# Liberty Utilities (Park Water) Corp.
# 2015 Urban Water Management Plan

**FINAL**

**June 24, 2016**

Liberty Utilities

MADDAUS WATER MANAGEMENT INC.

# TABLE OF CONTENTS

# LIST OF FIGURES



# LIST OF TABLES

# LIST OF ACRONYMS

| | |
|---|---|
| °F | degrees Fahrenheit |
| ABP | Alamitos Barrier Project |
| Act | California Urban Water Management Planning Act |
| AF | acre-feet |
| AFY | acre-feet per year |
| AL | Action Level |
| AMR | Automatic Meter Reading |
| APA | Allowed Pumping Allocation |
| AWWA | American Water Works Association |
| BMPs | Best Management Practices |
| CAT | Climate Action Team |
| CBMWD | Central Basin Municipal Water District |
| CBO | Community-Based Organization |
| CBWCB | Central Basin and West Coast Basin |
| ccf | hundred cubic feet |
| CCR | Consumer Confidence Report |
| CEQA | California Environmental Quality Act |
| CII | Commercial, Industrial and Institutional |
| CPUC | California Public Utilities Commission |
| CRA | Colorado River Aqueduct |
| CUWCC | California Urban Water Conservation Council |
| CWC | California Water Code |
| DBP | Disinfection By-products |
| DDW | State Water Resources Control Board, Division of Drinking Water |
| DGBP | Dominguez Gap Barrier Project |
| DMM | Demand Management Measures |
| DOF | California Department of Finance |
| DVL | Diamond Valley Lake |
| DWR | California Department of Water Resources |
| EPA | Environmental Protection Agency |
| ETo | Evapotranspiration |
| GIS | Geographic Information System |
| GPCD | gallons per capita per day |
| gpd | gallons per day |
| gpm | gallons per minute |
| HAA5 | haloacetic acids |
| HECW | High-Efficiency Clothes Washer |
| HET | High-Efficiency Toilet |
| IRP | Integrated Resource Plan |
| JWPCP | Joint Water Pollution Control Plant |
| LACSD | Sanitation Districts of Los Angeles County |
| MAF | Million Acre-Feet |
| MARS | Member Agency Response System |
| MCL | Maximum Contaminant Level |
| MF | Multifamily |
| MGD | million gallons per day |
| mg/L | milligrams per liter |

| | |
|---|---|
| MOU | Memorandum of Understanding Regarding Water Conservation in California |
| MTBE | Methyl Tertiary Butyl Ether |
| MWD | Metropolitan Water District of Southern California |
| NDMA | N-Nitrosodimethylamine |
| ng/L | Nanograms per liter or parts per trillion |
| NL | Notification Level |
| NPDES | National Pollutant Discharge Elimination System |
| Liberty | Liberty Park Water |
| ppb | Parts per billion |
| PPCP | Pharmaceutical and Personal Care Products |
| PCE | Tetrachloroethylene |
| PWS | Public Water System |
| QSA | Quantification Settlement Agreement |
| RC | Regional Council (SCAG) |
| RWQCB | Regional Water Quality Control Board |
| SB X7-7 | Water Conservation Bill of 2009 |
| SCAG | Southern California Area Government |
| SDLAC | Sanitation Districts of Los Angeles County |
| SF | Single Family |
| SNWA | Southern Nevada Water Authority |
| SWP | State Water Project |
| TDS | Total Dissolved Solids |
| TCE | Trichloroethylene |
| TTHM | trihalomethane |
| TT | Treatment Technique |
| µg/L | Micrograms per Liter |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geographical Survey |
| UWMP | Urban Water Management Plan |
| VOC | Volatile Organic Compound |
| WARN | California Water Agencies Response Network |
| WCBBP | West Coast Basin Barrier Project |
| WOC | Water Operations Center |
| WRD | Water Replenishment District of Southern California |
| WRP | Water Recycling Plant |
| WSDM | Water Surplus and Drought Management |

# 1. INTRODUCTION AND OVERVIEW

This report presents the 2015 Urban Water Management Plan (2015 UWMP) for the Liberty Utilities (Park Water) Corp. service area. In January 2016, Liberty Utilities acquired Park Water Company. As a result, Park Water Company is now known as Liberty Utilities (Park Water) Corp., hereafter "Liberty Park Water" (Liberty). This section describes the general purpose of the 2015 UWMP, discusses UWMP implementation, and provides general information about Liberty Park Water, its wholesaler, and its service area characteristics.

## 1.1 Background and Purpose

The intent of this 2015 UWMP is to provide the Department of Water Resources (DWR) and the public with information on present and future water sources and demands and to provide an assessment of Liberty Park Water's water resource needs. Specifically, the UWMP must provide water supply planning for a 20-year planning period in 5-year increments, identify and quantify adequate water supplies for existing and future demands during normal, dry and drought years, and assure efficient use of urban water supplies.

An Urban Water Management Plan (UWMP) is a planning tool that generally guides the actions of water management agencies. It provides managers and the public with a broad perspective on a number of water supply issues. It is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. For example, the Legislature mandated that a plan include a section which "describes the opportunities for exchanges or water transfers on a short-term or long-term basis." (California Urban Water Management Planning Act, Article 2, Section 10630(d).) The identification of such opportunities, and the inclusion of those opportunities in a general water service reliability analysis, neither commits a water management agency to pursue a particular water exchange/transfer opportunity, nor precludes a water management agency from exploring exchange/transfer opportunities not identified in the 2015 UWMP. When specific projects are chosen to be implemented, detailed project plans are developed, environmental analysis, if required, is prepared, and financial and operational plans are detailed.

In short, this 2015 UWMP is a management tool, providing a framework for action, but not functioning as a detailed project development or action plan. It is important that this 2015 UWMP be viewed as a long-term, general planning document, rather than as an exact blueprint for supply and demand management. Water management in California is not a matter of certainty, and planning projections may change in response to a number of factors.

It is the stated goal of Liberty Park Water to deliver a reliable and high quality water supply for its customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, this 2015 UWMP successfully achieves this goal.

This 2015 UWMP coalesces important information on Liberty Park Water's water supply planning and studies, emergency response, and conservation activities. It addresses all Water Code requirements for such a plan as shown on the completed DWR UWMP checklist provided in Appendix A.

## 1.2 Urban Water Management Planning and the California Water Code

This Urban Water Management Plan has been prepared in response to the Urban Water Management Planning Act (UWMP Act), California Water Code (CWC) Sections 10610 through 10650.

In order for an urban water supplier to be eligible for any water management grant or loan administered by DWR, the agency must have a current UWMP on file that has been determined by DWR to address the requirements of the CWC. A current UWMP must also be maintained throughout the term of any grant or loan administered by DWR. An UWMP may also be required in order to be eligible for other State funding, depending on the conditions that are specified in the funding guidelines.

### 1.2.1 Urban Water Management Planning Act of 1983 (AB 797)

The UWMP Act was adopted by the California Legislature as Assembly Bill 797 during the 1983-84 session and signed into law by Governor Deukmejian on January 1, 1984. The UWMP Act has been modified over the years in response to the State's water shortages, droughts, and other factors.

The UWMP Act requires that "every urban water supplier shall prepare and adopt an Urban Water Management Plan". An urban water supplier is defined as "a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually".

The UWMP Act requires urban water suppliers to report, describe, and evaluate:

- Water deliveries and uses;
- Water supply sources;
- Efficient water uses;
- Demand Management Measures (Conservation Measures); and
- Water shortage contingency planning.

The UWMP Act directs water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies are available to meet existing and future demands. Urban water suppliers are required to assess current demands and supplies over a 20-year planning horizon and consider various drought scenarios. The UWMP Act also requires water shortage contingency planning and drought response actions be included in a UWMP.

A checklist to ensure compliance of this 2015 UWMP with the Act requirements is provided in Appendix A.

### 1.2.2 Applicable Changes to the Water Code since 2010 UWMPs

See Appendix B for complete details regarding the changes to the Water Code since the production of the 2010 UWMPs.

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

A significant amendment was made in 2009, after the drought of 2007-2009 and as a result of the governor's call for a statewide 20% reduction in urban water use by the year 2020. This amendment is the Water Conservation Act of 2009, also known as SB X7-7. SB X7-7 requires agencies to establish water use targets for 2015 and 2020 that would result in statewide savings of 20% by the year 2020. It also requires urban water suppliers to report in their UWMPs base daily per capita water use (baseline), urban water use target, interim urban water use target, and compliance daily per capita water use.

Beginning in 2016, retail water suppliers are required to comply with the water conservation requirements in SB X7-7 in order to be eligible for State water grants or loans.

## 1.3 UWMP Organization

The following information is included in this report and is discussed in individual sections below:

**Section 1 – Introduction and Overview:** In this introductory section, Liberty Park Water provides a discussion on the importance and extent of their water management planning efforts.

**Section 2 – Plan Preparation:** This section provides information on the process for developing the UWMP, including efforts in coordination and outreach.

**Section 3 – System Description:** This section includes maps of Liberty Park Water's service area, a description of the service area and climate, its public water system(s), and its organizational structure and history.

**Section 4 – System Water Use:** The current and projected water uses within Liberty Park Water's service area are described and quantified in this section.

**Section 5 – Baselines and Targets:** A description of Liberty Park Water's methods for calculating its baseline and target water consumption is included in this section, along with a demonstration of how Liberty Park Water has achieved the 2015 interim water use target and its plans for achieving the 2020 water use target.

**Section 6 – System Supplies:** This section describes and quantifies the current and projected sources of water available to Liberty Park Water. A description and quantification of potential recycled water uses and supply availability is also included in this section.

**Section 7 – Water Supply Reliability:** This section describes the reliability of Liberty Park Water's water supply and projects the reliability out 20 years. This description is provided for normal, single dry years, and multiple dry years.

**Section 8 – Water Shortage Contingency Planning:** This section provides Liberty Park Water's staged plan for dealing with water shortages, including a catastrophic supply interruption.

**Section 9 – Demand Management Measures:** Liberty Park Water's efforts to promote conservation and to reduce demand on water supply is described in this section, which also specifically addresses several demand management measures.

**Section 10 – Plan Adoption, Submittal, and Implementation:** This section describes the steps taken to adopt and submit the UWMP and to make it publicly available. This also includes a discussion of Liberty Park Water's plan to implement the UWMP.

**Section 11 – References:** Any applicable references contained within this UWMP are noted in this section.

**Section 12 – Appendices:** As shown in the Table of Contents, a number of appendices are included consisting of documents related to this 2015 UWMP preparation.

# 2. PLAN PREPARATION

This section describes the basis for the 2015 UWMP preparation, regional planning, compliance, calendar year, units of measure, and coordination and outreach.

## 2.1 Basis for Preparing a Plan

In accordance with the CWC, urban water suppliers with 3,000 or more service connections or supplying 3,000 or more acre-feet of water per year are required to prepare an UWMP every five years.

Liberty Park Water, as defined in the California Water Code section 10617, qualifies as an "Urban Water Supplier". Liberty is an investor-owned water utility that provides retail water service to approximately 28,000 connections in southeast Los Angeles County, so an UWMP is required to be completed for 2015 and every five years thereafter and submitted to the California Department of Water Resources.

Current water supplies include Central Basin groundwater (the basin is managed by the Water Replenishment District of Southern California [WRD]), imported water purchased from the Central Basin Municipal Water District (CBMWD), and recycled water. CBMWD is a member agency of the Metropolitan Water District of Southern California (MWD or Metropolitan). This subsection provides the cooperative framework within which the 2015 UWMP will be implemented including agency coordination, public outreach, and resources maximization.

### 2.1.1 Public Water Systems

Public Water Systems (PWSs) are the systems that provide drinking water for human consumption. These systems are regulated by the State Water Resources Control Board, Division of Drinking Water (DDW). The California Health and Safety Code 116275 (h) defines a "Public Water System" as a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

Table 2-1 lists name and number of connections for each PWS that is managed by Liberty and reported in this UWMP.

**Table 2-1. Public Water Systems**

| Table 2-1 Retail Only: Public Water Systems | | | |
|---|---|---|---|
| Public Water System Number | Public Water System Name | Number of Municipal Connections 2015 | Volume of Water Supplied 2015 |
| | Liberty Utilities (Park Water) Corp. | 27,353 | 9,787 |
| 1910161 | Lynwood/Rancho Dominguez System | | |
| 1910211 | Bellflower/Norwalk System | | |
| 1910021 | Compton/Willowbrook System | | |
| | **TOTAL** | 27,353 | 9,787 |
| NOTES: DDW considers Liberty's service area to be 3 systems. | | | |

## 2.2 Regional Planning

Before developing the UWMP, water agencies should consider the extent to which they will become involved in regional planning processes. Developing a cooperative 2015 UWMP may be a natural continuation of other regional coordination

efforts, such as Integrated Regional Water Management, or may present an opportunity to begin regional collaboration. Regional planning can deliver mutually beneficial solutions to all agencies involved by reducing costs for the individual agency, assessing water resources at the appropriate geographic scale, and allowing for solutions that cross jurisdictional boundaries. Some of the other possible benefits, depending on the level of regional cooperation, can include:

- More reliable water supplies;
- Increased regional self-reliance; Improved water quality;
- Better flood management;
- Increased economic stability;
- Restored and enhanced ecosystems; and
- Reduced conflict over resources.

## 2.3 Individual or Regional Planning and Compliance

**Table 2-2. Plan Identification**

| Table 2-2: Plan Identification | | | |
|---|---|---|---|
| **Select Only One** | **Type of Plan** | | **Name of RUWMP or Regional Alliance** *if applicable* |
| ☑ | **Individual UWMP** | | |
| | ☐ | Water Supplier is also a member of a RUWMP | |
| | ☐ | Water Supplier is also a member of a Regional Alliance | |
| ☐ | **Regional Urban Water Management Plan (RUWMP)** | | |

## 2.4 Calendar Year and Units of Measure

### 2.4.1 Calendar Year Reporting

Since Liberty reports on a calendar year basis rather than fiscal, it is required to include the water use and planning data for the entire calendar year of 2015. This UWMP reflects that requirement.

### 2.4.2 Units of Measure

Water agencies use various units of measure when reporting water volumes, such as acre-feet (AF), million gallons (MG), or hundred cubic feet (CCF). Agencies may report volumes of water in any of these units, but must maintain consistency throughout the 2015 UWMP.

**Table 2-3. Agency Identification**

| Table 2-3: Agency Identification | |
|---|---|
| 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 Date that the Fiscal Year Begins (mm/dd) | |
| | |
| Units of Measure Used in UWMP (select from Drop down) | |
| Unit | AF |

## 2.5 Coordination and Outreach

Water agencies are permitted by the State to work together to develop a cooperative regional plan. Due to Liberty Park Water's dependency on CBMWD and MWD for a large proportion of its water supply, it must be closely coordinated and consistent with CBMWD's and MWD's UWMPs. In addition, Liberty Park Water provides water to a number of cities, including the cities of Artesia, Bellflower, Compton, Lynwood, Norwalk, and Santa Fe Springs. These cities were notified regarding Liberty's 2015 UWMP. Agency coordination for this 2015 UWMP is summarized in Table 2-4.

A public hearing to review the draft UWMP was held on May 3 at Liberty Park Water's office in Downey. The public was notified 60 days in advance of the public hearing. The public comment period remained open through May 30, 2016. A copy of the public outreach materials, including newspaper publication, website postings, and invitation letters, are included in Appendix C.

The Final UWMP was submitted to DWR. Letters were sent to the cities we serve and other agencies noted in Table 2-4 notifying them of how to access the final report from Liberty's website.

### 2.5.1 Wholesale and Retail Coordination

Because Liberty Park Water relies upon CBMWD for imported water supply and CBMWD, in turn, is supplied by MWD, the suppliers are required to provide each other with information regarding projected water supply and demand.

**Table 2-4. Water Supplier Information Exchange**

| Table 2-4 Retail: Water Supplier Information Exchange |
|---|
| The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631. |
| Wholesale Water Supplier Name *(Add additional rows as needed)* |
| Central Basin Municipal Water District |
| Metropolitan Water District of Southern California |
| NOTES: Imported water supplies are provided by CBMWD, a MWD member agency. |

### 2.5.2 Coordination with Other Agencies and the Community

Liberty attended the public hearings that CBMWD had regarding their UWMP. In addition, information from MWD's UWMP was consulted in preparing Liberty's plan. Letters were sent to the agencies listed below informing them about the availability of the draft report, requesting their input, and inviting them to the public hearing on May 3.

Liberty has encouraged the involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the 2015 UWMP, as evidenced by the diverse community that received draft notices (see Table 2-5 below).

**Table 2-5. Agency Coordination Summary**

| | Received Link to View Draft Online | Commented on Draft | Contacted for Assistance | Sent Notice of Intent to Adopt |
|---|---|---|---|---|
| Central Basin Municipal Water District | X | | X | X |
| MWD Water District of Southern California | X | | X | X |
| Water Replenishment District of Southern California | X | | | X |
| City of Artesia | X | | | X |
| City of Bellflower | X | | | X |
| City of Compton | X | | | X |
| City of Lynwood | X | | | X |
| City of Norwalk | X | | | X |
| City of Santa Fe Springs | X | | | X |
| Los Angeles County Department of Regional Planning | X | | | X |
| County Sanitation Districts of Los Angeles County (LACSD) | X | X | | X |

### 2.5.3 Notice to Cities and Counties

Liberty notified the cities within its service area and Los Angeles County of the opportunity to provide input regarding the 2015 UWMP. The timeline for public participation during the development of the 2015 UWMP is shown below. A copy of the public outreach materials, including website postings and invitation letters, are included in Appendix C.

**Public Participation Timeline**

| | | |
|---|---|---|
| April 26, 2016 | Preliminary Draft UWMP | Preliminary Draft released to solicit input |
| May 3, 2016 | Public Hearing | Solicited input from the public |
| June 15, 2016 | Adoption of UWMP | Board adoption of 2015 UWMP per Resolution |
| June 24, 2016 | Final UWMP | Final UWMP released |

The components of public participation include:

Local Media

- Paid notice in the Long Beach Press Telegram

Water Agencies Public Participation

- Metropolitan Water District of Southern California
- Central Basin Municipal Water District
- Water Replenishment District of Southern California
- County Sanitation Districts of Los Angeles County

City/County Outreach

- Planning Divisions of local cities:
  - Artesia
  - Bellflower
  - Compton
  - Lynwood
  - Norwalk
  - Santa Fe Springs
- Los Angeles County Department of Regional Planning

Public Availability of Documents

- Liberty Utilities website

# 3. SYSTEM DESCRIPTION

## 3.1 General Description

In January 2016, Liberty Utilities acquired Liberty Park Water. Liberty Utilities is a regulated water, natural gas, and electric transmission and distribution utility that operates in 11 states. The new name is Liberty Utilities (Park Water) Corp., or "Liberty Park Water."

Liberty Park Water, originally named the Los Nietos Water Company, was formed in the post-Great Depression era for the purpose of providing water to the residents east of the Los Angeles River, north and south of Rosecrans. In 1937, this water company became incorporated as Liberty Park Water. Today, Liberty Park Water has approximately 27,300 service connections.

Liberty has been making an effort to maximize the use of available resources while minimizing the use of imported water. In 2006, Liberty became a participant in the Memorandum of Understanding Regarding Water Conservation in California (MOU), and a member of the California Urban Water Conservation Council (CUWCC). Signatories to the MOU pledge to implement fourteen comprehensive conservation Best Management Practices (BMPs).

Liberty's groundwater resources are managed by the Water Replenishment District (WRD). The WRD was formed by the Water Replenishment Act, and manages, regulates, replenishes and protects the quality of the groundwater supplies within its boundaries.

This 2015 UWMP, along with other planning documents, will be used by Liberty staff to guide water use and management efforts through 2035, subject to changing conditions as identified in the required five-year updates of the UWMP.

Several documents and efforts were used to enable Liberty to maximize the use of available resources and minimize use of imported water, including the CBMWD UWMP. Section 6 of this 2015 UWMP describes in detail the water resources available to Liberty for the 25-year period covered by the 2015 UWMP.

## 3.2 Service Area Boundary Maps

Liberty's service area is divided into three non-contiguous water systems including the Compton/Willowbrook Water System, the Lynwood/Rancho Dominguez Water System and the Bellflower/Norwalk Water System. These water systems are shown on the Service Area Map (Figure 3-1).

### 3.2.1 Other Agencies

- **Metropolitan Water District of Southern California**

  MWD is a wholesaler of water, and supplies water to most of southern California by obtaining water from the Colorado River and from the State Water Project (SWP) in northern California.

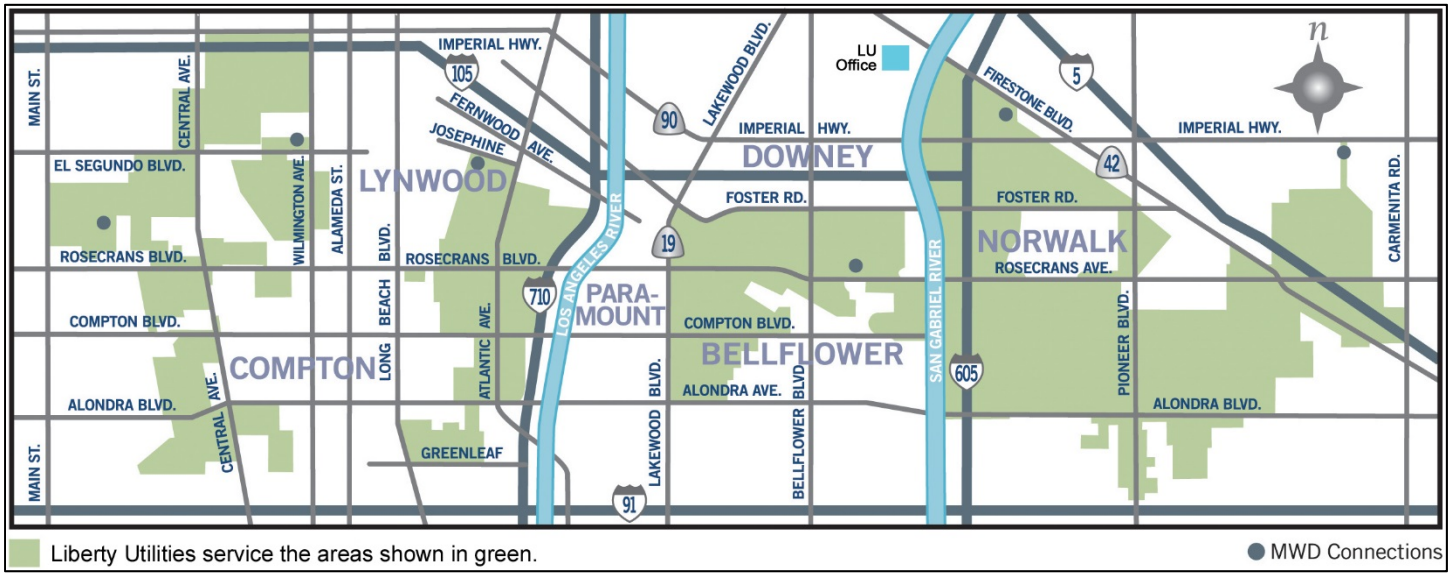
- **Central Basin Municipal Water District**

  CBMWD is a member agency of MWD that wheels MWD water to a specific area of Southern California.

- **Water Replenishment District of Southern California**

  WRD protects and manages the groundwater resources of the Central and West Coast groundwater basins of south Los Angeles County.

**Figure 3-1. Liberty Park Water's Service Area Map**




## 3.3 Service Area Climate

The climate in Liberty's service area is generally warm and dry in the summer and cool in the winters, typical of a Mediterranean climate. The average temperature is 74 degrees Fahrenheit. Average rainfall is about 12 inches per year. The average evapotranspiration (ETo) in the region is 46.3 inches per year.

**Table 3-0. Period of Record General Climate Summary, Temperature and Precipitation, Long Beach**

| Month | Max. Temperature (°F) | Min. Temperature (°F) | Mean Temperature (°F) | Mean Precipitation (inches) |
|---|---|---|---|---|
| January | 67.1 | 45.6 | 56.3 | 2.63 |
| February | 67.2 | 47.3 | 57.2 | 2.90 |
| March | 68.4 | 49.7 | 59.1 | 1.83 |
| April | 71.7 | 52.4 | 62.0 | .70 |
| May | 73.5 | 56.8 | 65.2 | .20 |
| June | 76.9 | 60.3 | 68.6 | .06 |
| July | 82.2 | 63.7 | 73.0 | .02 |
| August | 83.9 | 64.9 | 74.4 | .06 |
| September | 82.3 | 62.9 | 72.6 | .19 |
| October | 77.9 | 57.9 | 67.9 | .42 |
| November | 72.2 | 50.5 | 61.3 | 1.21 |
| December | 67.0 | 45.3 | 56.1 | 1.80 |
| Annual | 74.2 | 54.8 | 64.5 | 12.01 |

Sources: Western Regional Climate Center. December 2015. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5085 and http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5085

### 3.3.1 Climate Change

Climate change poses a risk to supply reliability as it is expected to cause weather patterns to shift dramatically and unpredictably, thus affecting water supply planning. Several areas of concern for California water planners include reduction in the Sierra Nevada snowpack; increased intensity and frequency of extreme weather events; and rising sea levels resulting in seawater intrusion, erosion of levees, among other things (MWD, Draft 2015 UWMP, March 2016). At the state level, climate change management is one of DWR's five core values. Through its Climate Action Plan, DWR performs a wide range of activities to help support climate change analysis and adaption planning[1] (DWR, March 2016).

At the regional level in southern California, MWD, as the regional wholesaler of imported water, is committed to performing its due diligence with respect to climate change. Under its 2015 IRP Update, MWD recognizes additional risks and uncertainties from climate change and analyzes how vulnerable the region's reliability is to longer-term risks. The 2015 IRP process involves evaluating a wider range of water management strategies, and seeking robust and adaptive plans that respond to uncertain conditions as they evolve over time, and that ultimately will perform adequately under a wide range of future conditions (MWD, March 2016).

## 3.4 Service Area Population and Demographics

Table 3-1 lists the current and projected population for Liberty's service area.

**Table 3-1. Population – Current and Projected**

| Table 3-1 Retail: Population - Current and Projected | | | | | | |
|---|---|---|---|---|---|---|
| Population Served | 2015 | 2020 | 2025 | 2030 | 2035 | 2040*(opt)* |
| | 126,637 | 126,867 | 127,332 | 127,797 | 128,263 | 129,434 |

NOTES: Liberty Park Water's 2015 population estimate is determined in the SB X7-7 analysis using the 2010 census based population value and Liberty's 2010 UWMP reported growth rate based on estimates and projections from 2001-2035 onward determined from Department of Finance (DOF) 2010 reported data. The process for determining Liberty's 2010 population is further explained in Appendix M. Population growth from 2020 through 2040 is based on Southern California Area Government (SCAG) Draft 2016 RTP/SCS Growth Forecast by Jurisdictions as a weighted average annual growth rate for the primary Liberty Park Water jurisdictions. SCAG's Regional Council (RC) is scheduled to adopt the RTP/SCS and associated jurisdictional level growth forecasts in April 2016, and RC staff don't anticipate further changes in the growth forecasts figures at jurisdictional level. SCAG provides year 2012, 2020, 2035 and 2040 population by jurisdiction. The weighted annual average 2012-2020 SCAG growth rate was initially applied to year 2015 population to get 2020; then, the weighted annual average 2020-2035 SCAG growth rate was applied to year 2020 population to get year 2025, 2030 and 2035 population values; and finally the 2035-2040 weighted annual average SCAG growth rate was applied to year 2035 population to get year 2040 population for Liberty Park Water.

Source: SCAG Draft 2016 RTP/SCS Growth Forecast by Jurisdictions. Online. 2/25/16v1
http://www.scag.ca.gov/Documents/2016DraftGrowthForecastByJurisdiction.pdf

[1] DWR Climate Change Action Plan <http://www.water.ca.gov/climatechange/CAP.cfm>

# 4. SYSTEM WATER USE

Accurately tracking and reporting current water demands allow a water supplier to properly analyze the use of their resources and conduct good resource planning. Estimating future demand as accurately as possible allows water agencies to manage their water supply and appropriately plan their infrastructure investments. Assessments of future growth and related water demand, done in coordination with local planning agencies, provide essential information for developing demand projections. Agencies are encouraged to coordinate and communicate with other planning agencies when developing demand projections.

This section describes historic and current water usage and the methodology used to project future demands within Liberty's service area. Water deliveries are divided into sources including imported water, groundwater, and recycled water. Water usage is divided into sectors such as residential, industrial, landscape, and other purposes. For this evaluation, existing land use data and new housing construction information were compiled from Liberty. This information was then compared to historical trends for new water service connections and customer water usage information.

## 4.1 Recycled versus Potable and Raw Water Demand

Recycled water is an important source of water in southern California due to the cost of imported water supplies, a dry climate, and high demand.

CBMWD's regional water recycling program, called the "Central Basin Water Recycling Project", is comprised of two distribution systems, the E. Thornton Ibbetson Century Water Recycling Project and the Esteban Torres Rio Hondo Water Recycling Project, along with three pumping stations and a reservoir. This system provided an average of 4,800 acre-feet per year of recycled water to more than 200 industrial, commercial, and landscape irrigation sites for the last five years. This system provides the Liberty service area with recycled water.

Several commercial nurseries went out of business and Cal Trans reduced their purchases of recycled water for irrigation in the last few years, resulting in a decrease in recycled water demand. In addition, drought messaging may have contributed to the decrease in recycled demands.

## 4.2 Water Uses by Sector

Liberty currently serves approximately 27,330 potable water connections and 25 recycled water accounts, all of which are metered accounts. In 2015, approximately 98% of the service connections were residential and commercial. Industrial, institutional, government, and fire protection connections account for approximately 2% of Liberty's total connections.

Predicting future water supply requires accurate historic water use patterns and water usage records.

In the past, Liberty has sold water periodically to the City of Norwalk through an interconnection. Liberty supplied water regularly to Peerless Water Company until 2009.

**Table 4-1. Demands for Potable and Raw Water – Actual**

| Table 4-1 Retail: Demands for Potable and Raw Water - Actual | | | |
|---|---|---|---|
| Use Type | 2015 Actual | | |
| | Additional Description (*as needed*) | Level of Treatment When Delivered | Volume |
| Single Family | | Drinking Water | 6,264 |
| Multi-Family | | Drinking Water | 901 |
| Commercial | | Drinking Water | 1,044 |
| Industrial | | Drinking Water | 87 |
| Institutional/Governmental | Public Authority | Drinking Water | 511 |
| Other | Fire Services and Temporary Meter Services | Drinking Water | 39 |
| Losses | Non-revenue water | Drinking Water | 733 |
| | | **TOTAL** | 9,579 |

Historic population estimates were compared to the historical customer demands to determine historic per capita use. As discussed in the previous section, SBX7-7 calculations were used to provide a baseline and target per capita water use. Future demand estimates were then determined by multiplying the projected population by the base per capita water use. These calculations provided Liberty's projected future water demands as shown in Table 4-2. The anticipated total water demand in 2040 is approximately 10,615 AF. Demand estimates do not include reductions from demand management practices.

**Table 4-2. Demands for Potable and Raw Water – Projected**

| Table 4-2 Retail: Demands for Potable and Raw Water - Projected | | | | | | |
|---|---|---|---|---|---|---|
| Use Type | Additional Description *(as needed)* | Projected Water Use | | | | |
| | | 2020 | 2025 | 2030 | 2035 | 2040 |
| Single Family | | 7,415 | 7,030 | 6,696 | 6,461 | 6,321 |
| Multi-Family | | 1,353 | 1,276 | 1,209 | 1,162 | 1,132 |
| Commercial | | 1,491 | 1,470 | 1,454 | 1,441 | 1,438 |
| Industrial | | 113 | 114 | 114 | 114 | 115 |
| Institutional/Governmental | Public Authority | 775 | 778 | 781 | 784 | 791 |
| Other | Fire Services and Temporary Meter Services | 69 | 69 | 69 | 70 | 70 |
| Losses | Non-revenue water | 853 | 816 | 783 | 760 | 746 |
| | **TOTAL** | 12,069 | 11,553 | 11,107 | 10,791 | 10,615 |
| NOTES: Water use includes projected savings from plumbing codes and low-income housing water use. Projected losses represent Liberty's conservative estimate that for planning purposes Losses or Non-revenue Water should be estimated at 7% of production. | | | | | | |

Liberty does not anticipate any regular or single large sales to other agencies in the future. As in the past, Liberty does not anticipate future water use related to saline barriers, groundwater recharge operations or conjunctive use. Recycled water use is expected to remain stable. For the purpose of projections, non-revenue water is assumed to be approximately 7%. Table 4-3 presents information on all projected water uses for the years 2015 to 2040.

**Table 4-3. Total Water Demands**

| Table 4-3 Retail: Total Water Demands | | | | | | |
|---|---|---|---|---|---|---|
| | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
| Potable and Raw Water From Tables *4-1 and 4-2* | 9,579 | 12,069 | 11,553 | 11,107 | 10,791 | 10,615 |
| Recycled Water Demand* From Table *6-4* | 208 | 224 | 241 | 260 | 280 | 302 |
| **TOTAL WATER DEMAND** | 9,787 | 12,293 | 11,794 | 11,367 | 11,071 | 10,917 |

## 4.3 Distribution System Water Losses

Distribution system water losses (also known as "real losses") are the physical water losses from the water distribution system and the supplier's storage facilities, up to the point of customer consumption.

In the past, Liberty Park Water has not had water use related to saline barriers or groundwater recharge operations. Liberty monitors water used for system operations such as hydrant flushing, dead end flushing, flushing for water quality purposes, broken fire hydrants, main leaks, etc.

However, Liberty, like all water agencies does have some non-revenue water. Non-revenue water is the difference between the amount of water produced and the amount of water billed to customers. Over the last five years, non-revenue water has averaged less than one (1) percent of produced water within Liberty's system.

The percentage of non-revenue water was estimated by comparing water production statistics to water sales statistics. Sources of non-revenue water include:

- Fire Hydrant Operations by the Fire Department - This represents the use of water for emergencies.
- Customer Meter Inaccuracies - Customer meters represent one of the main sources of non-revenue water as they tend to under-represent actual consumption in the water system.
- Leaky water lines - Leakage from water pipes is a common occurrence in water systems. A significant number of leaks remain undetected over long periods of time as they are very small. However, these small leaks contribute to the overall non-revenue water.

Table 4-4 indicates non-revenue water loss within the distribution system.

**Table 4-4. Water Loss Summary Most Recent 12-Month Period Available (as calculated in AWWA DWR Water Audit Method worksheet)**

| Table 4-4 Retail: 12 Month Water Loss Audit Reporting | |
|---|---|
| Reporting Period Start Date (mm/yyyy) | Volume of Water Loss* |
| 01/2013 | 384.21 |
| ** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.* | |
| NOTES: Used 2013 Audit as it was most recent available that is not an abnormal drought year. | |

## 4.4 Estimating Future Water Savings

The projected demands presented in this 2015 UWMP include estimate plumbing code savings. Liberty's process of estimating future water savings, the passive savings methodology, can be found in Appendix F.

## 4.5 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections of an UWMP include the projected water use for single-family and multifamily residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. Liberty's service area includes seven jurisdictions: the City of Artesia, the City of Bellflower, the City of Compton, the City of Lynwood, the City of Norwalk, and the City of Santa Fe Springs, and an unincorporated portion of Los Angeles County near Compton. The Housing Element of each of these cities described the percentage of "extremely low," "very low," and "low" income households as a percentage of the total number of households. The weighted percentage of low-income households per jurisdiction can be found in Table 4-6. A weighted average of 44% was used for projections of water demand for single-family and multifamily customers from very low and low-income households. The projected future low-income household water use (AF) in presented in Table 4-7.

Further, Liberty will not deny nor condition approval of water services, nor reduce the amount of services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs:

- Liberty specifically finds that it does not have sufficient water supply;
- Liberty is subject to a compliance order issued by the State Water Resources Control Board, Division of Drinking Water that prohibits new water connections; or
- The applicant has failed to agree to reasonable terms and conditions relating to the provision of services.

**Table 4-5. Inclusion in Water Use Projections**

| Table 4-5 Retail Only: Inclusion in Water Use Projections | |
|---|---|
| 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. | Appendix F, Table F-1 |
| Are Lower Income Residential Demands Included In Projections? | Yes |

**Table 4-6. Weighted Percentage of Low-Income Households**

| City | Total Number of Households from Housing Element | Weighted Percentage of Households | Percentage Low Income from Housing Element | Weighted Percentage of Low Income Households |
|---|---|---|---|---|
| Artesia[1] | 4,517 | 5% | 44% | 2% |
| Bellflower[2] | 24,132 | 24% | 50% | 12% |
| Compton[3] | 22,327 | 22% | 58% | 13% |
| Lynwood[4] | 15,270 | 15% | 39% | 6% |
| Norwalk[5] | 28,045 | 28% | 31% | 9% |
| Santa Fe Springs[6] | 4,968 | 5% | 40% | 2% |
| | | | **Weighted Percentage** | **44%** |

[1] "City of Artesia Housing Element HCD Submittal," November 15, 2013. http://www.cityofartesia.us/DocumentCenter/View/203

[2] *City of Bellflower 2014-2021 Housing Element*, prepared for the City of Bellflower by ESA, adopted September 23, 2013 (p. 48-49).
http://www.hcd.ca.gov/housing-policy-development/housing-resource-center/plan/he/housing-element-documents/bellflower_5th_adopted100713.pdf

[3] Housing Element Compton General Plan 2030.
http://www.comptoncity.org/civicax/filebank/blobdload.aspx?blobid=24234

[4] City of Lynwood, California, *2014-2021 Housing Element*, adopted August 6, 2013 (p. 51).
http://lynwood.ca.us/sites/default/files/City%20of%20Lynwood%20Adopted%202014-2021%20Housing%20Element.pdf

[5] *2013-2021 Housing Element of the General Plan,* Planning Division, Community Development Department.
http://www.hcd.ca.gov/housing-policy-development/housing-resource-center/plan/he/housing-element-documents/norwalk_5th_draft100313.pdf

[6] *City of Santa Fe Springs 2014-2021 Housing Element*, November 2013.
http://www.hcd.ca.gov/housing-policy-development/housing-resource-center/plan/he/housing-element-documents/santa_fe_springs_5th_draft111813.pdf

**Table 4-7. Projections of Future Low-Income Household Water Use (AF)**

| Water Use* | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|
| Estimated Very Low and Low-Income Household Water Use | 3,842 | 3,640 | 3,464 | 3,341 | 3,266 |

* Assumes 44% of all future households in Liberty service area qualify as “very-low” or “low” income per the definition provided in Senate Bill 1087.

## 4.6 Climate Change

A discussion of potential climate change impacts can assist in providing a comprehensive look at the potential impacts on projected demand. For example, hotter and drier weather may lead to an increased demand in landscape irrigation. Water agencies are encouraged, but not required, to consider potential climate change impacts to their water demand.

