*, San Francisco Public Utilities Commission, December 2004.

SoCal Water$mart. http://socalwatersmart.com/ accessed 27 May 2015.

UC IPM, 2014. The UC Guide to Healthy Lawns. http://www.ipm.ucdavis.edu/TOOLS/TURF/MAINTAIN/cycle.html accessed 27 May 2015.

USCB 2015. State and County QuickFacts: Los Angeles County, California. United States Census Bureau, last revised 28 May 2015. http://quickfacts.census.gov/qfd/states/06/06037.html accessed 12 June 2015.

Valvette Systems, 2015. The "Hows" and "Whys" of LittleValve Water Savings. http://www.valvettesystems.com/hows---whys-of-water-savings.html accessed 27 May 2015.

Vickers, 2001. Handbook of Water Use and Conservation, WaterPlow Press, May 2001.

WaterSmart, 2015. Measurable Results. http://www.watersmart.com/measurable-results/ accessed 27 May 2015.

APPENDIX I:
DROUGHT RESPONSE TOOL QUANTITATIVE ASSESSMENT

Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Westborough Water District

Enter Agency Information	
Agency Name	Westborough Water District
Total Population Served	12,481
Conservation Goal (%)	
Number of Residential Accounts	3,738
Number of Commercial, Industrial, and Institutional (CII) Accounts	50
Number of Dedicated Irrigation Accounts	87
Baseline Year(s)	2012 - 2015
Comments	

Navigation	
USER'S GUIDE	Download and read the guide before using this Tool
1 - HOME	Enter agency information
2 - INPUT BASELINE YEAR WATER USE	Enter Baseline Year production and use
3 - BASELINE YEAR WATER USE	Review and confirm entered information
4 - DROUGHT RESPONSE ACTIONS	Select Drought Response Actions and input estimated water savings and implementation rates.
5 - ESTIMATED WATER SAVINGS	Review estimated water production and compare estimated savings to conservation target.
6 - DROUGHT RESPONSE TRACKING	Track production and water savings against the conservation target.

Drought Response Tool

1 - Home

Westborough Water District

For questions about this tool or for additional information, contact:

Anona Dutton, P.G., C.Hg.
adutton@ekiconsult.com
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Erler & Kalinowski, Inc.
Consulting Engineers and Scientists

Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

2 - Input Baseline Year (2012 - 2015) Water Use

Westborough Water District

Input Baseline Year (2012 - 2015) Production and Water Use

Units: (ccf)

Select the units to input monthly production and use data. Enter the total monthly potable water production for the Baseline Year. Next, enter monthly water use data by sector for the Baseline Year. If you bill on a bi-monthly basis, divide your billing data between the months that the billing cycle includes. If your single-family and multi-family accounts are tracked separately, enter the combined water use for both sectors in the Residential Water Use column. If your commercial, industrial, and institutional (CII) accounts are tracked separately, enter the combined water use for each sector in the CII Water Use column. Your non-revenue water use is calculated by subtracting your monthly residential, CII, and dedicated irrigation water uses from your monthly production. Your monthly residential gallons per capita per day (R-GPCD) is calculated by dividing your monthly residential water use by your population entered in Worksheet 1 - Home.

Date	Total Production (ccf)	Residential Water Use (ccf)	CII Water Use (ccf)	Dedicated Irrigation Water Use (ccf)	Non-Revenue Water Use (ccf)	R-GPCD	Comments
January	**30,217**	25,879	1,897	1,236	1,205	50	
February	**28,688**	23,594	1,730	1,120	2,244	51	
March	**27,116**	25,602	1,954	1,951	-2,392	49	
April	**33,594**	24,776	1,891	1,888	5,039	49	
May	**36,137**	27,447	2,354	5,801	535	53	
June	**37,240**	26,562	2,278	5,614	2,786	53	
July	**41,729**	26,934	2,388	6,403	6,005	52	
August	**41,748**	26,934	2,388	6,403	6,023	52	
September	**39,618**	26,092	2,169	5,273	6,084	52	
October	**35,689**	26,962	2,241	5,449	1,038	52	
November	**30,989**	25,028	1,796	767	3,397	50	
December	**34,465**	25,862	1,856	793	5,955	50	

Drought Response Tool

3 - Baseline Year (2012 - 2015) Water Use Profile

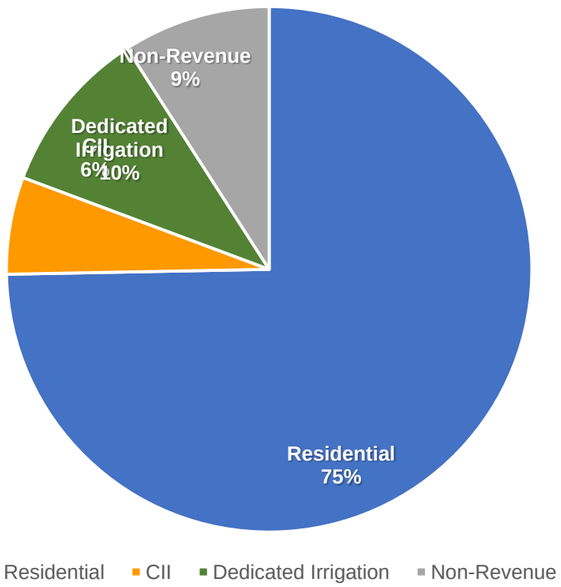
Westborough Water District

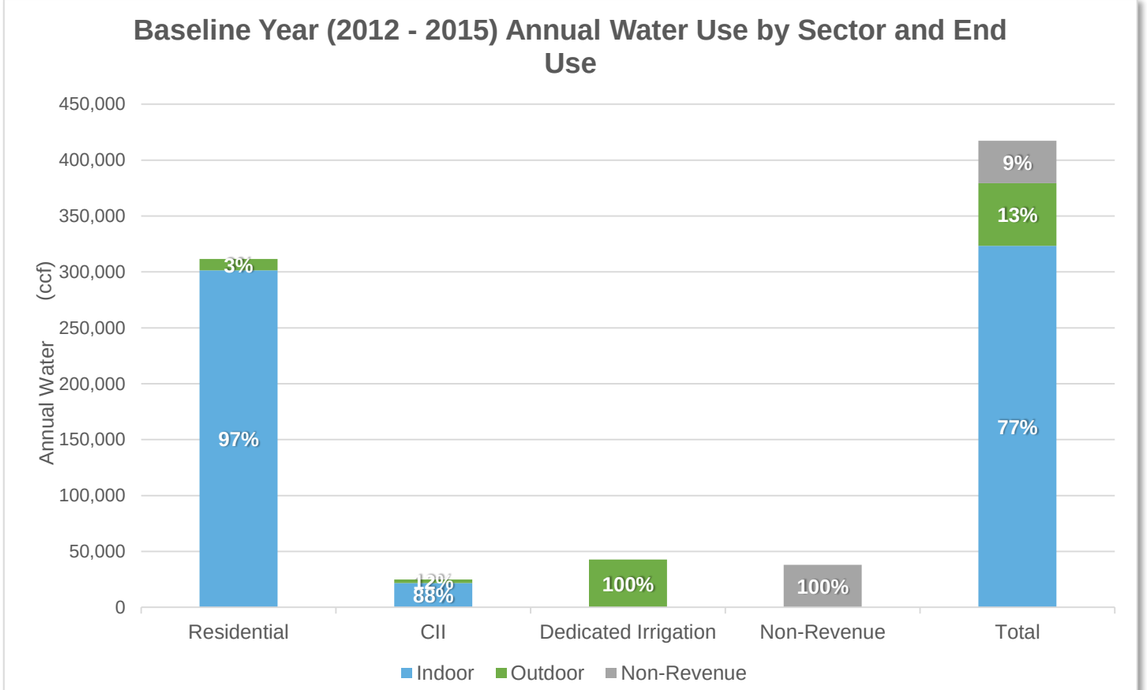
Baseline Year (2012 - 2015) Annual Water Use Summary

Units: (ccf)

A summary of your Baseline Year water use by sector and major end use category is shown below. Select the units in which your production and use data are displayed.

Water Use	Total Production (ccf)	Water Use (ccf)				Comments
		Residential	CII	Dedicated Irrigation	Non-Revenue	
Total	417,229	311,672	24,944	42,696	37,918	
Total Indoor	323,296	301,445	21,851	--	--	
Total Outdoor	56,015	10,227	3,093	42,696	--	
Total Non-Revenue	37,918	--	--	--	37,918	
Total Indoor %	77%	97%	88%	0%	--	
Total Outdoor %	13%	3%	12%	100%	--	
Total Non-Revenue %	9%	--	--	--	100%	

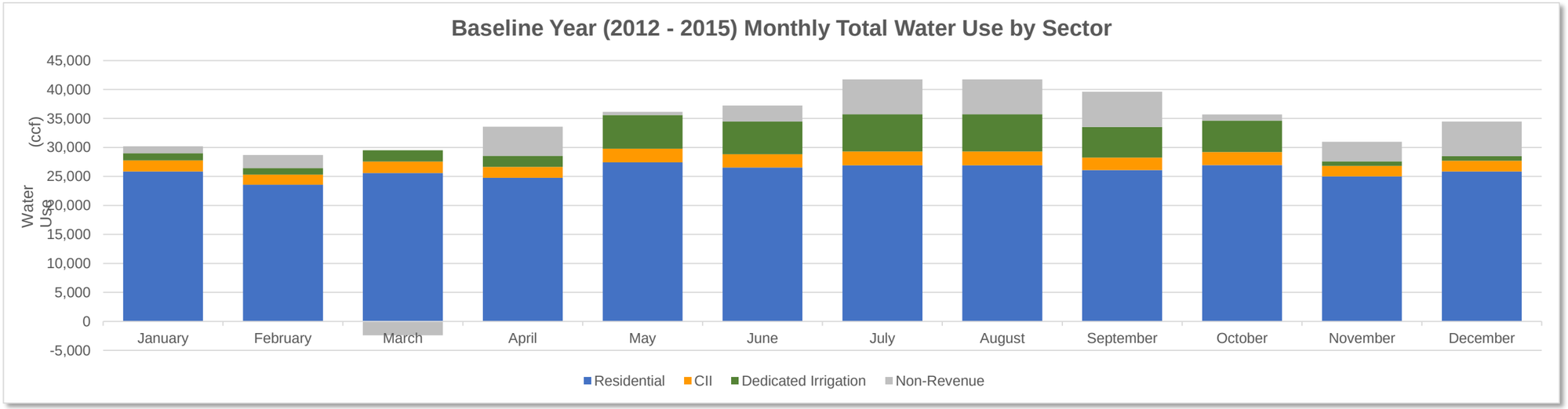


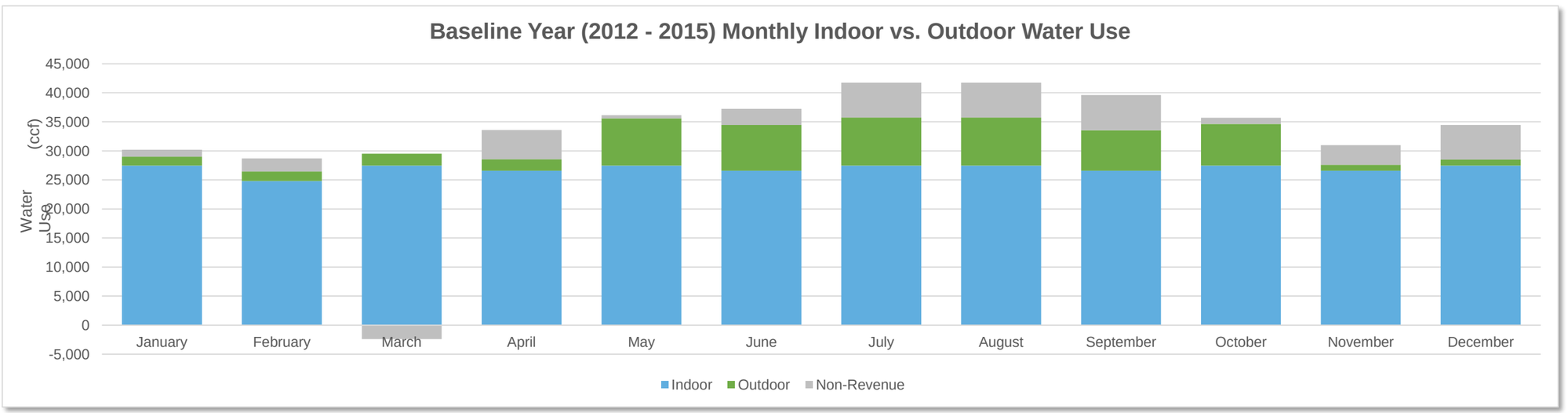


Drought Response Tool

3 - Baseline Year (2012 - 2015) Water Use Profile

Westborough Water District





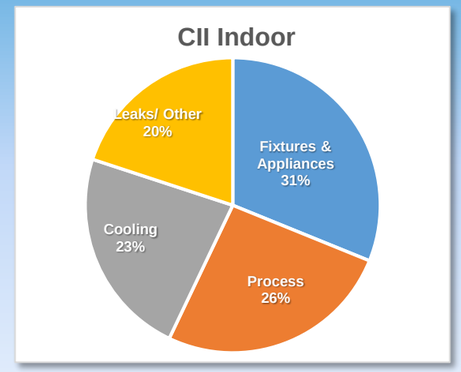
Drought Response Tool

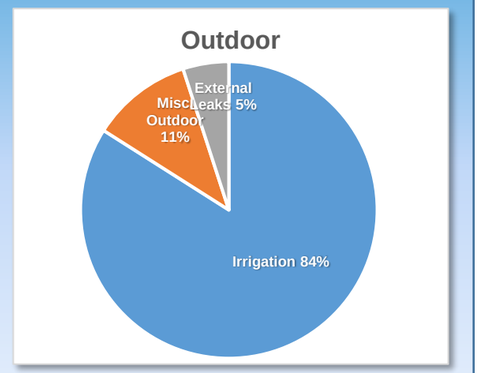
4 - Drought Response Actions

Westborough Water District

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	40	R-GPCD
Maximum Residential Outdoor Savings	75%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	10%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	75%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	75%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	29%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector





Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**75%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☑	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☐			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☐			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☐	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Agency Drought Actions / Restrictions**						
► **Agency Actions**						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	50%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☐		50%	--	--
Water Efficiency Workshops, Public Events	All	☐	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☐	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☐	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☐	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☐	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☐	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☐			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► **Dedicated Irrigation**						
Conduct Irrigation Account Surveys	Irrigation	☐	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	**17%**	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
- OR -						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Agency Drought Actions / Restrictions**						
▶ **Residential**						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	**17%**	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
- OR -						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
▶ **CII**						
Conduct CII Surveys Targeting High Water Users	All CII uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	**17%**	50%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☐	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
- OR -						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Residential Customer Actions to Encourage**						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

Drought Response Tool

5 - Estimated Water Savings

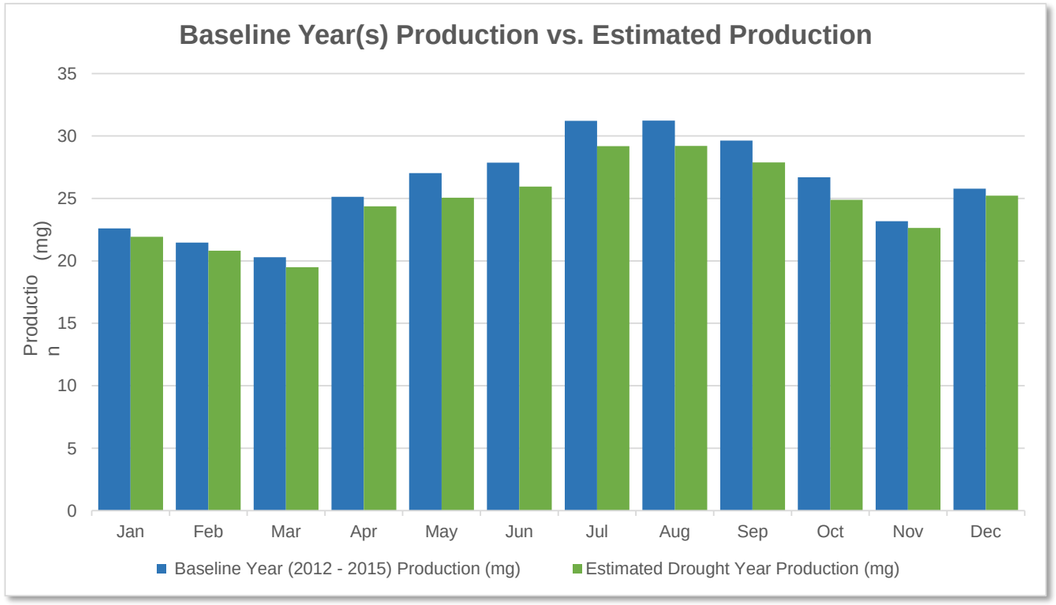
Westborough Water District

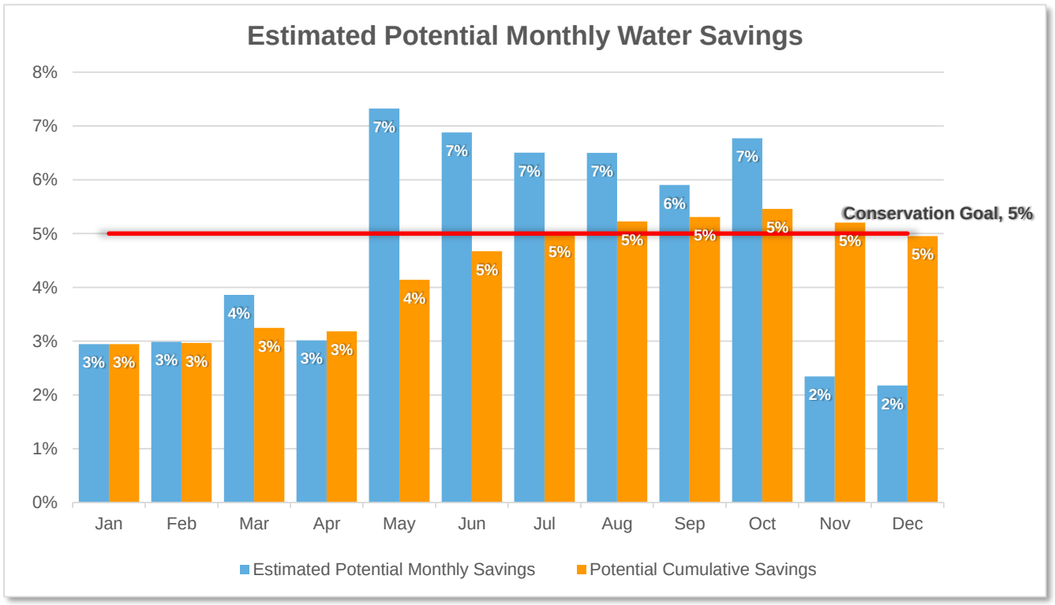
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2012 - 2015) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	23	22	3%	3%	5%	
February	21	21	3%	3%	5%	
March	20	20	4%	3%	5%	
April	25	24	3%	3%	5%	
May	27	25	7%	4%	5%	
June	28	26	7%	5%	5%	
July	31	29	7%	5%	5%	
August	31	29	7%	5%	5%	
September	30	28	6%	5%	5%	
October	27	25	7%	5%	5%	
November	23	23	2%	5%	5%	
December	26	25	2%	5%	5%	





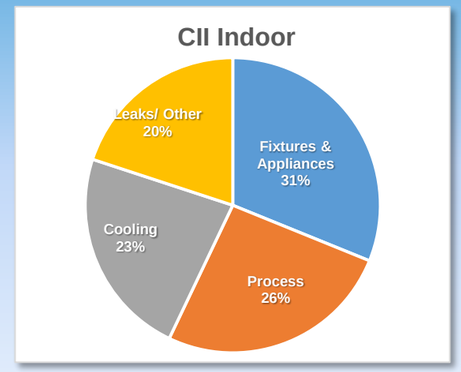
Drought Response Tool

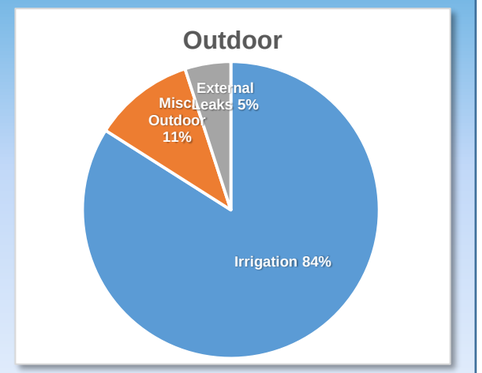
4 - Drought Response Actions

Westborough Water District

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	40	R-GPCD
Maximum Residential Outdoor Savings	75%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	10%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	75%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	75%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum June 2015 to May 2016 Annual Savings Potential	29%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector





Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**75%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☑	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☐			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☐			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☐	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Agency Actions						
Media Campaign, Newspaper Articles, Website	All	☑	**1.0%**	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑		50%	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	**1.0%**	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☐	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☐	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☑	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☐	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☐	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	☐	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	38%	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
- OR -						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► Agency Drought Actions / Restrictions						
► Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	38%	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
- OR -						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
► CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	38%	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☐	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
- OR -						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Residential Customer Actions to Encourage**						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

Drought Response Tool

5 - Estimated Water Savings

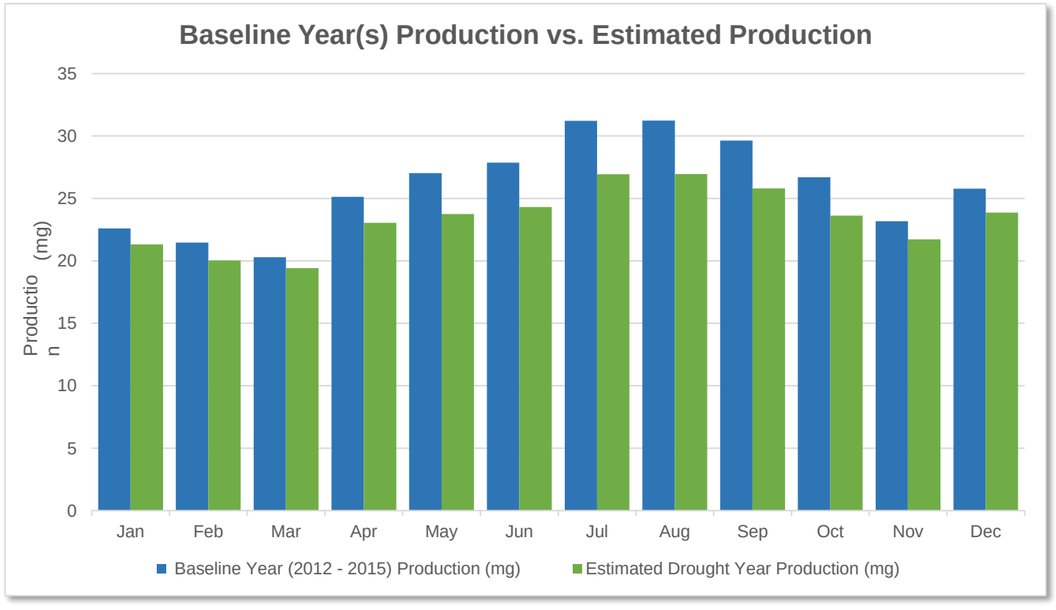
Westborough Water District

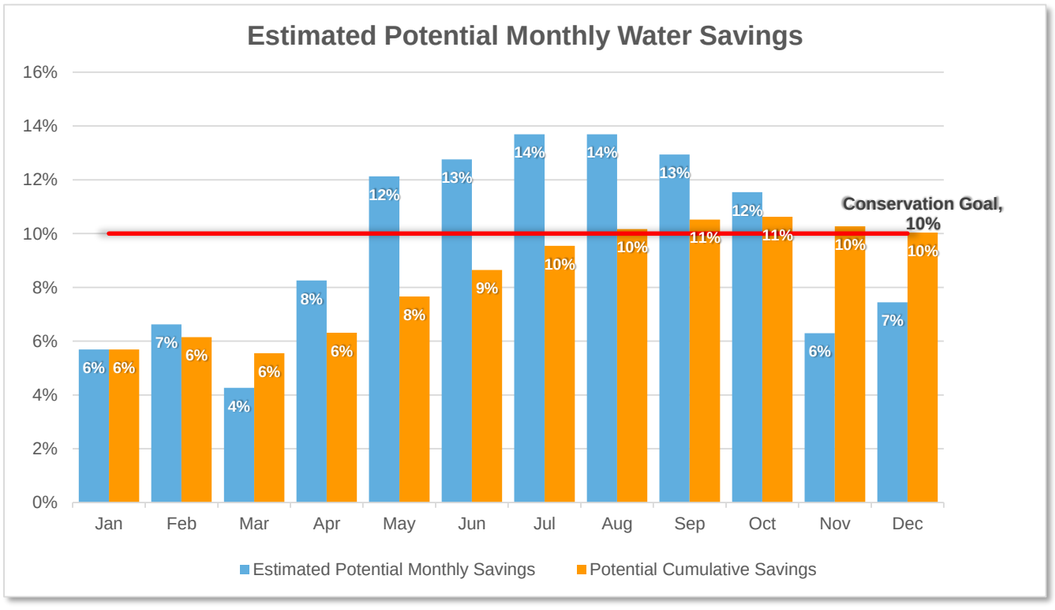
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2012 - 2015) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	23	21	6%	6%	10%	
February	21	20	7%	6%	10%	
March	20	19	4%	6%	10%	
April	25	23	8%	6%	10%	
May	27	24	12%	8%	10%	
June	28	24	13%	9%	10%	
July	31	27	14%	10%	10%	
August	31	27	14%	10%	10%	
September	30	26	13%	11%	10%	
October	27	24	12%	11%	10%	
November	23	22	6%	10%	10%	
December	26	24	7%	10%	10%	





