4.11 Utilities and Service Systems

This section provides a summary of existing utilities and service systems provided to the project site and vicinity including electricity, natural gas, water, stormwater, and sewer. Pertinent regulations and requirements at the federal, state, and local level are reviewed. Potential impacts on utilities and service systems that could result from project implementation are discussed, and mitigation measures are applied, as warranted, in order to minimize the intensity of potential utilities and service system-related impacts. Potential impacts on stormwater conveyance facilities are also discussed in this section. For a discussion of stormwater quality management on site, and construction stormwater/stormwater quality management, please refer to section 4.7, Hydrology and Water Quality.

The City received comments on the NOP related to utilities and service systems, which are addressed in this chapter to the extent they pertain to potential project impacts (see Appendix A). NOP comment letters received relevant to this section include a letter from the Sacramento Regional County Sanitation District (SRCSD), requesting that the City evaluate potential impacts on SRCSD facilities, noting that SRCSD has recently entered into an agreement to provide additional wastewater treatment capacity to the City's combined sewer system, and outlining applicable fees. Several questions were received regarding the ability of City utilities to serve the Proposed Project and the funding of needed upgrades. In its NOP comment, SRCSD inquired as to whether the City would replace the existing combined sewer system soon. This section addresses these items except for issues that do not pertain to the physical impacts of the Proposed Project, such as fees and funding of upgrades.

The analysis included in this section was developed based on project-specific construction and operational features, data provided by the City with respect to existing water use, and additional data and information gathered from the City of Sacramento 2030 General Plan, City of Sacramento 2030 General Plan and Master Environmental Impact Report, the City of Sacramento 2010 Urban Water Management Plan, the Downtown Infrastructure Study, CalRecycle's Solid Waste Information System, and the Sacramento Regional County Sanitation District.

4.11.1 Water Supply

Environmental Setting

Downtown Project Site

City Water Sources and Supplies

The City obtains the majority of its water supply from the Sacramento and American Rivers. Groundwater makes up the balance of supply.

Surface Water

Most of the City's water supply comes from surface water the City diverts pursuant to the City's surface water rights and entitlements. These consist of water rights established before 1914, water

rights established after 1914, and a settlement contract the City has with the United States Bureau of Reclamation (USBR). Each of these is discussed briefly below.

The City has pre-1914 appropriative rights, which entitle the City to water from the Sacramento River. The City's right is based on use of Sacramento River water since 1854. This pre-1914 appropriative right allows for direct diversion of 75 cubic feet per second (cfs)cfs from the Sacramento River.

The City's post-1914 Sacramento River rights are reflected in five water rights permits issued by the State Water Resources Control Board (SWRCB) or its predecessor, the State Water Rights Board. These are summarized in Table 4.11-1. Permit 992 authorizes the City to take water from the Sacramento River by direct diversion, and has a priority date of March 30, 1920. Permit 992 authorizes the City to divert up to 81,800 acre-feet annually (AFA) with a maximum diversion of 225 cfs. This permit allows the City to use diverted Sacramento River water within the City limits, as this area changes from time to time through annexations.

The City has four additional water right permits authorizing diversions of American River water. Permits 11358 and 11361 authorize the City to divert water from the American River by direct diversion, and have priority dates of October 29, 1947, and September 22, 1954, respectively. These permits allow for diversions at the City's E.A. Fairbairn Water Treatment Plant (FWTP), and specify a combined maximum allowable rate of diversion of 675 cfs. The authorized place of use (POU) for both permits is 79,500 acres within and adjacent to the City.

The final two permits (Permits 11359 and 11360) authorize re-diversion for consumptive uses of American River tributary water previously diverted by the Sacramento Municipal Utility District's (SMUD) Upper American River Project (UARP). Permits 11359 and 11360 have priority dates of February 13, 1948, and July 29, 1948, respectively, and the POU for both permits is 96,000 acres within and adjacent to the City. These permits allow for diversions at the FWTP and at the City's SRWWTP. The combined maximum allowable diversion under these permits includes re-diversion of up to 1,510 cfs of UARP direct diversion water and up to 589,000 AFA of UARP stored water.

The City also has a water rights settlement contract entered into in 1957 by the City and the USBR. In the settlement contract, the City agreed to limit its combined rate of diversion under its American River water rights permits to a maximum of 675 cfs, and up to a maximum amount of 245,000 acre-feet per year in the year 2030. The City also agreed to limit its rate of diversion under its Sacramento River water rights permit to a maximum of 225 cfs and a maximum amount of 81,800 acre-feet per year. This limits the City's total diversions of Sacramento and American river water to 326,800 acre-feet per year in the year 2030 as shown in Table 4.11-1. The contract also specifies an annual build-up schedule to this maximum amount, as shown in Table 4.11-2.

TABLE 4.11-1
SUMMARY OF CITY'S POST-1914 WATER RIGHTS

Application or License Number	Priority Date	River Source	Maximum Amount Specified[1] (cfs)	Maximum Amount Specified[1] (afy)	Purpose of Use	Season of Diversion and Re-Diversion	Place of Use	Deadline to Perfect Full Use
A. 1743 P. 992	3/30/1920	Sacramento	225	81,800	Municipal	Jan 1 to Dec 31	City of Sacramento	12/31/2030
A. 12140 P. 11358	10/29/1947	American	675	245,000	Municipal	Nov 1 to Aug 1	79,500 acres within and adjacent to the City	12/1/2030
A. 12321 P. 11359	2/13/1948	Tributaries of the American			Municipal	Nov 1 to Aug 1	79,500 acres within and adjacent to the City	12/31/2030
A. 12622 P. 11360	7/29/1948	Tributaries of the American			Municipal	Nov 1 to Aug 1	79,500 acres within and adjacent to the City	12/31/2030
A. 16060 P. 11361	9/22/1954	American			Municipal	Nov 1 to Aug 1	79,500 acres within and adjacent to the City	12/1/2030
Maximum Diversion Amount			**900**	**326,800**				

1. Amounts shown reflect the settlement agreement, as discussed in text.

SOURCE: City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October 2011. *Carollo Engineers*.p. 4-3.

TABLE 4.11-2
SETTLEMENT CONTRACT MAXIMUM DIVERSION SCHEDULE (ACRE-FEET PER YEAR)

Source	2010	2015	2020	2025	2030	2035
American River	145,700	170,200	196,200	222,200	245,000	245,000
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
Total	**227,500**	**252,000**	**278,000**	**304,000**	**326,800**	**326,800**

Source: City of Sacramento, 2008. *Docks Area Specific Plan Draft EIR, Section 5.10 - Utilities*. August 2008. pp. 5.10-12 - 5.10-13.

In return, the contract requires USBR to make available at all times enough water in the rivers to enable the agreed-upon diversions by the City. The City agreed to make an annual payment to USBR for Folsom Reservoir storage capacity used to meet the USBR's obligations under the contract, beginning with payment for 8,000 acre feet of storage capacity in 1963 and building up, more or less linearly, to payment for the use of 90,000 acre feet of storage capacity in 2030. The settlement contract is permanent and not subject to deficiencies. The USBR contract, in conjunction with the City's water rights, provides the City with a very reliable and secure water supply.

The City's diversions of American River water at the FWTP are also subject during certain time periods to limitations specified in the Sacramento Water Forum (Water Forum) negotiations. The Water Forum was started in 1993 by a group of water managers, local governments, business leaders, agricultural leaders, environmentalists, and citizen groups with two "co-equal" objectives: to provide a reliable and safe water supply through the year 2030, and to preserve the wildlife, fishery, recreational, and aesthetic values of the Lower American River. After six years of intense interest-based negotiations, the Water Forum participants approved the 2000 Water Forum Agreement (WFA).

As part of the WFA, each water purveyor signed a purveyor specific agreement (PSA) that specified that purveyor's Water Forum commitments. The City's PSA limits the quantity of water diverted from the American River at the FWTP during two hydrologic conditions: extremely dry years called Conference Years in the WFA, and periods when river flows are below the criteria commonly known as Hodge Flows issued by Judge Richard Hodge in the Environmental Defense Fund v. East Bay Municipal Utility District litigation. These two conditions, collectively referred to as the PSA Limitations, are described in more detail below.

The City's PSA defines Conference Years as years in which the California Department of Water Resources (DWR) projects an annual unimpaired flow into Folsom Reservoir of 550,000 AFA or less, or the projected March through November unimpaired flow into Folsom Reservoir is less than 400,000 AFA. During Conference Years, the City has agreed to limit its diversions for water treated at the FWTP to 155 cfs and 50,000 AFA. Conference Years have occurred on the American River only twice during the 72-year period of recorded historical hydrology.

