4. ENVIRONMENTAL IMPACT ANALYSIS
M. UTILITIES
1. WATER SUPPLY

1. INTRODUCTION

This section identifies the water purveyor responsible for providing water to the Project, and analyzes whether this water purveyor has adequate water supplies to serve the proposed Project. This section also describes the existing and proposed water distribution infrastructure in the Project area, and evaluates whether this infrastructure has sufficient capacity to serve the proposed Project. This section is based on several information sources, including a Project-specific Water Supply Assessment (WSA) provided by the California Water Service Company (Cal Water), the water purveyor serving the Medical Center Campus, which is included in Appendix J of this Draft EIR, and Cal Water's Rancho Dominguez District 2010 Urban Water Management Plan (UWMP).

2. ENVIRONMENTAL SETTING

a. Existing Conditions

(1) Water Supply

(a) Existing Water Sources and Supply[1]

The Medical Center Campus is located within Cal Water's Rancho Dominguez District service area, also referred to as the "Dominguez system". The Dominguez system is supplied by the following water sources:

1. Imported water purchased from Metropolitan Water District (MWD) of Southern California through the West Basin Municipal Water District (WBMWD).

2. Groundwater pumped from two adjudicated groundwater basins: the West Coast Basin and the Central Basin. Groundwater is extracted from both basins using 10 wells (8 active and 2 inactive).

3. Cal Water purchases treated desalted brackish groundwater produced in the C. Marvin Brewer Desalter owned by WBMWD in their West Basin Water Recycling Plant located in El Segundo.

In 2015, the Dominguez system used 26,886 acre-feet (AF)[2] of purchased water and 4,405 AF of groundwater pumped from Cal Water wells for a total of 31,291 AF. Hence, groundwater supplied 14 percent of total annual demand.

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[1] *Water supply information provided in this section is contained in the Water Supply Assessment prepared for the Master Plan Project by Yarne & Associates, Inc. on behalf of Cal Water. Yarne & Associates, Inc., "Harbor-UCLA Medical Center Campus SB610 Water Supply Assessment" prepared for California Water Service Company 2632 West 237th Street Torrance, California 90505. April 21, 2016. Included in Appendix J of this Draft EIR.*

[2] *One acre-foot of water is equal to approximately 328,000 gallons.*

Since 1926 (a period of 90 years), Cal Water has continuously supplied water to meet Dominguez system demands during normal, dry and multiple dry year periods using sources and water conservation measures as described in greater detail below. Actual and projected Dominguez system water supply sources and quantities are summarized below in **Table 4.M.1-1**, *Dominguez System Actual and Projected Water Supplies (AFY)*. Cal Water operates its potable water distribution system so that demand not met by groundwater sources is supplied through its interconnections with the WBMWD transmission system. Cal Water has a capital improvement program to maximize use of its adjudicated groundwater rights by constructing new wells and installing treatment on wells with non-compliant water quality. The plan is to provide sufficient well capacity to fully utilize its annual allocation. Currently, Cal Water leases a portion of its groundwater rights using short-term transfer agreements. The amount of recycled water listed in Table 4.M.1-1 is the projected demand from this source and does not include estimated unaccounted for losses in the recycled water distribution system. Purchased water would be used to provide the remaining supply.

Table 4.M.1-1

Dominguez System Actual and Projected Water Supplies (AFY)

Water Supply Sources	2010 Actual	2015	2020	2025	2030	2035	2040
West Basin Municipal Water District – Purchased Water	27,247	26,886	13,987	14,378	14,917	15,264	15,564
Cal Water Groundwater Wells	8,575	4,405	16,897	16,897	16,897	16,897	16,897
Recycled Water	4,515	5,089	6,776	7,481	8,260	9,120	10,069
Total	40,337	36,380	37,660	38,756	40,074	41,281	42,530

Source: California Water Service Company, 2016

(i) Purchased Imported Water

Purchased potable water is imported and supplied by MWD to WBMWD. Purchased water will continue to be the main supply source through 2019 per the UWMP. In 2020, groundwater is planned to provide 54.7 percent of potable water and in year 2040, 52 percent of potable supply.

Imported water from MWD is delivered through four interconnection feeders (Palos Verdes Feeder, Victoria Feeder, Long Beach Lateral and Extension and the Sepulveda Feeder) to WBMWD and through seven WBMWD service connections to the Dominguez system. The total rated capacity of the seven service connections is 72,000 gallons per minute (gpm). If operated at full capacity, these connections are capable of delivering up to 103.68 million gallons per day (mgd) or approximately 116,140 acre-feet per year (AFY), which is a flow rate higher than the distribution system could likely accommodate.

Cal Water has a supply purchase agreement with WBMWD. Water purchased by Cal Water and supplied to the Dominguez system comes from either the Colorado River Aqueduct (CRA), which is owned by MWD, or through the California Aqueduct, a facility of the State Water Project (SWP), which is owned and operated by the California Department of Water Resources (DWR).

MWD classifications of service and rate structure have changed in recent years and further changes are anticipated. Key to these changes is a purchase agreement for imported water between WBMWD and MWD. This agreement became effective January 1, 2003, had an initial term of five years, and establishes requirements for water sales within MWD's service area. The agreement sets a Base Allocation for each Purchaser, which is essentially their share of the supply MWD has made available to WBMWD. The Base Allocation is determined on that Purchaser's five-year average non-surplus purchases during fiscal years ending 1997 through 2001. Over the term of the agreement, the Purchaser commits to purchase at least 60 percent of the Base Allocation times five, which is known as the Purchase Commitment. If a Purchaser does not purchase the full Purchase Commitment over the term of the agreement, then they must pay for the balance at the current Tier 1 Supply Rate.

A two-tier rate and annual allocation is another aspect of this agreement. The agreement sets a Tier 1 Annual Maximum at 90 percent of the Base Allocation. All water purchased in any year in an amount that is equal to or less than the Tier 1 Maximum must be purchased at the current Tier 1 Rate. Any amount of water purchased in excess of the Tier 1 Annual Maximum must be at the Tier 2 Rate. In 2013, the Tier 1 rate for water purchased from WBMWD was $1,089/AF and the Tier 2 rate was $1,239/AF.

In the Imported Water Purchase Agreement between Cal Water and WBMWD, the Base Allocation, Tier Allocations, and Purchase Commitment are established as a combined amount for all four Cal Water systems served (Palos Verdes, Hermosa-Redondo, Dominguez and Hawthorne). The Dominguez system shares in the combined amount with the other three service areas. The agreement became initially effective on January 1, 2003. There have been several subsequent amendments, with No. 4 dated January 1, 2008, being the most recent. It eliminated Cal Water's Base Allocation, set the Tier 1 Annual Maximum to 70,000 acre-feet and the Purchase Commitment is 210,000 acre-feet. Cal Water has developed an allocation that distributes the Tier 1 Annual Maximum to each of its four districts, so that if the total Tier 1 Maximum is exceeded the applicable Tier 2 charges can be assessed to the appropriate district. Allocations among the four districts are as follows: Dominguez 22,400 AF, Hawthorne 4,900 AF, Hermosa-Redondo 16,800 AF, and Palos Verdes 25,900.

In-Lieu Seasonal Storage is an economic incentive program designed to encourage purveyors to shift groundwater production from winter to summer to reduce peak summer demands. Seasonal Storage Service is a classification for water that is available for delivery by MWD during the October through April period during years of adequate supply. Monthly certification is required to receive this reduced-price Seasonal Storage Service. To qualify for In-Lieu Seasonal Storage service water rates, a purveyor must reduce demand for supplemental water from MWD in the summer months (May to September) and shift production of groundwater from winter to summer. The baseline production ratio between local groundwater supply and total demand verifies that this shift has been accomplished. In-Lieu Seasonal Storage groundwater not pumped is left in the ground to augment groundwater replenishment. This unused groundwater results in a rebate or compensation from the Water Replenishment District (WRD) for the amount not pumped.

This program benefits MWD by reducing the summer peak flows that push MWD's treatment facilities and distribution system to capacity limits, and enables MWD to maximize water importation during winter when surplus flows are abundant in the areas of origin. Changes are anticipated in this conjunctive use program in the future. Cal Water's participation in this conjunctive use program in the future will depend on the makeup of the economic incentives provided by these changes.

(ii) Groundwater

In 1965 the Central Basin was adjudicated, and in 1961 the West Coast Basin was adjudicated, with the Department of Water Resources as Watermaster. The adjudication orders are attached to the Dominguez District 2010 UWMP as Appendices J and K for each basin, respectively. The DWR Annual Summary of Watermaster Service reports on groundwater status in each of the basins. This summary includes historical fluctuation of water level elevation in wells throughout the basin. These references indicate that, since the reduction in pumping began in 1954 and the adjudication was implemented in 1961, groundwater levels in the West Coast Basin have risen some 20 to 60 feet, depending on location. However, many groundwater elevations in the basin remain below sea level, requiring maintenance of seawater intrusion barriers.

The West Coast Basin is a pressurized aquifer groundwater basin with three primary aquifers: the 200-foot Sands, the Silverado Aquifer, and the Lower San Pedro Aquifer. These aquifers have continuity with the Pacific Ocean in Santa Monica Bay. Overdraft of the basin was caused by excessive pumping due to population growth and rapid industrialization of the Los Angeles Coastal Plain beginning in the 1930s. This overdraft caused lowering of the water pressure of the aquifers, which increased pumping cost and resulted in seawater intrusion. The adjudication of the West Coast Basin began in 1945 when Cal Water, along with the City if Torrance and the Palos Verdes Water Company, filed a lawsuit in Superior Court, Los Angeles County, to quiet title to the groundwater rights and control pumping in the basin. As part of the effort to resolve the overdraft condition, the WBMWD was formed in 1947 to distribute supplemental water to the major water purveyors imported into the region by the MWD. In 1955 when pumpers realized the severity of the overdraft, groundwater pumping was limited under an interim agreement. In 1961, the Court rescinded the interim agreement and signed the West Coast Basin Judgment.

The Dominguez Water Company was identified as a party to the judgment and granted water rights. Now Cal Water, as a result of the merger with Dominguez, owns 10,417.45 acre-feet of adjudicated rights in the West Coast Basin, or 16.15 percent of the total basin annual adjudicated rights of 64,486.25 acre-feet. This amount is in addition to the 4,070 acre-feet held by Cal Water's Hermosa- Redondo District. As a result of the reduction in pumping ordered by the adjudication and increased recharge via the injection wells of the seawater intrusion barrier, in-lieu replenishment and improved underflow from Central Basin, the water levels in the West Coast Basin have slowly recovered to near 1940 levels.

The adjudication of the Central Basin began not out of litigation as in the West Coast Basin, but out of the collective concern expressed by the major pumpers regarding the impacts that reduced groundwater quantity and quality would have on the future of their communities. The Central Basin Municipal Water District was formed in 1952 to distribute supplemental water to the major water purveyors. In 1954 it was annexed to the MWD, so that access to the imported water supplies was available to the region.

The WRD was created in 1959, largely out of cooperation between the West Coast Basin Water Association and the Central Basin Water Association, with the directive to facilitate artificial replenishment of the two basins as a means of eliminating the overdraft and halting seawater intrusion. To quiet the title to and limit production of the groundwater in Central Basin, the WRD filed a lawsuit in Superior Court, Los Angeles, in 1962 against more than 700 parties. Later that year after a vast majority of the pumpers approved of the approach, the Court adopted an interim agreement to limit the production from the basin. In 1965, following extensive meetings by

the parties to work out a settlement that was supported by pumpers representing over 75 percent of the basins anticipated water rights, the court approved the stipulated judgment for the Central Basin.

This judgment established an adjudicated water right for each party, but limited the allowable pumping allocation (APA) to 80 percent of the water right, which equals 217,367 acre-feet annually. The Dominguez Water Company was identified as a party to the judgment and granted water rights. As a result of the merger with Dominguez, Cal Water now owns these 8,100 acre-feet of adjudicated right with the associated 6,480 AFY of APA in the Central Basin. This amount is in addition to the 11,774 acre-feet held by Cal Water's East Los Angeles District. **Table 4.M.1-2**, *Cal Water Groundwater Pumping Rights*, below, summarizes Cal Water's Dominguez system allowable pumping allocation for the two basins.