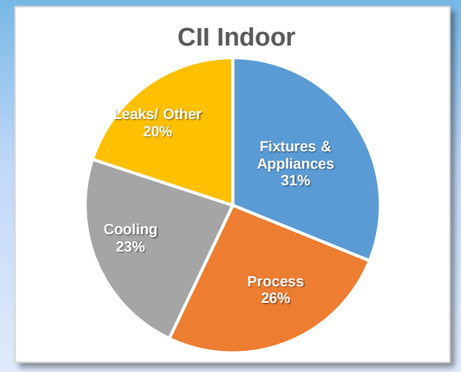
Drought Response Tool

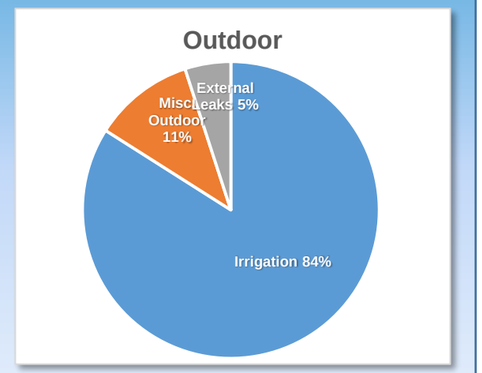
4 - Drought Response Actions

Westborough Water District

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	40	R-GPCD
Maximum Residential Outdoor Savings	75%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	10%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	75%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	75%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum June 2015 to May 2016 Annual Savings Potential	29%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector





Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**75%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☑	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☐			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☐			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☐	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Agency Drought Actions / Restrictions**						
► **Agency Actions**						
Media Campaign, Newspaper Articles, Website	All	☑	**1.0%**	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑		50%	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	**1.0%**	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☐	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☐	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☑	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☐	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☐	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► **Dedicated Irrigation**						
Conduct Irrigation Account Surveys	Irrigation	☐	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
- OR -						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☑	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Agency Drought Actions / Restrictions**						
▶ **Residential**						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
- OR -						
Establish Water Budget - 10% Reduction	All Residential Uses	☑	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
▶ **CII**						
Conduct CII Surveys Targeting High Water Users	All CII uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	38%	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☐	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
- OR -						
Establish Water Budget - 10% Reduction	All CII uses	☑	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Residential Customer Actions to Encourage**						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

Drought Response Tool

5 - Estimated Water Savings

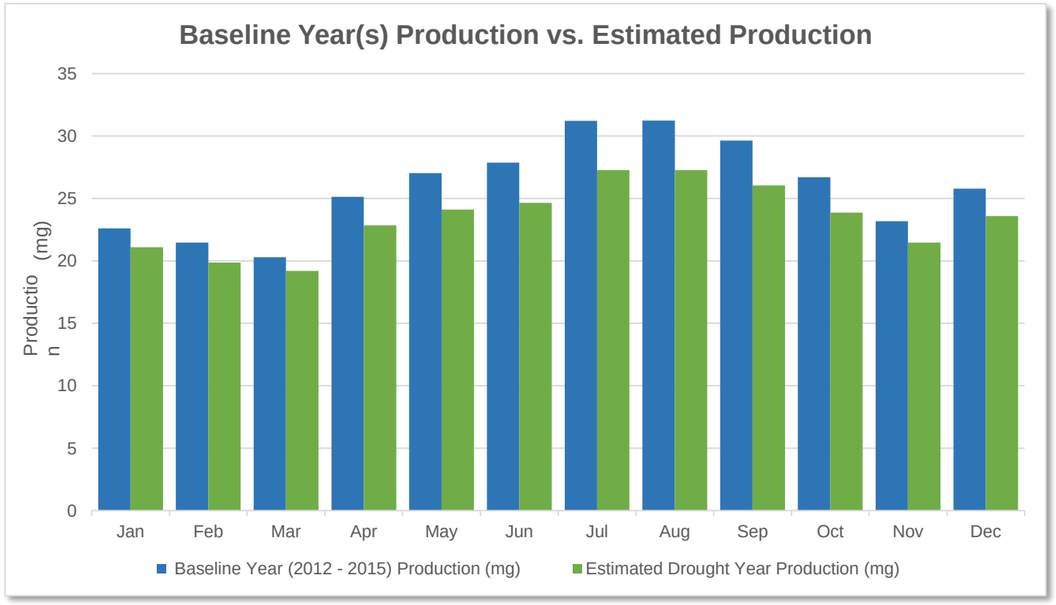
Westborough Water District

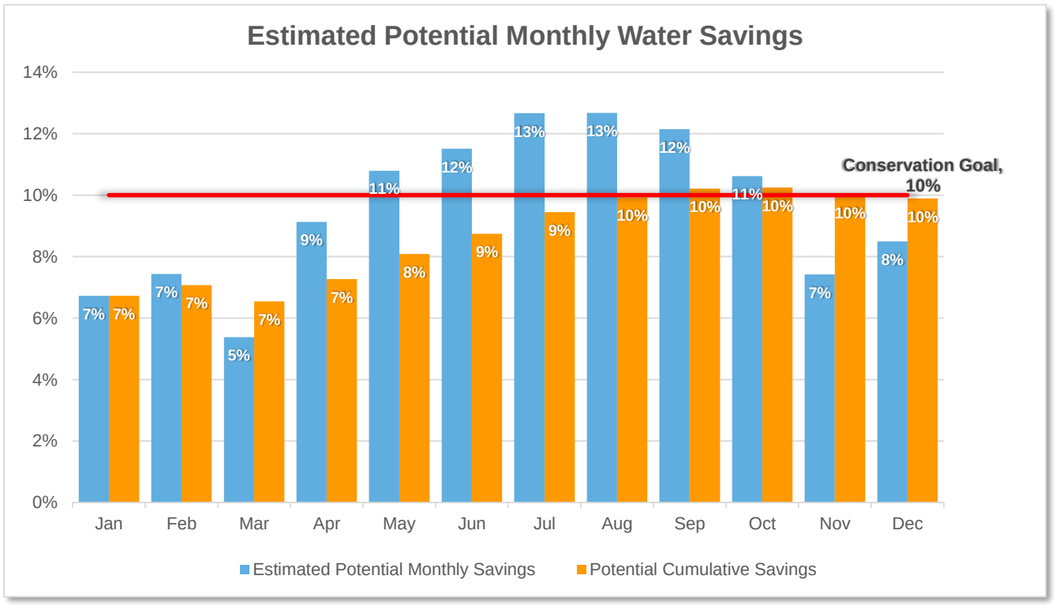
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2012 - 2015) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	23	21	7%	7%	10%	
February	21	20	7%	7%	10%	
March	20	19	5%	7%	10%	
April	25	23	9%	7%	10%	
May	27	24	11%	8%	10%	
June	28	25	12%	9%	10%	
July	31	27	13%	9%	10%	
August	31	27	13%	10%	10%	
September	30	26	12%	10%	10%	
October	27	24	11%	10%	10%	
November	23	21	7%	10%	10%	
December	26	24	8%	10%	10%	





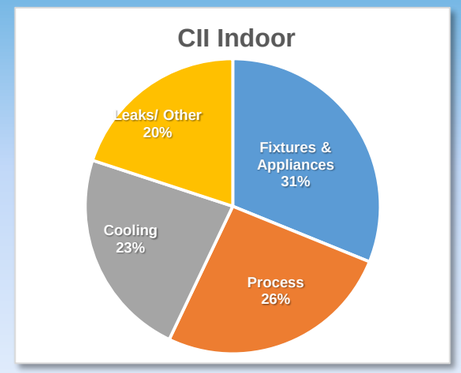
Drought Response Tool

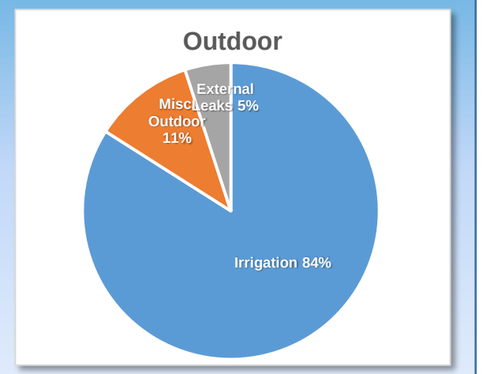
4 - Drought Response Actions

Westborough Water District

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	40	R-GPCD
Maximum Residential Outdoor Savings	75%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	10%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	75%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	75%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum June 2015 to May 2016 Annual Savings Potential	29%	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector





Drought Response Tool

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Westborough Water District

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**75%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☑	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☐			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☐			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☐	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Agency Drought Actions / Restrictions**						
► **Agency Actions**						
Media Campaign, Newspaper Articles, Website	All	☑	**1.0%**	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑		50%	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	**1.0%**	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☐	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☑	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☑	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☑	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☐	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► **Dedicated Irrigation**						
Conduct Irrigation Account Surveys	Irrigation	☐	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	50%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☐	100%	5%	--	--
- OR -						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	**75%**	--	--
Establish Water Budget - 75% Reduction	Irrigation	☑	75%	**75%**	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Agency Drought Actions / Restrictions**						
► **Residential**						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	50%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
- OR -						
Establish Water Budget - 10% Reduction	All Residential Uses	☑	10%	**75%**	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
► **CII**						
Conduct CII Surveys Targeting High Water Users	All CII uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	50%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☐	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
- OR -						
Establish Water Budget - 10% Reduction	All CII uses	☑	10%	**75%**	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Residential Customer Actions to Encourage**						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

Drought Response Tool

5 - Estimated Water Savings

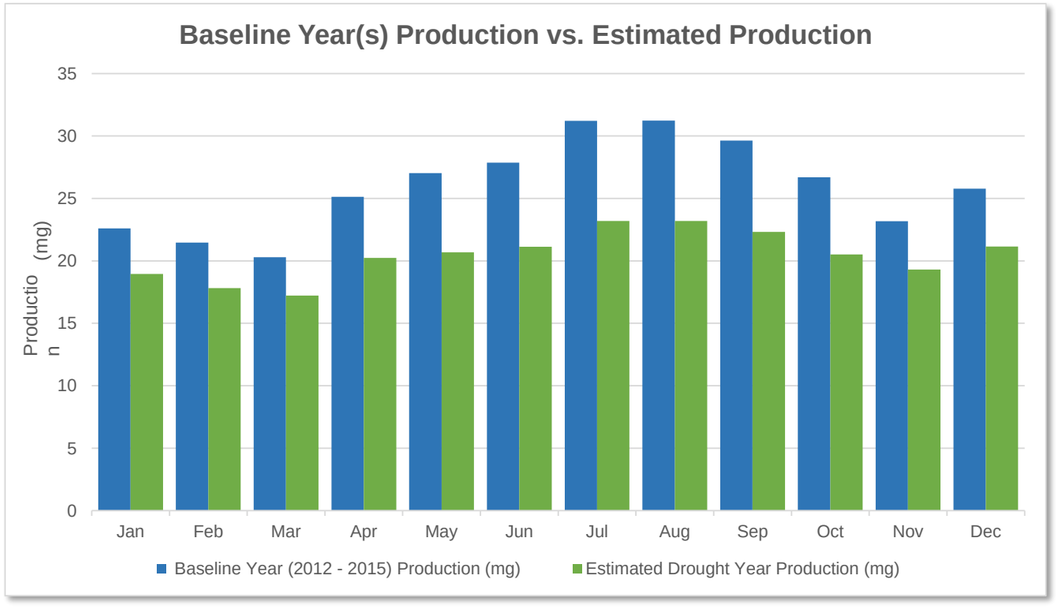
Westborough Water District

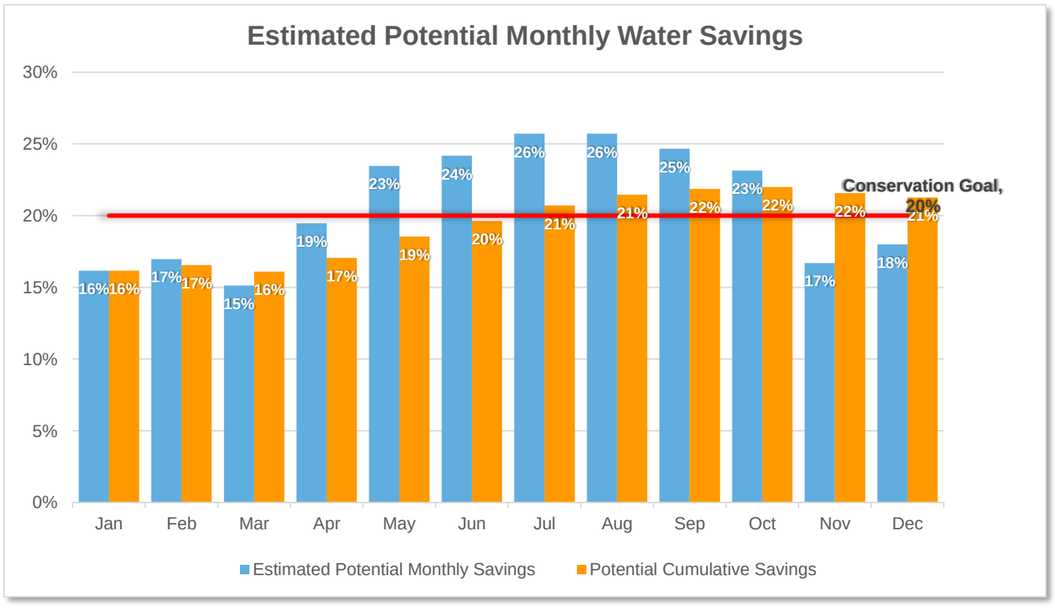
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2012 - 2015) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	23	19	16%	16%	20%	
February	21	18	17%	17%	20%	
March	20	17	15%	16%	20%	
April	25	20	19%	17%	20%	
May	27	21	23%	19%	20%	
June	28	21	24%	20%	20%	
July	31	23	26%	21%	20%	
August	31	23	26%	21%	20%	
September	30	22	25%	22%	20%	
October	27	21	23%	22%	20%	
November	23	19	17%	22%	20%	
December	26	21	18%	21%	20%	