In addition to Conference Years, the City's PSA specifies limitations on the City's diversion rate at the FWTP when American River flows bypassing the FWTP are less than the Hodge Flow criteria. Hodge Flows specify minimum flows that must remain in the Lower American River as follows: October 15 through February - 2,000 cfs, March through June - 3,000 cfs, and July through October 14 - 1,750 cfs. Based on a previously completed CALSIM II analysis of the 1922 to 1994 climate data, 59% of years will experience flows below Hodge Flow conditions at some time during the peak months of June through August. When flows passing the FWTP are greater than the Hodge Flow criteria, and when Conference Year conditions do not exist, the PSA allows diversions of American River water up to the FWTP's current maximum rate of 310 cfs (200 million gallons per day (mgd)).

It is important to note that the WFA does not restrict diversion under the City's American River entitlements from a Sacramento River diversion point. Therefore, during a Conference Year condition the City's annual surface water diversion amounts are limited only by the FWTP

Conference Year condition and the diversion and treatment capacity at the SRWTP. Assuming a maximum treatment capacity of 50,000 AFA at the FWTP and 180,000 AFA at the SRWTP, the current drought-limiting scenario allows a surface water production of 230,000 AFA.

Groundwater

While the City obtains the majority of its water supply from surface water along the American and Sacramento rivers, groundwater makes up the balance of supply. Municipal Groundwater is extracted from the North Sacramento Groundwater Basin and the Central Sacramento Groundwater Basin. Groundwater is extracted from 27 municipal wells, most of which are located north of the American River. Of these, 14 groundwater wells provide non-potable water supply, while the remaining 13 provide potable water. Total capacity for the City's municipal groundwater wells is approximately 20.7 mgd.[1]

The City pumps groundwater from both the North American Subbasin and the South American Subbasin of the Sacramento Valley Groundwater Basin. The City is one of many water purveyors that use groundwater from these two subbasins. While the City pumps from both subbasins, approximately 95 percent of the amount pumped by the City each year is pumped from the North American subbasin.[2] For example, the City pumped 17,772 AF of groundwater from the North American subbasin and 665 AF from the South American subbasin for potable water consumption in 2010.[3]

The North American and South American subbasins are located within the larger Sacramento Valley Groundwater Basin. The North American Subbasin is bound by Bear River to the north, Feather River to the west, the Sacramento and American Rivers to the south, and a north-south line extending from the Bear River to Folsom Lake to the east. The South American Subbasin is bound by the Sierra Nevada to the east, the Sacramento River to the west, the American River to the north, and the Cosumnes and Mokelumne Rivers to the south. For additional description of water bearing layers, groundwater quality, and other aquifer characteristics, as relevant to the project, please refer to section 4.7, Hydrology and Water Quality.

The Sacramento Groundwater Authority (SGA) prepared a Groundwater Management Plan (GMP) in 2008, for the portion of the North American Subbasin that is located north of the American River to the County line.[4] Additionally, as a result of the Water Forum Successor Effort, the Central Sacramento County Groundwater Forum (CSCGF) has developed the Central Sacramento County Groundwater Management Plan (CSCGMP).[5] These two studies, and references cited therein, identify sustainable yields within applicable areas of the North American and South American Subbasins, as relevant to the City of Sacramento.

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1 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. p. 4-15.

2 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. p. 4-8.

3 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. p. 4-8.

4 Sacramento Groundwater Authority, 2008. *Groundwater Management Plan*. December 2008.

5 Water Forum, Sacramento County Water Agency, and MWH, 2006. *Central Sacramento County Groundwater Management Plan*. February 2006.

The CSCGF and the SGA were developed in a consensus-based process, and these included stakeholders throughout both basins. GMPs are adaptive management tools and represent a critical step in establishing a framework for maintaining a sustainable groundwater resource for the various users overlying the basins. The GMPs are consistent with the provisions of California Water Code sections 10750 et seq. Within these programs, the SGA and the CSCGF will continually assess the status of the groundwater basin and make appropriate management decisions to sustain the basin. The City is a member of both the SGA and CSCGF.

The SGA and CSCGF share a common goal of the responsible management of the groundwater basin through a commitment to not exceed the long-term sustainable yield of the Subbasins. According to the WFA and GMPs, the SGA sustainable yield is estimated to be approximately 131,000 AFA, and the CSCGF sustainable yield is estimated to be approximately 273,000 AFA. The sustainable yields determined through the WFA provide for sufficient groundwater pumping to meet the projected level of groundwater demand through at least 2030.[6] The process to determine the sustainable yield took into account future pumping by the various groundwater users within the applicable subbasin, water quality, dewatering of wells, groundwater pumping costs, and ground subsidence.

SGA and CSCGF members, in accordance with the WFA, are proceeding with a conjunctive use program to responsibly manage and use the groundwater systems. This conjunctive use effort is part of the WFA 30-year agenda. A conjunctive use program accounts for the annual climatic variability of the region, whereby in normal or wet years of precipitation the water providers will divert more surface water and reduce or eliminate groundwater use, allowing the groundwater systems to recharge. In dry years when the in-stream flows must be maintained in the lower American River, groundwater pumping will be increased to supplement the reduced diversions from the river systems.

Under existing conditions, groundwater pumping in the portion of the North American Subbasin (including approximately 95% of the City's pumping) that is managed by SGA is less than the basin's sustainable yield. According to the SGA's 2008 GMP, groundwater pumping in the subbasin between 2000 and 2007 ranged from approximately 78,000 to 95,000 acre-feet per year, in comparison to an estimated sustainable yield of 131,000 acre-feet per year.[7]

Based on the information above, the supply of groundwater in the Subbasins from which the City's wells pump groundwater is sufficient to meet cumulative groundwater demands projected through 2030, and this is consistent with the sustainable yields determined for these areas, as discussed above.

Total Available Water Supply

Accounting for the surface water rights and constraints on those rights discussed above, as well as groundwater availability and pumping capacity, Table 4.11-3 provides a summary of total water

6 Water Forum, Sacramento County Water Agency, and MWH, 2006. *Central Sacramento County Groundwater Management Plan*. February 2006. p. 2-49.

7 Sacramento Groundwater Authority, 2008. *Groundwater Management Plan*. December 2008. p. 25.

supplies available for City use, including maximum wholesale and water wheeling requests anticipated through 2030.

TABLE 4.11-3
PROJECTED WATER SUPPLIES FOR CITY USE PLUS PROJECTED MAXIMUM WHOLESALE AND WATER WHEELING REQUESTS FOR 2010 THROUGH 2035 (ACRE-FEET PER YEAR)

Water Source	2010	2015	2020	2025	2030	2035
Total City Water Deliveries	108,276	146,300	138,300	149,200	160,100	171,100
Sales to Other Water Agencies	5,091	39,670	56,410	73,147	89,884	89,884
Total	**113,367**	**185,970**	**194,710**	**222,347**	**249,984**	**260,984**

SOURCE: City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October 2011. Carollo Engineers. p. 3-18.

Water Demand

Existing water demand within the City is primarily residential, but also includes commercial, institutional, and landscape irrigation. As of 2010, there were approximately 53,300 water meters within the City's service area, equivalent to about 40 percent of total connections.[8] Generally, water demand decreased from 2000 to 2010, due to a combination of factors, including increased conservation efforts, deployment of water conserving fixtures, replacement of leaky pipelines, increased public awareness over drought conditions, the City's meter retrofit program, and the effects of the recent recession. The City also sells water to other regional agencies including Sacramento International Airport, Sacramento Suburban Water District, California American Water Company, and Sacramento County Water Agency. Table 4.11-4 provides a projection of total water demand by the City for 2005 through 2035. Table 4.11-5 presents a summary of water demands and available supply during multiple dry years. As discussed in the City's UWMP, the available water supply figures shown in Table 4.11-5 conform to the requirements of the Water Forum Agreement, including Hodge Flow requirements (discussed previously).

TABLE 4.11-4
CITY MAXIMUM TOTAL WATER DEMAND INCLUDING ALL WHEELING AND WHOLESALE CUSTOMERS FOR 2010 THROUGH 2035 (ACRE-FEET PER YEAR)

Water Use	2010	2015	2020	2025	2030	2035
Total Water Deliveries	108,276	146,300	138,300	149,200	160,100	171,100
Sales to Other Water Agencies	5,091	39,670	56,410	73,147	89,884	89,884
Total	113,367	185,970	194,710	222,347	249,984	260,984

SOURCE: City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October 2011. Carollo Engineers. pp. 3-18, 4-25, 5-19.

8 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October 2011. Carollo Engineers. p. 6-11.