Other factors that affect water usage are weather and conservation practices. Historically, when the weather is hot and dry, water usage increases. The amount of increase varies according to the number of consecutive years of hot, dry weather and the conservation activities imposed. During cool, wet years, historical water usage has decreased, reflecting less water usage for exterior landscaping.

California faces the prospect of significant water management challenges due to a variety of issues including population growth, regulatory restrictions and climate change. Climate change is of special concern because of the range of possibilities and their potential impacts on essential operations, particularly operations of the SWP. The most likely scenarios involve increased temperatures, which will reduce the Sierra Nevada snowpack and shift more runoff to winter months, and accelerated sea level rise. These changes can cause major problems for the maintenance of the present water export system since water supplies are conveyed through the fragile levee system of the Sacramento-San

Joaquin Delta. The other much-discussed climate scenario or impact is an increase in precipitation variability, with more extreme drought and flood events posing additional challenges to water managers around the west[2]. The Colorado River Basin has experienced severe multi-year droughts, most recently in the mid-1990s.

In recent years, water conservation has become an increasingly important factor in water supply planning in California. Since the 2005 UWMP, there have been a number of regulatory changes related to conservation including new standards for plumbing fixtures, a state universal retrofit ordinance, new Green Building standards, demand reduction goals and more. In addition, the California Plumbing Code has instituted requirements for new construction that mandate the installation of ultra-low-flow toilets and low-flow showerheads.

Residential, commercial, and industrial usage can be expected to decrease as a result of the implementation of more aggressive water conservation practices. In southern California, the greatest opportunity for conservation is in developing greater efficiency and reduction in landscape irrigation. The irrigation demand can typically represent as much as 70% of the water demand for residential customers depending on lot size and amount of irrigated turf and plants. Conservation efforts will increasingly target this component of water demand. Section 9 discusses Demand Management Measures.

[2] Final California Water Plan Update 2009 Integrated Water Management: Bulletin 160.

# 5. SB X7-7 BASELINES AND TARGETS

## 5.1 Updating Calculations from 2010 UWMP

The Water Conservation Bill of 2009 (SB X7-7) is one of four policy bills enacted as part of the November 2009 Comprehensive Water Package (Special Session Policy Bills and Bond Summary). The Water Conservation Bill of 2009 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the *20 by 2020 Water Conservation Plan*. Consistent with SB X7-7, each water supplier must determine and report its existing baseline water consumption and establish future water use targets in gallons per capita per day (GPCD); reporting began with the 2010 UWMP.

In their 2015 UWMPs agencies may change the years they selected for their baseline periods as compared to their 2010 UWMPs. Agencies may choose to make this change based on changes to their calculated population, which may have affected the baseline and target GPCD values.

### 5.1.1 Update of Target Method

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). There are four methods for calculating the Compliance Water Use Target:

1. Eighty percent of the urban water supplier's baseline per capita daily water use
2. Per capita daily water use estimated using the sum of the following:
    a. For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of DWR's 2016 report to the Legislature reviewing progress toward achieving the statewide 20% reduction target, this standard may be adjusted by the Legislature by statute.
    b. For landscape irrigated through dedicated or residential meters or connections, water use efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in section 490 et seq. of Title 23 of the California Code of Regulations[3], as in effect the later of the year of the landscape's installation or 1992.
    c. For commercial, industrial, and institutional (CII) uses, a 10% reduction in water use from the baseline CII water use by 2020.
3. Ninety-five percent of the applicable state hydrologic region target as stated in the state's April 30, 2009, draft *20 by 2020 Water Conservation Plan*. Liberty falls within the South Coast Hydrologic Region; the "2020 Plan" regional targets is 149 GPCD. The Method 3 regional targets at 95% of 149 GPCD is 142 GPCD.
4. Reduce the 10- or 15-year Base Daily Per Capita Water Use a specific amount for different water sectors:
    a. Indoor residential water use to be reduced by 15 GPCD or an amount determined by use of DWR's "Best Management Practice (BMP) Calculator".

[3] California Department of Water Resources. Model Water Efficient Landscape Ordinance, California Code of Regulations, Title 23, section 490 et seq. Online: http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/2015%20MWELO%20Guidance%20for%20Local%20Agencies.pdf

b. A 20% savings on all unmetered uses.

c. A 10% savings on baseline CII use.

d. A 21.6% savings on current landscape and water loss uses.

The Interim Water Use Target is set as a halfway point between the Base Daily Water Use GPCD and the 2020 Compliance Water Use Target GPCD.

Finally, the selected Compliance Water Use Target must be compared against what DWR calls the "Maximum Allowable GPCD". The Maximum Allowable GPCD is based on 95% of a 5-year average base gross water use ending no earlier than 2003 and no later than 2010. The Maximum Allowable GPCD is used to determine whether a supplier's 2015 and 2020 per capita water use targets meet the minimum water use reduction of the SBX7-7 legislation. If an agency's Compliance Water Use Target is higher than the Maximum Allowable GPCD, the agency must instead use the Maximum Allowable GPCD as their target.

### 5.1.2 Required Use of 2010 U.S. Census Data

In the 2010 UWMP, "[p]opulation estimates and projections from 2010 onward were calculated using a growth rate determined from Department of Finance (DOF) data." In this UWMP, year 2010 population was determined using 2010 census information gathered in 2014 while developing a water use efficiency plan; the 2010 population estimate of 122,372 is based on a GIS analysis of 2010 census blocks data and the service area population-determining methodology outlined in the California State Water Resources Control Board's Instructions for Estimating Residential Gallons Per Capita per Day. Liberty's 2015 population estimate is determined using the 2010 population value and Liberty's 2010 UWMP reported growth rate based on estimates and projections from 2001-2035 onward determined from Department of Finance (DOF) 2010 reported data.

### 5.1.3 SB X7-7 Verification Form

In the 2015 UWMP, water agencies must demonstrate compliance with their established water use target for the year 2015. This will also demonstrate whether or not the agency is currently on track to achieve its 2020 target.

Compliance is verified by DWR's review of the SB X7-7 Verification Form submitted with the 2015 UWMP. The SB X7-7 Verification Form is found in Appendix E and summarized in Tables 5-1 and 5-2 of this section.

The two primary calculations required by SB X7-7 are:

- Base Daily Water Use calculation (average GPCD used in past years)
- Compliance Water Use Target (target GPCD in 2015 and 2020)

In addition to calculating base gross water use, SBX7-7 requires that a retail water supplier identify its water demand reduction targets. The methodologies for calculating demand reduction were described in Section 4. Liberty has selected Method 3 to calculate its 2020 Compliance Water Use Target and Interim Water Use Target.

The SB X7-7 Verification Form can be found in Appendix E.

## 5.2 Baseline Periods

Water use GPCD must be calculated and reported for two baseline periods, the 10- or 15-year baseline (Baseline GPCD) and the 5-year baseline (Target Confirmation). Whether an agency uses a 10- or 15-year baseline depends on the percentage of recycled water delivered in the year 2008.

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

The Base Daily Water Use calculation is based on gross water use by an agency in each year and can be based on a ten-year average ending no earlier than 2004 and no later than 2010 or a 15-year average if 10% of 2008 demand was met by recycled water. Base Daily Water Use must account for all water sent to retail customers, excluding:

- Recycled water
- Water sent to another water agency
- Water that went into storage

Since Liberty's percentage of recycled water used in the year 2008 was less than 10%, the water agency must use a 10-year baseline period. Recycled water deliveries of 2008 and the total water deliveries of 2008 will be entered into SB X7-7 Table 1. The table will calculate the percent of recycled water delivered in 2008.

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

Water suppliers must also calculate water use, in GPCD, for a 5-year baseline period. This will be used to confirm that the selected 2020 target meets the minimum water use reduction requirements (see Section 5.7). This is a continuous 5-year period that ends no earlier than December 31, 2007 and no later than December 31, 2010.

Liberty falls within the South Coast Hydrologic Region which has an Urban Water Use Target of 149 GPCD. Ninety-five percent of this target is 142 GPCD. Since Liberty's 5-year Average Base Daily Per Capita Water Use is lower than 100 GPCD, no adjustments to the Urban Water Use Target are needed.

For the Interim Urban Water Use Target – the water use goal each water supplier is to achieve and report in their 2015 UWMP – the average of the Base Daily Per Capita Water Use and the Urban Water Use Target is normally used. As shown in Table 5-1 for Liberty, since the Average Base Daily Water Use is already below 100 GPCD, the Interim Urban Water Use Target will be 121 GPCD, the average of the Base Daily Per Capita Water Use of 99.8 GPCD and year 2020 target of 142 GPCD.

## 5.3 Service Area Population

This section describes Liberty's service area population methodologies. Liberty has a current 2015 service area population of approximately 126,637. To determine historic population estimates, Census Tract data from 1990, 2000 and 2010 were compared to GIS data of the service area, providing a population estimate for those three years. The analysis for years 1990 and 2000 was conducted as part of the 2010 UWMP. The 2010 population analysis was conducted in 2014 as part of a water use efficiency study; this analysis is presented in Appendix M. The population for the years between 1990 and 2000, and 2000 and 2010 were linearly interpolated according to the population values. In the Park Water Use Efficiency Plan a 2010 population estimate of 122,372 is based on a GIS analysis of 2010 census blocks data and the service area population-determining methodology outlined in the California State Water Resources Control Board's Instructions for Estimating Residential Gallons Per Capita per Day. Liberty's 2015 population estimate is determined using the 2010 population value and Liberty's 2010 UWMP reported growth rate based on estimates and projections from 2001-2035 onward determined from Department of Finance (DOF) 2010 reported data. Liberty's baseline population estimates can be found in Appendix E's SB X7-7 Table 3: Service Area Population. Projected population estimates can be found in Section 3.4.

## 5.4 Gross Water Use

Gross water use is a measure of water that enters the distribution system of the supplier over a 12-month period (either fiscal or calendar year) with certain allowable exclusions. These exclusions are:

- Recycled water delivered within the service area;

- Indirect recycled water (see Methodology 1 from the *Methodologies* document, DWR 2011);
- Water placed into long term storage (surface or groundwater);
- Water conveyed to another urban supplier;
- Water delivered for agricultural use;
- Process water.

Gross water use must be reported for each year in the baseline periods as well as 2015, the compliance year.

## 5.5 Baseline Daily per Capita Water Use

Consistent with SBX7-7, the 2015 UWMP must provide an estimate of Base Daily Per Capita Water Use. This estimate utilizes information on population as well as base gross water use. For the purposes of this UWMP, population was estimated as described in Section 2.1.

Recycled water did not make up 10% of the 2008 delivery to the Liberty retail service areas, and for this reason, Base Daily Per Capita Water Use has been based on a 10-year period. In addition, urban retailers must report daily per capita water use for a 5-year period from January 1, 2003 to December 31, 2010. This 5-year base period is compared to the Target Based Daily Per Capita Water Use to determine the minimum water use reduction requirement (this is described in more detail in the following sections). Table 5-1 reports the data used to calculate the Base Daily Per Capita Water Use in GPCD, and the 10- and 5-year base periods.

Liberty has selected the period 1998 to 2007 as the basis for the 10-Year Average Base Daily Per Capita Water Use, which is 99.8 GPCD. Liberty has selected the period 2003 to 2007 as the basis for the 5-year Average, which is 99.0 GPCD.

## 5.6 2015 and 2020 Targets

The following table presents the baseline and target summary for Liberty. Liberty is below the 100 GPCD threshold for their average baseline GPCD so their 2015 interim GPCD is the average of the baseline and 2020 target GPCD.

**Table 5-1. Baselines and Targets Summary**

**Table 5-1 Baselines and Targets Summary**
*Retail Agency or Regional Alliance Only*

| Baseline Period | Start Year | End Year | Average Baseline GPCD* | 2015 Interim Target * | Confirmed 2020 Target* |
|---|---|---|---|---|---|
| 10-15 year | 1998 | 2007 | 99.8 | 121 | 142 |
| 5 Year | 2003 | 2007 | 99.0 | | |
| *All values are in Gallons per Capita per Day (GPCD) | | | | | |

## 5.7 2015 Compliance Daily per Capita Water Use (GPCD)

The 2015 per capita water use for Liberty is 68 GPCD as referenced in Appendix E, Table 5 and in the following table.

**Table 5-2. 2015 Compliances**

| **Table 5-2: 2015 Compliance:** *Retail Agency or Regional Alliance Only* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Actual 2015 GPCD* | 2015 Interim Target GPCD* | **Optional Adjustments to 2015 GPCD** *From Methodology 8* | | | | Adjusted 2015 GPCD* | 2015 GPCD* *(Adjusted if applicable)* | Did Supplier Achieve Targeted Reduction for 2015? Y/N |
| | | Extraordinary Events* | Economic Adjustment* | Weather Normalization* | TOTAL Adjustments* | | | |
| 68 | 121 | 0 | 0 | 0 | 0 | 68 | 68 | Yes |
| **All values are in Gallons per Capita per Day (GPCD)* | | | | | | | | |

## 5.8 Regional Alliance

Liberty Park Water is not part of a regional alliance.

# 6. SYSTEM SUPPLIES

This section describes the water resources available to Liberty for the 25-year period covered by the 2015 UWMP. These are summarized in Table 6-8 and discussed in more detail below. Both currently available and planned supplies are discussed.

## 6.1 Purchased or Imported Water

Imported water supplies are provided by CBMWD, a MWD member agency. MWD acquires water from the Colorado River and the SWP and distributes treated and untreated water directly to its 26 member agencies. MWD was established to develop an imported water supply from the Colorado River by constructing and operating the Colorado River Aqueduct (CRA), which has a capacity of 1.25 million acre-feet (MAF). The CRA impounds water from the Colorado River at Lake Havasu on the California-Arizona border west across the Mojave and Colorado deserts to the east side of the Santa Ana Mountains. It is one of the primary sources of drinking water for southern California. The CRA system is composed of two reservoirs, five pumping stations, 63 miles of canals, 92 miles of tunnels, and 84 miles of buried conduit and siphons.

The SWP is the largest state-built, multi-purpose water project in the country. It was authorized by the California State Legislature in 1959, with the construction of most initial facilities completed by 1973. Today, the SWP includes 34 storage facilities, reservoirs and lakes, 20 pumping plants, 4 pumping-generating plants, 5 hydro-electric plants and approximately 700 miles of aqueducts and pipelines. The primary water source for the SWP is the Feather River, a tributary of the Sacramento River. Storage released from Oroville Dam on the Feather River flows down natural river channels to the Sacramento-San Joaquin River Delta (Delta). While some SWP supplies are pumped from the northern Delta into the North Bay Aqueduct, the vast majority of SWP supplies are pumped from the southern Delta into the 444-mile-long California Aqueduct. The California Aqueduct conveys water along the west side of the San Joaquin Valley to Edmonston Pumping Plant, where water is pumped over the Tehachapi Mountains and the aqueduct then divides into the East and West Branches.

CBMWD was established in 1952 by a vote of the people to protect the Central Groundwater Basin from over-pumping. It was realized pumping would have to be curtailed and the region would require the importation of water. In 1954 CBMWD joined MWD to purchase wholesale imported water from the Colorado River and the SWP and sell it to local water agencies, both public and private.

Record dry conditions in the SWP and the Colorado River systems are the current challenges faced by MWD. Dry conditions persisted into 2015 as the fourth consecutive dry year for California. 2015 began with the driest January on record and the earlier and lowest snowpack peak in recorded history. As a result, MWD received only 20% of its contract water supplies from the SWP in 2015. The declining ecosystem in the Sacramento-San Joaquin River Delta (Bay-Delta) continues to impose operational constraints to the SWP system. SWP delivered restrictions due to regulatory requirements resulted in the loss of about 1.5 MAF of supplies to MWD from 2008 through 2014. This reduces the likelihood for the regional storage to be refilled in the near term. The Colorado River system has also seen a steady decline in total storage levels as it experiences a historic 16-year drought (MWD, 2015).

## 6.2 Groundwater

This section presents information about Liberty's groundwater supplies. Liberty currently owns 822.3 AF of groundwater rights and leases between 2,500-3,571 AF per year in the past five years (FY 2010-11 to 2014-15). Liberty plans to increase its purchases of groundwater in future years and reduce its purchases of imported water.

In Appendix N, please find a letter from the Water Replenishment District of Southern California, acting as Central Basin Watermaster – Administrative Body, as confirmation of Liberty Utilities (Park Water) Corporation's water rights in the Central Basin.

### 6.2.1 Central Groundwater Basin Description

The sole source of local groundwater for Liberty's water supply is the Central Groundwater Basin (Basin). This Basin is adjudicated (see Section 6.2.2 for more information), is made up of several large aquifers, and occupies a large portion of the southeastern part of the Coastal Plain of Los Angeles County. It has a total storage capacity of 13,800,000 AF. The Basin is bounded on the north by the La Brea high surface divide and on the northeast and east by emergent less permeable tertiary rocks of the Elysian, Repetto, Merced and Puente Hills. The southeast boundary follows Coyote Creek. The southwest boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift. The Los Angeles and San Gabriel Rivers drain inland watersheds and pass across the surface of the Basin on their way to the Pacific Ocean.

Throughout the Basin, groundwater occurs in Holocene and Pleistocene age sediments at relatively shallow depths. The Basin is divided into two forebays and two pressure areas: the Los Angeles Forebay, the Montebello Forebay, the Whittier pressure area, and the Central Basin pressure area. Both forebays have unconfined groundwater conditions and interconnected aquifers that extend 1,600 feet below the surface and provide recharge for the Basin aquifer system. The Whittier pressure area contains up to 1,000 feet depth of freshwater-bearing sediments. The Central Basin pressure area contains many aquifers of permeable sands and gravels separated by semi-permeable to impermeable sandy clay to clay, that extend to about 2,200 feet below the ground surface.

### 6.2.2 Groundwater Management

In order to halt groundwater overdraft, and sea water intrusion in the Central Basin, groundwater extraction has been limited to the amounts set by a Superior Court Judgment to adjudicate water rights and monitor extraction. Prior to the adjudication of groundwater rights in the early 1960s, annual pumping rates reached levels as high as 259,400 AF in the Central Basin and 94,100 AF in the adjacent West Coast Basin. The combined overdraft of 353,500 AF was more than double the 173,400 AF natural safe yield of the two basins as determined by the California Department of Water Resources (DWR) in 1962. To protect the groundwater basins, the courts adjudicated the two basins to limit pumping. The adjudicated amount (or Allowed Pumping Allocation (APA)) is 217,367 AFY and 64,468.25 AFY, for the Central and West Coast Basins, respectively. The combined amount allowed to be pumped from the two WRD-managed basins are 281,835.25 AFY plus any carryover or other provisions (WRD, 2016).

The most recent judgment, the third amended judgment, in 2013 brought about a restructuring in the governance of Central Basin water rights. The third amended judgment established Water Replenishment District of Southern California (WRD) as the new Watermaster replacing DWR and set up three branches that compose the Watermaster. The three Watermaster arms include the Administrative Body, to administer accounting and reporting functions; the Water Rights Panel, to enforce issues related to the pumping rights within adjudication; and the Storage Panel, to approve certain groundwater storage efforts (WRD, 2015).

The third amended judgment allows water rights holders to carryover a portion of their unused water rights not to exceed an applicable percentage of their APA from one administrative year to the next. The third amended judgment also allows the conversion of carryover to storage, either in an individual storage account (up to 50% of APA) or in a community storage account. The combined storage cannot exceed 200% of APA. Additionally, water rights holders are allowed to extract up to 40% beyond their allowable pumping rights within a given year, excluding amount leased.

The replenishment of the groundwater basin is managed by WRD, a responsibility vested by the Water Replenishment Act. Part of the WRD's role is also to protect the quality of the groundwater supplies, which approximately 3.5 million residents and water users rely upon. WRD is enabled under the California Water Code to purchase and recharge additional water to make up any overdraft, which is known as artificial replenishment. WRD has the authority to levy a replenishment assessment on all pumping within its boundaries to raise monies necessary to purchase the artificial replenishment water and fund projects and programs necessary for replenishment and groundwater quality activities.

WRD relies on artificial replenishment to replace the annual overdraft in the groundwater basin. In addition to stormwater capture and infiltration, the various methods of replenishment include spreading, injection, and in-lieu replenishment water.

- **Spreading –** Groundwater recharge of storm water, imported water from MWD, and recycled water takes place along the spreading grounds adjacent to the Rio Hondo and San Gabriel River and the Whittier Narrows Reservoir.
- **Injection –** WRD also recharges the groundwater by injecting water into the Basin to prevent seawater intrusion. A barrier is formed by the injecting treated water from MWD and highly treated recycled water in wells along the Alamitos Gap.
- **In-lieu Replenishment Water –** The in-lieu program allows the natural recharge of the Basin by offsetting groundwater production with the use of imported water. The reduction in pumping allows the basin to recharge naturally.

WRD's 2016 Engineering Survey and Report discusses WRD's intent to recharge the basins with 103,300 AF of imported and recycled water in water year 2015-16.

### 6.2.3 Historical Groundwater Pumping

In 2015, 179,704 AF of groundwater was produced from the Central Basin. Groundwater supply met approximately 79% of the water demand for agencies within the CBMWD in 2015. The Central and West Coast groundwater basins are in an overdraft condition. However, the groundwater levels and amount of overdraft fluctuate with time. WRD continually monitors groundwater level trends. WRD's 2015 Engineering Survey and Report discusses groundwater levels within the basins. WRD estimates that the annual overdraft for both basins during water year 2014/2015 was 102,500 AF. WRD or others purchased a total of 89,753 AF of recharge water. The difference between inflows (natural and artificial) and outflows was -12,700 AF, which resulted in a slight decrease in storage in 2014/2015. The accumulated overdraft at the end of the water year 2015/2016 was determined to be 812,100 AF for both basins.

Liberty owns 822.3 AF of groundwater rights to the Central Basin and secures additional water rights through lease agreements with other Central Basin water rights holders. Table 6-1 provides the groundwater volume pumped by Liberty from the Central Basin. Liberty's groundwater production increased annually from 2,539 AF in FY 2010-11 to 3,520 AF in FY 2014-15.

**Table 6-1. Groundwater Volume Pumped**

| Table 6-1 Retail: Groundwater Volume Pumped | | | | | | |
|---|---|---|---|---|---|---|
| ☐ | Supplier does not pump groundwater.<br>The supplier will not complete the table below. | | | | | |
| Groundwater Type | Location or Basin Name | 2011 | 2012 | 2013 | 2014 | 2015 |
| Alluvial Basin | Central Groundwater Basin | 2,539 | 2,906 | 3,157 | 3,384 | 3,520 |
| | **TOTAL** | 2,539 | 2,906 | 3,157 | 3,384 | 3,520 |

Liberty currently produces groundwater from 10 operating wells (seven active, three standby) that vary in depth from 270 feet to 1,052 feet. Groundwater well production varies from 788 gpm to 1,750 gpm in the active wells. A new well (Well 12C) with a design capacity of 2,500 gpm is expected to come online in 2016 and will increase the total system design capacity to 10,182 gpm.

## 6.3 Surface Water

Liberty's water supply does not include any local surface water sources from local streams, lakes, or reservoirs.

## 6.4 Stormwater

Liberty's water supply does not include any stormwater captured locally.

## 6.5 Wastewater and Recycled Water

This section of the 2015 UWMP presents information about the wastewater collection, treatment, and disposal system and the recycled water system within Liberty's service area.

### 6.5.1 Recycled Water Coordination

Wastewater from Liberty's service area is collected and treated at the Los Coyotes Water Reclamation Plant (WRP) and the Joint Water Pollution Control Plant (JWPCP), which are owned and operated by the Los Angeles County Sanitation District (LACSD). CBMWD purchases recycled water from LACSD and distributed approximately 7,647 AF to customers within its service area in FY 2014-15. Liberty participates in CBMWD's regional water recycling program which comprises two distribution systems, the E. Thornton Ibbetson Century Water Recycling Project and the Esteban E. Torres Rio Hondo Water Recycling Project.

### 6.5.2 Wastewater Collection, Treatment, and Disposal

**Wastewater Collected Within Service Area**

Liberty uses the services of LACSD to collect, treat, recycle, and dispose of wastewater. Wastewater from Liberty's service area is collected and treated at the Los Coyotes WRP and the JWPCP in Carson. Municipal wastewater is generated in Liberty's service area from a combination of residential, commercial, and industrial sources. The quantities of wastewater generated are generally proportional to the population and the water used in the service area. It is estimated that customers within Liberty's service area generate wastewater based on 65% of water demand. Wastewater treated at the Los Coyotes WRP is treated to California Department of Public Health's Title 22 recycled water standards.

Table 6-2 lists the volume of wastewater collected within Liberty's service area.

**Table 6-2. Wastewater Collected Within Service Area in 2015**

| Table 6-2 Retail: Wastewater Collected Within Service Area in 2015 | | | | | | |
|---|---|---|---|---|---|---|
| ☑ | There is no wastewater collection system. The supplier will not complete the table below. | | | | | |
| **Wastewater Collection** | | | **Recipient of Collected Wastewater** | | | |
| Name of Wastewater Collection Agency | Wastewater Volume Metered or Estimated? *Drop Down List* | Volume of Wastewater Collected from UWMP Service Area 2015 | Name of Wastewater Treatment Agency Receiving Collected Wastewater | Treatment Plant Name | Is WWTP Located Within UWMP Area? *Drop Down List* | Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List* |
| **Total Wastewater Collected from Service Area in 2015:** | | 0 | | | | |
| NOTES: Liberty does not provide wastewater collection services within its service area. Instead, Liberty utilizes the services of LACSD to collect, treat, and dispose of wastewater. Wastewater from Liberty's service area is collected and treated at the Los Coyotes WRP and the Joint Water Pollution Control Plant in Carson. | | | | | | |

**Table 6-3. Wastewater Treatment and Discharge Within Service Area in 2015**

| Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ☑ | No wastewater is treated or disposed of within the UWMP service area.<br>The supplier will not complete the table below. | | | | | | | | | |
| Wastewater Treatment Plant Name | Discharge Location Name or Identifier | Discharge Location Description | Wastewater Discharge ID Number *(optional)* | Method of Disposal ***Drop down list*** | Does This Plant Treat Wastewater Generated Outside the Service Area? | Treatment Level ***Drop down list*** | 2015 volumes | | | |
| | | | | | | | Wastewater Treated | Discharged Treated Wastewater | Recycled Within Service Area | Recycled Outside of Service Area |
| | | | | | | **Total** | 0 | 0 | 0 | 0 |

**Wastewater Treatment and Discharge Within Service Area**

Wastewater is not treated or disposed of within Liberty's service area. As described in Section 6.5.2, Liberty uses the services of LACSD to collect, treat, recycle, and dispose of wastewater at the Los Coyotes WRP and the JWPCP. Both are part of the Joint Outfall System, which is a network of seven treatment plants, trunk sewers, and pumping plants that provides wastewater treatment, reuse, and disposal for 73 cities and unincorporated areas of Los Angeles County (LACSD, 2016a).

The Los Coyotes WRP is located in the city of Cerritos at the northwest junction of the I-650 and I-91 freeways. It serves approximately 370,000 people. The plant provides primary, secondary, and tertiary treatment for 37.5 MGD of wastewater. About 5 MGD is recycled water that is used for landscape irrigation at parks, schools, golf courses, nurseries, and greenbelts, as well as industrial use. The remainder of the recycled water is discharged to the San Gabriel River (LACSD, 2016b).

The JWPCP is downstream of the Los Coyotes WRP in the city of Carson just east of the I-110 freeway. It is LACSD's largest wastewater treatment plant and one of the world's largest. The plant provides primary and secondary treatment for approximately 280 MGD and has a total permitted capacity of 400 MGD serving a population of 3.5 million in Los Angeles County. Effluent from JWPCP is disinfected and discharged into the Pacific Ocean through a network of outfalls (LACSD, 2016c).

### 6.5.3 Recycled Water System

Liberty's recycled water supply is provided by and purchased from CBMWD. CBMWD purchases tertiary treated recycled water from two LACSD WRP's, the Los Coyotes WRP and the San Jose Creek WRP. These plants provide approximately 100 MGD of tertiary treated (Title 22) water for distribution; no further treatment is required. CBMWD developed a regional water recycling program consisting of two major distribution systems, the E. Thornton Ibbetson Century Water Recycling Project and the Esteban Torres Rio Hondo Water Recycling Project. The two distribution systems are interconnected by a 50-mile pipeline system and operate as one recycled water supply system with three pumping stations, the Rio Hondo Pump Station, Hollydale Pump Station, and Cerritos Pump Station. Together they form the Central Basin Water Recycling Project, which delivered approximately 7,647 AFY of recycled water to 300 industrial, commercial, and landscape customers within the CBMWD's service area in FY 2014-15.

The Ibbetson Century Project began in 1992 and delivers recycled water from the Los Coyotes WRP to the cities of Bell, Bellflower, Bell Gardens, Compton, Cudahy, Downey, Huntington Liberty, Lakewood, Lynwood, Norwalk, Paramount, Santa Fe Springs, South Gate, and Vernon. The Torres Rio Hondo Project began in 1994 and delivers recycled water from the San Jose Creek WRP to the cities of Pico River and Whittier. In 2011, Phase I of the Southeast Water Reliability Project came online (HDR and Pacifica Services, 2012) and extends the recycled pipeline into Pico Rivera and Montebello.

Recycled water is acceptable for most non-potable water purposes such as irrigation and commercial and industrial processes. Although Liberty does not have a Recycled Water Master Plan, in 2008 CBMWD prepared a Recycled Water Master Plan to help identify all potential customers that could benefit from recycled water. The Recycled Water Master Plan was prepared in conjunction with various water purveyors and cities within CBMWD's service area, LACSD, and WRD. The 2008 Recycled Water Master Plan was updated in 2012 to evaluate the expansion of CBMWD's recycled water system. CBMWD's 2012 Recycled Water Master Plan identified potential customers that could benefit from recycled water. It provided potential system expansion routes and developed a phased Capital Improvement Program (CIP). The first phase of the CIP identifies projects to be performed by 2016 and the second phase identifies improvements that do not have a timeline. CBMWD is currently in the process of updating its 2012 Recycled Water Master Plan. CBMWD's recycled water system is projected to increase from its current sales of about 7,647 AF to 13,911 AF by 2040 by expanding from traditional irrigation users such as golf courses and parks to unconventional commercial and industrial users.

### 6.5.4 Recycled Water Beneficial Uses

This section discusses current and planned recycled water uses within the service area of urban water suppliers where recycled water use is implemented or planned and provides an overview of the current recycled water system.

**Current and Planned Uses of Recycled Water**

Liberty uses recycled water to augment valuable groundwater and imported water within its service area. In 2015, Liberty provided 208 AF of recycled water to its 29 locations within Liberty's service area for landscape and golf course irrigation. Landscape irrigation will continue to be the leading users of recycled water in Liberty's service area.

All recycled water is treated to tertiary levels and meets Title 22 requirements. It is estimated recycled water sold by Liberty to its customers will remain stable for many years. Liberty will continue to encourage large landscape water users, public authorities and others to consider using recycled water. The current and projected uses of recycled water used within Liberty's service area are summarized in Table 6-4.

**Table 6-4. Current and Projected Recycled Water Direct Beneficial Uses Within Service Area***

| Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ☐ | Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below. | | | | | | | |
| Name of Agency Producing (Treating) the Recycled Water: | | LACSD | | | | | | |
| Name of Agency Operating the Recycled Water Distribution System: | | CBMWD | | | | | | |
| Supplemental Water Added in 2015 | | None | | | | | | |
| Source of 2015 Supplemental Water | | N/A | | | | | | |
| Beneficial Use Type | General Description of 2015 Uses | Level of Treatment *Drop down list* | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 (opt) |
| Agricultural irrigation | | | | | | | | |
| Landscape irrigation (excludes golf courses) | Landscape customers | Tertiary | 198 | 215 | 232 | 251 | 271 | 293 |
| Golf course irrigation | Golf course | Tertiary | 9 | 9 | 9 | 9 | 9 | 9 |
| Commercial use | | | | | | | | |
| Industrial use | | | | | | | | |
| Geothermal and other energy production | | | | | | | | |
| Seawater intrusion barrier | | | | | | | | |
| Recreational impoundment | | | | | | | | |
| Wetlands or wildlife habitat | | | | | | | | |
| Groundwater recharge (IPR)* | | | | | | | | |
| Surface water augmentation (IPR)* | | | | | | | | |
| Direct potable reuse | | | | | | | | |
| Other *(Provide General Description)* | | | | | | | | |
| | | **Total:** | 208 | 224 | 241 | 260 | 280 | 302 |
| **IPR - Indirect Potable Reuse* | | | | | | | | |
| NOTES: Currently, recycled water is served to landscape customers including 1 golf course. All recycled water is treated to tertiary levels and meets Title 22 requirements. | | | | | | | | |

**Table 6-4b. Potential Recycled Water Customers Within 250 Feet of CBMWD's Recycled Line[1]**

| Business Type | 5-Year Average (gallons)[2] | 5-Year Average (AF) |
|---|---|---|
| City of Norwalk – Golf Course | 5,906,956 | 18.13 |
| City of Norwalk – John Zimmerman Liberty | 5,899,476 | 18.10 |
| City of Norwalk – Vista Verde Liberty | 5,817,944 | 17.85 |
| Nursery Gardens in Bellflower | 2,668,864 | 8.19 |
| City of Norwalk – Nature Liberty Way | 2,065,976 | 6.34 |
| Total | | **68.62** |

[1] Not all of the potable water used by these customers can be replaced with recycled water.
[2] Based on potable water use between 2011 and 2015.

As a regional effort, CBMWD has been working with its purveyors, including Liberty, to identify new customers and potential recycled water site connections. CBMWD would need to extend their existing recycled water backbone system to reach these new customers. Liberty looked at its top water users within about 250 feet of CBMWD's existing recycled water system and identified several customers that might be candidates for recycled water use as shown in Table 6-4b. Because CBMWD is in the initial stages of identifying customers, prioritizing projects, and considering financing, it is not expected that these projects would come to fruition in the next few years. Liberty supports the advancement of recycled water and will work closely with CBMWD to develop potential customers. However, it is more appropriate to update the future recycled water projections in the next UWMP.

**Planned vs. Actual Use of Recycled Water**

The total potential annual recycled water demand in Liberty's service area that is practical to serve is approximately 208 AFY. Recycled water use is down since its peak in 2006-2007. With the economic downturn, some nursery customers went out of business. In addition, the cost of water and conservation messaging during the drought contributed to reduced demands.

Table 6-5 compares the 2010 projections of recycled water use for 2015 with the actual recycled water use in 2015 within Liberty's service area.

**Table 6-5. 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual**

| Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual | | | |
|---|---|---|---|
| ☐ | Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below. | | |
| **Use Type** | | **2010 Projection for 2015** | **2015 Actual Use** |
| Agricultural irrigation | | | |
| Landscape irrigation (excludes golf courses) | | 270 | 198 |
| Golf course irrigation | | | 9 |
| Commercial use | | | |
| Industrial use | | | |
| Geothermal and other energy production | | | |
| Seawater intrusion barrier | | | |
| Recreational impoundment | | | |
| Wetlands or wildlife habitat | | | |
| Groundwater recharge (IPR) | | | |
| Surface water augmentation (IPR) | | | |
| Direct potable reuse | | | |
| Other | *Type of Use* | | |
| | **Total** | 270 | 208 |

### 6.5.5 Actions to Encourage and Optimize Future Recycled Water Use

Liberty works collaboratively with CBMWD to market the use of recycled water within its service area. CBMWD's marketing efforts have been successful in changing the perception of recycled water from merely a conservation tool with minimal application to a cost-effective business tool. The target customer is expanding from traditional irrigation users such as golf courses and parks to unconventional commercial and industrial users.

CBMWD encourages the use of recycled water by increased marketing efforts as well as providing financial incentives. Financial incentives include wholesaling recycled water at a rate lower than potable water and funding plumbing retrofits to use recycled water. Liberty's recycled water rate is set below potable water rates to encourage recycled water use.

CBMWD provides other financial incentives as well. Some potential recycled water users do not have the financial capability to pay for on-site plumbing retrofits necessary to accept recycled water. CBMWD advances funds for retrofit expenses and are subsequently reimbursed through monthly payments. The on-site facilities fees are amortized over a period of time up to ten years at CBMWD's cost of funds. Repayment is made using the differential between potable and recycled water rates such that the customer never pays more than the potable rate. Once the loan is repaid, the rate reverts to the current recycled rates.

To accommodate anticipated growth in the CBMWD service area by identifying all potential customers who would benefit from using recycled water, CBMWD also prepared the Recycled Water Master Plan in 2008 and updated it in 2012. The 2012 Recycled Water Master Plan provided potential system expansion routes and developed a phased CIP. Projects included in the FY 2016-17 Adopted Operating Budget & Preliminary CIP Plan include:

- **West San Gabriel Recycled Water Expansion Project** to construct a pipeline to bring recycled water supply into northern area of the City of Montebello, City of San Gabriel and the City of Monterey Park to serve a demand of 800 AFY.
- **La Mirada Recycled Water Expansion Project** to expand the existing recycled water distribution system in south Santa Fe Springs into La Mirada to serve several landscaped facilities with a demand of 1,200 AFY.
- **Gateway Cities Recycled Water Expansion Project** to provide 453 AFY of recycled water to irrigate nine parks and schools in the cities of South Gate, Bell Gardens, and Lynwood.
- **Pico Rivera Mines Avenue Recycled Water Expansion Project** to construct a pipeline to expand the recycled water supply within the City of Pico Rivera to serve a demand of 275 AFY.
- **City of Downey Recycled Water Expansion Project** to construct a pipeline to expand the recycled water supply into the City of Downey to serve a demand of 125 AFY.
- **City of Monterey Park Recycled Water Expansion Project** to expand the recycled water system into the City of Monterey Park to serve a demand of 750 AFY.
- **Pico Rivera North Recycled Water Expansion Project** to expand the recycled water system into north of Pico Rivera to serve a demand of 150 AFY.
- **Pico Rivera South Recycled Water Expansion Project** to expand the recycled water system into south of Pico Rivera to serve a demand of 200 AFY.

Another aspect of optimizing recycled water use is participation in funding opportunities. CBMWD participates in MWD's Local Resources Program and federal and state funding programs for recycled water projects when available.

**Table 6-6. Methods to Expand Future Recycled Water Use**

| Table 6-6 Retail: Methods to Expand Future Recycled Water Use | | | |
|---|---|---|---|
| ☐ | Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.<br>Provide page location of narrative in UWMP | | |
| Name of Action | Description | Planned Implementation Year | Expected Increase in Recycled Water Use |
| Marketing | Liberty works collaboratively with CBMWD to market the use of recycled water within its service area. CBMWD's marketing efforts have been successful in changing the perception of recycled water from merely a conservation tool with minimal application to a cost-effective business tool. The target customer is expanding from traditional irrigation users such as golf courses and parks to unconventional commercial and industrial users. | Ongoing | 47 |
| Financial Incentives | Financial incentives include wholesaling recycled water at a rate lower than potable water and funding plumbing retrofits to use recycled water. Liberty's recycled water rate is set below potable water rates to encourage recycled water use. CBMWD advances funds for recycled water retrofit expenses and are subsequently reimbursed through monthly payments. The on-site facilities fees are amortized over a period of time up to ten years at CBMWD's cost of funds. Repayment is made using the differential between potable and recycled water rates such that the customer never pays more than the potable rate. Once the loan is repaid, the rate reverts to the current recycled rates. | Ongoing | 47 |
| | | **Total** | 95 |

## 6.6 Desalinated Water Opportunities

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[i]). Currently, there are no identified Liberty projects for desalination of seawater or impaired groundwater. However, from a regional perspective, desalination projects within the region would benefit Liberty as they would make imported supplies available to meet demands.

