

RESOLUTION NO. 7711

CITY OF SOUTH GATE
LOS ANGELES COUNTY, CALIFORNIA

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SOUTH GATE ADOPTING THE 2015 URBAN WATER MANAGEMENT PLAN NECESSARY TO COMPLY WITH THE URBAN WATER MANAGEMENT PLANNING ACT (CALIFORNIA WATER CODE DIVISION 6, PART 2.6, SECTIONS 10610 THROUGH 10656) AS MANDATED IN CALIFORNIA

WHEREAS, the Urban Water Management Planning Act (California Water Code Division 6, Part 2.6, Sections 10610 through 10656) requires urban water suppliers that serve either more than 3,000 acre-feet of water annually or have more than 3,000 service connections to prepare an Urban Water Management Plan every five years; and

WHEREAS, the City of South Gate, a municipal utility, is an urban water supplier providing water to over 14,000 customers and serving an annual average of approximately 8,300 acre-feet of water, is required to prepare, adopt and file an Urban Water Management Plan with the State of California Department of Water Resources; and

WHEREAS, in 2016, the City prepared its 2015 Urban Water Management Plan to assess existing and future water demands and water sources, over a 20-year horizon, to ensure there are adequate water supplies for the City's water district through the year 2035; and

WHEREAS, consistent with Section 6066 of the Government Code, the 2015 Urban Water Management Plan was made available for public review, for which a notice of the Public Hearing was published in *The Wave* and posted on the City's Website; and

WHEREAS, the City Council held a duly noticed Public Hearing to receive input on the 2015 Urban Water Management Plan on June 14, 2016;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SOUTH GATE DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The above recitals are all true and correct.

SECTION 2. The City Council of the City of South Gate hereby adopts the City's 2015 Urban Water Management Plan attached hereto as Exhibit A, which was prepared by the City in accordance with Section 10642 of the California Water Code and in accordance with all other application provisions of the Urban Water Management Planning Act.

SECTION 3. The City Clerk is hereby directed to make a copy of the 2015 Urban Water Management Plan available for public review at the City Clerk's office no later than 30 days after submittal to the California Department of Water Resources and the California State Library in accordance with Section 10645 of the California Water Code.

SECTION 4. The City Clerk shall certify the adoption of this Resolution which shall be effective upon its adoption.

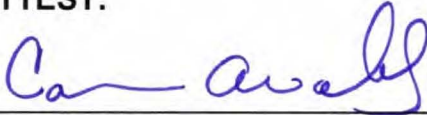
PASSED, APPROVED and ADOPTED this 14th day of June 2016.

CITY OF SOUTH GATE



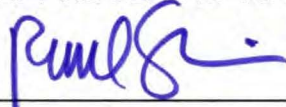
W.H. (Bill) De Witt, Mayor

ATTEST:



Carmen Avalos, City Clerk
(SEAL)

APPROVED AS TO FORM:



Raul F. Salinas, City Attorney



City of South Gate

2015 Urban Water Management Plan



Prepared by



GEI Consultants, Inc.

May 31, 2016

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Abbreviations and Acronyms

AB - Assembly Bill

AF - Acre-Foot or Acre-Feet

AWWARF - American Water Works Association Research Foundation

BMP - Best Management Practice

CEHTP - California Environmental Health Tracking Program

CARA - California Rivers Assessment

CASGEM - California Statewide Groundwater Elevation Monitoring Program

CBMWD - Central Basin Municipal Water District

ccf - Hundred Cubic Feet

CCR - Consumer Confidence Report

CEQA - California Environmental Quality Act

CII - Commercial, Industrial, Institutional, water use sectors

CIMIS - California Irrigation Management Information System

CUWCC - California Urban Water Conservation Council

CWC - California Water Code

CRA - Colorado River Aqueduct

DMMs - Demand Management Measures

DOF - Department of Finance

DWR - Department of Water Resources

eARDWP - Electronic Annual Reports to the Drinking Water Program (SWRCB)

ET_o - Reference Evapotranspiration

°F - Degrees Fahrenheit

FY - Fiscal Year

GIS - Geographic Information System

GPCD - Gallons per Capita per Day

GPM - Gallons per Minute

IRWM - Integrated Regional Water Management

ITP - Independent Technical Panel

LAFCO - Local Agency Formation Commission

MAF - Million Acre-Feet

MBR - Membrane Biological Reactors

MGPC - Million Gallons Per Capita Per Day

MLSS - Mixed Liquor Suspended Solids

MOU - Memorandum of Understanding

MWD - Metropolitan Water District

NOAA - National Oceanic and Atmospheric Administration

NPDES - National Pollutant Discharge Elimination System

PEIR - Program Environmental Impact Report

psi - Pounds Per Square Inch

PWS - Public Water System

RO - Reverse Osmosis

RWQCB - Regional Water Quality Control Board

RWQCP - Regional Water Quality Control Plant

RUWMP - Regional Urban Water Management Plan

SB - Senate Bill

SBX7-7 - Senate Bill Seven of the Senate's Seventh Extraordinary Session of 2009

SGMA - Sustainable Groundwater Management Act

SCAG - Southern California Association of Governments

SOP - Standard Operating Procedures

SWP - State Water Project

SWRCB - State Water Resources Control Board

TMDL - Total Maximum Daily Load

USEPA - United States Environmental Protection Agency

UWMP - Urban Water Management Plan

WARN - Water/Wastewater Agency Response Network

WDR - Waste Discharge Requirement

WRR - Water Recycling Requirement

WSCP - Water Shortage Contingency Plan

WSIP - Water System Improvement Program

Executive Summary

The City of South Gate 2015 Urban Water Management Plan has been prepared under contract by GEI Consultants, Inc. in response to the California Urban Water Management Planning Act. The Act requires all publicly and privately owned urban water suppliers that either have 3,000 or more customers or provide over 3,000 acre-feet (acre-foot = amount of water required to cover one acre one foot deep) of water annually to prepare an updated Urban Water Management Plan (UWMP) by the end of the calendar years that end in five or zero. The Act requires that UWMPs describe the suppliers' service area, water use by customer class, water supply and demand, water service reliability and shortage response options, water transfer and exchange opportunities, water recycling efforts, and conservation measures.

A municipal urban water supplier's UWMP is to be adopted by City Council resolution and submitted to the California Department of Water Resources (DWR) within thirty (30) days of adoption. A UWMP can be a condition of eligibility for state grant funds and other drought assistance allocations. The city invited the involvement of local agencies, community organizations and the general public in the development of this plan through mailed notifications, newspaper advertisements, draft availability and a public hearing which was held on June 14, 2016. The City Council adopted the UWMP following the public hearing on June 14, 2016.

The 2015 UWMP is a long-term resource planning tool that assesses existing and future water demands and water sources, over a 20-year horizon, to ensure there are adequate water supplies for the City's Water Division through the year 2035. The 2015 UWMP identifies demand management measures (conservation programs), implementation strategies, education programs, and water savings analysis. In addition, the 2015 UWMP includes a draft Water Shortage Contingency Plan that outlines steps to be taken in the event of a prolonged water shortage. This 2015 UWMP considers past, present, and future information regarding population, other demographic factors, climate, water production, water consumption, and water conservation measures. The 2015 UWMP includes all information necessary to meet the requirements of California Water Code Division 6, Part 2.6 (Urban Water Management Planning Act).

Incorporated in 1923, the City of South Gate has grown to a City with approximately 90,000 people. It is mostly a City of families and is strongly Latino. Located in Los Angeles County, it is expected to have only small growth in future years and there is little room for development. The City has an Allowed Pumping Allocation of 11,183 AFY in the Central Water Basin for extracting water from groundwater wells. In addition, the City has interconnections with other agencies and two connections with MWD to purchase water if needed. The City has not needed to purchase water in recent years and has been able to lease the unused water rights they own. Those additional sources are available for emergency.

Due to the recent drought conditions, increased usage, and fewer source waters, California has mandated a reduction in water use. For the City of South Gate the mandatory water reduction goal compared to the year 2013 was 12%, while most agencies are required to reduce by 20%. There are also regional targets including the 142 gallons-per-capita-per-day (gpcd) goal for the region that includes South Gate.

Through Ordinance No. 2263, adopted July 28, 2009, the City modified the water conservation regulations to include Level 1, Level 2 and Level 3 Water Shortage Contingency Plans to reduce water demand by 10%, 15%, and 40% respectively based on the demand reduction required. Depend on the level water shortage, the City will activate a contingency plan to meet the prevailing water supply conditions or the goals mandated by the regulatory agencies.

South Gate's average usage over the last ten years has been 104 gpcd. Pursuant to UWMP, the 2020 target is 100 gpcd and the 2015 interim target is 101 gpcd. This low usage factor demonstrated the already efficient water use by the residents and businesses of South Gate. In 2015, the usage was 86 gpcd which meets the interim target of 103 gpcd.

The projected demands through 2035 are below the allowable pumping allocation of the Central basin for the City of South Gate. This allows the city to continue to lease out a portion of their allowable pumping allocation and use the more expensive state water or other sources for emergency only.

Recycled water is currently being used in South Gate but on a limited basis. This water is available through the Central Basin MWD and from recycling efforts by the Sanitation Districts of Los Angeles County. There are additional supplies available however infrastructure would have to be installed to utilize this recycled water in other parts of the City.

The City of South Gate has an efficient, reliable system that is already well-ahead of many state guidelines for reduction. By maintaining the current distribution and production systems, they meet and exceed the goals of lower water use per person throughout the State.

The content of the UWMP has been organized to follow format guidelines for narrative and data tables as set forth in the 2015 UWMP Guidebook (Guidebook) published by the state's Department of Water Resources (DWR):

- Chapter 1 – Introduction: This introductory section provides a discussion on the importance and extent of its water management planning efforts.
- Chapter 2 – Plan Preparation: This section discusses the process for developing UWMP, including efforts in coordination outreach.
- Chapter 3 – System Description: This section provides a detailed overview of the history, service area, climate, and population demographics in this section.
- Chapter 4 – System Water Use: The section quantifies its current and projected water uses.
- Chapter 5 – Baselines and Targets: The City of South Gate demonstrates that it has met its 2015 interim water use target in this section and provides narrative explaining how the City computes its baseline and water target water consumption. Additionally, the City describes its plans for achieving its 2020 water use target in accordance and compliance with SB X7-.
- Chapter 6 – System Supplies: This section describes and quantifies current and projected sources of water available to the City and conceptual sources of recycled water being studied for future use.

- Chapter 7 – Water Supply Reliability: The section describes the reliability of the City’s water supply and projects the reliability out 20 years, for normal, single dry and multiple dry years in this chapter.
- Chapter 8 – Water Shortage Contingency Plan: This section provides its staged plan for how it manages water shortages, including catastrophic supply interruption.
- Chapter 9 – Demand Management Measures: This section describes City’s efforts to promote conservationism and to reduce demand on its water supply, including narrative explaining its demand management measures (DMM) categories.
- Chapter 10 – Plan Adoption, Submittal and Implementation: The steps taken to adopt and submit the UWMP and to make it publicly available, as well as a discussion of how the agency will implement the UWMP are described in this chapter.

Chapter 1 - Introduction and Overview

1.1 Background and Purpose

The City of South Gate is pleased to present to the general public its 2015 Urban Water Management Plan (UWMP). The State of California Department of Water Resources (DWR) issued a new guidebook for 2015 UWMPs in February 2016.

An Urban Water Management Plan, as defined by the California Legislature in the California Urban Water Management Planning Act of 1983 (attached to this plan as Appendix A), informs residents, neighboring agencies and local community groups on how an urban water agency will provide a safe, secure water supply in the short and long term. The following plan attempts to look 25 years into the future to project what the City of South Gate's water supply will look like in 2040. Included in that long-term projection are predictions concerning future water demand, conservation planning, contingency planning in case of short- or long-term droughts and other catastrophes, and potential strategies to enhance and diversify South Gate's water portfolio.

Overall, this plan was developed to be used as a tool to recognize, protect and enhance the value of South Gate's water resources. This is a living document that will be updated periodically as needed by the City and as required by the State in five year increments

The City of South Gate is located in the urbanized area of southern Los Angeles County, just 12 miles south of downtown Los Angeles. The City was incorporated in 1923 and is the seventeenth largest city in Los Angeles County, encompassing 7.5 square miles.

The City currently meets all of its water needs from its groundwater wells and adjudicated pumping rights. There are two MWD connections for purchased water that can be used but this has not been necessary since 1999 and not since 1990 have they been used on a regular basis. There are also several connections with other agencies that can be used in an emergency.

1.2 Urban Water Management Act

The City of South Gate 2015 Urban Water Management Plan has been prepared in response to the California Urban Water Management Planning Act (Water Code Division 6, Part 2.6, Sections 10610-10656—included as Appendix A). The Act requires all publicly and privately owned urban water suppliers that either have 3,000 or more customers or provide over 3,000 acre-feet (acre-foot = amount of water required to cover one acre one foot deep) of water annually to prepare an updated Urban Water Management Plan (UWMP) by the end of the calendar years that end in five or zero. A water supplier can also periodically review and adopt changes or amendments to its UWMP in intervening years.

The Act requires that UWMPs describe the suppliers' service area, water use by customer class, water supply and demand, water service reliability and shortage response options, water transfer and exchange opportunities, water recycling efforts and conservation measures. The state also expects the 2015 plans to reflect changes to the UWMP Act since the last round of UWMP updates in 2010 (see Section 1.3).

Overall, the UWMP requirements for 2015 reflect a heightened interest in water conservation. Additionally, recent litigation has added significant weight to documents like UWMPs which provide

legal and authoritative assessments of water supply and environmental impacts. Urban planning managers are expected to use UWMPs to determine future development goals as well as vulnerabilities in security infrastructure.

This 2015 Urban Water Management Plan was prepared in compliance with the requirements of the current Urban Water Management Act and under the guidance provided by the California Department of Water Resources.

A municipal urban water supplier's UWMP is to be enacted by City Council resolution and submitted to the California Department of Water Resources (DWR) within thirty (30) days of adoption. The DWR reviews the UWMP for completion.

1.3 Changes to the Act Since 2010

Since 2010, several amendments have been added to the Act. The following is a summary of the significant changes in the Act that have occurred from 2010 to the present:

- 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.
- Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.
- Requires the plan, or amendments to the plan, to be submitted electronically to the department.
- Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.
- Requires a plan to quantify and report on distribution system water loss.
- 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.
- Provides for an urban water supplier to include certain energy related information, including, but not limited to, an estimate of the amount of energy used to extract or divert water supplies.
- 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.

Chapter 2 - Plan Preparation

2.1 Plan Preparation

The City of South Gate contracted GEI Consultants, Inc. to prepare its 2015 Urban Water Management Plan. Below is an overview of the water system that verifies the need for a UWMP.

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
1910152	City of South Gate	14,179	7,691
TOTAL		14,179	7,691
NOTES:			

The City of South Gate is a member of the Central Basin Municipal Water District RUWMP and the Gateway Regional Alliance.

Table 2-2: Plan Identification

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

NOTES: South Gate is a member of the Central Basin Municipal Water District RUWMP.

The City of South Gate is a retailer and this report is calculated in Calendar years with all water measurements in Acre-Feet (AF).

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

2.2 Regional Coordination

The City of South Gate coordinated with the agencies listed in Table 2-4. The City’s major water supply is provided via groundwater wells utilizing allocated pumping rights from the Central Basin. There are two connections with MWD although they have not been used in over ten years. The City also has emergency interconnections with several other water agencies.

The City of South Gate conveys its wastewater to the Sanitation Districts of Los Angeles County (LACSD). LACSD functions on a regional scale and consists of 23 independent special districts serving about 5.7 million people in Los Angeles County. The service area covers approximately 820 square miles and encompasses 78 cities and unincorporated territory within the county. LACSD was notified of the City’s intention to prepare the UWMP. Although the City may not develop their own recycling program, additional recycling opportunities are expected to be available through CBMWD. Their programs are discussed in more detail in Section 4.2.

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

Chapter 3 - System Description

3.1 General Description

The South Gate water system serves the entire City with the exception of a portion of the Hollydale area, south of Gardendale Avenue, which is served by Golden State Water Company.

The groundwater wells in the City water system extract water from the Central Groundwater Basin. Treated Colorado River water is available for purchase from the Metropolitan Water District through two turnouts within the City. The purchased MWD water can serve as an emergency water source during system or operations failure. The City also has five additional interconnections with surrounding water purveyors including the City of Downey, the City of Lynwood, City of Huntington Park, the Walnut Park Mutual Water Company, and Golden State Water Company in Hollydale.

The City of South Gate operates a municipal water utility located in an adjudicated ground water basin (the Court retains jurisdiction to assure a balanced Central Basin aquifer through a Judgment awarding groundwater pumping rights to water producers and the Court appointed Watermaster – the Water Replenishment District of Southern California (WRD) – assists the Court in the administration and enforcement of the Judgment). The Utility has annual pumping rights of 11,183 AF of water. The City manages and operates wells, pumping plants, treatment facilities, water mains, and reservoirs. The water system in South Gate is regulated through federal law, state law, and the South Gate Municipal Codes. As of 2015, the City has a total of 14,179 metered connections. Seventy-three percent of water is used by residential users, twenty percent commercial, seven percent industrial, and less than one percent other users.

3.1.1 City History

The Tongva tribe and other Native American tribes were the original inhabitants of the entire Los Angeles coastal area around South Gate. The vast Rancho San Antonio – stretching from the eastern boundary of the pueblo of Los Angeles to the San Gabriel River – was granted to Spanish settlers by the King of Spain in 1810, and South Gate grew up around the literal “south gate” of this Rancho. Before the end of the 1870’s, much of the Rancho had been divided into 40-acre tracts, and by 1880 agriculture had replaced cattle ranching as the area’s primary industry. In 1918, the Rancho was further subdivided and sold to 125 pioneering homeowners. This unincorporated community known as “Southgate Gardens” included some of the City’s earliest streets, running east from Long Beach Boulevard to Otis Street and south from Santa Ana Street to Independence Avenue. Post Street, State Street, and Victoria Avenue were also designated as the “business district.”

When the City was incorporated in 1923, it had a population of around 2,500, but as California – and particularly nearby Los Angeles – boomed in the 1920s, 1930s, 1940s, and 1950s, so did South Gate. Major manufacturers such as Ameron, Firestone Tires, General Motors, Purex, the Star Roofing Company (now U.S. Gypsum,) and the Weiser Hardware Company flourished in the new city, and the population increased. Most of the housing in South Gate was built between 1920 and 1970 to house blue collar and industrial workers in and around the City. Los Angeles’ intense post-WWII urban sprawl eventually surrounded the once rural South Gate and brought it into the center of one of the United States’ largest metropolitan areas (around 18.5 million people live in the greater Los Angeles area today)¹.

¹ City of South Gate, www.cityofsouthgate.org/theearlyyears.htm

The City of South Gate is poised for positive change over the next 20 years – change that will simultaneously transform the landscape of the City and yet maintain the small town quality and characteristics cherished by residents and respected by neighbors.

In many ways, South Gate is grappling with similar issues and forces facing many other cities in Southern California. The City's industrial job base – historically driven by such major employers as Firestone Tires and General Motors but now dominated by warehouse, distribution and small-scale manufacturing – is being forced to transform itself and provide 21st century technologies and jobs. As is common with built-out “inner ring” suburbs, there is almost no undeveloped land in the City for development or parks, and most of the new housing and jobs must come from redevelopment, infill, densification, or adaptive building reuse. South Gate is also grappling with developing a multi-modal, 21st century transportation system that enhances access and mobility for all residents. Demographically, South Gate's large Latino population, where many residents are first or second generation immigrants from Central and South America, reflects the demographic shifts occurring in the country at-large and, more specifically, in Southern California. And like many cities, South Gate is largely defined by the nature of its neighborhoods – most of which are stable, high-quality building blocks for community.