Table 4.M.1-2

Cal Water Groundwater Pumping Rights

Basin	Pumping Rights AFY
Central Basin	6,480.00
West Coast Basin	10,417.45
Total	16,897.45

Source: California Water Service Company, 2016

The principle mechanisms for recharge in the West Coast Basin are injection of water into the seawater intrusion barriers, in-lieu replenishment, and inflow to the West Coast Basin from the Central Basin. The Central Basin is recharged through percolation of water applied to surface spreading ponds in the Montebello Forebay, in-lieu replenishment, and inflow to the Central Basin from the San Gabriel Valley.

The Los Angeles County Department of Public Works owns and operates all groundwater recharge facilities as a county-funded activity through a longstanding inter-agency agreement. As a result, costs associated with the capture and recharge of storm water runoff are not directly accounted for in the cost of water replenishment. All other water used for replenishing the groundwater of the Central and West Coast Basins is funded by the WRD through the Replenishment Assessment. Additionally, the WRD manages various groundwater quality cleanup programs. To finance its designated responsibilities, the WRD levies a Replenishment Assessment on every acre-foot of groundwater produced in the Central and West Coast Basins.

Cal Water's management plan for Dominguez District water supplies includes participating in existing regional conjunctive-use programs and making use of economic incentives and the lease market to the fullest extent possible.

Basin Boundaries and Hydrology

The West Coast Subbasin is bounded on the north by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River. On the east it is bounded by the Newport-Inglewood fault zone and on the south and west by the Pacific Ocean and consolidated rocks of the Palos Verdes Hills. The surface of the sub-basin is crossed in the south by the Los Angeles River through the Dominguez Gap, and the San Gabriel River through the Alamitos Gap, both of which then flow into San Pedro Bay.

The Central Subbasin occupies a large portion of the southeastern part of the Coastal Plain of Los Angeles Groundwater Basin. This subbasin is bounded on the north by a surface divide called the La Brea High, and on the northeast and east by emergent less permeable Tertiary rocks of the Elysian, Repetto, Merced and Puente Hills. The southeast boundary between Central Basin and Orange County Groundwater Basin roughly follows Coyote Creek, which is a regional drainage province boundary. The southwest boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift. The Los Angeles and San Gabriel Rivers drain inland basins and pass across the surface of the Central Basin on their way to the Pacific Ocean Bay.

A detailed description of the basin is given in the California's Ground Water Bulletin 118, which is included as Appendix D in the Dominguez District 2010 UWMP. The Urban Water Management Plans for West Coast Basin and Central Basin are included in Appendix H and I, respectively, of the UWMP.

Groundwater Management Plan

As the regional groundwater management agency for two of the most utilized groundwater basins in the state of California, the WRD plays an integral role in overall water resource management in southern Los Angeles County. The WRD manages groundwater for nearly four million residents in 43 cities of southern Los Angeles County. The 420 square mile service area uses about 250,000 AF of groundwater per year, which equates to nearly 40 percent of the total demand for water. The WRD ensures that a reliable supply of high-quality groundwater is available through its clean water projects, water supply programs, and effective management principles. A copy of WRD's Strategic Plan is included as Appendix J in the Dominguez District 2010 UWMP.

Dominguez System Wells (Groundwater) Summary

For 2012, total production capacity of the 7 active wells in the Dominguez system was approximately 6,650 gpm, which if operated continuously would produce 10,735 AFY. Actual well production in 2012 was 7,991 AF or approximately 74.4 percent of production capacity. In 2015, well production decreased to 4,405 AF. However, for 2020 Cal Water projects annual well production of 16,897 AF (its allowable pumping allocation from the West and Central Basins) and the same amount through at least 2040. Three wells (219-02, 275-01, and 294-01) will have treatment facilities installed and become operational between 2016 and 2018, which will add 2,600 gpm for a total production of 14,932 AFY. Cal Water temporarily has lost some well production capacity due to localized groundwater quality issues and reduced well efficiencies. In 2009, well production capacity was approximately 10,700 AFY. If the wells were operated at 90 percent utilization, this would equal a production of 9,630 AFY out of its allowable pumping right of 16,987 AF. In 2000, Cal Water pumped 14,737 AF or 87 percent of its adjudicated rights.

Cal Water has additional well projects in its current capital budget program that it intends to bring on line before the year 2020 in order to bring production capacity to it allowable pumping allocation. In addition to capital improvement projects for adding production capacity, Cal Water has projects for constructing new wells to replace older wells that are declining in output or are non-functional. **Table 4.M.1-3**, *Dominguez System Existing Production Wells Summary*, below, provides a summary of existing well pumping rates for 2015 and projected well pumping rates for existing wells for 2020 for the Dominguez system.

Table 4.M.1-3

Dominguez System Existing Production Wells Summary

Well Number	2015 Discharge Rate (GPM)	Estimated 2020 Discharge Rate (GPM)
215-01	420	400
219-02	Treatment to be added – online 2017	600
203-01	Destroyed	0
277-01	670	500
279-01	750	700
294-01	Treatment to be added – online 2016	1,000
298-01	Well rehabilitation – online 2016	1,300
275-01	Treatment to be added – online 2016	700
272-02	Treatment to be added – online 2017	500
290-01	700	700
297-01	650	600
Total	**3,190**	**7,000**

Source: California Water Service Company, 2016

Cal Water is implementing the recommendations of its 2009 WSFMP which include in addition to continued maintenance and improvements of existing wells construction of five to seven new wells to achieve full use of Cal Water's its groundwater rights and to replace wells at the end of their useful life. In 2016, Cal Water plans to replace station 215-02, which has been demolished. By 2020, it recommends replacement of station 290-01 (700 gpm). If the average production rate of a new well is 1,200 gpm, five new wells would have a combined production rate of 6,000 gpm. Total well production capacity in 2020, assuming no other changes in the other wells listed in Table 4.M.1-3, would be 7,000 gpm plus 6,000 gpm, for a total of 13,000 gpm. If these wells operate at a rate of 90 percent of production capacity (allows for downtime for maintenance), they could provide

a groundwater supply of 18,888 AFY. Cal Water's allowable pumping groundwater right is 16,987AFY. In summary, Cal Water's groundwater pumping right as a percentage of available production would be 90 percent (16,987 AFY/18,888 AFY). Cal Water provides ongoing maintenance, well rehabilitation and engineering support to maintain production in all of its active wells including adding treatment facilities for wells with water quality issues.

(iii) Recycled Water

Although Los Angeles County Sanitation District's (LACSD) Joint Water Pollution Control Plant (JWPCP) provides wastewater collection and treatment services for the Dominguez service area, recycled water comes from WBMWD's West Basin Water Recycling Facility (WBWRF). The source of water to that facility is secondary effluent from the City of Los Angeles' Hyperion Wastewater Treatment Plant, which provides secondary treatment using the activated sludge process. Most of the Hyperion treated effluent is disposed of through an ocean outfall. Approximately six percent of treated effluent goes to the WBWRF in El Segundo where it undergoes chemical clarification, recarbonation, microfiltration, and chlorination. The WBWRF produces 42,000 AFY (37.5 mgd) of recycled water and has a maximum capacity of 67,210 AFY (60 mgd).

WBMWD has one of the largest recycled water programs in the United States. WBMWD has identified over 105 economically feasible recycled water users. Fully implemented, the recycling program has the potential to use over 67,210 AFY of recycled water. In the Dominguez system, Cal Water began purchasing recycled water from WBMWD in 2000 for industrial process waters and landscape irrigation. WBMWD and Cal Water's plan is to increase use of recycled water with as new customers as WBMWD's distribution system is expanded. This will result in less potable water use where that water is being used for those purposes.

Recycled water from the WBWRF is used for groundwater replenishment through more than 100 injection wells. In addition to serving Cal Water the WBWRF provides recycled water to more than 140 sites in Manhattan Beach, Torrance, Hermosa Beach, Carson, and Inglewood. Its biggest customers are the Chevron, Mobil and BP oil refineries. It should be noted that Cal Water operates and maintains the recycled water distribution system under contract to WBMWD. WBMWD is responsible for:

1. Determining the technical and economic feasibility of supplying recycled water to the Dominguez service area
2. Encouraging the use of and optimizing the use of recycled water in the Dominguez service area
3. Extension of recycled water lines within the Dominguez service area

Cal Water actively supports use of recycled water by its customers and offers recycled water at a reduced cost. WBMWD has identified over 105 feasible recycled water users with a combined estimated average annual demand of 19,100 AFY. In 2015, Cal Water supplied 5,089 AF of WBMWD recycled water to 11 customers in the Dominguez system. Examples of recycled customers include the BP/ARCO refinery, the Home Depot sports complex with numerous soccer fields, and the Cal State University Dominguez Hills campus.

The Harbor-UCLA Medical Center Campus is not close to an existing WBMWD recycled water transmission main. WBWMD would have to construct a recycled transmission pipeline running west from an existing line in Carson for several miles. Hence, the WSA takes the position that in the next 5 years at least, all water demands for the project will be met by potable supplies.

The WBMWD Water Recycling Master Plan identified potential customers in the Dominguez service area. Currently there are eleven customers in the Dominguez system that use recycled water. The WBMWD plan ambitiously projected an increase in commercial, industrial and irrigation customers to 158 services by 2007 and use of 10,800 AFY. WBMWD's recycling plan includes several projects to install pipelines capable of delivering recycled water throughout the Harbor/South Bay area.

WBMWD believes there is a significant growth potential for recycled water; hence, the projected increase in recycled water use from 5,080 AFY in 2015 to 10,069 AFY in 2014 or an increase of approximately 5,000 AFY in 25 years (200 AFY per year increase) can be considered to be conservative when compared to the projections in WBMWD's Water Recycling Master Plan. Given four continuous years of severe drought in California (2011 - 2014) and the emphasis on developing local supply sources by MWD, WBMWD's strong development plan for recycled water use, projected recycled water use growth are conservative since in the future, WBMWD plans to further extend its pipe delivery system for recycled water in the Harbor/South Bay area.

Estimates of increased use of recycled water in WBMWD's Water Recycling Master Plan (WRMP) are quite high when compared to what has actually occurred in the Dominguez system. The WRMP assumes several large water users will switch to recycled water rather pump groundwater for which they hold water rights at a cost nearly double the cost of groundwater. The WRMP anticipates large uses of recycled water by several industrial customers for processes for which use of recycled water has not been demonstrated. Hence, for the Dominguez system, Cal Water uses a lower growth projection than WBMWD. **Table 4.M.1-4**, *Normal Hydrologic Year Supply and Demand Comparison (AFY)*, below, summarizes Cal Water's projected recycled water supply in the Dominguez system through 2040. Cal Water assumes that 80 percent of recycled water supply will be for industrial use and 20 percent for landscape irrigation.

Table 4.M.1-4

Normal Hydrologic Year Supply and Demand Comparison (AFY)

	2015	2020	2025	2030	2035	2040
Purchased water	26,886	13,987	14,378	14,917	15,264	15,564
Groundwater	4,405	16,897	16,897	16,897	16,897	16,897
Recycled water	5,089	6,776	7,481	8,260	9,120	10,069
Supply totals	36,380	37,660	38,756	40,074	41,281	42,530
Demand totals	36,380	37,660	38,756	40,074	41,281	42,530
Difference	0	0	0	0	0	0

Source: California Water Service Company, 2016

(iv) Desalinated Water

Desalted Brackish Groundwater

Seawater intrusion into the groundwater of the West Coast Basin has been a problem since the 1930s. Two seawater intrusion barriers, the West Coast Basin Barrier and the Dominguez Gap Barrier, have been constructed and put into operation to stop salt water intrusion. The Los Angeles County Department of Public Works is responsible for maintenance of these barriers and the WRD provides freshwater that is injected into these barriers. A large amount of brackish water still lies inland of the saltwater barriers. It is being removed by extraction wells and treated at the C. Marvin Brewer Desalter, which is a reverse osmosis treatment plant that started operating in 1993. Dominguez Water Corporation, with the support of the WBMWD, WRD, MWD, and the US Bureau of Reclamation established the desalter project. Its costs of operation are reduced through a MWD incentive program so that the unit cost of desalinated brackish water is slightly less than non-interruptible imported freshwater from MWD. Since the merger of Cal Water and Dominguez Water Corporation in 2000, Cal Water has operated the desalter project.