TABLE 4.11-5
CITY MULTIPLE DRY YEAR SUPPLY AND DEMAND COMPARISON, 2015 THROUGH 2035
(ACRE-FEET PER YEAR)

Year Scenario	Water Supply or Demand	2015	2020	2025	2030	2035
1st Year, Multiple Dry Year Scenario	Supply Total	290,800	310,300	329,800	346,800	346,800
	Demand Total	172,589	185,788	217,886	249,984	260,984
	Excess Supply	**118,211**	**124,512**	**111,914**	**96,816**	**85,816**
2nd Year, Multiple Dry Year Scenario	Supply Total	290,800	310,300	329,800	346,800	346,800
	Demand Total	172,589	185,788	217,886	249,984	260,984
	Excess Supply	**118,211**	**124,512**	**111,914**	**96,816**	**85,816**
3rd Year, Multiple Dry Year Scenario	Supply Total	290,800	310,300	329,800	346,800	346,800
	Demand Total	172,589	185,788	217,886	249,984	260,984
	Excess Supply	**118,211**	**124,512**	**111,914**	**96,816**	**85,816**

SOURCE: City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October 2011. Carollo Engineers. p. 5-21.

Water Supply Facilities

Annually, the City provides more than 45 billion gallons of water for drinking, household use, fire suppression, landscaping, and commercial and industrial use. The City's water distribution system is a pipeline network, where surface water and groundwater is mixed within the system. The City Department of Utilities operates and maintains the City's two water treatment plants, eight pump stations, 10 storage reservoirs, as well as municipal groundwater wells, fire hydrants, and approximately 1,500 miles of pipeline to convey water to homes and businesses throughout the City. The City's service area includes the Downtown project area, and also spans north to Elkhorn Boulevard in North Natomas, east to Watt Avenue and Highway 50, west to the Sacramento River and south to Sheldon Road. The City diverts surface water derived from the American and Sacramento Rivers. The City's Sacramento River Water Treatment Plant (SRWTP), located along the Sacramento River just downstream of its confluence with the American River, currently has a reliable capacity of approximately 135 mgd, although the City is currently rehabilitating the facility to return capacity to 160 mgd.

The City's FWTP is situated on the American River, about 7 miles upstream of its confluence with the Sacramento River. The facility has a diversion capacity of 200 mgd, although regulations can limit diversions to 100 mgd under certain river flow conditions, as discussed below.[9]

The City uses water storage to meet water demand for periods when peak hour demand exceeds maximum daily supply rates. These high demand periods usually occur for four to six hours during hot summer days and potentially for longer periods during large fire events. Storage infrastructure owned and maintained by the City includes 89 million gallons of storage capacity, and pumping facilities at the City's diversion and storage facilities.

9 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. pp. 2-4 through 2-6.

The City conveys water using its system of larger transmission pipelines, which are at least 18 inches in diameter, and smaller distribution mains, which range in diameter from 4 to 16 inches in diameter. Transmission pipelines are used solely for the conveyance of large volumes of water; they are generally not tapped for water or fire services.[10,11]

Within the Downtown project site and vicinity, the Sacramento downtown area in general is supplied by several transmission lines that range up to 42 inches in diameter, and by distribution mains that range in size from 6 inches to 12 inches in diameter. Water from the SRWTP is piped into a 42-inch line that extends from the intersection of 5th and I Streets to the east along I Street A 24-inch branch off of this line at 6th Street runs toward the Downtown project site. This line runs easterly along J Street and then routes south along 7th Street, within the Downtown project site. A second 18-inch main branches off of the transmission line along I Street. This second branch occurs at the intersection of I Street and 9th Street, and continues along 9th Street to Capitol Mall, southeast of the Downtown project site. Existing distribution lines within the Downtown project site are primarily 10-inch mains, with some 6-inch to 1- inch mains, and various small-scale distribution lines serving individual parcels.[12]

These transmission lines branch into a network of distribution mains that extend throughout the Downtown project site and surrounding areas. These mains provide a relatively high level of service within the Downtown project site and its vicinity. However, some existing water mains are composed of cast iron pipe, many of which are reaching the end of their anticipated lifetime. The City maintains a water main replacement program, although timing for water main replacement in the downtown area under this program has not yet been identified. The City does not supply recycled water to the Downtown project site or its vicinity.[13,14]

The existing system is considered to be generally adequate for water supplied for both domestic and fire flows. However, certain strategic upgrades would be needed in order to serve anticipated development within downtown Sacramento. Key aspects relevant to the Proposed Project include extensions of the existing service main system using new 12-inch water mains, to be located in the vicinity of the Downtown project site along K Street between 7th and 12th Streets.[15] Planning for these proposed improvements was initiated before the Proposed Project was proposed, and currently remains in the initial stages.

10 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. p. 2-6.
11 Nolte, 2011. *Downtown Infrastructure Study*. September 2011. p. V-1.
12 Water Forum, Sacramento County Water Agency, and MWH, 2006. *Central Sacramento County Groundwater Management Plan*. February 2006.
13 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. p. 4-22.
14 Nolte, 2011. *Downtown Infrastructure Study*. September 2011.
15 Nolte, 2011. *Downtown Infrastructure Study*. September 2011. p. V-5.

Offsite Digital Billboards

Depending upon the final sites selected for the proposed signs, water supply would be available either from the City of Sacramento or would be trucked in as needed. The proposed offsite digital billboards would not require a water supply following the completion of construction.

Regulatory Setting

The following discussion provides a summary of state and local regulations and requirements that are applicable to the Proposed Project.

State

Drinking Water Quality

The California Department of Health Services (DHS) is responsible for implementing the federal Safe Drinking Water Act of 1974 and its updates, as well as California statutes and regulations related to drinking water. As part of their efforts, the DHS inspects and provides regulatory oversight for public water systems within California. In the Sacramento area, the CVRWQCB also has the responsibility for protecting the beneficial uses of the State's waters, including groundwater, and these include municipal drinking water supply, as well as various other uses. Public water system operators are required to monitor their drinking water sources regularly for microbiological, chemical, and radiological contaminants to show that drinking water supplies meet the regulatory requirements listed in Title 22 of the California Code of Regulations (CCR) as primary maximum contaminant levels (MCLs). Primary standards are developed to protect public health and are legally enforceable. Among these contaminants are approximately 80 specific inorganic and organic contaminants and six radiological contaminants that reflect the natural environment, as well as human activities. Examples of potential primary inorganic contaminants are aluminum and arsenic, while radiological contaminants can include uranium and radium.

Public water system operators are also required to monitor for a number of other contaminants and characteristics that deal with the aesthetic properties of drinking water. These are known as secondary MCLs. Secondary standards are generally associated with qualities such as taste, odor, and appearance, but these are generally non-enforceable guidelines. However, in California secondary standards are legally enforceable for all new drinking water systems and new sources developed by existing public water suppliers. The public water system operators are also required to analyze samples for unregulated contaminants, and to report other contaminants that may be detected during sampling.

Urban Water Management Planning Act

California Water Code Section 10610 et seq. applies to all public water systems that provide municipal water to more than 3,000 customers, or that supply at least 3,000 AF/yr. These public water suppliers are required to prepare an Urban Water Management Plan (UWMP).

UWMPs represent key water supply planning documents for municipalities and water purveyors in California, and often form the basis of Water Supply Assessments (see below) prepared for individual projects.

Water Supply Assessment

Public Resources Code (PRC) §21151.9 requires that a Water Supply Assessment (WSA) be prepared for proposed projects as defined in the statute to ensure that long term water supplies are sufficient to meet the project's demands in normal, single dry and multiple dry years for a period of 20 years. Preparation of a WSA is required if a proposed action meets the statutory definition of a "project," which includes at least one of the following (Water Code § 20912(a)):

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed 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; or
- A mixed use project that includes one or more of the projects specified in the above bullets.

Completion of a WSA requires collection of proposed water supply data and information relevant to the project in question, an evaluation of existing/current use, a projection of anticipated demand sufficient to serve the project for a period of at least 20 years, delineation of proposed water supply sources, and an evaluation of water supply sufficiency under single year and multiple year drought conditions.

Senate Bill (SB) 221- Written Verification of Water Supply

Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply. SB 221 is intended to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs early in the planning process. This verification must also include documentation of historical water deliveries for the previous 20 years, as well as a description of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources of the region. Government Code section 66473.7 (b)(1) states:

> The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or

> local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.

Thus, following project certification, additional water supply verification is required to be completed at the Tentative Map stage, prior to adoption of the Final Map, for certain tentative maps. Pursuant to Government Code §66473.7(i), additional water supply verification is *not* required for:

> Any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low income households.

Therefore, while the Proposed Project requires completion of a WSA, residential development in the PUD area, located downtown, would not be subject to additional water supply verification at the Tentative Map stage pursuant to SB 221.