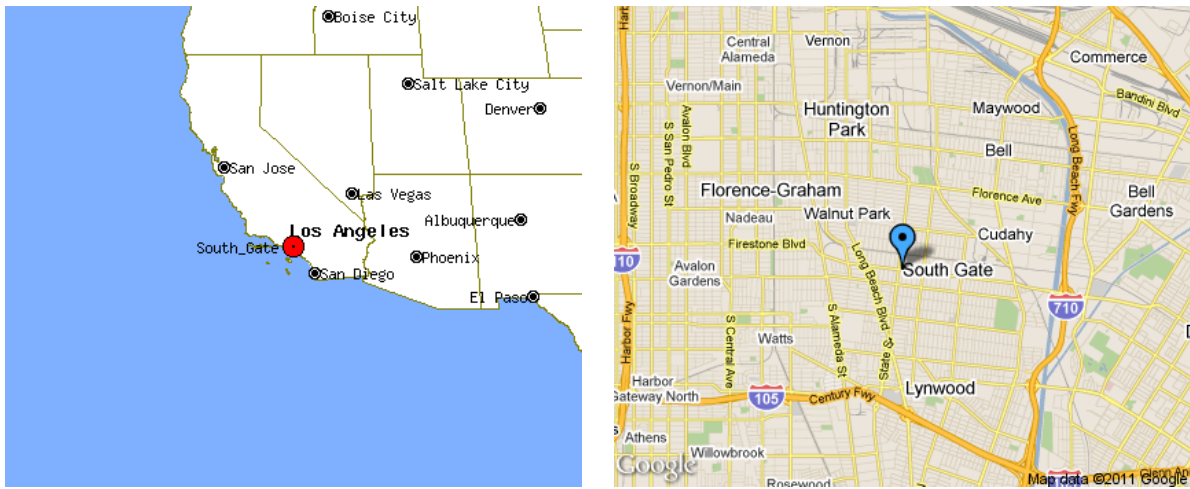
3.2 Service Area Boundary Maps

The City of South Gate is located in the urbanized area of southern Los Angeles County, a few miles south of downtown Los Angeles. The City of South Gate covers approximately 7.5 square miles of the south-central area of Los Angeles County. The City is bounded by an unincorporated area of Los Angeles County known as Walnut Park; cities of Huntington Park, Cudahy, Bell, and Bell Gardens, Downey, Lynwood, and Paramount. The City is located in the coastal plain at the confluence of the Los Angeles River and Rio Hondo. The terrain is gently sloping, ranging from 80 to 135 feet in elevation above sea level.

The City provides water service to most of the area within the city limits. However, water service to one section, Hollydale, is provided by Golden State Water Company (See Figure 3-4). Sewer collection and storm drainage is provided for all areas within the City limits. The City manages the sewer system and is maintained by the LACSD. All sewage is conveyed to LACSD's wastewater treatment plant. The Los Angeles County Department of Public Works provides storm drain management, while some of the local storm drains are owned and operated by the City.

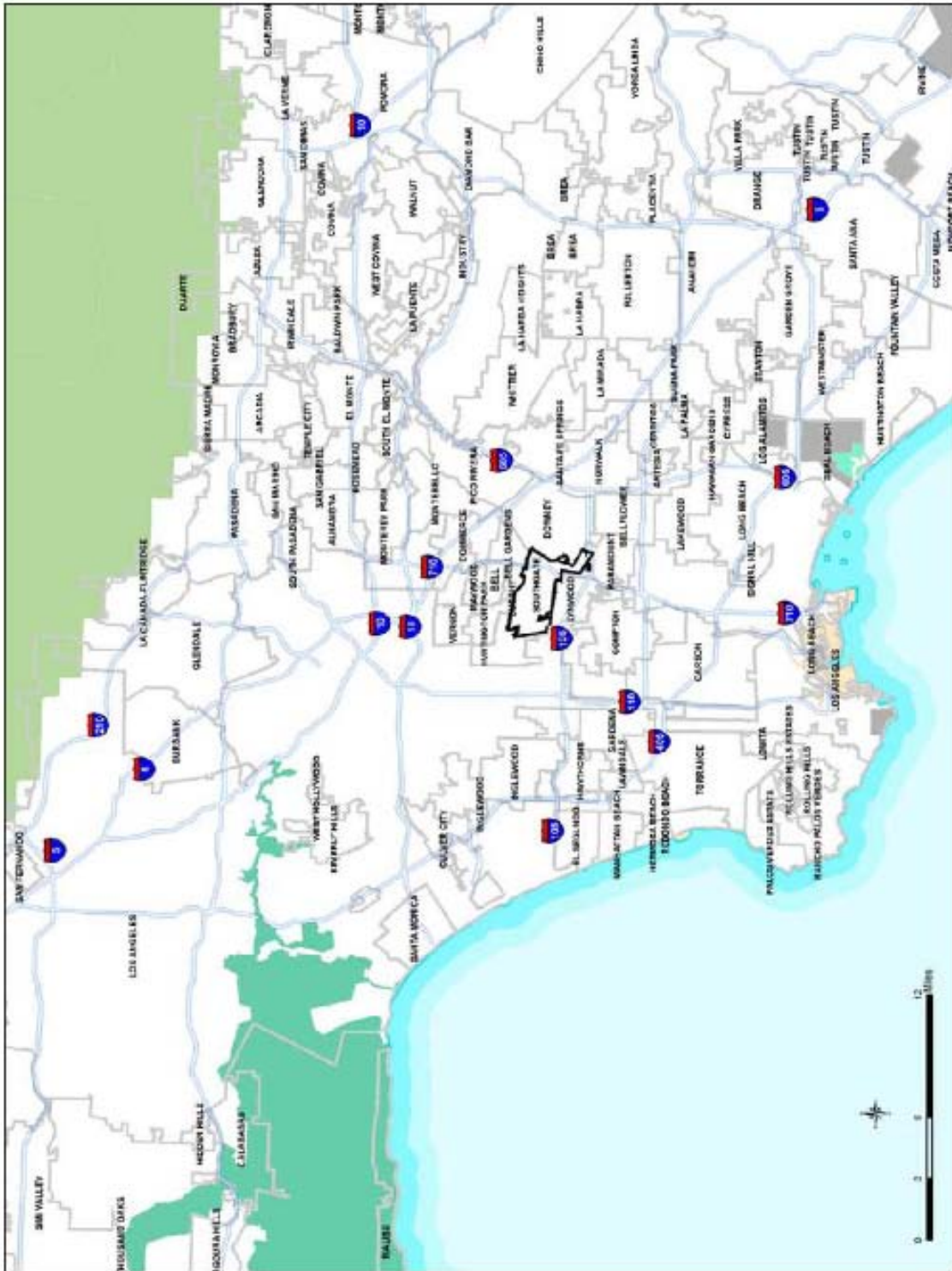
The topography of South Gate is dominated by the Los Angeles River (LA River) and Rio Hondo. The LA River divides the City into eastern and western sections. Land west of the LA River gently slopes to the river. Land east of the river slopes toward the LA River or Rio Hondo. There are no significant hills or known faults within the City. The Newport-Inglewood Fault is located about three miles to the southwest, the Whittier-Elsinore Fault is about ten miles to the east, and the San Andreas Fault is located about 40-miles to the northeast.

Figure 3-1: Location of South Gate



Source: South Gate, California Profile, 2016. <http://www.idcide.com>.

Figure 3-2: Location of South Gate



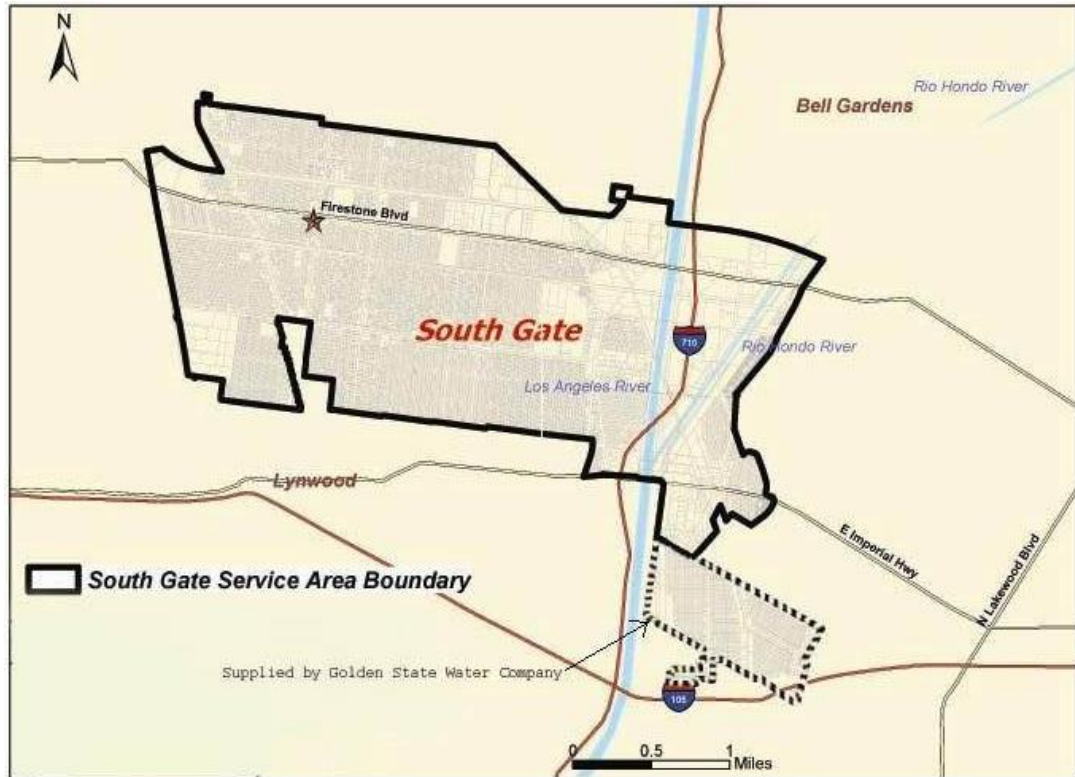
Source: City of South Gate General Plan, December 2009

Figure 3-3: City of South Gate City Limits



Source: City of South Gate General Plan, December 2009

Figure 3-4: City of South Gate Water Service Area



Source: City of South Gate Water Master Plan, August 2005

3.3 Service Area Climate

The City of South Gate is located in the desert climate of Southern California in the County of Los Angeles. South Gate has a semiarid Mediterranean climate with mild winters and hot, dry summers. Temperatures range from a low of 40 °F to a high of 110 °F. The average daily temperatures range from 56 °F to 75 °F. The average annual precipitation is 14.92 inches per year with most occurring between November and April.

Table 3-1: Climate													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Rainfall (inches)	3.22	4.47	1.47	0.99	0.45	0.09	0.00	0.09	0.08	0.90	0.93	2.23	14.92
Average Max Temperature (°F)	67.4	67.7	69.9	70.8	74.8	77.7	83	84.1	81.4	77.8	72.5	67.7	74.6
Average Min Temperature (°F)	48.8	49.5	51.9	53.5	58.4	61.4	64.7	64.9	62.9	58.7	53	48.2	56.3
Average ET (inches per month)	1.9	2.3	3.6	4.4	4.9	4.7	5.5	5.3	4.2	3.1	2.0	1.6	43.6

Sources: Monthly Average ETo Report (No. 174, Long Beach, Los Angeles Basin Region), CIMIS, Department of Water Resources, Office of Water Use Efficiency, Accessed March, 2016

3.4 Service Area Population and Demographics

3.4.1 Population

By 2010, South Gate was home to an estimated 94,396 people, double what it was in 1960 and about 2% less than in 2000. The actual current population may be 10-20% higher than that estimate because of the large immigrant and undocumented population in the City. Having fully transitioned away from its beginnings as a small agricultural outpost, South Gate can now be characterized as an increasingly urbanized city in greater Los Angeles that still retains a “small-town” identity, with a continued but diminishing manufacturing and industrial presence, and a still prevalent Spanish and Latino heritage.

Population figures were provided and developed from multiple sources and provided for the City of South Gate and the South Gate water service area. The City population and service area population were provided by the 2010 Census and the DWR Population Tool.

South Gate’s population since 2000 has declined by less than 1 percent per year and it expected to continue at that rate as the City has been mostly built out. Redevelopment of the vacant industrial areas are the most likely locations for additional population growth. By 2040 South Gate’s population is expected to reach 104,749.

The City of South Gate’s water service area does not mirror the city boundaries. Therefore the population estimates must be adjusted accordingly for the Hollydale area, south of Gardendale Avenue, which is served by the Golden State Water Company within the city limits. The DWR takes this difference in area into account. An increase of 2% per 5 years was used for both the City population and the service area population.

Table 3-2 gives the current and projected population for the City of South Gate’s Water Utility service area:

Table 3-2 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040(opt)
	88,654	90,427	92,236	94,080	95,962	97,881
NOTES: This is for the water service area which includes the City of South Gate but not the Hollydale area served by Golden State Water Company.						

3.4.2 Demographics

At its core, South Gate is a city of families and neighborhoods. In 2010, 86.6% of all households in the City were made up of families (couples with or without children or single people living with children), a slight increase from 86% in 2000. Many families are young. Nearly one-third of the population is 18 years old or younger, the City’s median age is 29.4, and the 27-54 year old demographic is by far the fastest growing age group. Many of these young families live in single family residential homes, which are the most common type of housing found in most residential neighborhoods. The City’s population is predominantly Hispanic. Many residents are first or second generation immigrants, and 94.8% of residents were identified as Hispanic or Latino in the 2010 census.

South Gate residents are about as likely to be renters as to be owners. According to the 2010 Census, approximately 46% of South Gate’s housing units are owner-occupied and 54% are renter-occupied. In 2010 South Gate’s vacancy rate were below four percent for rental housing and below two percent for ownership housing. These numbers point to a very tight rental and housing ownership market.

South Gate has a strong and active workforce. In 2015 according to the Employment Development Department (EDD), 7.8% of South Gate residents were unemployed, significantly higher than Los Angeles County’s unemployment rate of 5.9%. The median household income was \$43,526 for 2010-2014. There are fewer jobs in South Gate city limits (18,944 in 2012) than housing units (24,160 in 2010)², and many residents that cannot find suitable jobs within city limits commute elsewhere for work. The jobs that exist in South Gate city limits are primarily in the industrial sector, with a low number of office or service jobs.³

South Gate’s economy is supported by approximately 19,000 jobs. The education, retail and manufacturing sectors provide the majority of employment opportunities in South Gate. Many direct and indirect manufacturing businesses are located in the City, taking advantage of its proximity to Downtown Los Angeles, one of the largest economic centers in the nation in addition to the Ports of Los Angeles, Long Beach and the Alameda Corridor.

Retail trade is one of the fastest growing industries in the City. Between 1996 and 2006 South Gate saw a 12.4 percent growth in retail industry jobs. The retail sector is now a larger portion of jobs than manufacturing. Much of the City’s retail growth is occurring along Firestone Boulevard. Currently, Firestone is home to many new and used auto dealerships, which provide substantial taxable annual sales for the City. Other major commercial districts in the City include Tweedy Mile, Hollydale Business District, State Street, Paramount Boulevard, Long Beach Boulevard and El Paseo.

² US Census Data 2010.

³ South Gate General Plan 2035

Commercial establishments in South Gate are located mainly along major arterials such as Firestone Boulevard, Atlantic Avenue, Tweedy Boulevard, and Long Beach Boulevard. The section of Tweedy Boulevard between Long Beach Boulevard and Hunt Avenue is considered the central business district of South Gate. In recent years, the number of commercial establishments has increased as development occurs and industrially zoned land is converted to commercial uses.⁴

South Gate is currently home to a number of major industries including Schultz Steel, Saputo Cheese, Armstrong World, Philadelphia Quartz Industry, and Koos Manufacturing. In the 1980's, South Gate's industrial base changed as General Motors and Firestone Rubber closed manufacturing plants in the City. US Gypsum also left the city, changing the industry further.

In the past, South Gate was a predominantly agricultural area until the mid-1930, when urban growth replaced much of the farm land. Currently, there is very little land dedicated to agricultural production. Remaining agricultural land is located along the transmission utility right-of-way (owned by the Los Angeles Department of Water and Power and the Southern California Edison Company) adjacent to the Los Angeles River and the Rio Hondo and along a portion of Southern Avenue near Atlantic Avenue. The updated General Plan studies do not expect this agriculture use will change.

3.4.3 Land Use

Land use categorized as residential, commercial, industrial, and public/institutional comprise approximately 82% of the City's total land area of 3,739 acres. The remaining land consists of public parks, freeways, flood control right-of-ways, and railroad right-of-ways. Almost all of South Gate is developed, with less than 60 acres remaining undeveloped or vacant. The composition of existing land use in South Gate by user category is shown on Table 3-3.

Land Use	Number of Parcels	Acres	Percent Acreage
Single-Family Residential	10,348	1,374	36.7%
Multi-Family Residential	3,718	570	15.2%
Residential Landscaping	1	6	0.2%
Commercial 1	335	114	3.0%
Commercial 2	598	228	6.1%
General Industrial	467	719	19.2%
Railroad	48	72	1.9%
Flood Control District	69	158	4.2%
Easement	129	86	2.3%
Easement/Powerline R/W	127	73	2.0%
Civic/Institutional	8	10	0.3%
Public Works	96	72	1.9%

⁴ 2005 City of South Gate Water Master Plan

Schools	37	69	1.8%
Schools with Green Areas	46	128	3.4%
Parks	191	60	1.6%
Vacant	10,348	1,374	36.7%
Totals	16,218	3,739	100%
REFERENCE: 2005 City of South Gate Water Master Plan			

Commercial land use includes neighborhood, community, and regional shopping centers; commercial sales and service; general office; medical office; and lodging. Commercial development is located primarily on commercial strips located adjacent to major arterials such as Firestone Boulevard, Long Beach Boulevard and Tweedy Boulevard. The central business district is the section of Tweedy Boulevard between Long Beach Boulevard and Hunt Avenue.

Commercial land uses account for approximately 9.1% of the City’s total land area. The commercial parcels within the City showed a wide range of demand characteristics. In order to more effectively allocate water system demands, commercial land use was separated into Commercial 1 and Commercial 2. Commercial 1 is categorized as users with a daily average consumption of approximately 1200 gallons. Commercial 2 is categorized as users with a daily average consumption of approximately 4500 gallons. These categorizations are based purely on demand characteristics for the purposes of this master plan.

Industrial land uses are concentrated in the northeastern, eastern and extreme western parts of the City. The southwestern industrial sites are currently occupied by warehousing and distribution sites. The northwestern industrial sites are currently occupied by a variety of industrial users, including light manufacturing and mineral processing sites.

In the ultimate land use scenario, 376 parcels totaling 160 acres change land use with respect to current land use. The 160 acre total represents 60 acres of vacant land that are developed to the ultimate allowable land use and 100 acres that are redeveloped from existing land use. The large areas of concentrated redevelopment include two areas of new schools in the eastern/southeastern areas of the City.

There are three major parks and a number of smaller parks located throughout the City. Athletic fields and picnic areas are available at both South Gate Park and Hollydale Park. The City owns and maintains a 9 hole, par-3 golf course, and a recreation center equipped with a swimming pool at the South Gate Park. In addition, there are ten elementary schools, two junior high schools and two senior high schools located in the City. There are playgrounds and recreation programs at the elementary schools and athletic fields are available for public use at the junior and senior high schools.

3.5 System Description

The City of South Gate water system has approximately 124 miles of water mains. About 30 miles of these mains consist of cast iron pipes that are planned to be replaced by ductile iron pipes in the future. As part of this continuous replacement program, the City recently upgraded several miles of water mains. While majority of the distribution system consists of cement-lined cast iron piping, it also has some asbestos-cement, steel, polyvinylchloride (PVC) and ductile iron piping. There are about 1,250 control valves, 1,250 fire hydrants, 20 dead-ends equipped with blow-off valves for flushing in the system. The water system encompasses a single pressure zone with 50-70 pounds per square inch (PSI) being maintained at all times.

Currently, the City's potable water demand is met by seven active wells (Table 3-4 and Figure 3-5). A detailed description of the wells is given in Chapter 6. The water extracted from these wells is disinfected with liquid sodium hypochlorite at the well facilities prior to the delivery into the distribution system. The water system also has a manganese removal treatment plant for Well No. 27 at the Westside Reservoir site. Three additional wells (Wells 13, 23, and 25) in the system are classified standby at present due to elevated levels of iron, manganese, or other volatile organic carbon (VOC) contaminants classified by EPA. Well No. 22B was removed from service in the past due to contaminants that required extensive pretreatment.

Well No. 28, located at Ardmore Avenue and Elizabeth Avenue, is one of the primary production wells of the system. The water from Wells No. 14, 18, and 19 is treated by a spray aeration system 5,000 gallons per minute (GPM) capacity contained within the existing 4 million gallon (MG) underground reservoir located at South Gate Park Spray Irrigation Facility. In the past, the contaminants trichloroethylene (TCE) and tetrachloroethylene (PCE) were detected in these wells exceeding the EPA maximum contaminant level (MCL) requiring spray aeration treatment for mitigation.

There are two elevated tanks, four ground level tanks and one underground concrete tank in the system. These storage facilities are made of steel except for the buried reservoir in the South Gate Park which is of steel-reinforced concrete. Two of the ground-level tanks, capacity 2.5 MG each, are located at Firestone Boulevard and the I-710 Freeway, referred to as the Hawkins Reservoirs, while the remaining two ground level tanks, capacity 1.66 MG each, at West Side Reservoir site are located at Tweedy Boulevard between Well No. 26 and Well No. 27. All tanks except for the Park Treatment Reservoir were cleaned and inspected in 2014. The Park Treatment Reservoir was cleaned and inspected in 2015.

The two elevated tanks in the distribution system at the Santa Fe Avenue (0.5 MG) and Salt Lake Avenue tanks (0.5 MG) are currently discontinued from service mainly for safety reasons as they do not meet the seismic standards.