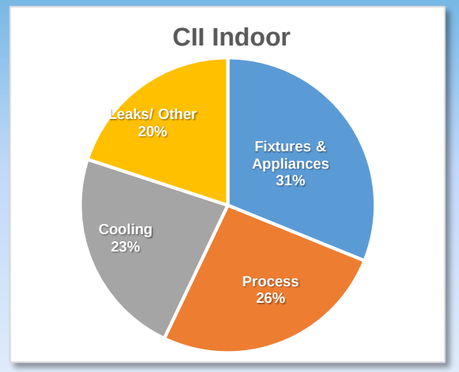
Drought Response Tool

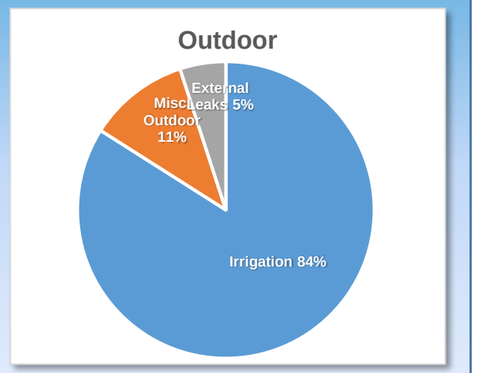
4 - Drought Response Actions

Westborough Water District

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	35	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum June 2015 to May 2016 Annual Savings Potential	**41%**	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector





Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**75%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☑	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☐			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☐			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☐	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Agency Drought Actions / Restrictions**						
► **Agency Actions**						
Media Campaign, Newspaper Articles, Website	All	☑	**1.0%**	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑		50%	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	**1.0%**	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☐	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☑	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☑	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☑	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☑			--	--
Move to Monthly Metering / Billing	All	☑	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
► **Dedicated Irrigation**						
Conduct Irrigation Account Surveys	Irrigation	☐	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	50%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☑	100%	**100%**		
Require Repair of all Leaks within 24 hours	External Leaks	☐	100%	5%	--	--
- OR -						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
► **Agency Drought Actions / Restrictions**						
► **Residential**						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	50%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☐	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
- OR -						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☑	**40%**	**75%**	--	--
► **CII**						
Conduct CII Surveys Targeting High Water Users	All CII uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	50%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☐	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
- OR -						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☑	30%	**75%**	--	--

Drought Response Tool

4 - Drought Response Actions

Westborough Water District

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Residential Customer Actions to Encourage**						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

Drought Response Tool

5 - Estimated Water Savings

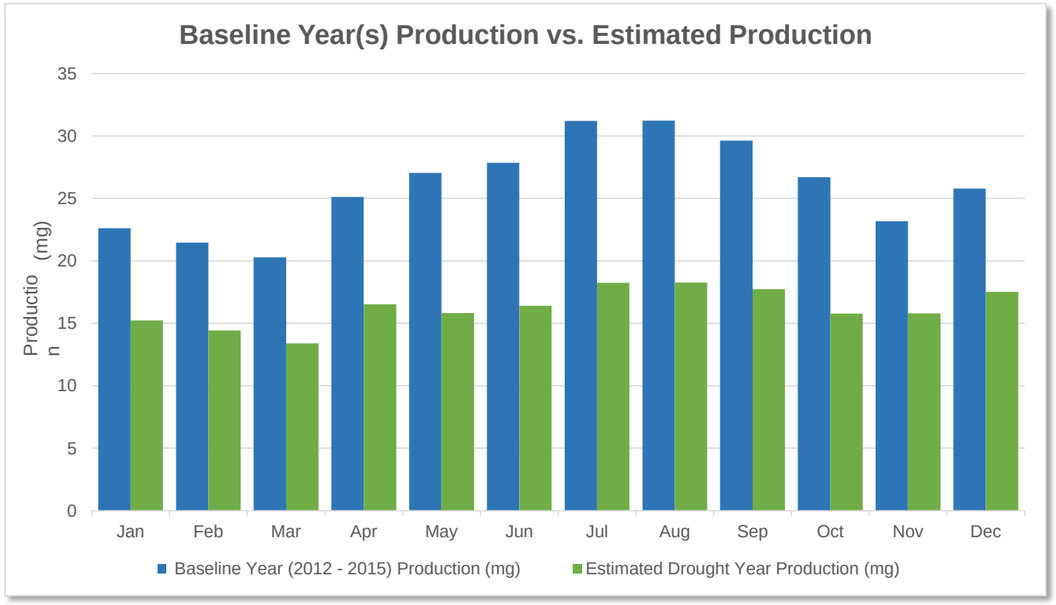
Westborough Water District

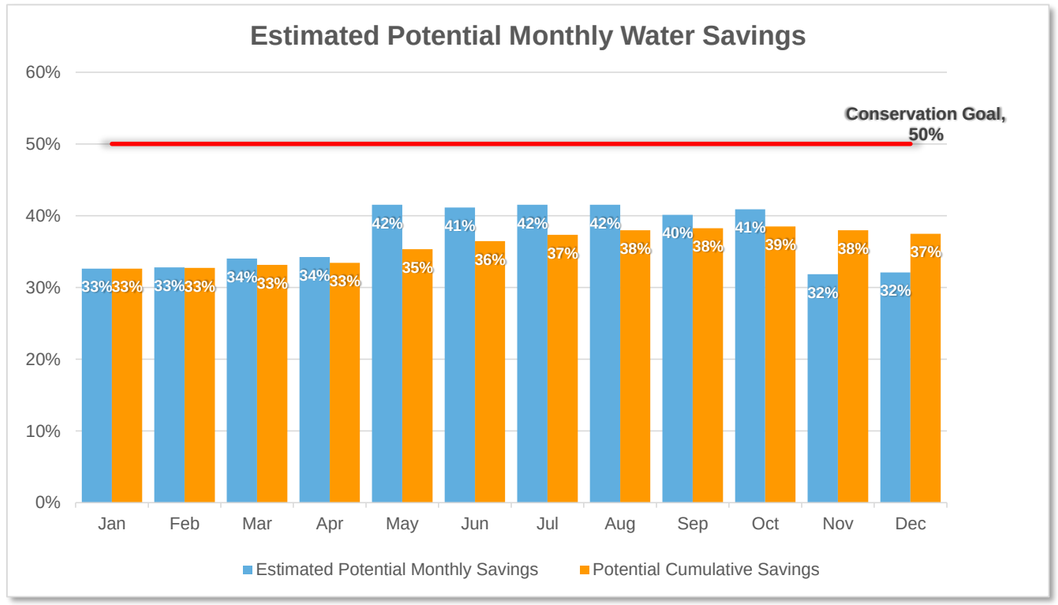
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2012 - 2015) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	23	15	33%	33%	50%	
February	21	14	33%	33%	50%	
March	20	13	34%	33%	50%	
April	25	17	34%	33%	50%	
May	27	16	42%	35%	50%	
June	28	16	41%	36%	50%	
July	31	18	42%	37%	50%	
August	31	18	42%	38%	50%	
September	30	18	40%	38%	50%	
October	27	16	41%	39%	50%	
November	23	16	32%	38%	50%	
December	26	18	32%	37%	50%	





APPENDIX J:
WWD ORDINANCE NO. 64 AND DRAFT WSCP RESOLUTION

ORDINANCE No. 64

PROHIBITING WASTEFUL WATER USE WITHIN THE DISTRICT

WESTBOROUGH WATER DISTRICT

THIS ORDINANCE is adopted in light of the following facts and circumstances, which are hereby found and declared by the Board of Directors of the Westborough Water District ("District"):

WHEREAS, the District is a County Water District organized pursuant to the County Water District Law (Water Code Section 30001 et seq.), which provides potable water service within its jurisdiction, which is located in the City of South San Francisco, California; and

WHEREAS, California Water Code Section 375 et seq. authorizes the adoption of a water conservation ordinance after notice and a public hearing; and

WHEREAS, California Water Code Section 31026 et seq. authorizes the District to restrict the use of District water during any emergency caused by drought, or other threatened or existing water shortage and to prescribe and define by ordinance, the restrictions and prohibitions on water use; and

WHEREAS, the District obtains all of its water from the City and County of San Francisco, acting by the San Francisco Public Utilities Commission ("SFPUC") and is entirely dependent on the SFPUC source of supply for its water; and

WHEREAS, on January 17, 2014, California Governor Jerry Brown issued a proclamation that a State of Emergency exists in California due to severe drought conditions, as evidenced by water supply and snowpack at levels alarmingly below their normal averages; and

WHEREAS, on January 31, 2014, and due to a dearth of precipitation, the SFPUC officially asked all customers to voluntarily reduce their usage by 10%; and

WHEREAS, on July 15, 2014, the State Water Resources Control Board adopted Resolution No. 2014-0038, adopting an emergency regulation for statewide urban water conservation, mandating certain actions by urban waters suppliers; and

WHEREAS, wasteful water use practices constitute a potential threat to, and an unacceptable diminution of, the District's water supplies and its ability to meet water conservation goals, particularly in times of drought; and

WHEREAS, careful water management that includes active water conservation measures not only in times of drought, but at all times, is essential to ensure a reliable minimum supply of water to meet current and future water supply needs; and

WHEREAS, Best Management Practice (DMM #13 of Urban Water Management Plan) calls for the District to enact and enforce certain prohibitions against wasteful use on a year-round and on-going basis, i.e. during drought and non-drought periods.

WHEREAS, the Board of Directors finds and determines that this Ordinance is not subject to the California Environmental Quality Act (Public Resources Code Section 2100 et seq.) ("CEQA") pursuant to Section 15307 (the activity assures the maintenance, restoration, enhancement, or protection of a natural resource) and Section 15378(b)(2) (the activity is not a project as it involves general policy and procedure making) of the State CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3; and

WHEREAS, the adoption and enforcement of this Ordinance is necessary to manage the District's water system, particularly during times of water shortage; and

WHEREAS, the District published notice of, and provided an opportunity for public input at a public hearing prior to adopting the Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the Board of Directors of the Westborough Water District as follows:

Section 1: Prohibition of Wasteful Water Use

A. The following uses of District water listed in this section 1 are hereby determined to be unreasonable and constitute a waste and therefore are prohibited on a permanent, year-round basis:

1. The use of water through a commercial meter when the customer has been given a 7-day notice to repair broken or defective plumbing or sprinkler system.

2. Use of potable water which results in excessive flooding or runoff in gutters, sidewalk, driveway or street.

3. Use of potable water for washing any automobiles, motorcycles, RV's trucks, trailers, and boats without shut-off nozzle or device attached that causes it to cease dispensing water immediately when not in use.

4. The service of drinking water in restaurants and cafes except upon request.

5. The use of water for city street sweepers/washers, except when approved by the District.

6. The use of water in non-recirculating water fountains and decorative water features.

Section 2: **Non-Essential Water Uses During Drought or Water Shortage Conditions**

A. The following uses of District water listed in this section 2 are hereby determined to be non-essential activities during any drought, water shortage emergency or voluntary water conservation period that has been officially proclaimed by the District and therefore are prohibited, except where necessary to address an immediate health or safety need or to comply with a term or condition of a permit issued by a state or federal agency:

1. Use of potable water for washing sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surface areas.

2. Use of potable water to clean, fill or maintain levels in fountains, including recirculating fountains.

3. Use of water for recreation toys and equipment.

4. Use of water through a hose or pressure washer to clean the exterior of any building, home, or driveway, except prior to painting or if required for health or safety purposes.

5. Limiting watering duration to 15 minutes watering 2 days a week maximum. Watering or irrigating of lawn or landscape is also prohibited between the hours of 8:00 a.m. and 7:00 p.m.