Desalinated Ocean Water

In 2014, WBMWD completed an ocean water desalination demonstration project at the L.A. Conservation Corps' SEA Lab facility in Redondo Beach for the purpose of developing and collecting data for planning, permitting, design, construction, and operation of a full-scale desalination facility. The demonstration plant used full-scale equipment to assess operating factors, evaluate alternative processes and assess water quality and energy efficiency. Based on the results of the study, WBMWD determined that building a full-scale desalination plant is feasible.

1. WBMWD intends to build a 20 mgd desalination plant in El Segundo (expandable to 60 mgd) because that location offers many advantages and has none of the significant issues associated with the demonstration plant site in Redondo Beach. Because of the extensive permitting and approval requirements, conducting the necessary environmental and scientific field studies, preparing the necessary draft and final documents, obtaining funding, designing, constructing, testing and commissioning of all new facilities could take at least 10 years to complete.

2. WBMWD is interested in discussing with Cal Water its interest in participating in its El Segundo desalination plant and what that might entail in terms of supply, costs and other factors. Cal Water is considering this option.

3. The research completed by WBMWD at the Redondo Beach demonstration plant could provide useful information to Cal Water in locating possible treatment plant sites and in developing a preliminary feasibility assessment should Cal Water elect to pursue its own desalination project. An in-depth technical, environmental, permitting and cost analysis would be required to provide the information needed to decide whether or not it was feasible for Cal Water to move forward with its own desalination project.

Transfer or Exchange Agreements

Both the West Coast Basin and Central Basin judgments allow for transfer of groundwater rights through sale or lease agreements between parties and for the carryover of unused rights in an amount up to 20 percent of the

groundwater rights held by a party. DWR is the designated Watermaster for both the West Coast Basin and Central Basin Adjudications. In that capacity, DWR accounts for all groundwater production in the basin, and annually reports on groundwater production and related groundwater-use transactions. The parties must file monthly production reports and notify the Watermaster regarding all leases or sales of rights.

The lease or purchase of additional adjudicated water rights could be used to increase supply reliability and availability. Obtaining additional adjudicated rights would further increase the savings available to the system under MWD's seasonal service program. Hence, the Dominguez system's program for increasing reliable groundwater production capacity of its wells to fully utilize all of its existing adjudicated rights and those of other agencies when opportunities become available. In the past nine years, Cal Water leased a portion of its adjudicated rights in both basins on a short-term basis to other pumpers that had production capacity and had the need for more water. As Cal Water increases its well production capacity, it will not renew these leases. Cal Water has had several short- term leases with local municipalities and private companies to use their available excess groundwater allocations for supply and will evaluate negotiating new leases as Dominguez system well capacity increases and full use of Cal Water's allowable pumping allocation is achieved.

(b) Future Water Supply

Cal Water's plan for the Dominguez system and its three neighboring districts is to continuously provide adequate reliable supplies through facilities that meet peak demand requirements and have sufficient reserve capacity for fire protection. Cal Water recognizes that water supply planning is an ongoing process that requires regular reviews of assumptions and conditions.

The reliability of MWD imported water supplies has been affected by a number of factors in recent years, so MWD has implemented several programs to improve supply reliability:

1. Financial incentives for development of local supplies
2. Use of imported supplies on a seasonal basis and in a manner that maximizes the importation of supplies into Southern California
3. Storage for surplus imported supplies for future use
4. Restore use of local groundwater that have been contaminated

Cal Water will evaluate prospective additional supply projects and regional supply conditions to include:

1. Status of West Coast and Central Basin groundwater basin storage, availability of groundwater and utilization of adjudicated water rights.
2. Transfer Agreements with other utilities that hold adjudicated groundwater rights in the two basins and have surplus water rights available.
3. Status and maintenance of seawater intrusion barriers managed by the Los Angeles County Department of Public Works.

4. Increased participation in WBMWD's water recycling program in the Dominguez and adjacent systems.

5. Possible participation in WBMWD's desalination treatment project.

Cal Water coordinates its supply planning activities with other purveyors who are served by WBMWD. Cal Water participated in the development of the WBMWD Water Shortage Contingency Plan. Proposed Programs in this plan include:

1. West Coast Basin Judgment Work Group - Representatives of the West Coast Basin Water Association are developing possible amendments to provide more flexible operations during drought, expansion of storage and conjunctive operation of the basin, and innovative water management practices.

2. Water Supply and Drought Management Planning.

3. Implementation of the Best Management Practices through a Memorandum of Understanding.

4. West Coast Basin Reclamation Program.

5. West Coast Basin Saline Plume Mitigation Planning.

While Cal Water recognizes that MWD and WBMWD are committed to providing reliable and affordable imported water supplies, it also recognizes that as water demand increases the potential for water shortages does also. MWD's and WBMWD's objective is to provide 100 percent supply reliability over the next twenty years to meet all non-discounted, non-interruptible demand in the region. MWD initiatives to ensure this reliability include the Integrated Resource Plan (IRP), the Water Surplus and Drought Management Plan (WS&DMP) and the Local Resource Investments program.

As indicated previously, Cal Water is committed to implementing new programs and projects in increasing water conservation, expanding use recycled water and maximizing use of its groundwater rights to decrease reliability on MWD supplied water.

(c) Supply Adequacy and Reliability

This section combines and compares previously presented information on projected demand and supplies for the Dominguez system to address the question of whether Dominguez system supplies are adequate and reliable for the next 20 years for normal hydrologic conditions, one dry year and a multiple dry year period.

(i) Normal Water Year

Groundwater supply is limited to Cal Water's adjusted pumping allocation (APA) and by the capacity of wells to pump water. As explained previously, Cal Water is installing new wells to increase pumping capacity and adding wellhead treatment to existing wells with water quality issues. Cal Water plans to maximize use of its APA by 2020. Recycled water supply is matched to expected demand from this source. If some industrial customers in

the Dominguez system were to convert their process water use to recycled water sooner, this would decrease potable water demand and make existing potable supplies available for future growth.

Cal Water's combined projected purchased water for all four of its districts receiving WBMWD water will be below its Tier I maximum of 70,000 AFY in normal hydrologic years. According to MWD's 2010 Regional Urban Water Management Plan, sufficient supplies of imported water will be available in normal hydrologic years to meet all projected demands. For the WSA analysis as previously noted, normal demand is considered equal to Cal Water's calculated demand minus one standard deviation rather than the SBx7-7 target water demand projection (see discussion of SBx7-7 below under Regulatory Framework Summary). This results in a higher potable demand from 2020 to 2040. Table 4.M.1-4 above compares demand with supply for a normal hydrologic year and demonstrates adequacy of supply to meet demands.

(ii) Single Dry Year

Cal Water projects no decrease in total supply available and that it will meet projected demands. As noted previously, groundwater and recycled water are expected to be available in the quantities projected and are not affected by a dry year. MWD's 2010 Regional Urban Water Management Plan indicates sufficient supplies of imported water will be available in single dry years to meet all projected demands. MWD indicates that the policies in its 2010 Integrated Resources Plan (IRP) update will insure this reliability. Therefore, the supply is projected to be fully meet demand during a single dry year as shown below in **Table 4.M.1-5**, *Single Dry Year Supply and Demand Comparison (AFY)*.

Table 4.M.1-5

Single Dry Year Supply and Demand Comparison (AFY)

	2015	2020	2025	2030	2035	2040
Purchased water	26,886	13,987	14,378	14,917	15,264	15,564
Groundwater	4,405	16,897	16,897	16,897	16,897	16,897
Recycled water	**5,089**	**6,776**	**7,481**	**8,260**	**9,120**	**10,069**
Supply totals	36,380	37,660	38,756	40,074	41,281	42,530
Demand totals	36,380	37,660	38,756	40,074	41,281	42,530
Difference	0	0	0	0	0	0

Source: California Water Service Company, 2016

(iii) Multiple Dry Year Period

Because of adequate existing groundwater basin storage volume and ongoing regional groundwater recharge programs, groundwater supply is considered reliable. Therefore, Cal Water will be able pump up to its annual APA based on need and well production capacity. The quantity of recycled water to be delivered in the Dominguez system during a multiple dry year period is expected to be the same as that delivered during a normal hydrologic year. MWD's 2010 Regional Urban Water Management Plan indicates that sufficient supplies

of imported water will be available during multiple dry years to meet all projected demands. MWD believes that the policies in the 2010 IRP update will insure reliability.

As a conservative approach, a scenario with 10 percent reduction of MWD supply in year 2 and 20 percent in year 3 of a multiple dry year period was developed. **Table 4.M.1-6**, *Multiple Dry Year Period Supply and Demand Comparison: 1st & 2nd Years (AFY)*, below, presents this water supply scenario for an assumed multiple dry year period from 2015 - 2017. Normal year demand is assumed for year 2010. The quantity of MWD imported water delivered to the Dominguez system is assumed to be reduced by 10 percent in 2016 and by 20 percent in 2017. The quantity of groundwater pumped and recycled water increases as shown in Table 4.M.1-6. Groundwater and recycled water supplies are not expected to be affected by a multiple dry year period. Table 4.M.1-6 shows that even if there were cut backs in MWD supply of 10 percent and 20 percent, Dominguez system supplies would be adequate to meet projected normal demand during a multiple dry year period.

Table 4.M.1-6

Multiple Dry Year Period Supply and Demand Comparison: 1st & 2nd Years (AFY)

Water Supply Source	2010 Normal Water Year Water Supply	Multiple Dry Water Year Water Supply		
		2015	2016	2017
Purchased	27,247	26,886	24,522	21,798
Recycled	4,515	5,089	5,426	5,764
Groundwater	8,575	4,405	6,608	9,270
Total Supply	40,337	36,380	36,556	43,354
Demand	40,377	36,380	36,556	36,832

Source: California Water Service Company, 2016

Table 4.M.1-7, *Multiple Dry Year Period: 3rd Year (AFY)*, below, is a comparison of supply to normal demand for the 3rd year in a multiple dry year period where a 20-percent reduction (relative to 2010) in purchased water is assumed. Cal Water will be implementing increased water conservation program measures during the period from 2015 to 2020, which should result in further decreases in per capita water use as previously discussed; however, no additional potable water demand reduction over what is shown in Table 4.M.1-7 is assumed. Recycled water use will be increasing and by 2020, Cal Water expects to be able to pump it full groundwater allocation. Table 4.M.1-7 shows that even with a 20-percent reduction in purchased water, total supplies are more than adequate to meet normal projected demands for the Dominguez system.

During dry years when deliveries from the Colorado River Aqueduct and the SWP are reduced, MWD can draw water from other storage areas established through groundwater banking and transfer agreements made with other agencies. These agreements are further described in MWD's Water Surplus and Drought Management Plan (WSDM Plan).

Table 4.M.1-7

Multiple Dry Year Period: 3rd Year (AFY)

	Supply Source	2010	2015	2020	2025	2030
Third Dry Year	Purchased	27,247	21,798	21,798	21,798	21,798
	Groundwater	8,575	4,405	16,897	16,897	16,897
	Recycled water	4,515	5,089	6,776	7,481	8,260
	Supply Total	40,337	36,380	45,471	46,176	46,955
	Demand Total	40,337	36,380	37,660	38,756	40,074

Source: California Water Service Company, 2016

(2) Water Demand

(a) Dominguez District Background Information

The Dominguez system within the Rancho Dominguez District of Cal Water currently provides water service to the existing Medical Center Campus. Cal Water's Rancho Dominguez District is located in the southern corner of Los Angeles County approximately ten miles north of Los Angeles Harbor. The Rancho Dominguez District includes three separate regulated water systems, a leased system, and various operations and billing contracts.