There are three booster pump stations in the system:

- 1) Hawkins Reservoir Pumping Plant, located at Firestone Boulevard and I-710 Freeway, consists of four booster pumps rated 150 HP each. Of the four pumps, two pumps are equipped with variable speed drives while the remaining two are operated at constant speed. These booster pumps can provide 2,800 GPM each. They pressurize the water from the Hawkins Reservoir. Wells No. 24 and 25 are also located at this location. There is also a 750 kilowatt (kW) diesel generator to provide emergency power to these boosters.

2) The second booster pump station at the South Gate Park Reservoir site for Wells No. 13, 14, 18, and 19 has four vertical turbine pumps. These 150 HP/2,200 GPM pumps deliver water from the reservoir into the distribution system. There is also a 1,000 kW generator for auxiliary/emergency power at this site.

3) The third booster pump station is located on Tweedy Boulevard between Well No. 26 and Well No. 27 at Westside Reservoir Site. This booster pump station is equipped with four variable speed drive vertical turbine pumps. These are capable of producing 2,500 GPM each and pump water from the reservoir into the distribution system. There is also a 1,000 kW generator for auxiliary/emergency power at this site.

The City is currently pursuing an aggressive capital improvement program estimated at \$13 million. The facilities currently under construction include drilling of new Well No. 29 at the intersection of Santa Fe Avenue and Ardmore Avenue, constructing a new 1.8 MG reservoir at Well No. 28 site, and installing approximately 5,100 feet of new 8" – 12" ductile water mains in Ardmore Avenue and San Luis Avenue to replace aging cast iron mains. Once completed, Well No. 28 piping will be reconfigured to feed into the new storage tank for delivery into the distribution system through the booster station.

Figure 3-5 – Water System Layout

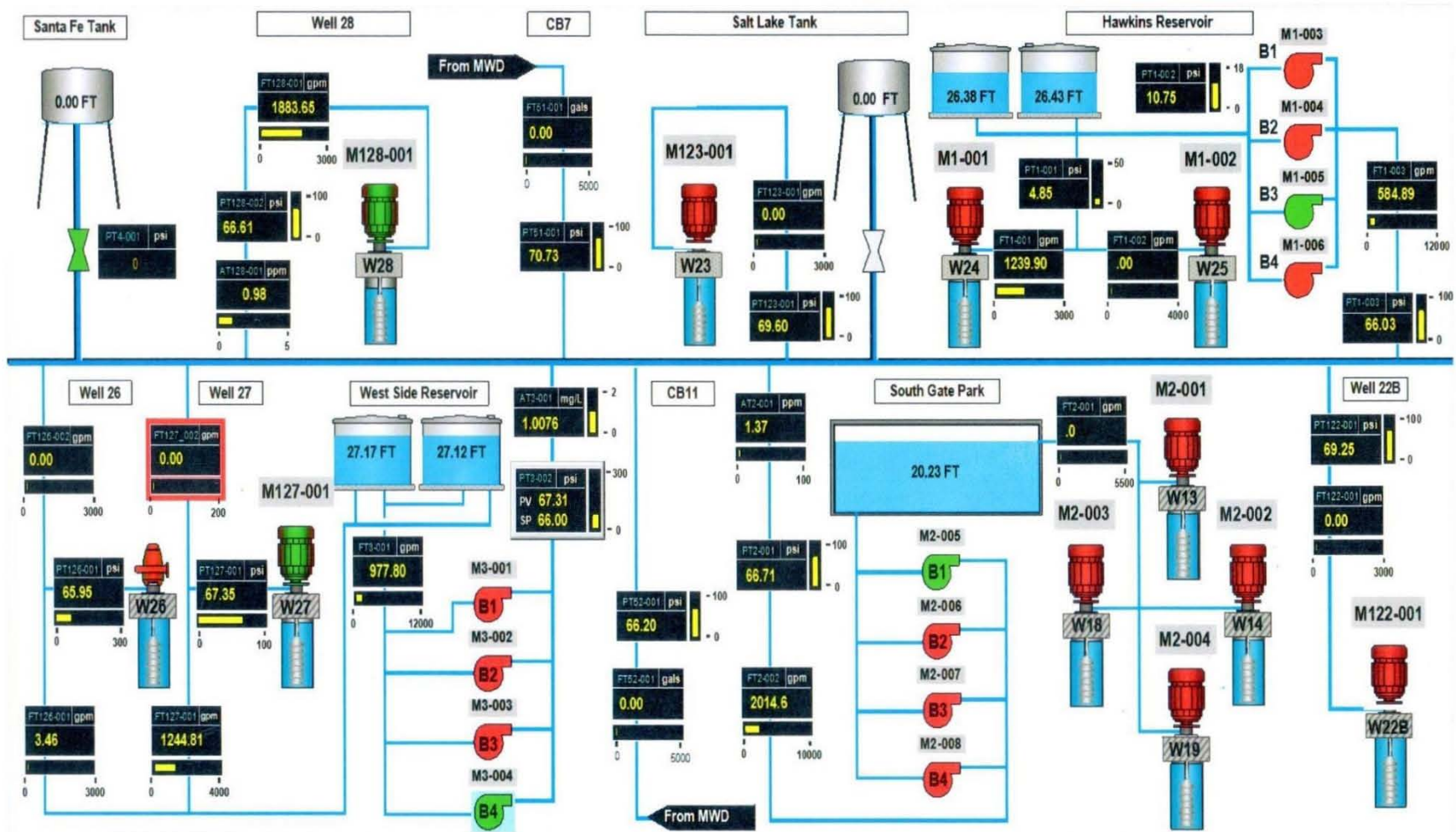


Table 3-4 -WELLSITES AND RESERVOIRS

State Well No.	Well No.	Drilled	Capacity	Status
03S/ 12W-06D01	13	1940	1,650 GPM	Stand-by (Submersible pump. High levels of Iron and Manganese).
03S/ 12W-06D02	14	1944	2,900 GPM	Active
03S/ 12W-06D03	18	1945	1,500 GPM	Active
03S/ 12W-06D04	19	1947	2,000 GPM	Active
03S/12W-05M01	22-B	1948	950 GPM	In-active (High levels of TCE – Not connected to distribution system).
03S/ 12W-06B03	23	1952	600 GPM	Stand-by (High levels of Iron and Manganese).
02S/ 12W-31Q03	24	1985	1,500 GPM	Active
02S/ 12W-31Q02	25	1985	350 GPM	Stand-by (High levels of Iron and Manganese).
02S/ 13W-34Q03	26	1984	1,600 GPM	Active (Natural Gas powered).
02S/ 13W-34R01	27	1987	1,500 GPM	Active (Iron and Manganese Treatment Facility).
02S/ 13W-35A002S	28	2003	2,500 GPM	Active

Tanks and Reservoirs

	Built	Capacity
Hawkins Reservoir	1985	2 – 2.5 Million Gallons
Santa Fe Tank (Inactive)	1946	500,000 Gallons
Salt Lake Tank (Inactive)	1951	500,000 Gallons - Inactive
Westside Reservoir	1999	2 – 1.66 Million Gallons
Park Treatment Reservoir (below grade)	1994	4.2 Million Gallon

Chapter 4 - System Water Use

This section provides an overview of water usage in the City of South Gate. It includes an overview of the system demands as well as the past, current and projected usage numbers, including water sales to other agencies and unaccounted-for water system losses, for the City of South Gate through 2035.

Analysis of present water use determines the make-up of the City's current water users, and the magnitude of consumption by these users. From this analysis, water use by customer class can be determined. Historical and present water use, in conjunction with planning information, is the basis for projecting future water demand.

Water production for South Gate is equal to the groundwater withdrawn by City wells plus any imported water purchased from MWD and interconnections with adjacent cities. It is the total amount of water introduced into the distribution system. Water produced by City wells and MWD connections are recorded by meters located at each production facility. Water consumption reflects water consumed by City customers as recorded by customer water meters. The difference between water production and water consumption is represented by unaccounted-for water.

Water demand is projected water consumption, but not necessarily available. During a period of adequate supply, the amount of water that is desired will be consumed. During a period of restricted water availability, such as a drought, water consumption may be less than desired water demand if mandatory water conservation measures are imposed because of drought conditions.

4.1 Demand Project Development

The projections for growth within the City are based on multiple resources. For residential uses, the main component is basic population growth. An analysis of recent, current and projected populations and the amount of water used by the residents establishes the majority of the projected demand. For the industrial and commercial customers, the growth is based on planned projects provided by City staff and reports. Most development, however, is in redevelopment areas as the City has been built out for many years.

Koos Manufacturing and Saputo Cheese are the top two users totaling an average of 160,000 units (371 AF) over the last five years. Those two typically have roughly double the consumption of the next largest user and about 8 times the 10th largest user.

The large projects anticipated by the City include:

- Gateway Retail Center - 600,000SF commercial area – 30.5 AC
- South Gate Civic Center - 118,000 SF
- Hon Property-Retail – 19.23 AC
- East Los Angeles Community College Extension - 18.51 AC

As these projects are less than a 10% increase to the commercial and industrial uses within the City, we will assume a 1% rate per year in each sector throughout the study period of this report. Although it is possible that a large industrial user could return to the City, there is no planned development at this time.

The City of South Gate projects no future demand for imported water from MWD. The City has not used MWD water for several years and currently only anticipates using the connections for emergencies. Based upon demand projections in Section 4.4, the 11,183 AF of adjudicated allotment for groundwater will be sufficient.

4.2 Recycled versus Potable and Raw Water Demand

Water recycling is the reuse of treated wastewater for non-potable (non-drinking) purposes, including industrial uses and irrigation for public landscaping, such as medians, parks and golf courses. Using recycled water can increase the availability of potable water supplies.

The City of South Gate does not own or operate any water recycling facilities. The City purchases recycled water from the Central Basin Municipal Water District (CBMWD), which is offered to industrial users at a 15 percent discount. CBMWD obtains recycled water from the San Jose Creek Water Reclamation Plant in Whittier and the Los Coyotes Water Reclamation Plant in Cerritos, which are owned and operated by the LACSD. The City is a member agency with the LACSD. LACSD constructs, operates, and maintains facilities to collect, treat, recycle, and dispose of residential, commercial, and industrial wastewater.

From 1996 to 2015, South Gate purchased 3,417 AF of recycled water from the CBMWD. The City itself uses recycled water for irrigation in Hollydale Park and Circle Park. There are also two carwash facilities in the City that recycle their own water. CBMWD operates a recycled water pipeline on Atlantic Avenue that has enough capacity to provide for most of the industrial uses in that area, but despite the reduced cost the potential customers have not been motivated to use this resource. CBMWD may extend additional recycled water pipeline to the west side of the City.

Individual districts operate and maintain their own portions of the collection system. The City is planning on expanded use of recycled water for medians, and park facilities where possible. It may be necessary in the future to require landscaping on private property to use recycled water. A program to educate and guide the potential customers about the benefits and safety of the recycled water will be pursued. Recycled water is less expensive to acquire, more reliable and is the best means to reduce potable water demand.

Historical Recycled Water Use (AF) of CBMWD and South Gate

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
South Gate	153	176	210	127	113	219	97	147	238	185
CBMWD Total	3936	5311	5073	4716	4317	4164	4501	5051	5885	5160

4.2.1 CBMWD Recycling Plan

Recycled water is a cornerstone of CBMWD’s efforts to augment local supplies and reduce dependence on imported water. Since planning and constructing its recycled water distribution systems in the early 1990s, CBMWD had become an industry leader in promoting water re-use. Recycled water is used for non-potable applications such as landscape irrigation, commercial and industrial processes such as cooling, and indirect potable use through groundwater replenishment.

In FY 2014, recycled water demand within CBMWD’s service area peaked at 5,885 AF. This amount represented about 2 percent of the CBMWD service area total water demand.

The source of CBMWD's recycled water is LACSD. LACSD operates six water recycling plants in the Los Angeles basin. Wastewater that is treated at the San Jose Creek and the Los Coyotes water reclamation plants undergoes tertiary treatment and denitrification. Tertiary recycled water is filtered and disinfected wastewater that meets specific Title 22 testing criteria.⁵ Tertiary treated water can be used for a wide variety of industrial, irrigation and groundwater replenishment purposes where high-quality non-potable water is needed.

CBMWD's recycled system is comprised of two separate projects: E. Thornton Ibbetson Century Water Recycling Project (Ibbetson Century Project) and the Esteban E. Torres Rio Hondo Water Recycling Project (Torres Project). Both projects deliver recycled water for landscape irrigation and industrial uses throughout the CBMWD service area.

The potential of recycled water use will increase among cities, water agencies, and businesses/industries through the years. The increased cost of imported water and groundwater will enhance the beneficial usages of recycled water.

In 2008, CBMWD developed a Recycled Water Program Master Plan to help identify all of the potential customers that could benefit from recycled water. Although there is great potential to increase recycled water use in CBMWD, there are challenges and limitation in connecting customers. Among them is proximity to recycled water pipelines, capacity and pressure to serve, and retrofit cost feasibility. These factors play a significant role in meeting the potential growth of recycled water.

4.2.2 Sanitation Districts of Los Angeles County (LACSD)

LACSD operate 11 wastewater treatment facilities, 10 of which are classified as water reclamation plants (WRPs). These facilities serve approximately five million people in 78 cities and unincorporated areas within Los Angeles County. Effluent quality from the WRPs ranges from undisinfected secondary to coagulated, filtered, disinfected tertiary. During 2015, LACSD facilities produced an average of 393.6 MGD, or 529,485 AF of effluent, which is a decrease of 3.9% from the preceding year, and an 11.8% decrease from the historic peak of FY 89-90.

Capacity at the ten LACSD water reclamation facilities is now 250.8 MGD (281,118 AF). However, of the total effluent produced in 2015, 135.2 MGD (151,544 AF) consisted of recycled water suitable for reuse (53.9% of capacity). This amount is 34.3% of the total amount of effluent produced, a decrease of 7.5% from the preceding year. The remaining 258.4 MGD (289,637 AF) was effluent discharged to the ocean from LACSD's Joint Water Pollution Control Plant (JWPCP) in the City of Carson, a 1.9% decrease from the preceding year.

LACSD has made efforts over the past four-and-a-half decades to divert high quality wastewater flows away from direct ocean disposal to the upstream WRPs, which provide recycled water supplies for eventual reuse. Discharge to the ocean has steadily decreased since the WRPs in the Los Angeles Basin (i.e., the Joint Outfall System, or JOS) were built in the early 1970's, while additional needed treatment capacity has been added to the WRPs. Significant drops in effluent production occurred in 1977 and 1991 in response to serious droughts. A similar drop in effluent production has been occurring since 2006 when the current water crisis in the State became apparent and conservation actions continue to be implemented. The majority of these decreases came from the JWPCP, while the upstream WRPs were able to maintain a relatively high level of production, which contributed to recycled water's reputation as being "drought-proof."

⁵ California Health Laws Related to Recycled Water, "The Purple Book", June 2001, Title 22, Chapter 3, Article 1, 60301.230

Of the total amount of recycled water produced, 79.16 MGD (106,489 AF) was actively reused for a variety of applications including urban landscape irrigation, agricultural irrigation, industrial process water, recreational impoundments, wildlife habitat maintenance, and groundwater replenishment.

The amount of recycled water used for replenishment of the underground water supply can vary greatly from year to year, depending on the amount and timing of rainfall runoff, maintenance activities in the spreading grounds, and other factors. The long-term trend of recycled water usage is best represented by the increase in direct, non-potable reuse for landscape and agricultural irrigation, industrial process supply, and environmental enhancement.

More recycled water is typically used for groundwater recharge (via surface spreading) than for all other applications combined because of its cost-effectiveness. The San Jose Creek, Whittier Narrows, and Pomona WRPs discharge to rivers or creeks (i.e., flood control channels) that can convey the water by gravity to existing off-stream recharge basins. These basins and the unlined portions of the rivers and creeks permit large volumes of recycled water to percolate by gravity into the aquifer. Recycled water used in this way incurs no additional capital improvement and related operation and maintenance (O&M) costs or any energy consumption for pumping.⁶

4.2.3 Future Recycled Water Uses

Regionally, the use of recycled water is growing. CBMWD, MWD, and LACSD are planning to increase production and availability of recycled water.

Locally, the City of South Gate already uses recycled water for municipal parks, school and landscaped median irrigation, commercial and industrial facilities. However, the costs associated with installing any new treatment systems to produce high-quality effluent and installing pipelines to distribute it locally has been prohibitive. There are no current plans to increase the use of recycled water.

4.2.4 Satellite Wastewater Treatment Plants

Satellite wastewater treatment plants or point-of-use facilities collect wastewater from an interceptor or trunk line, treat it so that it meets appropriate reuse standards, and then release it to nearby customers. Because the plants have such a small footprint, Membrane Biological Reactors (MBR) generally can be located even in dense urban locations without difficulty. The highly automated systems require relatively little operator oversight and tend to perform reliably.

The MBR process combines an aerobic biological process with an immersed membrane system. Cost-effective and reliable, this separation technology is suited for a wide range of municipal and industrial wastewater applications. MBR systems can also provide advanced nitrogen and phosphorus removal to meet the most stringent effluent requirements.

There are many equipment variations, configurations and options that can be used with MBR systems, all of which are designed to provide the necessary treatment for each wastewater or water reuse project. The equipment selected depends on effluent requirements, operation and maintenance requirements, power consumption, future expansion and initial capital costs.

Within the MBR process, the biological process and membrane operating systems are located in separate tanks to optimize performance of the overall process and to simplify operation and maintenance. This unique combination eliminates the need for clarifiers, return sludge pumping, polishing effluent filters and maintenance normally associated with a conventional clarification process.

⁶ Twenty-Fifth Annual Status Report on Recycled Water, Sanitation Districts of Los Angeles County

By eliminating clarifiers, the biological process can be designed and operated for high-rate wastewater treatment, rather than sludge settle ability. The biological system can also be operated at much higher mixed liquor suspended solids (MLSS) concentrations (8,000 to 16,000 mg/L). This results in a more efficient biological process that increases solids retention time, reduces sludge yield and improves reactor efficiency for nitrification and denitrification.

High MLSS levels also mean that the plants can operate with shorter hydraulic retention times, allowing smaller reactor basins than with conventional treatment. Space requirements in the plant can be up to 50 percent less than with a conventional biological process.

Operation of the MBR treatment process is easily automated and can be controlled with a microprocessor such as a membrane monitoring system, which continuously monitors and records important operational parameters. A highly automated design helps operators meet stringent environmental requirements.

4.3 Sales to Other Agencies

The City of South Gate has interconnections with five agencies as shown in Table 4-1. The Golden State and Lynwood connections are operated automatically based upon pressure settings while the other 3 connections are operated manually. Each of these connections can be used to buy or sell water as needed by the two agencies.

As each of these connections are only utilized as needed or during a water emergency, it is not likely to be a large volume of sales compared to total production. In 2015, 17.8 AF were sold to Golden State Water Company. Projecting forward, only a small planned sale quantity is anticipated. Table 4-1 lists all City of South Gate current and projected sales to other agencies:

Table 4-1: Sales to Other Agencies						
Water Distributed (AF)	2015	2020	2025	2030	2035	2040
City of Downey	0	0.1	0.1	0.1	0.1	0.1
City of Lynwood	0	0.5	0.5	0.5	0.5	0.5
Walnut Park Mutual Water Company	0	0.1	0.1	0.1	0.1	0.1
City of Huntington Park	0	0.1	0.1	0.1	0.1	0.1
Golden State Water Company	17.8	0.5	0.5	0.5	0.5	0.5
TOTAL	17.8	1.3	1.3	1.3	1.3	1.3
NOTES:						

4.4 Water Uses by Sector

The projections for growth within the City are based on multiple resources. For residential uses, the main component is basic population growth. An analysis of recent, current and projected populations and the amount of water used by the residents establishes the majority of the projected demand. For the industrial and commercial customers, the growth is based on planned projects provided by City staff and reports. Most development, however, is in redevelopment areas as the City has been built out for many years.

Koos Manufacturing and Saputo Cheese are the top two users totaling an average of 160,000 units (371 AF) over the last five years. Those two typically have roughly double the consumption of the next largest user and about 8 times the 10th largest user.

The large projects anticipated by the City include:

- Gateway Retail Center - 600,000SF commercial area – 30.5 AC
- South Gate Civic Center - 118,000 SF
- Hon Property-Retail – 19.23 AC
- East Los Angeles Community College Extension - 18.51 AC

As these projects are less than a 10% increase to the commercial and industrial uses within the City, we will assume a 1% rate per year in each sector throughout the study period of this report. Although it is possible that a large industrial user could return to the City, there is no planned development at this time.

Industrial water consumption accounts for about 7% of water used in South Gate. About 70% of all industrial water consumption is consumed by four of the City's top water users. These major industrial water users are: Saputo Cheese, Koo's Manufacturing, American Apparel and BGN Properties. There is some unoccupied industrial land that currently does not have any water demand, but it is anticipated vacant parcels may develop and water demand will increase with each development project.