6. The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.

Section 3: Violations, Notices and Remedies

A. Violations of section 1 or 2 will be considered waste and an unreasonable use of water and subject to penalties listed in this section 3.

B. If the District believes that a customer has been or is using water in violation of this Ordinance, the General Manager will send a written notice to the customer that includes the following: (1) specifying the nature of the waste and the time of occurrence, to the extent known by the District: (2) requesting that the customer cease such use; (3) informing the customer of the process to seek an exception based on undue hardship or substantial risk to the health and safety of the customer; and (4) informing the customer that failure to comply with this Ordinance may result in the termination of water service, fine and imprisonment ("violation notice"). The District will make a reasonable, good faith effort to contact an adult person residing at the premises by telephone or in person to provide the customer with the violation notice.

C. If the customer does not correct the violation within 72 hours of receiving the violation notice and the customer does not request an exception to the application of this Ordinance, the General Manager will post the violation notice on the property where the violation is occurring. If the customer does not correct the violation within 48 hours of the posting of the violation notice, the District may seek to enforce this Ordinance by restricting or terminating the customer's water service. The customer shall be responsible for paying the District's costs incurred in enforcing this Ordinance, including the costs of terminating and restoring water service.

D. The District may also seek to enforce this Ordinance as a criminal misdemeanor by coordinating with the District Attorney.

Section 4: Appeals

A. Any person appealing a notice of noncompliance shall within fifteen days (15) days of receipt thereof, request for hearing by the Board of Directors. Request for hearing shall be made to the General Manager of the District. The General Manager shall provide the person with the date and time of the next available public hearing. The person is required to submit an explanation for appeal or attend the meeting to discuss this matter.

B. Decision and Appeal. The final decision of the hearing shall be issued within thirty (30) days of the conclusion of the hearing and shall be delivered by first-class mail.

Section 5: Exceptions

A. Any customer who believes that the application of this Ordinance would create an undue hardship or would cause a substantial risk to the health or safety of the customer may submit a written request for an exception to the requirements of the Ordinance to the General Manager for consideration. A customer may appeal the decision of the General

Manager to the Board of Directors. To do so, he or she must submit a written statement of the reason for the appeal, together with evidence in support of it.

Section 6: Severability

If any section, subsection, provision or part of this Ordinance, or its application to any person or circumstance, is held to be unconstitutional or otherwise invalid, the remainder of this Ordinance, and the application of such provision to other person or circumstances, shall not be affected thereby and shall remain in full force and effect and, to that end, the provisions of this Ordinance are severable.

Section 7: Effective Date

This Ordinance shall become effective upon adoption.

Section 8: Notice of Exemption

The General Manager hereby is authorized and directed to file a Notice of Exemption with the County Clerk to record the bases for which the actions taken by this Ordinance are exempt from the California Environmental Quality Act.

Section 9: Summary

The District Secretary shall publish a summary of the contents of this Ordinance in a newspaper of general circulation within 15 days of adoption, indicating the names of the directors who voted for and against the ordinance.

Passed and adopted this 14 th day of August, 2014, by the following vote of the Board:

AYES: Chambers, Medina, Bautista, Irwin

NOES: None

ABSENT: Lopez

/s/ Thomas Chambers
President of the Board of Directors
Westborough Water District

ATTEST:

Darryl A. Barrow
Secretary of the Board

RESOLUTION NO.

DECLARING A WATER SHORTAGE EMERGENCY AND IMPLEMENTING WATER SHORTAGE CONTINGENCY PLAN UNDER THE DISTRICT'S URBAN WATER MANAGEMENT PLAN

WESTBOROUGH WATER DISTRICT

WHEREAS, on March 27, 2015 the State Water Resources Control Board ("State Water Board") approved emergency regulatory action to further amend its previous two emergency regulations pertaining to drought emergency water conservation; and

WHEREAS, on April 1, 2015 the Governor issued an Executive Order directing the State Water Board to impose restrictions to achieve an aggregate statewide 25% reduction in potable urban water use for the period of June 1, 2015 through February 28, 2016, as compared to January 1, 2013 through February 28, 2013 and June 1, 2013 through December 31, 2013 water use; and

WHEREAS, on May 5, 2015 the State Water Board adopted a nine (9) tier system based on a water supplier's residential gallons per capita per day, R-GPCD, range for July through September of 2014 which placed the Westborough Water District ("WWD") into tier two (2), requiring WWD to achieve a 8% reduction in water use from its use in January through February of 2013 and June through December of 2013; and

WHEREAS, on February 2, 2016, based on Governor Brown's November 2015 Executive Order, the State Water Board approved an updated and extended emergency regulation that continued mandatory reductions through October 2016;

WHEREAS, on May 18, 2016, based on Governor Brown's May 9, 2016 Executive Order B-37-16, the State Water Board approved replacing the previous state-developed standards with locally developed conservation standards based upon each agency's specific circumstances and extending the emergency regulations for urban water conservation through the end of January 2017, and requiring urban water suppliers to continue reporting monthly water use production information to the SWRCB on a permanent basis;

WHEREAS, Governor Brown's May 2016 Executive Order directs the State Water Board to continue the following prohibitions on a permanent basis:

- Hosing off sidewalks, driveways and other hardscapes;
- Washing automobiles with hoses not equipped with a shut-off nozzle:
- Using non-recirculated water in a fountain or other decorative water feature:
- Watering landscapes in a manner that causes runoff.
- Watering landscapes within 48 hours after measurable precipitation.
- Irrigation ornamental turf on public street medians.

WHEREAS, the Urban Water Management Planning Act (California Water Code Sections 10610, et. seq.) requires each urban water supplier, such as the Westborough Water

District, to prepare and adopt an Urban Water Management Plan (Plan); and

WHEREAS, the Plan is required to include Water Shortage Contingency Plan; and

WHEREAS, in June, 2016, the Westborough Water District (District) adopted the 2015 update to its Plan, which included a Water Shortage Contingency Plan; and

WHEREAS, the District has enacted an ordinance (Ordinance) prohibiting wasteful water use, which contains restrictions that become effective only after the District has declared a water shortage emergency; and

WHEREAS, in light of the Governor's declaration and the terms of the emergency regulations adopted by the SWRCB, the District has decided to declare a water shortage emergency to implement those provisions of the Ordinance that apply during water shortage emergencies.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Westborough Water District hereby declares a water shortage emergency and thereby activates the restrictions contained in Section 2 of the Ordinance; and

BE IT FURTHER RESOLVED that the Board of Directors hereby implements those elements of Stage 2 of its Water Shortage Contingency Plan that relate to outdoor watering.

PASSED AND ADOPTED this ____ day of ____, 2016, by the following vote:

AYES:

NOES:

ABSENT:

_____
President, Board of Directors

ATTEST:

_____
Board Secretary

APPENDIX K:
CONSERVATION PROGRAM OUTREACH MATERIALS

December 2011

Are you aware that your sewer service charge for the entire fiscal year is **STILL** based on how much water you use during the January and February meter reading period? **YES!**...you can still have control of how much your sewer charges will be for the next fiscal year! ***Minimum annual sewer charge of 12 units applies*** ***(or 2 units per base period x 6 billing periods).***

Lowering you sewer charges is easy to do, but must be done NOW! All YOU have to do is reduce YOUR water usage as much as YOU can from January 3 through March 2, 2012 ***(meter reading is dependent on weather conditions).*** The sewer charges on your annual property tax bill for fiscal year 2012/2013 will reflect YOUR savings based on the amount of water YOU have conserved during the Jan-Feb. 2012 period ***(12 unit minimum annual sewer charge applies).***

NOW is the time to check all household plumbing fixtures and repair those that are leaking. Leaky faucets and silent toilet leaks can cause your water bill and sewer service charge to **MORE THAN DOUBLE**. You can easily check your residence for plumbing leaks by using a **free** packet of toilet dye strips from our office. Please call, e-mail, or visit our website for more information.

WESTBOROUGH WATER DISTRICT
(650) 589-1435

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IMPORTANT MESSAGE...PLEASE READ!

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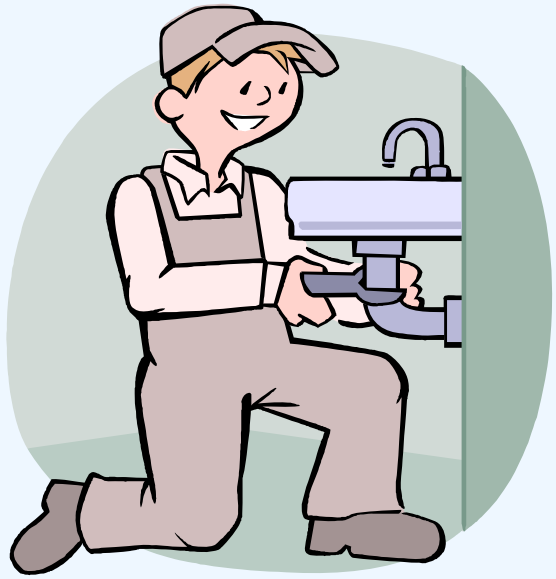
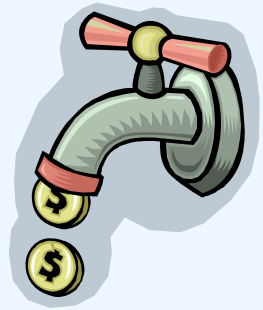
or e-mail: wwd@westboroughwater.com

WESTBOROUGH WATER DISTRICT

2263 westborough boulevard
south san francisco, ca 94083-2747

URGENT NOTICE!





Stop letting your money run down the drain!
Make time to fix all leaks today and save!

December 2012

Are you aware that your sewer service charge for the entire fiscal year is **STILL** based on how much water you use during the January and February meter reading period? **YES!**...you can still have control of how much your sewer charges will be for the next fiscal year! ***Minimum annual sewer charge of 12 units applies*** ***(or 2 units per base period x 6 billing periods).***

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NOW is the time to check all household plumbing fixtures and repair those that are leaking. Leaky faucets and silent toilet leaks can cause your water bill and sewer service charge to **MORE THAN DOUBLE**. You can easily check your residence for plumbing leaks by using a **free** packet of toilet dye strips from our office. Please call, e-mail, or visit our website for more information.

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WESTBOROUGH
WATER DISTRICT
2263 westborough boulevard
south san francisco, ca 94083-2747

URGENT NOTICE!

Don't let your money run down the drain!
Make sure to fix all leaks today and save!

December 2013

Are you aware that your sewer service charge for the entire fiscal year is **STILL** based on how much water you use during the January and February meter reading period? **YES!**...you can still have control of how much your sewer charges will be for the next fiscal year! ***Minimum annual sewer charge of 12 units applies*** ***(or 2 units per base period x 6 billing periods).***

Lowering you sewer charges is easy to do, but must be done NOW! All YOU have to do is reduce YOUR water usage as much as YOU can from January 2 through March 4, 2014 ***(meter reading is dependent on weather conditions).*** The sewer charges on your annual property tax bill for fiscal year 2014/2015 will reflect YOUR savings based on the amount of water YOU have conserved during the Jan-Feb. 2014 period ***(12 unit minimum annual sewer charge applies).***

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WESTBOROUGH WATER DISTRICT

2263 westborough boulevard
south san francisco, ca 94083-2747

HERE'S ONE NEW YEAR'S RESOLUTION YOU ONLY HAVE TO KEEP FOR TWO MONTHS!

Save money on your annual sewer assessment!
Make time to fix all leaks today and save!

westborough water district
2263 westborough boulevard
south san francisco, ca 94083-2747

Make time to fix all leaks today!

EVERY DROP COUNTS

...Conserve and Save!

Reduce your annual sewer assessment!

CALIFORNIA IS EXPERIENCING A RECORD DROUGHT!

December 2014

Are you aware that your sewer service charge for the entire fiscal year is **STILL** based on how much water you use during the January and February meter reading period? **YES!**...you can still have control of how much your sewer charges will be for the next fiscal year! ***Minimum annual sewer charge of 12 units applies*** ***(or 2 units per base period x 6 billing periods).***

Lowering you sewer charges is easy to do, but must be done NOW! All YOU have to do is reduce YOUR water usage as much as YOU can from January 2 through March 3, 2015. The sewer charges on your annual property tax bill for fiscal year 2015/2016 will reflect YOUR savings based on the amount of water YOU have conserved during the Jan-Feb. 2015 period ***(12 unit minimum annual sewer charge applies).***

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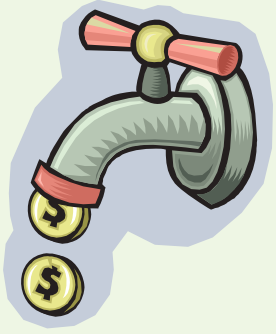

EVERY DROP COUNTS!

Make time to fix all leaks today and save!

CALIFORNIA IS EXPERIENCING A RECORD DROUGHT!