The Dominguez system serves most of the City of Carson, as well as a portion of the City of Torrance and small sections of the cities of Compton, Long Beach and Los Angeles and unincorporated Los Angeles County. The service area covers approximately 25 square miles and is bounded on the north by the cities of Redondo Beach, Torrance, Los Angeles, Carson and Compton, on the east by Long Beach, on the south by the cities of Los Angeles, Lomita and Torrance, and on the west by Redondo Beach.

Senate Bill 610 (Chapter 643, Statutes of 2001) (SB 610) amended state law as of January 1, 2002, to include consideration of water supply availability when cities and counties are making land use development decisions (see further discussion of SB 610 below under Regulatory Framework Summary). SB 610 requires information on water supply availability be provided to local public agency decision-makers prior to approval of development projects that meet or exceed any of the following criteria:

1. A residential development of more than 500 dwelling units.
2. A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet.
3. A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
4. A hotel or motel with more than 500 rooms.

5. An industrial, manufacturing or processing plant or industrial park planned to house more than 1,000 persons occupying more than 40 acres of land or having more than 650,000 square feet of floor area.

6. A mixed-used project that includes one or more of the projects specified above.

7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Depending on the definitions used, the proposed Harbor-UCLA Master Plan Project exceeds criteria 2, 3, 5, 6 and 7 above, and as such, a WSA is required. As such, a WSA was prepared for the Project that assesses the adequacy of the water supply to meet the estimated demands of the proposed Harbor-UCLA Project over the next 20 years and those of Cal Water's Dominguez system customers and projected new users under normal, single dry year and multiple dry year conditions (Water Code §10911(a)). SB 610 requires that the information presented in a WSA be included in the administrative record that is the basis for an approval action by the local public agency. Cal Water uses U.S. Census data in estimating populations in all of its districts in California. Its methodology for estimating existing and future populations has been reviewed and accepted by the California Public Utilities Commission (CPUC), which provides regulatory oversight of privately owned water and wastewater utilities. In its 2010 UWMP, Cal Water used year 2000 census data because 2010 data were not available to local governments until the beginning of 2012. Cal Water is using 2010 U.S. Census data in the Dominguez 2015 UWMP. That data and more recent projections of population growth in the service area are the basis for water demand forecasts.

Estimates of the population serviced by Cal Water in the Dominguez system are based on overlaying the 2010 U.S. Census Tract Block data with the Dominguez system service area. A summary of the census data for 2010 for the Dominguez system is shown below in **Table 4.M.1-8**, *Summary of Census 2010 Data for Dominguez System*.

Table 4.M.1-8

Summary of Census 2010 Data for Dominguez System

	Census Tract Block	Population	Dwelling Units
Dominguez Service Area	889	141,105	45,021

Source: California Water Service Company, 2016

The data presented in Table 4.M.1-8 were used as a baseline for estimating future population in the Dominguez system. To forecast population to 2040, the 2010 Census population was divided by the total number of dwelling units served by Cal Water in 2000 to obtain an average of 3.134 persons per dwelling unit. This average number of persons per dwelling unit value was multiplied by the projected number of dwelling units in the Dominguez system for future years to obtain the population forecast.

To estimate future residential service counts, Cal Water used the 10-year average annual growth rate of 0.873-percent calculated from service counts using U.S. Census data from 2000 and 2010. To estimate total population, the projected residential service counts are multiplied by the estimated number of persons per residential unit based on U.S. Census data. **Table 4.M.1-9**, *Dominguez System Population Projections*, below, summarizes Cal Water's projected population for the Dominguez system in five-year increments based on the 10-year long-term average service connection growth rates and 2010 US Census data used to determine persons per dwelling unit.

Table 4.M.1-9

Dominguez System Population Projections

	2005	2010	2015	2020	2025	2030	2035	2040
Persons/Dwelling Unit	3.127	3.134	3.134	3.134	3.134	3.134	3.134	3.134
Total Dwelling Units	44,946	45,024	45,382	46,012	46,650	47,297	47,954	48,619
Number of Persons	140,546	141,105	142,227	144,201	146,202	148,230	150,287	152,372

Source: California Water Service Company, 2016

Cal Water's user classes for customer services are as follows:

1. Single-family Residential
2. Multi-family Residential
3. Commercial
4. Industrial
5. Government
6. Other

The total number of customer services for the Dominguez system for 2010 was 32,629. In 2012, total customer services were 32,737 or an increase of 108 services in two years or 54 services per year. Virtually all of these were residential with single-family being 66 percent of the increase. Hence, the data from 2010 continues to be an accurate indicator of water use by user class.

Single-family residential services totaled 28,574 (88 percent of total). Multi-family residential services totaled 704 (two percent of total) and commercial totaled 2,866 (nine percent of total). All other user classes comprised the remaining one percent of total. Classes using the most water are single-family residential, commercial, and industrial. Single-family residential and commercial uses increased constantly from 1992 until about 2003/2004, after which they have declined to almost 1992 levels. Water use in the residential sector is for permanent single- and multi-family residences. There are no seasonal customers. The industrial

sector has had some fluctuations, but overall is fairly constant. Multi-residential and governmental sectors have been constant since 1992. Recycled water was not available in the Dominguez system until early 2000.

(b) Historical and Current Water Demand

(i) Dominguez System Water Demand

Projected increases in the number of customers in each user class are based on historic growth rates for that class unless a particular growth rate was determined to be non-representative then the overall customer growth rate was used.

Historically, Cal Water projected demand by multiplying the projected number of services for each user class by one of three (high, average and low) historic service rates for that class. The three service rates were derived from customer water records. The sum of the projected demands for each user class equals the total projected demand for the Dominguez system. Three separate demand projections for the Dominguez system were calculated in this manner: high, average and low. After the passage of Senate Bill 7 (SBx7-7, see further discussion below under Regulatory Framework Summary), the above method is no longer used by Cal Water as the primary method for making projected demands. However, these calculations are still used as the basis for projected services, population, and distribution of demand among user classes.

Demand projections in the 2010 UWMP were made in accordance with SBx7-7 requirements. Two demand projections were made: 1) an unadjusted baseline demand and 2) a target demand. The unadjusted baseline water demand projection is the total demand expected without any conservation. It is equal to forecasted population multiplied by the base per capita water use, which is the average for the period from 2005 to 2009 or 225 gallons per person per day. Updated demand projections were made by Cal Water in 2015 which reflect different methods and sources.

The target water demand projection includes conservation savings due to both passive and active demand management. Target demand is calculated by multiplying SBx7-7 target per capita water use values by the projected population. The water demand projection calculation used for SBx7-7 compliance is based on future population projections and per capita per day water use target values. Projected water demand based on user class (customer type) cannot be determined by this method. To obtain a breakdown of future demand by user class, Cal Water calculated the ratio of demand for each user class to total demand. This ratio was applied to the total baseline demand forecast to develop projected potable water demands by user class for 2020 to 2040. The SBx7-7 demand forecast includes conservation savings associated with the demand management measures described later in this section. As shown below in **Table 4.M.1-10**, *Actual 2010 and 2015 Potable Water Use Dominguez System (AF)*, total potable water use in the Dominguez system for 2015 was 31,291 AF, which was 1,701 AF less than total water use in 2010. Thus, even with an estimated population increase of 1,122 people in five years, increased water conservation due in part to measures implemented by Cal Water resulted in less water use.

Table 4.M.1-10

Actual 2010 and 2015 Potable Water Use Dominguez System (AF)

Water Use Sectors	2010		2015		Difference
	# of accounts	*Use*	*# of accounts*	*Use*	*Use*
Single family	28,574	9,937	28,732	8,012	-1,925
Multi-family	704	2,661	742	2,428	-233
Commercial	2,866	7,308	2,869	8,077	+769
Industrial	162	10,953	158	10,772	-181
Institutional/government	286	1,438	278	1,312	-126
Other	26	67	34	59	-8
Unaccounted for Water	-	628	-	631	+3
Total	**32,629**	**32,992**	**32,813**	**31,291**	**-1,701**

Source: California Water Service Company, 2016

California Senate Bill x7- 7 Baseline and Targets

Cal Water is expanding water conservation programs for its 24 California service districts. Over the next five years, conservation program expenditures will increase significantly due to the state requiring future reductions in per capita urban water use. Senate Bill No. 7 (SBx7-7) adopted in November 2009 (see further discussion below under Regulatory Framework Summary) mandates a statewide 20 percent reduction in per capita urban water use by December 31, 2020. The CPUC is directing Class A and B water utilities, including Cal Water, to adopt conservation programs and rate structures designed to achieve reductions in per capita water use. In preparing to achieve increased water conservation, Cal Water in 2010 developed five-year conservation program plans for each of its service districts. The complete Dominguez District Conservation Master Plan is included in Appendix G of the 2010 UWMP. An updated Conservation Master Plan will be included in the 2015 UWMP.

SBx7-7 required progress toward the 2020 goal by reducing per capita water use by at least 10 percent on or before December 31, 2015. SBx7-7 requires each urban retail water supplier to develop 2015 and 2020 urban water use targets in accordance with specific requirements and provides several ways to calculate water use reduction targets. Retail water suppliers can also form regional alliances within the same hydrologic region to achieve compliance. Cal Water plans to include the Dominguez system in a regional alliance with four other Cal Water districts in the South Coast hydrologic region. For the five districts, Cal Water has calculated both district-specific targets and a regional alliance target. The specific targets for Dominguez system are:

1. 193 gallons per capita per day (gpcd) by 2015
2. 171 gpcd by 2020

Dominguez system 2015 demand including distribution system losses averaged 27,911,572 gpd for an estimated population of 142,227 persons which equals 196.2 gpcd, or 3.2 gpcd more than the 2015 target value, which is an exceedance of 1.6 percent.

For 2020, per capita demand is to decrease by 25.2 gpcd, or 12.8 percent, in order to meet the Dominguez system target. **Table 4.M.1-11**, *Dominguez System Potable Water Demand Actual and Projected (AF)*, below, provides two projected potable water demand forecasts for the Dominguez water system: 1) based on historic water use by user class and projected growth in each user class minus one standard deviation, 2) the SBx7-7 method described above. The reason for presenting two is that achieving SBx7-7 compliance based on using the 171 gpcd by 2020 will be challenging since it depends on achieving in higher levels of water conservation than what was realized in 2015. The Cal Water method selected would result in a per capita water use of 191 gpcd in 2020 and 188.8 gpcd in 2040, which are below the 2015 SBx7-7 target value but above the 2020 value. To be conservative, the WSA prepared for the Master Plan Project uses the higher demand forecast (Cal Water Average – Standard Deviation) shown in Table 4.M.1-11.

Table 4.M.1-11

Dominguez System Potable Water Demand Actual and Projected (AF)

	2005*	2010*	2015*	2020	2025	2030	2035	2040
Cal Water Average – Standard Deviation	36,499	32,992	31,291	30,884	31,221	31,567	31,910	32,260
SBx7-7	36,499	32,992	31,291	27,643	28,028	28,416	28,810	29,210
Difference	0	0	0	3,241	3,193	3,147	3,100	3,050

**Actual demand from year indicated*

Source: California Water Service Company, 2016

(ii) Recycled Water Demand

Cal Water purchases recycled water from West Basin Municipal Water District (WBMWD) and provides it to a number of customers for non-potable uses, thereby reducing use of potable water. **Table 4.M.1-12**, *Actual and Projected Recycled Water Use in Dominguez System (AF)*, below, provides updated projections on recycled water use. The quantity of recycled water delivered to the distribution system is greater than recorded or projected customer use due to pipe leakage, authorized but unmeasured water use and unauthorized and unmeasured use. More information on the recycled water source and system for delivery and existing and projected customers is provided later.

Table 4.M.1-12

Actual and Projected Recycled Water Use in Dominguez System (AF)

	2010	2015	2020	2025	2030	2035	2040
Recycled Water Use	4,515	5,089	6,776	7,481	8,260	9,120	10,069

Source:

Actual and projected total demand (potable and recycled water use) for the Dominguez system is shown below in **Table 4.M.1-13**, *Dominguez System Total Water Demand: Potable and Recycled Water Use Actual and Projected (AF)*.