The City of South Gate delivered 8,402 AF of water to 14,051 residential customers and 1,504 non-residential customers in Fiscal Year (FY) 2009-2010. This amount is much less than the city delivered in FY 2004-2005 (10,745 AF to 13,847 residential customers and 1,491 non-residential customers).

Table 4-2 lists the current water deliveries and Table 4-3 lists the projected water deliveries of the City of South Gate from 2020 through 2040 in 5-year increments. The resulting water use data is separated by sector into the following categories: single-family and multi-family residential usage, commercial and industrial usage and other.

Demand at the South Gate Park varies from 108 to 432 GPM depending on the number of sprinkler heads that are on-line. The parks are watered at night and the demand does not impact daytime water distribution.

Table 4-2 Retail: Demands for Potable and Raw Water - Actual			
Use Type (Add additional rows as needed)	2015 Actual		
Drop down list <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description (as needed)	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family	9,163 connections	Drinking Water	2698
Multi-Family	3,582 connections	Drinking Water	2693
Commercial	1,352 connections	Drinking Water	1455
Industrial	75 connections	Drinking Water	476
TOTAL			7,322
NOTES:			

Table 4-3 shows the projected water demands through 2040. The 2020-2040 calculations are based upon the population growth rates and the average usage rates as calculated in the previous sections.

Table 4-3 Retail: Demands for Potable and Raw Water - Projected						
Use Type (Add additional rows as needed)	Additional Description (as needed)	Projected Water Use Report To the Extent that Records are Available				
Drop down list <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>		2020	2025	2030	2035	2040-opt
Single Family		2,862	2,919	2,978	3,037	3,098
Multi-Family		2,540	2,591	2,642	2,695	2,749
Commercial		1,461	1,490	1,520	1,550	1,581
Industrial		485	494	504	514	524
Other		10	11	12	13	14
TOTAL		7,358	7,505	7,656	7,809	7,966
NOTES:						

Total water demands:

Table 4-4 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 <i>(opt)</i>
Potable and Raw Water <i>From Tables 4-2 and 4-3</i>	7,322	7,469	7,618	7,771	7,926	8,085
Recycled Water Demand* <i>From Table 6-4</i>	9	11	13	15	17	19
TOTAL WATER DEMAND	7,331	7,480	7,631	7,786	7,943	8,104
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						
NOTES:						

4.5 Distribution System Water Losses

The City of South Gate has some minor water losses. In 2015, unaccounted for water system loss was 179 AF, or about 2.3% of total production which was 7,691 AF.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	179
<i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i>	
NOTES:	

4.6 Estimating Future Water Savings

As detailed in Chapter 5, the current baselines and targets are all at 97 gpcd. Due to the water use being less than 100 gpcd, the City of South Gate is not required to do any water reduction at this time. However, the City will continue with current conservation measures and comply with the DMM's discussed further in Chapter 9.

The City is also a member of the Gateway Authority 20x2020 Regional Alliance which plans to meet the target goals from a regional perspective as well.

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

4.7 Water Use for Lower Income Households

The water use projections in Section 4.2 include water provided to low income housing units. The City does not have any specific projects planned for low income housing and they do not currently separate water accounts for low-income but based upon data provided from the Housing element, we can estimate the percentage of residences that are low-income. Lower income is based on 80% of median income of the County. In the 2005-2009 SCAG Data, 51% of households were below this income level.⁷ The ratios are expected to remain which allow us to project the water usage by using the rates as calculated below.

Table 4-5: Demands for Potable and Raw Water - Projected Low Income					
Use Type <i>(Add additional rows as needed)</i>	Low-Income Projected Water Use				
	2020	2025	2030	2035	2040-opt
Single Family	1,460	1,489	1,519	1,549	1,580
Multi-Family	1,295	1,321	1,347	1,374	1,402
TOTAL	2,755	2,810	2,866	2,923	2,982
NOTES:					

⁷ City of South Gate 2014 Housing Element

Chapter 5 - SB X7-7 Baselines and Targets

5.1 Updating Calculations from 2010 UWMP

The 2010 UWMP did not include the 2010 Census data. The City has adjusted the population values used in determining the baseline daily per capita water use using the DWR Population Tool. This is better estimate because it utilizes the actual area of the system, not just a percentage of the city area and the 2010 Census data as well as persons per connection calculations.

5.2 Baseline Periods

The City currently uses very little recycled water that is well below 10%, therefore a 10-year base period is used.

5.3 Service Area Population

The City of South Gate has developed its baseline target for the water service area individually and not part of a regional target. The city boundaries are not contiguous with the water service area; in the DWR Population Tool, the use of .kml file maps took this into consideration. The population estimates for the baseline years for the analysis were developed utilizing the DWR Population Tool. This method utilizes the 2010 Census data and calculates the person per single-family connection and per multifamily connection then projects the population out based on the connections throughout the selected base period.

In the 2010 UWMP, the DWR guidebook was used and without the 2010 census data, the population estimates were much larger than the online DWR population tool. This led to a minor adjustment of the 2015 and 2020 targets.

5.4 Gross Water Use

The gross water use for the area has been well documented by the city and Water Replenishment District. The 2010 values were confirmed. See Appendix E.

5.5 Baseline Daily Per Capita Water Use

Because of the adjustment of the population using DWR's population tool, the baseline daily per capita water use (GPCD) was recalculated. Using the same year periods as the 2010 UWMP, the 10 year baseline was 104 GPCD and the 5 year baseline was 106 GPCD. Using Method 3, these values are below 95% of the regional target of 149 GPCD, they are also barely above the cutoff of 100 GPCD.

The 2010 UWMP baseline was 97 GPCD based on the previous population estimates.

5.6 2015 and 2020 Targets

Given below is the adjusted targets for 2015 and 2020 are 103 GPCD and 101 GPCD, respectively.

Table 5-1 Baselines and Targets Summary					
<i>Retail Agency or Regional Alliance Only</i>					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target*	Confirmed 2020 Target*
10-15 year	2001	2010	104	103	101
5 Year	2003	2007	106		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES:					

5.7 2015 Compliance Daily per Capita Water Use (GPCD)

The actual usage in 2015 is 86 GPCD, this is well below the 2010 interim target of 97 GPCD and the adjusted 2015 target of 103 GPCD. The City achieved and exceeded its reduction target for 2015.

Table 5-2: 2015 Compliance <i>Retail Agency or Regional Alliance Only</i>									
Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD <i>From Methodology 8</i>					Adjusted 2015 GPCD*	2015 GPCD* <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*				
86	103	0	0	0	0	86	86	Yes	
<i>*All values are in Gallons per Capita per Day (GPCD)</i>									
NOTES:									

5.8 Regional Alliance

In addition, although the City is compliant with the 20x2020 goals by currently having a usage rate under 100 gpcd, it is also a participant in the Gateway Authority IRMWP. This Regional Alliance plans to meet the 20x2020 goals as well.

Chapter 6 - System Supplies

Groundwater is the major component of the City's water supply system. A secondary source, generally for emergencies, is from MWD connections and inter-connections with other water purveyors. Water generated by the groundwater wells is chlorinated and distributed to existing City customers or stored in elevated or ground-level (either buried or exposed on grade) reservoirs. Supply from the ground-level reservoirs is pressurized by booster pump stations into the distribution system.

The City of South Gate uses groundwater from the City wells as its primary source. Water generated from wells is chlorinated and distributed to City customers or stored in reservoirs. The total capacity of both active and stand-by wells is 23.17 million gallons per day (MGD), or 85.39 AF per day. This represents a surplus over the City's average daily demand of 9.32 MGD, and the City's maximum daily demand of 16.78 MGD. Because the total capacity of these existing wells exceeds maximum daily demand, additional wells are not required. However, reservoir storage capacity needs to be improved and additional reservoirs or storage capacity needs to be developed.

In addition to its own sources, the City also has agreements to purchase water from other agencies including the Metropolitan Water District of Southern California (MWD), the City of Downey and the Golden State Water Company. These secondary sources are generally for emergencies only, and the City has not used purchased water during the last ten years. The City is allowed to pump 11,183 AF per year, and has leased water rights of about 2,000 acre-feet per year to other agencies for many years. The City is working with other agencies to develop a "conjunctive use" program (water storage in the underground aquifer) and may be able to convert unused water to underground water storage. This plan requires cooperation with other water purveyors as well as court approval.

6.1 Purchased or Imported Water

The City of South Gate projects no future demand for imported water from MWD. The City has not used MWD water for several years and currently only anticipates using the connections for emergencies. Based upon demand projections in Section 4.4, the 11,183 AF of adjudicated allotment for groundwater will be sufficient.

6.2 Groundwater

6.2.1 Metropolitan Water District and CBMWD

CBMWD relies on approximately 90,600 (AF) of imported water from the Colorado River and California's State Water Project (SWP) to meet the District's retail and replenishment demands. MWD receives this supply from these two major water systems that supplies a majority of the Southern California region.

MWD was established to develop a supply from the Colorado River. Its first mission was to construct and operate the Colorado River Aqueduct (CRA), which can deliver roughly 1.2 million acre-feet (MAF) per year. Under its contract with the federal government, MWD has a basic entitlement of 550,000 AF per year of Colorado River water. MWD also holds a priority for an additional 662,000 AF per year.

SWP, MWD's second main source of imported water, is the nation's largest state-built water and power development and conveyance system. Facilities of the SWP include pumping and power plants, reservoirs, lakes and storage tanks, canals, tunnels and pipelines that serve to capture, store and convey water from the Lake Oroville watershed in Northern California to 29 water agencies in Central and Southern California. Planned, designed, constructed and now operated and maintained by the California Department of Water Resources (DWR), this unique facility provides water supplies for 23 million Californians and for 755,000 acres of irrigated farmland.

The original State Water Contract called for an ultimate delivery capacity of 4.2 MAF, with MWD holding a contract for 1.9 MAF. More than two-thirds of California's drinking water, including all of the water supplied by the SWP, passes through the San Francisco-San Joaquin Bay-Delta (Bay-Delta). For decades, the Bay-Delta system has experienced water quality and supply reliability challenges and conflicts due to variable hydrology and environmental standards that limit pumping operations. In 1999, MWD's Board of Directors set new goals for the SWP with the adoption of its CALFED Policy Principles. These goals committed MWD to water quality objectives, the development of 0.65 MAF minimum dry-year supply from the SWP by 2020 and average annual deliveries of 1.5 MAF (excluding transfers and storage programs along the SWP). To achieve these goals while minimizing impacts to the Bay-Delta ecosystem, MWD would maximize deliveries to storage programs during wetter years, implement a number of source water qualities and supply reliability improvements in the Delta, remove operational conflicts with the Central Valley Project (CVP), and better coordinate planning and operations between the SWP and CVP.

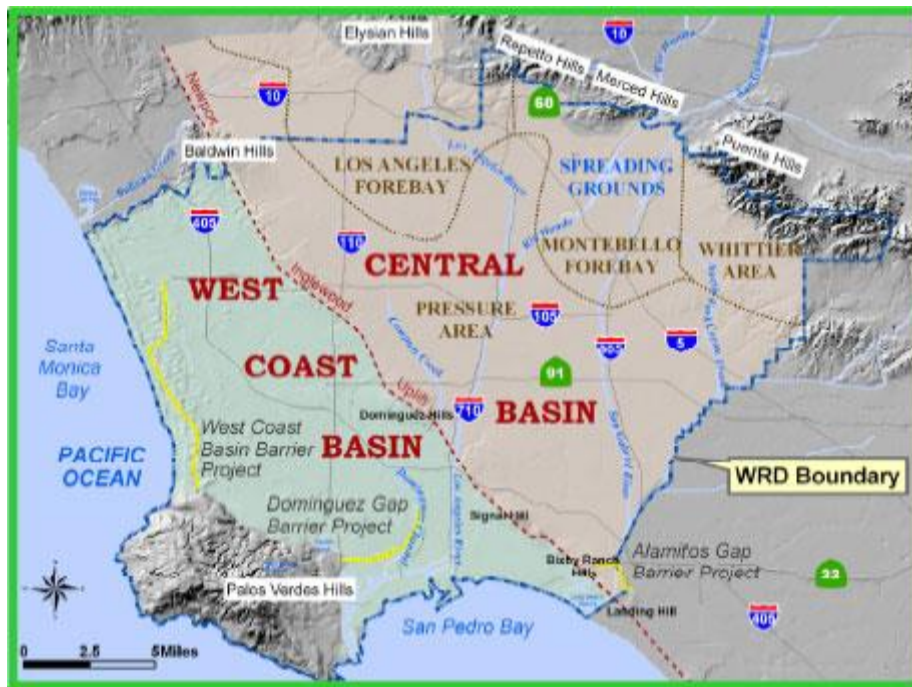
MWD offers different types of imported water to its member agencies depending on the ultimate use. Among them, CBMWD has delivered Non-Interruptible Water (treated full-service), Seasonal Treated Replenishment Water and Seasonal Untreated Replenishment Water. Non-Interruptible Water is the treated firm supply that is available all year round. CBMWD delivers an average of 11,183 AF of non-interruptible water annually. It is used as the main supplemental supply of cities and water agencies and has historically been used as the main supply for the Alamitos Barrier; however, the City of Long Beach now provides water for that barrier. Seasonal Treated Replenishment Water, also known as the "In-Lieu" water, is delivered to customer agencies that are eligible to offset groundwater production with imported water.

This program incentivizes customer agencies to take imported surplus water which indirectly replenishes the groundwater basin. This surplus water is purchased at a discount rate in exchange for leaving groundwater in the basin for no less than a year so that it can be used subsequently during dry years. Seasonal Untreated Replenishment Water, better known as "Spreading" water, is delivered to the replenishment spreading grounds in the Montebello Forebay. Spreading water does not require treatment and is preferred this way in order to avoid or minimize the potential to generate disinfection by-products. Generally, spreading water is provided during the seasonal months (October through April), which allows for it to be purchased at a discounted rate. Water Replenishment District of Southern California (WRD) is the sole purchaser of spreading water, and the amount varies year to year depending on replenishment needs of the Basin and availability of water from MWD. The long term average being approximately 27,600 acre-feet per year. Groundwater has for many years been the primary supply of water within CBMWD's service area. In fact, it was the sole source of water supply until the Central Groundwater Basin (Basin) was over drafted in the late 1940s. Today, the average customer agency in CBMWD relies on groundwater production for 62% of its water supply, although there still remain a few agencies in the District's service area that rely exclusively on groundwater to meet all current water needs.

Ultimately, the extensive over pumping of the Basin through the years led to critically low groundwater levels. This over pumping of the Basin resulted in a legal judgment, or adjudication, that limited the allowable extraction that could occur in any given year and assigned water rights to basin pumpers. The adjudicated water rights were greater than the Basin yield; therefore, the Basin was operating with an annual overdraft. In order to address this overdraft, imported and recycled water sources and a means to purchase these sources were required.

The following figure shows the location of the Central Groundwater Basin.

Figure 6-1: Central Groundwater Basin Area



Source: Water Replenishment District of Southern California's:
<http://www.wrd.org/engineering/groundwater-replenishment-spreading-grounds.php>

6.2.2 Water Replenishment District of Southern California (WRD)

The groundwater producers (pumpers) in the area, which are members of the Central Basin Water Association, led the creation of the WRD, which manages the replenishment of the groundwater basin. In 1959, the State Legislature enacted the Water Replenishment Act, enabling the water associations for the Basin to secure voter approval for the formation of the “Central and West Basin Water Replenishment District” (now referred to as the Water Replenishment District of Southern California or “WRD”) to be the permanent agency in charge of replenishing the Basin. The State Legislature has vested in WRD the statutory responsibility to manage, regulate, replenish and protect the quality of the groundwater supplies within its boundaries for the beneficial use of the approximately 3.5 million residents and water users who rely upon those groundwater resources to satisfy all or a portion of their beneficial water needs. Although the water rights have been bought, sold, exchanged or transferred through the years, the total amount of allowable extraction rights within the entire groundwater basin has remained virtually the same. The adjudicated pumping rights available within Central Basin's service area totaled 163,960 AF. However, not all of these water right holders are water retail agencies. Many of these holders are nurseries, businesses, cemeteries and private entities that make up approximately 23% (37,287 AF) of the total water rights.

For the past 42 years, WRD has replenished the Basin through “Spreading Grounds” and prevented further seawater intrusion by injecting recycled and imported water into the Alamitos Barrier, which were created by the Los Angeles County Flood Control District (LACFCD) and owned and operated by the Los Angeles County Department of Public Works. WRD assesses a groundwater production fee, known as their “Replenishment Assessment,” to pumpers in the Basin. This assessment provides funds to be used by WRD to purchase water for both spreading and injection to replace groundwater pumped, create a hydrological barrier to seawater intrusion and protect the groundwater basin.⁸

6.2.3 Groundwater Well Facilities

The City's allocated pumping rights from Central Basin are shown in Appendix F and Appendix G. The original 1965 adjudication was allocated as 7,954 AF and an additional 3,229 AF were via succession from other water right holders. The current pumping rights for the City are 11,183 AF. The City often leases a portion of these rights to other water uses in the Basin, currently for FY 2015/16 the city leased 2,000 AF to the City of Compton.

Currently, seven (7) of the City's eleven (11) wells are active. The active wells are Nos. 14, 18, 19, 24, 26, 27, and 28. The active wells have a combined rated/tested capacity of about 13,500 gallons per minute (gpm), or 19.4 million gallons per day (mgd). Six of the active wells discharge into existing storage reservoirs. Well No. 28 discharges directly into the distribution system using onsite chlorination.

The following are general descriptions of the eleven existing wells within the City of South Gate:

⁸ 2016 WRD Engineering and Survey Report, WRD

Well No. 13 (Standby): Well No. 13 was drilled in 1940 and is located in South Gate Park. The well is 810 feet deep and has 16-inch diameter casing. The well pump is a constant speed Byron Jackson seven-stage vertical turbine pump. The well was last tested by SCE in June of 2000. The well's overall efficiency was found to be 38 percent with a specific capacity of 118 gpm/ft and specific energy consumption of 351 kWh/AF. The pump has a tested capacity of 2133 gpm. Well No. 13 discharges into the South Gate Park Reservoir. Chlorinated solvents including TCE and perchloroethylene (PCE) have been detected in this well. Spray aeration in the South Gate Park Reservoir is used to remove these contaminants from the water. This well has also experienced some higher manganese concentration but the levels are currently below the MCL, the City will continue monitoring these levels and install a filtration system if deemed necessary in the future.

Well No. 14: Well No. 14 was drilled in 1944 and is located in South Gate Park. The well is 813 feet deep and has an 18-inch diameter casing. The well pump is a constant-speed Layne and Bowler four-stage vertical turbine pump. The well was last tested by SCE in April of 2000. The well had an overall efficiency rating of 53 percent. The well's specific energy consumption is 302 kWh/AF and specific capacity is 129 gpm/ft. The pump has a tested capacity of 3233 gpm. Well No. 14 discharges into the South Gate Park Reservoir.

Well No. 18: Well No. 18 was drilled in 1945 and is located in South Gate Park. The well is 792 feet deep and has an 18-inch diameter casing. The well pump is a constant speed Aurora vertical turbine pump. The well was last tested by SCE in May of 2001. The well had an overall efficiency rating of 73 percent. The well's specific energy consumption is 214 kWh/AF and specific capacity is 56 gpm/ft. The pump has a tested capacity of 1500 gpm. Well No. 18 discharges to South Gate Park Reservoir.

Well No. 19: Well No. 19 was drilled in 1947 and is located in South Gate Park. The well is 794 feet deep and has an 18-inch diameter casing. The well pump, a constant speed Layne and Bowler six-stage vertical turbine pump, was installed in 1984. The well was last tested by SCE in May 2001. The well had an overall efficiency rating of 66 percent. The well's specific energy consumption is 289 kWh/AF and specific capacity is 88 gpm/ft. The pump has a tested capacity of 3065 gpm. Well No. 19 discharges to South Gate Park Reservoir.

Well No. 22B (Inactive): Well No. 22B was drilled in 1948 and is located east of Garfield Avenue and south of Southern Avenue. The well is 578 feet deep and has a 16-inch diameter casing. The well has been inactive since the fall of 1985 due to PCE contamination, and consistent reliability problems. The well has experimental Ultraviolet/Ozone treatment equipment for disinfection.

Well No. 23 (Standby): Well No. 23 was drilled in 1952 and is located at the Salt Lake Reservoir site, just west of the Los Angeles River and south of Southern Avenue. The well is 856 feet deep and has an 18-inch diameter casing. The well has suffered from periodic sand production problems, as well as manganese contamination. However, basic water quality at this well has been consistently good. The well is currently not equipped with disinfection facilities. Because of its inherent sanding problems, the well has remained inactive. However, it remains in a standby mode. The well was last tested in April of 2000, and was found to have a capacity of 622 gpm.