December 2015

Are you aware that your sewer service charge for the entire fiscal year is **STILL** based on how much water you use during the January and February meter reading period? **YES!**...you can still have control of how much your sewer charges will be for the next fiscal year! ***Minimum annual sewer charge of 12 units applies*** ***(or 2 units per base period x 6 billing periods).***

Lowering you sewer charges is easy to do, but must be done NOW! All YOU have to do is reduce YOUR water usage as much as YOU can from January 4 through March 4, 2016. The sewer charges on your annual property tax bill for fiscal year 2016/2017 will reflect YOUR savings based on the amount of water YOU have conserved during the Jan-Feb. 2016 period ***(12 unit minimum annual sewer charge applies).***

NOW is the time to check all household plumbing fixtures and repair those that are leaking. Leaky faucets and silent toilet leaks can cause your water bill and sewer service charge to **MORE THAN DOUBLE**. You can easily check your residence for plumbing leaks by using a **free** packet of toilet dye strips from our office. Please call, e-mail, or visit our website for more information.

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IMPORTANT MESSAGE...PLEASE READ!

Visit us at: http://www.westboroughwater.com
or e-mail: wwd@westboroughwater.com

The Water Faucet

FEBRUARY 2015

Check out our website. You can obtain water conservation information and rebate forms!
www.westboroughwater.com

Free dye strips to test for toilet leaks are available at the District Office.

Westborough Water District
P.O. Box 2747
So. SF, CA 94083-2747

24-Hour Telephone No.
(650) 589-1435

Fax (650) 589-5167
e-mail address:
wwd@westboroughwater.com

ALERT! Customers Urged to Check Water District Employee IDs

The Westborough Water District received a report from a customer who was robbed by a person masquerading as a water district worker. We urge everyone to ask for photo identification of anyone at their door claiming to be a water district worker. Westborough Water District employees never request to come inside your home unless you made an appointment with the District for a service call. Additionally, workers wear uniforms and drive vehicles with our logo plainly visible. District workers do not sell any products door-to-door. If you are unsure about the person's identity, don't hesitate to call the District office at (650) 589-1435 before you open the door.

10% Voluntary Water Reduction in Effect in California

The state's outdoor water use restriction remains in place. Although it appeared the rains brought a lot of water, the fact is during this past year precipitation in the Hetch Hetchy watershed was less than half the annual average. A high level of coordination has put the state in a better position for 2015 but continued conservation efforts throughout the entire year may be required. This historic drought is far from over. Californians need to brace for a fourth year of drought. We are in slightly better shape than last year when we had no storms, but keep in mind we experienced the driest January on record. While we won't know for certain how much water we will get this year, we must plan conservatively and do all we can to manage through another challenging year.

This means fixing leaks, replacing old water-wasting plumbing fixtures, reducing use outdoors, and being water conscious. For more tips on water conservation, visit: www.westboroughwater.com.

Water Rates

In the coming months we will inform you of the proposed water rate increase for FY 2015/2016. We understand the frustration you may feel when you are asked to conserve water and are still told water rates may increase. Many of the District's costs, including delivery infrastructure maintenance are fixed and are not reduced when customers conserve water. In other words, as you conserve water, our revenue declines while expenses remain the same or increase. Since our customers conserve, the District did not have to implement mandatory water rationing with a rate increase. Please continue to conserve water!

YOUR DISTRICT:

The Westborough Water District board meetings are held on the second Thursday of every month at the District office. The meeting begins at 7:30 p.m. and the public is encouraged to attend.

The current Board members are:

President:
Perry Bautista

Vice President:
David Irwin

Directors:
William Lopez, Janet Medina, and Tom Chambers.

Sewer Service Charge on Property Tax Bill

The amount of water you consumed during January and February 2015 will be used to determine your annual sewer charge, which will appear on your property tax bill effective July 1, 2015. **If you experienced high usage during this period due to an emergency or uncontrollable event, please submit a written request to the District for possible adjustment no later than May 15, 2015.**

Rebate Programs

The Westborough Water District's Washing Machine and Toilet Rebate Programs are managed by the Bay Area Water Supply and Conservation Agency (BAWSCA) for all new purchases. You can get additional information and download a rebate application form from the District website at: www.westboroughwater.com.

Notary Public Service

The District has a Notary Public on duty that can notarize documents you may have for a fee of $10 per signature. Feel free to take advantage of this service. Calling in advance is recommended.

EVERY DROP COUNTS

Conserve water!

The Water Faucet

JULY 2015

Congratulations for Scoring #1 in the State in Conserving Water. A Job Well Done!

Supplier Name	Residential Gallons Per Capita-day (R-GPCD) Jul-Sep 2014
Westborough Water District (lowest in the entire state)	40.6
San Francisco Water	45.4
Cal Water (S.S.F.)	48.8
San Bruno Water	55.7
Daly City Water	58.8
North Coast County Water (Pacifica)	59.5
Millbrae Water	89.2

New State Drought Regulations

With the worst drought on record, Governor Brown issued an Executive Order directing the State Water Resource Control Board (SWRCB) to implement mandatory water conservation regulations to reduce water usage in California by at least 25% from 2013. The SWRCB has assigned conservation standards to individual districts based on 2014 consumption levels and may assess fines to districts if these standards are not met.

Based upon our low per capita consumption, Westborough Water District will only be required to reduce consumption 8% below 2013 levels, not the 25% average for the State. Based upon our 2014 consumption this should be achievable if we continue our current good practices. Still, who knows how long this drought will last and, with population growth, conservation will always be a wise investment. Please redouble your conservation efforts and consider some of the incentives offered later in this newsletter.

How Will This Affect You

It is important that everyone understand, should the District not meet our 8% target cutback and the SWRCB imposes fines/penalties, we may have to recover the cost by imposing a fine/penalty to customers for excessive water use.

What Can You Do?

You can conserve water and consider taking advantage of the District's rebate programs. If you suspect you have a leak, the District offers free leak tests. You may stop by the office for free toilet dye strips to test for leaks. Leaky toilets are the number one cause of wasted water indoors. These leaks can sometimes be silent and go un-noticed for long periods of time.

Check out our website. You can obtain water conservation information and rebate forms!
www.westboroughwater.com

Free dye strips to test for toilet leaks are available at the District Office.

Westborough Water District
P.O. Box 2747
So. SF, CA 94083-2747
Monday-Friday
8 a.m. to 4:30 p.m.

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The current Board members are:

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Vice President:
David Irwin

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Janet Medina
and Tom Chambers.

10 Ways to Conserve Water:

1. Take advantage of the District's rebate program and install water saving devices.
2. Evaluate your water habits and discuss with everyone in your household ways to conserve water.
3. Look for leaks and repair them right away.
4. Flush the toilet only when necessary. Consider purchasing dual flush toilets.
5. Wash dishes and clothes wisely with full loads. Know your machine settings.
6. Take shorter shower, lather up, turn off water, and turn on water to rinse off.
7. Reduce outdoor water consumption and only water 2 days a week, 15 min. max.
8. Use less water preparing foods by boiling water to thaw instead of running hot water.
9. Evaluate your bi-monthly water consumption. The average use per person during a drought should use 3.5 units bi-monthly or (2,618 gallons / 60 days = 43.63 gpd.)
10. Make sure your home has high efficiency faucet aerators in bathroom and kitchen. (Faucet aerators are the little pieces of hardware that screw into the bottom of faucets. High efficiency aerators can reduce flow by 1.5 gallons per minute and saving you money and saving lots of water).

Rebate Programs

The Westborough Water District's Washing Machine and Toilet Rebate Programs are managed by the Bay Area Water Supply and Conservation Agency (BAWSCA) for all new purchases. You can get additional information and download a rebate application form from the District website at: www.westboroughwater.com.

Shop for the EPA WaterSense Logo:

Orchard Supply Hardware (OSH)

2245 Gellert Boulevard, South San Francisco – (650) 878-3322

Water Conservation Demonstration

Saturday, July 25, 2015 at 12 Noon to 2 p.m.

The Westborough Water District is partnering with Orchard Supply Hardware to put on a demonstration on water conservation repairs you can do yourself. Please join us noon to 2 p.m. on July 25, 2015, at Orchard Supply for a free water conservation demonstration.

Every DROP counts

What Are We Doing to Keep Costs Down?

- The District has implemented a number of cost-cutting measures by reducing the number of Capital Improvement Projects scheduled for the Fiscal Year 2015/2016.
- Even though the number of customers and workload has increased over the past 30 years, staffing has remained at the same level.
- Instead of out sourcing, to reduce cost we perform in-house website maintenance, desk top publishing, payroll, billing, accounts receivable, vehicle maintenance and repair work, construction projects, and building maintenance including painting, janitorial, landscape, electrical, and repairs.

- The District has reinvested cost savings back into the system through capital infrastructure replacement, rehabilitation, or improvement. We remain committed to providing high-quality water service as cost-efficiently as possible.

New Business Hours

Effective July 15, 2015, our new business hours will be 8 a.m. to 4:30 p.m. Monday thru Friday. Most business activities may be conducted online. Please visit our website at www.westboroughwater.com.

Avoid the Parking Lot Madness!

The District was recently required to modify its parking lot to provide handicapped parking, which reduced the number of available spaces.

THESE ARE VARIOUS OPTIONS FOR PAYING YOUR BILL *(OTHER THAN IN PERSON)*:

- **After-hours** in our convenient 24-hour payment drop off box located near the garage at the District Office (*do not drop off cash in this box).* Please note that if your payment is placed in the drop box on the due date, it will be considered timely received as long as it is in the box by the time we open the office at 8 a.m., the following business day. *Drop off payments any time of the day but preferably after hours to avoid parking lot madness!*

- **By mail:** Westborough Water District, P.O. Box 2747, South San Francisco, CA 94083-2747 *(checks or money orders).*

- **By using your own bank's automatic payment** withdrawal service. Note that your bank will mail us a check, so please make sure to allow **at least 7 to 10** business days for posting.

- **WWD Online Web Payments:** Make a one-time payment or sign up for reoccurring payments using your Visa, MasterCard, or personal check on our secured website: www.westboroughwater.com. You must have your account no. to access it:

- **WWD Direct Payment (ACH):** You may also sign up for our Direct Payment Program from your checking or savings account. **Contact District for form or download at** www.westboroughwater.com.

WESTBOROUGH WATER DISTRICT (WWD)
EMERGENCY RESPONSE SYSTEM

The WWD has developed a speedy Emergency Response System that will notify each and every customer by phone in the event of an emergency. Emergencies include: boil water notice, extended water outages, reduce water consumption due to low storage, water safe to drink - system back to normal, and other similar items.

If you choose not to participate in this program you stand the chance of not being notified promptly and risk being exposed to contaminated water - should an emergency arise.

The information below will not be given out or used for any purpose other than emergency response notification.

Service Address: _____

Emergency Contact Phone Number ( ) _____* Home___ Cell___

* **In the future, if for some reason you change your telephone number, please contact the WWD so that we may update our records.**

NOTARY PUBLIC

The District has a Notary Public on duty that can notarize documents you may have for a fee of $10 per signature. Feel free to take advantage of this service. **Calling in advance is strongly recommended**.

The Water Faucet

DECEMBER 2015

Check out our website. You can obtain water conservation information and rebate forms!
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wwd@westboroughwater.com

State Mandatory 8% Water Reduction

The State Water Board Emergency Conservation Regulation, which is set to expire next year, requires the District to reduce its water consumption by 8%. The mandatory reduction may be continued to at least October 31, 2016, if drought conditions persist through January 2016. The District must use 8% less water than our 2013 water use. January and February will be our most challenging period because customers already conserve during these two months in order to lower their sewer service charge. We must now conserve even more water due to the State mandated water reduction. Should the District not meet the State's mandatory 8% water reduction, penalties may be imposed. **Please continue to conserve water!**

Will El Niño Solve California's Drought?

With the threat of El Niño this winter, it is not expected to solve 4 years of drought in California. In recent weeks, conditions have increased for what forecasters say could be one of the strongest El Niño weather patterns on record.

Experts stress that El Niño is notoriously unpredictable, and when the storms hit the state, they're prone to soaking the southern third of California. While more than 75 percent of the demand for irrigation and drinking water is in the southern portion of the state; California's water supply, delivery system and most of its reservoir capacity is in the north.

We are much better off if it rains in the north than in the south. State officials say that this year recorded the warmest high-elevation temperatures in over 120 years of record keeping which reduced the amount of snow. Less snow pack means reduced water supplies and warmer temperatures mean more water loss due to evaporation.

El Niño usually produces rain over southern and central California where it floods rivers and streets and then runs off into the ocean, making only a small dent in the drought. Climate scientists warn that even a good El Niño year is unlikely to solve California's water deficit. The National Oceanic and Atmospheric Administration Meteorologist estimate that every region of the state would need to have record shattering rain. The rain and snow would need to reach northern California to fill some of the state's primary reservoirs and increase the snowpack in the Sierra Nevada mountains. Much of the water from El Niño is funneled directly into the ocean rather than being captured and used.