Local

Model Water Efficient Landscape Ordinance

Pursuant to CCR Title 23, Division 2, Chapter 2.7, the California Department of Water Resources (DWR) approved the Model Water Efficient Landscape Ordinance. Local agencies, including the City of Sacramento, were required to adopt the ordinance or a local water efficient landscape ordinance by January 1, 2010, and notify DWR of the adoption by January 31, 2010. In accordance with these requirements, the City's Model Water Efficient Landscape Ordinance (MWELO) became effective on January 1, 2010. (California Code of Regulations Title 23, Division 2, Chapter 2.7 as amended). Key objectives of the MWELO are:

- Promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
- Establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects;
- Establish provisions for water management practices and water waste prevention for existing landscapes;
- Use water efficiently without waste by setting a Maximum Applied Water Allowance (MAWA) as an upper limit for water use and reduce water use to the lowest practical amount;
- Promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;

- Encourage local agencies and water purveyors to use economic incentives that promote the efficient use of water, such as implementing a tiered-rate structure; and
- Encourage local agencies to designate the necessary authority that implements and enforces the provisions of the MWELO or its local landscape ordinance.

The MWELO applies to public and private projects that would include a landscaped area of at least 2,500 square feet and require a building or landscape permit, plan check, or design review. For the Proposed Project, MWELO would be implemented when the project applicant submits a Landscape Documentation Package for review and approval by the City. The Landscape Documentation Package must contain the following information: project information, a Water Efficient Landscape Worksheet, a soil management report, a landscape design plan, an irrigation design plan, and a grading design plan. Each of these components is defined under the MWELO.

Water Forum Agreement

The Water Forum is a group of water managers and other water supply stakeholders that was organized in 1993. The group's stated purpose is to address water supply issues in the American River watershed, and in particular along the Lower American River. The group adopted the Water Forum Agreement as a solution to present and anticipated future water supply issues in the region.

The Water Forum Agreement implements a series of actions with the objectives of providing a reliable and safe water supply to support economic health and planned development in the region through 2030, and to preserve fishery, wildlife, recreational, and aesthetic values along the Lower American River. As part of the Water Forum Agreement, each purveyor (including the City) signed a purveyor specific agreement that specifies that purveyor's Water Forum commitments. The City's agreement limits the quantity of water diverted from the American River to the Fairbairn Water Treatment Plant during two conditions: extremely dry years (i.e., "Conference Years") and periods when river flows are below the "Hodge Flow Criteria" issued by Judge Richard Hodge in the *Environmental Defense Fund v. East Bay Municipal Utility District* litigation. These flow restrictions are discussed previously in this chapter.

City of Sacramento Urban Water Management Plan

The City's UWMP was prepared in accordance with California's Urban Water Management Planning Act of 1983, which requires urban water suppliers servicing 3,000 or more connections or 3,000 AF per year or more to prepare a UWMP. The 2010 UWMP serves as an update to the 2005 UWMP. It presents a description of the City's current water supply system and facilities including water treatment facilities, distribution, and storage; identifies key water demands that are or that will need to be met by the City; reviews available water supplies; discusses water supply reliability and a water shortage contingency plan; reviews demand management measures; and discusses complicating factors surrounding climate change.

City of Sacramento 2030 General Plan

The following goals and policies from the 2030 General Plan are relevant to utilities with respect to the Proposed Project.

Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high quality public infrastructure facilities and services throughout the city.

Policies

- **U 1.1.1 Provision of Adequate Utilities.** The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services utility services to areas in the city currently receiving these services from the City, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently receive these City services upon funding and construction of the infrastructure necessary to provide these City services.

- **U 1.1.6 Growth and Level of Service.** The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.

Goal U 2.1 High-Quality and Reliable Water Supply. Provide water supply facilities to meet future growth within the City's Place of Use and assure a high-quality and reliable supply of water to existing and future residents.

Policies

- **U 2.1.9 New Development.** The City shall ensure that water supply capacity is in place prior to granting building permits for new development.

General Plan Consistency Analysis

The Proposed Project would be consistent with each of the General Plan goals and policies listed above. Consistent with Policies U 1.1.1 and U 1.1.6, project utilities would be appropriately sized and installed within the Downtown project site to maintain adequate service in light of the impact analysis provided below; the project applicant would pay a fair share of the cost for any needed upgrades, as warranted. With respect to Goal U 2.1 and Policy U.2.1.9, as discussed for impacts below, the City has issued a positive water supply assessment for the Proposed Project, and expects to be able to serve the Proposed Project in light of all other current and planned projects.

Methodology and Assumptions

The following impact analysis evaluates potential for the Proposed Project to result in changes to existing infrastructure and supply relating to water availability. The analysis focuses primarily on potential impacts to facilities located outside of the Downtown project site.

Construction period water demand was calculated assuming that dust suppression, compaction, and other construction period water requirements would amount to 0.05 AF/month per acre, on average, consistent with typical regional construction water consumption for urban projects. The construction water analysis conservatively assumes that all construction within the Downtown project site would occur at the same time, over a 3-year construction schedule. In actuality, construction will be dispersed in time as individual components are implemented. However, assuming that all construction water demand would occur at once provides an upper limit to the anticipated volume of water that could be consumed annually during project construction. Actual levels would likely be less than this maximum.

The analysis for water supply centers on a comparison of existing uses and demand to project future water demand. Project demand was determined by identifying gross water demand for the Proposed Project, then subtracting out existing demands that would be discontinued as a result of the Proposed Project (i.e., existing non-irrigation water demand at the Sleep Train Arena, and existing demand for areas of the Downtown Plaza that would be removed). This provided a net water demand value for the Proposed Project. Net water demand was then compared to water supplies available to the City, in accordance with City procedures, and a determination made regarding sufficiency of supply for the Proposed Project.

Significance Criteria

The Proposed Project would result in a significant impact on water supply if it would:

1. increase demand for potable water in excess of existing supplies;
2. result in inadequate capacity in the City's water supply facilities to meet the water supply demand, so as to require the construction of new water supply facilities; or
3. require or result in either the construction of new water treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental impacts.

Impacts and Mitigation Measures

Impact 4.11-1: The Proposed Project would increase demand for potable water.

Downtown Project Site

Construction

Project construction would require water for dust suppression, grading, and general demolition and construction activities. Within the Downtown project site, water would be supplied by existing water mains/connections provided by the City. Based on a 3-year construction schedule, it is estimated the that, based on a 20-acre project area, project construction would require up to approximately 1.0 acre-foot of water per month, for a construction period demand of 12 AF/yr, or a total construction period demand of 36 acre-feet of water over a 3-year period. As discussed in

greater detail below, under existing conditions, water demand at the Downtown project site averaged 87.0 acre-feet per year during 2007 through 2013. During project construction, use of existing facilities on site would cease, and therefore would not require continued water demand. Because construction of the Proposed Project would result in a temporary net reduction in water demand on site (i.e., from 87.0 acre-feet per year to 12 acre-feet per year during construction), ***no impact*** would occur due to construction activities.

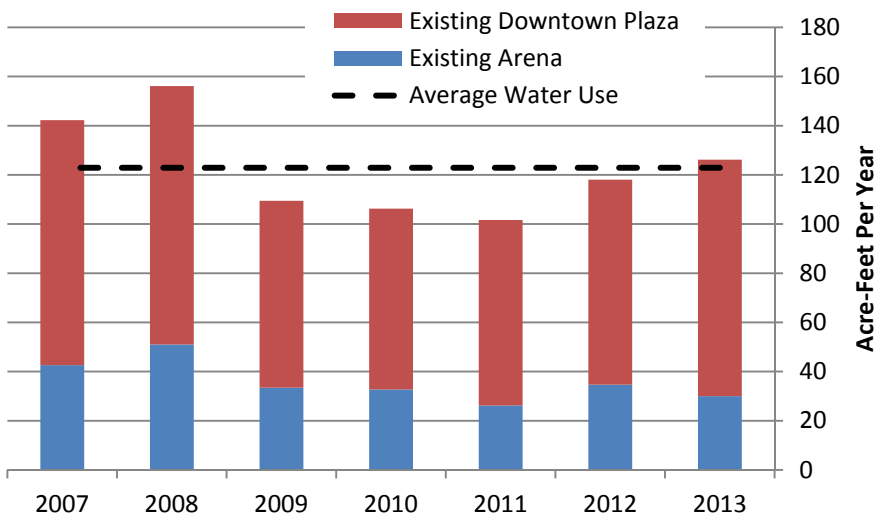
Operation

Under existing conditions, established levels of water use relevant to the Proposed Project include water use associated with the existing Downtown Plaza and Sleep Train Arena. Both are relevant because if the Proposed Project is approved and implemented, then current/existing water use for both facilities would no longer be required (refer to Chapter 2, Project Description). The estimates of water use assume that landscaping water at the existing Sleep Train Arena would remain in use at existing levels, in order to maintain on site landscaping. Table 4.11-6 and Figure 4.11-1 provide a summary of historic levels of water use for the existing Downtown Plaza that would be included in the Downtown project area, as well as the Sleep Train Arena. These figures were made available by the City and are based on metered flows for 2007 through 2013. Due to economic and other factors, water use at both the Downtown Plaza and the Sleep Train Arena has decreased notably since the onset of the recent recession, due to decreased occupancy. As a result, the water use numbers shown in Table 4.11-5 are notably lower than 2006 and earlier. The analysis presented below is therefore conservative in that it likely underestimates the water demand that could be expected from the Downtown Plaza and the Sleep Train Arena in the future, resulting in a larger estimate of additional use that could result from the project. Table 4.11-6 illustrates that the Proposed Project would result in the discontinuation of use of approximately 122.9 acre-feet of water per year.