Table 4.M.1-13

Dominguez System Total Water Demand: Potable and Recycled Water Use Actual and Projected (AF)

	2005 (Actual)	2010 (Actual)	2015	2020	2025	2030	2035	2040
Water Use	40,356	37,507	36,280	37,660	38,702	39,823	41,030	42,279

Source: California Water Service Company, 2016

(iii) Dominguez System Demand Management

Cal Water has and is significantly expanding its water conservation programs. State law, CPUC directives and a state water conservation organization are focused on reducing urban water use and have provided much of the impetus for this emphasis. This includes the following factors:

1. Recent decisions by the CPUC directing regulated water utilities to reduce per capita urban water demand.

2. State legislation mandating urban water suppliers reduce per capita demand 20 percent by 2020.

3. Memorandum of Understanding Regarding Urban Water Conservation in California (MOU).

A brief summary of each of these factors is provided below.

The CPUC's Decision 07-05-062 directed Class A and B water utilities to submit a plan to achieve a five-percent reduction in average customer water use over each three-year rate cycle. This policy was refined under Decision 08-02-036, which established a water use reduction goal of three to six percent in per customer or service connection consumption every three years once a full conservation program, with price and non-price components, is in place. These decisions anticipated enactment of policies by the State legislature to reduce urban water use in California 20 percent by 2020.

SBx7-7 requires the state to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. The state is required to make incremental progress toward this goal by reducing per capita water use by at least 10 percent on or before December 31, 2015. SBx7-7 requires each urban retail water supplier to develop interim and 2020 urban water use targets. Urban retail water suppliers will not be eligible for state water grants or loans unless they comply with SBx7-7's requirements.

There are three ways in which a water supplier can comply with the MOU. The first way is to implement a set of water conservation best management practices (BMPs) according to the requirements and schedules set forth in

Exhibit 1 of the MOU. The second way, called Flex Track compliance, is to implement conservation programs expected to save an equivalent or greater volume of water than the BMPs. The third way, similar to SBx7-7, is to reduce per capita water use. Each of these compliance options is briefly described below.

Originally, the MOU established a set of BMPs that signatories agreed to implement in good faith. For each BMP, the MOU established the actions required by the water supplier (e.g. site surveys, fixture and appliance rebates, water use budgets, volumetric pricing and conservation rate designs), the implementation schedule, and the required level of effort (in the MOU this is referred to as the coverage requirement). Additionally, the MOU established the terms by which a water supplier could opt out of implementing a BMP.

BMPs are grouped into five categories. Two categories, Utility Operations and Education, are "Foundational BMPs" because they are considered essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits. The remaining BMPs are "Programmatic BMPs" and are organized into Residential, Commercial, Industrial, and Institutional (CII), and Landscape categories. **Table 4.M.1-14**, *MOU Best Management Practices*, below, lists the BMPs by category. The requirements and coverage levels of each BMP are set forth in Exhibit 1 of the MOU. Cal Water's CUWCC annual reports, which detail BMP implementation, are included as Appendix G in the 2010 UWMP.

Table 4.M.1-14

MOU Best Management Practices

BMP Group	BMP Name
1. Utility Operations Programs (F)	Conservation Coordinator
	Water Waste Prevention
	Wholesale Agency Assistance Programs
	Water Loss Control
	Metering & Volumetric Rates
	Retail Conservation Pricing
2. Education Programs (F)	Public Information Programs
	School Education Programs
3. Residential (P)	Residential Assistance Program
	Landscape Water Surveys
	High Efficiency Clothes Washer Program
	Watersense Toilet Program
	Watersense Specifications for Residential Development
4. Commercial, Industrial, Institutional (P)	Reduce baseline CII water use by 10% in 10 years
5. Landscape (P)	Large Landscape Water Budget Programs
	Large Landscape Water Surveys

F = Foundational BMP, P = Programmatic BMP

Source: California Water Service Company, 2016

Under Flex Track, a water supplier can estimate the expected water savings over the 10-year period 2009-2018 if it were to implement the programmatic BMPs in accordance with the MOU's schedule, coverage, and exemption requirements, and then achieve these water savings through any combination of programs it desires. Thus, through the Flex Track compliance option, a water supplier agrees to save a certain volume of water using whatever it determines to be the best combination of programs. Because the savings target depends on the programmatic BMP coverage requirements, which in turn are functions of service area size and composition of demand, the volume of water to be saved under this compliance option must be calculated separately for each supplier. The methodologies and tools for water suppliers to implement these calculations had not been developed by the CUWCC at the time of preparation of the 2010 UWMP. They will be used in the 2015 Dominguez system UWMP.

Under the gpcd option, a water supplier can comply with the MOU by reducing its baseline gpcd by 18 percent by 2018. The baseline is the ten-year period 1997-2006. The MOU also establishes interim gpcd targets and the highest acceptable levels of water use deemed to be in compliance with this option. The MOU's gpcd option is similar to using Method 1 to set the SBx7-7 target, except that it uses a fixed baseline period and only runs through 2018. This compliance option may be difficult to achieve for Cal Water districts that are part of a regional alliance for purposes of SBx7-7 compliance because savings as a percent of demand will vary considerably among the districts in the alliance. It may also conflict with district-specific SBx7-7 targets set using method 3 (hydrologic region-based target). Because of these potential conflicts, this is not considered a viable MOU compliance option for Cal Water districts.

Cal Water uses Flex Track to comply with the MOU. This compliance option offers the most flexibility in selecting conservation programs suited to each Cal Water district and allows for more streamlined reporting. Because CUWCC tools for calculating a district's Flex Track savings target were not available in the 2010 UWMP, Cal Water developed its own target estimates. Cal Water will update these estimates in the 2015 UWMP using the CUWCC Flex Track target calculator.

(iv) Water Conservation Master Plans

To comply with requirements for urban water use reduction, Cal Water developed Water Conservation Master Plans (WCMP) for each of its service districts. WCMPs set forth a framework for compliance and describe Cal Water's specific conservation actions to be implemented in the next five years. Major tasks in the WCMPs include:

1. A complete review of State policies and development of a compliance strategy
2. Calculating all appropriate per capita targets
3. Determining water savings required from new programs
4. Performing an analysis of conservation programs
5. Developing a portfolio of conservation program actions
6. Creating a plan for monitoring and updating the WCMP

The Water Conservation Master Plan for the Dominguez system is included in its entirety as Appendix G of the Dominguez District 2010 UWMP and will be included in the 2015 UWMP. A discussion of baseline and target water use is in Section 3 of the UWMP. Details on water savings requirements and the programs to be implemented are also provided that document. **Table 4.M.1-15**, *Cal Water Conservation Programs*, below, provides a summary of water conservation programs selected for evaluation.

Table 4.M.1-15

Cal Water Conservation Programs

Program Name	Description	Target Market
CORE PROGRAMS		
Rebate/Vouchers for toilets, urinals, and clothes washers	Provide customer rebates for high-efficiency toilets, urinals, and clothes washers	All customer segments
Residential Surveys	Provide residential surveys to low-income customers, high-bill customers, and upon customer request or as pre-screen for participation in direct install programs	All residential market segments
Residential Showerhead/Water Conservation Kit Distribution	Provide residential showerhead/water conservation kits to customers upon request, as part of residential surveys, and as part of school education curriculum	All residential market segments
Pop-Up Nozzle Irrigation System Distribution	Offer high-efficiency pop-up irrigation nozzles through customer vouchers or direct install.	All customer segments
Public Information/Education	Provide conservation messaging via radio, bill inserts, direct mail, and other appropriate methods. Provide schools with age appropriate educational materials and activities. Continue sponsorship of Disney Planet Challenge program.	All customer segments
NON-CORE PROGRAMS		
Toilet/Urinal Direct Install Program	Offer direct installation programs for replacement of non-HE toilets and urinals	All customer segments
Smart Irrigation Controller Contractor Incentives	Offer contractor incentives for installation of smart irrigation controllers	All customer segments
Large Landscape Water Use Reports	Expand existing Cal Water Large Landscape Water Use Report Program providing large landscape customers with monthly water use reports and budgets	Non residential customers with significant landscape water use and potential savings

Table 4.M.1-15 (Continued)

Cal Water Conservation Programs

Program Name	Description	Target Market
Large Landscape Surveys & Irrigation System Incentives	Provide surveys and irrigation system upgrade financial incentives to large landscape customers participating in the Large Landscape Water Use Reports programs and other targeted customers	Non residential customers with significant landscape water use and potential savings
Food Industry Rebates/Vouchers	Offer customer/dealer/distributor rebates/vouchers for high-efficiency dishwashers, food steamers, ice machines, and pre-rinse spray valves	Food and drink establishments, institutional food service providers
Cooling Tower Retrofits	Offer customer/dealer/distributor rebates/vouchers of cooling tower retrofits	Non-residential market segments with significant HVAC water use
Industrial Process Audits and Retrofit Incentives	Offer engineering audits/surveys and financial incentives for process water efficiency improvement	Non-residential market segments with significant industrial process water uses

Source: California Water Service Company, 2016

(v) Dominguez System Conservation Programs

Conservation programs selected for the Dominguez system are summarized below in **Table 4.M.1-16**, *Dominguez System Projected Water Savings by Conservation Program*. A water savings requirement analysis showed that after accounting for water savings from existing water efficiency codes and ordinances, scheduled adjustments to water rates, and past investment in conservation programs, projected 2015 baseline demand (excluding recycled water use) in the Dominguez system is 1,307 AFY above the level required for SBx7-7 compliance. The analysis also showed that 713 AFY of water savings from new programs would be required to satisfy MOU compliance requirements in 2015.

(vi) Water Shortage Allocation Plans

Cal Water has also developed Water Shortage Allocation Plans (WSAP), which are plans of action to reduce water demand should significant water supply shortages occur. These actions may be implemented for several months or several years depending on circumstances. The WSAP differs from the WCMP, which is focused on achieving permanent reductions in per capita water use by Cal Water's customers and is not driven by significant short or long reductions in supply. In the short- term, the WSAP assists Cal Water in further reducing demand so that it matches significant reductions in supply.

Implementation of Cal Water's WSAP for the Dominguez system will generally be triggered by actions taken by the West Basin Municipal Water District (WBMWD) and the Metropolitan Water District (MWD). Except in

Table 4.M.1-16

Dominguez System Projected Water Savings by Conservation Program

Program	Water Savings AFY				
	2011	2012	2013	2014	2015
CORE PROGRAMS					
Rebates/Vouchers					
Toilets	24.5	48.0	70.6	105.5	139.0
Clothes Washers	10.9	21.3	31.3	41.2	50.6
Urinals	0.0	0.0	0.0	0.0	0.0
Customer Surveys/Audits	34.3	65.3	93.1	135.3	173.3
Conservation Kit Distribution	9.0	16.9	23.9	30.0	35.4
Pop-Up Nozzle Distribution	34.6	69.3	103.9	138.6	173.2
Subtotal Core Programs	113.3	220.8	322.8	450.5	571.5
NON-CORE PROGRAMS					
Direct Install Toilets/Urinals	19.1	38.7	57.5	141.5	222.2
Smart Irrigation Controller Vendor Incentives	1.6	3.2	4.9	15.7	26.5
Large Landscape Water Use Reports	5.6	5.6	5.6	11.2	11.2
Large Landscape Surveys/Incentives	9.0	18.0	27.0	36.0	44.9
Commercial Kitchen Rebates/Vouchers	0.0	0.0	0.0	14.9	29.9
Cooling Tower/Process Water Retrofit Incentives	58.6	117.3	175.9	194.2	212.4
Subtotal Non-Core Programs	93.9	182.8	270.8	413.4	547.1
Total Core and Non-Core Program Savings	207.3	403.5	593.6	864.0	1,118.6

Source: California Water Service Company, 2016

unusual circumstances, Cal Water will follow the lead of these agencies when deciding whether to implement its WSAP. Cal Water has a four-stage approach that corresponds to specific levels of projected water supply shortage. Depending on the supply reduction target, this approach becomes increasingly more aggressive in requiring customer water use reductions. The stage selected depends on such factors as wholesale supply reductions, availability of alternative supplies, time of year and coordinated regional actions among all affected water utilities and agencies.