Because Liberty's service area is not in a coastal area, it is neither practical nor economically feasible for Liberty to implement a seawater desalination program. However, Liberty could provide financial assistance to MWD, other SWP contractors, or their member agencies in the construction of their seawater desalination facilities in exchange for SWP supplies.

Liberty has been following existing and proposed seawater desalination projects along California's coast. Most of the existing and proposed seawater desalination facilities are, or would be, operated by agencies that are not SWP contractors. However, in these cases, an exchange for imported water deliveries would most likely involve a third party (SWP contractor), CBMWD, and Liberty.

## 6.7 Exchanges or Transfers

Outside of groundwater lease agreements with other local pumpers of the Central Basin, Liberty has not entered into any agreements for the exchanges or transfers of water.

### 6.7.1 Exchanges

None to report.

### 6.7.2 Transfers

None to report.

### 6.7.3 Emergency Interties

Liberty has 16 inter-connections with other water utilities in case of any emergency. Emergency interties are addressed further in Section 8 of this 2015 UMWP.

## 6.8 Future Water Projects

Liberty has several water supply projects planned to increase reliability and reduce water supply costs by transitioning toward increased groundwater pumping and decreased purchasing of imported water. These projects will allow us to meet demands when imported water supplies are unavailable and allow us to use less expensive groundwater supplies. A new 2,000-gallon-per-minute groundwater well will be completed in 2016 and serve customers in the Compton West system. This well is replacing two wells that have reached the end of their useful lives. A new well is planned in the Bellflower-Norwalk system for completion in 2017. This facility will replace several groundwater wells that are reaching the end of their useful lives and are no longer able to be pumped on a regular basis. A 600,000-gallon reservoir and booster pump station are planned for the Compton East system. The reservoir will allow Liberty to pump more water during low demand periods and store it in the reservoir for use during high demand periods. Construction of the reservoir is expected in 2017. Another new well is planned to replace an old existing well in the Compton East system and is expected to be completed around 2019.

Planned future water supply projects for Liberty is discussed in the paragraph above and are not compatible with Table 6-7.

**Table 6-7. Expected Future Water Supply Projects or Programs**

| Table 6-7 Retail: Expected Future Water Supply Projects or Programs | | | | | | |
|---|---|---|---|---|---|---|
| ☐ | No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below. | | | | | |
| ☑ | Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format. | | | | | |
| p. 41 | Provide page location of narrative in the UWMP | | | | | |
| Name of Future Projects or Programs | Joint Project with other agencies? | | Description (if needed) | Planned Implementation Year | Planned for Use in Year Type *Drop Down List* | Expected Increase in Water Supply to Agency *This may be a range* |
| | *Drop Down List (y/n)* | *If Yes, Agency Name* | | | | |

## 6.9 Summary of Existing and Planned Sources of Water

The following table presents Liberty's actual water supplies in year 2015.

**Table 6-8. Water Supplies – Actual**

| Table 6-8 Retail: Water Supplies — Actual | | | |
|---|---|---|---|
| Water Supply | Additional Detail on Water Supply | 2015 | |
| | | Actual Volume | Water Quality |
| Groundwater | The sole source of local groundwater for Liberty's water supply is the Central Groundwater Basin. | 3,520 | Drinking Water |
| Purchased or Imported Water | Imported water supplies are provided by CBMWD, a MWD member agency. MWD acquires water from the Colorado River and the SWP and distributes treated and untreated water directly to its 26 member agencies. | 6,059 | Drinking Water |
| Recycled Water | CBMWD owns the Century Recycled Water System in the cities of Vernon, South Gate, Lynwood, Paramount, Lakewood, Bellflower, Downey, and Norwalk. This system provides the Liberty service area with recycled water. | 208 | Recycled Water |
| | **Total** | 9,787 | |

The total anticipated water supply for Liberty from imported water, groundwater, and recycled water is shown in Table 6-9.

**Table 6-9. Water Supplies – Projected**

| Table 6-9 Retail: Water Supplies — Projected | | | | | | |
|---|---|---|---|---|---|---|
| Water Supply | Additional Detail on Water Supply | Projected Water Supply (reasonable available volume AFY) | | | | |
| | | 2020 | 2025 | 2030 | 2035 | 2040 |
| Groundwater | The sole source of local groundwater for Liberty's water supply is the Central Groundwater Basin. | 5,030 | 5,030 | 5,030 | 5,030 | 5,030 |
| Purchased or Imported Water | Imported water supplies are provided by CBMWD, a MWD member agency. MWD acquires water from the Colorado River and the SWP and distributes treated and untreated water directly to its 26 member agencies. | 7,039 | 6,523 | 6,077 | 5,761 | 5,585 |
| Recycled Water | CBMWD owns the Century Recycled Water System in the cities of Vernon, South Gate, Lynwood, Paramount, Lakewood, Bellflower, Downey, and Norwalk. This system provides the Liberty service area with recycled water. | 224 | 241 | 260 | 280 | 302 |
| | **Total** | 12,293 | 11,794 | 11,367 | 11,071 | 10,917 |

## 6.10 Water Quality

The quality of any natural water is dynamic in nature. This is true for the SWP, Colorado River water, and local groundwater. During periods of intense rainfall or snowmelt, routes of surface water movement are changed; new constituents are mobilized and enter the water while other constituents are diluted or eliminated. The quality of water changes over the course of a year. These same basic principles apply to groundwater. Depending on water depth, groundwater will pass through different layers of rock and sediment and leach different materials from those strata. Water depth is a function of local rainfall, snowmelt, and artificial recharge in the Central Basin. During periods of drought, the mineral content of groundwater increases. Water quality is not a static feature of water, and these dynamic variables must be recognized.

As required by the Safe Drinking Water Act, which was reauthorized in 1996, Liberty provides annual Water Quality Reports to its customers, also known as Consumer Confidence Reports (CCR), for each of the three water systems: Bellflower/Norwalk, Lynwood/Rancho Dominguez, and Compton/Willowbrook. This mandate is governed by the U.S. Environmental Protection Agency (EPA) and the Division of Drinking Water Programs (DDW) to inform customers of their drinking water quality. In accordance with the Safe Drinking Water Act, Liberty monitors a number of regulated and unregulated compounds in its water supply and as in years past, the water delivered to Liberty customers meets the standards required by the state and federal regulatory agencies.[4]

[4] Liberty Utilities (Park Water) Corp., Consumer Confidence Reports, 2014-2015.

As mentioned previously, Liberty's source of water is from imported water supplies, local groundwater and recycled water. This section provides a general description of the quality of Liberty's water supplies. A discussion of potential water quality impacts on the reliability of these supplies is also provided.

### 6.10.1 Quality of Imported Water

Liberty receives imported water through CBMWD from MWD, which receives raw water from Northern California through the SWP and from the Colorado River Basin through the Colorado River Aqueduct. Water quality is identified as a possible risk to MWD's future water supply reliability. Existing supplies could be threatened in the future because of contamination, more stringent water quality regulations, or the discovery of an unknown contaminant. Water quality issues could directly impact the amount of water supplies available to Liberty as shown in the following examples:

- If a groundwater basin becomes contaminated and cannot be used, more water will be required from other sources.
- Imported water from the Colorado River must be blended (mixed) with lower salinity water from the SWP. Higher salinity levels in the Colorado River would increase the proportion of SWP supplies required.
- High total dissolved solids (TDS) in water supplies lead to high TDS in wastewater, which increases the cost of recycled water, if additional treatment such as reverse osmosis is required.
- If diminished water quality causes a need for membrane treatment, the process typically results in losses of up to 15% of the water processed.
- Degradation of imported water supply quality could limit the use of local groundwater basins for storage.
- Changes in drinking water quality standards such as arsenic, chromium VI, radon, or perchlorate could increase demand on imported water supplies.

Because of these concerns, MWD has identified those water quality issues that are most concerning as follows:

- Salinity
- Perchlorate
- Total Organic Carbon and Bromide Formation
- Nutrients
- Arsenic
- Uranium
- Chromium VI
- N-nitrosodimethylamine (NDMA)
- PPCPs

MWD has identified necessary water management strategies to minimize the impact of these contaminants on water supplies. None of these contaminants affects water reliability in Liberty's service area. MWD has not identified any water quality risks that cannot be mitigated. Overall, MWD "anticipates no significant reductions in water supply availability from imported sources due to water quality concerns, over the next five years" (MWD, 2016).

High salinity levels remain a significant issue associated with Colorado River supplies. Under California's current drought conditions, decreased flows have altered Delta flow causing increased seawater intrusion and an observable increase in SWP salinity. However, SWP salinity is still significantly lower than the Colorado River, even under drought conditions (MWD, 2016).

The primary water quality concern for the SWP is disinfection byproduct precursors, specifically total organic carbon and bromide. Disinfection byproducts formed as a result of total organic carbon and bromide reacting with disinfectants can cause near term restrictions to MWD's ability to use SWP water. In order to mitigate this problem, MWD has installed ozone disinfection at four of its treatment plants and construction is underway for an ozone facility at Weymouth Water Treatment Plant.

Perhaps the most important difference in quality between surface water and groundwater is the presence of microbes in surface water. Surface water is exposed to a variety of microbial contaminants while groundwater in general is not. As a result, MWD water is treated at one of three filtration plants - the Jensen Filtration Plant in Mission Hills (San Fernando Valley), the Diemer Filtration Plant in Yorba Linda, and the Weymouth Filtration Plant in LaVerne – before being delivered to Liberty.

MWD tests and treats its water for microbial, organic, inorganic, and radioactive contaminants, as well as pesticides and herbicides. Protection of MWD's water system continues to be a top priority. MWD conducts more than 300,000 water quality tests each year and has contingency plans that coordinate with the Homeland Security Office's multicolored tiered risk alert system.[5] MWD also has one of the most advanced laboratories in the country where water quality staff performs tests, collects data, reviews results, prepares reports, and researches other treatment technologies. Although not required, MWD monitors and samples elements that are not regulated but have captured scientific and/or public interest. MWD has tested for chemicals such as perchlorate, methyl tertiary butyl ether (MTBE), and chromium VI among others. In 2007, MWD implemented a program to determine the occurrence of Pharmaceuticals and Personal Care Products (PPCPs) and other organic wastewater contaminants in MWD's treatment plant effluents and selected source water locations within the Colorado River and SWP watersheds.

**Water Quality Programs**

In addition to monitoring for and controlling specific identified chemicals in the SWP and Colorado River water supply, Metropolitan Water District is involved in a number of programs to protect the quality of its water supplies. Some of the programs and activities include:

- Source Water Protection – MWD has an active source water protection program and continues to advocate on numerous issues to protect and enhance SWP and Colorado River water quality.
- In accordance with California's Surface Water Treatment Rule, Title 22 of the California Code of Regulations, DDW requires large utilities delivering surface water to complete a Watershed Sanitary Survey every five years to identify possible sources of drinking water contamination, evaluate source and treated water quality, and recommend watershed management activities that will protect and improve source water quality. The most recent sanitary surveys for the Colorado River and SWP sources were completed in 2010 and 2011, respectively.
- Colorado Water Quality Partnership – MWD is a member of the Clean Colorado River Sustainability Coalition, formed in 1997 to protect and enhance the Colorado River through monitoring and analysis of water quality. MWD is also a member of the Colorado River Basin Salinity Control Forum, which facilitates coordination between Basin states and federal agencies on salinity matters and the implementation of the Colorado River Basin Salinity Control Program. In 2011, MWD, with Southern Nevada Water Authority (SNWA) and the Central Arizona Project, formed the Lower Colorado River Water Quality Partnership to identify and implement collaborative solutions to address water quality issues facing the Colorado River. MWD is also a participant of the Lake Mead Water Quality Forum, formed in 2012, with the goals to support the protection of human health and the environment and to preserve and improve the water quality of the Las Vegas Wash, Las Vegas Bay, and Lake Mead (and as a result, the Colorado River).
- SWP Water Quality Program – MWD supports DWR's policies and programs to maintain and improve the quality of the SWP water. MWD has implemented selective withdrawals from the Arvin-Edison storage program and exchanges with the Kern Water Bank to improve water quality. These programs were initially designed to

[5] MWD website. http://www.mwdh2o.com/Search-Results/Pages/Default.aspx?k=RUWMP

provide dry-year supply reliability but can also be used to store SWP water during periods of better water quality. During periods of lower SWP water quality, the better quality stored water can be withdrawn to dilute with SWP water deliveries.

- Regulatory and Legislative Action – MWD conducts reviews of regulatory and legislative actions that may have an impact on MWD's source water, including state and federal water quality standards, the California Environmental Quality Act (CEQA) documents for projects within MWD's source watershed, and National Pollution Discharge Elimination System (NPDES) permits for wastewater discharges into the Bay-Delta and Colorado River water systems. MWD also provides policies and funding requests for source water protection priorities, such as the Moab uranium tailings clean up and the Colorado River salinity control.

### 6.10.2 Quality of Groundwater

WRD's service area contains a large and diverse industrial and commercial base, which can potentially contribute to groundwater contamination sources, such as leaking underground storage tanks, petroleum pipeline leaks at refineries and petrochemical plants, discharges from dry cleaning facilities, and auto repair shops. Consequently, WRD established its Groundwater Contamination Prevention Program as a key component of the Groundwater Quality Program in an effort to minimize or eliminate threats to groundwater supplies.

WRD provides extensive information on groundwater quality in both its current Engineering and Survey Report (May 2015) and the Regional Groundwater Monitoring Report (February 2015). Both reports have a section devoted solely to groundwater quality management. The groundwater quality issues discussed by WRD include 11 key water quality constituents: total dissolved solids (TDS), iron, manganese, nitrate, chloride, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, and methane.

None of the contaminants listed above impact the reliability of Liberty's groundwater supplies. The Regional Groundwater Monitoring Report concludes that while there are localized areas of marginal to poor water quality that go untapped or may require treatment prior to use, overall, the groundwater in the Basin continues to be of high quality, suitable for potable and non-potable uses, and continues to meet high standards.

Liberty has not had any violations of any Maximum Contaminant Levels (MCLs), Action Levels (ALs) or Treatment Techniques (TTs). The revised Total Coliform Rule became final on February 13, 2013. Although enforcement of the revised rule in California is expected to begin February 2016, it does not appear that this revised rule will have any significant impacts on Liberty (Liberty, Application No. 15-01-001, 2015).

United States Environmental Protection Agency (USEPA)'s second 6-year regulatory review of existing drinking water regulations may include revisions of the MCLs for two volatile organic chemicals (VOCs) – tetrachloroethylene (PCE) and trichloroethylene (TCE). Liberty has several wells that have detected levels of both PCE and TCE, below the current MCL, but near the potential level of the revised MCLs, which are expected to be near the current detection level of reporting (0.5 µg/L). This could require removing several Liberty wells from service in the future while the Company decides whether to build treatment plants (Liberty, Application No. 15-01-001, 2015).

There are several significant regulatory activities pending in California. The DDW adopted an MCL for hexavalent chromium on July 1, 2014, with compliance beginning on January 1, 2015. Although initial quarterly monitoring of all sources is required in the last quarter of 2014 and continuing for three quarters in 2015, Liberty does not expect any problems with compliance with this new MCL (Liberty, Application No. 15-01-001, 2015).

**Water Quality Programs**

For Central Basin as a whole, WRD actively monitors the Basin for water quality issues. WRD assists purveyors in its service area in meeting drinking water standards through its Cooperative Basin-Wide Title 22 Groundwater Quality Program. The program includes wellhead testing at 84 groundwater wells from 22 participating pumpers, reservoir sample collecting, and water quality testing and reporting services.[6] WRD conducts a comprehensive Groundwater Quality Program to evaluate water quality compliance in production wells, monitoring wells, and recharge/injection areas.

As part of WRD's Regional Groundwater Monitoring Program, WRD collects groundwater samples twice a year from over 300 monitoring wells. The water quality data collected from these wells are used to assess ambient conditions of the Basin, monitor the effects of extraction, monitor the effectiveness of the seawater intrusion barriers, address poor water quality areas, and also provide early warning of emerging contaminants of concern. WRD supplements their sampling with information from production wells in order to broaden the coverage of the Basin.

CBMWD and WRD support and are involved in many programs that address water quality concerns of the groundwater basin. Some of the programs and activities include:

- WRD's Safe Drinking Water Program – This program promotes the treatment of contaminants at the wellhead for potable purposes. Currently, the program is focusing on Volatile Organic Compounds (VOCs) and provides financial assistance for the design and installation of wellhead treatment systems. This program also focuses on the secondary contaminants iron and manganese.
- CBMWD's Water Quality Protection Project – This project was developed to protect the Basin from TCE and PCE from migrating into the Central Basin from the San Gabriel Valley aquifer. The project includes two extraction wells and a treatment facility. Approximately 3,500 AFY of groundwater are treated at a site within the City of Pico Rivera.
- WRD's Groundwater Quality Program – This program monitors and evaluates the impacts of current and pending drinking regulations on the groundwater basin. Contaminants of concern such as perchlorate, NDMA, hexavalent chromium, and 1,4-dioxane are closely monitored.
- WRD's Water Augmentation Study – This study evaluates the feasibility of capturing more storm runoff in-lieu of discharge to surface waters.
- WRD's Central Basin Groundwater Contamination Study – WRD, in conjunction with the U.S. Geographical Survey (USGS), is characterizing the threat of multiple contaminants moving to deeper potable water aquifers.
- WRD's Los Angeles Forebay Groundwater Task Force – WRD formed the Los Angeles Forebay Groundwater Task Force in 2012 to coordinate and align regulators and water purveyors/agencies to collaboratively address groundwater contamination in the Los Angeles Forebay, specifically VOCs and perchlorate issues.
- WRD's Broadway Neighborhood Stormwater Greenway (Broadway) Project – Funded by Prop 84 money, WRD partnered with the City of Los Angeles Bureau of Sanitation to implement a portion of the concept design to increase stormwater infiltration and to assist the City of Los Angeles in its compliance with total maximum daily load (water quality-related) requirements.

[6] WRD Engineering Survey and Report, May 2015.

- WRD's Regional Water Quality Monitoring Program – This program has been in place for over 50 years to collect basic information used for groundwater basin management, including groundwater level data and water quality data. It currently consists of a network of over 300 WRD and USGS-installed monitoring wells at over 55 locations.

### 6.10.3 Water Quality Impacts on Reliability

The previous section summarized the general water quality issues of MWD's imported water and the Central Basin's groundwater. The same water quality concerns apply to Liberty's water supply. Similar to MWD's watershed survey, Liberty prepared a Source Water Assessment of its drinking water sources in April 2003. The groundwater sources were found to be most vulnerable to possible contamination from landfills and dumps, irrigated crops, sewer collection systems, gas stations, dry cleaners, metal plating/finishing/fabricating shops, military installations, chemical/petroleum processing and storage facilities, and leaking underground storage tanks. There have been no contaminants detected that exceed any federal or state drinking water standards. Hundreds of samples analyzed every month and thousands every year by Liberty and MWD laboratories assure that all primary (health related) and secondary (aesthetic) drinking water standards are being met.[7] Liberty continues to monitor its groundwater wells for the first indication of problems as part of their water management strategy.

Liberty constructed a wellhead treatment facility to reduce the levels of manganese and arsenic occurring in the water pumped from Well 9D. The installation of this treatment plant allows Liberty to maximize local groundwater supply by pumping about 850 AFY (maximum flow of 1,200 gpm) from Well 9D.

Liberty proactively monitors emerging contaminants and has some wells with 1,4-Dioxane detected at levels above the California Notification Level (not a drinking water standard) of 1 ppb. Four wells in the Bellflower-Norwalk system and one well in the Lynwood/Rancho Dominguez system have detected levels of 1,4-Dioxane ranging from 1.5 to 4.1 ppb. Concentrations have remained relatively stable since 2002. Liberty provides notice of this exceedance of the 1,4-Dioxane NL to its customers annually in its Consumer Confidence Reports (Liberty, Application No. 15-01-001, 2015).

Except for the occurrence of 1,4-dioxane and Well 9D arsenic and manganese, Liberty has not experienced any other significant water quality problems. Liberty is concerned about the potential for increasing levels of VOCs in the Central Basin as well as the potential lowering of the existing MCLs for TCE and PCE. Liberty has additional concerns about VOCs because of several plans being considered to use the Basin for conjunctive use (additional groundwater storage). This would be accomplished by spreading additional imported water and raising the groundwater level in the Basin. Raising groundwater levels has the potential to put water into the previously dry vadose zone[8] and mobilize contaminants like VOCs into the groundwater. Liberty will continue to closely monitor this situation.

The EPA's Stage 2 regulation of the disinfection byproducts rule took effect in 2013 to tighten monitoring requirements of total trihalomethanes (TTHM) and haloacetic acids (HAA5). Stage 1 was implemented in 2002 and lowered the TTHM maximum annual average concentration level in water supplies. Stage 2 changed compliance from a system-wide running annual average to a location running annual average, making it easier for utilities to fall out of compliance. The Liberty water supplies meet the requirements of both Stage 1 and 2. MWD is adding ozone treatment to their Weymouth Filtration Plant as a primary disinfectant to reduce the levels of regulated disinfection byproducts (DBPs).

[7] Liberty Utilities (Park Water) Corp., *Consumer Confidence Reports*, 2014-2015.
[8] The mostly unsaturated zone between the soil surface and the permanent groundwater table.

Ozone is already in place at the Jensen, Skinner, Mills and Diemer Plants. This should assure Liberty's compliance with Stage 2 DBP Rule into the future.

Liberty does not anticipate any significant or immediate changes in its available water supplies due to water quality issues, in part because of the mitigation actions undertaken by Liberty, MWD, CBMWD, and WRD as described earlier.

# 7. WATER SUPPLY RELIABILITY ASSESSMENT

This section provides details regarding Liberty's Water Supply Reliability Assessment.

## 7.1 Overview

Among the future challenges of continued urbanization in southern California is water reliability. In other words, can southern California water supply agencies meet the necessary water demands of the region during times of drought or during periods when imported water deliveries are not available in historic quantities? Over the last five years, southern California water agencies have been subject to imported water curtailments from the Delta and by the imposition of an allocation plan to reduce imported water deliveries to member agencies of Metropolitan. This section discusses the future reliability of water sources that Liberty purchases from Metropolitan through CBMWD as well as local sources of water that Liberty's retail agencies depend on.

## 7.2 Metropolitan's Water Supply Reliability

Having experienced the historical droughts of 1977-78 and 1987-92 and the current drought, Metropolitan has undertaken a number of planning initiatives to ensure water supply reliability. Included among them are the Integrated Resources Plan (IRP), the Water Surplus and Drought Management Plan (WSDM Plan), the Water Supply Allocation Plan (WSAP), and Local Resources Program (LRP) investments. Together, these initiatives have provided the policy framework for Metropolitan and its member agencies to manage their water resources in such a way as to meet the needs of a growing population even under recurrences of the worst historic hydrologic conditions locally and in the key watersheds that supply southern California. Below is a brief description of each water management initiative Metropolitan has undertaken to ensure continued reliability over the next 20 years.

### 7.2.1 Metropolitan's Integrated Resource Plan

The fundamental goal of the Integrated Resources Plan (IRP) is to have a reliable water system within southern California. Since the 2010 IRP, drought in California and across the southwestern United States has put the IRP adaptive management strategy to test. Dry conditions in California have persisted into 2015, resulting in a fourth consecutive year of drought. The year 2015 began with the driest January on record, resulting in the earliest and lowest snowpack peak in recorded history at only 17% of the traditional snowpack peak on April 1st. In the ten years since 2006, there were only two wet years, with the other eight years having been below normal, dry, or critically dry. The Colorado River watershed has also experienced an extended reduction in runoff. Within southern California, continuing dry conditions have impacted the region's local supplies, including its groundwater basins.

Southern California has a remarkable, unparalleled tradition of meeting its water challenges as a single cohesive region. Metropolitan serves as both an importer of water and regional water planner. The IRP has served as the reliability road map for the region. Throughout 2015, Metropolitan engaged in a comprehensive process with its Board of Directors and member agencies to review how conditions have changed since the 2010 IRP Update and to establish targets for achieving regional reliability, taking into account known opportunities and risks. Areas reviewed in the 2015 IRP Update included demographics, hydrologic scenarios, water supplies from existing and new projects, water supply reliability analyses, and potential resource and conservation targets.

The 2015 IRP Update approach explicitly recognizes that there are remaining policy discussions that will be essential to guiding the development and maintenance of local supplies and conservation. Following adoption of the 2015 IRP Update and its targets for water supply reliability, Metropolitan will begin a process to address questions such as how to meet the targets for regional reliability, what are local and what are regional responsibilities, how to finance regional projects, etc. This discussion will involve extensive interaction with Metropolitan's Board of Directors and member agencies, with input from the public. The findings and conclusions of the 2015 IRP Update are (Metropolitan, Integrated Water Resources Plan, 2015):

- Action is needed – Without the investments in conservation, local supplies and the California WaterFix targeted in the 2015 IRP Update, Metropolitan's service area would experience an unacceptable level of shortage allocation frequency in the future.
- Stabilize SWP supplies – The goal for SWP supplies is to adaptively manage flow and export regulations to achieve a long-term Delta solution that will enable a healthy ecosystem and address water reliability challenges. Also, efforts will be made to work with California WaterFix and California EcoRestore to facilitate a continuation of collaborative adaptive management with key regulatory agencies.
- Develop and protect local supplies and water conservation – The 2015 IRP Update embraces and advances the regional self-sufficiency ethics by increasing the targets for additional local supplies and conservation.
- Maximize the effectiveness of storage and transfers – Rebuilding Metropolitan's supply of water reserves is imperative when the drought is over. A comprehensive water transfer approach that takes advantage of water when it is available will help to stabilize and build storage reserves, increasing the ability for Metropolitan to meet water demands in dry years.
- Continue with the adaptive management approach – The IRP is updated periodically to incorporate changed conditions, and an implementation report is prepared annually to monitor the progress in resources development. The 2015 IRP also includes Future Supply Actions that would advance a new generation of local supplies through public outreach; development of legislation and regulation; technical studies and support; and land and resource acquisitions.

### 7.2.2 Metropolitan's Local Resources Programs

A key element within Metropolitan's IRP objectives to ensure regional reliability is to further enhance local resources. The LRP provides financial incentive to member agencies to develop and use recycled water and recovered groundwater to reduce dependence on imported water supplies. Since the LRP's inception in 1982, Metropolitan has provided $372 million to produce about 2.2 MAF of recycled water and $132 million to produce 791,000 AF of recovered degraded groundwater for municipal use.

Metropolitan made significant improvements to the LRP in October 2014 such as providing three incentive payment structures. Metropolitan offers three LRP incentive payment options to choose from: sliding scale incentives up to $340 per AF over 25 years, sliding sale incentives up to $475 per AF over 15 years, or fixed incentives up to $305 per AF over 25 years. This approach helps reduce operational and programmatic costs for the member agencies while creating a more diversified regional resource mix. Metropolitan provides funding for numerous projects including recycled water, conservation, groundwater recovery, surface water storage and even ocean water desalination to help meet future demands.

CBMWD has long been involved with Metropolitan in the LRP program for recycled water development. Since 1991, Metropolitan has provided CBMWD with approximately $15 million for recycled water development, $3.5 million for conservation programs, and $5.3 million for groundwater recovery projects.

### 7.2.3 Metropolitan Facility Improvements

One of Metropolitan's most significant investments is Diamond Valley Lake (DVL), which was completed in 1999 and reached capacity in early 2003, and its companion project, the Inland Feeder. Built in the saddle of two mountains, DVL, southern California's largest reservoir, is an important link in the regional water supply system. The lake, located in southwestern Riverside County, nearly doubled southern California's surface storage capacity and provides additional water supplies for drought, peak summer and emergency needs. DVL holds 810 MAF of water. DVL stores water imported during years when there is ample supply. There are two types of storage within the DVL, dry-year or seasonal storage and emergency storage. When at capacity, DVL holds enough water to meet the region's emergency and

drought needs for six months and is an important component in Metropolitan's plan to provide a reliable supply of water to southern California.

## 7.3 Water Replenishment District Engineering and Surveying Report

Because of the continued drought during the previous year 2013/2014 that caused below normal storm water and imported water recharge, groundwater levels over the WRD service area dropped on average 4 feet and 62,100 AF were removed from storage. Most of this storage loss (49,200 AF or 79%) occurred in the Montebello Forebay, where water levels fell on average 11 feet, but up to 25 feet in some areas near the spreading grounds. The groundwater basins fortunately are enormous underground reservoirs that are able to accommodate large swings in storage and water level changes, so there remains plentiful groundwater in the Central Basin and West Coast Basin (CBWCB). However, because of the extended drought, the Water Year ended with groundwater levels near their lows in the 1960s and 1970s. WRD manages water levels in the basins utilizing an Optimum Quantity and Accumulated Overdraft approach. So far, the basins are operating within range and there should not be any problems with the groundwater supply meeting the needs of the overlying users in the current and ensuing years.

For replenishment purposes, discounted replenishment water from MWD has not been available for In-Lieu or spreading since October 2011. MWD has not yet adopted a new replenishment program and for now only the more expensive Tier 1 or Tier 2 water is potentially available. WRD is budgeting for Tier 1 water in the ensuing year. In 2014, Tier 1 water was not sold to WRD due to low MWD supplies as a result of the drought. In the current water year, some Tier 1 is being sold to WRD for replenishment. For the ensuing year, it is currently assumed that Tier 1 water will be available. A summary of all of the sources of replenishment water available to WRD is as follows:

- Recycled Water: Tertiary water for spreading is available from the Sanitation Districts of Los Angeles County (SDLAC). Advanced-treated recycled water for the West Coast Basin Barrier Project (WCBBP) is available from the West Basin Municipal Water District. Advanced treated recycled water for the Dominguez Gap Barrier Project (DGBP) is available from the City of Los Angeles. Advanced-treated recycled water for the Alamitos Barrier Project (ABP) is available from WRD.

- Imported Water: Raw river water (untreated) Tier 1 is assumed to be available for spreading from MWD and its member agencies. For the seawater barrier wells, treated potable imported water Tier 1 is assumed to be available for the WCBBP and DGBP from the West Basin Municipal Water District, and for the ABP from the City of Long Beach. (Engineering Survey and Report, WRD, May 2015).

Maintaining the reliability and quality of the Central and West Coast groundwater basins is a priority for WRD and all agencies that depend on this source, especially in times of drought.

## 7.4 Constraints on Water Sources

Constraints that could potentially affect Liberty's ability to service its customers are reliability and water quality. Reliability is discussed in depth in Section 7.7; water quality issues are discussed in detail in section 6.10. Future sources and planned actions are discussed in Section 6.8.

## 7.5 Reliability by Type of Year

Along with MWD and CBMWD's reliability initiatives, Liberty has also taken important steps during the past decade to reduce its service area's vulnerability to extended drought or other potential threats. Liberty has expanded recycled water to replace imported water for non-potable uses, introduced of conservation devices and education programs have resulted in more self-reliance within the region.

This section discusses the supply reliability of imported water only. Total water deliveries are used in all scenarios; imported water supply is now subject to decreased deliveries through Metropolitan's Water Supply Allocation Plan

(WSAP) which can be modified from a 5% cut of historical deliveries up to a 50% cut which will fluctuate under different hydrological scenarios.

Looking forward, Liberty will continue to evaluate opportunities to diversify its water supply portfolio within its service area. Opportunities include the expanded use of recycled water and additional conservation programs.

### 7.5.1 Types of Years

Dry year conditions were evaluated for a single-dry year outside of normal precipitation per year and multi-year dry conditions where there are multiple successive years with precipitation below normal. Each type is explained in more detail below.

**Average Year**

Liberty receives imported water from MWD through CBMWD via connection to Metropolitan's regional distribution system. Although pipeline and connection capacity rights do not guarantee the availability of water, they do guarantee the ability to convey water when it is available in the Metropolitan distribution system. All imported water supplies are assumed available to Liberty from existing water transmission facilities. The demand and supplies listed below also include local groundwater supplies that are available to Liberty through its adjudicated water rights and leases from the Central Groundwater Basin. Recycled water is also included in the tables and is available to Liberty through CBMWD.

Liberty's reliability analysis follows that of MWD and CBMWD where the average year is taken to be the average of 1922 to 2004 hydrology.

**Single-dry Year**

A single-dry year is defined as a single year of no to minimal rainfall within a period that average precipitation is expected to occur. Liberty has documented that it is 100% reliable for single dry year demands from 2020 through 2040 with an average demand increase of 2.5% over the average using hydrologic year 1977 as the single dry-year. This percentage and single dry year were determined by Metropolitan based on historical data for its member agencies and CBMWD. As Liberty's wholesaler, the imported water demand percentages developed for CBMWD were applied to Liberty's demand. The projections are in 5-year increments; there is a different percentage for each increment and an average is presented in Table 7-1.

**Multiple-dry Year**

Multiple-dry years are defined as three or more years with minimal rainfall within a period of average precipitation. CBMWD is capable of meeting all customer demands for imported water with significant reserves held by Metropolitan in multiple dry years from 2020 through 2040 with an average demand increase of 110% using hydrologic years 1990-92 as the driest years. Metropolitan defined demand projections are in five-year increments and the demand varies for each. The basis of the water year is displayed in Table 7-1.

**Sources for Water Data**

Water data was provided by Metropolitan, CBMWD, and Liberty.

### 7.5.2 Agencies with Multiple Sources of Water

Many agencies have multiple water sources and each may have a different hydrology, resulting in different base years for each source. For example, an imported water source may have experienced its single driest year in the same year that a local surface water source experienced a normal year.

Liberty's potable water supplies are comprised of imported water and groundwater. Both of these sources are included in Table 7-1.

**Table 7-1. Bases of Water Year Data – Imported Water**

| Table 7-1 Retail: Basis of Water Year Data | | | |
|---|---|---|---|
| **Year Type** | **Base Year** | **Available Supplies if Year Type Repeats** | |
| | | ☐ | Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____ |
| | | ☐ | Quantification of available supplies is provided in this table as either volume only, percent only, or both. |
| | | **Volume Available** | **% of Average Supply** |
| Average Year | 1922-2004 | | 100% |
| Single-Dry Year | 1977 | | 102.2% to 102.8% |
| Multiple-Dry Years 1st Year | 1990-1992 | | 95.2% to 114.7% |
| Multiple-Dry Years 2nd Year | 1990-1992 | | 95.2% to 114.7% |
| Multiple-Dry Years 3rd Year | 1990-1992 | | 95.2% to 114.7% |
| NOTES: This table presents average, single, and multiple dry year groundwater and imported water supplies. Base years were determined from Metropolitan's 2020 to 2040 demand projections for CBMWD, Liberty's wholesaler. Liberty's reliability analysis follows that of MWD and CBMWD where the average year is taken to be the average of 1922 to 2004 hydrology. | | | |

## 7.6 Supply and Demand Assessment

A comparison between the supply and demand for projected years between 2020 and 2040 is shown in Table 7-2. The available supply will meet projected demand due to diversified supply and conservation measures. Recycled water is included with potable demands and supplies in Tables 7-2, 7-3, and 7-4 per DWR supplies tables.

**Table 7-2. Normal Year Supply and Demand Comparison**

| Table 7-2 Retail: Normal Year Supply and Demand Comparison | | | | | |
|---|---|---|---|---|---|
| | 2020 | 2025 | 2030 | 2035 | 2040 |
| Supply totals *(autofill from Table 6-9)* | 12,293 | 11,794 | 11,367 | 11,071 | 10,917 |
| Demand totals *(autofill from Table 4-3)* | 12,293 | 11,794 | 11,367 | 11,071 | 10,917 |
| Difference | 0 | 0 | 0 | 0 | 0 |

A comparison between the supply and the demand in a single dry year is shown in Table 7-3. A single dry year hydrology is expected to increase demand by 2.2 to 2.8% in the CBMWD's service area which encompasses Liberty as projected by MWD. MWD and CBMWD project 100% reliability for imported water supply for its respective service areas.

Consequently, Liberty projects that it will be able to meet demands in a single dry year scenario through imported water and other supply sources enhanced by conservation measures.

**Table 7-3. Single Dry Year Supply and Demand Comparison**

| Table 7-3 Retail: Single Dry Year Supply and Demand Comparison | | | | | |
|---|---|---|---|---|---|
| | 2020 | 2025 | 2030 | 2035 | 2040 |
| Supply totals | 12,335 | 11,830 | 11,385 | 11,094 | 10,912 |
| Demand totals | 12,335 | 11,830 | 11,385 | 11,094 | 10,912 |
| Difference | 0 | 0 | 0 | 0 | 0 |
| NOTES: Demand total from Table 4-2, projection factors from Metropolitan for CBMWD's consumptive use. | | | | | |

A comparison between the supply and the demand in multiple dry years is shown in Table 7-4. Multiple dry years hydrology is expected to decrease demand by 4.8% in 2020 and increase demand by 13.3 to 14.7% between 2025 and 2040 in the CBMWD's service area which encompasses Liberty as projected by MWD. MWD and CBMWD project 100% reliability for imported water supply for its respective service areas. Consequently, Liberty projects that it will be able to meet demands in a multiple dry years scenario through imported water and other supply sources enhanced by conservation measures.

**Table 7-4. Multiple Dry Years Supply and Demand Comparison**

| Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison | | | | | | |
|---|---|---|---|---|---|---|
| | | 2020 | 2025 | 2030 | 2035 | 2040 |
| First year | Supply totals | 11,490 | 13,089 | 12,540 | 12,378 | 12,026 |
| | Demand totals | 11,490 | 13,089 | 12,540 | 12,378 | 12,026 |
| | Difference | 0 | 0 | 0 | 0 | 0 |
| Second year | Supply totals | 11,490 | 13,089 | 12,540 | 12,378 | 12,026 |
| | Demand totals | 11,490 | 13,089 | 12,540 | 12,378 | 12,026 |
| | Difference | 0 | 0 | 0 | 0 | 0 |
| Third year | Supply totals | 11,490 | 13,089 | 12,540 | 12,378 | 12,026 |
| | Demand totals | 11,490 | 13,089 | 12,540 | 12,378 | 12,026 |
| | Difference | 0 | 0 | 0 | 0 | 0 |
| NOTES: Demand total from Table 4-2. Use projection factors from Metropolitan to CBMWD (November 2015) for "Consumptive Use". | | | | | | |

As shown in the analyses above, Liberty has sufficient supplies to meet demand in single dry and multiple dry years. Liberty will purchase additional imported water to meet the increasing demand. Currently in an average year, Liberty has sufficient supply to meet the demands.

## 7.7 Regional Supply Reliability

This section presents the reliability of water supplies regionally.