TABLE 4.11-6
HISTORIC WATER USE AT THE DOWNTOWN PLAZA AND SLEEP TRAIN ARENA

Year	Downtown Plaza	Sleep Train Arena	Grand Total
2013	96.2	30.0	126.2
2012	83.3	34.7	118.0
2011	75.4	26.2	101.6
2010	73.5	32.7	106.3
2009	76.0	33.5	109.5
2008	105.1	51.1	156.1
2007	99.6	42.6	142.3
Average	**87.0**	**35.8**	**122.9**

SOURCE: City of Sacramento, 2013a. *Water Meter Data*.



SOURCE: City of Sacramento, 2013a. *Water Meter Data*.

Sacramento Entertainment and Sports Center & Related Development. 130423

Figure 4.11-1
Historic Water Use at the Downtown Plaza and Sleep Train Arena

Operation of the Proposed Project would result in new water demands. These anticipated demands would be associated with operation of the ESC as well as operation of the other proposed uses that would be implemented on site. Potential water demand for the Proposed Project was estimated based on land use type and intensity. Usage factors were derived from the 2011 Downtown Infrastructure Study.[16] Table 4.11-7 shows each of the proposed land use categories associated with the Proposed Project along with an estimate of the area (in square feet), number of rooms, or housing units that could be developed, as applicable, and the total associated annual water demand per category. Total existing demands are also shown, as well as the anticipated net increase in water supply required for the Proposed Project. The volume of water demand required assumes full buildout of the Proposed Project.

TABLE 4.11-7
ANTICIPATED NET INCREASE IN WATER USE UNDER THE PROPOSED PROJECT

Land Use Category	Area/Number	Units	Demand Factor	Water Use per Year (Acre-Feet)
Retail/Commercial	1,005	employees	0.09 AFY*/employee	90.45
Office	2,159	employees	0.02 AFY/employee	43.18
Hotel	250	rooms	0.23 AFY/room	58.25
Residential	550	units	0.12 AFY/unit	66.00
Proposed ESC	779,000	square feet	Estimated Total Use	63.68
Subtotal	**N/A**	**N/A**		**321.56**
Existing Use	N/A	N/A	Average 2007-2012 Use	122.86
Net Increase	**N/A**	**N/A**	**N/A**	**198.70**

*acre-feet per year

SOURCE: City of Sacramento, 2013b. City of Sacramento SB 610/SB 221 Water Supply Assessment and Certification Form. October 15, 2013. pp. 2-3. (See Appendix E of this EIR); additional calculations by ESA, 2013.

[16] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. V-1 – V-5.

As shown, upon full buildout, the Proposed Project would result in a total water demand of 321.56 acre-feet per year, equivalent to a net increase of 198.70 acre-feet per year over existing conditions. Therefore, the total increase in water demand associated with the Proposed Project would be approximately 198.70 acre-feet per year. As discussed in Chapter 2, Project Description, the project proponents plan to obtain LEED Gold certification for the proposed ESC, and have identified a goal of reducing water levels by 25% below the amounts resulting from compliance with CalGreen Baseline. Therefore, water demand for the ESC portion of the Proposed Project is likely to be lower than indicated in Table 4.11-7.

The 2010 UWMP does not identify specific individual projects that are considered within that plan's water demand projections. The planning figures that the UWMP relies upon do, however, consider continued development within the downtown area, including the Downtown project site and vicinity. While an ESC project was not explicitly included in the downtown area planning in support of the UWMP, the water use from the existing Sleep Train Arena was assumed. Also, other development consistent with the remainder of the Proposed Project was considered in support of the UWMP water demand analysis.[17] Based on the findings of a WSA completed by the City in October 2013, the City has sufficient water supply to provide water to the Proposed Project through 2035.[18] For these reasons, the impact would be ***less than significant*.**

Offsite Digital Billboards

The Project would require limited water to support construction of each offsite digital sign. Based on approximately one acre of total construction area, construction of the proposed offsite digital billboards would require up to approximately 1.5 acre-feet of water in total (assuming 0.05 AF/acre-month required during construction of six 5,000-square foot sites, with construction occurring over a 5-month period), over the duration of the construction period. This volume of water would be readily available on site or via water truck, would not noticeably increase water demand within the area, and would not exceed existing supplies. This impact is considered ***less than significant***.

Mitigation Measures

None required.

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[17] City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan.* October, 2011. Carollo Engineers. pp. 1-1 – 2-11.

[18] City of Sacramento, 2013b. *City of Sacramento SB 610/SB 221 Water Supply Assessment and Certification Form. October 15, 2013*. p. 4. (See Appendix E of this EIR).

Impact 4.11-2: The Proposed Project could require additional water conveyance and treatment.

Downtown Project Site

Construction

As noted for Impact 4.11-1, the Proposed Project would result in a net reduction in water use during the construction process. Therefore, no new water supply infrastructure would be required for construction, and ***no impact*** would occur.

Operation

With respect to water conveyance and distribution facilities, the Proposed Project would require installation of new distribution pipelines within the Downtown project site and surrounding vicinity in support of the proposed facilities. While water use in the existing Downtown Plaza area is less than half of the proposed use, existing water supply connections are sufficient to supply a greater volume of water to the Downtown Plaza under existing conditions. This is because the Downtown Plaza is currently operating at only 50% to 60% of total occupied space, whereas existing infrastructure is sufficient to support a completely occupied facility. Under the Proposed Project, additional new connections would be installed, connecting to existing water mains located along J Street, L Street, 7th Street, and other adjacent water mains. The City's existing water supply and transmission system is adequate to support water supply within the downtown area, including the Downtown project site.

The City anticipates that major water supply infrastructure in the vicinity of the Downtown project site has sufficient capacity to serve the Proposed Project, and that large scale or major upgrades would not be required.[19] During the design phase, however, depending upon which pipelines the applicant would connect to, replacement, or minor upgrades to pipelines adjacent to the facility (i.e., outside of the Project area) may be required pursuant to City review of project plans. The City's standard practice requires that a project applicant work with the City to determine whether localized facility upgrades would be needed in the project vicinity, and requires that any upgrades needed to serve the project site be constructed by the applicant. The City requires completion of a water supply test at the final point of connection, combined with an evaluation of flow sufficiency and an evaluation of the extent to which localized distribution line upgrades would be required. The applicant would then be responsible for installing the proposed upgrades, located in the vicinity of the Proposed Project. This requirement would apply to the proposed ESC and PUD development.

[19] Ewart, Brett. 2013. Personal phone communication between Robert Eckard of ESA and Brett Ewart of the City of Sacramento. October 8, 2013.

Potential increases in water demand associated with the Proposed Project are not otherwise expected to exceed existing pumping or diversion capacity within the City's existing water supply system.[20]

With respect to treatment capacity, the City's existing surface water treatment plants maintain a total treatment capacity of 336 mgd or 376,617 AF/yr. Under existing conditions, the City currently treats less than 150,000 AF/yr of surface water; thus the City maintains over 200,000 AF/yr in available treatment capacity. Therefore, no new treatment infrastructure under current conditions would be needed as a result of the Project, and the impact would be ***less than significant***.

Based on available information regarding existing infrastructure, anticipated system upgrades would be limited. Nonetheless, construction of these facilities could result in minor, temporary increases in construction related traffic congestion, air quality emissions, and noise during the pipeline installation and upgrading process. The applicant would also be required to pay standard water development fees to the City for the anticipated increase in water use. Because these effects would be limited in area and duration, potential environmental impacts would be limited, and no further mitigation or analysis is warranted.

Offsite Digital Billboards

The Proposed Project would require limited water to support construction of each offsite digital billboard. Based on approximately 2 acres of total construction area for all signs combined, construction of the proposed offsite digital billboards would require up to approximately 0.5 acre-feet of water in total, over the duration of the construction period. This volume of water would be readily available on site or via water truck, and would not noticeably interfere with available water supplies or otherwise require installation of new water supply pipelines or other facilities. Additionally, the relatively small volumes of water needed for digital billboard construction would be available using the City's existing water distribution system. Upgrades to the City's distribution system would not be required in order to source this volume of water. This impact is considered ***less than significant***.

Mitigation Measure

None required.

Cumulative Impacts

The following discussion provides an analysis of cumulative level impacts that could occur as a result of project implementation. The cumulative context for water supply, treatment and

[20] Ewart, Brett. 2013. Personal phone communication between Robert Eckard of ESA and Brett Ewart of the City of Sacramento. October 8, 2013.

conveyance includes the water service area for the City of Sacramento, including reasonably foreseeable increases in water demand as identified in the City's 2030 General Plan Master EIR and 2010 UWMP.