The percentage of supply shortage determined by MWD will be a significant factor in Cal Water's decision on which stage of supply reduction it will implement for the Dominguez system. Supply reductions percentages are shown for each of the four stages below in **Table 4.M.1-17**, *Cal Water Supply Shortage Reduction Stages*. A description of each stage is provided below.

Table 4.M.1-17

Cal Water Supply Shortage Reduction Stages

Stage	Projected Supply Reduction %
Stage 1	5 to 10%
Stage 2	10 to 20%
Stage 3	20 to 35%
Stage 4	35 to >50%

Source: California Water Service Company, 2016

Stage 1 is for water supply shortages of up to 10 percent and can be used to address annual variations in precipitation and mild dry year periods of one or two years duration. All reductions in Stage 1 are voluntary and impacts to customers are considered minimal. Actions to be taken by Cal Water in Stage 1 are listed below in **Table 4.M.1-18**, *WSCP Stage 1 Demand Reduction*.

Table 4.M.1-18

WSCP Stage 1 Demand Reduction

Stage 1	Cal Water Actions
• 5 to 10 percent • Shortage Up to 10 Percent Reduction Goal • Voluntary Reductions	• Request voluntary customer conservation as described in CPUC Rule 14.1. • Maintain an ongoing public information campaign. • Maintain conservation kit distribution programs. • Maintain school education programs. • Maintain incentive programs for high efficiency devices. • Coordinate drought response with wholesale suppliers and cities. • Lobby cities for passage of drought ordinances. • Discontinue system flushing except for water quality purposes. • Request that restaurants serve water only on request.

Source: California Water Service Company, 2016

Stage 2 is based on projected water supply shortages between 10 and 20 percent. Stage 2 is for water shortages of moderate severity such as those caused by a multi-year dry period. Reductions by customers can be voluntary or mandatory depending on percentage of water shortage. Mandatory requirements would likely be implemented if supply shortage exceeds 15 percent. Customers will experience moderate impacts on normal water use and some businesses may experience financial impacts. In Stage 2, Cal Water intensifies demand reduction by implementing the actions listed below in **Table 4.M.1-19**, *WSCP Stage 2 Demand Reduction*.

Table 4.M.1-19

WSCP Stage 2 Demand Reduction

Stage 2	Cal Water Actions
• 10 to 20 Percent Shortage • Up to 20 Percent Reduction Goal • Voluntary or Mandatory Reductions	• Increase or continue all actions from Stage 1. • Implement communication plan with customers, cities, and wholesale suppliers. • Request voluntary or mandatory customer reductions. • File Schedule 14.1 with CPUC approval if necessary. • Request memorandum account to track penalty rate proceeds and other drought related expenses. • Lobby for implementation of drought ordinances. • Monitor water use for compliance with reduction targets.

Source: California Water Service Company, 2016

Stage 3 will be activated if there is a water supply reduction between 20 and 35 percent. This stage can be triggered by a very severe multi-year dry period or major failures in facilities for storage, transmission, treatment water and distribution facilities due to a natural disaster such as an earthquake. Supply reduction of these percentages could impact public health and safety and cause significant financial impacts on local businesses.

All reductions are mandatory and customer allocations will be made. In Stage 3, Cal Water will take the actions listed below in **Table 4.M.1-20**, *WSCP Stage 3 Demand Reduction*.

Table 4.M.1-20

WSCP Stage 3 Demand Reduction

Stage 3	Cal Water Actions
• 20 to 35 Percent Shortage • Up to 35 Percent Reduction Goal • Mandatory Reductions	• Increase or continue all actions from previous stages. • Implement mandatory conservation with CPUC approval. • Install flow restrictors on repeat offenders. • Require customers to have high efficiency devices before granting increased allocations. • Require participation in survey before granting an increased allocation.

Source: California Water Service Company, 2016

Stage 4 would be triggered by a reduction of supply greater than 35 percent, and possibly above 50 percent. This would be a crisis caused by a most severe multi-year dry period, a severe natural disaster resulting in catastrophic failure of major water supply infrastructure. In Stage 4, Cal Water will take the additional actions listed below in **Table 4.M.1-21**, *WSCP Stage 4 Demand Reduction*.

Table 4.M.1-21

WSCP Stage 4 Demand Reduction

Stage 4	Cal Water Actions
• 35 to 50+ Percent Shortage • Up to and above a 50 percent Reduction Goal Mandatory Reductions	• Increase all actions from previous stages. • Discontinue service for repeat offenders. • Monitor water use daily for compliance with reduction targets. • Prohibit potable water use for landscape irrigation and other non- essential activities

Source: California Water Service Company, 2016

Cal Water's groundwater supply from the Central and West Basins is limited to its APA of 16,897 AFY, which is based on the safe yield of each basin and is fixed in both wet and multiple dry year periods. After Dominguez system well pumping capacity is increased to sustainably produce the APA, groundwater supply can be used to offset reductions in imported water from WBMWD. Recycled water is a drought-proof supply not subject to reductions by WBMWD. During critical water shortage periods, Cal Water will maximize recycled water use with existing customers and work on increasing use by additional customers in order to reduce potable water demand.

In April of each year, MWD assesses its available water supply for the coming water year and determines if reductions in water use by its member agencies are not required, are advisable or are in fact needed. MWD evaluates the performance of WBMWD retailers as a whole and will only assess penalties to WBMWD if retailers' collective use exceeds its allocation. These reduction targets are passed along through WBMWD to Cal Water and from Cal Water to its customers. If requested by MWD, the allocation period begin on July 1st and continues for at least one year or until the availability of supplies warrants the lifting of requesting water use reductions.

During all stages of water shortages, water production data for all sources are monitored by Dominguez system management. Customer water use data is concurrently monitored to determine if demand reduction percentages are being achieved and, if not, which customers require greater attention by Cal Water.

(3) Existing Harbor-UCLA Medical Center Water Use

Cal Water provides water service to the Medical Center Campus through four metered service connections. **Table 4.M.1-22**, *Harbor-UCLA Medical Center Campus Annual Water Use Data (gpd)*, below, provides a summary of Cal Water metered water use sales data by year from 2012 through 2015 for the existing Medical Center Campus.

As shown in Table 4.M.1-22, annual average daily potable metered water use for these four years is 185,105 gpd or 207.5 AFY. The peak annual daily use in 2014 was 199,130 gpd and the lowest annual daily use in 2015 was 157,508 gpd, which represents a difference of 41,622 gpd, or a 20.9-percent reduction. Presumably, the reduction between 2014 and 2015 reflects increased water conservation actions as a result

Table 4.M.1-22

Harbor-UCLA Medical Center Campus Annual Water Use Data (gpd)

Year	Service Connection 1	Service Connection 2	Service Connection 3	Service Connection 4	Total All Connections
2012	114,782	32,279	44,107	594	191,763
2013	78,860	39,570	73,515	74	192,019
2014	91,850	42,925	64,283	72	199,130
2015	94,240	25,668	37,601	0	157,508
Average:					
gpd	94,933	35,110	54,877	185	185,105
AFY	106.4	39.4	61.5	0.2	207.5

Source: California Water Service Company, 2016

of four years of drought and California's mandate for all urban areas to achieve a 25-percent reduction in annual water use.

The total developed square footage of the existing Medical Center Campus is 1,279,284 square feet. Therefore, the average water use factor for all existing facilities (including an estimated 2.5 acres of landscaping) is 185,105 gpd/1,279,284 square feet, or 0.1447 gpd/square foot of development.

(4) Existing Water Distribution Infrastructure[3]

(a) Domestic Water Facilities

The Project Site is located within the service area of Cal Water, which is responsible for constructing, operating, and maintaining the water conveyance and treatment infrastructure serving the Medical Center Campus and the surrounding area. As such, Cal Water owns and maintains distribution mains within the roadways around the medical center that range in size from six inches to 33 inches in diameter. Based on preliminary utility research and conversations with facility staff, the Medical Center Campus is currently served off of the Cal Water mains at four connection points with a backup system connection off of a water main owned and operated by the Los Angeles Department of Water and Power (LADWP) that is not continuously operational.

The four connections to the Cal Water water system are made at various locations. One connection is made from the 220th Street main line, approximately 450 feet west of Vermont Avenue and is near the Central Plant. Another single connection is made from the Vermont Avenue main line approximately 300 feet north of 220th street. The final two connections are made from the Carson Street main. One of the Carson Street connections is located adjacent to the main hospital entrance off of Carson Street, approximately 600 feet

[3] *Information presented in this section regarding existing water distribution infrastructure serving the Medical Center Campus is provided on pages 65 and 66 of the Harbor-UCLA Master Plan prepared by Perkins+Will(June 2012).*

west of Vermont Avenue. The other Carson Street connection is located close to mid-block, approximately 1400 feet west of Vermont Avenue. The LADWP connection is made from Normandie Avenue, approximately 300 feet south of Carson Street.

Existing pressure tests were obtained from Cal Water for different locations near the medical center during late 2009 and 2010 at three locations including Carson Street and Normandie Avenue, 220th Street and Vermont Avenue, just west of Vermont Avenue, and 220th Street and Vermont Avenue, just east of Vermont Avenue. The pressure test results are summarized below in **Table 4.M.1-23**, *Harbor-UCLA Medical Center Campus Water Pressure Test Results*.

Table 4.M.1-23

Harbor-UCLA Medical Center Campus Water Pressure Test Results

Location	Static Pressure	Residual Pressure	Total Flow Observed	Calculated Flow at 20 PSI
220th and Vermont, West of Vermont	78 psi	63 psi	4545 gpm	9434 gpm
Carson and Normandie	75 psi	68 psi	2148 gpm	6538 gpm
220th and Vermont East of Vermont	80 psi	28 psi	1358 gpm	1467 gpm

Source: Perkins+Will, 2012

The 220th Street and Vermont Avenue, east of Vermont Avenue pressure test was obtained from a hydrant connected to a six-inch water main in 220th Street which may have caused the significant pressure drop for this test compared to the other two fire flow tests which were taken off of 10-inch or larger mains.

MWD owns a 78-inch transmission main in 220th Avenue. Given the size of the pipeline, it is highly unlikely that any service connections will be allowed off of this pipeline as MWD typically does not allow individual connection to its distribution mains. This is currently the only known MWD transmission main in the area.

Based on the 1993 District 5 Interceptor Relief Trunk Sewer As-Built plans, an LADWP-owned 30-inch water main is shown on Normandie Avenue. No flow tests were performed on this system, though facility staff indicated that when the on-site system was originally connected to the LADWP main, the high pressure in the system caused damage to several on-site water mains. Subsequently, a pressure regulator was placed on this connection.

The on-site water system for the Medical Center Campus is looped and consists of 10-inch and 12-inch main lines. Generally, water mains are located in the main north-south and east-west roads on the Medical Center Campus. The system was overhauled recently after the connection to the LAWPD water main caused multiple system failures. The water pipe network is relatively new and maintenance should not be a major issue. Most of the on-site building fire services are connected to the on-site looped system, though the site

water plan indicates that the hospital fire service is taken directly from the Vermont Avenue water main.

(b) Reclaimed Water Facilities

Reclaimed Water is currently not provided to the existing Medical Center Campus, as noted above. Previous studies investigated opportunities for serving Harbor-UCLA with recycled water for landscape irrigation. According to staff from the Los Angeles County Sanitation Districts (LACSD), their recycling efforts are concentrated in the eastern areas of the County and there are no plans to extend the system to the Torrance area in LACSD's District Number 5.

West Basin Municipal Water District (WBMWD) does have recycled water distribution systems in the west County area according to WBMWD staff input. The closest facilities WBMWD has to the project site are about three miles away, with no future plans for extending their system to the vicinity of the Medical Center Campus.

b. Regulatory Framework Summary

Following is a discussion of the regulatory plans, regulations, and requirements related to water supply applicable at the Medical Center Campus.