### 7.7.1 Reliability of Imported Water Supplies

Each SWP contractor's Water Supply Contract contains an amount that identifies the maximum amount of water that a contractor may request. However, the amount of SWP water actually allocated to contractors each year is dependent on a number of factors than can vary significantly from year to year. The primary factors affecting SWP supply availability include hydrologic conditions in northern California, the amount of water in SWP storage reservoirs at the beginning of

the year, regulatory and operational constraints, and the total amount of water requested by the contractors. The availability of SWP supplies to MWD and the other SWP contractors is generally less than their full Table A amounts in many years and can be significantly less in very dry years. DWR's SWP Delivery Capability Report for 2015, issued in July 2015, assists SWP contractors in assessing the reliability of the SWP component of their overall supplies. DWR provided these updated delivery reliability estimates to the SWP contractors for planning purposes. The most recent reports states that the reliability of this water is subject to biological demands and climate change.

Colorado River Aqueduct supplies can be severely affected by drought conditions. MWD's goal is to develop programs that maintain a full CRA during dry years. It is expected the ability to deliver a full CRA will also rely on storage facilities. Although not yet sufficient in the short-term to provide the full targeted CRA capacity, MWD has been successful in developing Colorado River programs to date, including the implementation of the Quantification Settlement Agreement (QSA). The QSA determines priority and quantity of rights for parties in California holding rights to Colorado River water. MWD also recently gained the ability to bank water in Lake Mead through the Intentionally Created Surplus Program. With the adoption of the QSA and the opportunity to store conserved water in Lake Mead, a firm foundation has been laid for developing future programs that will help meet the long-term CRA goals.

### 7.7.2 Reliability of Groundwater Supplies

The sole source of local groundwater for Liberty's water supply is the Central Groundwater Basin managed by the WRD. The Basin occupies a large portion of the southeastern part of the Coastal Plain of Los Angeles County with a total storage capacity of 13,800,000 AF. The amount of water that member agencies are allowed to pump is set annually, but the values remain fairly constant. Liberty's adjudicated pumping right for 2015-2016 is 822.3 AFY. Frequently Liberty pumps in excess of its adjudicated water right through leasing water rights from other purveyors.

Stormwater, imported water, and recycled water contribute to the recharge of the Central Basin. Stormwater recharge is affected by changes in the local hydrology and is highly limited to the dry climate of the region. As the Watermaster, WRD implements various projects to enhance the reliability of the Central Basin as described in Section 6.2 of this UWMP.

### 7.7.3 Reliability of Recycled Water Supplies

Recycled water supplies are considered an extremely reliable source of supply. Liberty's recycled water demand is much lower than the amount of recycled water generated in its service area. Liberty does not anticipate any issues with the reliability of recycled water to its customers.

# 8. WATER SHORTAGE CONTINGENCY PLANNING

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

A water shortage contingency plan (WSCP) is a document that can be created separately from the UWMP and amended as needed without amending the corresponding UWMP.

Water supplies may be interrupted or reduced significantly in a number of ways, such as a drought which limits supplies, an earthquake which damages water delivery or storage facilities, a regional power outage, or a toxic spill that affects water quality. This section of the 2015 UWMP describes how Liberty plans to respond to such emergencies so that emergency needs are met promptly and equitably.

To meet the current State conservation requirements, Liberty implemented Rule 14.1, entitled "Water Shortage Contingency Plan," which was approved by the CPUC on October 13, 2015. It is included in Appendix G.

Prohibitions, penalties, and financial impacts of shortages have recently been developed by Liberty and are summarized in this section as well.

## 8.1 Stages of Action

The number of stages of action in a WSCP is at the discretion of the water supplier. Typically, water agencies will include between three and five stages of action in a WSCP. The stages reflect decreasing water supplies with increasing levels of prohibitions and consumption reduction methods. Agencies must include a stage that addresses a reduction of 50% in the water supply.

If water supplies are projected to be insufficient to meet normal customer demand and are beyond the control of the utility, Liberty may implement voluntary conservation after notifying the California Public Utilities Commission (CPUC) Water Division. As outlined in Rule 14.1 presented in Appendix G, in the event that voluntary conservation measures are not adequate, Liberty may impose mandatory conservation and rationing after receiving CPUC approval. Liberty also works in collaboration with city governments in which it serves to encourage conservation. Liberty informs its customers of their local city ordinances and that of MWD, as well as takes the necessary actions available to curtail the waste of water, including following MWD's WSDM Plan.

As the water purveyor, Liberty must provide the minimum health and safety water needs of the community at all times. Liberty Park Water has developed four stages of action to be taken in response to water supply shortages up to 50%. Table 8-1 presents the four-stage rationing and demand reduction goals for Liberty. Liberty Park Water must obtain approval from the CPUC prior to implementing any mandatory stages.

**Table 8-1. Stages of WSCP**

| Table 8-1 Retail: Stages of Water Shortage Contingency Plan | | |
|---|---|---|
| Stage | Complete Both | |
| | Percent Supply Reduction* *Numerical value as a percent* | Water Supply Condition (*Narrative description*) |
| 1 | 0-10% | Moderate reduction in imported and/or local supplies |
| 2 | 10%-20% | Critical reduction in imported and/or local supplies |
| 3 | 20%-35% | Severe reduction in imported and local supplies |
| 4 | 35%-50% | Extreme reduction in imported and local supplies |
| * *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.* | | |
| NOTES: Reference Rule 14.1 for Liberty Park Water, presented in Appendix G. | | |

- **Stage 1:**
  During Stage 1, the drought conditions will be explained to Liberty customers and voluntary conservation will be encouraged. The customer will be encouraged not to use water for non-essential or unauthorized uses as listed in Sections 8.3 through 8.5.

- **Stage 2**:
  Liberty will continue public outreach and education about the water supply conditions, and customers will be asked to reduce consumption by 10-20%. Depending on the desired reduction goal, mandatory conservation may be required. Prior to implementation of mandatory restrictions, CPUC approval will be required and public meetings will be held. Drought surcharges will be implemented to penalize excess usage. Each customer will be notified of the surcharges and other details about the rationing plan by mail before the effective date of the Water Shortage Emergency. New customers will be notified at the time the application for service is made. The voluntary conservation measures listed in Section 8.2 will become mandatory when a rationing program goes into effect. In a disaster, prior notification may not be possible, and notice will be provided by other means. Liberty Park Water will also work with appropriate governmental agencies for the passage of drought ordinances.

- **Stage 3:**
  During Stage 3, mandatory conservation rules and higher drought surcharges will be required to meet reductions of 20-35%. If a customer consistently abuses water, a flow restrictor may be installed. Liberty will monitor production for compliance with conservation reduction requirements. Liberty may read customer meters on a more frequent basis.

- **Stage 4**:
  During this stage, the shortage is extreme and 35-50% reduction will be required. The steps taken in the prior stages will be increased, and production will be monitored daily.

Priorities for use of available water, based on Chapter 3 (Sections 350-359) of the California Water Code (per DWR's 2008 Urban Drought Guidebook) are:

- Health and Safety—Interior residential, sanitation and fire protection
- Commercial, Industrial, and Governmental—Maintain jobs and economic base
- Existing Landscaping—Especially trees and shrubs
- New Demand—Projects with permits when shortage declared

### 8.1.1 MWD WSDM Plan

MWD evaluates the level of supplies available and existing levels of water in storage to determine the appropriate management stage annually. Each stage is associated with specific resource management actions to avoid extreme shortages to the extent possible and minimize adverse impacts to retail customers should an extreme shortage occur. The sequencing outlined in the MWD's Water Surplus and Drought Management Plan (WSDM Plan) reflects anticipated responses towards MWD's existing and expected resource mix.

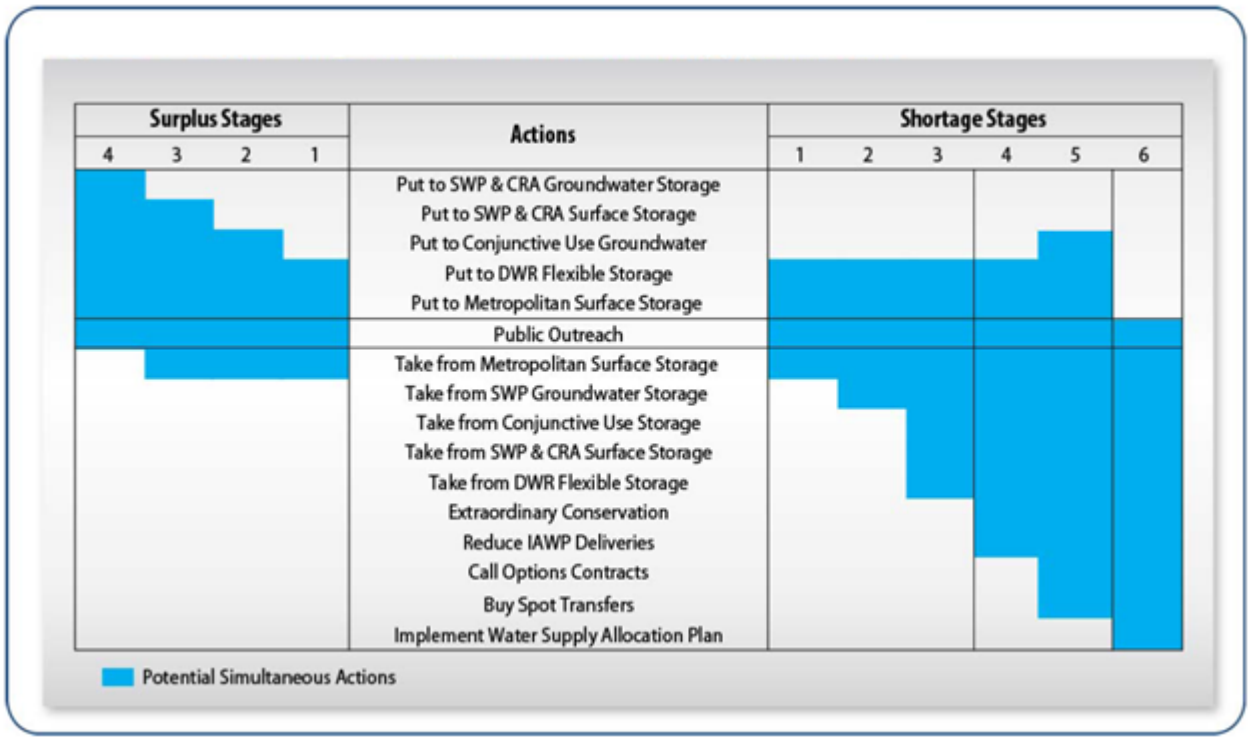
Surplus stages occur when net annual deliveries can be made to water storage programs. Under the WSDM Plan, there are four surplus management stages that provide a framework for actions to take for surplus supplies. Deliveries in DVL and in SWP terminal reservoirs continue through each surplus stage provided there is available storage capacity. Withdrawals from DVL for regulatory purposes or to meet seasonal demands may occur in any stage.

The WSDM Plan distinguishes between Shortages, Severe Shortages, and Extreme Shortages. The differences between each term is listed below.

- Shortage: Metropolitan can meet full-service demands and partially meet or fully meet interruptible demands using stored water or water transfers as necessary.
- Severe Shortage: Metropolitan can meet full-service demands only by using stored water, transfers, and possibly calling for extraordinary conservation.
- Extreme Shortage: Metropolitan must allocate available supply to full-service customers.

There are six shortage management stages to guide resource management activities. These stages are defined by shortfalls in imported supply and water balances in Metropolitan's storage programs. When Metropolitan must make net withdrawals from storage to meet demands, it is considered to be in a shortage condition. Figure 8-1 gives a summary of actions under each surplus and shortage stages when an allocation plan is necessary to enforce mandatory cutbacks. The goal of the WSDM plan it to avoid Stage 6, an Extreme Shortage.

**Figure 8-1. MWD's Resource Stages, Anticipated Actions, and Supply Declarations**




Metropolitan's Board of Directors adopted a Water Supply Condition Framework in June 2008 in order to communicate the urgency of the region's water supply situation and the need for further water conservation practices. The framework has four conditions, each calling increasing levels of conservation. Descriptions for each of the four conditions are listed below:

- Baseline Water Use Efficiency: Ongoing conservation, outreach, and recycling programs to achieve permanent reductions in water use and build storage reserves.
- Condition 1 Water Supply Watch: Local agency voluntary dry-year conservation measures and use of regional storage reserves.
- Condition 2 Water Supply Alert: Regional call for cities, counties, member agencies, and retail water agencies to implement extraordinary conservation through drought ordinances and other measures to mitigate use of storage reserves.

- Condition 3 Water Supply Allocation: Implement Metropolitan's Water Supply Allocation Plan

As noted in Condition 3, should supplies become limited to the point where imported water demands cannot be met, Metropolitan will allocate water through the Water Supply Allocation Plan (WSAP) (Metropolitan, 2015 Final Draft UWMP, March 2016).

### 8.1.2 Shortage Actions by Shortage Stage

When MWD must make net withdrawals from storage, it is considered to be in a shortage condition. However, under most of these stages, it is still able to meet all end-use demands for water. The following summaries describe water management actions to be taken under each of the seven shortage stages:

- **Shortage Stage 1:**
  MWD will continue storage deliveries to Diamond Valley and SWP terminal reservoirs. Draws from Diamond Valley may be necessary to fully or partially meet interruptible demands.

- **Shortage Stage 2:**
  MWD will continue Shortage Stage 1 actions and may draw from Semitropic and Arvin-Edison groundwater storage to meet anticipated demands.

- **Shortage Stage 3:**
  MWD will continue Shortage Stage 2 actions and may curtail or temporarily suspend deliveries to Long-Term Seasonal and Replenishment Groundwater Storage Programs.

- **Shortage Stage 4:**
  MWD will continue Shortage Stage 3 actions and may draw from contractual groundwater storage and SWP terminal reservoirs to meet full-service demands.

### 8.1.3 Severe Shortage Stages

The following two stages are Severe Shortage Stages:

- **Shortage Stage 5:**

  MWD will continue Shortage Stage 4 actions. MWD Board of Directors may call for extraordinary conservation. In the event of a call for extraordinary conservation, MWD's Drought Program Officer will coordinate public information activities with member agencies and monitor the effectiveness of ongoing conservation programs. The Drought Program Officer will implement monthly reporting on conservation program activities and progress and will provide quarterly estimates of conservation water savings.

- **Shortage Stage 6:**

  MWD will continue Shortage Stage 5 actions and may exercise water supply option contracts and/or buy water on the market either for consumptive use or for delivery to regional storage facilities.

### 8.1.4 Extreme Shortage Stage

The following stage is an Extreme Shortage Stage:

- **Shortage Stage 7:**

  MWD will discontinue deliveries to regional storage facilities, continue extraordinary conservation efforts, and develop a plan to allocate available supply fairly and efficiently to full-service customers. MWD will enforce these allocations using rate surcharges. Currently the surcharges are:
  - Between 100% and 115% of allocation, the Tier 1 rate plus $1,480
  - Greater than 115% of allocation, the Tier 1 rate plus $2,960.

The overriding goal of the WSDM Plan is to never reach Shortage Stage 7, an Extreme Shortage. Given present resources, MWD fully expects to achieve this goal over the next ten years.

### 8.1.5 Health and Safety Requirements

The primary goal of the Liberty's water system is to preserve the health and safety of its personnel and the public. Meeting this goal is a continuous function of the system – before, during and after a disaster or water shortage. Fire suppression capabilities are expected to be maintained during any water shortage contingency stage. Some water needs are more immediate than others. The following list of public health needs and the allowable time without potable water is a guideline and will depend on the magnitude of the water shortage (per AWWA's *M19 Emergency Planning for Water Utilities*, 4th Edition):

- Hospitals – continuous need
- Emergency shelters – immediate need
- Kidney dialysis – 24 hours
- Drinking water – 72 hours
- Personal hygiene, waste disposal – 72 hours

Water quantity calculations used to determine the interior household GPCD requirements for health and safety are provided in Table 8-2. As developed in Table 8-2, the California Water Code Stage 2, 3, and 4 health and safety allotments are 68 GPCD, or 33 ccf (hundred cubic feet) per person per year. When considering this allotment and the 2015 Liberty service area population of 126,637 (as presented in Section 3.4), the total annual water supply required to meet the first priority use during a water shortage is approximately 9,000 AFY.

### 8.1.6 Priority by Use

Priorities for use of available potable water during shortages are based on the legal requirements set forth in the California Water Code, Sections 350-358, that conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection.

Conditions prevailing in Liberty's service area require that the water resources available be put to maximum beneficial use to the extent to which they are capable. The waste or unreasonable use, or unreasonable method of use, of water should be prevented. Water conservation and water use efficiency is encouraged with a view to the maximum reasonable and beneficial use thereof in the interests of customers of Liberty and for the public welfare. Preservation of health and safety will be a top priority for Liberty.

Water allocations will abide by the following ranking system (per DWR's 2008 Urban Drought Guidebook):

- Minimum health and safety allocations for interior residential needs (includes single family, multifamily, hospitals and convalescent facilities, retirement and mobile home communities, student housing, and firefighting and public safety).
- Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and for minimum health and safety allocations for employees and visitors) to maintain jobs and economic base of the community (not for landscape uses).
- Existing landscaping.
- New customers, proposed projects without permits when shortage is declared.

## 8.2 Prohibitions on End Uses

Liberty implements several measures to curtail water consumption during times of water shortages. The water shortage stages outlined in Section 8.1 demonstrate the stages of action that will take place to ensure adequate consumption reduction methods to address a 50% reduction in supply. Liberty will also prohibit nonessential or unauthorized uses of water during shortage conditions. Voluntary compliance will be requested in Stage 1, and mandatory compliance will be necessary in Stages 2-4. The nonessential or unauthorized uses are included in Tariff Rule No. 14.1 and are listed in Table 8-2 below.

**Table 8-2. Restrictions and Prohibitions on End Uses**

| Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses | | | |
|---|---|---|---|
| Stage | Restrictions and Prohibitions on End Users | Additional Explanation or Reference *(optional)* | Penalty, Charge, or Other Enforcement? |
| 1 | Other - Customers must repair leaks, breaks, and malfunctions in a timely manner | Applicable to all stages. | Yes |
| 1 | Landscape - Restrict or prohibit runoff from landscape irrigation | Applicable to all stages. | Yes |
| 1 | CII - Lodging establishment must offer opt out of linen service | Applicable to all stages. | Yes |
| 1 | CII - Restaurants may only serve water upon request | Applicable to all stages. | Yes |
| 1 | Other - Prohibit use of potable water for washing hard surfaces | Applicable to all stages. | Yes |
| 1 | Other - Require automatic shut of hoses | Applicable to all stages. | Yes |
| 1 | Water Features - Restrict water use for decorative water features, such as fountains | Only allow recirculating systems for water features. Applicable to all stages. | Yes |
| 1 | Landscape - Limit landscape irrigation to specific times | No watering between 8 a.m. and 7 p.m. | Yes |
| 1 | Landscape - Limit landscape irrigation to specific days | No more than 3 days per week | Yes |
| 1 | Landscape - Prohibit certain types of landscape irrigation | Not allowable 48 hours after rain event greater than 0.1 inches. No potable irrigation on street medians or new homes or buildings unless delivered by drip or microspray. | Yes |
| 1 | Landscape - Prohibit certain types of landscape irrigation | Require reduction to mandatory reduction on all non-residential properties, including cemeteries. | Yes |
| 2,3,4 | Landscape - Restrict or prohibit runoff from landscape irrigation | | Yes |
| 2,3,4 | Landscape - Limit landscape irrigation to specific times | | Yes |
| 2,3,4 | Landscape - Limit landscape irrigation to specific days | | Yes |
| 2,3,4 | Landscape - Prohibit certain types of landscape irrigation | | Yes |

| Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses | | | |
|---|---|---|---|
| Stage | Restrictions and Prohibitions on End Users | Additional Explanation or Reference *(optional)* | Penalty, Charge, or Other Enforcement? |
| 2,3,4 | Other water feature or swimming pool restriction | Restricted: The use of potable water to refill residential swimming pools or outdoor spas more than one foot or initial filling with potable water except when existing pools are drained to repair leaks. | Yes |
| 2,3,4 | Other | Set allocation thresholds for residential sector of use. | Yes |
| 2,3,4 | Other | Residential and non-residential allocations and tariff schedule enacted subsequent to drought stage. | Yes |
| NOTES: For more details and additional measures, see Water Shortage Contingency Plan, Rule 14.1, Appendix G | | | |

### 8.2.1 Landscape Irrigation

The following categories of prohibitions on landscape irrigation are listed in Table 8.2. The section below includes restrictions or prohibitions that fall within these categories. Note that "Other landscape restriction or prohibition" is a category that will be used to include prohibitions that do not fall into the listed categories.

- Restrict or prohibit runoff from landscape irrigation - irrigation runoff is to be prevented; excessive irrigation runoff is prohibited; irrigation runoff is prohibited.
- Limit landscape irrigation to specific times: landscape irrigation is limited to between the hours of 7:00pm and 8:00am; Landscape irrigation is limited to less than 10 minutes per day duration. Duration is decreased in successive stages.
- Limit landscape irrigation to specific days: Even numbered addresses are allowed to water only on Monday, Wednesday, and Saturday; Odd numbered addresses on the opposite days. In successive stages: Landscape irrigation is allowed only two days per week; Landscape irrigation is allowed only one day per week.
- Prohibit certain types of landscape irrigation: The use of sprinkler irrigation is prohibited; Irrigation of ornamental turf is prohibited on street medians, except with recycled water; Only irrigation of trees and shrubs is allowed.
- Prohibit all new landscape irrigation: All landscape irrigation using potable water is prohibited unless drip or micro-spray systems: All landscape irrigation is prohibited.

### 8.2.2 Commercial, Industrial, and Institutional (CII)

The following categories of prohibitions on CII are listed in Table 8.2. The section below includes restrictions or prohibitions that fall within these categories. Note that "Other CII restriction or prohibition" is a category that will be used to include prohibitions that do not fall into the listed categories.

- Lodging establishments must offer opt out of linen service.
- Restaurants may only serve water upon request.
- Commercial kitchens are required to use pre-rinse spray valves as part of their dish washing operation.

- Other CII restriction or prohibition

### 8.2.3 Water Features and Swimming Pools

The following categories of prohibitions on water features and swimming pools are listed in Table 8.2. The section below includes the restrictions or prohibitions that may fall within these categories. Note that "Other water feature or swimming pool restriction" is also a category to include prohibitions that do not fall into the listed categories.

- Decorative water features may only be operated if they use recirculating water; In more restrictive stages, then decorative water features shall not be allowed to operate.
- Every swimming pool and spa is required to cover the surface of the pool or spa with a cover that reduces evaporation during hours that the pool or spa is not in use. Refill of swimming pools and spas limited to no more than 1 foot. May be more restrictive in other stages.

### 8.2.4 Defining Water Features

Liberty's definition of water features is as follows:

A landscape design element where open water forms an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment of stormwater retention are not water features for means of calculating a landscape water budget.

### 8.2.5 Other

The following categories of other prohibitions or restrictions are listed in Table 8.2. The section below includes restrictions or prohibitions that fall within these categories. Note that "Other" is a category that will be used to include prohibitions that do not fall into the listed categories.

- Customers must repair leaks, breaks, and malfunctions in a timely manner – Broken or malfunctioning sprinkler heads must be repaired within 48 hours after the customer receives a notification from the water agency; All leaks or breaks must be repaired by the customer within 48 hours of receiving a notification from the water agency.
- Residential allocation approach to cutbacks and non-residential drought surcharge rates.
- Hoses may only be operated out of doors if they are equipped with an automatic shut off nozzle.
- Potable water may not be used for construction or dust control.
- Potable water may not be used to wash hard surfaces, such as driveways or sidewalks, except in cases of health and safety.
- Tiered rates with drought surcharges.

## 8.3 Penalties, Charges, Other Enforcement of Prohibitions

Liberty's penalties, charges, and other enforcement of prohibitions are summarized in Table 8-2.

## 8.4 Consumption Reduction Methods

Additionally, requirements set forth in the California Water Code Sections 350-358 conserve water supply for the greatest public benefit especially with regard to domestic use, sanitation, and fire protection. During a water shortage,

Liberty will allocate water supply for health and safety, residential, commercial, industrial, institutional/government, and landscaping needs in accordance with the ranking system detailed in Section 8.1.6 of this UWMP.

To reduce water use during the most severe stages of shortage, Liberty will employ the methods listed in Table 8-2 and Schedule 14.1 in Appendix G, if approved by the CPUC.

### 8.4.1 Categories of Consumption Reduction Methods

The following categories of consumption reduction methods are listed in Table 8.3. The section below includes examples of consumption reduction methods that fall within these categories. Note that "Other" is a category that will be used to include consumption reduction methods that do not fall into the listed categories.

- Expand Public Information Campaign – Examples include: create bill insert or direct mail pieces with conservation information; begin media campaign; write articles for local newspaper; conduct water efficiency workshops for different customer sectors; hold Conservation Celebration for customers; provide speakers at community events; promote Dropcountr that is an application that compares water use to those of similar customers.
- Improve Customer Billing – Examples include: change bill format to report consumption in gallons per capita per day; add information to the bill that compares the customer's use to the water use of similar customers.
- Make Customers Aware of Possible Leaks – Example includes sending a letter to a customer where the automatic meter read indicates a possible leak.
- Offer Water Use Surveys – Examples include: actively reach out to high water users to offer water use surveys; expand water use survey program to include new sectors.
- Provide Rebates or Giveaways of Plumbing Fixtures and Devices – Examples include: increased promotion of existing (toilet, clothes washer, etc.) rebate programs and device giveaway programs; expand funding for existing rebate or giveaway programs.
- Provide Rebates for Landscape Irrigation Efficiency – Examples include implement a new landscape efficiency rebate program that provides rebates for landscape conversion, irrigation controllers, sprinkler heads, etc.; increase the existing rebate program that provides rebates for irrigation controllers, sprinkler heads, etc.
- Reduce System Water Loss – Examples include: implement a water audit program to identify leaks in the water system; expand the leak repair program to control system losses.
- Increase Water Waste Patrols – Examples include: coordinate a Water Waste Patrol program with the cities we serve; Create a Water Waste Patrol.
- Implement a Drought Surcharge –Examples include: Implement a drought surcharge depending on the shortage stage after PUC approval.

**Table 8-3. Stages of WSCP – Consumption Reduction Methods**

| Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods | | |
|---|---|---|
| Stage | Consumption Reduction Methods by Water Supplier | Additional Explanation or Reference *(optional)* |
| 1 | Expand Public Information Campaign | |
| 2,3,4 | Expand Public Information Campaign | |
| 2,3,4 | Implement or Modify Drought Rate Structure or Surcharge | Customer allocation and tariff schedule enacted. |
| NOTES: Reference for specific details and additional information is based on Water Shortage Contingency Plan Schedule 14.1 that was CPUC Approved per Liberty's Advice Letter 260-W filed on May 22, 2015. http://50.63.130.128/docs/default-source/rates/approved-park-water-company%27s-advice-letter-260.pdf?sfvrsn=0 | | |

Liberty may, after one verbal and one written warning, install a flow-restricting device on the service line of any customer observed by Liberty personnel to be using water for any nonessential or unauthorized water use. If, despite installation of flow-restricting device, nonessential or unauthorized water use continues, Liberty may discontinue water service to such customer.

Any customer may seek a variance from any of the provisions of the water conservation and rationing plan by notifying Liberty in writing, setting forth the grounds for a variance in detail. Any customer not satisfied with Liberty's response may file an appeal with the CPUC.

## 8.5 Determining Water Shortage Reductions

In normal water supply conditions, production figures are recorded monthly and are incorporated into the monthly water production report. During rationing conditions, water shortages will be monitored on a weekly and daily basis depending on the severity of the drought. Production from the MWD connections and well production can be retrieved on an hourly basis. This allows Liberty's Production Department to determine the effects of reductions on water production within the system.

During a disaster shortage, production figures will be monitored on an ongoing basis. Liberty's SCADA system will warn of any critical conditions instantly. If power goes out, backup generators will be used to run the main office and major wells. Reports will be provided on a daily basis to Liberty management.

## 8.6 Revenue and Expenditure Impacts

This section presents Liberty's revenue and expenditure impacts as a result of water shortage.

### 8.6.1 Drought Rate Structures and Surcharges

If conditions warrant, Liberty may implement mandatory water use reductions, mandatory restrictions, and drought emergency surcharges to achieve mandated reductions in water use established by an authorized government agency. The drought emergency surcharges are in addition to the regular water use charges. Drought surcharges are effective in reducing short-term demands especially when designed to help manage short-term, severe drought restrictions.

All monies collected through the drought emergency surcharges are booked to the Water Revenue Adjustment Mechanism (WRAM) Balancing Account to offset recovery of lost revenues. All expenses incurred by Park associated with voluntary conservation efforts, mandatory conservation efforts, and other activities associated with Park's

response to California's drought that have not been considered in a general rate case are tracked in the Conservation Memorandum Account for recovery.

### 8.6.2 Other Measures

In 2008, the CPUC approved the establishment of a WRAM Balancing Account and a Modified Cost Balancing Account (MCBA). These two regulatory accounts track the difference between actual and adopted water sales and production costs as part of a water conservation program. By March 31st of each year, Liberty files an advice letter with the CPUC Division of Water and Audits to amortize the combined net accumulated balance for the WRAM and MCBA. Recovery of the under-collections and refunds of over-collections will be passed on to customers through volumetric surcharges and surcredits.

Failure to comply with the mandatory restrictions listed in Liberty's Water Shortage Contingency Plan is deemed a wasteful and unreasonable use of water and may result in the installation of a flow restrictor device along with associated fees for installation and removal. Failure to comply with the restrictions may also result in the installation of a real time measurement device on the customer's service line to provide the customer and Liberty with access to information from the device. The cost of the device, including installation, shall be billed to the customer, and nonpayment may result in discontinuance of service.

## 8.7 Resolution or Ordinance

Liberty's Rule 14.1, Water Shortage Contingency Plan, allows the utility to respond efficiently and effectively to all water shortage contingencies. The Water Shortage Contingency Plan contains staged mandatory reductions, restrictions, and drought surcharges and can be implemented as necessary as water supply conditions warrant.

When a city, county, or other public agency in Liberty's service area adopts water use restrictions different than those adopted by Liberty, Liberty may enforce the city, county, or other local public agency's restrictions.

Refer to Appendix G for Liberty's Water Shortage Contingency Plan and Appendix H for the Water Waster Prevention Ordinance.

## 8.8 Catastrophic Supply Interruption

This section identifies what actions will be taken by Liberty if there is a catastrophic reduction in water supplies.

### 8.8.1 Imported Water Supplies

In addition to earthquakes, imported water supplies could experience other emergency outage scenarios. Past examples on the SWP include slippage of aqueduct side panels into the California Aqueduct near Patterson in the mid-1990s, the Arroyo Pasajero flood event in 1995 (which also destroyed part of Interstate 5 near Los Baños), and various subsidence repairs needed along the East Branch of the California Aqueduct since the 1980s. All these outages were short-term in nature (on the order of weeks), and DWR's Operations and Maintenance Division worked diligently to devise methods to keep the Aqueduct in operation while repairs were made. Thus, the SWP contractors experienced no interruption in deliveries.

One of the SWP's important design engineering features is the ability to isolate parts of the system. The Aqueduct is divided into "pools." Thus, if one reservoir or portion of the California Aqueduct is damaged in some way, other portions of the system can still remain in operation.

Other events could result in significant outages and potential interruption of service. Examples of possible nature-caused events include a levee breach in the Delta near the Harvey O. Banks Pumping Plant, a flood or earthquake event that severely damaged the Aqueduct along its San Joaquin Valley traverse, or an earthquake event along either the West or East Branches. Such events could impact some or all SWP contractors south of the Delta.

The response of DWR and other SWP contractors to such events would be highly dependent on the type and location of any such event. In typical SWP operations, water flowing through the Delta is diverted at the SWP's main pumping facility, located in the southern Delta, and is pumped into the California Aqueduct. During the relatively heavier runoff period in the winter and early spring, Delta diversions generally exceed SWP contractor demands, and the excess is stored in San Luis Reservoir. Storage in SWP aqueduct terminal reservoirs, such as Pyramid and Castaic Lakes, is also refilled during this period. During the summer and fall, when diversions from the Delta are generally more limited and less than contractor demands, releases from San Luis Reservoir are used to make up the difference in deliveries to contractors. The SWP share of maximum storage capacity at San Luis Reservoir is 1,062,000 AF.

Colorado River supplies are likewise vulnerable to catastrophic interruption and MWD relies on storage reservoirs for emergency supply as discussed in the following subsection.

### 8.8.2 Other MWD Facilities

A key component of MWD's emergency response planning is storage. MWD established its criteria for determining storage requirements in the October 1991 Final Environmental Impact Report for the Eastside Reservoir, now the Diamond Valley Lake. These criteria were again discussed during preparation of the 1996 Integrated Resource Plan (IRP). By 2015, MWD had developed over 5.5 million acre-feet of storage capacity and had successfully stored over 2.7 MAF. This is a more than 13 times the storage capacity compared to the 1980s, with record quantities of water in reserve. The success of the storage programs is owed to the vision of the 1996 IRP (MWD, Draft 2015 IRP, December 2015).

Emergency storage requirements are based on the potential of a major earthquake damaging the aqueducts that transport imported water supplies to southern California, the SWP, CRA and Los Angeles Aqueducts). MWD's storage criteria include capacity for six months' duration of emergency supply. MWD also has access to emergency storage at its other reservoirs, at the SWP terminal reservoirs and in its groundwater conjunctive use storage accounts.

MWD has also developed contingency plans for planned and unplanned electrical outages at its facilities. This includes gravity-fed water supply from reservoirs, backup generation capability at all treatment plants, backup generation for operation of key valves, and mobile generators that can be transported as necessary to key facilities.

### 8.8.3 Water Shortage Emergency Response

Liberty has developed an Emergency Response and Recovery Plan to respond in a major emergency associated with natural disasters, technological incidents, and national security emergencies affecting Liberty's facilities and service area. The goals of the Emergency Response and Recovery Plan are to rapidly restore service after an emergency; ensure adequate water service for fire suppression; minimize water or electrical system damage; minimize impact and loss to customers; and provide emergency public information concerning customer service. The following details Liberty's action during a major emergency or catastrophe:

- Activate the appropriate level of the emergency plan
- Mobilize emergency response personnel, as needed
- Activate the Emergency Operations Center, if necessary
- Notify other agencies such as regulatory agencies (local and state health, etc.)
- Begin damage inspections
- Evaluate safety of facilities
- Begin documentation process
- Activate emergency communications systems, as needed

- Activate emergency mutual assistance agreements, if necessary
- Activate contracts for emergency supplies (including water) and equipment
- Interface with the media
- Coordinate inter-agency resources, including water supplies
- Develop repair and restoration plans
- Provide public and employee information announcements, including water quality advisories

Liberty is a member of CalWARN and will have the resources of the WARN network available to assist in an emergency.

## 8.9 Minimum Supply Next Three Years

The minimum water supply available during the next three years would occur during a three-year multiple-dry year event between 2016 and 2018. Table 8-4 presents the total minimum supplies during the next three years. When comparing these supplies to the demand projections provided in Sections 4 and 7 of this 2015 UWMP, Liberty has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years. Table 8-4 projected supplies are estimated to be equal to the interpolated normal year demand between actual year 2015 water use and projected year 2020 demand as presented in Table 4-3.

**Table 8-4. Minimum Supply Next Three Years (AFY)**

| Table 8-4 Retail: Minimum Supply Next Three Years | | | |
|---|---|---|---|
| | 2016 | 2017 | 2018 |
| Available Water Supply | 10,288 | 10,789 | 11,290 |
| NOTES: Assumes minimum supplies in 2016-2018 to meet demand projected for those three years. | | | |

# 9. DEMAND MANAGEMENT MEASURES

The goal of the Demand Management Measures (DMM) section in a UWMP is to provide a comprehensive description of the water conservation programs that a supplier has implemented, is currently implementing, and plans to implement in order to meet its urban water use reduction targets. This chapter provides the opportunity for water suppliers to communicate their efforts to promote conservation and to reduce the demand on the water supply.

Liberty is a CUWCC member and has the option of submitting their 2013–2014 Best Management Practice (BMP) annual reports in lieu of describing the Demand Management Measures (DMMs) in this UWMP. Liberty is a signatory to the CUWCC, is on track with the CUWCC BMPs, and is in full compliance with the CUWCC's Memorandum of Understanding (MOU).

## 9.1 Demand Management Measures for Retail Agencies

Liberty is subject to the Urban Water Management Planning Act, AB1420 and SB X7-7 requirements, in addition to the commitment of compliance with the BMPs as a signatory to the MOU. The MOU and BMPs were revised by the CUWCC on January 4, 2016. The revised BMPs now contain a category of "Foundational BMPs" that signatories are expected to implement as a matter of their regular course of business. These include Utility Operations (metering, water loss control, pricing, conservation coordinator, wholesale agency assistance programs, and water waste ordinances) and Public Education (public outreach and school education programs). The new category of Foundational BMPs is a significant shift in the revised MOU. These revisions are reflected in the reporting database, starting with reporting year 2009.

Signatories to the urban MOU are allowed by Water Code Section 10631(j) to include their biennial CUWCC BMP reports in an UWMP to meet the requirements of the DMMs sections of the UWMP Act.

Liberty has chosen a combined BMP/Flex Track approach for complying with the MOU, largely because of its strong history with BMP implementation. BMP status is described in the following section. The cost effectiveness analysis is compared with Liberty's average purchase water cost of $1,108.19/AF in 2015.

### 9.1.1 Water Waste Prevention Ordinances

Liberty operates under California Public Utilities Commission (CPUC)-approved rules that include Rule No. 14.1, the Water Conservation and Rationing Plan, and Rule 11, Discontinuance and Restoration of Service (see Appendix H for a copy of each rule). The CPUC's methodology for water utilities to implement Water Conservation Plans is documented in Standard Practice U-40-W, "Instructions for Water Conservation, Rationing, and Service Connection Moratoria." Water shortage contingency plans must be approved by the CPUC prior to implementation. As stated in the Standard Practice U-40-W, the CPUC shall authorize mandatory conservation and rationing by approving Schedule No. 14.1, Mandatory Water Conservation and Rationing. Schedule No. 14.1 sets forth water use violation fines, charges for removal of flow restrictors, and the period during which mandatory conservation and rationing measures will be in effect.

Liberty's Rule No. 14.1, the Water Conservation and Rationing Plan, took effect on October 18, 2008 and was updated on October 13, 2015. This rule allows the utility to institute voluntary conservation measures, and if further reduction is needed, mandatory conservation measures. The rule specifies enforcement criteria and fines for violations.

Liberty's Rule No. 20, Water Conservation, discourages the wasteful use of water and promotes the use of water saving devices. The rule is intended to, "…ensure that water resources available to the utility are put to a reasonable beneficial use and that the benefits of the utility's water supply and service extend to the largest number of persons."