Impact 4.11-3: The Proposed Project would contribute to cumulative increases in demand for water supply.

The cumulative context for this impact includes the water service area for the City of Sacramento, including reasonably foreseeable increases in water demand as identified in the City's 2010 UWMP. As discussed previously, the 2010 UWMP does not identify specific development projects that were included in the City's water demand calculations. Instead, the UWMP proposes various categories of development within the City's service area for water supply. The UWMP considers water supply needed for future development as planned in the 2030 General Plan. Buildout within the downtown area is anticipated to be a mix of infill of vacant properties, and reuse and redevelopment of existing economically under-performing or obsolete developments. Based on a review of proposed development categories set forth in the 2030 General Plan and discussed in the 2030 General Plan Master EIR, and conversations with City staff, the Proposed Project would be consistent with development anticipated in the downtown area, including the Downtown project site, under the 2010 UWMP.[21]

As discussed in the 2010 UWMP and as noted previously in this chapter, Hodge flow conditions can result in diversion restrictions at the existing FWTP. As a result, the City has sufficient water production capacity to meet anticipated demands through the year 2030, but not beyond that year, under anticipated Hodge flow restrictions.[22] This assumes that no additional wholesale or water wheeling customers would be served, except for those listed in Table 4.11-8. Additionally, Table 4.11-9 includes additional likely future wholesale and wheeling customers, as discussed in the 2010 UWMP. No commitments have been made for these additional supplies, and such commitments would not be made unless sufficient water supply were made available.

TABLE 4.11-8
MAXIMUM DAY DEMAND INCLUDING CITY RETAIL DEMAND AND EXISTING WHOLESALE AND WHEELING CUSTOMERS (MILLION GALLONS PER DAY)

Customer	2015	2020	2025	2030	2035
City Retail Demand	240	234	246	259	281
Sacramento International Airport and Metro Air Park	2.8	2.8	2.8	2.8	2.8
California American Water Company	2.3	2.3	2.3	2.3	2.3
Sacramento County Water Agency Zone 40 Wheeling	11	11	11	11	11
Fruitridge Vista Water Company	3.2	3.2	3.2	3.2	3.2
Total	**259**	**253**	**266**	**278**	**300**

SOURCE: City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. p. 3-14.

21 Ewart, Brett. 2013. Personal phone communication between Robert Eckard of ESA and Brett Ewart of the City of Sacramento. October 8, 2013.

22 City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October 2011. Carollo Engineers. pp. 4-7, 4-8, 4-25.

TABLE 4.11-9
MAXIMUM DAY DEMAND INCLUDING CITY RETAIL DEMAND AND LIKELY FUTURE WHOLESALE AND WHEELING CUSTOMERS (MILLION GALLONS PER DAY)

Customer	2015	2020	2025	2030	2035
City Retail Demand	240	234	246	259	281
Sacramento International Airport and Metro Air Park	4.1	5.9	7.6	9.3	9.3
Sacramento Suburban Water District – Town and Country System	20	20	20	30	30
California American Water Company – Arden	0.8	1.6	2.4	3.2	3.2
California American Water Company – Rosemont	5.3	10.6	15.9	21.2	21.2
California American Water Company – Parkway	4.8	8.4	12.1	15.7	15.7
Sacramento County Water Agency Zone 40 Wholesale	4.8	9.5	14.3	19.0	19.0
Sacramento County Water Agency Zone 40 Wheeling	11	11	11	11	11
Fruitridge Vista Water Company	4.8	6.4	8.0	9.6	9.6
Total	**295**	**307**	**337**	**378**	**400**

SOURCE: City of Sacramento Department of Utilities, 2011. *2010 Urban Water Management Plan*. October, 2011. Carollo Engineers. p. 3-15.

The Master EIR prepared for the 2030 General Plan, and certified in 2009, concluded similarly that the City would need additional diversion and treatment capacity to meet peak demand under Hodge flow conditions. (Master EIR, p. 6.11-33) The Master EIR referenced General Plan policies calling for sound planning for new development and reducing peak demand. (Master EIR, p. 6.11-34).

The mitigation measures in the Master EIR call for the City to act as a cost-sharing partner in the Sacramento River Water Reliability Study (Mitigation Measure 6.11-2a). The SRWRS is not being actively pursued by the City or the other parties to the effort, and this mitigation measure would not be effective to mitigate the Proposed Project's contribution to cumulative effects regarding water diversion and treatment. Mitigation Measure 6.11-2b in the Master EIR calls for the City to construct its own diversion and treatment facility. This is consistent with one of the mitigation approaches identified below and has, therefore, been incorporated into the mitigation strategy for the Proposed Project, as shown below.

While the City's existing water rights would be sufficient to provide water to meet foreseeable development within the City, including the Proposed Project, at least through 2030, the City's ability to divert water from existing facilities could become insufficient in or before 2030. This impact is considered ***potentially significant***.

<u>Mitigation Measure</u>

4.11-3 (ESC/PUD)

To ensure that sufficient capacity would be available to meet cumulative demands, the City shall implement, to the extent needed in order to secure sufficient supply, one or a combination of the following:

(a) Maximize Water Conservation

Chapter 6 of the 2010 UWMP outlines an array of Demand Mitigation Measures (DMMs). In order to further reduce water demands, the City could require the Proposed Project to implement additional DMMs, which would support water conservation on site, and a partial offset of anticipated water demand for the Project. DMMs discussed in the 2010 UWMP include the following:

- Water Survey Programs for Single Family and Multiple Family Residential Customers
- Residential Plumbing Retrofit
- System Water Audits, Leak Detection, and Repair
- Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections
- Large Landscape Conservation Programs and Incentives
- High Efficiency Washing Machine Rebate Program
- Public Information Programs
- School Education Programs
- Conservation Programs for Commercial, Industrial, and Institutional Accounts
- Wholesale Agency Programs
- Conservation Pricing
- Water Conservation Coordinator
- Water Waste Prohibition
- Residential Ultra-Low Flush Toilet Replacement Program

(b) Implement New Water Diversion and/or Treatment Infrastructure

The 2010 UWMP proposes implementation of three potential additional projects that would support additional surface water diversion and/or treatment capacity within the City. Potential projects include:

1. Installation of a new WTP – Install a new WTP along the Sacramento or American River to support additional diversion and treatment;
2. Expansion of the SRWTP – Use existing water entitlements and expand design and treatment capacity of the SRWTP; and
3. Construction of a raw water line to the FWTP in order to take advantage of available and existing treatment capacity at the FWTP.

Consistent with these approaches, the City is currently exploring an additional potential surface water intake along the Lower American River, downstream of the FWTP. Water would be piped to the FWTP for treatment prior to distribution. Under another alternative, raw water would be piped from the existing Sacramento River intake to the FWTP for treatment. These projects would be initiated by or before 2023, and would be completed by or before 2028. These projects would supplement the City's supply during Hodge Flow conditions, because the proposed facilities would not be restricted by Hodge Flow limitations as is the City's current diversion infrastructure.

Each of these projects, if implemented, would require its own environmental review, as well as compliance with all applicable regulatory requirements and restrictions. Construction and operation of these facilities could result in the following categories of potentially significant impacts:

- Exposure of soils to erosion and loss of topsoil during construction;
- Surface water quality degradation;
- Changes to natural drainage courses and hydrology;
- Construction-related air emissions;
- Construction and operations-related noise impacts;
- Visual and/or light and glare impacts;
- Loss of protected species and degradation or loss of their habitats;
- Conversion of existing agricultural lands or resources;
- Degradation of fisheries habitat; and
- Exposure to pre-existing listed and unknown hazardous materials contamination.

Any such project be subject to CEQA review. The CEQA document would identify mitigation measures to reduce any potentially significant impacts to the extent feasible. Due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2030, project-specific mitigation measures would need to be tailored to the selected project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above:

- Reduction in operational and construction air emissions as required by SMAQMD;
- Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;
- Minimization of operational and construction noise through the use of noise attenuation measures;

- Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;
- Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;
- Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and
- Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.

The City, as a lead or responsible agency, would be required to implement environmental review and mitigation measures identified for each individual project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.

(c) Implement Additional Groundwater Pumping

As discussed in the 2010 UWMP, in order to meet demands under Hodge Flow restrictions, the City could also construct new groundwater production capacity and employ a conjunctive use program in order to meet future demands.

The implementation of this mitigation measure would require environmental analysis to assess if the construction or operation of new wells would have any adverse environmental consequences; its implementation would require environmental evaluation. Any new wells, appurtenances and/or infrastructure could result in the following potentially significant environmental impacts:

- Exposure of soils to erosion and loss of topsoil during construction:
- Construction-related air emissions;
- Destruction of buried archeological or paleontological resources;
- Changes in natural drainage courses and hydrology;
- Construction and operations-related noise impacts;
- Visual and/or light and glare impacts;
- Conversion of existing agricultural lands or resources;
- Drawdown of groundwater in the North American Subbasin; and
- Exposure to pre-existing listed and unknown hazardous materials contamination.