(1) Federal

(a) Safe Drinking Water Act

The primary federal legislation concerning domestic water supply is the Safe Drinking Water Act (SDWA) of 1974. The SDWA provides the U.S. Environmental Protection Agency (USEPA) with the authority to regulate the quality of water supplies. The SDWA required USEPA to set interim primary drinking water regulations that establish recommended maximum contamination levels (RMCLs) for each contaminant that may have an adverse effect on human health. Since promulgation of the National Primary Drinking Water Regulations, USEPA has developed additional drinking water quality standards for volatile organic chemicals, fluoride, surface water treatment, total coliform bacteria, lead, copper, synthetic organic contaminants, and inorganic contaminants. All domestic water supplies are required to meet these standards.

(2) State

(a) California Urban Water Management Planning Act(Assembly Bill 797)

The California Urban Water Management Planning Act (California Water Code [CWC] Division 6, Part 2.6, Sections 10610-10656) addresses several State policies regarding water conservation and the development of water management plans to ensure the efficient use of available supplies. The Act also requires water suppliers to develop water management plans every five years to identify short-term and long-term demand management measures to meet growing water demands during normal, dry, and multiple-dry years. Specifically, municipal water suppliers that serve more than 3,000 customers or provide more than 3,000 AFY of water must adopt an UWMP.

(b) Senate Bill 610

State legislation addressing water supply, Senate Bill (SB) 610, became effective January 1, 2002. SB 610, codified in CWC Section 10910 et seq., describes requirements for both water supply assessments (WSAs) and UWMPs applicable to the California Environmental Quality Act (CEQA) process. SB 610 requires that for projects subject to CEQA which meet specific size criteria, the water supplier must prepare a WSA that determines whether the projected water demand associated with the proposed project is included as part of the most recently adopted UWMP. Specifically, a WSA must identify existing water supply entitlements, water rights, or water service contracts held by the public water system, and prior years' water deliveries received by the public water system. In addition, it must address water supplies over a 20-year period and consider normal, single-dry, and multiple-dry year conditions. In accordance with SB 610 and Section 10912 of the CWC, projects subject to CEQA and requiring completion of a WSA include the following:

- Residential developments of more than 500 dwelling units;
- Shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- Commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- Hotels, motels, or both, having more than 500 rooms;
- Industrial, manufacturing, or processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- Mixed-use projects that include one or more of the projects specified in this subdivision; or
- Projects that would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project.

The WSA must be approved by the public water system at a regular or special meeting and must be incorporated into the CEQA document. The lead agency must then make certain findings related to water supply based on the WSA.

(c) California Code of Regulations

(i) Title 20

Title 20, Sections 1605.1(h) and 1605.1(i) of the California Code of Regulations (CCR) establishes efficiency standards (maximum flow rates) for all new federally regulated plumbing fittings and fixtures, including such fixtures as showerheads, lavatory faucets, and toilets. Among the standards, the maximum flow rate for showerheads and lavatory faucets are 2.5 gpm at 80 pounds per square inch (psi) and 2.2 gpm at 60 psi, respectively. The standard for toilets is 1.8 gallons per flush. In addition, Section 1605.3(h) establishes State efficiency standards for non-federally regulated plumbing fittings, including commercial pre-rinse spray valves.

(ii) Title 24, Part 11

Part 11 of Title 24, the title that regulates the design and construction of buildings, establishes the California Green Building Standards Code (CALGreen). The purpose of CALGreen is to improve public health, safety and general welfare by: 1) enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and 2) encouraging sustainable construction practices in the categories of planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CalGreen includes both mandatory measures and voluntary measures. The mandatory measures establish minimum baselines that must be met in order for a building to be approved. The voluntary measures can be adopted by local jurisdictions for greater efficiency.

(d) State Executive Order B-29-15[4]

In response to the current drought conditions, Governor Brown signed Executive Order B-29-15 on April 1, 2015. The Order requires an immediate 25 percent mandatory reduction in overall potable urban water use Statewide, from 2013 levels, through at least February 28, 2016. This is applicable to all cities, towns, and urban water supplies in California (such as the RWD). The Order also requires RWD to provide funding to allow for lawn replacement programs; requires the California Energy Commission to provide rebates for water-efficient appliances; prohibits irrigation of ornamental turf on public street medians with potable water; use of only drip or microspray irrigation systems in new residential construction; and requires urban water suppliers to develop rate structures and other pricing mechanisms, including but not limited to surcharges, fees and penalties, to maximize water conservation consistent with Statewide water restrictions.

(e) State Water Resources Control Board 2015 Emergency Water Conservation Regulations[5]

On March 17, 2015, the State Water Resources Control Board (SWRCB) adopted Emergency Water Conservation Regulations in response to California's current drought and State Executive Order B-29-15 (discussed above). The Regulations identify mandatory water conservation requirements for all Californians including, but not limited to, the following:

- Prohibits:
    - Using potable water to wash sidewalks and driveways;
    - Allowing runoff when irrigating with potable water;
    - Using hoses with no shutoff nozzles to wash cars;
    - Using potable water in decorative water features that do not recalculate the water;
    - Irrigating outdoor areas within 48 hours following measurable rainfall;
    - Serving water to customers in restaurants unless the customer requests it; and

[4] *State of California, Executive Department, Executive Order B-29-15, signed April 1, 2015.*

[5] *State Water Resources Control Board, 2015 Emergency Water Conservation Regulations Fact Sheet, http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/fs_conservreg_032715.pdf. Accessed June 17, 2015.*

- Irrigating outdoor areas more than two days per week.

- Requires:
  - Hotels and motels to offer their guests the option to not have their linens and towels laundered daily; and
  - Large urban water suppliers (serving >3000 connections) to:
    - Impose restrictions on outdoor irrigation;
    - Notify customers about leaks that are within the customer's control;
    - Report on water use monthly; and
    - Report on compliance and enforcement.

Violations of prohibited activities are considered infractions punishable by fines of up to $500 per day. Furthermore, the State Water Board can issue cease and desist orders and fines against and water agencies that do not impose mandatory outdoor irrigation restrictions on their customers. The regulations are in effect through at least the end of 2015.

(f) Water Conservation Act of 2009[6]

The California Water Conservation Act of 2009, otherwise known as Senate Bill X7-7 (SBx7-7), was enacted in November 2009, requiring all water suppliers to increase water use efficiency. The bill also requires, among other things, that the Department of Water Resources, in consultation with other state agencies, develop a single standardized water use reporting form, which would be used by both urban and agricultural water agencies. The legislation sets an overall goal of reducing per capita urban water use by 20% by December 31, 2020. The state must make incremental progress towards this goal by reducing per capita water use by at least 10% by December 31, 2015. Each urban retail water supplier shall develop water use targets and an interim water use target by July 1, 2011.

An urban retail water supplier shall include in its water management plan due July 2011 the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use. The Department of Water resources, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part. The Department of Water Resources shall adopt regulations for implementation of the provisions relating to process water.

A Commercial, Institutional, Industrial (CII) task force is to be established that will develop and implement urban best management practices for statewide water savings. Effective 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans.

[6] *http://www.water.ca.gov/wateruseefficiency/sb7/*

(3) Regional

(a) Cal Water Dominguez District Urban Water Management Plan

California Water Code (CWC) Section 10644(a) requires urban water suppliers to file with the Department of Water Resources, the California State Library, and any city or county within which the supplier provides water supplies, a copy of its Urban Water Management Plan (UWMP), no later than 30 days after adoption. Cal Water complies with the California Water Code and files an UWMP at least once every five years on or before December 31, in years ending in five and zero.

All urban water suppliers as defined in CWC Section 10617 (including wholesalers), either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare an UWMP. Cal Water's 2010 UWMP, the most recently adopted UWMP for the Rancho Dominguez service area, is a foundation document and source of information for a Water Supply Assessment and a Written Verification of Water Supply. An UWMP also serves as:

- A long-range planning document for water supply,
- Source data for development of a regional water plan, and
- A source document for cities and counties as they prepare their General Plans.
- A key component to Integrated Regional Water Management Plans

(4) Local

(a) Los Angeles County General Plan 2035

As discussed in the Public Services and Facilities Element of the Los Angeles County General Plan 2035, the conservation of the water supply is a primary goal of the County. To reduce the County's dependence on imported water, County agencies are establishing various water conservation programs. One example from DPW is the creation of water reclamation projects and groundwater recharge facilities to capture stormwater runoff. Another effort by DPW is participation in a Water Augmentation Study, which is striving to make parcel-level groundwater recharge feasible. Additional actions include the Board of Supervisor's 2008 Countywide Water Supply and Conservation Alert. This resolution urges residents, businesses, and water purveyors to intensify water conservation efforts and directs all County departments to implement measures to achieve a 15 to 20 percent reduction in overall water demand.

The General Plan supports water conservation efforts that focus on curbing demand by reducing consumption through technological advances, such as aerators and motion sensors on low flush toilets and stalls, onsite gray water reclamation and dual plumbing; promoting xeriscaping; and organizing educational campaigns to discourage wasteful water consumption.

Goals and policies contained in the Public Services and Facilities Element that are relevant to water supply include the following:

Goal PS/F 2: Increased water conservation efforts.

- Policy PS/F 2.1: Support water conservation measures.
- Policy PS/F 2.2: Support educational outreach efforts that discourage wasteful water consumption.

Goal PS/F 3: Increased local water supplies through the use of new technologies.

- Policy PS/F 3.1: Increase the supply of water though the development of new sources, such as recycled water, gray water, and rainwater harvesting.
- Policy PS/F 3.2: Support the increased production, distribution and use of recycled water, gray water, and rainwater harvesting to provide for groundwater recharge, seawater intrusion barrier injection, irrigation, industrial processes and other beneficial uses.

(b) County of Los Angeles Green Building Standards Code(Title 31)

In 2008, Los Angeles County adopted the Green Building Program, which included the Green Building Ordinance, Low Impact Development (LID) Ordinance, and Drought-Tolerant Landscaping Ordinance. The County also created an Implementation Task Force and Technical Manual. In November 2013, in response to the mandates set forth in the 2010 CALGreen, the Board of Supervisors adopted the Los Angeles County Green Building Standards Code (Title 31). Among other things, the Green Building Standards Code promotes water conservation by requiring the installation of smart irrigation controllers and high-efficiency toilets, design features that maximize the infiltration of stormwater for groundwater recharge, landscaping using drought-tolerant species, and limiting turf areas.

3. ENVIRONMENTAL IMPACTS

a. Methodology

(1) Water Infrastructure

The analysis of water infrastructure capacity in this section is based on the location and flow capacity of water distribution facilities and other water infrastructure serving the Medical Center Campus. Based on the projected demands of the Master Plan Project, the analysis evaluates whether the existing off-site facilities are adequate to serve future development under the Master Plan Project.

(2) Water Supply

The Harbor-UCLA Project was not specifically included in Cal Water's Dominguez system 2010 Urban Water Management Plan (UWMP); therefore, its water requirements relative to existing and future demand and supply are addressed in the project-specific WSA included in Appendix J of this Draft EIR. The 2010 UWMP is based on data recorded through 2010 and is still the most recent UWMP document for the Dominguez system service area within which the Medical Center Campus is located. Cal Water is currently preparing a 2015 Draft UWMP and has collected and compiled data on population growth, water demand and water supplies from 2010 to 2015. These data, where available were used in the Master Plan Project WSA. In June

2009, Cal Water completed a Water Supply and Facilities Master Plan (WSFMP) for the Dominguez system that also included an assessment of future water demand and supply, which has information that has been used in preparing by Cal Water in preparing its UWMP. Based on the long-term supply and demand projections within the Dominguez system, which is the service area for the Master Plan Project, the demands of the Master Plan Project were compared in the WSA against these projections to determine if the Project demands are within the available supplies anticipated to be available at Master Plan Project buildout and beyond.

b. Thresholds of Significance

The potential for populations and housing impacts is based on thresholds derived from the County's Initial Study Checklist questions, which are based in part on Appendix G of the State *CEQA Guidelines.* These questions are as follows:

XVIII. Utilities and Service Systems. Would the project:

b) Create water or wastewater system capacity problems, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Have sufficient reliable water supplies available to serve the project demands from existing entitlements and resources, considering existing and projected water demands from other land uses?