Further, Liberty's Rule No. 11.B (3) prohibits the wasting of water. If negligent or wasteful use of water is occurring on a customer's premises, the utility may discontinue water service if these practices are not changed within five days of receiving written notice of the issue.

Liberty has no enforcement authority but works with the cities it serves to encourage and promote water efficiency. For example, Liberty's field staff patrols its service area for water wasters. Liberty then notifies the cities of chronic water wasters and works with them to address the situation.

### 9.1.2 Metering

Liberty's metering program began in 1950; all customers in their service area have been fully metered and billed volumetrically since that time.

Liberty complies with CPUC requirements for water meter testing. Liberty replaces 5/8-inch and 1-inch meters every 15 years, and 1-½ and 2-inch meters every 10 years. Meters 3 inches and larger are tested every 5 years and replaced within 20 years.

In 2016, Liberty's residential meters will be Automatic Meter Reading (AMR). The AMR system is useful in identifying customer side leaks and understanding assessing the impacts of various conservation programs.

### 9.1.3 Conservation Pricing

Liberty converted its residential rate structure from uniform rates to increasing block rates in September 2008. As of February 2016, customers are billed at $5.202/hundred cubic feet (ccf) for the first 900 cubic feet and $5.983 for all use in excess of that. The portion of Liberty's revenue attributable to the volumetric component of billing is estimated at 71% in 2015.

### 9.1.4 Public Education and Outreach

Liberty has implemented the following public education and outreach efforts:

- Marketing of rebates and giveaways
- Communicating water use via water bills (e.g., compare a customer's water use to the prior month and year)
- Providing school education programs
- Information booths at fairs and public events
- Informative websites and online tools
- Web application Dropcountr
- Other activities not listed here

Liberty distributes public information on conservation through pamphlets, bill inserts, newsletters, and brochures, which are available in the lobby of the office where customers pay their bill. The lobby also displays a slide show of conservation tips. The website provides conservation tips and resources, links to local water conservation ordinances, and information on rebate programs. Rebate information includes links to the SoCal WaterSmart and CBMWD sites, both of which provide residential and CII rebate calculators identifying all rebates currently available to Liberty customers. Liberty also provides speakers on conservation for local organizations and participates in community events.

In addition, Liberty communicates directly with its customers through the bi-monthly bills. Customer bills show usage data for the current month, compared to the same month in the previous year so that customers can track their own use. Liberty also houses a popular conservation demonstration garden installed at its main office that shows how water-efficient landscaping can be both practical and attractive.

**Residential Programs**

The largest customer class in the Liberty service area is residential users, accounting for approximately 92% of customer accounts and 67% of total use. Accordingly, Liberty has focused the majority of its conservation efforts on residential use. Note that multifamily customers are classified as commercial accounts.

Liberty offers free residential water use surveys to single-family customers. Survey teams measure flow rates of plumbing fixtures, test for toilet leakage and provide landscape assessments and other assistance as required.

Free low-flow faucet aerators, leak-detection tablets, garden hose nozzles, shower timers and other items are available at the agency office and are given away at community events, local fairs, as well as during inspections.

Liberty's internal Toilet Direct Program offers immediate response to customer demands and allows us to target low-income and disabled customers that may not otherwise have the means to participate in a rebate or distribution program. The program targets specific water wasting toilets with 3.5 - 7 gallons per flush and delivers up to two WaterSense approved 0.8 GPF Ultra High Efficiency Toilets. This program has successfully replaced 3,055 toilets since 2010.

Liberty has also expanded their leak detection program to notify customers with a continuous flow of water over a 24-hour period with a leak detection letter. These letters have successfully identified leaks on the customer's property that may have gone undetected. Liberty plans to continue this program in the future years.

Liberty will continue to seek partnerships with wholesale agencies, cities, energy companies, government programs, and other utilities to reduce wasted water within our service area.

### 9.1.5 Programs to Assess and Manage Distribution System Real Loss

Consistent with the revised MOU, Liberty is implementing American Water Works Association (AWWA) Standard Water Audit Approach per the M36 manual in order to develop a water balance. The approach consists of a component analysis of leaks into "revenue" and "non-revenue" categories, among others, and an economic analysis of recoverable loss. In addition, California passed legislation requiring all urban water suppliers in California to "submit a completed and validated water loss audit report" to DWR starting in October 2017. The California-Nevada Section of the American Water Works Association has brought together utilities and organizations to form the Water Loss Control Collaborative. This partnership will improve knowledge of water utility personnel in the areas of identification and control of real or apparent losses from their systems. Liberty staff will participate in the Collaborative to learn best practices to combat water loss. These concepts and past successful practices will be taught in workshops and individualized learning sessions that will bring the knowledge Liberty needs to develop additional loss control programs for the system.

### 9.1.6 Water Conservation Program Coordination and Staffing Support

Liberty has had a conservation coordinator to manage BMP implementation and other water conservation implementation and planning activities since 2008.

### 9.1.7 Other Demand Management Measures

For other activities, see CUWCC BMPs in Appendix I.

## 9.2 Implementation over the Past Five Years

Liberty is a CUWCC member and is submitting its 2013-2014 Best Management Practice (BMP) annual reports in lieu of describing the Demand Management Measures (DMMs) in this UWMP. Liberty is on track and in full compliance with the CUWCC's MOU.

## 9.3 Planned Implementation to Achieve Water Use Targets

Liberty is a CUWCC member and is submitting its 2013-2014 BMP annual reports in lieu of describing the Demand Management Measures (DMMs) in this UWMP. Liberty is on track and in full compliance with the CUWCC's MOU.

## 9.4 Members of the California Urban Water Conservation Council

Liberty is a CUWCC member and has submitted their 2013-2014 BMP annual coverage reports in lieu of describing the Demand Management Measures (DMMs) in this UWMP. Liberty is in full compliance with the CUWCC's Memorandum of Understanding (MOU). The option of submitting the CUWCC BMP report in lieu of describing the DMMs is only available if the supplier is in full compliance with the CUWCC's MOU. The submitted reports are in Appendix I and include documentation from the CUWCC that Liberty has met the MOU coverage requirements and is in full compliance with the MOU.

# 10. PLAN ADOPTION, SUBMITTAL AND IMPLEMENTATION

During Liberty's update of its UWMP, a public participation meeting was held to discuss key plan elements.

## 10.1 Notice of Public Hearing

A public hearing to discuss and receive comments regarding Liberty's 2015 UWMP demand reduction targets, selected method, and economic impacts was held on May 3, 2016. The public hearing was advertised in the Long Beach Press-Telegram at least 30 days prior to the meeting. Additionally, a public hearing notice was posted on Liberty's web site in the following location:

- http://parkwater.com/about/our-water-supply/

The draft UWMP was posted to the following page on Liberty's website for public review and comment. The public comment period was open through May 30, 2016.

- http://parkwater.com/about/regulatory-information/

The notices from the website regarding the public hearing and the online availability of the UWMP draft are shown in Appendix C.

### 10.1.1 Notice to Cities and Counties

The 2015 UWMP Plan also was provided to cities listed in Table 10-1 and Los Angeles County.

**Table 10-1. Notification to Cities and Counties**

| Table 10-1 Retail: Notification to Cities and Counties | | |
|---|---|---|
| City Name | 60 Day Notice | Notice of Public Hearing |
| City of Artesia | ☑ | ☑ |
| City of Bell Gardens | ☑ | ☑ |
| City of Bellflower | ☑ | ☑ |
| City of Compton | ☑ | ☑ |
| City of Lynwood | ☑ | ☑ |
| City of Norwalk | ☑ | ☑ |
| City of Santa Fe Springs | ☑ | ☑ |
| County Name | 60 Day Notice | Notice of Public Hearing |
| Los Angeles County | ☑ | ☑ |
| NOTES: Notices were also sent to Central Basin Municipal Water District (CBMWD), Metropolitan Water District, Water Replenishment District, and the Sanitation Districts of Los Angeles County. | | |

### 10.1.2 Notice to the Public

The public hearing was posted in the Long Beach Press-Telegram and on Liberty's website (see Appendix C).

## 10.2 Public Hearing and Adoption

The UWMP was made available for public review at the Liberty Park Water office and online. The public was notified 60 days prior to the adoption meeting via newspaper and the following website:

- www.libertyutilities.com

### 10.2.1 Adoption

The Liberty Park Water's Board of Directors adopted the UWMP by resolution at its June 15 Board Meeting. A copy of the resolution adopting the UWMP is provided in Appendix J.

## 10.3 Plan Submittal

To satisfy Water Code Section 10635(b), within 30 days of adoption, Liberty was required to submit a copy of the adopted 2015 UWMP to any city or county to which it provides water.

Documentation confirming Liberty's 2015 UWMP submittal can be found in Appendix L.

## 10.4 Public Availability

Within 30 days of adoption, a copy of the plan will be mailed to DWR, the California Library Records Hall (Sacramento), and placed on Liberty's website.

# 11. REFERENCES


Alliance for Water Efficiency. The Status of Legislation, Regulation, Codes & Standards on Indoor Plumbing Water Efficiency, January 2016. Online: http://www.allianceforwaterefficiency.org/Codes-Standards-White-Paper.aspx

American Water Works Association. *M19 Emergency Planning for Water Utilities* (4th edition), 2001. Online: http://www.awwa.org/store/productdetail.aspx?productid=6708

Ibid. *Manual of Water Supply Practice, M36, Water Audits and Loss Control Programs*, (3rd edition), 2009. Online: http://www.awwa.org

California Department of Public Health. *California Code of Regulations*, Title 22, Section 60301.200. Online: http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/lawbook/RWregulations_20140618.pdf

California Green Building Standards Code (CALGreen). Online: http://www.usgbc-ncc.org/index.php?option=com_content&view=article&id=401&Itemid=90

California Urban Water Conservation Council. *Best Management Practices (BMP) Cost and Savings Study.* CUWCC, 2005.

Ibid. *Memorandum of Understanding,* CUWCC, adopted December 1991, amended September 2014. Online: https://www.cuwcc.org/Resources/Memorandum-of-Understanding

California Urban Water Conservation Council. *CUWCC Research and Evaluation Committee Report*, August 2009.

California Water Code. Sections 1725, 1728. Online: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=01001-02000&file=1725-1732

Central Basin Municipal Water District website: http://www.centralbasin.org/recyclingProgram.html

Ibid. *Draft 2010 Urban Water Management Plan*, March 2011.

City of Artesia. *Housing Element HCD Submittal Draft*, November 2013. http://www.cityofartesia.us/DocumentCenter/View/203

City of Compton. Housing Element Compton General Plan 2030. http://www.comptoncity.org/civicax/filebank/blobdload.aspx?blobid=24234

City of Lynwood. *2014-2021 Housing Element*, adopted August 2013. http://lynwood.ca.us/sites/default/files/City%20of%20Lynwood%20Adopted%202014-2021%20Housing%20Element.pdf

City of Norwalk. *Draft 2013-2021 Housing Element of the General Plan,* Planning Division, Community Development Department. http://www.hcd.ca.gov/housing-policy-development/housing-resource-center/plan/he/housing-element-documents/norwalk_5th_draft100313.pdf

City of Santa Fe Springs. *2014-2021 Housing Element*, November 2013. http://www.santafesprings.org/civica/inc/displayblobpdf2.asp?BlobID=6869

Consortium for Efficient Energy website. www.cee1.org

CUWCC Website. https://www.cuwcc.org/Resources/Planning-Tools-and-Models?folderId=776&view=gridview&pageSize=10

DeOreo, W.B., P.W. Mayer, E.M. Opitz, B. Dziegielewski, J.C. Kiefer, W.Y. Davis, and J.O. Nelson. *Residential End Uses of Water, Version 2 - 4309.* Denver, Colorado: AWWA Research Foundation, 2016.

DeOreo, W.B., P.W. Mayer, Leslie Martien, Matthew Hayden, Andrew Funk, Michael Kramer-Duffield, Renee Davis, James Henderson, Bob Raucher, Peter Gleick, and Matt Heberger, *California Single-Family Water Use Efficiency Study*. Sacramento, California: Department of Water Resources, 2011. Online: http://www.energy.ca.gov/appliances/2013rulemaking/documents/responses/Water_Appliances_12-AAER-2C/California_IOU_Response_to_CEC_Invitation_to_Participate-Water_Meters_REFERENCE/DeOreo_2011_California_Single-Family_Water_Use_Efficiency_Study.pdf

Department of Water Resources. Climate Change Action Plan, March 2016. Online: http://www.water.ca.gov/climatechange/CAP.cfm

Ibid. Final California Water Plan Update 2009 Integrated Water Management: Bulletin 160, December 2009. Online: http://www.waterplan.water.ca.gov/cwpu2009/

Ibid. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*, February 2011. Online: http://www.water.ca.gov/wateruseefficiency/sb7/docs/MethodologiesCalculatingBaseline_Final_03_01_2011.pdf

Ibid. Model Water Efficient Landscape Ordinance, California Code of Regulations, Title 23, section 490 et seq. Online: http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/2015%20MWELO%20Guidance%20for%20Local%20Agencies.pdf

Ibid. *Urban Drought Guidebook*, 2008. Online: http://www.water.ca.gov/wateruseefficiency/docs/UrbanDroughtGuide_Appendices.pdf

Dziegielewski, B., J. C. Kiefer, W. DeOreo, P. Mayer, E. M. Opitz, G. A. Porter, G. L. Lantz, and J. O. Nelson. *Commercial and Institutional End Uses of Water*. Denver, Colorado: AWWA, Research Foundation and American Water Works Association with Cooperation of the U.S. Bureau of Reclamation, 2000. Catalog No.90806. 264 pp. ISBN 1-58321-035-0. Online: http://ufdc.ufl.edu/WC13511002/00001

Energy Star Unit Shipment and Market Penetration Report Calendar Year 2011 Summary. Online: http://www.energystar.gov/ia/partners/downloads/unit_shipment_data/2011_USD_Summary_Report.pdf

ESA. *City of Bellflower 2014-2021 Housing Element*, adopted September 2013. http://www.hcd.ca.gov/housing-policy-development/housing-resource-center/plan/he/housing-element-documents/bellflower_5th_adopted100713.pdf

HDR and Pacifica Services. *CBMWD 2012 Recycled Water Master Plan Update*.

Koeller & Company. “High Efficiency Plumbing Fixtures - Toilets and Urinals," 2005.

Liberty Utilities (Park Water) Corp. *2005 Urban Water Management Plan,* Psomas, November 2005.

Ibid. Application No. 15-01-001, 2015.

Ibid. *Consumer Confidence Reports*, 2014-2015.

Ibid. *Final Park Water WUE Plan*, December 2014.

Ibid. *Revenue Requirements Report*, Test Year 2016, Application No. 15-01-001, January 2015. Online:

Ibid. Service area maps, accessed December 2015. Online: http://parkwater.com/images/default-album/pwc-service-area-maps60E1E0CF0C6DB99FAEB80281.jpg?sfvrsn=2

Ibid. *Water Shortage Contingency Plan Schedule 14.1,* May 22, 2015. Online: http://50.63.130.128/docs/default-source/rates/schedule-14-1---conservation.pdf?sfvrsn=0

Ibid. Website: www.libertyutilities.com

Los Angeles County Sanitation Districts (LACSD) website, Water Facilities page, accessed January 2016. http://www.lacsd.org/wastewater/wwfacilities/default.asp

Ibid. Los Coyotes Water Reclamation Plant page, accessed January 2016. http://www.lacsd.org/wastewater/wwfacilities/joint_outfall_system_wrp/los_coyotes.asp

Ibid. Joint Water Pollution Control Plant (JWPCP) page, accessed January 2016. http://www.lacsd.org/wastewater/wwfacilities/jwpcp/default.asp

Metropolitan Water District of Southern California. *Draft 2015 Urban Water Management Plan*, June 2016.

Ibid. *Integrated Resource Plan*, 1996.

Ibid, *Integrated Water Resources Plan 2010 Update,* October 2010.

Ibid. *The Regional Urban Water Management Plan,* November 2010.

Ibid. Website: http://www.mwdh2o.com/Search-Results/Pages/Default.aspx?k=RUWMP

Oak Ridge National Laboratory, Energy Division, "Bern Clothes Washer Study, Final Report," prepared for U.S. Department of Energy, March 1998. Online: http://web.ornl.gov/sci/ees/etsd/btric/eere_research_reports/appliances/other_appliances/laundry_equipment/ornl_m_6382/ornl_m_6382.html

Plumbing Efficiency Research Coalition. Water Consumption by Water-Using Plumbing Products and Appliances – 1980-2012, PERC Phase 1 Report, Table 2-A, November 2012. Online: http://www.map-testing.com/content/info/menu/perc.html

Santa Clara Valley Water District Water Use Efficiency Unit. "SCVWD CII Water Use and Baseline Study," February 2008.

Southern California Area Government. *Draft 2016 RTP/SCS Growth Forecast by Jurisdictions*, February 2016. Online: http://www.scag.ca.gov/Documents/2016DraftGrowthForecastByJurisdiction.pdf

U.S. Census 2010 website. http://www.census.gov/2010census/

Water Replenishment District (WRD) of Southern California. *Engineering Survey and Report*, March 2011.

Ibid. *Engineering Survey and Report*, March 2015, updated May 2015. Online: www.wrd.org/WRD_ESR_Final_Report_March_5_2015.pdf

Ibid. *Engineering Survey and Report*, March 2016. Online: http://www.wrd.org/2016-Cost-of-Service-Report-Final-Board-Adopted.pdf

Ibid, *Regional Groundwater Monitoring Report Water Year 2009-2010*, February 2011

Western Regional Climate Center website, accessed on Dec 2015. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5085

# 12. APPENDICES

A. UWMP Checklist

B. Water Code Changes Since 2010 UWMP

C. Public Notice of UWMP Hearing

D. Water Replenishment District of Southern California's Engineering Survey and Report

E. SB X7-7 Verification Form

F. Demand & Passive Savings Methodology

G. Water Shortage Contingency Plan

H. Water Waste Prevention Ordinance

I. CUWCC Best Management Practices Reports

J. Adoption Resolution

K. DWR Water Audit Method

L. Documentation of 2015 UWMP Submittal

M. Population Methodology Appendix A from 2014 FINAL Park Water WUE Plan

N. Documentation of Liberty's Central Basin Water Rights

# Liberty Utilities (Park Water) Corp.
# 2015 Urban Water Management Plan

## FINAL

## June 24, 2016

## Appendices

Liberty Utilities

MADDAUS WATER MANAGEMENT INC.

# TABLE OF CONTENTS

# LIST OF ACRONYMS

| | |
|---|---|
| °F | degrees Fahrenheit |
| ABP | Alamitos Barrier Project |
| Act | California Urban Water Management Planning Act |
| AF | acre-feet |
| AFY | acre-feet per year |
| AL | Action Level |
| AMR | Automatic Meter Reading |
| APA | Allowed Pumping Allocation |
| AWWA | American Water Works Association |
| BMPs | Best Management Practices |
| CAT | Climate Action Team |
| CBMWD | Central Basin Municipal Water District |
| CBO | Community-Based Organization |
| CBWCB | Central Basin and West Coast Basin |
| ccf | hundred cubic feet |
| CCR | Consumer Confidence Report |
| CEQA | California Environmental Quality Act |
| CII | Commercial, Industrial and Institutional |
| CPUC | California Public Utilities Commission |
| CRA | Colorado River Aqueduct |
| CUWCC | California Urban Water Conservation Council |
| CWC | California Water Code |
| DBP | Disinfection By-products |
| DDW | State Water Resources Control Board, Division of Drinking Water |
| DGBP | Dominguez Gap Barrier Project |
| DMM | Demand Management Measures |
| DOF | California Department of Finance |
| DVL | Diamond Valley Lake |
| DWR | California Department of Water Resources |
| EPA | Environmental Protection Agency |
| ETo | Evapotranspiration |
| GIS | Geographic Information System |
| GPCD | gallons per capita per day |
| gpd | gallons per day |
| gpm | gallons per minute |
| HAA5 | haloacetic acids |
| HECW | High-Efficiency Clothes Washer |
| HET | High-Efficiency Toilet |
| IRP | Integrated Resource Plan |
| JWPCP | Joint Water Pollution Control Plant |
| LACSD | Sanitation Districts of Los Angeles County |
| MAF | Million Acre-Feet |
| MARS | Member Agency Response System |
| MCL | Maximum Contaminant Level |
| MF | Multifamily |
| MGD | million gallons per day |
| mg/L | milligrams per liter |

| | |
|---|---|
| MOU | Memorandum of Understanding Regarding Water Conservation in California |
| MTBE | Methyl Tertiary Butyl Ether |
| MWD | Metropolitan Water District of Southern California |
| NDMA | N-Nitrosodimethylamine |
| ng/L | Nanograms per liter or parts per trillion |
| NL | Notification Level |
| NPDES | National Pollutant Discharge Elimination System |
| Liberty | Liberty Park Water |
| ppb | Parts per billion |
| PPCP | Pharmaceutical and Personal Care Products |
| PCE | Tetrachloroethylene |
| PWS | Public Water System |
| QSA | Quantification Settlement Agreement |
| RC | Regional Council (SCAG) |
| RWQCB | Regional Water Quality Control Board |
| SB X7-7 | Water Conservation Bill of 2009 |
| SCAG | Southern California Area Government |
| SDLAC | Sanitation Districts of Los Angeles County |
| SF | Single Family |
| SNWA | Southern Nevada Water Authority |
| SWP | State Water Project |
| TDS | Total Dissolved Solids |
| TCE | trichloroethylene |
| TTHM | trihalomethane |
| TT | Treatment Technique |
| µg/L | Micrograms per Liter |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geographical Survey |
| UWMP | Urban Water Management Plan |
| VOC | Volatile Organic Compound |
| WARN | California Water Agencies Response Network |
| WCBBP | West Coast Basin Barrier Project |
| WOC | Water Operations Center |
| WRD | Water Replenishment District of Southern California |
| WRP | Water Recycling Plant |
| WSDM | Water Surplus and Drought Management |

# APPENDIX A – UWMP CHECKLIST

**Checklist Arranged by Subject**

| CWC Section | UWMP Requirement | Subject | Guidebook Location | UWMP Location |
|---|---|---|---|---|
| **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 1.2** |
| **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 2.5.2** |
| **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 | **Section 2.5.2** |
| **10631(a)** | Describe the water supplier service area. | System Description | Section 3.1 | **Section 3.2** |
| **10631(a)** | Describe the climate of the service area of the supplier. | System Description | Section 3.3 | **Section 3.3** |
| **10631(a)** | Provide population projections for 2020, 2025, 2030, and 2035. | System Description | Section 3.4 | **Section 3.4** |
| **10631(a)** | Describe other demographic factors affecting the supplier's water management planning. | System Description | Section 3.4 | **Section 3.4** |
| **10631(a)** | Indicate the current population of the service area. | System Description and Baselines and Targets | Sections 3.4 and 5.4 | **Section 3.4** |
| **10631(e)(1)** | Quantify past, current, and projected water use, identifying the uses among water use sectors. | System Water Use | Section 4.2 | **Section 4.2** |
| **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 4.3, Appendix K** |
| **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 4.5** |
| **10608.20(b)** | Retail suppliers shall adopt a 2020 water use | Baselines and | Section 5.7 | **Section 5.6,** |

| CWC Section | UWMP Requirement | Subject | Guidebook Location | UWMP Location |
|---|---|---|---|---|
| | target using one of four methods. | Targets | and App E | **Appendix E** |
| **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 5, Appendix E** |
| **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 if the suppliers base GPCD is at or below 100. | Baselines and Targets | Section 5.7.2 | **Section 5.6** |
| **10608.24(a)** | Retail suppliers shall meet their interim target by December 31, 2015. | Baselines and Targets | Section 5.8 and App E | **Section 5.2.2** |
| **10608.24(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 | **Section 5, Table 5-2, Appendix E** |
| **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 5.7, Appendix E** |
| **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 6.9** |
| **10631(b)** | Indicate whether groundwater is an existing or planned source of water available to the supplier. | System Supplies | Section 6.2 | **Section 6.2** |
| **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 | **Section 6.2, Appendix N** |
| **10631(b)(2)** | Describe the groundwater basin. | System Supplies | Section 6.2.1 | **Section 6.2.1** |

| CWC Section | UWMP Requirement | Subject | Guidebook Location | UWMP Location |
|---|---|---|---|---|
| **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 | **Section 6.2, Appendix N** |
| **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 | **Section 6.2** |
| **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 | **Section 6.2** |
| **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 | **Section 6.2** |
| **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 6.7, N/A** |
| **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 6.8, Section 7.5** |
| **10631(h)** | Describe desalinated water project opportunities for long-term supply. | System Supplies | Section 6.6 | **Section 6.6** |
| **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 | **Section 2.5.1, Table 2-4, Table 6-9** |
| **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 6.5.1** |

| CWC Section | UWMP Requirement | Subject | Guidebook Location | UWMP Location |
|---|---|---|---|---|
| **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 6.5.2** |
| **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 6.5.2, Table 6-3** |
| **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 6.5.3** |
| **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 6.5.3** |
| **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 | **Section 6.5** |
| **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 6.5.5** |
| **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 6.5.5** |
| **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 7.2.1** |
| **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 7.1** |
| **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 7.7** |
| **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 7.2.1** |

| CWC Section | UWMP Requirement | Subject | Guidebook Location | UWMP Location |
|---|---|---|---|---|
| **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 6.10** |
| **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 7.5** |
| **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 8.1** |
| **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 8.9** |
| **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 8.8** |
| **10632(a)(4)** | Identify mandatory prohibitions against specific water use practices during water shortages. | Water Shortage Contingency Planning | Section 8.2 | **Section 8.2** |
| **10632(a)(5)** | Specify consumption reduction methods in the most restrictive stages. | Water Shortage Contingency Planning | Section 8.4 | **Section 8.4** |
| **10632(a)(6)** | Indicated penalties or charges for excessive use, where applicable. | Water Shortage Contingency Planning | Section 8.3 | **Section 8.3** |
| **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 8.6** |
| **10632(a)(8)** | Provide a draft water shortage contingency resolution or ordinance. | Water Shortage Contingency Planning | Section 8.7 | **Section 8.7, Appendix G** |
| **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 8.5** |
| **10631(f)(1)** | Retail suppliers shall provide a description of | Demand | Sections 9.2 | **Section 9,** |

| CWC Section | UWMP Requirement | Subject | Guidebook Location | UWMP Location |
|---|---|---|---|---|
| | the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code. | Management Measures | and 9.3 | **Appendix I** |
| **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(i)** | 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 | **Appendix I** |
| **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 10.1** |
| **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 10.1** |
| **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 | **Section 10.2** |
| **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 | **Section 10.1** |
| **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 | **Section 10.1, Appendix C** |
| **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 10.1** |

| CWC Section | UWMP Requirement | Subject | Guidebook Location | UWMP Location |
|---|---|---|---|---|
| **10642** | Provide supporting documentation that the plan has been adopted as prepared or modified. | Plan Adoption, Submittal, and Implementation | Section 10.3.1 | **Section 10.2.1, Appendix J** |
| **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 | **Section 10.3, Appendix L** |
| **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 | **Section 10.3, Appendix L** |
| **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 | **Section 10.3** |
| **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 | **Section 10.4, Appendix L** |

# APPENDIX B – WATER CODE CHANGES SINCE 2010 UWMP

Table 1 lists the changes made to the Water Code since the completion of the 2010 Urban Water Management Plan.

**Table B-1. Changes to the Water Code since 2010 UWMP**

| Change Number | Topic | CWC Section | Legislation Bill | Summary | Section in Liberty Park Water's 2015 UWMP |
|---|---|---|---|---|---|
| 1 | Demand Management Measures | 10631 (f)(1) and (2) | AB 2067, 2014 | Requires water suppliers to provide narratives describing their water demand management measures, as provided. Requires retail water suppliers to address the nature and extent of each water demand management measure implemented over the past 5 years and describe the water demand management measures that the supplier plans to implement to achieve its water use targets. | Section 9 |
| 2 | Submittal Date | 10621 (d) | AB 2067, 2014 | Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016. | Section 10 |
| 3 | Electronic Submittal | 10644 (a) (2) | SB 1420, 2014 | Requires the plan, or amendments to the plan, to be submitted electronically to the department. | Section 10 |
| 4 | Standardized Forms | 10644 (a) (2) | SB 1420, 2014 | Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department. | Water agencies are required to submit UWMP data electronically to DWR using standardized tables. Liberty has chosen to include the UWMP standardized forms as tables throughout this 2015 UWMP. |
| 5 | Water Loss | 10631 (e) (1) (J) and (e) (3) (A) and (B) | SB 1420, 2014 | Requires the plan to quantify and report on distribution system water loss. | Section 4.3, Appendix K |
| 6 | Estimating Future Water Savings | 10631 (e) (4) | SB 1420, 2014 | Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans when that information is available and applicable to an urban water supplier. | Section 4.4, Appendix F |
| 7 | Defining Water Features | 10632 | AB 2409, 2010 | Requires urban water suppliers to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas. | Section 8, Section 8.2.4 |

Liberty Utilities

February 3, 2016

RECEIVED
FEB 08 2016
BY:

Mr. Richard J. Bruckner
Director
Los Angeles County Department of Regional Planning
1390 Hall of Records
320 West Temple Street
Los Angeles, CA 90012

Dear Mr. Bruckner:

Subject: Notification of Public Hearing for the 2015 Liberty Utilities Urban Water Management Plan

This letter serves as notification that Liberty Utilities (formerly Park Water Company) is currently preparing a 2015 update of its Urban Water Management Plan (UWMP), pursuant to the Urban Water Management Planning Act (Act) of the California Water Code. Updates are required every five years. This effort helps ensure we can provide the communities we serve with a reliable supply of high-quality water to meet current and future demands.

Developing a comprehensive 2015 Urban Water Management Plan is critical to Liberty Utilities and to the Southern California region. Liberty Utilities' 2015 UWMP has been prepared in coordination with the Central Basin Municipal Water District's 2015 UWMP and the Metropolitan Water District of Southern California's 2015 Regional UWMP. The result of this collaborative effort will be an all-inclusive plan that will assist us in better managing one of Southern California's most precious resources.

When a draft of Liberty Utilities' UWMP is available, you will be notified how to access a copy electronically. To insure sufficient opportunity for public feedback and suggestions, a public hearing on the 2015 UWMP has been scheduled for 10 a.m. on Tuesday, May 3, 2016 at Liberty Utilities' office, 9750 Washburn Road, Downey, CA 90241.

If you have any questions or comments about this effort, please contact me at (562) 299-5123 or by email at jm.bruno@libertyutilities.com.

Sincerely,

Jeanne-Marie Bruno

Jeanne-Marie Bruno
General Manager/Vice President

9750 WASHBURN ROAD , DOWNEY, CA 90241
WWW.LIBERTYUTILITIES.COM

Notice from Liberty's Website

Liberty Utilities

**NOTICE OF PUBLIC HEARING**

Liberty Utilities (Park Water) Corp. will conduct a hearing to receive public comments on its proposed Urban Water Management Plan. The Plan describes and evaluates water uses and supplies, conservation practices, and water shortage contingency planning in the Liberty service areas in Norwalk, Compton, Bellflower, Lynwood, unincorporated Los Angeles County, Santa Fe Springs and Artesia.

**Public Meeting**

All comments will be considered, and a final report presented to the California Department of Water Resources by June 30, 2016. A copy of the proposed Plan will be available for public review at the Liberty Utilities Downey office, beginning April 26 through May 3 between 8 a.m. and 5 p.m. and online at libertyutilities.com.

The hearing date, time and location are shown below.

Liberty Utilities
9750 Washburn Road, Downey, CA 90241
Tuesday, May 3, 2016
10:00 a.m.

**Long Beach Press-Telegram**
727 Pine Avenue
Long Beach, CA 90844
562-499-1236
Fax: 562-499-1391
legals@presstelegram.com

(Space below for use of County Clerk Only)

5029083

LIBERTY UTILITIES
9750 WASHBURN ROAD
DOWNEY, CA 90241

Legal No. **0010786981**

**NOTICE OF PUBLIC HEARING**

Liberty Utilities (Park Water) Corp. will conduct a hearing to receive public comments on its proposed Urban Water Management Plan. The Plan describes and evaluates water uses and supplies, conservation practices, and water shortage contingency planning in the Liberty service areas in Norwalk, Compton, Bellflower, Lynwood, unincorporated Los Angeles County, Santa Fe Springs and Artesia. The hearing will be held at 10:00 AM on Tuesday, May 3, at Liberty Utilities, 9750 Washburn Road, Downey. All comments will be considered, and a final report presented to the California Department of Water Resources by June 31, 2016. A copy of the proposed Plan will be available for public review at the Liberty Utilities Downey office, beginning April 26 through May 3 between 8 AM and 5 PM and online at libertyutilities.com.

**Pub April 1, 2, 3, 4, 5, 6, 7, 2016**
**(7t) PT (785359)**

# PROOF OF PUBLICATION
# (2015.5 C.C.P.)

## STATE OF CALIFORNIA
## County of Los Angeles

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principle clerk of the printer of the Long Beach Press-Telegram, a newspaper of general circulation, printed and published daily in the City of Long Beach, County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of County of Los Angeles, State of California, on the date of March 21, 1934, Case Number 370512. The notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

**04/01/2016, 04/02/2016, 04/03/2016, 04/04/2016, 04/05/2016, 04/06/2016, 04/07/2016**

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Executed at Long Beach, LA Co. California,
this 12th day of April, 2016.

Signature

The Long Beach Press-Telegram, a newspaper of general circulation, is delivered to and available in but not limited to the following cities: Long Beach, Lakewood, Bellflower, Cerritos, Downey, Norwalk, Artesia, Paramount, Wilmington, Compton, South Gate, Los Alamitos, Seal Beach, Cypress, La Palma, Lynwood, San Pedro, Hawaiian

Liberty Utilities

May 4, 2016

Mr. Kevin Hunt
General Manager
Central Basin Municipal Water District
6252 Telegraph Road
Commerce, CA 90040-2512

Dear Mr. Hunt:

Subject: 2015 Liberty Utilities Urban Water Management Plan Draft

This letter serves as notification that Liberty Utilities (formerly Park Water Company) has prepared a Draft 2015 update of its Urban Water Management Plan (UWMP). It is available electronically at bit.ly/LU_UWMP. Comments on the draft plan will be accepted until May 30, 2016.

If you have any questions or comments about this effort, please contact me at (562) 299-5123, send an email to jm.bruno@libertyutilities.com, or mail a letter to my attention using the address at the bottom of this letter.

Thank you for your interest.