In addition, although this groundwater pumping mitigation measure could supply potable water to meet proposed site demands and offset a service area capacity deficit, this mitigation measure could also cause rapid drawdown of a sustained groundwater basin. This would run counter to current groundwater management planning. Additionally, increasing groundwater withdrawals could adversely affect other groundwater pumping activities in the region, or cause notable changes to known and unknown groundwater contamination plumes in the subbasin.

Mitigation measures would be developed to reduce any potentially significant impacts to the extent feasible. Due to the timing uncertainties associated with the long-term water supply infrastructure necessary to maintain sufficient system capacity, project-specific mitigation measures would be responsive to and tailored to the design of the eventual project. The strategies identified above under (b) (new water diversion and/or treatment infrastructure) would be implemented as appropriate.

The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.

Impact Significance After Mitigation: Mitigation Measure 4.11-3 would result in implementation of action for increasing diversion and treatment capacity. The timing and location of any such improvements are unknown. Nor can the effectiveness of the mitigation be known with certainty. The resulting impact, for these reasons, is ***significant and unavoidable.***

Impact 4.11-4: The Proposed Project would contribute to cumulative increases in demand for water conveyance in the vicinity of the Downtown project site.

The City's Downtown Infrastructure Study reviews existing infrastructure within the City's downtown area, and evaluates need for new infrastructure in light of planned growth within the downtown area.[23] The Downtown Infrastructure Study considers increases in water demand associated with planned increases in urban use in the downtown area.

The Proposed Project would be consistent with the types and magnitude of development considered within the study. Findings from the study indicate that the existing water supply system is generally adequate, but would require strategic upgrades to serve anticipated development. Specifically, development of the Sacramento Railyards area will require relocation or replacement of large transmission lines located along that area's southern boundary. Development within other parts of the downtown area could require extensions of the existing main service system in order to reach certain specific developments. These would be installed on a project-by-project basis to serve a particular project or group of projects. The existing system of 8-, 10-, and 12-inch service mains is not expected to require system-wide upgrading; however, localized upgrading at and near the connection points to the project could be required. The

[23] Nolte, 2011. *Downtown Infrastructure Study*. September 2011.

Proposed Project is located in an area that is capable of handling additional flows; as development proceeds, existing distribution lines will need to be extended on a project-by-project basis, with limited additional upgrading needed to ensure that distribution lines in the immediate vicinity of the project area would be appropriately sized. As discussed in Impact 4.11-2, the City requires that new development provide any needed upgrades to the local distribution system needed to serve the project in question, and to pay associated fees for any increase in use. Therefore, the cumulative increase in water conveyance would be less than significant, and the Proposed Project contribution would be less than cumulatively considerable.

For the above reasons, the cumulative impact on the local water conveyance system would be ***less than significant.***

Mitigation Measure

None required.

4.11.2 Wastewater and Stormwater

Environmental Setting

Sacramento Regional Wastewater Treatment Plant

The Sacramento Regional Wastewater Treatment Plant (SRWWTP) is located in Elk Grove, and is owned and managed by the Sacramento Regional County Sanitation District (SRCSD). SRCSD provides regional wastewater conveyance and treatment services to commercial, residential, and industrial end users within the City of Sacramento, several other areas including Sacramento County and the cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, and West Sacramento, as well as the communities of Courtland and Walnut Grove. SRCSD maintains 177 miles of interceptor pipelines. The SRWWTP began service in 1982. The existing SRWTP currently maintains a maximum average dry weather treatment capacity of 181 mgd. As of 2012, actual average dry weather flow for the facility was approximately 115 mgd, substantially lower than the facility's capacity.[24] Treated effluent is discharged into the Sacramento River.

In 2010, the Central Valley Water Quality Control Board (CVRWQCB) released a draft permit for the SRWWTP that targeted ammonia reductions from the existing SRWWTP facility. The SRWWTP currently maintains secondary level treatment processes. In order to meet the target requirements, as well as other anticipated future discharge requirements, SRCSD is exploring options for upgrade of the SRWWTP. The proposed upgrade would include deployment of new treatment technologies and facilities, and would increase the quality of effluent discharged into the Sacramento River. The proposed upgrade would not, however, result in a net increase in permitted capacity of the SRWWTP.

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[24] Sacramento Regional County Sanitation District, 2012. *2012 State of the District Report*. p. 4.

Sewer and Drainage

Sewer service and drainage within the Downtown project site is provided by the City. Sewer is provided by a combined sewer system (CSS), which underlies the area roughly bounded by 3rd Street to the west, 17th Street to the east, I Street to the north, and Capitol Avenue to the south (as well as other areas of the City). This area includes the whole of the Downtown project site. The combined sewer system is a legacy system that was designed to provide both stormwater and sanitary sewer service (combined into one set of pipes) within this area. However, stormwater service across most of the Downtown project site is also provided to the Downtown project site by a second system that routes stormwater runoff to Storm Drainage Basin 52 (see Figure 4.11-2).[25]

Combined sewer systems were constructed in the City until 1946. Because the system was designed to carry both stormwater and sanitary flows, the system is considerably oversized for managing sanitary flows generated within the applicable service area. However, it is insufficiently sized to meet the City's current design standard for drainage, which is to convey flows consistent with a 10-year storm event (i.e., a storm event of sufficient size that it has a 10% chance of annual occurrence). Because the system does not meet City standards for stormwater conveyance capacity, it is subject to outflow and, infrequently, overflow during major storm events.[26]

Under normal conditions, stormwater plus sanitary flows are routed in a westerly direction to Sump 1/1A and Sump 2, which are located along the Sacramento River. In order to provide secondary treatment, the City has entered into a contract with the SRWWTP to convey up to a total capacity of 108.5 million gallons per day (mgd) of wastewater combined from Sumps 2, 2A, 21, 55, and 119. These flows would be routed along SRCSD's Interceptor pipeline for conveyance to SRCSD's treatment facility, and ultimate treatment. This volume of capacity is sufficient for dry weather flows, with some additional capacity. [27]

During heavy storms when this capacity is exceeded, excess flows in the CSS are routed to the Combined Wastewater Treatment Plant, located along South Land Park Drive and 35th Avenue. This facility provides primary only treatment of up to an additional 130 mgd. If flows exceed this volume, additional water, up to a capacity of 350 mgd, is routed to the Pioneer Reservoir storage and treatment facility. When this facility too has reached capacity, excess flows are discharged from Sump 2 directly into the Sacramento River, without treatment. When the pipeline capacity is exceeded, excess flows flood local streets in the downtown area through maintenance holes and catch basins.

Within the Downtown project site and vicinity, the combined sewer system is composed of pipes that range from approximately 4 inches to 120 inches in diameter. However, most collection system piping ranges in size from 8 inches to 12 inches, located in alleyways and streets. Water flows within the system, generally, from the north to the south. Pipeline composition reflects historic installations as well as upgrades, and includes brick, polyvinyl chloride (PVC), reinforced concrete pipe (RCP), and vitrified clay pipe (VCP).