In consideration of the above factors, the following thresholds are utilized to determine if the Project would result in potentially significant impacts on water infrastructure or water supply. The Project would result in potentially significant impacts if it would result in either of the following:

WS-1: Would the Project create water system capacity problems, or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

WS-2: Would the Project have insufficient reliable water supplies available to serve Project demand from existing entitlements and resources, considering existing and projected water demands from other land uses?

c. Project Characteristics or Design Features

Of existing campus facilities, 759,649 square feet are to be demolished. Total new construction would total 1,908,520 square feet at Master Plan buildout in 2030. Total planned facilities area in year 2023 total 1,400,425 square feet while at build out in year 2030 the total would be 2,457,355 square feet, for a total net increase in building space of 1,178,071 square feet.

All existing uses (administrative office, day-care center, central utilities/industrial/infrastructure, hospital/inpatient, library, medical offices/outpatient, biomedical research and development, warehouse/storage) would be included to some degree in the Master Plan Project, though the intensity of

most of these would increase. Specifically, hospital space would increase from 648,810 square feet to 1,202,655 square feet; LA BioMed space would increase from 94,754 square feet to 225,000 square feet. New biomedical research space within the Bioscience Tech Park would be 250,000 square feet, while new retail area would be 35,000 square feet.

The proposed Master Plan Project would replace existing facilities with those that will fully comply with more stringent and current LA County water conservation requirements including the California Plumbing Code and the California Green Building Code, which mandate installation of water conserving plumbing fixtures and fittings. However, it is not known how much additional water demand may be created by new laboratories and other water using medical and biomedical research and development activities. Therefore, as an offset to the installation of more water conserving fixtures, machines and cleaning practices, the existing average water use factor of 0.1447 gpd/square feet is used.

Therefore, the estimated water use in 2023, excluding irrigation of landscape area improvements, is:

1,400,425 square feet x 0.1447 gpd/square feet = 202,642 gpd or 227.2 AFY

The proposed Master Plan Project includes a substantial increase in landscaped areas when compared to the existing Medical Center Campus, which is minimally landscaped. The landscaped area estimate using the Master Plan Campus map is 26.5 acres. The estimated existing landscaped area is about 2.5 acres; therefore, the net increase in landscaped area is 24 acres.

For the year 2023 it is assumed that 56 percent of the total landscaped area or 13.4 acres would be in place (same percentage as the 2023 building space area is to the 2030 building space area.)

The landscape plan identifies a number of plants, shrubs and trees which are drought tolerant. A typical historic Southern California irrigation rate for public landscaped areas is between three and four AFY/acre. For a more water conserving irrigation system (i.e., drip system) with plantings that are more drought tolerant, an irrigation rate of 2.5 AFY/acre is assumed. This would result in an irrigation water use of 33.5 AFY in the year 2023 and 60 AFY in the year 2030.

The Harbor-UCLA Medical Center Campus is not proximate to West Basin Municipal Water District's (WBMWD) recycled water transmission pipeline which could supply recycled water for landscape irrigation. While it is suggested this option be explored with WBMWD, the assumption in the WSA is that landscape irrigation will be done with potable water. Therefore, estimated Medical Center Campus Project water demand in 2023 is: 227.2 + 33.5 = 260.7 AFY.

For the year 2030 (Master Plan Project build out), estimated water use, excluding irrigation of landscaped area improvements is 2,457,355 gpd x 0.1447 gpd/square feet = 355,579 gpd (or 398.6 AFY).

Total estimated Medical Center Campus Project water demand in 2030 is: 398.5 + 60 = 458.6 AFY. Net new water demand for the Medical Center Project is as follows:

- Year 2023: 53.2 AFY (260.7 – 207.5)
- Year 2030: 251.1 FY (458.6 – 207.5)

California Water Code 10631, Paragraph (e) (2), requires a water use projection (average annual demand forecast) in five-year increments for the 20-year forecasted period. The average annual day demand in five-year forecast increments for the Master Plan Project for the next 20 years is shown below in **Table 4.M.1-24**, *Harbor-UCLA Medical Center Project Demand Forecast (Net Increase)*.

Table 4.M.1-24

Harbor-UCLA Medical Center Project Demand Forecast (Net Increase)

Year	2015	2020	2025	2030	2035	2040
Net Demand Increase (AF)	0	0	54	251	251	251

Source: California Water Service Company, 2016

d. Project Impacts

(1) Water Distribution Facilities

Threshold WS-1: Would the Project create water system capacity problems, or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Impact Statement WS-1: *Construction of the water infrastructure required to serve the Master Plan Project would not result in significant environmental effects. Impacts would be less than significant.*

The proposed Project would require construction of some new on-site domestic water and fire water conveyance facilities (pipelines, sub-meters, and other connections) and the connection of this system to the existing off-site facilities discussed above. This would require on-site trenching for new or relocated water lines and welding activities to connect the new hardware. No active water lines serving adjacent properties bisect the Project Site, so there would be no potential to interrupt water service to adjacent properties (such as due to inadvertent damage of existing lines) during construction.

Although there appears to be significant pressures in the area, future development for any of the proposed Master Plan Project components would be required to verify if the existing system can supply adequate pressures and flows to and within the Medical Center Campus based on final development type and building fire flow requirements once specific details of such development are known. If future services are anticipated to be taken off of six-inch or eight-inch mains in the street, additional fire flow tests would need to be conducted from hydrants connected to the mains that are anticipated for connection to verify the pressure and flow in the system at that location. Such tests and verification would be carried out by the affected agency, including Cal Water, the Los Angeles County Department of Public Works, and/or LADWP, as applicable, in order to demonstrate that capacity exists. Should system improvements be necessary to achieve adequate capacity for proposed uses, such improvements would be carried out as part of the overall construction effort for those Master Plan Project improvements.

County of Los Angeles Fire Department (LACFD) personnel indicated that the on-site fire flow requirement would be determined using Table B105.1 from the California Fire Code. The maximum required fire flow established in Table B105.1 is 6,000 gallons per minute (gpm) at 20 pounds per square inch residual pressure for type IA, IB, IIA, and IIIA building construction types. The maximum required fire flow for type IIB, IIIB, IV, V-A, and V-B building construction is 8,000 gpm as 20 psi residual pressure. Required fire flows are also based on building square footages. The County of Los Angeles Fire Code allows for a 50-percent reduction of the required fire flows for buildings as approved by the fire department on a project-by-project basis. Hydraulic modeling of the on-site and off-site water distribution systems will be required by LACFD for new building construction on the Medical Center Campus as part of the Master Plan Project. Similar to non-fire flow-related improvements, any necessary construction to provide adequate fire flow infrastructure would be carried out as part of overall Master Plan Project construction activities, which would be largely limited to the Medical Center Campus itself.

Overall, the environmental effects associated with trenching and other activities required to install and connect the on-site water system are addressed as part of the larger construction-related impacts of the proposed Project in the appropriate impact sections of this Draft EIR (e.g., Sections 4.B., Air Quality, 4.E., Geology and Soils, 4.G., Hydrology and Water Quality, etc.). No additional environmental effects would occur beyond short-term construction-related effects as once constructed these facilities would operate passively with little, if any, operational activity needed. As such, impacts related to water distribution infrastructure would be less than significant.

(2) Water Supply

Threshold WS-2: Would the Project have insufficient reliable water supplies available to serve Project demand from existing entitlements and resources, considering existing and projected water demands from other land uses?

Impact Statement WS-2: *Implementation of the proposed Master Plan Project would not result in a demand for water that would exceed projected available supplies. As such, impacts would be less than significant.*

(a) Harbor-UCLA Medical Center Project and Dominguez System Demand Comparison

Table 4.M.1-25, *Dominguez System and Harbor-UCLA Medical Center Net New Project Potable Water Demands (AF)*, below, summarizes the Dominguez system and Master Plan Project projected potable water demands in five-year increments. Since the Harbor-UCLA Medical Center Master Plan Project was not explicitly part of the projected increase in Dominguez system demand, the water demands of previously anticipated development and the Master Plan Project are combined for the purposes of assessing the additive demands of the Project and other demand sources in the service area. As shown in Table 4.M.1-25, in 2025, projected Harbor-UCLA Medical Center project water demand would cause an increase in Dominguez system demand of 54 AF, compared to 31,221 AF from previously anticipated development, or only 0.17 percent of total demand in the service area. In 2030, projected Master Plan Project water demand would cause an increase in Dominguez system demand of 251 AF, compared to 31,567 AF for all other development, or an increase of 0.8 percent.

Table 4.M.1-25

Dominguez System and Harbor-UCLA Medical Center Net New Project Potable Water Demands (AF)

	2015	2020	2025	2030	2035	2040
Dominguez System	31,291	30,884	31,221	31,567	31,910	32,260
Harbor-UCLA Master Plan Project	0	0	54	251	251	251
Combined Demand	31,291	30,884	31,275	31,818	32,161	32,511

Source: California Water Service Company, 2016

As stated above, the Harbor-UCLA Master Plan Project's increase in demand is not considered part of the demand forecast for the Dominguez system; therefore, it was treated in the WSA as additive since the total projected increase in demand from 2025 to 2030 for the Dominguez system is 346 AFY while the Harbor-UCLA Medical Campus project increase is 197 AFY, or approximately 57 percent of the Dominguez system increase. Nonetheless, based on the information and analysis presented in the Project WSA, the Harbor-UCLA Master Plan Project demand in 2030 represents only 0.8 percent of total Dominguez system demand, and therefore implementation of the Master Plan Project would not affect the ability of Cal Water to provide an adequate supply to meet water demands in the Project's service area. As such, impacts to water supply would be less than significant.

e. Cumulative Impacts

(1) Water Infrastructure

The related projects identified in Chapter 3.0, General Description of Environmental Setting, of this Draft EIR, located in various jurisdictions in the vicinity of the Medical Center Campus and thus many are not located within Cal Water's Dominguez system service area. Nonetheless, each related project would be reviewed by Cal Water, LADWP, or other water service provider that operates and maintains water conveyance infrastructure within each respective service area, to ensure its infrastructure could adequately serve those projects. Because of this circumstance and because the same infrastructure is not anticipated to serve the Project and many of the related projects, the Master Plan Project, considered together with the related projects, is not anticipated to have a cumulatively considerable contribution to cumulatively significant impacts on water infrastructure.

(2) Water Supply

With respect to cumulative water supply impacts, the Project-specific analysis presented above also represents the cumulative analysis because it considers water demand and supply within the whole of Cal Water's Dominquez system service area at Project buildout in 2030. While many of the related projects are located outside the Cal Water Dominquez system service area, and thus would not contribute to cumulative water demands on this system, those that are within the Master Plan Project service area are anticipated to have been included in the overall growth projections utilized in the 2010 UWMP. Per the Project WSA,

because cumulative plus Project water demand in 2030 would not exceed Cal Water's 2030 water supply projections in light of anticipated demands, the contribution to cumulative water supply impacts of the proposed Master Plan Project would not be cumulatively considerable. More specifically, as discussed in the Project WSA, based on (1) the adequacy of existing and planned supplies from WBMWD and MWD, (2) plans to construct new wells and maintain existing wells including constructing treatment facilities to address water quality issues where needed in order to fully utilize its adjudicated groundwater rights, (3) plans to continue to participate in MWD's in-lieu storage program for increasing basin groundwater storage for use during drought periods, (4) plans to increase use of recycled water from WBMWD, (5) in-place, ongoing and planned expanded water conservation programs and best management practices for reducing demand during normal and single and multiple dry years, (6) continuing participation in regional supply programs sponsored by WBMWD and MWD, (7) success in obtaining increased reductions in water use during multiple dry years by implementing its four-stage water demand reduction program, and (8) ninety years of experience in continuously providing an adequate supply to meet demands during normal, single and multiple dry years in the Dominguez service area, Cal Water concludes that for the next 24 years (2016 – 2040), the Dominguez system will have adequate water supplies to meet projected demands associated with the proposed Master Plan Project and those of all existing customers and other anticipated future customers for normal, single dry year and multiple dry year conditions.

4. MITIGATION MEASURES

With the implementation of Project water system improvements, potential impacts on the water distribution system and water supply would be less than significant. Therefore, no mitigation measures are required.

5. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential impacts with regard to water infrastructure and water supply as a result of implementation of the Master Plan Project would be less than significant.