Sincerely,

Jeanne-Marie Bruno
General Manager/Vice President

9750 WASHBURN ROAD , DOWNEY, CA 90241
WWW.LIBERTYUTILITIES.COM

# APPENDIX D – WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA'S ENGINEERING SURVEY AND REPORT

Due to its length, the Water Replenishment District of Southern California's *Engineering Survey and Report* (WRD, 2015) can be viewed as a separate document online by following this link:

http://www.wrd.org/WRD_ESR_Final_Report_March_5_2015.pdf

# APPENDIX E – SB X7-7 VERIFICATION FORM

| SB X7-7 Table-1: Baseline Period Ranges | | | |
|---|---|---|---|
| **Baseline** | **Parameter** | **Value** | **Units** |
| 10- to 15-year baseline period | 2008 total water deliveries | 12,807 | Acre Feet |
| | 2008 total volume of delivered recycled water | 336 | Acre Feet |
| | 2008 recycled water as a percent of total deliveries | 2.62% | Percent |
| | Number of years in baseline period[1] | 10 | Years |
| | Year beginning baseline period range | 1998 | |
| | Year ending baseline period range[2] | 2007 | |
| 5-year baseline period | Number of years in baseline period | 5 | Years |
| | Year beginning baseline period range | 2003 | |
| | Year ending baseline period range[3] | 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 ending year must be between December 31, 2004 and December 31, 2010.* | | | |
| *[3] The ending year must be between December 31, 2007 and December 31, 2010.* | | | |

| SB X7-7 Table 2: Method for Population Estimates | |
|---|---|
| **Method Used to Determine Population** (may check more than one) | |
| ☑ | **1. Department of Finance** (DOF)<br>DOF Table E-8 (1990 - 2000) and (2000-2010) and<br>DOF Table E-5 (2011 - 2015) when available |
| ☐ | **2. Persons-per-Connection Method** |
| ☐ | **3. DWR Population Tool** |
| ☑ | **4. Other**<br>DWR recommends pre-review |
| NOTES: This method was reviewed and approved by Gwen Huff at DWR 1/6/2016. | |

| SB X7-7 Table 3: Service Area Population | | |
|---|---|---|
| **Year** | | **Population** |
| 10 to 15 Year Baseline Population | | |
| Year 1 | 1998 | 115,993 |
| Year 2 | 1999 | 117,583 |
| Year 3 | 2000 | 119,172 |
| Year 4 | 2001 | 119,492 |
| Year 5 | 2002 | 119,812 |
| Year 6 | 2003 | 120,132 |
| Year 7 | 2004 | 120,452 |
| Year 8 | 2005 | 120,772 |
| Year 9 | 2006 | 121,092 |
| Year 10 | 2007 | 121,412 |
| 5 Year Baseline Population | | |
| Year 1 | 2003 | 120,132 |
| Year 2 | 2004 | 120,452 |
| Year 3 | 2005 | 120,772 |
| Year 4 | 2006 | 121,092 |
| Year 5 | 2007 | 121,412 |
| 2015 Compliance Year Population | | |
| **2015** | | 126,637 |

Notes: In the 2010 UWMP, "[p]opulation estimates and projections from 2010 onward were calculated using a growth rate determined from Department of Finance (DOF) data." 2010 population was determined using 2010 census info in 2014 while developing a water use efficiency plan; this 2010 population estimate of 122,372 is based on a GIS analysis of 2010 census blocks data and the service area population-determining methodology outlined in the California State Water Resources Control Board's Instructions for Estimating Residential Gallons Per Capita per Day. Liberty Park Water's 2015 population estimate is determined using the 2010 population value and Liberty's 2010 UWMP reported growth rate based on estimates and projections from 2001-2035 onward determined from Department of Finance (DOF) 2010 reported data. According to Liberty's 2010 UWMP, the service area population is estimated to grow 19 percent by 2040. The process for determining Liberty's 2010 population is further explained in Appendix M.

| SB X7-7 Table 4: Annual Gross Water Use * | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Baseline Year** *Fm SB X7-7 Table 3* | **Volume Into Distribution System** *Fm SB X7-7 Table(s) 4-A* | **Deductions** | | | | | **Annual Gross Water Use** |
| | | | Exported Water | Change in Dist. System Storage (+/-) | Indirect Recycled Water *Fm SB X7-7 Table 4-B* | Water Delivered for Agricultural Use | Process Water *Fm SB X7-7 Table(s) 4-D* | |
| 10 to 15 Year Baseline - Gross Water Use | | | | | | | | |
| Year 1 | 1998 | 12950.98 | 0 | 0 | 0 | 0 | 0 | 12,951 |
| Year 2 | 1999 | 13541.26 | 0 | 0 | 0 | 0 | 0 | 13,541 |
| Year 3 | 2000 | 13092.14 | 0 | 0 | 0 | 0 | 0 | 13,092 |
| Year 4 | 2001 | 13151.26 | 0 | 0 | 0 | 0 | 0 | 13,151 |
| Year 5 | 2002 | 14031.08 | 0 | 0 | 0 | 0 | 0 | 14,031 |
| Year 6 | 2003 | 13308.27 | 0 | 0 | 0 | 0 | 0 | 13,308 |
| Year 7 | 2004 | 14005.42 | 0 | 0 | 0 | 0 | 0 | 14,005 |
| Year 8 | 2005 | 13389.15 | 0 | 0 | 0 | 0 | 0 | 13,389 |
| Year 9 | 2006 | 13447.07 | 0 | 0 | 0 | 0 | 0 | 13,447 |
| Year 10 | 2007 | 12810.69 | 0 | 0 | 0 | 0 | 0 | 12,811 |
| **10 - 15 year baseline average gross water use** | | | | | | | | **13,373** |
| 5 Year Baseline - Gross Water Use | | | | | | | | |
| Year 1 | 2003 | 13,308 | 0 | 0 | 0 | 0 | 0 | 13,308 |
| Year 2 | 2004 | 14,005 | 0 | 0 | 0 | 0 | 0 | 14,005 |
| Year 3 | 2005 | 13,389 | 0 | 0 | 0 | 0 | 0 | 13,389 |
| Year 4 | 2006 | 13,447 | 0 | 0 | 0 | 0 | 0 | 13,447 |
| Year 5 | 2007 | 12,811 | 0 | 0 | 0 | 0 | 0 | 12,811 |
| **5 year baseline average gross water use** | | | | | | | | **13,392** |
| 2015 Compliance Year - Gross Water Use | | | | | | | | |
| **2015** | | 9,579 | 0 | 0 | 0 | 0 | 0 | 9,579 |
| * NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3 | | | | | | | | |

**SB X7-7 Table 4-A: Volume Entering the Distribution System(s)**
Complete one table for each source.

| **Name of Source** | Groundwater | | |
|---|---|---|---|
| **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 | 1998 | 1,762 | 0 | 1,762 |
| Year 2 | 1999 | 1,849 | 0 | 1,849 |
| Year 3 | 2000 | 1,797 | 0 | 1,797 |
| Year 4 | 2001 | 1,663 | 0 | 1,663 |
| Year 5 | 2002 | 1,552 | 0 | 1,552 |
| Year 6 | 2003 | 1,464 | 0 | 1,464 |
| Year 7 | 2004 | 1,598 | 0 | 1,598 |
| Year 8 | 2005 | 1,509 | 0 | 1,509 |
| Year 9 | 2006 | 1,482 | 0 | 1,482 |
| Year 10 | 2007 | 1,479 | 0 | 1,479 |
| 5 Year Baseline - Water into Distribution System | | | |
| Year 1 | 2003 | 1,464 | 0 | 1,464 |
| Year 2 | 2004 | 1,598 | 0 | 1,598 |
| Year 3 | 2005 | 1,509 | 0 | 1,509 |
| Year 4 | 2006 | 1,482 | 0 | 1,482 |
| Year 5 | 2007 | 1,479 | 0 | 1,479 |
| 2015 Compliance Year - Water into Distribution System | | | |
| **2015** | | 3,520 | 0 | 3,520 |

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

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

Complete one table for each source.

| **Name of Source** | Imported Water |
|---|---|
| **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 | 1998 | 11,189 | 0 | 11,189 |
| Year 2 | 1999 | 11,692 | 0 | 11,692 |
| Year 3 | 2000 | 11,295 | 0 | 11,295 |
| Year 4 | 2001 | 11,488 | 0 | 11,488 |
| Year 5 | 2002 | 12,480 | 0 | 12,480 |
| Year 6 | 2003 | 11,844 | 0 | 11,844 |
| Year 7 | 2004 | 12,408 | 0 | 12,408 |
| Year 8 | 2005 | 11,880 | 0 | 11,880 |
| Year 9 | 2006 | 11,965 | 0 | 11,965 |
| Year 10 | 2007 | 11,332 | 0 | 11,332 |
| 5 Year Baseline - Water into Distribution System | | | | |
| Year 1 | 2003 | 11,844 | 0 | 11,844 |
| Year 2 | 2004 | 12,408 | 0 | 12,408 |
| Year 3 | 2005 | 11,880 | 0 | 11,880 |
| Year 4 | 2006 | 11,965 | 0 | 11,965 |
| Year 5 | 2007 | 11,332 | 0 | 11,332 |
| 2015 Compliance Year - Water into Distribution System | | | | |
| **2015** | | 6,059 | 0 | 6,059 |

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

NOTES: Purchased imported water supplies are provided by CBMWD, a MWD member agency. MWD acquires water from the Colorado River and the SWP and distributes treated and untreated water directly to its 26 member agencies.

| 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 | 1998 | 115,993 | 12,951 | 100 |
| Year 2 | 1999 | 117,583 | 13,541 | 103 |
| Year 3 | 2000 | 119,172 | 13,092 | 98 |
| Year 4 | 2001 | 119,492 | 13,151 | 98 |
| Year 5 | 2002 | 119,812 | 14,031 | 105 |
| Year 6 | 2003 | 120,132 | 13,308 | 99 |
| Year 7 | 2004 | 120,452 | 14,005 | 104 |
| Year 8 | 2005 | 120,772 | 13,389 | 99 |
| Year 9 | 2006 | 121,092 | 13,447 | 99 |
| Year 10 | 2007 | 121,412 | 12,811 | 94 |
| **10-15 Year Average Baseline GPCD** | | | | **99.8** |
| 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 | 120,132 | 13,308 | 99 |
| Year 2 | 2004 | 120,452 | 14,005 | 104 |
| Year 3 | 2005 | 120,772 | 13,389 | 99 |
| Year 4 | 2006 | 121,092 | 13,447 | 99 |
| Year 5 | 2007 | 121,412 | 12,811 | 94 |
| **5 Year Average Baseline GPCD** | | | | **99.0** |
| 2015 Compliance Year GPCD | | | | |
| **2015** | | 126,637 | 9,579 | 68 |

| **SB X7-7 Table 6**: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5* | |
|---|---|
| 10-15 Year Baseline GPCD | 100 |
| 5 Year Baseline GPCD | 99 |
| 2015 Compliance Year GPCD | 68 |

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

| **SB X7-7 Table 7-A: Target Method 1**<br>20% Reduction | |
|---|---|
| 10-15 Year Baseline GPCD | 2020 Target GPCD |
| 100 | 80 |

| 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 |
| ☐ | | San Francisco Bay | 131 | 124 |
| ☐ | | San Joaquin River | 174 | 165 |
| ☐ | | Central Coast | 123 | 117 |
| ☐ | | Tulare Lake | 188 | 179 |
| ☐ | | South Lahontan | 170 | 162 |
| ☑ | 100% | South Coast | 149 | 142 |
| ☐ | | Colorado River | 211 | 200 |
| **Target** *(If more than one region is selected, this value is calculated.)* | | | | **142** |

| 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* | Calculated 2020 Target *Fm Appropriate Target Table* | Confirmed 2020 Target |
| 99 | N/A | 142 | 142 |
| ** Maximum 2020 Target is 95% of the 5 Year Baseline GPCD* | | | |

| 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 |
| 142 | 99.8 | 121 |

| SB X7-7 Table 9: 2015 Compliance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Actual 2015 GPCD | 2015 Interim Target GPCD | Optional Adjustments *(in GPCD)* | | | | | 2015 GPCD *(Adjusted if applicable)* | Did Supplier Achieve Targeted Reduction for 2015? |
| | | Extraordinary Events | Weather Normalization | Economic Adjustment | TOTAL Adjustments | Adjusted 2015 GPCD | | |
| 68 | 121 | *0* | *0* | *0* | 0 | 68 | 68 | YES |

# APPENDIX F – DEMAND & PASSIVE SAVINGS METHODOLOGY

Plumbing codes and appliance standards for toilets, urinals, faucets, clothes washers, and showerheads will continue to reduce indoor residential and non-residential water demands in the future. This reduction in demand is accounted for in Maddaus Water Management Decision Support System (DSS) Model. Background on the DSS Model as well as details on the method of determining plumbing code savings is presented in the following sections.


## DSS Model Overview

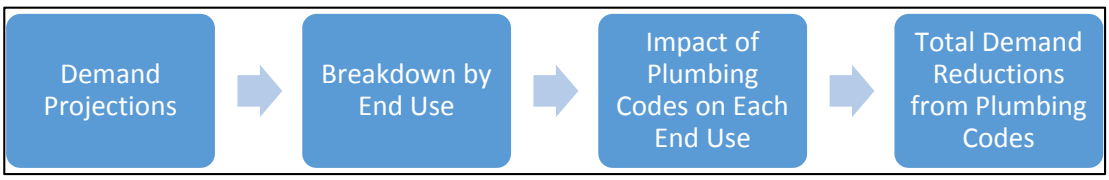
The DSS Model prepares long-range, detailed demand projections. The purpose of the extra detail is to enable a more accurate assessment of the impact of water efficiency programs on demand. A rigorous modeling approach is especially important if the project will be subject to regulatory or environmental review.

The DSS Model is an end-use model that breaks down total water production (water demand in the service area) to specific water end-uses. The model uses a bottom-up approach that allows for multiple criteria to be considered when estimating future demands, such as the effects of natural fixture replacement, plumbing codes, and conservation efforts. The DSS Model may also use a top-down approach with a utility prepared water demand forecast.

To forecast urban water demands using the DSS Model, customer demand data are obtained from the water agency being modeled. The demand data are reconciled with available demographic data to characterize the water usage for each customer category in terms of number of users per account and per capita water use. The data are further analyzed to approximate the split of indoor and outdoor water usage in each customer category. The indoor/outdoor water usage is further divided into typical end uses for each customer category. Published data on average per-capita indoor water use and average per-capita end use are combined with the number of water users to calibrate the volume of water allocated to specific end uses in each customer category. In other words, the DSS Model checks that social norms from end studies on water use behavior (e.g., for flushes per person per day) are not exceeded.

The DSS Model evaluates conservation measures using benefit cost analysis with the present value of the cost of water saved ($/Acre-Foot). Benefits are based on savings in water and wastewater facility operations and maintenance (O&M). The figure below illustrates the process for forecasting conservation water savings, including the impacts of fixture replacement due to plumbing codes and standards already in place.

The DSS Model has been used for practical applications of conservation planning in over 250 service areas representing 20 million people including extensive efforts nationally in California, Colorado, Hawaii, Idaho, Utah, Georgia, Florida, North Carolina, Tennessee, Oregon, Texas, Ohio, and internationally in Australia, New Zealand and Canada. The California Urban Water Conservation Council did a peer review and has endorsed the model since 2006. The model is offered to all of their members for use to estimate water demand, plumbing code and conservaiton program savings. For more information please see the CUWCC Website: https://www.cuwcc.org/Resources/Planning-Tools-and-Models?folderId=776&view=gridview&pageSize=10



## DSS Model Assumptions

The table below shows the key assumptions used in the DSS Model in determining projected demands with and without plumbing codes. The assumptions having the most dramatic effect on future demands are the natural replacement rate of fixtures, how residential or commercial future use is projected, and finally the percent of estimated real water losses.

**Table F-1. List of Key Assumptions**

| Parameter | Model Input Value, Assumptions, and Key References | | | | |
|---|---|---|---|---|---|
| **Model Start Year** | 2015 | | | | |
| **Water Demand Factor Year (Base Year)** | 2013 | | | | |
| **Non-Revenue Water in Start Year** | 7% | | | | |
| | This value is more conservative than the historical NRW and can be found in the green NRW section of the DSS Model. | | | | |
| **Population Projection Source** | SCAG Draft 2016 RTP/SCS Growth Forecast by jurisdiction | | | | |
| **Base year Water Use Profile** | | | | | |
| **Customer Categories** | **Start Year Accounts** | **Total Water Use Distribution** | **Demand Factors (gpd/acct)** | **Indoor Use %** | **Residential Indoor Water Use (GPCD)** |
| **Single Family** | 25,614 | 66.6% | 272 | 84% | 56 |
| **Multifamily** | 858 | 12.2% | 1,489 | 90% | 53 |
| **Commercial** | 1,154 | 13.0% | 1,176 | 92% | N/A |
| **Industrial** | 7 | 1.0% | 14,392 | 91% | N/A |
| **Institutional** | 231 | 6.6% | 2,988 | 56% | N/A |
| **Other** | 434 | 0.6% | 141 | 0% | N/A |
| **Total** | 28,298 | 100% | N/A | N/A | N/A |
| **Residential End Uses** | Key Reference: CA DWR Report "California Single Family Water Use Efficiency Study," (DeOreo, 2011 – Page 28, Figure 3: Comparison of household end-uses) and AWWA Research Foundation (AWWARF) Report "Residential End Uses of Water, Version 2 - 4309" (DeOreo, 2016).<br>Table 2-A. Water Consumption by Water-Using Plumbing Products and Appliances - 1980-2012. PERC Phase 1 Report. Plumbing Efficiency Research Coalition. 2013.<br>http://www.map-testing.com/content/info/menu/perc.html<br>Model Input Values are found in the "End Uses" section of the DSS Model on the "Breakdown" worksheet. | | | | |
| **Non-Residential End Uses, %** | Key Reference: AWWARF Report "Commercial and Institutional End Uses of Water" (Dziegielewski, 2000 – Appendix D: Details of Commercial and Industrial Assumptions, by End Use).<br>Santa Clara Valley Water District Water Use Efficiency Unit. "SCVWD CII Water Use and Baseline Study." February 2008.<br>Model Input Values are found in the "End Uses" section of the DSS Model on the "Breakdown" worksheet. | | | | |

| Parameter | Model Input Value, Assumptions, and Key References |
|---|---|
| **Efficiency Residential Fixture Current Installation Rates** | U.S. Census, Housing age by type of dwelling plus natural replacement plus rebate program (if any).<br>Key Reference: California Urban Water Conservation Council Potential Best Management Practice Report "High Efficiency Plumbing Fixtures – Toilets and Urinals" (Koeller, 2005 – Page 42, Table 8 and Table 9: Residential toilet installation rates in California).<br>Key Reference: Consortium for Efficient Energy (www.cee1.org).<br>Model Input Values are found in the "Codes and Standards" green section of the DSS Model by customer category fixtures. |
| **Water Savings for Fixtures, gal/capita/day** | Key Reference: AWWARF Report "Residential End Uses of Water, Version 2 - 4309" (DeOreo, 2016).<br>Key Reference: CA DWR Report "California Single Family Water Use Efficiency Study" (DeOreo, 2011 – Page 28, Figure 3: Comparison of household end-uses). WCWCD supplied data on costs and savings; professional judgment was made where no published data was available.<br>Key Reference: California Energy Commission, Staff Analysis of Toilets, Urinals and Faucets, Report # CEC-400-2014-007-SD, 2014.<br>Model Input Values are found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model. |
| **Non-Residential Fixture Efficiency Current Installation Rates** | Key Reference: 2010 U.S. Census, Housing age by type of dwelling plus natural replacement plus rebate program (if any). Assume commercial establishments built at same rate as housing, plus natural replacement.<br>California Energy Commission, Staff Analysis of Toilets, Urinals and Faucets, Report # CEC-400-2014-007-SD, 2014.<br>Santa Clara Valley Water District Water Use Efficiency Unit. "SCVWD CII Water Use and Baseline Study." February 2008.<br>Model Input Values are found in the "Codes and Standards" green section of the DSS Model by customer category fixtures. |
| **Residential Frequency of Use Data, Toilets, Showers, Faucets, Washers, Uses/user/day** | Key Reference: AWWARF Report "Residential End Uses of Water, Version 2 - 4309" (DeOreo, 2016). Summary values of the report can be found in the following presentation:<br>http://watersmartinnovations.com/documents/pdf/2014/sessions/2014-T-1458.pdf<br>Key Reference: California Energy Commission, Staff Analysis of Toilets, Urinals and Faucets, Report # CEC-400-2014-007-SD, 2014.<br>Key Reference: Alliance for Water Efficiency, The Status of Legislation, Regulation, Codes & Standards on Indoor Plumbing Water Efficiency, January 2016.<br>Model Input Values are found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model and confirmed in each "Service Area Calibration End Use" worksheet by customer category. |

| Parameter | Model Input Value, Assumptions, and Key References |
|---|---|
| **Non-Residential Frequency of Use Data, Toilets, Urinals, and Faucets, Uses/user/day** | Key References: Estimated based on AWWARF Report "Commercial and Institutional End Uses of Water" (Dziegielewski, 2000 – Appendix D: Details of Commercial and Industrial Assumptions, by End Use).<br>Key Reference: California Energy Commission, Staff Analysis of Toilets, Urinals and Faucets, Report # CEC-400-2014-007-SD, 2014.<br>Based on three studies of office buildings in which the numbers varied from 2.0 to 3.45 toilet flushes per employee per day: Darell Rogers cited in Schultz Communications (1999); Konen Plumbing Engineer July/August 1986); and Eva Opitz cited in PMCL (1996). Fixture uses over a 5-day work week are prorated to 7 days.<br>Non-residential 0.5gpm faucet standards per Table 2-A. Water Consumption by Water-Using Plumbing Products and Appliances - 1980-2012. PERC Phase 1 Report. Plumbing Efficiency Research Coalition. 2013. http://www.map-testing.com/content/info/menu/perc.html<br>Model Input Values are found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model, and confirmed in each "Service Area Calibration End Use" worksheet by customer category. |
| **Natural Replacement Rate of Fixtures (% per year)** | Residential Toilets 2% (1.28 gpf and lower), 3% (1.6 gpf toilets), 4% (3.5 gpf and higher toilets) |
| | Non-Residential Toilets 2% (1.6 gpf and lower), 3% (3.5 gpf and higher toilets) |
| | Residential Showers 4% (corresponds to 25-year life of a new fixture) |
| | Residential Clothes Washers 10% (based on 10-year washer life).<br>Key References: "Residential End Uses of Water" (DeOreo, 2016) and "Bern Clothes Washer Study, Final Report" (Oak Ridge National Laboratory, 1998). |
| | Residential Faucets 10% and Non-Residential Faucets 6.7% (every 15 years). CEC uses an average life of 10 years for faucet accessories (aerators). A similar assumption can be made for public lavatories, though no hard data exists and since CII fixtures are typically replaced less frequently than residential, 15 years is assumed. CEC, Analysis of Standards Proposal for Residential Faucets and Faucet Accessories, a report prepared under CEC's Codes and Standards Enhancement Initiative, Docket #12-AAER-2C, August 6, 2013. |
| | Model Input Value is found in the "Codes and Standards" green section on the "Fixtures" worksheet of the DSS Model. |
| **Residential Future Water Use** | Increases Based on Population Growth and Demographic Forecast |
| **Non-Residential Future Water Use** | Increases Based on Employment Growth and Demographic Forecast |

The DSS Model forecasts service area water fixture use. In the codes and standards part of the DSS Model, specific fixture end use type (point of use fixture or appliance), average water use, and lifetime are compiled. Additionally, state and national plumbing codes and appliance standards for toilets, urinals, showers, and clothes washers are modeled by customer category. These fixtures and plumbing codes can be added to, edited, or deleted by the user. This yields two demand forecasts: 1) with plumbing codes, and 2) without plumbing codes.

Plumbing code measures are independent of any conservation program; they are based on customers following applicable current local, state and federal laws, building codes, and ordinances.

## Plumbing Codes and Legislation

The DSS Model incorporates the following items as a "code" meaning that the savings are assumed to occur and are therefore "passive" savings.

- National Plumbing Code
- CALGreen
- AB 715
- AB 407
- CA Code of Regulations Title 20 Sections 1601-1608 2015 Appliance Efficiency Rulemaking New Standards

### National Plumbing Code

The Federal Energy Policy Act of 1992, as amended in 2005, mandates that only fixtures meeting the following standards can be installed in new buildings:

- Toilet – 1.6 gal/flush maximum
- Urinals – 1.0 gal/flush maximum
- Showerhead – 2.5 gal/min at 80 psi
- Residential faucets – 2.2 gal/min at 60 psi
- Public restroom faucets – 0.5 gal/min at 60 psi
- Dishwashing pre-rinse spray valves – 1.6 gal/min at 60 psi

Replacement of fixtures in existing buildings is also governed by the Federal Energy Policy Act, which mandates that only devices with the specified level of efficiency (as shown above) can be sold as of 2006. The net result of the plumbing code is that new buildings will have more efficient fixtures and old inefficient fixtures will slowly be replaced with new, more efficient models. The national plumbing code is an important piece of legislation and must be carefully taken into consideration when analyzing the overall water efficiency of a service area.

In addition to the plumbing code, the U.S. Department of Energy regulates appliances, such as residential clothes washers, further reducing indoor water demands. Regulations to make these appliances more energy efficient have driven manufactures to dramatically reduce the amount of water these machines use. Generally, front loading washing machines use 30-50% less water than conventional models (which are still available). In a typical analysis, the DSS Model forecasts a gradual transition to high efficiency clothes washers (using 12 gallons or less) so that by the year 2025 that will be the only type of machines available for purchase. In addition to the industry becoming more efficient, rebate programs for washers have been successful in encouraging customers to buy more water efficient models. Given that machines last about 10 years, eventually all machines on the market will be the more water efficient models. Energy Star washing machines have a water factor (WF) of 6.0 or less - the equivalent of using 3.1 cubic feet (or 23.2 gallons) of water per load. The maximum water factor for residential clothes washers under current federal standards is 9.5. The water factor equals the number of gallons used per cycle per cubic foot of capacity. Prior to year 2000, the water factor for a typical new residential clothes washer was about 12. In March 2015, the federal standard reduced the maximum water factor for top- and front-loading machines to 8.4 and 4.7, respectively. In 2018, the maximum water factor for top-loading machines will be further reduced to 6.5. For commercial washers, the maximum water factors were reduced in 2010 to 8.5 and 5.5 for top- and front-loading machines, respectively. Beginning in 2015, the maximum water factor for Energy Star certified washers was 3.7 for front-loading and 4.3 for top-loading machines. In 2011, the Environmental Protection Agency (EPA) estimated that Energy Star washers comprised more that 60% of the residential market and 30% of the commercial market (Energy Star 2011). A new Energy Star compliant washer uses about two-thirds less water per cycle than washers manufactured in the 1990s.

## State Building Code – 2010 CALGreen

The 2010 CALGreen requirements effect all new development in the State of California after January 1, 2011. The new development requirements under CALGreen are listed in the following figure. The DSS Model includes the CALGreen requirements that effect all new development in the State of California after January 1, 2011. The DSS Model modeled water savings from the CALGreen building code by adding Multi-family and Commercial customer categories as appropriate to applicable conservation measures.

**Table F-2. 2010 CALGreen Building Code Summary Table**

| 2010 CALGreen Building Code | | | | | | |
|---|---|---|---|---|---|---|
| **Building Class** | **Component** | **Effective Date*** | **Indoor Fixtures Included** | **Indoor Requirement** | **Landscaping & Irrigation Requirements** | **Are the Requirements Mandatory?** |
| **Residential** | Indoor | 1/1/2011 | Toilets, Showers, Lavatory & Kitchen Faucets, Urinals | Achieve 20% savings overall below baseline | | Yes |
| | Outdoor | 1/1/2011 | | | Provide weather adjusting controllers | Yes |
| **Non Residential** | Indoor | 1/1/2011 | Submeter leased spaces | Only if building >50,000 sq. ft. & if leased space use >100 gallons per day | | Yes |
| | | | Toilets, Showers, Lavatory & Kitchen Faucets, Wash Fountains, Metering Faucets, Urinals | Achieve 20% savings overall below baseline | | Yes |
| | Outdoor | 1/1/2011 | | | Provide water budget | > 1,000 sq. ft. landscaped area |
| | | | | | Separate meter | As per Local or DWR ordinance |
| | | | | | Prescriptive landscaping requirements | > 1,000 sq. ft. landscaped area |
| | | | | | Weather adjusting irrigation controller | Yes |

* Effective date is 7/1/2011 for toilets.

## State Plumbing Code – AB 715

Plumbing codes for toilets, urinals, showerheads, and faucets were initially adopted by California in 1991, mandating the sale and use of ultra-low flush 1.6 gallon per flush (gpf) toilets (ULFTs), 1 gpf urinals, and low-flow showerheads and faucets. California Code of Regulations Title 20 California State Law (AB 715) required High Efficiency Toilets and High Efficiency Urinals be exclusively sold in the state by 2014. Effective January 1, 2014, Assembly Bill (AB) 715 (enacted in

2007) required that toilets and urinals sold and installed in California cannot have flush ratings exceeding 1.28 and 0.5 gallons per flush, respectively.

### California State Law – SB 407

SB 407 addresses plumbing fixture retrofits on resale or remodel. The DSS Model carefully takes into account the overlap with SB 407, the plumbing code (natural replacement), CALGreen, AB 715 and rebate programs (such as toilet rebates). SB 407 (enacted in 2009) requires that properties built prior to 1994 be fully retrofitted with water conserving fixtures by the year 2017 for single-family residential houses and 2019 for multifamily and commercial properties. SB 407 program length is variable and continues until all the older high flush toilets have been replaced the service area. The number of accounts with high flow fixtures is tracked to make sure that the situation of replacing more high flow fixtures than actually exist does not occur. SB 837 (enacted in 2011) requires that sellers of real property disclose on their Real Estate Transfer Disclosure Statement whether their property complies with these requirements. Additionally, SB 407 conditions issuance of building permits for major improvements and renovations upon retrofit of non-compliant plumbing fixtures. Each of these laws is intended to accelerate the replacement of older, low efficiency plumbing fixtures, and ensure that only high-efficiency fixtures are installed in new residential and commercial buildings.

### 2015 CALGreen and 2015 CA Code of Regulations Title 20 Appliance Efficiency Regulations

Fixture characteristics in the DSS Model are tracked in new accounts, which are subject to the requirements of the 2015 California Green Building Code and 2015 California Code of Regulations Title 20 Appliance Efficiency Regulations adopted by the California Energy Commission (CEC) on September 1, 2015. The CEC 2015 appliance efficiency standards applies to the following new appliances, if they are sold in California: showerheads, lavatory faucets, kitchen faucets, metering faucets, replacement aerators, wash fountains, tub spout diverters, public lavatory faucets, commercial pre-rinse spray valves, urinals, and toilets. The DSS Model accounts for plumbing code savings due to these standards effects on showerheads, faucets and aerators, urinals, and toilets.

- Showerheads: July 2016: 2.0 gpm; July 2018: 1.8 gpm
- Wall Mounted Urinals: 2016: 0.125 (pint) gpf
- Lavatory Faucets and Aerator: July 2016: 1.2 gpm at 60 psi
- Kitchen Faucets and Aerator: July 2016: 1.8 gpm with optional temporary flow of 2.2 gpm at 60 psi
- Public Lavatory Faucets: Julyy 2016: 0.5 gpm at 60 psi

In summary, the controlling law for **toilets** is Assembly Bill (AB) 715. This bill requires high efficiency toilets (1.28 gpf) to be exclusively sold in California beginning January 1, 2014. The controlling law for wall-mounted urinals is the 2015 CEC efficiency regulations requiring that ultra-high efficiency pint **urinals** (0.125 gpf) be exclusively sold in California beginning January 1, 2016. This is an efficiency progression for urinals from AB 715's requirement of high-efficiency (0.5 gpf) urinals starting in 2014.

Standards for **residential clothes washers** fall under the regulations of the U.S. Department of Energy. In March 2015, the federal standard reduced the maximum water factor for non-Energy Star certified top- and front-loading washing machines to 8.4 and 4.7, respectively. In 2018, the maximum water factor for standard top-loading machines will be further reduced to 6.5.

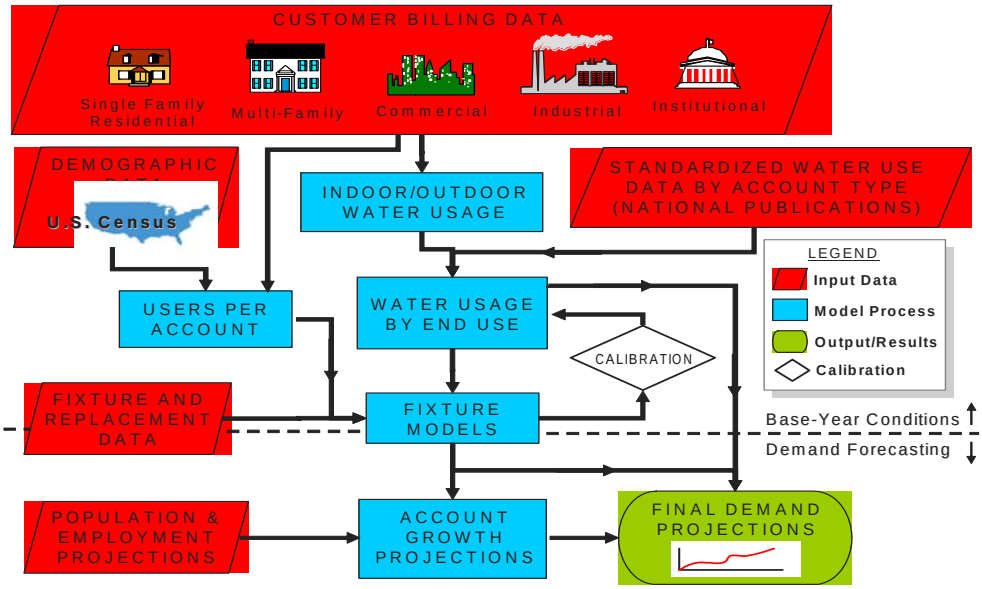
**Showerhead** flow rates are newly regulated under the 2015 California Code of Regulations Title 20 Appliance Efficiency Regulations adopted by the CEC, which requires the exclusive sale in California of 2.0 gpm showerheads at 80 psi as of July 1, 2016 and 1.8 gpm showerheads at 80 psi as of July 1, 2018. The WaterSense specification applies to showerheads that have a maximum flow rate of 2.0 gallons per minute (gpm) or less. This represents a 20% reduction in showerhead flow rate over the current federal standard of 2.5 gpm, as specified by the Energy Policy Act of 1992.

**Faucet** flow rates have likewise been recently regulated by the 2015 CEC Title 20 regulations. This standard requires that the residential faucets and aerators manufactured on or after July 1, 2016 be exclusively sold in California at 1.2 gpm at 60 psi; and public lavatory and kitchen faucet/aerators sold or offered for sale on or after July 1, 2016 be 0.5 gpm at 60 psi, and 1.8 gpm at 60 psi (with optional temporary flow of 2.2 gpm), respectively. Previously, all faucets had been regulated by the 2010 California Green Building Code at 2.2 gpm at 60 psi.

Plumbing code related water savings are considered reliable, long-term savings, and can be counted on over time to help reduce the City's overall system water demand. The demand projections including plumbing code savings further assumes no active involvement by the water utility, and that the costs of purchasing and installing replacement equipment (and new equipment in new construction) are borne solely by the customers, occurring at no direct utility expense. The inverse of the Fixture Life is the natural replacement rate, expressed as a percent (i.e., 10 years is a rate of 10% per year).

The following figure conceptually describes how plumbing codes are incorporated into the flow of information in the DSS Model.

**Figure F-1. DSS Model Overview Used to Make Potable Water Demand Projections**




## DSS Model Fixture Replacement

The DSS Model is capable of modeling multiple types of fixtures, including fixtures with slightly different design standards. For example, currently toilets can be purchased that flush at a rate of 0.8 gallons per flush (gpf), 1.0 gallon per flush or 1.28 gallons per flush. The 1.6 gpf and higher gallons per flush toilets still exist but can no longer be purchased in California. Therefore, they cannot be used for replacement or new installation of a toilet. So, the DSS Model utilizes a fixture replacement table to decide what type of fixture should be installed when a fixture is replaced or a new fixture is installed. The replacement of the fixtures is listed as a percentage, as shown in the following figure. A value of 100% would indicate that all the toilets sold would be of one particular flush volume. A value of 75% means that three out of every four toilets installed would be of that particular flush volume type. The DSS Model contains a pair of replacement tables for each fixture type and customer category combination (i.e., Residential Single Family toilets, Residential Multifamily toilets, Commercial toilets, Residential clothes washing machines, Commercial washing machines, etc.).

In the following example, the DSS Model includes the effects of the Federal Policy Act and AB 715 on each toilet fixture type. This DSS Model feature determines the "saturation" of 1.6 gpf toilets as the Federal Policy Act was in effect from 1992-2014 for 1.6 gpf toilet replacements.

**Figure F-2. Example Toilet Replacement Percentages by Type of Toilet**

| Replacement Appliance Market Shares | | | | | |
|---|---|---|---|---|---|
| Year | <1.0 gpf Toilet Residential | 1.28 gpf HET Residential | 1.6 gpf ULFT Residential | High Use Toilet Residential | Total |
| 2015 | 0% | 100% | 0% | 0% | 100% |
| 2020 | 10% | 90% | 0% | 0% | 100% |
| 2025 | 25% | 75% | 0% | 0% | 100% |
| 2030 | 35% | 65% | 0% | 0% | 100% |
| 2040 | 50% | 50% | 0% | 0% | 100% |
| | | | | | |
| **New Appliance Market Shares** | | | | | |
| Year | <1.0 gpf Toilet Residential | 1.28 gpf HET Residential | 1.6 gpf ULFT Residential | High Use Toilet Residential | Total |
| 2015 | 0% | 100% | 0% | 0% | 100% |
| 2020 | 10% | 90% | 0% | 0% | 100% |
| 2025 | 25% | 75% | 0% | 0% | 100% |
| 2030 | 35% | 65% | 0% | 0% | 100% |
| 2040 | 50% | 50% | 0% | 0% | 100% |

PARK WATER COMPANY
9750 WASHBURN ROAD
P. O. BOX 7002
DOWNEY, CALIFORNIA 90241-7002

ORIGINAL Cal. P.U.C. Sheet No. 1233-W

Canceling _____ Cal. P.U.C. Sheet No. _____

PARK WATER COMPANY SCHEDULE 14.1 Page 1 of 6 (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES

**A. APPLICABILITY**

This schedule applies to all water customers served under Tariff Schedules PR-1-R and PR-1-NR authorized by the California Public Utilities Commission (Commission) for the Park Water Company (Park) service areas. This schedule is only effective in times of mandatory conservation, as required by Rule No. 14.1, and only for the period noted in the Special Conditions section below. The drought emergency surcharges listed in this schedule are in addition to the regular water use charges under the current Schedules referenced above as authorized by the Commission.

To the extent that a stage of the water shortage contingency plan in Schedule No. 14.1 has been activated, and a provision of Rule No. 14.1 is inconsistent with the activated stage in Schedule No. 14.1, the provisions of Schedule No. 14.1 apply.

**B. TERRITORY**

This schedule is applicable to customers in portions of Artesia, Bellflower, Compton, Lynwood, Norwalk, and Santa Fe Springs and in Los Angeles County.

**C. MANDATORY WATER USE REDUCTIONS, MANDATORY RESTRICTIONS, AND DROUGHT EMERGENCY SURCHARGES**

In response to the Governor's Executive Order (B-29-15) the State Water Resources Control Board (Water Board) imposed restrictions to achieve a statewide 25% reduction in potable urban water usage through February 28, 2016. These restrictions are designed to strongly encourage those customers with high per capita usage to achieve proportionally greater reduction than those with low use. Water users will need to reduce usage as compared to the amount they used in 2013. The mandated water use reduction for Park's service area is 8%. Park customers reduced usage in 2014, but will need to achieve additional water conservation in 2015-16 to achieve the statewide goal.

The Water Board has established the following mandatory restrictions for all water users.
No customer shall use utility-supplied water for non-essential or unauthorized uses as defined below:

a. The application of potable water to outdoor landscapes in a manner that causes runoff such that water flow onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
b. The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

(continued) (N)

Advice No. 260-W LEIGH K. JORDAN Name Date Filed _____
Effective _____
Dec. No. _____ EXECUTIVE VICE PRESIDENT Title Resolution No. _____

PARK WATER COMPANY SCHEDULE 14.1 Page 2 of 6 (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

**C. MANDATORY WATER USE REDUCTIONS, MANDATORY RESTRICTIONS, AND DROUGHT EMERGENCY SURCHARGES** (continued)

c. The use of potable water for washing buildings, structures, sidewalks, walkways, patios, tennis courts, or other hard-surfaced, non-porous areas.
d. The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.
e. The use of potable water for watering outside plants, lawn, landscape, and turf area during certain hours prohibited by applicable laws, during and up to 48 hours after measurable rainfall (0.1" or more).
f. Park will promptly notify customers when aware of leaks within the customer's control. The failure to promptly repair any leaks, breaks, or other malfunction resulting in water waste in a customer's domestic or outdoor water system after notification by Park, unless other, specific arrangements are made with and agreed to by Park.
g. The serving of water, other than upon request, in eating and drinking establishments, including but not limited to restaurants, hotels, cafes, bars, or other public places where food or drink are served and/or purchased.
h. Hotels/motels must provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option in each guestroom.
i. The use of potable water for irrigation of ornamental turf on public street medians.
j. The use of potable water for irrigation outside of newly constructed homes and buildings that is not delivered by drip or micro spray systems.
k. Commercial, industrial, and institutional properties, such as campuses, golf courses, and cemeteries, immediately implement water efficiency measures to reduce potable water use in an amount consistent with the mandated reduction.
l. Further reduction in or the complete prohibition of any other use of water declared non-essential, unauthorized, prohibited, or unlawful by an authorized government or regulatory agency or official.
m. Use of potable water for watering streets with trucks, or other vehicles, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.

The following stages will be implemented as needed to achieve the annual mandated reduction. The utility may implement Stage 2 and the associated Drought Emergency Surcharge without first implementing Stage 1 if warranted by the mandated reduction.

(continued) (N)

PARK WATER COMPANY SCHEDULE 14.1 Page 3 of 6 (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

**Stage 1**

1. Outdoor irrigation is restricted to no more than three days per week:

| Addresses Ending In: | Watering Days |
|---|---|
| Even Numbers (0, 2, 4, 6, 8) | Monday, Wednesday, and Saturday |
| Odd Numbers (1, 3, 5, 7, 9) | Tuesday, Thursday, and Sunday |

2. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than 10 minutes of watering per day per station, with no watering between 8:00 a.m. and 7:00 p.m. This provision does not apply to landscape irrigation zones that exclusively use drip-type irrigation systems that use less than 1.0 inch per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive action shut-off nozzle or device that causes it to cease dispensing water immediately when not in use, or for the express purpose of adjusting or repairing an irrigation system. However, no irrigation that results in runoff can occur regardless of method.
3. Apart from the above outdoor irrigation restrictions, when a city, county, or other local public agency in Park's service area adopts restrictions on the number of days or hours of the day that customers may irrigation that are different than those adopted by Park, Park may adopt the city, county, or other local public agency's restrictions.
4. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within five (5) business days of written notification by Park, unless other arrangements are made with Park.
5. Failure to comply with these restrictions may result in the installation of a flow restrictor device along with associated fees for installation and removal.
6. Failure to comply with these restrictions may result in the installation of a real time measurement device on the customer's service line to provide the customer and Park with access to information from the device. The cost of the device, including installation, shall be billed to the customer, and nonpayment may result in discontinuance of service.
7. If conditions warrant, Park will change the number of watering days and the specific day of watering after first notifying its customers in accordance with Rule No. 14.1.
8. If conditions warrant, Park will change the number of days allowed for a customer to fix leaks, breaks or other malfunctions after first notifying its customers in accordance with Rule No. 14.1.