Well No. 24: Well No. 24 was drilled in 1985 and is located at the Hawkins Reservoir site. The well is 1,290 feet deep and has a 16-inch and 20-inch diameter casing. The well site is equipped with sodium hypochlorite disinfection facilities. The well pump, a constant-speed Aurora three-stage vertical turbine pump, was installed in 1985. The well was last tested by SCE in June of 2000. The well's overall efficiency was 64 percent. The well has a specific energy consumption of 245 kWh/AF and specific capacity at 112 gpm/ft. The pump has a tested capacity of 1500 gpm.

Well No. 25 (Standby): Well No. 25 was drilled in 1985 and is located at the Hawkins Reservoir site. The well is 1,331 feet deep and has a 16-inch and 20-inch casing. Water quality has generally been good. The well site is equipped with sodium hypochlorite disinfection facilities. The well pump, a constant-speed Aurora three-stage vertical turbine pump, was installed in 1985. The well was last tested by SCE in June of 2000. The well's overall efficiency was 64 percent. The well has a specific energy consumption of 245 kWh/AF and specific capacity at 112 gpm/ft. The pump has a tested capacity of 3080 gpm. In recent years, a portion of the casing collapsed and this has resulted in lower production.

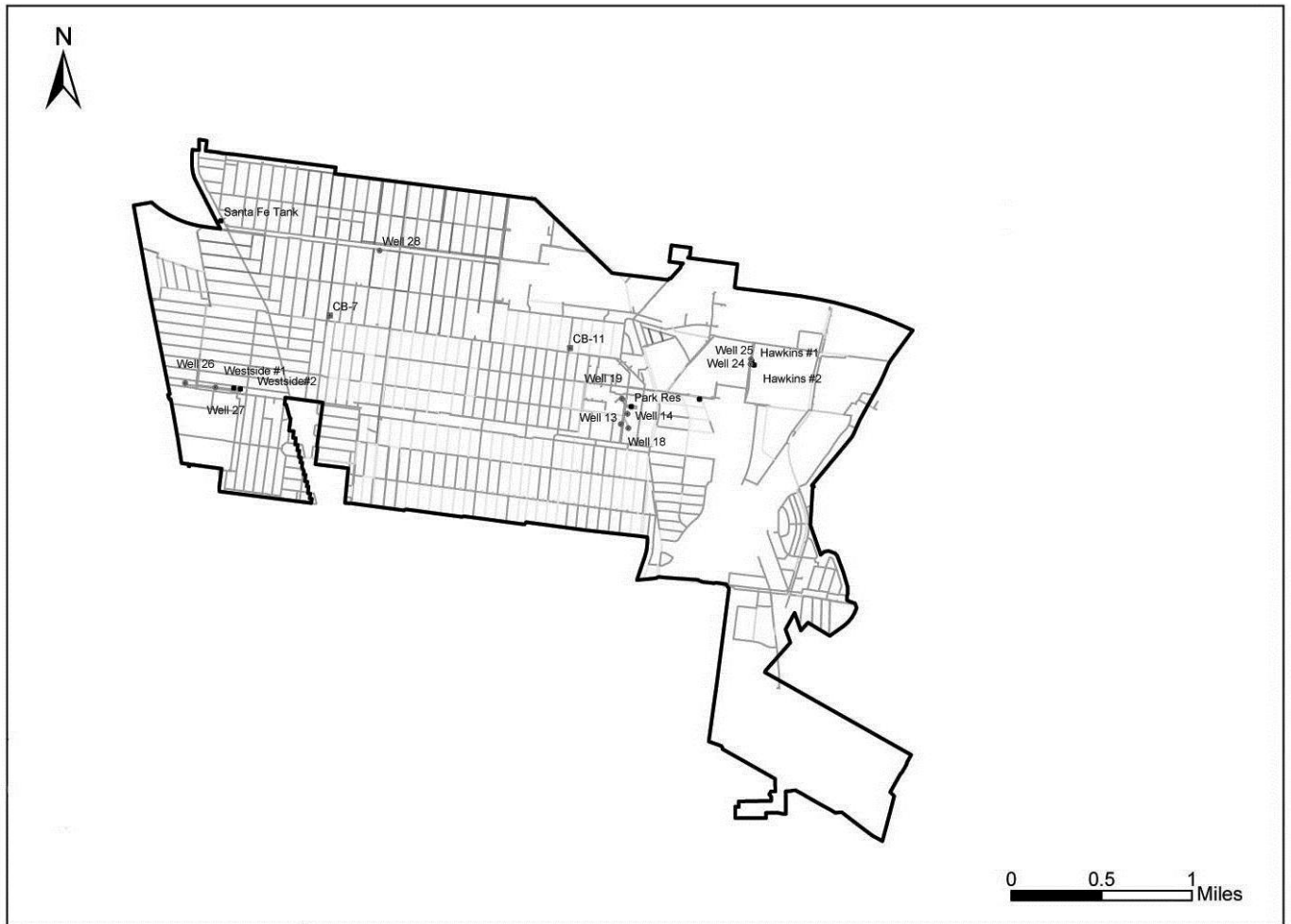
Well No. 26: Well No. 26 was drilled in 1987 and is located just north of Tweedy Boulevard, west of Long Beach Boulevard. The well is 1,226 feet deep and has a 16-inch and 18-inch diameter casing. Water quality has generally been good. The well site is equipped with sodium hypochlorite disinfection facilities. The well pump, a Floway fivestage vertical turbine pump, is powered by a natural gas engine with a variable speed drive. The well has not been tested by SCE. Installation tests indicate that the pump can move 2710 gpm at 224 feet of head at 83% efficiency.

Well No. 27: Well No. 27 was drilled in 1989 and is located approximately one block east of Well No. 26 to the north of Tweedy Boulevard. Well No. 27 is 1,200 feet deep and has a 16-inch and 18-inch diameter casing. Water quality has generally been good, but after tests indicated some manganese contamination, a manganese filtration system was installed in 2014. The well site is equipped with sodium hypochlorite disinfection facilities. The current well pump, a constant-speed Ingersoll-Rand four-stage vertical turbine pump, was installed in 1992. Installation tests on the pump indicate that the pump can move 1500 gpm at 240 feet of head at a maximum efficiency of 85%.

Well No. 28: Well No. 28 was drilled in 2003 and is the City's newest well. The well was drilled at the same site as the recently demolished Well No. 2, which is on Ardmore Avenue, a few hundred feet west of Virginia Avenue. Well No. 28 is 1095 feet deep and has a 16-inch and 18-inch diameter casing. Based on the hydrogeological report prepared after the well drilling, the well will be able to produce 2,500 gpm. The aquifer testing resulted in an overall specific well capacity of 58.9 gpm/ft with a transmissivity value of 129,700 gpd/ft. Water quality in the well was tested to be in conformance to State Health Department requirements, and no treatment except disinfection is required.

The following figure shows the location of the City wells throughout the service area.

Figure 6-2: City of South Gate Well locations



Source: City of South Gate Water Master Plan, August 2005

Currently, the City has greater available supply from its groundwater wells than the demands. But based upon the future projections as shown in Table 6-1, MWD supplies may be necessary in case of emergency.

Table 6-1 Retail: Groundwater Volume Pumped						
□	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type Drop Down List <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015

<i>Add additional rows as needed</i>						
Alluvial Basin	Central Basin	8645	8149	8380	8081	7,691
TOTAL		8,645	8,149	8,380	8,081	7, 691
NOTES:						

6.3 Sources of Water Supply

6.3.1 Metropolitan Water District (MWD) Connections

The City has two connections to the MWD pipeline system. Connection CenB-7 is located at Southern Avenue and State Street, and CenB-11 is located at Southern Avenue and Kauffman Avenue. Each connection consists of a 16-inch outlet from MWD’s Middle Cross Feeder. The outlets branch into two 10-inch parallel lines, each having a 10-inch combination rate-of-flow, pressure-reducing and check valves.

Each connection has a rated capacity of 15 cfs (9.7 mgd), but the required pressure-reduction settings restrict actual capacity for CenB-7 and CenB-11 to 4.25 cfs (2.75 mgd) and 2.9 cfs (1.9 mgd), respectively. Prior to 1989, the City used MWD water to supplement well production during the peak summertime months. The MWD connections have not been used since 1989, but remain available for emergency or future use.

6.3.2 Inter-Agency Connections

The City of South Gate has five interconnections to adjacent water systems. These interconnections are with the City of Downey, the City of Lynwood, the Walnut Park Mutual Water Company, the City of Huntington Park, and the Golden State Water Company (GSWC). Each is a two way connection, allowing water transfers to or from the City of South Gate, depending upon the given emergency situation and the relative pressures on each side of the inter-connections.

The interconnection with the City of Lynwood is an automatic connection. It is set to operate such that if local pressure in one of the two systems drops below 20 psi and there is a significant pressure differential between the two systems, the interconnection will open. Water will then flow from the system with higher pressure to the system with lower pressure. The connection to Golden State Water Company is automatic as well, set to open at 40 psi. The other connections are operated manually.

Although these connections all have two-way ability, the City of South Gate is the more frequent seller. The City currently has sufficient pumping rights and system to supply their residents and sell water to the neighboring agencies. But each of these connections provides the essential backup systems in case of emergencies or other system water supply deficits.

6.3.3 Transfer or Exchange Opportunities

The City of South Gate has interconnections with other water agencies as described in Section 4.3. The City currently leases about 3,000 AF to other agencies. Based on the projected demands, the City can continue to do so because their groundwater rights are sufficient to cover projected demands.

6.3.4 Local Groundwater

All local groundwater is pumped from Central Basin. The well facilities are described in more detail in Section 6.2.3.

CBMWD joined MWD in 1954 to purchase, on a wholesale level, potable water imported from the Colorado River and then sell it to the local municipalities, investor-owned and mutual water companies and water districts. CBMWD remains one of the largest member agencies of MWD's wholesalers with a population of about 1.6 million to 2 million.

CBMWD's service area covers approximately 227 square miles and includes 24 cities and several unincorporated areas in southeast Los Angeles County. In 2014-2015, the total water demand in CBMWD's service area was 216,978 AF. CBMWD projects that although population will increase, total demand will remain level due to increased conservation, recycled water use and consumption.⁹

6.3.5 Surface Water

The City of South Gate does not draw on any local surface water sources to meet the demands of its customers, and has no plans to do so in the future.

6.3.6 Stormwater

The City of South Gate does not collect any stormwater to meet the demands of its customers, and has no plans to do so in the future.

6.3.7 Wastewater and Recycled Water

The City does not own or operate any water recycling facilities. The City is a member agency with the LACSD. LACSD constructs, operates, and maintains facilities to collect, treat, recycle, and dispose of residential, commercial, and industrial wastewater. Individual districts operate and maintain their own portions of the collection system. The City of South Gate is responsible for the collection of wastewater through local sewers.

LACSD treats sewer water to produce recycled water. The water is treated to drinking water standards and used to replenish aquifers, and to irrigate golf courses, landscaped medians and other greenbelt areas, or be used in industrial processes. The City is using recycled water to offset use of potable water from the aquifer. Recycled water is purchased from the CBMWD and the City uses some of that in two City parks, Hollydale Park and Circle Park. The recycled water line on Atlantic Avenue has enough capacity to provide for most of the industrial uses in that area, but the potential customers have not been motivated to use this resource so far. The City offers a 15% discount from the cost of potable water for recycled water deliveries.

MWD has many recycled water programs. Within the CBMWD, there are four projects planned that will ultimately utilize approximately 65,000 AF of recycled water¹⁰. CBMWD's current recycling effort produces more recycled water than the City of South Gate could use. The capital cost of the adding the

⁹ Central Basin Municipal Water District Draft 2015 Urban Water Management Plan

¹⁰ Metropolitan Water District of Southern California Regional Urban Water Management Plan, November 2010, Table A.5-2

recycled infrastructure does prevent expanded use at this time. The CBMWD UWMP Section 8 describes their current and proposed recycled water supplies.

WRD has a program, Water Independence Now (WIN), which is focused on the development of water supplies to be used in the replenishment of the groundwater basin. As part of WIN, the Groundwater Reliability Improvement Program (GRIP) is in process. GRIP's purpose is to evaluate alternatives for the replacement or offset of MWD imported supplies for groundwater replenishment. One alternative being vetted is the advanced treatment of recycled water from the San Jose Creek Water Treatment Plant.

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
<input type="checkbox"/>		There is no wastewater collection system. The supplier will not complete the table below.				
		Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>				
		Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>				
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
<i>Add additional rows as needed</i>						
City of South Gate	Estimated	4,393	LACSD	Hyperion	No	No
Total Wastewater Collected from Service Area in 2015:		4,393				
NOTES:						

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

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

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

<input type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.								
Name of Agency Producing (Treating) the Recycled Water:			LACSD					
Name of Agency Operating the Recycled Water Distribution System:			CBMWD					
Supplemental Water Added in 2015			0					
Source of 2015 Supplemental Water			N/A					
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)	Parks and Medians	Tertiary	7	8	9	10	11	12
Golf course irrigation								
Commercial use								
Industrial use	Limited	Tertiary	2	3	4	5	6	7
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 (<i>Provide General Description</i>)								
Total:			9	11	13	15	17	19
*IPR - Indirect Potable Reuse								
NOTES:								

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)		7
Golf course irrigation		
Commercial use		
Industrial use		2
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	<i>Type of Use</i>	
Total	0	9
NOTES:		

6.4 Desalinated Water Opportunities

The act of changing seawater into potable or fresh drinking water is called desalination. As the demand and competition for water in California increases and traditional ways of increasing water supply (construction of dams, aqueducts and pipelines) become less viable and publicly acceptable, alternative ways of developing new water sources are being explored. In 2004 the California Congress passed legislation requiring urban water suppliers to consider desalination opportunities in their Urban Water Management Plans.

The City of South Gate is not a coastal city and therefore it would be very difficult to establish any desalination project to provide direct supplies. In the future, regional agencies including MWD and CBMWD may develop desalination supplies. But it is expected that future desalination supplies would be utilized by coastal areas. That would allow inland areas to utilize a greater proportion of the current water supplies including groundwater and imported water. CBMWD is not planning any desalination projects. MWD does have several planned but they are all along the coastal areas.

6.5 Exchanges or Transfers

The City of South Gate has interconnections with other water agencies as described in section 6.3.2. The City also currently leases between 1500 to 2500 AF to other agencies. Based on the previously discussed demands, the City will need to discontinue the water leases within the next 5 years. If the City can lease additional water from other agencies once the demand exceeds the 11,183 AF rights, they would avoid the higher cost MWD water.

6.6 Future Water Projects

Potential plans for new sources are being considered at this time and will be addressed in the new Master Planning and Management Program. The City is working closely with the CBMWD and the WRD to consider expanded use of underground storage of water in the aquifer. This is referred to as "Conjunctive Use" and would benefit the City of South Gate. Conjunctive Use refers to the idea of storing water underground when it is plentiful, to be extracted during shortages.

Also, the City may consider the use of ultraviolet light and ozone to treat the Well No. 22-B water, so that it may be used as an active source. However, the City would need to prepare a demonstration study to show that the proposed treatment would reliably and consistently produce water of acceptable quality, before such treatment may be approved by the State Department of Health Services.

Because the City currently has excess supply compared to the current and projected water demands and multiple wells that are able to pump the current water rights, there is not a great need for new water supply projects. However, one potential project would be to provide manganese treatments on the two wells that have high manganese levels. This would provide additional system flexibility should another well be shut down.

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input checked="" type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
Total			0
<p>NOTES:</p> <p style="text-align: center;">TABLE NOT APPLICABLE TO THIS SYSTEM</p>			

6.7 Summary of Existing and Planned Sources of Water

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>				
Groundwater		7,356	Drinking Water	11,183
Recycled Water		185	Recycled Water	
Total		7,541		11,183
NOTES:				

2015 Urban Water Management Plan for City of South Gate

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>									
		2020		2025		2030		2035		2040 (opt)	
<i>Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
		<i>Add additional rows as needed</i>									
Groundwater		11,183	11,183	11,183	11,183	11,183	11,183	11,183	11,183	11,183	11,183
Recycled Water		200		200		200		200		200	
Purchased or Imported Water		500		500		500		500		500	
Total		11,883	11,183	11,883	11,183	11,883	11,183	11,883	11,183	11,883	11,183
NOTES:											

6.8 Climate Change Impacts to Supply

Certain potential threats to the City of South Gate’s water supply must be monitored closely in order to detect and mitigate future impacts to the availability and sufficiency of the City’s water supply. These threats include future extended droughts, legal issues, water quality, environmental concerns and threats to replenishment waters from such sources as quagga mussels from the Colorado River. A matrix of these threats to the city’s current and future water sources are listed in Table 6-1:

Table 6-1: Factors Resulting in Inconsistency of Supply				
Name of Water Source	Climactic	Legal	Water Quality	Environmental
Groundwater Wells	Drought	Adjudication	Salt Water Infiltration; Iron, Manganese, chrom-6, arsenic, VOC contamination	Quagga Mussels in Replenishment Supplies
MWD	Drought	Allocation	N/A	Endangered Species; Quagga Mussels

6.8.1 Climactic

The major potential supply impact would be a prolonged drought, such as that which has occurred the last four years. However, due to the City’s supply sources and use, this impact is minimal. As the City owns adjudicated rights that do not fluctuate with Basin levels there is no climate impact.

MWD has two sources of water to supply to southern California. These are the State Water Project (SWP) and the Colorado River Aqueduct. Both of these sources are susceptible to prolonged drought. The SWP experienced low allocations during the last 2 years. The allocation in 2015 was 5 percent. For 2016, the allocation has been set at 30 percent (Notice to State Water Project Contractors February 24, 2016, DWR). The Colorado River Basin experienced an extended drought beginning in 2001. This had a major impact to supplies/storage along the Colorado River. MWD utilizes multiple sources, programs, and plans to address extended drought conditions to mitigate the impacts to their customer base. MWD’s plans are detailed further in their 2015 RUWMP. The City currently only uses their MWD connections in times of emergency and future projections have MWD supplies as a small percentage of the total.

WRD is responsible for ensuring the sustainability of the Central Basin production. The sustainability of the basin is becoming increasingly challenging. WRD, through its Water Independence Now program, seeks alternative water supplies to offset the use and loss of imported water for replenishment. The Groundwater Reliability Improvement Project (GRIP) is considering the advanced treatment of recycled municipal wastewater from the San Jose Creek Water Reclamation Plant. GRIP would supplement the recycled water supplies already used for replenishment of the Central Basin.

The actions of MWD and WRD create a situation in which the City is minimally impacted by drought.

6.8.2 Legal

6.8.2.1 Allocation

MWD determines an overall allotment to agencies within the CBMWD. South Gate does not have a set allotment but shares with the surrounding agencies. South Gate currently does not use MWD and projects to use only a small percentage of its needs, a reduction of overall allotments are not a significant impact.

6.8.2.2 Adjudication

The City currently has adjudicated water rights in the Central Basin as shown in Appendix F and Appendix G. It is highly unlikely that these rights will be altered. But if there was a legal judgment that reduced these rights, it would be a great impact to South Gate.

6.8.3 Water Quality

The City of South Gate publishes an annual Consumer Confidence Report (CCR). The most recently published CCR that was provided, shows that there were no average results higher than a primary or secondary MCL. There were a few contaminants of concern that were above a secondary MCL that will continue to be monitored closely. These include 1,-4 Dioxane and manganese.¹¹ There are several wells that are above the notification level (1) for 1,-4 Dioxane. However, there is no MCL for this contaminant and the tests are well below the action level of 40. Well 27 has had an iron and manganese treatment system installed that has brought these contaminants down to an acceptable level.

Iron and manganese are common metallic elements found in the earth's crust which are chemically similar and cause similar problems. When exposed to air, iron and manganese sediments are oxidized and change from colorless, dissolved forms to colored, solid forms. Excessive amounts of these sediments are responsible for staining, and may even plug water pipes. Iron and manganese can also affect the flavor and color of food and water. Finally, nonpathogenic bacteria that feed on iron and manganese in water form slime in toilet tanks and can clog water systems.

CBMWD manages water quality in the basin as a whole. Any contaminants that could become problematic would be handled by CBMWD. Although there are no major contaminant issues, basin wide contaminant plumes have impacted other basins in Southern California and other parts of the United States. A large unmitigated plume that affected many of South Gate's wells is unlikely, but would be a huge impact if it occurred. A small plume could be mitigated as the City has a surplus of well facilities.

The wholesale imported water is managed by MWD and they would handle any water quality issues that would arise. MWD has multiple sources of water including the California Water Project and the Colorado River Aqueduct. With multiple storage locations and treatment facilities, it is also unlikely that MWD would have significant water quality issues that would impact delivery.