Water Rate Survey

As of October 1, 2015, this is a comparison of surrounding agencies water rates:

AGENCY	15 Units	20 Units	25 Units
City of Daly City	$87.47	$112.87	$145.22
Westborough Water District	$101.35	$130.90	$160.45
North Coast County Water	$100.66	$141.21	$184.36
City of Millbrae	$111.75	$139.00	$166.25
City of San Bruno	$115.59	$152.19	$200.95
California Water Service	$116.60	$152.66	$188.72
Mid Peninsula Water	$160.50	$205.50	$255.00
Coastside County Water	$183.48	$240.93	$301.08
AVERAGE	$114.78	$150.08	$188.44

YOUR DISTRICT:

The Westborough Water District board meetings are held on the second Thursday of every month at the District office. The meeting begins at 7:30 p.m. and the public is encouraged to attend.

The current Board members are:

President:
Perry Bautista

Vice President:
David Irwin

Directors:
William Lopez,
Janet Medina,
and Tom Chambers.

FREE Water Audit

The Westborough Water District offers free water audits. The average household usage is 4-6 units per person, per billing period. If your bill is higher than the average for the number of people living in your home, you may want to consider having a free water audit. If a leak is detected, the District will estimate the cost of the leak over a 60-day billing period. The District has free dye strips that can be used to test your toilet for leaks. You can find out information on how to test your plumbing for leaks on our District's website.

Washing Machine Rebate

As of January 1, 2014, the Westborough Water District's Washing Machine Rebate Program managed through the Bay Area Water Supply and Conservation Agency (BAWSCA) for all new purchases will reimburse customers $50 to $125 depending on the type of washing machine you purchase. For more information, please go to: http://bawsca.org/water-conservation/residential-water-conservation-programs/high-efficiency-toilet-rebate-program/.

New Credit Card Computer Chip

The global standard for credit cards now is for them to be equipped with a computer chip technology used to authenticate transactions. In the wake of numerous large scale data breaches and increasing counterfeit fraud, credit card companies have issued new credit cards with a computer chip. If you signed up for auto web payment for your water bill using your credit card, please remember to update your credit card information online at http://westboroughwater.com.

NOTARY PUBLIC

The District has a Notary Public on duty that can notarize documents you may have for a fee of $10 per signature. Feel free to take advantage of this service. **Calling in advance is strongly recommended**.

The Water Faucet

APRIL 2016

Check out our website. You can obtain water conservation information and rebate forms!
www.westboroughwater.com

Free dye strips to test for toilet leaks are available at the District Office.

Westborough Water District

P.O. Box 2747

So. SF, CA 94083-2747

24-Hour Telephone No.

(650) 589-1435

Fax (650) 589-5167

e-mail address:

wwd@westboroughwater.com

Update on Drought Regulation

The State Water Resource Control Board has extended the emergency regulation until October 31, 2016. This means everyone must have to continue to conserve water by 8% through October. Our challenges will be for customers to continue to conserve from now through the summer months.

The District may have to impose penalties if we fail to meet the State's mandatory 8% water reduction. We thank you for doing a great job in conserving water. **Please continue to conserve water!**

Sewer Service Charge

Sewer service charges pay for the cost of sewer collection, treatment, safe disposal of the sewage, and electrical cost to pump the sewage to the treatment plant. The sewer service charge is calculated based on the amount of water consumed during January/February x per unit rate x 6 billing periods.

Sewer Service Charge on Property Tax Bill

The amount of water you consumed during January and February 2016 will be used to determine your annual sewer charge, which will appear on your property tax bill effective July 1, 2016. **If you experienced high usage during this period due to an emergency or uncontrollable event, please submit a written request to the District for possible adjustment no later than May 16, 2016.**

SEWER SERVICE CHARGE SURVEY:

(As of March 2016)

AGENCY	Annual Cost for 15 Units	Annual Sewer Charge Min.
City of Daly City	$ 563.40	$ 69.42
City of South San Francisco	$ 575.00	$ 575.00
Westborough Water District	$ 676.80	$ 90.24
City of San Bruno	$ 830.70	$ 55.38
City of Millbrae	$ 1,003.20	$ 566.40
Half Moon Bay	$ 1,007.40	$ 537.28
City of Burlingame	$ 1,102.50	$ 147.00
City of Pacifica	$ 1,125.78	$ 600.42
AVERAGE	**$ 860.60**	**$ 330.14**

YOUR DISTRICT:

The Westborough Water District board meetings are held on the second Thursday of every month at the District office. The meeting begins at 7:30 p.m. and the public is encouraged to attend.

The current Board members are:

President:
Perry Bautista

Vice President:
David Irwin

Directors:
William Lopez,
Janet Medina,
and Tom Chambers.

Concerned About Lead In Your Drinking Water?

Lead was used in many common products like paint and solder used to join plumbing pipes together. Lead pipes have been outlawed for many years, but may still exist in older homes. The District is under reduced monitoring by the State Water Resources Control Board which requires us to collect 30 water samples every three years because we have never had any samples that exceeded the maximum contaminant level for lead. Homes with older plumbing should consider testing their water for lead. If you would like to have your water tested, the District will be collecting routine water samples in May 2016 and can include your samples. There is a $25 fee (paid in advance) to have your water tested for lead. Please email the District at wwd@westboroughwater.com to sign up for lead testing or call (650) 589-1435.

Working and Digging Near Pipelines

For your safety, always call before you dig. Did you know you can call USA North by dialing 811 or submit a ticket on the internet at http://usanorth811.org/homeowners/? USA North 811 will contact utility companies to come out and mark their facilities in the area you plan to dig.

811 Know what's **below.** **Call** before you dig.

Emergency Response Training

Recently the Westborough Water District conducted Emergency Response Training which included the Board of Directors and staff. The training included reviewing procedures, and hands on field training in preparation of responding to a major catastrophe.

Pay Online
We now accept online payments
Make a Payment

Make a one-time payment or sign up for reoccurring payments using your Visa, MasterCard, or personal check on our secured website (FREE OF CHARGE):

www.westboroughwater.com

You must have your account no. to access it, so if you do not have it, please call the WWD Office to request it.

Rebate Programs

The Westborough Water District's Washing Machine and Toilet Rebate Programs are managed by the Bay Area Water Supply and Conservation Agency (BAWSCA) for all new purchases. You can get additional information and download a rebate application form from the District website at: www.westboroughwater.com

Stop by the WWD Office and Pick up Your Free Water Savings Products!

SUPPLIES ARE LIMITED! STOP BY SOON!

Items we have in stock include *(colors may be different than those shown here)*:

- Low-Flow Kitchen and Bathroom Faucet Aerators
- Low-Flow Showerheads
- Toilet Dye Strips
- Shower Timers
- Garden Spray Nozzles
- Cold Water Catcher Bucket (NEW ITEM)
- Conservation literature

ALERT!

Customers Urged to Check Water District Employee IDs

We urge everyone to ask for photo identification of anyone at their door claiming to be a water district worker. Westborough Water District employees never request to come inside your home unless you made an appointment with the District for a service call. Additionally, workers wear uniforms and drive vehicles with our logo plainly visible. District workers do not sell any products door-to-door. If you are unsure about the person's identity, don't hesitate to call the District office at (650) 589-1435 before you open the door.

Is Your Bank Paying Your Water Bill on Time?

Unfortunately, some customers who paid their bills via their online banking service were under the mistaken impression that the Westborough Water District received the funds electronically on the date they selected.

Instead, they have found out that not only wasn't their bill paid on time, but a late fee was incurred. The online banking service debits your account on the date you select and then mails a check to the District; however many bank online payment processors bundle and hold checks for up to 7 business days before mailing them. This can cause your payment to be received after the bills due date. To ensure timely payment of your bill and avoid late fees, we suggest you schedule payment at least 10 business days prior to the due date.

Another way to prevent possible late payments is to sign up with the District for free automatic electronic payment of your bill from your checking, savings, or Visa/MasterCard account. For details, please visit our website and click on the tab "Service and Billing" and then select "Options for Paying your Bill".

NOTARY PUBLIC

The District has a Notary Public on duty that can notarize documents you may have for a fee of $10 per signature. Feel free to take advantage of this service. **Calling in advance is strongly recommended**.

APPENDIX L:
RESOLUTION 593, URBAN WATER MANAGEMENT PLAN, 2015 UPDATE

RESOLUTION NO. 593

ADOPTING URBAN WATER MANAGEMENT PLAN

WESTBOROUGH WATER DISTRICT

WHEREAS, the Urban Water Management Planning Act (California Water Code Sections 10610, et. seq.) requires each urban water supplier, such as the Westborough Water District, to prepare and adopt an Urban Water Management Plan ("Plan"); and

WHEREAS, the Urban Water Management Planning Act requires that each urban water supplier update its Plan at least once every five years; and

WHEREAS, the District engaged the firm of Erler & Kalinowski, Inc. to prepare the Plan for the District; and

WHEREAS, the District has made the Plan available for public inspection and has held a public hearing regarding the Plan as required by California Water Code Section 10642.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Westborough Water District hereby approves and adopts as the Urban Water Management Plan for the District the document entitled "2015 Urban Water Management Plan" as presented to the Board and attached to this Resolution.

BE IT FURTHER RESOLVED that the General Manager is authorized and directed to file a copy of the adopted Plan with the Department of Water Resources within 30 days of its adoption as required by Water Code Section 10644.

PASSED AND ADOPTED this 9th day of June, 2016, by the following vote:

AYES: Bautista, Medina, and Irwin.

NOES: None.

ABSENT: Chambers and Lopez.

President, Board of Directors

ATTEST:

Daryl A. Barrow

Board Secretary

APPENDIX M:
PLAN SUBMITTAL DOCUMENTATION

Tina Wang

From: dbarrow@westboroughwater.com
Sent: Monday, May 23, 2016 2:10 PM
To: Tina Wang
Cc: Anona Dutton; Matt Zucca; Jonathan Sutter; Paty
Subject: [FWD: ACTION NEEDED: Final Review of Population and Demand Projections for SFPUC UWMP]
Attachments: UWMP SFPUC Purchase Projections_REVISED_DRAFT.xlsx

Tina,

Per your request, please see attached document regarding population and demand projections.

Darryl Barrow
General Manager
Westborough Water District

> -------- Original Message --------
> Subject: ACTION NEEDED: Final Review of Population and Demand Projections for SFPUC UWMP
> From: Andree Johnson <AJohnson@bawsca.org>
> Date: Tue, February 09, 2016 11:36 am
> To: " (mbolzowski@calwater.com)" <mbolzowski@calwater.com>, "Alex Ameri (alex.ameri@hayward-ca.gov)" <alex.ameri@hayward-ca.gov>, "Anthony Carrasco - Cal Water (ACarrasco@calwater.com)" <ACarrasco@calwater.com>, "Art Morimoto (amorimoto@burlingame.org)" <amorimoto@burlingame.org>, "aschutte@hansonbridgett.com" <aschutte@hansonbridgett.com>, "bmccarthy@ci.sunnyvale.ca.us" <bmccarthy@ci.sunnyvale.ca.us>, "bob.bleisner@mountainview.gov" <bob.bleisner@mountainview.gov>, "Brian Manning (Bmanning@stanford.edu)" <Bmanning@stanford.edu>, Cari Lemke <clemke@nccwd.com>, "Chris deGroot (cdegroot@santaclaraca.gov)" <cdegroot@santaclaraca.gov>, "cmoffice@cityofepa.org" <cmoffice@cityofepa.org>, "Cyrus Kianpour (cyrus@csgengr.com)" <cyrus@csgengr.com>, "Dailey, Karla (Karla.Dailey@CityofPaloAlto.org)" <Karla.Dailey@CityofPaloAlto.org>, "David Dickson (ddickson@coastsidewater.org)" <ddickson@coastsidewater.org>, "dbarrow@westboroughwater.com" <dbarrow@westboroughwater.com>, "Dennis Diemer (DDiemer@HILLSBOROUGH.NET)" <DDiemer@HILLSBOROUGH.NET>, Doug Chun <doug.chun@acwd.com>, "Flegel, Elizabeth" <Elizabeth.Flegel@mountainview.gov>, "Gregg Hosfeldt (gregg.hosfeldt@mountainview.gov)" <gregg.hosfeldt@mountainview.gov>, "jane.ratchye@cityofpaloalto.org" <jane.ratchye@cityofpaloalto.org>, "Janice Zavalaclark (jzavalaclark@nccwd.com)" <jzavalaclark@nccwd.com>, "Jeff Moneda - City of Foster City (jmoneda@fostercity.org)" <jmoneda@fostercity.org>, "Jeff Provenzano (Jeffrey.provenzano@sanjoseca.gov)" <Jeffrey.provenzano@sanjoseca.gov>, Jerry Flanagan <jflanagan@ci.brisbane.ca.us>, "Jim Burch (jburch@sanbruno.ca.gov)" <jburch@sanbruno.ca.gov>, "Jimmy Tan (jtan@sanbruno.ca.gov)" <jtan@sanbruno.ca.gov>, "John Stufflebean - City of Sunnyvale (jstufflebean@sunnyvale.ca.gov)" <jstufflebean@sunnyvale.ca.gov>, "Julia Nussbaum (JuliaNN@stanford.edu)" <JuliaNN@stanford.edu>, "Julie Paping (jpaping@fostercity.org)" <jpaping@fostercity.org>, "Justin Chapel (jchapel@redwoodcity.org)"