(continued) (N)

PARK WATER COMPANY SCHEDULE 14.1 Page 4 of 6 (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

**Stage 2**

Will be implemented if the Stage 1 restrictions are deemed insufficient to achieve reductions due to water supply shortages or to achieve identified water usage goals established by an authorized government agency or official.

In addition to the restrictions identified in Stage 1, the following restrictions, allocations, and drought emergency surcharges are in effect:

1. Outdoor irrigation is restricted to no more than two (2) days per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than ten (10) minutes of watering per day per station.
2. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within three (3) business days of written notification by Park, unless other arrangements are made with Park.
3. The use of potable water to refill residential swimming pools or outdoor spas more than one foot or initial filling with potable water except when existing pools are drained to repair leaks.
4. All customers will have their baseline established by using the system wide average use for 2013.
5. The customer's allocation will be based on the 2013 baseline less 8%.
6. Residential customer's allocation will be set at nine (9) Ccf per month for the months of November, December, January, February, March, April, and May. For the months of June, July, August, September, and October the allocation will be set at twelve (12) Ccf per month.
7. All usage in excess of residential customer's allocation will be charged at the regular Schedule No. PR-1-R rate plus a drought emergency surcharge rate that is calculated from the Tier 1 quantity rate multiplied by a factor of 0.5.
8. All usage for non-residential customers served under Tariff Schedule No. PR-1-NR will be charged at the regular Schedule No. PR-1-NR quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.10.
9. If feasible, customer's allocation may be based on a customer's consumption during a historical base period and will include a percentage reduction designed to meet necessary water use reductions. In addition to the normal rate paid for the unit of water, a drought surcharge will be charged to a customer for each unit of water used over the established allocation for the billing period.

(continued) (N)

PARK WATER COMPANY SCHEDULE 14.1 Page 5 of 6 (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

**Stage 3**

Will be implemented if the Stage 2 allocations and drought emergency surcharges are deemed insufficient to achieve reductions due to water supply shortages or to achieve identified water usage goals established by an authorized government agency or official.

In addition to the restrictions identified in Stage 2, the following restrictions and drought emergency surcharges are in effect:

1. Outdoor irrigation is restricted to no more than two (2) days per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than five (5) minutes of watering per day per station.
2. All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within two (2) business days of written notification by Park, unless other arrangements are made with Park.
3. All usage in excess of residential customer's allocation will be charged at the regular Schedule No. PR-1-R rate plus a drought emergency surcharge rate that is calculated as the Tier 1 quantity rate multiplied by a factor of 1.0.
4. All usage for non-residential customers served under Tariff Schedule No. PR-1-NR will be charged at the regular Schedule No. PR-1-NR quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.20.

**Stage 4**

Will be implemented if the Stage 3 allocations and drought emergency surcharges are deemed insufficient to achieve reductions due to water supply shortages or to achieve identified water usage goals established by an authorized government agency or official.

In addition to the restrictions identified in Stage 3, the following restrictions and drought emergency surcharges are in effect:

1. Outdoor irrigation is restricted to no more than one (1) day per week. Watering or outdoor irrigation of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than five (5) minutes of watering per day per station.
2. All usage in excess of residential customer's allocation will be charged at the regular Schedule No. PR-1-R rate plus a drought emergency surcharge rate that is calculated as the Tier 1 quantity rate multiplied by a factor of 1.5.
3. All usage for non-residential customers served under Tariff Schedule No. PR-1-NR will be charged at the regular Schedule No. PR-1-NR quantity rate plus a drought emergency surcharge rate that is calculated as the quantity rate multiplied by a factor of 0.30.

(continued) (N)

PARK WATER COMPANY SCHEDULE 14.1 Page 6 of 6 (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS, RESTRICTIONS AND DROUGHT SURCHARGES
(continued)

**D. FLOW RESTRICTOR REMOVAL CHARGE**

The charge for installation and removal of a flow-restricting device shall be:
$73 during normal business hours, and $370 during outside normal business hours.

The flow restrictor will remain installed for a minimum of 7 days.

**E. EXEMPTION AND APPEALS PROCESS**

Any customer who seeks a variance from any of the provisions of this Water Shortage Contingency plan shall notify the utility in writing using the appeals form, explaining in detail the reason for such a variation. The utility shall respond to each such request in writing.

The appeals form is available online at Park website, www.parkwater.com, the Park office located at 9750 Washburn Road, Downey, 90241 or by calling 1-800-727-5987.

If the customer disagrees with such disposition, the customer shall have the right to file a complaint with the Commission.

Except as set forth in this section, no person shall have any right or claim in law or in equity against Park, or any of its employees, or the Commission because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of this Schedule No. 14.1.

**F. SPECIAL CONDITIONS**

1. The active stage of Schedule No. 14.1 is to remain in effect until a Tier 2 advice letter is filed with the Commission to activate a different Stage or when Schedule No. 14.1 is deactivated.
2. Drought Emergency Surcharges must be separately identified on each bill.
3. All bills are subject to reimbursement fee set forth on Schedule No. UF.
4. All monies collected by Park through Drought Emergency Surcharges shall not be accounted for as income, but shall be accumulated in the Water Revenue Adjustment Mechanism (WRAM) Balancing Account and used to offset under-collected revenues.
5. All expenses incurred by Park to implement Rule No. 14.1, and Schedule No. 14.1, and requirements of the Water Board that have not been considered in a General Rate Case or other proceeding shall be accumulated by Park in a separate memorandum account, authorized in Resolution No. W-4976, for disposition as directed or authorized from time to time by the Commission. (N)

PARK WATER COMPANY
9750 WASHBURN ROAD
P. O. BOX 7002
DOWNEY, CALIFORNIA 90241-7002

REVISED Cal. P.U.C. Sheet No. 803-W

Canceling REVISED Cal. P.U.C. Sheet No. 672-W

RULE NO. 11

DISCONTINUANCE AND RESTORATION OF SERVICE

A. Customer's Request for Discontinuance of Service

1. A customer may have service discontinued by giving not less than two days' advance notice thereof to the utility. Charges for service may be required to be paid until the requested date of discontinuance or such later date as will provide not less than the required two days' advance notice.

2. When such notice is not given, the customer will be required to pay for service until two days after the utility has knowledge that the customer has vacated the premises or otherwise has discontinued water service.

B. Discontinuance of Service by Utility

1. For Nonpayment of Bills

a. Past-Due Bills. When bills are rendered monthly or bimonthly, they will be considered past due if not paid within 19 days from the date of mailing. The utility shall allow ever residential customer at least 19 days from the Date of mailing its fill for services, postage prepaid, to make payment of The bill. The utility may not discontinue residential service for nonpay-ment of a delinquent account unless the utility first gives notice of the de-linquency and impending discontinuance, by means of a notice mailed, Postage prepaid, to the customer to whom the service is provided if Different than to whom the service is billed, not earlier than 19 days From the date of mailing the utility's bill for services. T/he 10-day dis-Continuance of service notice shall not commence until five days after Mailing of the notice. (T) (T)

b. When a bill for water service has become past due and a 10-day discontinuance of residential service notice or a 7-day discontinuance of nonresidential service notice for nonpayment has been issued, service may be discontinued if bill is not paid within the time required by such notice. The customer's service, however, will, not be discontinued for nonpayment until the amount of any deposit made to establish credit for that service has been fully absorbed.

(To be inserted by utility) Issued By (To be inserted by Cal. P.U.C.)

Advice No. 160-W — Leigh K. Jordan (Name) — Date Filed Aug 5, 1993

Dec. No. — Vice President (Title) — Effective Sep 14, 1993

Resolution No. W 3770

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. c. Any customer, residential as well as non-residential, who has initiated a billing complaint or requested an investigation within 5 days of receiving a disputed bull or who has, before discontinuance of service made a request for extension of the payment period of a bill asserted to be beyond the means of the customer to pay in full within the normal period for payment, shall not have residential water service discontinued for nonpayment during the pendency of an investigation by the utility of such customer complaint or request and shall be given an opportunity for review of the complaint, investigation, or request by a review manager of the utility. The review shall include consideration of whether a residential customer shall be permitted to make installment payments on any unpaid balance of the delinquent account over a reasonable period of time, not to exceed 12 months. Such service shall not be discontinued for nonpayment for any customer complying with an installment payment agreement entered into with the utility, provided the customer also keeps current his account for waster service as charges accrue in each subsequent billing period. If a residential customer fails to comply with an installment payment agreement, the utility will give a 10-day discontinuance of service notice before discontinuing such service, but such notice shall not entitle the customer to further investigation by the utility.

d. Any customer whose complaint or request for an investigation pursuant to subdivision (c) has resulted in an adverse determination by the utility may appeal the determination to the Commission. Any subsequent appeal of the dispute or complaint to the Commission shall be in accordance with the Commission adopted Rules of Practice and Procedure.

e. Service to a residential water customer will not be discontinued for nonpayment when the customer has pre4viously established to the satisfaction of the utility that:

(1) The customer is elderly (age 62 or over) or handicapped,* or upon certification of a licensed physician or surgeon that to discontinue water will be life threatening to the customer; and

?? Proof of age must be supported by certificate of birth, driver's license, passport or other reliable document. Proof of handicap must be by certification from a licensed physician, surgeon, public health nurse or social worker.

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. e. (2) The customer is temporarily unable to pay for such service in accordance with the provisions of the utility's tariffs; and

(3) The customer is willing to arrange installment payments satisfactory to the utility, over a period not to exceed 12 months, including arrangements for prompt payment of subsequent bills.

However, service may be discontinued to any customer who does not comply with an installment payment agreement or keep current his account for water service as charges accrue in each subsequent billing period.

f. A customer's residential service may be discontinued for nonpayment of a bill for residential service previously rendered him at any location service by the utility.

g. Service will not be discontinued by reason of delinquency in payment for service on any Saturday, Sunday, legal holiday, or at any time during which the business offices of the utility are not open to the public.

h. Where water service is provided to residential users in a mulit-unit residential structure, mobile home park, or permanent residential structures in a labor camp, where the owner, manager, or operator is listed by the utility as the customer or record, the utility will make every good faith effort to inform the users, when the account is in arrears, that service will be discontinued. Notice will be as prescribed in subdivision (a) above, and in Rules Nos. 5 and 8. (T)

(1) Where said users are individually metered. (N)

The utility is not required to make service available to these users unless each user agrees to the terms and conditions of service and meets the requirement of the law and the utility's rules and tariffs. However, if one or more users are willing and able to assume responsibility for subsequent charges by these users to the account to the satisfaction of the utility, and if there is a practical physical means, legally available to the utility of (N)

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. h. selectively providing services to these users who have met the requirements of the utility's rules and tariffs., the utility will make service available to these users. For these selected users establishment of credit will be as prescribed in Rule No. 6, except that where prior service for a period of time is a condition for establishing credit with the utility, proof that is acceptable to the utility of residence and prompt payment of rent or other credit obligation during that period of time is a satisfactory equivalent. (N)

(2) Where said users are mater metered.

The utility is not required to make service available to these users unless each user agrees to the terms and conditions of service, and meets the requirements of the law and the utility's rules and tariffs and the following.

The same Rule 11 item B.1.h. (1) above which applies to individually metered users also applies to master metered users, except a representative may act on the behalf of a master metered user, and the utility will not discontinue service in any of the following situations:

(a) During the pendency of an investigation by the utility of a master-metered customer dispute or complaint.

(b) When the mater metered customer has been granted an extension of the period for repayment of a bill.

(c) For an indebtedness owed by the mater metered customer to any other person or corporation or when the obligation represented by delinquent account or other indebtedness was incurred with a person or corporation other than the utility demanding payment therefor.

(d) When a delinquent account relates to another property owned, managed, or operated by the mater-metered customer. (N)

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. h. (e) When a public health or building officer certifies that, determination would result in a significant threat to the health or safety of the residential occupants or the public. Proof of age or handicap are described in Rule 11.B.1.e. (N)

i. A reasonable attempt must be made by the utility to personally contact an adult person on the residential customer's premises either by telephone or in person, at hours prior to discontinuance. For elderly or handicapped residential customers, the utility shall provide at least 48 hours' notice by telephone or in person. For these customers, if telephone or personal contact cannot be made, a notice of discontinuance of service shall be posted in a conspicuous location at the service address at least 48 hours prior to discontinuance. Such notice shall be independent of, other notice(s) as may be prescribed in the utility's tariffs. (C) (N) (N)

j. Residential Customer's Remedies Upon Receipt of Discontinuance Notice

(1) If upon receipt of a 10-day discontinuance notice, a residential customer is unable to pay, he must contact the utility before discontinuance of service to make payment arrangements to avoid discontinuance of service.

(2) If, after contacting the utility, the residential customer alleges to the Commission an inability to pay and that he is unable to make payment arrangements with the utility he should write to the Commission's Consumer Affairs Branch (CAB) to make an informal complaint. This action must be taken within the 10-day discontinuance of service notice.

(3) The CAB's resolution of the matter will be reported to the utility and the residential customer within ten business days after receipt of the informal complaint. If the customer is not satisfied with such resolution, he must file, with in ten business days after the date of the CAB's letter, a formal complaint with the Commission under Public Utilities Code Section 1702 on a form provided by the CAB.

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. j. (4) Failure of the residential as well as nonresidential customer to observe these time limits shall entitle the utility to insist upon payment or, upon failure to pay, to discontinue the customer's service.

k. Designation of a Third-Party Representative (Elderly or Handicapped only)

(1) Customer must inform utility if he desires that a third party receive discontinuance or other notices on his behalf.

(2) Utility must be advised of name, address, and telephone number of third party with a letter from third party accepting this responsibility.

(3) Only customers who certify that they are elderly or handicapped are entitled to third-party representation.*

2. For Noncompliance with Rules

The utility may discontinue service to any customer for violation of these rules after it has given the customer at least five days' written notice of such intention. Where safety of water supply is endangered, service may be discontinued immediately without notice.

3. For Waste Water

a. Where negligent or wasteful use of water exists on a customer's premises, the utility may discontinue the service if such practices are not remedied within five days after it has given the customer written notice to such effect.

b. In order to protect itself against serious and unnecessary waste or misuse of water, the utility may meter any flat rate service and apply the regularly established meter rates where the customer continues to misuse or waste water beyond five days after the utility has given the customer written notice to remedy such practices.

* Proof of age must be supported by certificate of birth, driver's license, passport or other reliable document. Proof of handicap must be by certification from a licensed physician, public health nurse, or social worker.

(Continued)

**RULE NO. 11**
(Continued)

**DISCONTINUANCE AND RESTORATION OF SERVICE**

B. 4. For Unsafe Apparatus or Where Service is Detrimental or Damaging to the Utility or its Customers

If an unsafe or hazardous condition is found to exist on the customer's premises, or if the use of water thereon by apparatus, appliances, equipment or otherwise is found to be detrimental or damaging to the utility or its customers, the service may be shut off without notice. The utility will notify the customer immediately of the reasons for the discontinuance and the corrective action to be taken by the customer before service can be restored.

5. For Fraudulent Use of Service

When the utility has discovered that a customer has obtained service by fraudulent means, or has diverted the water service for unauthorized use, the service to that customer may be discontinued without notice. The utility will not restore service to such customer until that customer has complied with all filed rules and reasonable requirements of the utility and the utility has been reimbursed for the full amount of the service rendered and the actual cost to the utility incurred by reason of the fraudulent use.

C. Restoration of Service

1. Reconnection Charge

Where service has been discontinued for violation of these rules or for nonpayment of bills, the utility may charge $73.00 for reconnection of service during regular working or $90.00 for reconnection of service at other than regular working hours when the customer has requested that the reconnection be made at other than regular working hours. (I) (I)

2. To be Made During Regular Working Hours

The utility will endeavor to make reconnections during regular working hours on the day of the request, if conditions permit, otherwise reconnection will be made on the regular working day following the day the request is made.

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

C. 3. To Be Made at Other Than Regular Working Hours

When a customer has requested that the reconnection be made at other than regular working hours (Regular Hours are Monday through Friday, excluding holidays, from 8:00 a.m. to 4:30 p.m.), the utility will reasonably endeavor to so make the reconnection if practicable under the circumstances upon payment of a fee of $370 per reconnection. This same fee, $370 per disconnection, will also be applicable to requests for disconnection made at other than regular hours, except that the fee will not be applicable to emergency situations such as the flooding of a house or leaks between the meter and house valve. (C)

4. Wrongful Discontinuance

A service wrongfully discontinued by the utility must be restored without charge for the restoration to the customer within 24 hours.

D. Refusal to Serve

1. Conditions for Refusal

The utility may refuse to serve an applicant for service under the following conditions:

a. If the applicant fails to comply with any of the rules as filed with the Public Utilities Commission.

b. If the intended use of the service is of such a nature that it will be detrimental or injurious to existing customers.

c. If, in the judgment of the utility, the applicant's installation for utilizing the service is unsafe or hazardous, or of such nature that satisfactory service cannot be rendered.

d. Where service has been discontinued for fraudulent use, the utility will not serve an applicant until it has determined that all conditions of fraudulent use or practice has been corrected.

(continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

2. Notification of Customers (L)

When an applicant is refused service under the provisions of this rule, the utility will notify the applicant promptly of the reason for the refusal to service and of the right of the applicant to appeal the utility's decision to the Public Utilities Commission. (L)

# RULE NO. 14.1

## WATER CONSERVATION AND RATIONING PLAN

### GENERAL INFORMATION

If water supplies are projected to be insufficient to meet normal customer demand, and are beyond the control of the utility, the utility may elect to implement voluntary conservation using the portion of this plan set forth in Section A of this Rule after notifying the Commission's Water Division of its intent. If, in the opinion of the utility, more stringent water measures are required, the utility shall request Commission authorization to implement the mandatory conservation and rationing measures set forth in Section B. (N)

The Commission shall authorize mandatory conservation and rationing by approving Schedule No. 14.1, Mandatory Water Conservation and Rationing. When Schedule No. 14.1 has expired, or is not in effect, mandatory conservation and rationing measures will not be in force. Schedule No. 14.1 will set forth water use violation fines, charges for removal of flow restrictors, and the period during which mandatory conservation and rationing measures will be in effect.

When Schedule No. 14.1 is in effect and the utility determines that water supplies are again sufficient to meet normal demands, and mandatory conservation and rationing measures are no longer necessary, the utility shall seek Commission approval to rescind Schedule No. 14.1 to discontinue rationing.

In the event of a water supply shortage requiring a voluntary or mandatory program, the utility shall make available to its customers water conservation kits as required by Rule 20. The utility shall notify all customers of the availability of conservation kits.

### A. CONSERVATION - NON-ESSENTIAL OR UNAUTHORIZED WATER USE

No customer shall use utility-supplied water for non-essential or unauthorized uses as defined below:

1. Use of water through any connection when the utility has notified the customer in writing to repair a broken or defective plumbing, sprinkler, watering or irrigation system and the customer has failed to make such repairs within 5 days after receipt of such notice.
2. Use of water which results in flooding or run-off in gutters, waterways, patios, driveway, or streets.
3. Use of water for washing aircraft, cars, buses, boats, trailers or other vehicles without a positive shut-off nozzle on the outlet end of the hose. Exceptions include washing vehicles at commercial or fleet vehicle washing facilities operated at fixed locations where equipment using water is properly maintained to avoid wasteful use. (N)

(continued)

RULE NO. 14.1
(continued)
WATER CONSERVATION AND RATIONING PLAN

4. Use of water through a hose for washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive run-off or waste. (N)
5. Use of water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
6. Use of water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
7. Use of water for more than minimal landscaping in connection with any new construction.
8. Use of water for outside plants, lawn, landscape, and turf areas more often than every other day, with even numbered addresses watering on even numbered days of the month and odd numbered addresses watering on the odd numbered days of the month, except that this provision shall not apply to commercial nurseries, golf courses, and other water-dependent industries.
9. Use of water for watering outside plants, lawn, landscape and turf areas during certain hours if and when specified in Schedule No. 14.1 when the schedule is in effect.
10. Use of water for watering outside plants and turf areas using a hand-held hose without a positive shut-off valve.
11. Use of water for decorative fountains or the filling or topping off of decorative lakes or ponds. Exceptions are made for those decorative fountains, lakes, or ponds which utilize recycled water.
12. Use of water for the filling or refilling of swimming pools.
13. Service of water by any restaurant except upon the request of the patron.

B. RATIONING OF WATER USAGE

In the event the conservation measures required by Section A are insufficient to control the water shortage, the utility shall, upon Commission approval, impose mandatory conservation and rationing. Rationing shall be in accordance with the conditions set forth in Schedule No. 14.1 as filed at the time such rationing is approved by the Commission.

Before mandatory conservation and rationing is authorized by the Commission, the utility shall hold public meetings and take all other applicable steps required by Sections 350 through 358 of the California Water Code. (N)

(continued)

RULE NO. 14.1
(continued)
WATER CONSERVATION AND RATIONING PLAN

C. ENFORCEMENT OF MANDATORY CONSERVATION AND RATIONING

1. The water use restrictions of the conservation program, in Section A of this rule, become mandatory when the rationing program goes into effect. In the event a customer is observed to be using water for any nonessential or unauthorized use as defined in Section A of this rule, the utility may charge a water use violation fine in accordance with Schedule No. 14.1. (N)
2. The utility may, after one verbal and one written warning, install a flow-restricting device on the service line of any customer observed by utility personnel to be using water for any non-essential or unauthorized use as defined in Section A above.
3. A flow restrictor shall not restrict water delivery by greater than 50% of normal flow and shall provide the premise with a minimum of 6 Ccf/month. The restricting device may be removed only by the utility, only after a three-day period has elapsed, and only upon payment of the appropriate removal charge as set forth in Schedule No. 14.1.
4. After the removal of the restricting device, if any non-essential or unauthorized use of water shall continue, the utility may install another flow-restricting device. This device shall remain in place until water supply conditions warrant its removal and until the appropriate charge for removal has been paid to the utility.
5. If, despite installation of such flow-restricting device pursuant to the provisions of the previous enforcement conditions, any such non-essential or unauthorized use of water shall continue, then the utility may discontinue water service to such customer. In such latter event, a charge as provided in Rule No. 11 shall be paid to the utility as a condition to restoration of service.
6. Any monies collected by the utility through water use violation fines shall not be accounted for as income, but shall be accumulated by the utility in a separate account for disposition as directed or authorized from time to time by the Commission.
7. The charge for removal of a flow-restricting device shall be in accordance with Schedule No. 14.1.

D. APPEAL PROCEDURE

Any customer who seeks a variance from any of the provisions of this water conservation and rationing plan shall notify the utility in writing, explaining in detail the reason for such a variation. The utility shall respond to each such request.

Any customer not satisfied with the utility's response may file an appeal with the staff of the Commission. The customer and the utility will be notified of the disposition of such appeal by letter from the Executive Director of the Commission. (N)

(continued)

RULE NO. 14.1
(continued)
WATER CONSERVATION AND RATIONING PLAN

If the customer disagrees with such disposition, the customer shall have the right to file a formal complaint with the Commission. Except as set forth in this Section, no person shall have any right or claim in law or in equity, against the utility because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of this water conservation and rationing plan. (N)

E. PUBLICITY

In the event the utility finds it necessary to implement this plan, it shall notify customers and hold public hearings concerning the water supply situation, in accordance with Chapter 3, Water Shortage Emergencies, Sections 350 to 358, of the California Water Code. The utility shall also provide each customer with a copy of this plan by means of billing insert or special mailings; notification shall take place prior to imposing any fines associated with this plan. In addition, the utility shall provide customers with periodic updates regarding its water supply status and the results of customers' conservation efforts. Updates may be by bill inserts, special mailing, posting, flyer, newspaper, television, or radio spot/advertisement, community bulletin board, or other appropriate methods. (N)

CUWCC BMP Retail Coverage Report 2014

*Foundational Best Managemant Practices for Urban Water Efficiency*

BMP 1.1 Operation Practices **ON TRACK**

**7017 Park Water Company**

| | | |
|---|---|---|
| **1. Conservation Coordinator provided with necessary resources to implement BMPs?** | Name: | TAMMIE MYERS |
| | Title: | WATER CONSERVATION COORDINATOR |
| | Email: | tammie.myers@libertyutilities.com |

**2. Water Waste Prevention Documents**

| WW Document Name | WWP File Name | WW Prevention URL | WW Prevention Ordinance Terms Description |
|---|---|---|---|
| Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP. | | http://parkwater.com/conservation/city-ordinance | |
| Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area. | | | |
| Option C Describe any documentation of support for legislation or regulations that prohibit water waste. | | | |
| Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP. | | | |
| Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP. | | | |
| Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development. | | | |

**At Least As effective As** No

**Exemption** No

**Comments:**


CUWCC BMP Retail Coverage Report 2014

*Foundational Best Managemant Practices for Urban Water Efficiency*

BMP 1.1 Operation Practices ON TRACK

CUWCC BMP Coverage Report 2014

*Foundational Best Management Practices For Urban Water Efficiency*

BMP 1.2 Water Loss Control **ON TRACK**

**7017 Park Water Company**

| | |
|---|---|
| Completed Standard Water Audit Using AWWA Software? | Yes |
| AWWA File provided to CUWCC? | Yes |
| 2014 PWC AWWA WaterAudit.xls | |
| AWWA Water Audit Validity Score? | 88 |
| Complete Training in AWWA Audit Method | Yes |
| Complete Training in Component Analysis Process? | Yes |
| Component Analysis? | Yes |
| Repaired all leaks and breaks to the extent cost effective? | Yes |
| Locate and Repar unreported leaks to the extent cost effective? | Yes |
| Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. | Yes |

Provided 7 Types of Water Loss Control Info

| Leaks Repairs | Value Real Losses | Value Apparent Losses | Miles Surveyed | Press Reduction | Cost Of Interventions | Water Saved (AF) |
|---|---|---|---|---|---|---|
| 46 | | | | False | | |

**At Least As effective As** No

**Exemption** No

Comments:

CUWCC BMP Coverage Report 2014

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.3 Metering With Commodity

ON TRACK

**7017 Park Water Company**

| | |
|---|---|
| Numbered Unmetered Accounts | No |
| Metered Accounts billed by volume of use | Yes |
| Number of CII Accounts with Mixed Use Meters | 0 |
| Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? | Yes |
| Feasibility Study provided to CUWCC? | Yes |

Date: 1/1/0001

Uploaded file name:

| | |
|---|---|
| Completed a written plan, policy or program to test, repair and replace meters | Yes |

**At Least As effective As** No

**Exemption** No

Comments:

# Meter Reads
S F - 153256
Com - Bi-Monthly - 9935
Com - Monthly - 513
Ind - Bi-Monthly - 6
Ind- Monthly - 35
Inst- Bi-Monthly - 835
Inst - Monthly - 724
Recycled - 332
Other - Bi-Monthly - 427
Other - Monthly - 1767

CUWCC BMP Coverage Report 2014

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.4 Retail Conservation Pricing

On Track

**7017 Park Water Company**

Implementation (Water Rate Structure)

| Customer Class | Water Rate Type | Conserving Rate? | (V) Total Revenue Comodity Charges | (M) Total Revenue Fixed Carges |
|---|---|---|---|---|
| Single-Family | Increasing Block | Yes | 14871865 | 5711570 |
| Commercial | Uniform | Yes | 5303220 | 1301481 |
| Industrial | Uniform | Yes | 190242 | 19039 |
| Institutional | Uniform | Yes | 1481883 | 414001 |
| Fire Lines | Uniform | Yes | 3279 | 161752 |
| Other | Uniform | Yes | 136848 | 22271 |
| Dedicated Irrigation | Uniform | Yes | 503378 | 77725 |
| | | | **22490715** | **7707839** |

**Calculate: V / (V + M)** **74 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

**At Least As effective As** No

**Exemption** No

Comments:

In the above section under customers class "Dedication Irrigation", we used our Recycled-Reclaimed charges for this section. In the previous reporting, there was a specific section labeled Recycled-Reclaimed.

CUWCC BMP Coverage Report 2014

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.1 Public Outreach

**ON TRACK**

**7017** **Park Water Company** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

| |
|---|
| Central Basin MWD |
| Sandi Linares-Plimpton 323-201-5511. |

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? No

| Public Outreach Program List | Number |
|---|---|
| General water conservation information | 2000 |
| General water conservation information | 2000 |
| **Total** | **4000** |

Did at least one contact take place during each quater of the reporting year? No

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

| Annual Budget Category | Annual Budget Amount |
|---|---|
| Public Outreach | 25800 |
| Public Outreach | 25800 |
| **Total Amount:** | **51600** |

| Public Outreah Additional Programs |
|---|
| |
| |

Description of all other Public Outreach programs

Comments:

**At Least As effective As** Yes

Please see 2010 coverage report attached below.

**Exemption** No 0

CUWCC BMP Coverage Report 2014

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.2 School Education Programs

**ON TRACK**

**7017 Park Water Company** **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Central Basin MWD

Mark Moss, Education Manager 323-201-5519.

| Agencies Name | ID number |
|---|---|
| Central Basin MWD | 39 |

Materials meet state education framework requirements? Yes

Grade level appropriate teacher guides through the Think Earth! It's Magic program

Materials distributed to K-6? Yes

Activity Books through the Water Squad Investigations program

Materials distributed to 7-12 students? Yes (Info Only)

See description in comment section...

Annual budget for school education program: 136050.00

Description of all other water supplier education programs

See description in comment section...

Comments:

**At Least As effective As** No

**Exemption** No 0

## CUWCC BMP Coverage Report 2014

7017 Park Water Company

**Baseline GPCD:** 99.05

GPCD in 2014 76.94

**GPCD Target for 2018:** 81.20

**Biennial GPCD Compliance Table** ON TRACK

| | | Target | | Highest Acceptable Bound | |
|---|---|---|---|---|---|
| Year | Report | % Base | GPCD | % Base | GPCD |
| 2010 | 1 | 96.4% | **95.50** | 100% | **99.00** |
| 2012 | 2 | 92.8% | **91.90** | 96.4% | **95.50** |
| 2014 | 3 | 89.2% | **88.40** | 92.8% | **91.90** |
| 2016 | 4 | 85.6% | **84.80** | 89.2% | **88.40** |
| 2018 | 5 | 82.0% | **81.20** | 82.0% | **81.20** |

CUWCC BMP Retail Coverage Report 2013

*Foundational Best Managemant Practices for Urban Water Efficiency*

## BMP 1.1 Operation Practices

**ON TRACK**

**7017 Park Water Company**

**1. Conservation Coordinator provided with necessary resources to implement BMPs?**

| | |
|---|---|
| Name: | TAMMIE MYERS |
| Title: | WATER CONSERVATION COORDINATOR |
| Email: | tammie.myers@libertyutilities.com |

**2. Water Waste Prevention Documents**

| | |
|---|---|
| **At Least As effective As** | No |
| **Exemption** | No |

**Comments:**

CUWCC BMP Coverage Report 2013

*Foundational Best Management Practices For Urban Water Efficiency*

BMP 1.2 Water Loss Control **ON TRACK**

**7017 Park Water Company**

| | |
|---|---|
| Completed Standard Water Audit Using AWWA Software? | Yes |
| AWWA File provided to CUWCC? | Yes |
| 2013 PWC AWWA WaterAudit.xls | |
| AWWA Water Audit Validity Score? | 68 |
| Complete Training in AWWA Audit Method | Yes |
| Complete Training in Component Analysis Process? | Yes |
| Component Analysis? | Yes |
| Repaired all leaks and breaks to the extent cost effective? | Yes |
| Locate and Repar unreported leaks to the extent cost effective? | Yes |
| Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. | Yes |

Provided 7 Types of Water Loss Control Info

| Leaks Repairs | Value Real Losses | Value Apparent Losses | Miles Surveyed | Press Reduction | Cost Of Interventions | Water Saved (AF) |
|---|---|---|---|---|---|---|
| 27 | | | | False | | |

**At Least As effective As** No

**Exemption** No

Comments:

CUWCC BMP Coverage Report 2013

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.3 Metering With Commodity

**ON TRACK**

**7017 Park Water Company**

| | |
|---|---|
| Numbered Unmetered Accounts | No |
| Metered Accounts billed by volume of use | Yes |
| Number of CII Accounts with Mixed Use Meters | 0 |
| Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? | Yes |
| Feasibility Study provided to CUWCC? | Yes |

Date: 1/1/0001

Uploaded file name:

| | |
|---|---|
| Completed a written plan, policy or program to test, repair and replace meters | Yes |

**At Least As effective As** Yes

NA

**Exemption** No

Comments:

# Meter Reads
S F - 155147
Com - Bi-Monthly - 10152
Com - Monthly - 491
Ind - Bi-Monthly - 6
Ind- Monthly - 36
Inst- Bi-Monthly - 843
Inst - Monthly - 705
Recycled - 354
Other - Bi-Monthly - 414
Other - Monthly - 1557

CUWCC BMP Coverage Report 2013

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.4 Retail Conservation Pricing

**On Track**

**7017 Park Water Company**

Implementation (Water Rate Structure)

| Customer Class | Water Rate Type | Conserving Rate? | (V) Total Revenue Comodity Charges | (M) Total Revenue Fixed Carges |
|---|---|---|---|---|
| Single-Family | Increasing Block | Yes | 12999920 | 5335346 |
| Commercial | Uniform | Yes | 4503914 | 1221176 |
| Industrial | Uniform | Yes | 142846 | 17883 |
| Institutional | Uniform | Yes | 1158870 | 397239 |
| Fire Lines | Uniform | Yes | 4198 | 133436 |
| Other | Uniform | Yes | 49400 | 13499 |
| | | | **18859148** | **7118579** |

**Calculate: V / (V + M)** **73 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

**At Least As effective As** No

**Exemption** No

Comments:

In the above section under customers class "Dedication Irrigation", we used our Recycled-Reclaimed charges for this section. In the previous reporting, there was a specific section labeled Recycled-Reclaimed.

CUWCC BMP Coverage Report 2013

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.1 Public Outreach

**ON TRACK**

**7017** **Park Water Company** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

| |
|---|
| Central Basin MWD |
| Sandi Linares-Plimpton 323-201-5511. |

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? No

| Public Outreach Program List | Number |
|---|---|
| General water conservation information | 2000 |
| **Total** | **2000** |

Did at least one contact take place during each quater of the reporting year? No

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

| Annual Budget Category | Annual Budget Amount |
|---|---|
| Public Outreach | 25800 |
| **Total Amount:** | **25800** |

| Public Outreah Additional Programs |
|---|
| |

Description of all other Public Outreach programs

Comments:

**At Least As effective As** Yes

Please see 2010 coverage report attached below.

**Exemption** No 0

CUWCC BMP Coverage Report 2013

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.2 School Education Programs

**ON TRACK**

**7017 Park Water Company** **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Central Basin MWD

Mark Moss, Education Manager 323-201-5519.

| Agencies Name | ID number |
|---|---|
| Central Basin MWD | 39 |

Materials meet state education framework requirements? Yes

Grade level appropriate teacher guides through the Think Earth! It's Magic program.

Materials distributed to K-6? Yes

Activity Books through the Water Squad Investigations program

Materials distributed to 7-12 students? Yes (Info Only)

See description in comment section...

Annual budget for school education program: 129327.00

Description of all other water supplier education programs

See description in comment section...

Comments:

**At Least As effective As** No

**Exemption** No 0

CUWCC BMP Retail Coverage Report 2012

*Foundational Best Managemant Practices for Urban Water Efficiency*

## BMP 1.1 Operation Practices

**ON TRACK**

**7017 Park Water Company**

| | | |
|---|---|---|
| **1. Conservation Coordinator provided with necessary resources to implement BMPs?** | Name: | TAMMIE MYERS |
| | Title: | WATER CONSERVATION COORDINATOR |
| | Email: | tammie.myers@libertyutilities.com |

**2. Water Waste Prevention Documents**

| WW Document Name | WWP File Name | WW Prevention URL | WW Prevention Ordinance Terms Description |
|---|---|---|---|
| Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP. | | http://parkwater.com/conservation/city-ordinance | Park operates under CPUC-approved rules that include Rule No. 14.1, the Water Conservation and Rationing Plan, and Rule 11, Discontinuance and Restoration of Service. Park's Rule No. 20, Water Conservation, discourages the wasteful use of water and p |
| Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area. | | | |
| Option C Describe any documentation of support for legislation or regulations that prohibit water waste. | | | |
| Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP. | | | |
| Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP. | | | |
| Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development. | | | |

**At Least As effective As** No

CUWCC BMP Retail Coverage Report 2012

*Foundational Best Managemant Practices for Urban Water Efficiency*

BMP 1.1 Operation Practices **ON TRACK**

| | | |
|---|---|---|
| **Exemption** | No | |

**Comments:**

CUWCC BMP Coverage Report 2012

*Foundational Best Management Practices For Urban Water Efficiency*

BMP 1.2 Water Loss Control **ON TRACK**

**7017 Park Water Company**

| | |
|---|---|
| Completed Standard Water Audit Using AWWA Software? | Yes |
| AWWA File provided to CUWCC? | Yes |
| PWC 2012 AWWA Water Audit.xls | |
| AWWA Water Audit Validity Score? | 85 |
| Complete Training in AWWA Audit Method | No |
| Complete Training in Component Analysis Process? | No |
| Component Analysis? | No |
| Repaired all leaks and breaks to the extent cost effective? | Yes |
| Locate and Repar unreported leaks to the extent cost effective? | Yes |
| Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. | Yes |

Provided 7 Types of Water Loss Control Info

| Leaks Repairs | Value Real Losses | Value Apparent Losses | Miles Surveyed | Press Reduction | Cost Of Interventions | Water Saved (AF) |
|---|---|---|---|---|---|---|
| 58 | | | | False | | |

**At Least As effective As** No

**Exemption** No

Comments:

CUWCC BMP Coverage Report 2012

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.3 Metering With Commodity

**ON TRACK**

**7017 Park Water Company**

| | |
|---|---|
| Numbered Unmetered Accounts | No |
| Metered Accounts billed by volume of use | Yes |
| Number of CII Accounts with Mixed Use Meters | 0 |
| Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? | Yes |
| Feasibility Study provided to CUWCC? | Yes |

Date: 1/1/0001

Uploaded file name:

| | |
|---|---|
| Completed a written plan, policy or program to test, repair and replace meters | Yes |

**At Least As effective As** Yes

NA

**Exemption** No

Comments:

# Meter Reads
S F - 153411
Com - Bi-Monthly - 10272
Com - Monthly - 468
Ind - Bi-Monthly - 6
Ind- Monthly - 34
Inst- Bi-Monthly - 823
Inst - Monthly - 699
Recycled - 391
Other - Bi-Monthly - 407
Other - Monthly - 1486

CUWCC BMP Coverage Report 2012

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.4 Retail Conservation Pricing

**On Track**

**7017 Park Water Company**

Implementation (Water Rate Structure)

| Customer Class | Water Rate Type | Conserving Rate? | (V) Total Revenue Comodity Charges | (M) Total Revenue Fixed Carges |
|---|---|---|---|---|
| Single-Family | Increasing Block | Yes | 11962721 | 5150026 |
| Commercial | Uniform | Yes | 4066867 | 1179369 |
| Industrial | Uniform | Yes | 136622 | 17317 |
| Institutional | Uniform | Yes | 1024118 | 370715 |
| Fire Lines | Uniform | Yes | 4802 | 122952 |
| Other | Uniform | Yes | 16307 | 18517 |
| Dedicated Irrigation | Uniform | Yes | 380947 | 73077 |
| | | | **17592384** | **6931973** |

**Calculate: V / (V + M)** **72 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

**At Least As effective As** No

**Exemption** No

Comments:

In the above section under customers class "Dedication Irrigation", we used our Recycled-Reclaimed charges for this section. In the previous reporting, there was a specific section labeled Recycled-Reclaimed.