6.8.4 Environmental

Although there are not significant environmental issues at this time, these can change in the future. With the majority of South Gate's supply coming from groundwater, this would be a minor impact. But

¹¹ City of South Gate Water Division 2014 Consumer Confidence Report

it is possible for MWD to be impacted by environmental issues and endangered species are the most likely of those.

6.8.5 Endangered Species

The potential impact to MWD's supply would be threatened or endangered fish in the Bay-Delta and the quagga mussels in the Colorado River. These impacts are discussed in MWD's RUWMP. But with the multiple supplies of MWD and a small percentage of use of these facilities by South Gate, this is a not a significant concern.

Chapter 7 - Water Supply Reliability Assessment

Water supply reliability is a measure of the City of South Gate's ability to provide an adequate water supply during times of shortage. Reliability focuses mostly on drought, though it must take into consideration other potential threats to the water supply, such as those discussed in Section 6.8. To counter these threats, Chapter 8 lists the projects and programs planned or already being implemented which will address the most serious threats to maintaining a consistent supply. With the addition of the City's conservation potential discussed in Chapter 9, the City will most likely be able to handle any drought.

There have not been any major water shortage problems in the City. The City of South Gate has been making system improvements and is positioning the enterprise to be a first class water utility. The City's own groundwater facilities have been sufficient to provide for its water needs during the last fifteen years. A worst case scenario would be loss of production at key water well facilities. In that case, the City will rely on purchased water, which can provide for essential needs. The City has standby wells which can be a significant source of supply. The City monitors growth in residential, commercial, and industrial developments requiring estimates of water usage to calculate increases in water demand. The City encourages use of recycled water and water conservation measures.

Worst case water shortages can be managed. Significant water quality problem(s) that affect the entirety of the City's groundwater supply would require the City to purchase potable water from CBMWD.

The City relies on its groundwater sources and its interconnections with other utilities. If an emergency occurs only within the City, the interconnected supplies can be of help. However, in case of an area wide problem, the City may be fully dependent on its own groundwater sources. Fortunately, the City's groundwater is sufficient to provide for the necessities of the residents.

Overall, the City of South Gate has a very reliable water supply. Combining MWD's supply assurance with data from Chapter 4, on the city's total projected water demand, this chapter will lay out three climatic scenarios—an average water year, a single dry water year, and multiple dry water years—for the city's water supply in the next 25 years.

7.1 Constraints on Water Sources

Chapter 6 described the sources of water for the City of South Gate. These sources have very high reliability as there are multiple wells for the groundwater source and two connections with MWD.

With the majority of the City's water use being supplied by groundwater, there are few water quality problems. There have been some instances of water quality problems, primarily with manganese as discussed in Section 6.2.3, but with multiple well options these have been controllable. Barring a future unforeseen and new problem, there does not appear to be a high concern for water quality issues that would impact the supply reliability.

7.2 Reliability by Type of Year

The following tables give the City of South Gate’s current and future water supply reliability scenarios for both normal year, single dry year and multiple dry year periods. However, the City of South Gate does not utilize any surface water sources and all of its sources (groundwater pumping and purchased MWD water) are consistent regardless of the runoff.

For each of the following near-term and projected single and multiple dry water year scenarios, the calculated water reliability deficit is compared with potential new supplies from 1) additional water supply sources discussed in Chapter 6 2) the city’s projected conservation potential, and 3) potential recycled water supplies.

shows the basis of the water year data. It shows the consistent water supply for the City of South Gate during normal years and dry years.

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2010	11,183	100%
Single-Dry Year	2010	11,183	100%
Multiple-Dry Years 1st Year	2010	11,183	100%
Multiple-Dry Years 2nd Year	2011	11,183	100%
Multiple-Dry Years 3rd Year	2012	11,183	100%
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES:			

7.3 Supply and Demand Assessment

The City’s supply and particularly their adjudicated groundwater rights are greater than the current and projected demands as detailed in the previous sections. The City will be able to meet the projected demand during normal conditions for the next 25 years. The following tables include the groundwater supply that is sufficient for all demands. There is not an allocation limit on the MWD sources, but there are financial considerations if it is needed. For the purpose of this table, the MWD is not shown, but there is more supply available if the demand increases further:

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 <i>(Opt)</i>
Supply totals <i>(autofill from Table 6-9)</i>	11,883	11,883	11,883	11,883	11,883
Demand totals <i>(autofill from Table 4-3)</i>	7,480	7,631	7,786	7,943	8,104
Difference	4,403	4,252	4,097	3,940	3,779
NOTES: This includes some water from MWD and recycled water. The future projections only include groundwater.					

Table 7-3 gives the city’s single dry year water supply reliability scenario for the years 2020, 2025, 2030, 2035 and 2040.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 <i>(Opt)</i>
Supply totals	11,183	11,183	11,183	11,183	11,183
Demand totals	7,480	7,631	7,786	7,943	8,104
Difference	3,703	3,552	3,397	3,240	3,079
NOTES:					

Table 7-4 is a compound table that gives the city’s multiple dry year water supply reliability scenarios for the three year periods ending in years 2020 through 2040, displayed in five-year increments:

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	11,183	11,183	11,183	11,183	11,183
	Demand totals	7,480	7,631	7,786	7,943	8,104
	Difference	3,703	3,552	3,397	3,240	3,079
Second year	Supply totals	11,183	11,183	11,183	11,183	11,183
	Demand totals	7,480	7,631	7,786	7,943	8,104
	Difference	3,703	3,552	3,397	3,240	3,079
Third year	Supply totals	11,183	11,183	11,183	11,183	11,183
	Demand totals	7,480	7,631	7,786	7,943	8,104
	Difference	3,703	3,552	3,397	3,240	3,079
NOTES:						

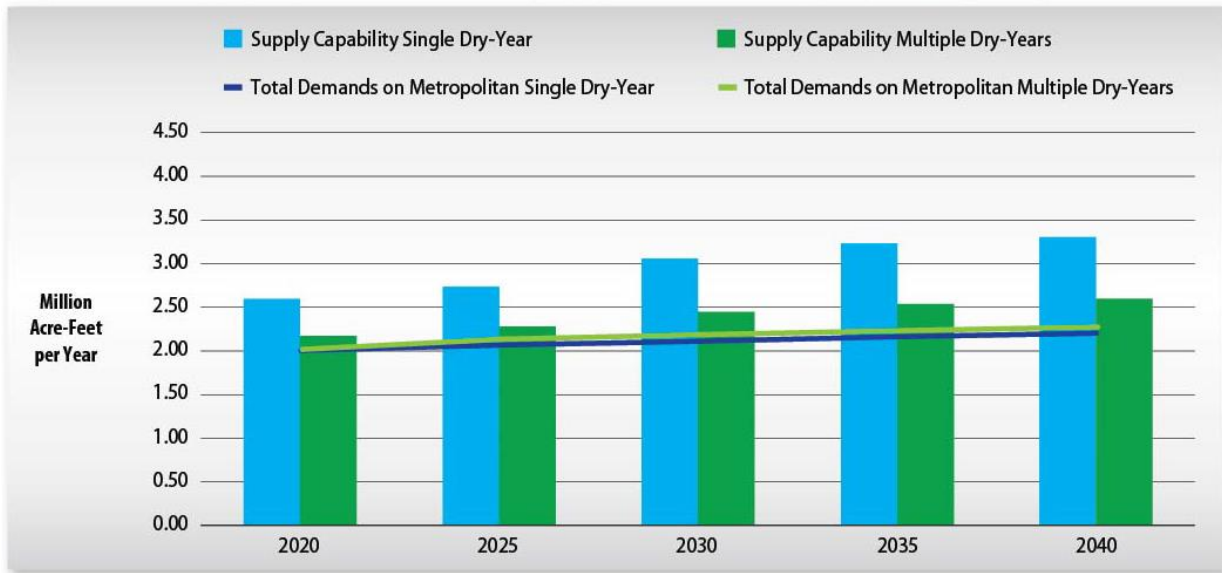
With the city’s consistent supply that is not based on water runoff or drought conditions, the surplus above demand also remains consistent. Although the tables above show zero surplus or shortfall, the supply is not limited due to the availability of MWD water although it would be more costly. Therefore there are no scenarios prior to 2040 that would result in a supply shortage based upon dry year conditions.

7.4 Regional Supply Reliability

Metropolitan Water District (MWD) supplies wholesale water throughout Southern California. Although the City of South Gate is not a member-agency, the CBMWD is a member agency. South Gate has two connections with MWD. The City has typically only needed these connections during emergency operations.

MWD has numerous sources of supply which enables them to provide assurance to their member agencies and retailers regarding the supply. The Regional Urban Water Management Plan prepared in March 2016 by MWD provides the necessary details of MWDs plans. The following figure shows the excess supply over demand as projected by MWD.

Figure 7-1: MWD Dry Year Supplies and Demand



Source: Metropolitan Water District of Southern California Regional Urban Water Management Plan, March 2016

Chapter 8 - Water Shortage Contingency Planning

The City of South Gate has adopted the Ordinance No. 2263 to respond to water shortages. This Ordinance amends Title 6.64 of the South Gate Municipal Code relating to the implementation of water conservation measures. This ordinance is referred to as the "Water Conservation Ordinance."

This ordinance authorizes the City Council to protect the public health, safety and welfare when it is determined there will be a water shortage. The City Council will determine by resolution the water conservation plan. The City Council may implement water conservation measures in addition to those specified in this ordinance.

Ordinance No. 2263 has three phases of water conservation:

Level 1 places some restrictions upon the use of water for washing down driveways and other similar exteriors, washing vehicles, use of decorative fountains and other fixtures, water served in restaurants, water leakage loss, landscaping water waste, etc. It also requires some large users to submit a water conservation plan.

Level 2 restricts landscape irrigation to two to three days per week at certain hours of the day to minimize water waste. Commercial nurseries and growers are exempt.

Level 3 restricts landscape irrigation to one to two days per week at certain hours of the day to minimize water waste. Commercial nurseries and growers are required to observe these restrictions.

City Ordinances establish a lower priority for use of water to such uses as the commercial and industrial landscaping and washing down driveways or washing vehicles. The second step is to reduce the residential landscaping applications. Finally, the general water use by commercial and industrial users is reduced. The City will provide water to residential users.

The City's priority is not to reduce the availability of potable water for domestic use by residential customers, fire suppression, and the maintenance of health and safety. The conservation ordinances and program establish processes for reducing landscape use of water and curtail commercial and industrial water use.

The determination of water shortage and implementation of the Water Conservation Ordinance is to be made by the City Council. The Water Department provides reports and recommendations to the City Council regarding implementation of any water restriction measures.

Water allotment is focused on maintaining water service for public health and safety. The goals are to provide residential customers with sufficient water to provide for their needs including normal sanitary uses. Fire suppression is a primary goal to protect life and property. Landscaping water uses will be curtailed.

City customers are metered and the Water Division reviews water use to assess the need to reduce water consumption.

8.1 Stages of Action

The Water Shortage Contingency Plan establishes progressively more serious stages of action dependent on the percent of water shortage. This shortage can be for any reason. (The currently adopted plan has Level 3 at a 40% shortage. It will be revised for a 50% shortage).

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
<i>Add additional rows as needed</i>		
1	10%	A Level 1 water supply shortage condition exists when the city notifies its water users that, due to drought or other supply reductions, a consumer demand reduction of up to ten percent is necessary to make more efficient use of water and respond to existing water conditions
2	15%	A Level 2 water supply shortage condition exists when the city notifies its water users that due to drought or other supply reductions, a consumer demand reduction of up to fifteen percent is necessary to make more efficient use of water and respond to existing water conditions
3	50%	A Level 3 water supply shortage emergency exists when the city declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that more than a fifty percent consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection.
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES: Levels defined in City of South Gate Municipal Code Chapter 6.64 Water Conservation Ordinance.		

8.2 Prohibitions on End Uses

The following table is the list of each of the prohibitions and the stage when they are enforced, the penalties are after accumulated violations of any restrictions in place.

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
<i>Add additional rows as needed</i>			
Permanent	Landscape - Other landscape restriction or prohibition	Limits on Watering Hours	Yes
Permanent	Landscape - Other landscape restriction or prohibition	Limit on Water Duration	Yes
Permanent	Landscape - Restrict or prohibit runoff from landscape irrigation	No Excessive Water Flow or Runoff	Yes
Permanent	Other - Prohibit use of potable water for washing hard surfaces	Except of safety and sanitary needs	Yes
Permanent	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Excessive Loss-3 days	Yes
Permanent	Water Features - Restrict water use for decorative water features, such as fountains	Except recirculated	Yes
Permanent	Other	Limits on Washing Vehicles	Yes
Permanent	CII - Restaurants may only serve water upon request	Mandated by State	Yes
Permanent	CII - Lodging establishment must offer opt out of linen service	Mandated by State	Yes
Permanent	Other	No Installation of Single Pass Cooling Systems	Yes
Permanent	Other	No Installation of Non-re-circulating in Commercial Car Wash or Laundry Systems	Yes
Permanent	CII - Commercial kitchens required to use pre-rinse spray valves		Yes
Level 1	Landscape - Limit landscape irrigation to specific days	3 days/week May-Nov	Yes
Level 1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	All leaks-72 hours	Yes
Level 2	Landscape - Limit landscape irrigation to specific days	2 days/week May-Nov	Yes

Level 2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	All leaks – 48 hours	Yes
Level 2	Other water feature or swimming pool restriction	Limits on Filling Ornamental Lakes or Ponds	Yes
Level 2	Other	Limits on Washing Vehicles	Yes
Level 2	Pools - Allow filling of swimming pools only when an appropriate cover is in place.		Yes
Level 3	Landscape - Prohibit all landscape irrigation		Yes
Level 3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	All leaks-24 hours	Yes
NOTES:			

8.3 Penalties, Charges, Other Enforcement of Prohibitions

A. Misdemeanor. Any violation may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty days, or by a fine not exceeding one thousand dollars or as established by resolution of the city council, whichever is greater, or by both.

B. Civil Penalties. Civil penalties for failure to comply with any provisions of this chapter are as follows:

1. First Violation. The city will issue a written warning and deliver a copy of the ordinance codified in this chapter by certified mail.

2. Second Violation. A second violation within the preceding twelve calendar months is punishable by a fine not to exceed one hundred dollars or as established by resolution of the city council, whichever is greater.

3. Third Violation. A third violation within the preceding twelve calendar months is punishable by a fine not to exceed two hundred fifty dollars or as established by resolution of the city council, whichever is greater.

4. Fourth and Subsequent Violations. A fourth and any subsequent violation is punishable by a fine not to exceed five hundred dollars or as established by resolution of the city council, whichever is greater.

i. Water Flow Restrictor. In addition to any fines, the city may install a services water flow restrictor device of approximately one gallon per minute capacity for services up to one-and-one-half-inch size and comparatively sized restrictors for larger services after written notice of intent to install a flow restrictor for a minimum of forty-eight hours.

ii Termination of Service. In addition to any fines and the installation of a water flow

restrictor, the city may disconnect and/or terminate a customer’s water service.

C. Cost of Flow Restrictor and Disconnecting Service. A person or entity that violates this chapter is responsible for payment of the city’s charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the city’s schedule of charges then in effect. This charge for installing or removing a flow restriction device will be set at one hundred dollars each or as established by resolution of the city council, whichever is greater. The charge for installing and/or removing any flow restricting device must be paid to the city before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of basic water rates.

D. Separate Offenses. Each day that violation of this chapter occurs is a separate offense.

8.4 Consumption Reduction Methods

In the Table below, there are additional consumption reduction methods and their stage of implementation.

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>		
Level 2	Other	Water Allocations/ Water Budget
Level 2	Implement or Modify Drought Rate Structure or Surcharge	Water Supply Shortage Rates
Level 2	Other	Mandatory % Use Reductions
Level 3	Moratorium or Net Zero Demand Increase on New Connections	
NOTES:		

8.5 Determining Water Shortage Reductions

The City will rely on meters to record the production and consumption of water and the effectiveness of the reduction methods.

8.6 Revenue and Expenditure Impacts

The City of South Gate may experience some reduction of revenue as users reduce consumption. The City also partners with the region to increase outreach to customers, offsetting the individual expenditure amount.

8.7 Resolution or Ordinance

The current Water Shortage Contingency Plan (Ordinance 2263 Appendix D) complies with requirements for this UWMP other than one item. Level 3 is currently implemented when there is a 40% demand reductions required. This portion of the Ordinance (Section 6.64.090A) needs to be revised for a 50% reduction. This resolution then needs to be re-adopted.

8.8 Catastrophic Supply Interruption

The City of South Gate has adopted ordinances to respond to water shortage. The City is also a participant in the Member Agency Response System (MARS), which was developed by the Metropolitan Water District of Southern California for its members’ agencies. The MARS network was developed in a coordinated effort to improve emergency response and expedite mutual aid to participating agencies.

The City’s water conservation ordinances assist in reduction of water use. However, if a natural disaster such as an earthquake causes an emergency, the City will follow the Member Agency Response System (MARS) of the Metropolitan Water District.

8.9 Minimum Supply Next Three Years

The adjudicated amount of groundwater available to South Gate is consistent and will be available for the next three years.

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	11,183	11,183	11,183
NOTES:			

Chapter 9 - Demand Management Measures

9.1 Implementation over the Past Five Years

This section will discuss the existing and planned DMMs implemented by the City of South Gate.

Water Demand Management Measures

As outlined below, the UWMPA requires water suppliers to implement “demand management” in their UWMP. Demand management, as applied to water conservation, refers to the use of measures, practices, or incentives implemented by water utilities to permanently reduce the level of demand or change the pattern of demand. Per California Water Code (CWC) §10631(f) and (g), UWMPs must include:

1. A description of each water demand management measure being implemented or scheduled for implementation:
 - DMM 1. Waste water prevention ordinances
 - DMM 2. Metering
 - DMM 3. Conservation Pricing
 - DMM 4. Public Education and outreach
 - DMM 5. Programs to assess and manage distribution
 - DMM 6. Water Conservation Program Coordination and staffing support
 - DMM 7. Other demand management measures that have a significant impact on water use as measured in GPCD, including innovative measures, if implemented.
2. A schedule of implementation for all water DMMs proposed or described in the water supplier’s UWMP.
3. A description of the methods, if any, the water supplier will use to evaluate the effectiveness of the DMMs implemented or described under the UWMP.
4. An estimate, if available, of existing conservation savings on water use within the water supplier’s service area and the effect of the savings on the supplier’s ability to further reduce demand.
5. An evaluation of each DMM not being implemented or scheduled for implementation, which shall include cost-benefit, funding availability, and legal authority analyses.
6. The UWMPA allows one of two ways for water utilities to provide DMM information so as to meet the respective requirements of CWC §10631(f) and (g):
7. Signatory. A water supplier who is a member of the CUWCC¹² and signatory of the *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) may submit their Best Management Practice (BMP) Activity Reports (Annual Reports). Signatories pledge to develop and implement the 14 BMPs that are intended to reduce long-term urban water demands. These BMPs are functionally equivalent to the DMMs in CWC §10631(f)(1).

¹² CUWCC, a non-governmental agency, was formed to increase water use efficiency statewide through partnerships among urban water agencies, public interest organizations, and private entities. CUWCC’s goal is to integrate urban water conservation BMPs into the planning and management of California’s water resources.

8. It should be noted that exemptions are available for BMPs that cannot be implemented; certain criteria must be met regarding cost-effectiveness, budgetary constraints, or legal issues that prohibit the implementation of any BMP for a signatory.
9. Non-signatory. A water supplier who is not a member of CUWCC, or who is a member of CUWCC, but chooses not to submit the Annual Reports, must discuss all 14 DMMs, along with any additional measures the supplier is implementing or has scheduled for implementation in their UWMP submittal.

Implementation Levels of DMM’s/BMP’s

The DMMs that were implemented, or scheduled to be implemented, by the City are outlined in the respective sections below. Included in the discussions are the five descriptive demand management elements as per the UWMPA.

The City is not a signatory to the CUWCC MOU and is not a member of CUWCC, however the City is dedicated to expeditiously implementing as many reasonable water conservation measures in urban areas and to establish appropriate assumptions for use in calculating estimates of reliable future water conservation savings.

The City regularly evaluates the implementation of their conservation programs on an annual basis and is able to implement programs accordingly as budgets allow. A brief description of the City’s activities with respect to each DMM implementation follows. In addition the Table 9-1 lists the current implementation status for each of the DMs required by the Urban Water Management Planning Act.

Table 9-1: Summary of Demand Management Measure Implementation Status	
Demand Management Measure Number and Name	Implementation Status
(i) Water Waste Prevention Ordinances	Fully implemented
(ii) Metering	Fully implemented
(iii) Conservation Pricing	Fully implemented
(iv) Public Education and Outreach	Fully implemented
(v) Programs to Assess and Manage Distribution System Real Loss	In Progress
(vi) Water Conservation Program Coordination and Staffing Support	Fully implemented
(vii) Other Demand Management Measures	Fully implemented

9.2 Planned Implementation to Achieve Water Use Targets

Many water managers today consider water conservation, or “demand management,” as essentially a new source of water supply. The City of South Gate is committed to implementing water conservation programs at the local and regional level. Doing so will make it possible for the city to manage demand of water, especially during times of water scarcity.