<jchapel@redwoodcity.org>, "klim@ci.millbrae.ca.us" <klim@ci.millbrae.ca.us>, "Mansour Nasser - Sunnyvale (mnasser@sunnyvale.ca.gov)" <mnasser@sunnyvale.ca.gov>, "marilyn.mosher@hayward-ca.gov" <marilyn.mosher@hayward-ca.gov>, "Mary Rogren (mrogren@coastsidewater.org)" <mrogren@coastsidewater.org>, "Maziar Bozorginia (mbozorginia@cityofepa.org)" <mbozorginia@cityofepa.org>, "nhawk@ci.milpitas.ca.gov" <nhawk@ci.milpitas.ca.gov>, "Pam Lowe (phlowe@menlopark.org)" <phlowe@menlopark.org>, "Patrick Sweetland (psweetland@dalycity.org)" <psweetland@dalycity.org>, "Patrick Walter (pwalter@purissimawater.org)" <pwalter@purissimawater.org>, Paul Willis <PWillis@HILLSBOROUGH.NET>, "Peter Vorametsanti (peterv@ci.millbrae.ca.us)" <peterv@ci.millbrae.ca.us>, Randy Breault <rbreault@ci.brisbane.ca.us>, "Rene Ramirez (rramirez@midpeninsulawater.org)" <rramirez@midpeninsulawater.org>, "rnino@menlopark.org" <rnino@menlopark.org>, "Rob Guzzetta (capitano.idraulica@gmail.com)" <capitano.idraulica@gmail.com>, "Smithson, Dawn (dsmithson@calwater.com)" <dsmithson@calwater.com>, Steve Peterson <steve.peterson@acwd.com>, "Steven Inn (Steven.Inn@acwd.com)" <Steven.Inn@acwd.com>, "Steven Machida (smachida@ci.milpitas.ca.gov)" <smachida@ci.milpitas.ca.gov>, "Tammy Rudock (tammyr@midpeninsulawater.org)" <tammyr@midpeninsulawater.org>, Terrence Kyaw <watermanager@redwoodcity.org>, "Thomas.Niesar@acwd.com" <Thomas.Niesar@acwd.com>, "Tim McAuliffe (tmcauliffe@burlingame.org)" <tmcauliffe@burlingame.org>, "Tina Pham (tina.pham@sanjoseca.gov)" <tina.pham@sanjoseca.gov>
Cc: Michael Hurley <MHurley@bawsca.org>, Nicole Sandkulla <NSandkulla@bawsca.org>

BAWSCA Member Agencies,

In the attached spreadsheet, BAWSCA has compiled the population and SFPUC purchase projections to be provided to SFPUC for preparation of its 2015 Urban Water Management Plan. Population and SFPUC purchase projection numbers in bold font have been updated or verified by the member agency from the draft spreadsheet provided on January 20th (thank you to those who provided this information). If your agency's numbers are not in bold font, BAWSCA has not received a response from your agency on UWMP population and SFPUC purchase projections and the numbers presented are from your FY 2014-15 WCDB data submittal.

Please review these numbers to confirm that they represent the best available information for SFPUC's 2015 UWMP and **provide any changes to BAWSCA by noon tomorrow, February 10th**. I will provide the final population and purchase projections to SFPUC tomorrow afternoon.

Thank you and please feel free to call me with any questions.

Andree

From: Andree Johnson
Sent: Wednesday, January 20, 2016 9:28 AM
To: (mbolzowski@calwater.com); Alex Ameri (alex.ameri@hayward-ca.gov); Anthony Carrasco - Cal Water (ACarrasco@calwater.com); Art Morimoto (amorimoto@burlingame.org); aschutte@hansonbridgett.com; bmccarthy@ci.sunnyvale.ca.us; bob.bleisner@mountainview.gov; Brian Manning (Bmanning@stanford.edu); Cari Lemke; Chris deGroot (cdegroot@santaclaraca.gov); cmoffice@cityofepa.org; Cyrus Kianpour

(cyrus@csgengr.com); Dailey, Karla (Karla.Dailey@CityofPaloAlto.org); David Dickson (ddickson@coastsidewater.org); dbarrow@westboroughwater.com; Dennis Diemer (DDiemer@HILLSBOROUGH.NET); Doug Chun; Flegel, Elizabeth; Gregg Hosfeldt (gregg.hosfeldt@mountainview.gov); jane.ratchye@cityofpaloalto.org; Janice Zavalaclark (jzavalaclark@nccwd.com); Jeff Moneda - City of Foster City (jmoneda@fostercity.org); Jeff Provenzano (Jeffrey.provenzano@sanjoseca.gov); Jerry Flanagan; Jim Burch (jburch@sanbruno.ca.gov); Jimmy Tan (jtan@sanbruno.ca.gov); John Stufflebean (jstufflebean@ci.sunnyvale.ca.us); Julia Nussbaum (JuliaNN@stanford.edu); Julie Paping (jpaping@fostercity.org); Justin Chapel (jchapel@redwoodcity.org); klim@ci.millbrae.ca.us; Mansour Nasser (mnasser@ci.sunnyvale.ca.us); marilyn.mosher@hayward-ca.gov; Mary Rogren (mrogren@coastsidewater.org); 'Maziar Bozorginia (mbozorginia@cityofepa.org)'; nhawk@ci.milpitas.ca.gov; Pam Lowe (phlowe@menlopark.org); Patrick Sweetland (psweetland@dalycity.org); Patrick Walter (pwalter@purissimawater.org); Paul Willis; Peter Vorametsanti (peterv@ci.millbrae.ca.us); Randy Breault; Rene Ramirez (rramirez@midpeninsulawater.org); rnino@menlopark.org; Rob Guzzetta (capitano.idraulica@gmail.com); Smithson, Dawn (dsmithson@calwater.com); 'Steve Peterson'; Steven Inn (Steven.Inn@acwd.com); Steven Machida (smachida@ci.milpitas.ca.gov); Tammy Rudock (tammyr@midpeninsulawater.org); 'Terrence Kyaw'; Thomas.Niesar@acwd.com; Tim McAuliffe (tmcauliffe@burlingame.org); Tina Pham (tina.pham@sanjoseca.gov)
Cc: Nicole Sandkulla; Michael Hurley
Subject: Action Needed: Provide Purchase Projections for SFPUC UWMP by 2/3

BAWSCA Water Management Representatives,

As part of its efforts to prepare its Wholesale Urban Water Management Plan for the San Francisco Regional Water System (RWS), the San Francisco Public Utilities Commission (SFPUC) is requesting projections of (1) RWS water purchases and (2) population from each of its wholesale customers in five year increments from 2020 to 2040.

In the attached spreadsheet, BAWSCA has compiled the population and water purchase projections reported by each BAWSCA member agency as part of the FY 2014-15 Annual Survey process in the format consistent with the UWMP requirements. **If you have any modifications to these numbers, please provide BAWSCA with your updates by close of business on Wednesday, February 3, 2016**. **BAWSCA will forward the information received to the SFPUC on Thursday, February 4th.** In addition to the data requested, BAWSCA will also forward any qualifications that you wish to include to clarify the data you provide at this time (e.g. that the data is draft and subject to modification as part of finalizing your agency UWMP).

Thank you for your attention to this request. If you have any questions, please call me.

Andree Johnson
Water Resources Specialist
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
San Mateo, CA 94402
Ph: (650) 349-3000 Fax: (650) 349-8395
Email: ajohnson@bawsca.org
Website: www.bawsca.org


GIVE IT UP
Lose your lawn. It's a DROUGHT.
BAWSCA
Hetch Hetchy
Regional Water System
bawsca.org/DROUGHT

Table 3-1 Wholesale: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
Alameda CWD	**346,000**	**353,300**	**367,600**	**382,500**	**398,700**	**415,600**
Brisbane/GVMID	4,394	4,509	4,632	4,761	4,906	5,056
Burlingame	**31,355**	**34,051**	**35,009**	**36,051**	**37,104**	**39,530**
Coastside CWD	16,668	16,853	16,875	17,181	18,658	23,247
CWS - Bear Gulch	**59,883**	**61,202**	**62,555**	**63,944**	**65,369**	**66,831**
CWS - Mid-Peninsula	**133,679**	**139,642**	**146,125**	**153,178**	**160,856**	**169,216**
CWS - South SF	**61,223**	**63,430**	**65,732**	**68,133**	**70,639**	**73,254**
Daly City	**108,510**	**109,000**	**110,000**	**111,000**	**112,000**	**121,385**
East Palo Alto	**30,501**	**31,767**	**33,122**	**34,570**	**36,120**	**37,781**
Estero MID	**37,088**	**37,924**	**38,442**	**38,869**	**39,223**	**39,600**
Hayward	**150,919**	**157,500**	**164,400**	**171,800**	**179,700**	**188,000**
Hillsborough	10,869	10,913	10,956	11,000	11,000	11,000
Menlo Park	**16,224**	**18,224**	**21,214**	**24,204**	**27,194**	**30,184**
Mid-Peninsula WD	26,730	27,230	28,130	28,630	29,130	29,130
Millbrae	**22,600**	**23,600**	**24,700**	**25,700**	**26,700**	**26,700**
Milpitas	74,700	82,300	90,400	98,100	10,600	83,900
Mountain View	**75,430**	**79,010**	**82,590**	**86,170**	**89,750**	**93,330**
North Coast CWD	39,800	40,600	41,400	42,000	42,400	42,800
Palo Alto	**67,400**	**70,500**	**73,700**	**77,100**	**80,800**	**84,600**
Purissima Hills WD	6,150	6,165	6,180	6,195	6,220	6,240
Redwood City	87,696	89,756	91,815	93,875	95,935	97,995
San Bruno	45,600	48,600	51,200	53,400	55,800	58,200
San Jose	26,569	39,884	53,200	66,515	79,830	79,830
Santa Clara	125,397	131,732	136,660	141,587	146,917	156,482
Stanford	**30,811**	**32,636**	**34,826**	**37,174**	**39,536**	**42,018**
Sunnyvale	**148,028**	**154,646**	**161,264**	**167,882**	**174,600**	**174,600**
Westborough WD	14,050	14,060	14,040	14,020	14,020	14,020
Total	1,798,275	1,879,034	1,966,767	2,055,539	2,053,706	2,210,529

Source: *BAWSCA Water Conservation Database, 1-7-2016*

Bold font indicates that numbers have been verified and/or updated by agency from FY 14-15 Water Conservation Database submittal.

Erler & Kalinowski, Inc.

Consulting Engineers and Scientists

1870 Ogden Drive
Burlingame, CA 94010
(650) 292-9100
Fax: (650) 552-9012

LETTER OF TRANSMITTAL

TO: California State Library
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001

Attn: Coordinator, Urban Water Management Plans

DATE: 20 June 2016
PROJ. NO. B50086.00
SUBJECT: Westborough Water District 2015 Urban Water Management Plan

WE ARE SENDING YOU THE FOLLOWING:

1. Westborough Water District – 2015 Urban Water Management Plan
2. CD ROM of the Westborough Water District – 2015 Urban Water Management Plan

REMARKS:

In accordance with California Water Code §10644, Erler & Kalinowski Inc. is pleased to submit the 2015 updated Urban Water Management Plan to the California State Library on the behalf of Westborough Water District.

COPY TO:

EKI Project File (w/o enclosure)
Darryl Barrow (District w/o enclosure)

Very truly yours,

ERLER & KALINOWSKI, INC.

Anona L. Dutton, P.G., C.Hg.
Vice President/Principal-in-Charge

If enclosures are not as noted, please advise us at once at (650) 292-9100.

Erler & Kalinowski, Inc.

Consulting Engineers and Scientists

1870 Ogden Drive
Burlingame, CA 94010
(650) 292-9100
Fax: (650) 552-9012

LETTER OF TRANSMITTAL

TO: Heather Forshey
San Mateo County Environmental Health
2000 Alameda de las Pulgas, Suite 100
San Mateo, CA 94403

DATE: 20 June 2016
PROJ. NO. B50086.00
SUBJECT: Westborough Water District 2015 Urban Water Management Plan

WE ARE SENDING YOU THE FOLLOWING:

1. Westborough Water District – 2015 Urban Water Management Plan
2. CD ROM of the Westborough Water District – 2015 Urban Water Management Plan

REMARKS:

In accordance with California Water Code §10644, Erler & Kalinowski Inc. is pleased to submit the 2015 updated Urban Water Management Plan to the San Mateo County on the behalf of the Westborough Water District.

COPY TO:

EKI Project File (w/o enclosure)
Darryl Barrow (District w/o enclosure)

Very truly yours,

ERLER & KALINOWSKI, INC.

Anona L. Dutton, P.G., C.Hg.
Vice President/Principal-in-Charge

If enclosures are not as noted, please advise us at once at (650) 292-9100.