CUWCC BMP Coverage Report 2012

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.1 Public Outreach

**ON TRACK**

**7017** **Park Water Company** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

| |
|---|
| Central Basin MWD |
| Sandi Linares-Plimpton 323-201-5511. |

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? No

| Public Outreach Program List | Number |
|---|---|
| General water conservation information | 2000 |
| **Total** | **2000** |

Did at least one contact take place during each quater of the reporting year? No

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

| Annual Budget Category | Annual Budget Amount |
|---|---|
| Public Outreach | 25626 |
| **Total Amount:** | **25626** |

| Public Outreah Additional Programs |
|---|
| |

Description of all other Public Outreach programs

Comments:

**At Least As effective As** Yes

Please see 2010 coverage report attached below.

**Exemption** No 0

CUWCC BMP Coverage Report 2012

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.2 School Education Programs

**ON TRACK**

**7017 Park Water Company** **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

CENTRAL BASIN MUNICIPAL WATER DISTRICT

Mark Moss, Education Manager 323-201-5519.

| Agencies Name | ID number |
|---|---|
| Central Basin MWD | 39 |

Materials meet state education framework requirements? Yes

Grade level appropriate teacher guides through the Think Earth! It's Magic program

Materials distributed to K-6? Yes

Activity Books through the Water Squad Investigations program

Materials distributed to 7-12 students? Yes (Info Only)

See description in comment section...

Annual budget for school education program: 383500.00

Description of all other water supplier education programs

$173,000 in FY 2009-2010 for Central Basin's entire service area and $189,500 in FY 2010-2011 for Central Basin's entire service area

Comments:

Think Earth! It's Magic (Grades K – 5) What does a magician have to do with water conservation? On the surface, it wouldn't seem like much, but Think Earth! It's Magic is a collaborative program between the District and the Think Earth Environmental

**At Least As effective As** No

**Exemption** No 0

## CUWCC BMP Coverage Report 2012

7017 Park Water Company

**Baseline GPCD:** 99.77

GPCD in 2012 80.26

**GPCD Target for 2018:** 81.80

**Biennial GPCD Compliance Table** **ON TRACK**

| | | Target | | Highest Acceptable Bound | |
|---|---|---|---|---|---|
| Year | Report | % Base | GPCD | % Base | GPCD |
| 2010 | 1 | 96.4% | **96.20** | 100% | **99.80** |
| 2012 | 2 | 92.8% | **92.60** | 96.4% | **96.20** |
| 2014 | 3 | 89.2% | **89.00** | 92.8% | **92.60** |
| 2016 | 4 | 85.6% | **85.40** | 89.2% | **89.00** |
| 2018 | 5 | 82.0% | **81.80** | 82.0% | **81.80** |

CUWCC BMP Retail Coverage Report 2011

*Foundational Best Managemant Practices for Urban Water Efficiency*

## BMP 1.1 Operation Practices

**ON TRACK**

**7017 Park Water Company**

**1. Conservation Coordinator provided with necessary resources to implement BMPs?**

| | |
|---|---|
| Name: | Tammie Myers |
| Title: | Water Conservation Coordinator |
| Email: | tammie@libertyutilities.com |

**2. Water Waste Prevention Documents**

| WW Document Name | WWP File Name | WW Prevention URL | WW Prevention Ordinance Terms Description |
|---|---|---|---|
| Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP. | | http://parkwater.com/conservation/city-ordinances/ | Park operates under CPUC-approved rules that include Rule No. 14.1, the Water Conservation and Rationing Plan, and Rule 11, Discontinuance and Restoration of Service. Park's Rule No. 20, Water Conservation, discourages the wasteful use of water and p |
| Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area. | | | NA |
| Option C Describe any documentation of support for legislation or regulations that prohibit water waste. | | | NA |
| Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP. | | | NA |
| Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP. | | | NA |
| Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development. | | | NA |

**At Least As effective As** Yes

CUWCC BMP Retail Coverage Report 2011

*Foundational Best Managemant Practices for Urban Water Efficiency*

| BMP 1.1 Operation Practices | | ON TRACK |
|---|---|---|
| NA | | |
| **Exemption** | No | |

**Comments:**

NA

CUWCC BMP Coverage Report 2011

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.2 Water Loss Control — ON TRACK

**7017 Park Water Company**

| | |
|---|---|
| Completed Standard Water Audit Using AWWA Software? | Yes |
| AWWA File provided to CUWCC? | Yes |
| PWC 2011 AWWA Water Audit.xls | |
| AWWA Water Audit Validity Score? | 85 |
| Complete Training in AWWA Audit Method | No |
| Complete Training in Component Analysis Process? | No |
| Component Analysis? | No |
| Repaired all leaks and breaks to the extent cost effective? | Yes |
| Locate and Repar unreported leaks to the extent cost effective? | Yes |
| Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. | Yes |

Provided 7 Types of Water Loss Control Info

| Leaks Repairs | Value Real Losses | Value Apparent Losses | Miles Surveyed | Press Reduction | Cost Of Interventions | Water Saved (AF) |
|---|---|---|---|---|---|---|
| 70 | | | | False | | |

**At Least As effective As** No

**Exemption** No

Comments:

CUWCC BMP Coverage Report 2011

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.3 Metering With Commodity

**ON TRACK**

**7017 Park Water Company**

| | |
|---|---|
| Numbered Unmetered Accounts | No |
| Metered Accounts billed by volume of use | Yes |
| Number of CII Accounts with Mixed Use Meters | 0 |
| Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? | Yes |
| Feasibility Study provided to CUWCC? | Yes |

Date: 1/1/0001

Uploaded file name:

| | |
|---|---|
| Completed a written plan, policy or program to test, repair and replace meters | Yes |
| **At Least As effective As** | No |
| **Exemption** | No |

Comments:

# Meter Reads
S F - 152594
Com - Bi-Monthly - 9911
Com - Monthly - 470
Ind - Bi-Monthly - 6
Ind- Monthly - 32
Inst- Bi-Monthly - 816
Inst - Monthly - 684
Recycled - 341
Other - Bi-Monthly - 409
Other - Monthly - 1495

CUWCC BMP Coverage Report 2011

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 1.4 Retail Conservation Pricing

**On Track**

**7017 Park Water Company**

Implementation (Water Rate Structure)

| Customer Class | Water Rate Type | Conserving Rate? | (V) Total Revenue Comodity Charges | (M) Total Revenue Fixed Carges |
|---|---|---|---|---|
| Single-Family | Increasing Block | Yes | 11164029 | 4994411 |
| Commercial | Uniform | Yes | 3778212 | 1148662 |
| Industrial | Uniform | Yes | 141491 | 16824 |
| Institutional | Uniform | Yes | 849301 | 355903 |
| Fire Lines | Uniform | Yes | 4618 | 119256 |
| Dedicated Irrigation | Uniform | Yes | 283498 | 68033 |
| Other | Uniform | Yes | 11758 | 17192 |
| | | | **16232907** | **6720281** |

**Calculate: V / (V + M)** **71 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

**At Least As effective As** No

**Exemption** No

Comments:

In the above section under customers class "Dedication Irrigation", we used our Recycled-Reclaimed charges for this section. In the previous reporting, there was a specific section labeled Recycled-Reclaimed.

CUWCC BMP Coverage Report 2011

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.1 Public Outreach

**ON TRACK**

**7017** **Park Water Company** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

| |
|---|
| Central Basin MWD |
| Sandi Linares-Plimpton 323-201-5511. |

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? No

| Public Outreach Program List | Number |
|---|---|
| General water conservation information | 2000 |
| **Total** | **2000** |

Did at least one contact take place during each quater of the reporting year? No

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

| Annual Budget Category | Annual Budget Amount |
|---|---|
| Public Outreach | 30465 |
| **Total Amount:** | **30465** |

| Public Outreah Additional Programs |
|---|
| |

Description of all other Public Outreach programs

Comments:

**At Least As effective As** Yes

Please see 2010 coverage report attached below.

**Exemption** No 0

CUWCC BMP Coverage Report 2011

*Foundational Best Management Practices For Urban Water Efficiency*

## BMP 2.2 School Education Programs

**ON TRACK**

**7017 Park Water Company** **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

CENTRAL BASIN MUNICIPAL WATER DISTRICT

Mark Moss, Education Manager 323-201-5519.

Materials meet state education framework requirements? Yes

Grade level appropriate teacher guides through the Think Earth! It's Magic program

Materials distributed to K-6? Yes

Activity Books through the Water Squad Investigations program

Materials distributed to 7-12 students? Yes (Info Only)

See description in comment section...

Annual budget for school education program: 363500.00

Description of all other water supplier education programs

$173,000 in FY 2009-2010 for Central Basin's entire service area and $189,500 in FY 2010-2011 for Central Basin's entire service area

Comments:

Think Earth! It's Magic (Grades K – 5) What does a magician have to do with water conservation? On the surface, it wouldn't seem like much, but Think Earth! It's Magic is a collaborative program between the District and the Think Earth Environmental

**At Least As effective As** No

**Exemption** No 0

# APPENDIX J – ADOPTION RESOLUTION

**UNANIMOUS WRITTEN CONSENT OF THE BOARD OF DIRECTORS OF LIBERTY UTILITIES (PARK WATER) CORP.**

**June 15, 2016**

**2015 URBAN WATER MANAGEMENT PLAN**

The undersigned members of the Board of Directors ("Board") of Liberty Utilities (Park Water) Corp. (the "Corporation"), a corporation existing under the laws of the state of California, acting pursuant to the California Corporations Code, hereby waives any and all formalities of notice, time, date, place and purpose of meeting and consents to and adopts the following resolutions and declares them to be in full force and effect as if they were adopted at a meeting duly held on the date first written above:

**WHEREAS,** the California Urban Water Management Planning Act, Water Code sections 10610 through 10650 (the "Act"), mandates that each urban water supplier that provides water for municipal purposes to more than 3,000 customers or delivers more than 3,000 acre feet of water annually must prepare and adopt an updated Urban Water Management Plan ("UWMP") at least once every five years; and

**WHEREAS,** the Act specifies the requirements and procedures for adopting such Urban Water Management Plans; and

**WHEREAS,** Liberty Utilities (Park Water) Corp. is an "urban retail water supplier" under the Act that provides potable municipal water to more than 3,000 end users; and

**WHEREAS,** in accordance with applicable laws, including the requirements of the Act, the Company has prepared its 2015 UWMP and has undertaken certain agency coordination, public notice, public involvement and outreach, public comment, and other procedures relating to the 2015 UWMP; and

**WHEREAS,** a public hearing was held on May 3, 2016 at 10:00 am at the office of Liberty Utilities (Park Water) Corp., located at 9750 Washburn Road, Downey, California 90241 to, among other things, provide members of the public and other interested entities with the opportunity to be heard in connection with the proposed 2015 UWMP; and

**WHEREAS,** it is desirable and in the best interest of the Corporation to adopt the 2015 Urban Water Management Plan for submittal to the state of California as a true and accurate representation of the Corporation's water resources plan in accordance with the requirements of the Act.

**NOW, THEREFORE, BE IT RESOLVED** that the Corporation is hereby authorized to adopt and submit the 2015 UWMP in the form attached hereto as Exhibit A and the adoption and delivery of the 2015 UWMP to the state of California on behalf of the Corporation by any two officers of the Corporation is hereby approved and authorized in all respects, such delivery to be conclusive evidence of such approval and authorization of the 2015 UWMP.

**FURTHER RESOLVED,** that any two officers of the Corporation be, and each of them hereby is, authorized, empowered and directed, in the name and on behalf of the Corporation, to take or cause to be taken any and all actions necessary or appropriate to effectuate

the foregoing resolutions and to otherwise carry out the purposes and intent of the foregoing resolutions, including, but not limited to, adoption and submittal of the 2015 LWMP in the form substantially the same as attached hereto;

**FURTHER RESOLVED**, that any and all actions taken by any officer, director, or other duly authorized representative of the Corporation prior to the date hereof in accordance with the intent of these resolutions be, and hereby are, approved, ratified and confirmed in all respects.

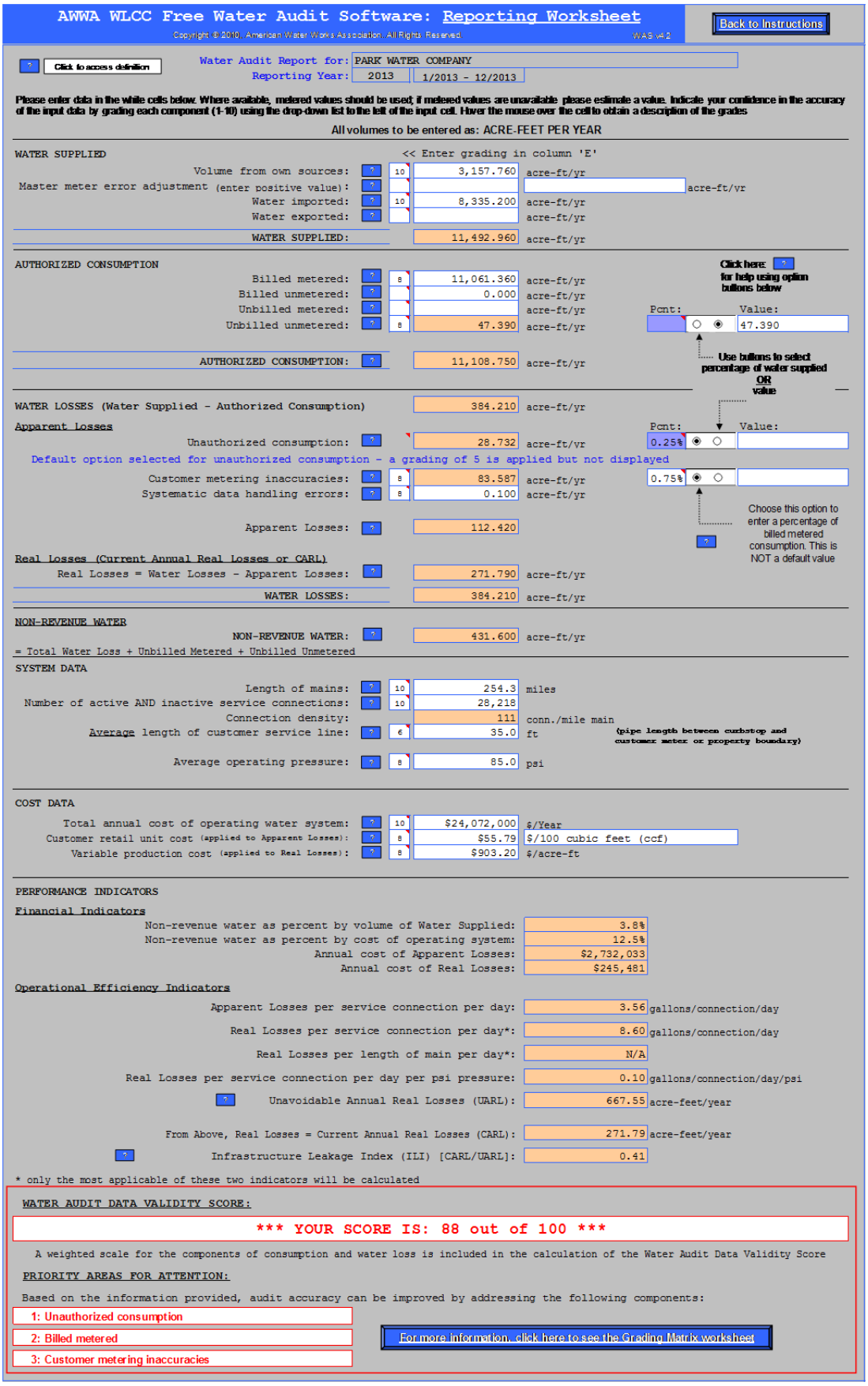
**IN WITNESS WHEREOF**, the undersigned, being all of the Directors of the Corporation, have executed this Statement of Unanimous Written Consent as of the date first written above.

**LIBERTY UTILITIES (PARK WATER) CORP.**

By: _____
Name: David Pasieka
Title: Director

By: _____
Name: Gregory Sorensen
Title: Director

By: _____
Name: Richard Loehr
Title: Director



AWWA WLCC Free Water Audit Software: Reporting Worksheet



WAS v4.2

Back to Instructions

Click to access definition

Water Audit Report for: PARK WATER COMPANY

Reporting Year: 2013 1/2013 - 12/2013

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

| WATER SUPPLIED | | << Enter grading in column 'E' | |
|---|---|---|---|
| Volume from own sources: | 10 | 3,157.760 | acre-ft/yr |
| Master meter error adjustment (enter positive value): | | | acre-ft/yr |
| Water imported: | 10 | 8,335.200 | acre-ft/yr |
| Water exported: | | | acre-ft/yr |
| WATER SUPPLIED: | | 11,492.960 | acre-ft/yr |

| AUTHORIZED CONSUMPTION | | | | Click here: for help using option buttons below |
|---|---|---|---|---|
| Billed metered: | 8 | 11,061.360 | acre-ft/yr | |
| Billed unmetered: | | 0.000 | acre-ft/yr | |
| Unbilled metered: | | | acre-ft/yr | Pcnt: Value: |
| Unbilled unmetered: | 8 | 47.390 | acre-ft/yr | 47.390 |
| AUTHORIZED CONSUMPTION: | | 11,108.750 | acre-ft/yr | Use buttons to select percentage of water supplied OR value |

| | | | |
|---|---|---|---|
| WATER LOSSES (Water Supplied - Authorized Consumption) | | 384.210 | acre-ft/yr |
| Apparent Losses | | | |
| Unauthorized consumption: | | 28.732 | acre-ft/yr |

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

| | | | | |
|---|---|---|---|---|
| Customer metering inaccuracies: | 8 | 83.587 | acre-ft/yr | 0.75% |
| Systematic data handling errors: | 8 | 0.100 | acre-ft/yr | |
| Apparent Losses: | | 112.420 | | |

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

| | | | |
|---|---|---|---|
| Real Losses (Current Annual Real Losses or CARL) | | | |
| Real Losses = Water Losses - Apparent Losses: | | 271.790 | acre-ft/yr |
| WATER LOSSES: | | 384.210 | acre-ft/yr |

| NON-REVENUE WATER | | | |
|---|---|---|---|
| NON-REVENUE WATER: | | 431.600 | acre-ft/yr |

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

| SYSTEM DATA | | | | |
|---|---|---|---|---|
| Length of mains: | 10 | 254.3 | miles | |
| Number of active AND inactive service connections: | 10 | 28,218 | | |
| Connection density: | | 111 | conn./mile main | |
| Average length of customer service line: | 6 | 35.0 | ft | (pipe length between curbstop and customer meter or property boundary) |
| Average operating pressure: | 8 | 85.0 | psi | |

| COST DATA | | | |
|---|---|---|---|
| Total annual cost of operating water system: | 10 | $24,072,000 | $/Year |
| Customer retail unit cost (applied to Apparent Losses): | 8 | $55.79 | $/100 cubic feet (ccf) |
| Variable production cost (applied to Real Losses): | 8 | $903.20 | $/acre-ft |

PERFORMANCE INDICATORS

| Financial Indicators | |
|---|---|
| Non-revenue water as percent by volume of Water Supplied: | 3.8% |
| Non-revenue water as percent by cost of operating system: | 12.5% |
| Annual cost of Apparent Losses: | $2,732,033 |
| Annual cost of Real Losses: | $245,481 |

| Operational Efficiency Indicators | | |
|---|---|---|
| Apparent Losses per service connection per day: | 3.56 | gallons/connection/day |
| Real Losses per service connection per day*: | 8.60 | gallons/connection/day |
| Real Losses per length of main per day*: | N/A | |
| Real Losses per service connection per day per psi pressure: | 0.10 | gallons/connection/day/psi |
| Unavoidable Annual Real Losses (UARL): | 667.55 | acre-feet/year |
| From Above, Real Losses = Current Annual Real Losses (CARL): | 271.79 | acre-feet/year |
| Infrastructure Leakage Index (ILI) [CARL/UARL]: | 0.41 | |

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 88 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Unauthorized consumption

2: Billed metered

3: Customer metering inaccuracies

For more information, click here to see the Grading Matrix worksheet

# AWWA WLCC Free Water Audit Software: Water Balance



WAS v4.2

| Water Audit Report For: | Report Yr: |
|---|---|
| PARK WATER COMPANY | 2013 |

| | | | | | |
|---|---|---|---|---|---|
| Own Sources (Adjusted for known errors) 3,157.760 | Water Exported 0.000 | Billed Water Exported | | | |
| | | Authorized Consumption 11,108.750 | Billed Authorized Consumption 11,061.360 | Billed Metered Consumption (inc. water exported) 11,061.360 | Revenue Water 11,061.360 |
| | | | | Billed Unmetered Consumption 0.000 | |
| | | | Unbilled Authorized Consumption 47.390 | Unbilled Metered Consumption 0.000 | Non-Revenue Water (NRW) 431.600 |
| | | | | Unbilled Unmetered Consumption 47.390 | |
| | Water Supplied 11,492.960 | Water Losses 384.210 | Apparent Losses 112.420 | Unauthorized Consumption 28.732 | |
| | | | | Customer Metering Inaccuracies 83.587 | |
| | | | | Systematic Data Handling Errors 0.100 | |
| Water Imported 8,335.200 | | | Real Losses 271.790 | Leakage on Transmission and/or Distribution Mains Not broken down | |
| | | | | Leakage and Overflows at Utility's Storage Tanks Not broken down | |
| | | | | Leakage on Service Connections Not broken down | |

Liberty Utilities

June 24, 2016

California State Library
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001

To Whom It May Concern:

Re: Liberty Utilities (Park Water) Corp. 2015 Urban Water Management Plan

Please find included a CD of the adopted 2015 Urban Water Management Plan for Liberty Utilities (Park Water) Corp. If you have any questions or comments, please contact me at (562) 299-5123 or by email at jm.bruno@libertyutilities.com.

Sincerely,

Jeanne-Marie Bruno

Jeanne-Marie Bruno, P.E.
General Manager/Vice President

Enclosure

9750 WASHBURN ROAD, DOWNEY, CA 90241
WWW.LIBERTYUTILITIES.COM

Liberty Utilities

June 24, 2016

Mr. Michael Egan
City Manager
City of Norwalk
12700 Norwalk Blvd.
Norwalk, CA 90650

Dear Mr. Egan,

Subject: Final 2015 Liberty Utilities Urban Water Management Plan

This letter serves as notification that 2015 update of the Urban Water Management Plan (UWMP) for Liberty Utilities (Park Water) Corp. has been finalized. A CD of the report is included with this letter. A copy of the report will also be posted on Liberty Park Water's website at www.libertyutilities.com. The 2015 UWMP effort helps ensure we can provide the communities we serve with a reliable supply of high-quality water to meet current and future demands.

If you have any questions or comments about the report, please contact me at (562) 299-5123 or by email at jm.bruno@libertyutilities.com.

Sincerely,

Jeanne-Marie Bruno

Jeanne-Marie Bruno, P.E.
General Manager/Vice President

Enclosure

9750 WASHBURN ROAD, DOWNEY, CA 90241
WWW.LIBERTYUTILITIES.COM

# APPENDIX M – POPULATION METHODOLOGY APPENDIX A FROM 2014 FINAL PARK WATER WUE PLAN

## Determining 2010 Census Year Population

To calculate the 2010 service area population GIS was used to overlay the water service area boundaries supplied by Park Water Company (Park) and the 2010 TIGER census block data for Park's service area. These maps are provided on the following pages. The following is a list of the steps taken within GIS to arrive at the source analysis data. This list is primarily for those familiar with GIS to be able to reproduce this effort.

1. Re-project Census Blocks to Match the Park Projection
2. Create donut polygons by subtracting polygons within the service area boundaries that represent areas that are not within the service area
3. Download AFF Data >Los Angeles County Blocks >2010>Total Population>SF1 100%
4. Reformat AFF Data for Join (Separate block, tract, county, block group and state data from one field to multiple fields)
5. Create a new Tract field that removes decimal point from the existing value to match shapefile Tract format by multiplying each value by 100
6. Create Unique_Id field for joining data by combining the Block field and the new Tract field
7. Add a UNIQ_ID value to the Census Block shapefile from the Block and Tract fields to match the Unique_ID field in the table.
8. Performed Join Test. 227 Block Records Dropped in the county of Los Angeles out of 109584 records total. Within acceptable percentage of error at 0.21%. Will re-examine if join errors effect our specific area of examination
9. Fixed Field errors for AFF data titles Geo.id, Geo.id2 to Geo_id and Geo_id2 to eliminate join errors in ArcMap
10. Joined Population Data to Block shapefile
11. Created a new shapefile of blocks that intersect Park service area to improve analysis speed
12. Add an AREA_SQFT field and populate with an Geographic Calculation
13. Create a new shapefile that is a UNION of the Park service area and the PWC_2010_Census_Blocks
14. Add a NEW_AREA field and populate with a Geographic Calculation for the new SQFT of blocks divided by the service area boundary
15. Add a PRCT_AREA field and create a field calculation to create a percentage with [NEW_SQFT] / [Area_SQFT] * 100
16. Export data table

From this data table, the percent of each census tract within Park's service area boundary was multiplied by the total population of that census tract and then summed to determine the total 2010 Park population.

## Census Block Analysis Results Summary

1,642 Number of total census blocks within the Park service area boundary and included in this analysis.

1,190 Number of census blocks that are over 95% inside of the Park service area boundary.

473 Number of census blocks that are 100% inside of the Park service area boundary.

187 Number of census blocks that are less than 50% (and greater than 0%) in the Park service area boundary

**Figure M-1. 2010 Population Analysis – Park Water Company Census Block Map**

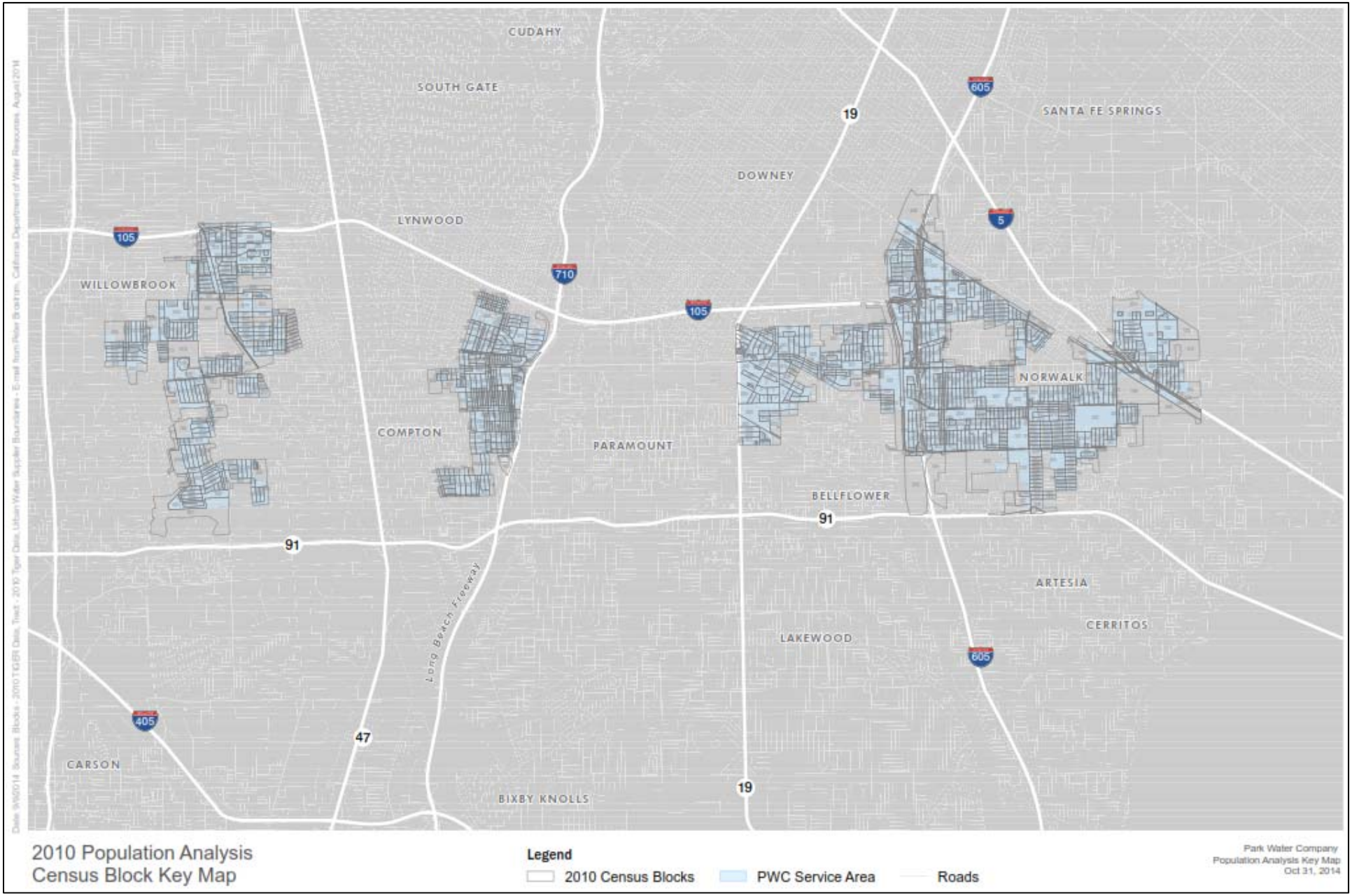


**Figure M-2. 2010 Population Analysis – Park Water Company Census Block Map – Bellflower-Norwalk**

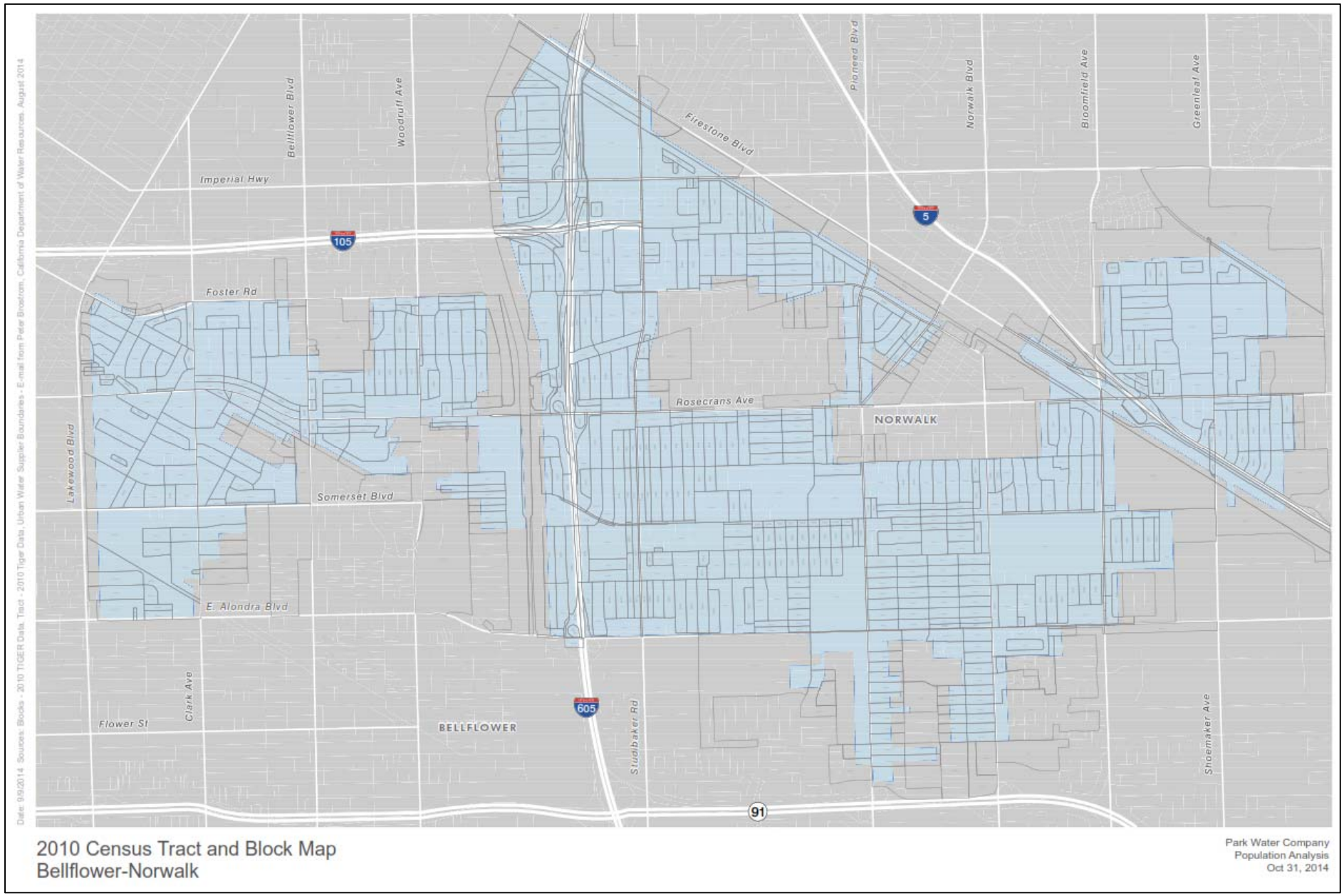


**Figure M-3. Population Analysis – Park Water Company Census Block Map – Compton East**

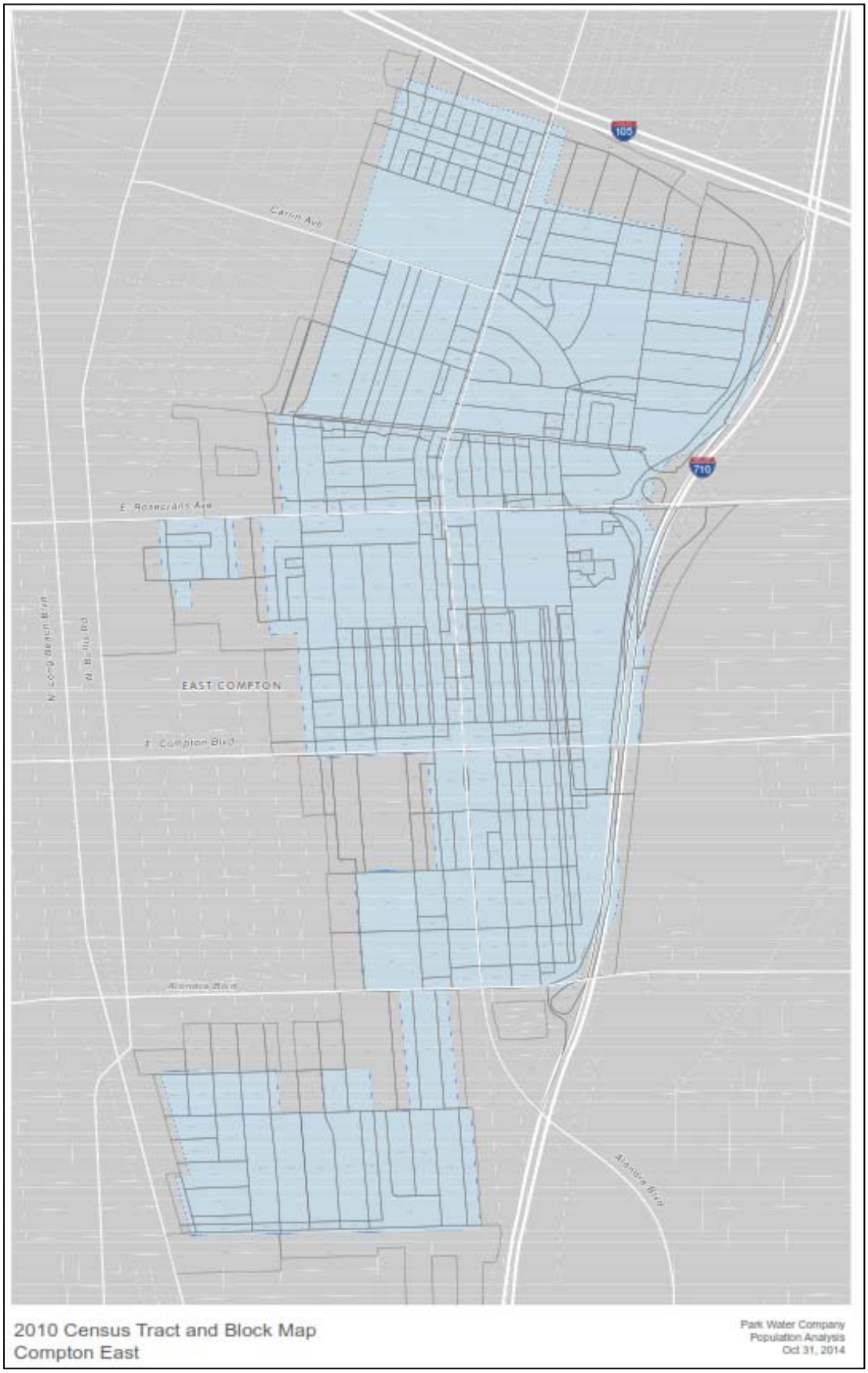


**Figure M-4. Population Analysis – Park Water Company Census Block Map – Compton West**

# APPENDIX N – DOCUMENTATION OF LIBERTY'S CENTRAL BASIN WATER RIGHTS

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA



April 22, 2016

Ms. Jeanne-Marie Bruno
Vice President/General Manager Central Basin
Liberty Utilities
9750 Washburn Road
Downey, CA 90241

Dear Ms. Bruno:

Please accept this letter from the Water Replenishment District of Southern California, acting as Central Basin Watermaster – Administrative Body, as confirmation of Liberty Utilities (Park Water) Corporation's water rights in the Central Basin.

As of April 22, 2016, our records show that Liberty Utilities (Park Water) Corporation owns 822.30 acre-feet of Allowed Pumping Allocation in the Central Basin.

Please contact me at jweeks@wrd.org or at (562) 275-4253 if you have any questions or concerns.

Sincerely,

Jason Weeks, P.E.
Manager of Water Resources

4040 Paramount Boulevard, Lakewood, California 90712 Phone (562) 921-5521 Fax (562)921-6101 www.wrd.org