This chapter gives an overview of regional water conservation efforts, the statewide water conservation Memorandum of Understanding (MOU) administered by the California Urban Water Conservation Council (CUWCC), current and future City of South Gate conservation measures.

The City has been active in water conservation and has adopted Ordinances No 2263 and Resolutions 4892, 4963, 4964, and 5054 in support of its conservation efforts. Both of these are designed to reduce water usage, especially during shortages. The City encourages and may also, by using the above ordinances, require users to use recycled water for landscaping. There are also other measures that are required by these ordinances to ensure that the water waste or unnecessary use of potable water is reduced. Based on the Ordinance No. 1960, the City has also prepared specific guidelines for water conservation and landscaping. The Ordinance No. 1960 is designed to place certain water conservation requirements upon new and rehabilitated landscaping for industrial, commercial and multifamily residential developments. It does so by requiring submittal of landscaping plans prepared in accordance with the City’s guidelines.

The City is using recycled water in three of its parks, several medians and a shopping center irrigation system. Further applications are possible. The City offers a 15% discount to its customers for using recycled water. Expanding the use of recycled water would reduce pumping of potable water. Alternatives will be reviewed to determine new uses and applications.

9.3 Regional Water Conservation Coordination

There are many regional plans for conservation. The City of South Gate receives most of its supply from groundwater pumping of the Central Basin. The CBMWD complies with a majority of the DMMs and these efforts are described in more detail in their UWMP.¹³ Although the City may not participate in the programs directly, they indirectly are involved as the pumping fees that are paid contribute to the programs.

9.4 California Urban Water Conservation Council

The City of South Gate is not signatory to the CUWCC. However, the CUWCC has established the conservations guidelines that have been developed into the Demand Management Measures for the UWMP process. If a City is part of the CUWCC, they can include their compliance with the BMPs in their UWMP and not complete this DMM section. This may be something that the City of South Gate will consider prior to the 2015 UWMP.

The premier statewide organization dedicated to urban water conservation is the California Urban Water Conservation Council (CUWCC). The CUWCC administers the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU), the result of a coordinated effort by the California Department of Water Resources (DWR), water utilities, environmental organizations and other interested groups to develop a central list of urban water conservation practices.

¹³ Central Basin Municipal Water District 2015 Urban Water Management Plan

The CUWCC has identified 7 principal areas in which there are significant opportunities for urban water conservation, collectively known as “Best Management Practices,” or BMPs. The State Legislature codified these BMPs into the Urban Water Management Planning Act, renaming them “Demand Management Measures,” or DMMs.

9.5 City of South Gate Water Conservation Measures

Each DMM listed will discuss whether the City has implemented, is scheduled to implement or has not implemented. If they have not implemented the DMM, a method to achieve DMM compliance will be listed or it will explain the function reason why the City cannot meet that DMM. As the City has a less than 100 gpcd usage rate, they are not required to reduce consumption as part of this Act. However, the City is committed to promoting conservation where possible.

DMM 1: Water Waste Prevention Ordinances

The City adopted Ordinance 2263, Title 6 (Health and Sanitation), Chapter 6.64 (Water Conservation) of the South Gate Municipal Code in 2009. The Ordinance sets permanent water conservation requirements which prohibit the waste of water:

- A. Limits on Watering Hours. Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of nine a.m. and six p.m. Pacific Standard Time on any day, except by use of a hand-held bucket or similar container, a handheld hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.
- B. Limit on Watering Duration. Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two gallons of water per hour and weather based controllers or stream rotor sprinklers that meet a seventy percent efficiency standard.
- C. No Excessive Water Flow or Runoff. Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited.
- D. No Washing Down Hard or Paved Surfaces. Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device or a low-volume, high-pressure cleaning machine equipped to recycle any water used.
- E. Obligation to Fix Leaks, Breaks or Malfunctions. Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user’s plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than three days of receiving notice from the city is prohibited.
- F. Recirculating Water Required for Water Fountains and Decorative Water Features. Operating a

water fountain or other decorative water feature that does not use recirculated water is prohibited.

- G. Limits on Washing Vehicles. Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not, is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility.
- H. Drinking Water Served Upon Request Only. Eating or drinking establishments, including but not limited to a restaurant, hotel, cafe, cafeteria, bar, club or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.
- I. Commercial Lodging Establishments Must Provide Option to Not Launder Linen Daily. Hotels, motels, and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood language.
- J. No Installation of Single Pass Cooling Systems. Installation of single pass cooling systems is prohibited in buildings requesting new water service.
- K. No Installation of Non-recirculating Water Systems in Commercial Car Wash and Laundry Systems. Installation of non-recirculating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems.
- L. Restaurants Required to Use Water Conserving Dish Wash Spray Valves. Food preparation establishments, such as restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

The municipal code is enforced during normal and shortage conditions.

During times of water shortages, enforcement is mandated and increased. Currently, City water staff-customer service representatives and pump operators-inspect and provide notices to customers who overtly waste water. Additionally, the City has retained John Hunter Associates to perform NPDS storm water inspections and also notice customers of excessive water waste run-off.

Budgetary Schedule:

The City has allotted an annual budget of \$10,000 to implement this DMM.

Large Landscape Conservation Programs and Incentives

Motivated by the drought, the City has established several landscape ordinances. It has since been amended to include fire escaping guidelines and to conform to California Water Code Section 65590 et seq. (AB 325).

The City also continues to work in partnership with the local fire department, local nurseries, landscape designers, contractors, and the local floriculture growers and schools to help educate customers and

landowners in regards to water efficient landscaping (WEL). In cooperation with Central Basin is also utilized to broaden the messaging regarding efficient irrigation schedules.

The largest landscape areas in the community are city-owned and consist primarily of parks. The parks are all utilizing recycled water for irrigation purposes. Additionally, to assist in landscape conservation for future developments, the City Council adopted the Chapter 11.33 Water Conservation and Landscaping. Chapter 11.33 established standards and procedures for the design, installation, and management of landscapes in order to utilize available plant, water, and land resources to avoid excessive landscape water demands while ensuring high quality landscape design. The ordinance requires developers to submit a landscape plan for review and approval by the City. These requirements are applicable to new and rehabilitated landscaping for apartments; condominiums; any multiple-unit residential developments; commercial developments; industrial developments; single-family residential and recreational developments.

DMM 2: Metering

Metering With Commodity Rates for All New Connections and Retrofit of Existing Connections

The City is fully metered for all customer sectors, including separate meters for single-family residential, commercial, large landscapes, and all institutional/governmental facilities. Since the early nineties the City has had a policy to separately meter each dwelling unit in multi-family complexes.

The City has embarked on an ambitious meter upgrade program. In FY 2016/17, the City plans to install approximately 2,500 Automatic Meter Reading meters to replace the existing conventional water meters. The estimated cost of the project is \$1.3 million. The City plans to continue this project to convert all 15,000 meters in the water system. Once a substantial number of meters are installed AMR meters will be upgraded to AMI (Advanced Metering Infrastructure) meters for remote monitoring. AMI metering will allow the City and the customers monitor up-to-date information on the water consumptions, water leaks, etc., to conserve water.

DMM 3- Conservation Pricing

The City charges a set price per unit of potable water, referred to as a uniform volume charge. Water customers currently pay the following rates:

Residential	\$5.98	/100 c.f.
Commercial/Industrial	\$6.31	/100 c.f.
Recycled water (Exceeding 4 ccf)	\$3.98	/100 c.f.
Minimum Base Rate Charge (4 ccf or less)	\$26.04	/100 c.f.

A monthly minimum charge varies based on meter size. The current minimum charge for each meter size is listed below.

Two-inch (2")	\$56.19	bi-monthly
Three-inch (3")	\$80.82	bi-monthly
Four-inch (4")	\$107.78	bi-monthly

Six-inch (6")	\$161.64	bi-monthly
Eight-inch (8")	\$215.53	bi-monthly
Ten inch (10")	\$269.42	bi-monthly

This existing rate structure facilitates conservation since customer bills vary directly with the level of water usage. The Uniform Volume Charge also provides a clear and easy to understand price signal to the customer. In addition to the above, the City has also implemented a new Water Development Impact Fee.

Since the City’s customers are metered and charged the single-block commodity rate (i.e., one price for each unit volumetric water use) for water encourages water conservation since more water use means a higher water bill. The City’s wastewater billing policies for these customers (non-residential and multi-family residential) also reflect water use, which provides an additional incentive for conservation. Only a portion of water use for a residence can be considered discretionary, generally a portion of landscaping use, excess showering periods, and other similar household activities. Most water use is simply a basic function of existence and therefore cannot be drastically reduced. At the point discretionary use has been wrung out of the system due to the marginal costs of water, another rate tier is unlikely to reap much conservation savings.

The City is currently not considering drought pricing (i.e., surcharges effective during times of drought that may increase the fixed charge, volumetric charge, volumetric tier cutoffs, etc.), but may as the drought continues and the Water Meter Program is closer to completion. Any rate changes would require approval through California Proposition 218 process.

DMM 4: Public Education and Outreach

Public Information Programs

The CBMWD has created the Shut Your Tap! Campaign. The City joined the Campaign in 2009. The Shut Your Tap! Campaign engages community partnerships, grassroots outreach, and media relations to promote water conservation within CBMWD’s 24-city service area. The Shut Your Tap! program provides valuable information on ways to use water more efficiently and protect our most precious natural resource for the short and long-run. CBMWD Staff and Directors are available through the Speakers Bureau Program, to come to the City, local organization or school to give presentations on a variety of water related topics.

School Education Programs

The City participates in school education programs through the CBMWD. CBMWD partners with 17 school districts in the District’s service area to provide free water conservation education programming. The District funds programs that are designed for students from kindergarten through high school. Programs include Think Earth! It’s Magic (K-5), Think Water! It’s Magic, Water Wanderings (4-5), Think Watershed (4-6), Water for the City (4-8), Water Squad Investigations (4-12), Conservation Connection (6-8), Sewer Science (9-12) and Waterlogged (9-12). The education programs range from in class, extended daycare/after school and field trips. Educational topics range from watershed protection, marine animal and plants, water sources and wastewater treatment. Each year over 30,000 students from the District’s service area participate in the CBWMD education program.

The City is currently working with CBMWD on creating demonstration gardens and holding classes to further educate the community. In the recent past, the City held a class at Hollydale Library with the collaboration of CBMWD.

Implementation Schedule:

Program Ongoing.

Budgetary Schedule:

The City has a proposed annual budget of \$5,000, (from public affairs office budget) for staff and materials for this activity.

Residential Plumbing Retrofit

The City participates in a MWD rebate program through the CBMWD. Under this program, water-conserving devices such as high-quality low-flow showerheads, faucet aerators, toilet-displacement devices, toilet tank banks, toilet leak detection tablets, and literature related to other city water conservation programs are distributed. The plumbing retrofit DMM was implemented in 2000 through the National Association of Clean Water Agencies (NACWA). The City participates in the distribution of retrofit kits during Water Awareness Month. Residential plumbing retrofit programs include distributing retrofit kits that may include high quality low-flow showerhead, faucet aerator/restrictor, toilet displacement device, toilet leak detection tablets, garden hose nozzle, hose washers, and hose repair kits. Retrofit kits include instructions on the proper installation and benefits of the low-flow devices. In addition, each of the kits includes printed materials promoting interior and exterior conservation practices.

By providing water saving kits the City will be directly promoting water conservation into the homes of city water customers while offering simple ways to save.

This program offers the City the opportunity to meet with individual customers who are interested in conserving water. Recent efforts include an informational meeting held on June 24, 2015, in which the City reached out to the community to inform the public regarding the "Level 1, Water Shortage Plan." The meeting discussed the mandatory watering schedule, water conservation obligations and made available water conservation items including efficient water hose nozzles, leak detecting tablets and dish squeegees.



Water Efficient Hose Nozzle

This heavy-duty Deluxe Seven Spray Water Saving Water Hose Nozzle features a heavy-duty, durable metal body with a cushioned dial ring and grip for long life. It is built for pressure compensation for consistent water savings regardless of water pressure.



Dish Squeegee™

The Dish Squeegee™ makes doing dishes simple, fast and eco-friendly. According to the US EPA, pre-rinsing dishes prior to dishwasher use wastes water. Simply squeegee off dirty dishes without pre-rinsing to save water and save energy used to heat water.



Water Efficient Showerhead

The Tri-Max™ Showerhead features three adjustable spray settings for optimal task performance and maximum water savings. It produces a luxurious shower with an even vacillating spray that requires up to 40 percent less water usage than typical "low-flow" showerheads.



Leak Detection Tablets

Leak Detection Toilet Dye Tablets are used to rapidly identify a leaky toilet tank which can waste thousands of gallons of water per year. Place the tablets into your toilets tank, and if blue water appears in your bowl, you have a damaged flapper that needs to be replaced.

During these meetings the City is able to educate customers regarding additional methods of saving water and let them know about the other rebate programs offered by the City and other local agencies. At this most recent effort, the City was successful in distributing over 100 water conservation items.

The City also participated in a separate outreach program on Earth Day. The Earth Day event was held on April 25, 2015 and was coordinated with wholesale agency Central Basin Water District. At the fair the City distributed an additional 100 bags at the event containing the items depicted above.

Additionally, the Gas Company offers rebates for low-flow shower heads. More information is available at: <http://www.socalgas.com/for-your-home/rebates/>

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

The City tracks the difference between water produced or purchased and the amount of water sold to its customers. The difference, expressed as a percentage of total water produced, is referred to as unaccounted for water. The City has the very unusual situation of having no losses. For the future projection, we assume that this anomaly will be found and a 2% system loss will occur. The generally accepted industry standard for unaccounted for water is from 7% to 15%. All water delivered to the City is recorded on master meters connected to each well. All water distributed by the City to its customers is metered, with the exception of water used from fire hydrants for emergencies, periodic flushing, leaks and theft. The Utility Billing Software program enables the City to log water use data and history of each service. Data for each service includes an account number, address, meter size and charges along with the water usage. With this data, the City can calculate the unaccounted for water.

The City also participates in the National Association of Clean Water Agencies (NACWA)-sponsored annual valve exercise program, recently established,

Budgetary Schedule:

Approximately \$330,049.00 has been allocated for this DMM as part of the budget to complete installation of meters needed to improve conservation by reducing leaks throughout the City's distribution system. All installation will be completed by 2017.

DMM 6- Water Conservation Program Coordinator and Staffing Support

The Water Division Manager acts as the Conservation Coordinator whose duties include program management, tracking, planning, responding to public requests, and any required reporting.

Implementation Schedule:

Program Ongoing

Budgetary Schedule:

The proposed annual budget is TBD for water conservation staff costs.

Residential ULFT Replacement Programs

The City currently does not operate an ultra-low-flush toilet replacement program. However, MWD, of which the City is within MWD's service area, maintains a residential ultra-low-flush toilet replacement program. MWD offers rebates starting at \$50 per toilet if a customer replaces a toilet that is a program-qualifying model. The water customer purchases and installs the program-qualifying model, completes an application provided by MWD, and then sends the application and proof of purchase, and proof of residency (water service account number) to MWD. As previously mentioned, the City contributes \$15,000 to supplemental program with Central Basin who administers the MWD rebate program.

Implementation Schedule:

Program On-going

Budgetary Schedule:

The \$15,000 will be budgeted annually until the MWD rebate program expires.

DMM 7 –Other Demand Management Measures

High-Efficiency Washing Machine Rebate Programs

High-efficiency washing machines use about 50 percent less water than conventional machines; using only 20 to 30 gallons of water per load, compared to 40 to 45 gallons for conventional top-loading washers. The estimated annual savings for a typical household is about 5,000 gallons per year.

The City does not currently have its own residential rebate program. However, customers in the City's water service area may be eligible for rebates from either Central Basin or MWD. As of recent, the City partnered with Central Basin and provided an additional \$15,000 for supplemental funding on washing machine, toilet, and irrigation head rebate program.

Water and energy savings vary with the new models, however, mean water savings of approximately 14 gallons per household per day would be expected. High efficiency models cost from \$600 to \$1,100 (compared to \$300 to \$700 for conventional units) which may reduce the rate of participation. Examples of customers that would derive maximum benefit from this program include multi-family residential units and laundromats with multiple washing machines per location.

Due to the lack of funding, the low gpcd for the City, and other agencies offering rebates, the City does not offer rebates for this DMM. As a member agency of MWD, the City has access to MWD rebate programs that implement several conservation measures which customers of the participating agencies may receive rebates. Through MWD's SoCal WaterSmart program, customers may receive rebates of \$110.00 for the installation of high efficiency washing machines. Customers who inquire about rebates are directed to the MWD SoCal WaterSmart program at <http://socialwatersmart.com>.

Additionally, the Gas Company and Southern California Edison offer rebates for High Efficiency Clothes Washers. More information is available at:

<http://www.socalgas.com/for-your-home/rebates/>

<http://www.sce.com/residential/rebates-savings/rebates-savings.htm>

Implementation Schedule:

MWD Program: Ongoing

The Gas Company Program: Ongoing

Central Basin MWD Program: Ongoing

Budgetary Schedule:

The \$15,000 will be budgeted annually until the MWD rebate program expires.

9.6 Water Savings Analysis

Each of the individual DMM's that are currently being implemented are not easily quantifiable. However, the City's overall conservation of water is evident by the 86 gpcd that is in use. This is 32% less than the regional target that has been set and well below the average regional usage. The usage for the area is 124 gpcd¹⁴. So South Gate is 46% below that regional average.

Through the implementation of the existing DMMs and SB X7-7 requiring all water suppliers to reduce per capita urban water use, a reduction of approximately 10 percent in average water use is expected by 2015 and 20 percent by 2020. However, it is difficult to determine actual water savings since most conservation measures are voluntary. Typically when a shortage occurs, water customers increase their awareness of water usage and voluntarily reduce water demand even more to avoid water rationing.

¹⁴ Metropolitan Water District of Southern California Regional Urban Water Management Plan

Chapter 10 - Plan Adoption, Submittal, and Implementation

10.1 Inclusion of All 2015 Data

10.2 Notice of Public Hearing

All local cities, counties, water and planning agencies and community organizations were notified by mail of the availability of the plan for public inspection and the time and location of the public hearing.

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
City of Downey	<input checked="" type="checkbox"/>	<input type="checkbox"/>
City of Huntington Park	<input checked="" type="checkbox"/>	<input type="checkbox"/>
City of Lynwood	<input checked="" type="checkbox"/>	<input type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Los Angeles County	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

10.3 Public Hearing and Adoption

The City of South Gate sought a wide range of involvement in the development of this plan, including direct public involvement. Public participation in the development of the UWMP was encouraged.

The city ran a 1.5"x2" advertisement in the April 28, 2016 and May 5, 2016 editions of the *Los Angeles Wave* announcing the initiation of plan preparation (see Appendix _ for proof of publication).

Drafts of the plan were made available for public inspection at the City of South Gate's City Hall on May 31, 2016 before the public hearing which began prior to the City Council Meeting on June 14, 2016. The draft of the plan was also made available on the City's website beginning on May 31, 2016.

Comments on the draft were collected and either incorporated into the plan or responded to in Appendix Q.

10.4 Plan Submittal

10.5 Public Availability

Drafts of the plan were made available for public inspection at the City of South Gate's City Hall on May 31, 2016 before the public hearing. The draft of the plan was also made available on the City's website beginning on May 31, 2016.

Appendix F – South Gate Resolution

ORDINANCE NO. 2263

CITY OF SOUTH GATE
LOS ANGELES COUNTY, CALIFORNIA

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOUTH GATE AMENDING TITLE 6 (HEALTH AND SANITATION), CHAPTER 6.64 (WATER CONSERVATION) OF THE SOUTH GATE MUNICIPAL CODE IN ITS ENTIRETY

WHEREAS, the purpose of this ordinance is to modify water conservation regulations and water shortage contingency measures consistent with the State law; and

WHEREAS, California enters its third consecutive year of drought; and

WHEREAS, the City's policy promotes conservation and efficient use of water; and

WHEREAS, mandatory conservation will begin replacing voluntary efforts at the local government level; and

WHEREAS, cities must begin implementing local efforts through partnerships, ordinances, and tiered rate systems in order to meet pending state requirements and qualify for much-needed funding through the Metropolitan Water District; and

WHEREAS, The Metropolitan Water District (MWD) Board of Directors has adopted a policy requiring cities in its jurisdiction to have a water conservation ordinance in place by June 30, 2009, as a prerequisite for funding through the Public Sector Program (PSP) and Enhanced Conservation Program (ECP); and

WHEREAS, this ordinance has been determined to be Categorically Exempt pursuant to Section 15308, Class 8 of the California Environmental Quality Act (CEQA);

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF SOUTH GATE DOES HEREBY ORDAIN AS FOLLOWS:

CHAPTER 6.64 (WATER CONSERVATION)

Sections:

6.64.010 Title.
6.64.020 Findings.
6.64.030 Declaration of Purpose and Intent.

- 6.64.040 Definitions.
- 6.64.050 Application.
- 6.64.060 Permanent Water Conservation Requirements – Prohibition Against Waste.
- 6.64.070 Level 1 Water Supply Shortage.
- 6.64.080 Level 2 Water Supply Shortage.
- 6.64.090 Level 3 Water Supply Shortage – Emergency Condition.
- 6.64.100 Procedures for Determination/Notification of Water Supply Shortage.
- 6.64.110 Level 3 Alternate Provisions.
- 6.64.120 Hardship Waiver.
- 6.64.130 Penalties and Violations.
- 6.64.140 Severability.

SECTION 1. Title 6 (Health and Sanitation) of the South Gate Municipal Code is amended by adding Chapter 6.64 (Water Conservation Ordinance) as follows:

6.64.010. Title.

This chapter will be known as the City of South Gate Water Conservation and Water Supply Shortage Program.

6.64.020. Findings.

A. A reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of the City of South Gate and Southern California region.

B. Southern California is a semi-arid region and is largely dependent upon imported water supplies. A growing population, climate change, environmental concerns, and other factors in other parts of the State of and western United States, make the region highly susceptible to water supply reliability issues.

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

D. Article XI, Section 7 of the California Constitution declares that a City or County may make and enforce within its limits all local, police, sanitary and other ordinances and regulations not in conflict with general laws.

E. Article X, Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water be prevented, and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof.

F. California Water Code Section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.

G. The adoption and enforcement of a water conservation and supply shortage program is necessary to manage the City's potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortages within the

City. Such program is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

6.64.030. Declaration of Purpose and Intent.

A. The purpose of this chapter is to establish a water conservation and supply shortage program that will reduce water consumption within the City of South Gate through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within the City of South Gate to avoid and minimize the effect and hardship of water shortage to the greatest extent possible.

B. This chapter establishes permanent water conservation standards intended to alter behavior related to water use efficiency for non-shortage conditions and further establishes three levels of water supply shortage response actions to be implemented during times of declared water shortage or declared water shortage emergency, with increasing restrictions on water use in response to worsening drought or emergency conditions and decreasing supplies.

6.64.040. Definitions.

A. The following words and phrases whenever used in this chapter have the meaning defined in this section:

1. "City" means the City of South Gate.
2. "Person" means any natural person or persons, corporation, public or private entity, governmental agency or institution, or any other user of water provided by the City.
3. "Landscape Irrigation System" means an irrigation system with pipes, hoses, spray heads, or sprinkling devices that are operated by hand or through an automated system.
4. "Large Landscape Areas" means a lawn, landscape, or other vegetated area, or combination thereof, equal to more than one (1) acre of irrigable land.
5. "Single Pass Cooling Systems" means equipment where water is circulated only one to cool equipment before being disposed.
6. "Potable Water" means water which is suitable for drinking.
7. "Recycled Water" means the reclamation and reuse of non-potable water for beneficial use.
8. "Billing Unit" means the unit of water used to apply water rates for purposes of calculating water charges for a persons water usage and equals one hundred (100) cubic feet or seven hundred forty-eight (748) gallons of water.

6.64.050. Application.

A. The provisions of this chapter apply to any person in the use of any potable water provided by the City.

B. The provisions of this chapter do not apply to uses of water necessary to protect public health and safety or for essential government services, such as police, fire and other similar emergency services.

C. The provisions of this chapter do not apply to the use of recycled water, with the exception of Section VI (a).

D. The provisions of this chapter do not apply to the use of water by commercial nurseries and commercial growers to sustain plants, trees, shrubs, crops or other vegetation intended for commercial sale.

E. This chapter is intended solely to further the conservation of water. It is not intended to implement any provision of federal, state, or local statutes, ordinances, or regulations relating to protection of water quality or control of drainage or runoff. Refer to the local jurisdiction or Regional Water Quality Control Board for information on any storm water ordinances and storm water management plan.

6.64.060. Permanent Water Conservation Requirements- Prohibition Against Waste.

The following water conservation requirements are effective at all times and are permanent. Violations of this section will be considered waste and an unreasonable use of water.

A. Limits on Watering Hours: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 9 a.m. and 6 p.m. Pacific Standard Time on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

B. Limit on Watering Duration: Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour and weather based controllers or stream rotor sprinklers that meet a 70% efficiency standard.

C. No Excessive Water Flow or Runoff: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited.

D. No Washing Down hard or Paved Surfaces: Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device or a low-volume, high pressure cleaning machine equipped to recycle any water used.

E. Obligation to Fix Leaks, Breaks or Malfunctions: Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonable been discovered and corrected and in no event more than 3 days of receiving notice from the City is prohibited.

F. Re-circulating Water Required for Water Fountains and Decorative Water Features: Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.

G. Limits on Washing Vehicles: Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility.

H. Drinking Water Served Upon Request Only: Eating or drinking establishments, including but not limited to a restaurant, hotel, café, cafeteria, bar, club or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.

I. Commercial Lodging Establishments Must Provide Option to Not Launder Linen Daily: Hotels, motels, and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood language.

J. No Installation of Single Pass Cooling Systems: Installation of single pass cooling systems is prohibited in buildings requesting new water service.

K. No Installation of Non-re-circulating in Commercial Car Wash and Laundry Systems: Installation of no-re-circulating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems.

L. Restaurants Required to Use Water Conserving Dish Wash Spray Valves: Food preparation establishments, such as restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

6.64.070. Level 1 Water Supply Shortage.

A. A Level 1 Water Supply Shortage exists when the City determines, in its sole discretion, that due to drought or other water supply reductions, a water supply shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the City of a Level 1 Water Supply Shortage condition, the City will implement the mandatory Level 1 conservation measures identified in this section. The type of event that may prompt the City to declare a Level 1 Water Supply Shortage may include, among other factors, a finding that its wholesale water provider calls for extraordinary water conservation.

A Level 1 Water Supply Shortage condition exists when the City notifies its water users that due to drought or other supply reductions, a consumer demand reduction of up to 10% is necessary to make more efficient use of water and respond to existing water conditions. Upon the declaration of a Level 1 Water Supply Shortage condition, the City shall implement the mandatory Level 1 conservation measures identified in this Ordinance. The type of event that may prompt the City to declare a Level 1 Water Supply Shortage may include, among other factors, a finding that its wholesale water provider calls for extraordinary water conservation.

B. Additional Water Conservation Measures: In addition to the prohibited uses of water identified in Section VI, the following water conservation requirements apply during a declared Level 1 Water Supply Shortage:

1. Limits on Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to three days per week on a schedule established and posted by the City. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by the City. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water 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 self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

2. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of notification by the City unless other arrangements are made with the City.

3. Other Prohibited Uses: The City may implement other prohibited water uses as determined by the City, after notice to customers.

6.64.080. Level 2 Water Supply Shortage.

A. A Level 2 Water Supply Shortage exists when the City determines, in its sole discretion, that due to drought or other supply reductions, a water supply shortage exists and a consumer demand reduction is necessary to make more efficient use of water and respond to existing water conditions. Upon the declaration by the City of a Level 2 Water Supply Shortage condition, the City will implement the mandatory Level 2 conservation measures identified in this section.

A Level 2 Water Supply Shortage condition exists when the City notifies its water users that due to drought or other supply reductions, a consumer demand reduction of up to 15% is necessary to make more efficient use of water and respond to existing water conditions. Upon the declaration of Level 2 Water Supply Shortage condition, the City shall implement the mandatory Level 2 conservation measures identified in this Ordinance.

B. Additional Conservation Measures: In addition to the prohibited uses of water identified in Section VI and VII, the following additional water conservation requirements apply during a declared Level 2 Water Supply Shortage.

1. Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to two days per week on a schedule established and posted by the City. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by the City. This

provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water 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 self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

2. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight (48) hours of notification by the city unless other arrangements are made with the City.

3. **Limits on Filling Ornamental Lakes or Ponds:** Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under this ordinance.

4. **Limits on Washing Vehicles:** Using water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus motorcycle, boat or trailer, whether motorized or not, is prohibited except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.

5. **Limits on Filling Residential Swimming Pools and Spas:** Refilling of more than one foot and initial filling of residential swimming pools or outdoor spas with potable water is prohibited.

6. **Other Prohibited Uses:** The City may implement other prohibitions on water uses as determined by the City, after notice to customers.

Other Options at Level II:

1. **Water Allocations/ Water Budget:** The City may establish a water allocation for property served by the City using a method that does not penalize persons for the implementation of conservation methods or the installation of water saving devices. The City must provide notice of the allocation by including it in the regular billing statement for the fee or charge or by any other mailing to the address to which the City customarily mails the billing statement for fees or charges for on-going water service.

Following the effective date of the water allocation as established by the City, any person that uses water in excess of the allocation will be subject to a penalty in the amount of \$2.50 for each billing unit of water in excess of the allocation or an amount established by the Resolution of City Council whichever is greater. The penalty for excess water usage will be cumulative to any other remedy or penalty that may be imposed for violation of this Ordinance.

2. **Water Supply Shortage Rates:** During a Level 2 Water Supply Shortage condition, the City may increase water rates, other than Tier 1 Lifeline rates of 15 units per residential household.

3. Mandatory % Use Reductions: During a Level 2 Water Supply Shortage condition, all customers will be required to reduce water consumption by a percentage determined by the City.

6.64.090. Level 3 Water Supply Shortage- Emergency Condition.

A. A Level 3 Water Supply Shortage condition is also referred to as an "Emergency" condition. A Level 3 condition exists when the City declares a water shortage emergency and notifies its residents and businesses that a significant reduction in consumer demand is necessary to make more efficient use of water and respond to existing water conditions. Upon the declaration of a Level 3 Water Supply Shortage Emergency condition, the City will implement the mandatory Level 3 conservation measures identified in this section.

A Level 3 Water Supply Shortage Emergency exists when the City declares a water shortage emergency condition pursuant to California Water Code Section 350 and notifies its residents and businesses that more than a 40% consumer demand reduction is required to ensure sufficient supplies for human consumption, sanitation and fire protection. The City must declare a Water Supply Shortage Emergency in the manner and on the grounds provided in California Water Code Section 350.

B. Additional Conservation Measures: In addition to the prohibited uses of water identified in Section VI, VII, and VIII, the following water conservation requirements apply during a declared Level 3 Water Supply Shortage Emergency:

1. No Watering or Irrigating: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use unless the City has determined that recycled water is available and may be lawfully applied to the use:

- i. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or a very low-flow drip type irrigation system when no emitter produces more than two (2) gallons of water per hour subject to the hour restrictions in Section VI (a);
- ii. Maintenance of existing landscape necessary for fire protection;
- iii. Maintenance of existing landscape for soil erosion control;
- iv. Maintenance of plant materials identified to be rare or essential to the well being of rare animals;
- v. Maintenance of landscape within active public parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week according to the schedule established in Section VIII (b) (1) and time restrictions in Section VI (a) and (b)(1);
- vi. Public Works projects and actively irrigated environmental mitigation projects.

2. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty four (24) hours of notification by the City unless other arrangements are made with the City.

3. **No new Potable Water Service:** Upon declaration of a Level 3 Water Supply Shortage Emergency condition, no new potable water service will be provided, no new temporary meters or permanent meters will be provided, and no statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:

- a. A valid, unexpired building permit has been issued for the project; or
- b. The project is necessary to protect the public's health, safety, and welfare; or
- c. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the City.

This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.

d. **Discontinue Service:** The City, in its sole discretion, may discontinue service to consumers who willfully violate provisions of this section.

e. **Other Prohibited Uses:** The City may implement other prohibited water uses as determined by the City, after notice to customers.

6.64.100. Procedures for Determination/Notification of Water Supply Shortage.

A.. **Declaration and Notification of Level 1 and 2 Water Supply Shortage:** The existence of Level 1 and Level 2 Water Supply Shortage conditions may be declared by resolution of the City adopted at a regular or special public meeting held in accordance with State law. The mandatory conservation requirements applicable to Level 1 or Level 2 conditions will take effect on the tenth day after the date the shortage level is declared. Within five days following the declaration of the shortage level, the City must publish a copy of the resolution in a newspaper used for publication of official notices. If the City establishes a water allocation, it must provide notice of the allocation by including it in the regular billing statement for fees or charges for ongoing water service. A water allocation will be effective on the fifth day following the date of mailing or at such later date as specified in the notice.

B. **Declaration and Notification of Level 3 Water Supply Shortage:** The existence of a Level 3 Water Supply Shortage Emergency condition may be declared in accordance with the procedures specified in Water Code Sections 351 and 352. The mandatory conservation requirements applicable to the Level 3 conditions will take effect on the tenth (10) day after the date the shortage level is declared. Within five (5) days following the declaration of the shortage level, the City must publish a copy of the Resolution in a newspaper used for the publication of official notices. If the City establishes a water allocation, it will provide notice of the allocation by including it in the regular billing statement or by any other mailing to the address to which the City

customarily mails the billing statement or by any other mailing to the address to which the City customarily mails the billing statement for fees or charges for ongoing water service. A water allocation will be effective on the fifth day following the date of mailing or at such later date as specified in the notice.

6.64.110. Level 3 Alternate Provisions.

A. Commercial Car Wash Systems: Effective on January 1, 2011, all commercial conveyor car wash systems must have installed and operational re-circulating water systems, or must have secured a waiver of this requirement from the City.

B. Large Landscape Areas- Rain Sensors: Large landscape areas, such as parks, cemeteries, golf courses, school grounds, and playing fields, that use landscape irrigation systems to water or irrigate, must use landscape irrigation systems with rain sensors that automatically shut off such systems during periods of rain or irrigation timers which automatically use information such as evapotranspiration sensors to set an efficient water use schedule.

C. Construction Purposes: Recycled or non-potable water must be used for construction purposes when available.

D. No New Annexations: Upon the declaration of a Level 3 Water Supply Shortage condition, the City will suspend consideration of annexations to its service area. This subsection does not apply to boundary corrections and annexations that will not result in any increased use of water.

E. Limits on Building Permits: The City may limit or withhold the issuance of building permits which require new or expanded water service, except to protect the public health, safety and welfare, or in cases which meet the City's adopted conservation offset requirements.

F. Water Recycling Required if Alternative Available: The use of potable water, other than recycled water, is prohibited for specified uses after the City has provided to the customer an analysis showing that recycled water is a cost-effective alternative to potable water for such uses and the customer has had a reasonable time, as determined by the City Manager, to make the conversion to recycled water.

G. Water Recycling- New Service: Prior to the connection of any new water service, an evaluation must be done by the City to determine whether recycled water exists to supply all or some of the water needed and recycled water must be utilized to the extent feasible.

H. City Conservation Reports: Upon request of the City Manager, City Departments must prepare and submit quarterly reports on their water conservation efforts. The reports will be consolidated by the City Manager and reported to the City Council at a minimum of once a year.

I. Customer Water Conservation Reports: The City may be written request require all commercial, residential and industrial customers using twenty five thousand (25,000) or more billing units per year to submit a water conservation plan and to submit quarterly progress reports on such plan. The conservation plan must include recommendations for increased water savings, including increased water recycling based on feasibility, and the reports must include progress to date on implementation of such recommendations.

J. Reporting Mechanism- Hotline: The City will establish a water waste hotline for residents to report violation of this chapter.

6.64.120. Hardship Waiver

A. Undue and Disproportionate Hardship: if, due to unique circumstances, a specific requirement of this chapter would result in undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply for a waiver to the requirements as provided in this section.

B. Written Finding: The waiver may be granted or conditionally granted only upon a written finding of the existence of facts demonstrating an undue hardship to a person using water or to property upon which water is used, that is disproportionate to the impacts to water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.

1. Application: Application for a waiver must be on a form prescribed by the City and accompanied by a non-refundable processing fee in an amount of five hundred dollars (\$500) or as established by the Resolution by the City Council whichever is greater.

2. Supporting Documentation: The application must be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.

3. Required Findings for Waiver: An application for a waiver will be denied unless the Water Division Manager finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the City or its Agent, all of the following:

- i. That the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other residents and businesses;
- ii. That because of special circumstances applicable to the property or its use, the strict application of this chapter would have a disproportionate impact on the property or use that exceeds the impacts to residents and businesses generally;
- iii. That the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City to effectuate the purpose of this chapter and will not be detrimental to the public interest; and
- iv. That the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent or general in nature.

4. Approval Authority: The City Manager or Water Division Manager must act upon any completed application no later than ten (10) business days after submittal and may approve, conditionally approve, or deny the waiver. The applicant requesting the waiver must be promptly notified in writing of any action taken. Unless

specified otherwise at the time a waiver is approved, the waiver will apply to the subject property during the period of the mandatory water supply shortage condition. The decision of the City Manager or Water Division Manager will be final.

6.64.130. Penalties and Violations.

A. Misdemeanor: Any violation of this chapter may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days, or by a fine not exceeding one thousand dollars (\$1,000) or as established by Resolution of the City Council whichever is greater, or by both.

B. Civil Penalties: Civil penalties for failure to comply with any provisions of the Ordinance are as follows:

1. First Violation: The City will issue a written warning and deliver a copy of this Ordinance by certified mail.

2. Second Violation: A second violation within the preceding twelve (12) calendar months is punishable by a fine not to exceed one hundred dollars (\$100) or as established by Resolution of the City Council whichever is greater.

3. Third Violation: A third violation within the preceding twelve (12) calendar months is punishable by a fine not to exceed two hundred and fifty (\$250) or as established by Resolution of the City Council whichever is greater .

4. Fourth and Subsequent Violations: A fourth and any subsequent violation is punishable by a fine not to exceed five hundred (\$500) or as established by Resolution of the City Council whichever is greater

i. Water Flow Restrictor: In addition to any fines, the City may install a services water flow restrictor device of approximately one gallon per minute capacity for services up to one and one-half inch size and comparatively sized restrictors for larger services after written notice of intent to install a flow restrictor for a minimum of forty eight (48) hours.

ii. Termination of Service: In addition to any fines and the installation of a water flow restrictor, the City may disconnect and/or terminate a customer's water service.

C. Cost of Flow Restrictor and Disconnecting Service: A person or entity that violates this Ordinance is responsible for payment of the City's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the City's schedule of charges then in effect. This charge for installing or removing a flow restriction device will be set at one hundred dollars (\$100) each or as established by Resolution of the City Council whichever is greater. The charge for installing and/or removing any flow restricting device must be paid to the City before the device is removed. Nonpayment will be subject to the same remedies as nonpayment of basic water rates.

D. Separate Offenses: Each day that violation of this Ordinance occurs is a separate offense.

E. Notice and Hearing:

1. The City will issue a Notice of Violation by certified mail or personal delivery at least ten (10) days before taking enforcement action. Such notice must describe the violation and the date by which corrective action must be taken. A customer may appeal the Notice of Violation by filing a written notice of appeal with the City no later than the close of business on the day before the date scheduled for enforcement action. Any Notice of Violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled, and the City will mail written notice of the hearing date to the customer at least ten (10) days before the date of the hearing.

2. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the City may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violations and the current declared water Level condition.

6.64.140. Severability.

If any section, subsection, sentence, clause or phrase in this chapter is for any reason held invalid, the validity of the remainder of the chapter will not be affected. The City Council hereby declares it would have passed this chapter and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses, or phrases or is declared invalid.

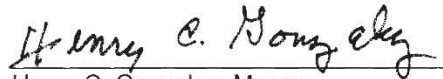
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SECTION 2. This Ordinance shall take effect and be in force on the thirty-first (31st) day after its adoption.


SECTION 3: The City Clerk shall certify to the adoption of this Ordinance and shall cause the same to be published as required by law.

PASSED, APPROVED and ADOPTED this 28th day of July, 2009.

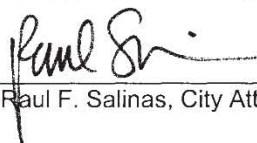
CITY OF SOUTH GATE:


Henry C. Gonzalez, Mayor

ATTEST:


Carmen Avalos, City Clerk
(SEAL)

APPROVED AS TO FORM:


Raul F. Salinas, City Attorney

ORDINANCE CERTIFICATION PAGE

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF SOUTH GATE)

I, Carmen Avalos, City Clerk of the City of South Gate, California, hereby certify that the whole number of Members of the City Council of said City is five; that Ordinance No. 2263 was adopted by the City Council at their Regular Meeting held on July 28, 2009, by the following vote:

Ayes: Council Members: Gonzalez, Martinez, Davila, De Witt and Hurtado
Nocs: Council Members: None
Absent: Council Members: None
Abstain: Council Members: None

Witness my hand and the seal of said City on August 11, 2009.



Carmen Avalos, City Clerk
City of South Gate, California