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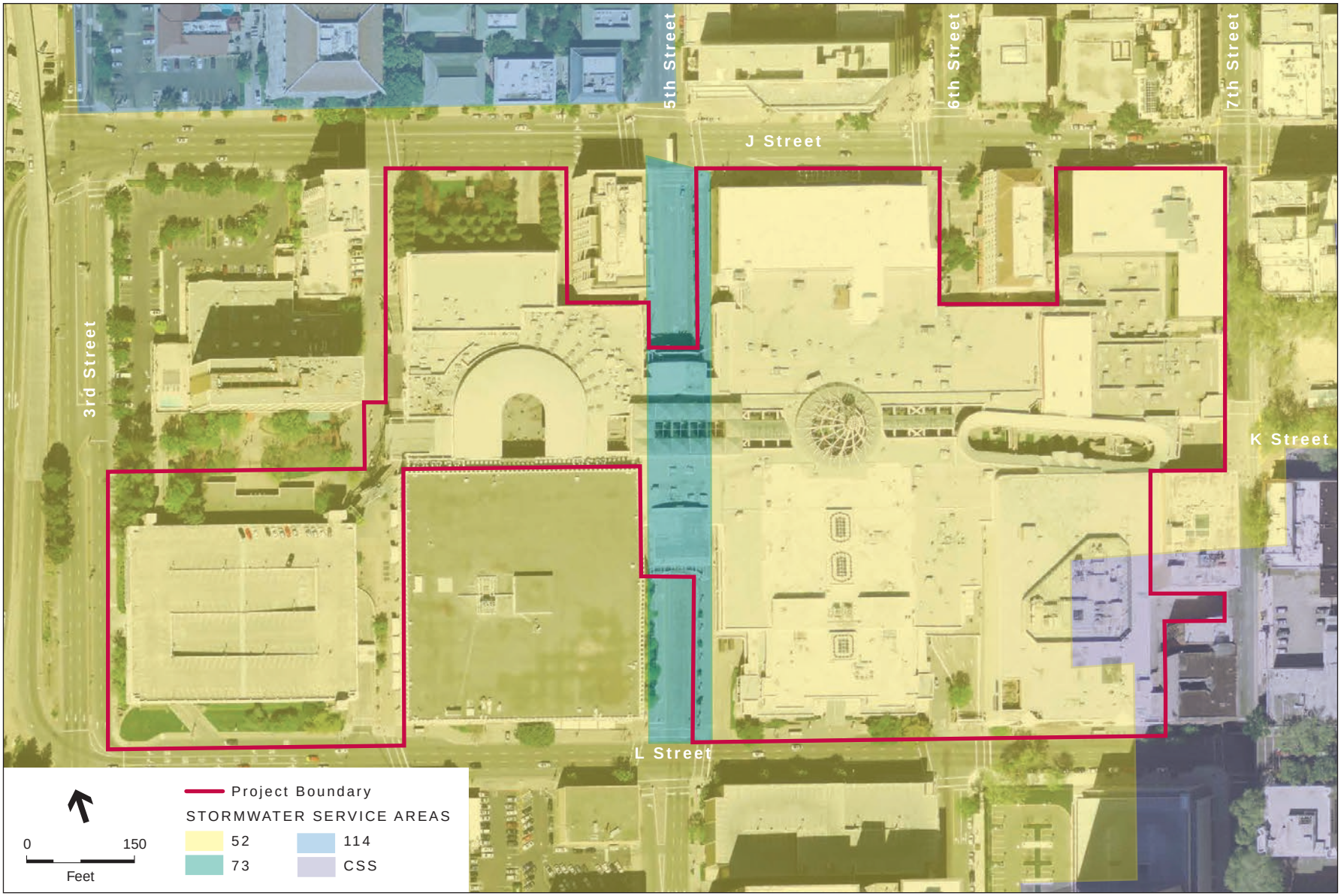
25 Nolte, 2011. *Downtown Infrastructure Study*. September 2011. p. IV-12.

26 Outflow is defined as the discharge of water to City streets; overflow, which occurs rarely, is defined as discharges that spill untreated wastewater/stormwater from the combined system directly into the Sacramento River.

27 Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. IV-1 – IV-11.



SOURCE: USGS, 2011; Nolte, 2011

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Figure 4.11-2
Existing Stormwater Service Areas

The area served by the combined system is currently operated under Cease and Desist Order No. 85-342 (C&DO), promulgated by the Central Valley Regional Water Quality Control Board (CVRWQCB). The order, which includes amendments, mandates that the City implement certain operational improvements in order to reduce system overflows, with the ultimate goal of providing 10-year capacity for the combined sewer system.

In order to address the requirements of the C&DO, the City has developed several strategies to reduce or avoid outflow and overflow events. Key improvements, in various stages of completion, are funded by fees imposed on new development to fund long term improvements to the CSS. These include:

- Rehabilitation and expansion of Sumps 1/1A and 2;
- Rehabilitating and converting Pioneer Reservoir into a treatment facility;
- Rehabilitating and up-sizing of sewer mains in the combined system; and
- Rehabilitating the Combined Wastewater Treatment Plant.

Basin 52 is one of many stormwater drainage basins that the City uses to manage stormwater within its service area. Basin 52 generally supports the westerly portions of downtown Sacramento west of 8th Street, including most of the Downtown project site. The approximate eastern half of the block bordered by K Street (within the existing Downtown Plaza) to the north, L Street to the south, 6th Street to the west, and 7th Street to the east, is served not by Basin 52 facilities, but instead by the combined sewer system. Water captured within portions of the Downtown project site served by Basin 52 is gravity-fed to Pump Station 52 (Sump 52), which is located near the Crocker Art Museum. From the pump station, water is discharged under I-5 and directly into the Sacramento River. The total area served by Basin 52 is approximately 320 acres.[28]

The pipelines that convey stormwater from Basin 52 to Sump 52 are currently over capacity. This situation results in notable street flooding of stormwater during storm events equivalent to or greater than the 2-year event (i.e., 50% annual chance of recurrence). Street flooding is not anticipated to affect at-grade structures, except during a 100-year or greater intensity storm event.[29]

The portion of 5th Street that cuts below grade to pass underneath the existing Downtown Plaza (i.e., between J Street and L St) is served by Basin 73. The sump for Basin 73 is located immediately west of 5th Street at the Downtown Plaza. Water from Basin 73 is routed to Sump

[28] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. p. IV-2.
[29] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. p. IV-2.

52, where it commingles with water from Basin 52 (and other basins) and is discharged to the Sacramento River.[30]

Within the Downtown project site and its vicinity, pipelines within the Basin 52 system range in diameter from 12 to 54 inches. Key collection mains are located along 3rd St, 4th St, and 7th Street. Flow within the system is generally routed from the Downtown project site toward the pump station.

The Basin 52 Stormwater Master Plan was completed in May 1996. The plan provides various recommendations for improvements within the Basin 52 area. These include:

- Construction of a new pump station (not completed),
- Construction of a new storage basin (not completed),
- Installation of new outfall lines to the Sacramento River (not completed),
- Upsizing of 8,800 feet of existing pipelines (partially completed), and
- Replacement in kind of 3,300 feet of existing/degrading pipelines (partially completed).

Timing for the completion of these proposed facilities is not presently known. Therefore, the analysis presented below assumes that these facilities would not be implemented.

Existing Dewatering

The parking area located below the existing Downtown Plaza is below grade and intersects with the groundwater table, with the lower level of the garage extending down to 11.5 feet above mean sea level (msl). As a result, in order to maintain the existing parking area free of water, a dewatering system is in operation. The dewatering system includes a subsurface drainage system that extends down to 2.65 msl, which is composed of a field of 21-inch combined vent/drainage pipe installed below the grade beam elevation. The drainage system drains into four sumps, which are installed at an elevation of -4.5 msl. All four sumps are connected, and discharge through a combined 10-inch force main into the CSS system on L Street near 5th Street.[31] A separate system is located under the existing Macy's East building. This includes perforated pipe with gravel backfill under the existing garage level. The pipe field drains into a sump with a 480 gallon per minute sump pump system, operated by a float. The system discharges to the CSS via an 8-inch connection along L Street.

The volume of water discharged from the dewatering system into the CSS is not metered, and therefore is not known precisely. Additionally, dewatering volumes are expected to vary seasonally, with high pumping rates required during/following major storm events and during

[30] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. IV-2, IV-12.
[31] Hiser, Matt, 2013. Personal communication via email between Brian Boxer of ESA and Matt Hiser of Turner Construction. December 11, 2013.

other periods when groundwater levels are elevated. However, based on calculated estimates completed by the applicant's engineering team, it is likely that the existing dewatering system discharges an average of approximately 15.1 million gallons per month.[32] This is equivalent to 504,000 gallons per day.[33] Under existing conditions, water from the dewatering system enters the CSS, and is managed as previously discussed for flows in the CSS.

Offsite Digital Billboards

Land areas where offsite digital billboards would be located would also require drainage facilities. Under existing conditions, drainage from these areas is provided by existing stormwater infrastructure managed and maintained by the City and/or County of Sacramento. Digital signs would not generate sanitary wastewater, and therefore would not require a sewer connection.

Regulatory Setting

The following discussion provides a summary of federal, state, and local regulations and requirements that are applicable to the Proposed Project.

Federal

U.S. Environmental Protection Agency's National Combined Sewer Overflow Control Policy

The U.S. Environmental Protection Agency (EPA) initiated its Combined Sewer Overflow (CSO) Control Policy (40 CFR 122) in April, 1994. The CSO Policy provides a national level framework for the control and management of CSOs. The CSO Policy provides guidance regarding how to achieve Clean Water Act goals and requirements when faced with management of a CSO. Key components of the CSO Policy that are relevant to the Proposed Project include a requirement for Nine Minimum Controls (NMCs), which apply to every combined sewer system in the nation. The NMCs are minimum technology-based actions or measures that are designed to reduce CSOs and their effects on receiving water quality. The intent of the NMCs is to be implementable without extensive engineering studies or major construction. The policy requires that at least 85 percent of the average annual CSS storm flow must be captured and routed to at least primary treatment with disinfection prior to discharge.

Local

Sacramento Combined Sewer Development Fee

In order to support ongoing maintenance and upgrade efforts within the combined sewer system area, the City has adopted the Combined Sewer Development Fee.[34] This fee is designed to be an impact mitigation fee that requires mitigation of any significant increase in wastewater flows over the baseline/present level. To the extent that a proposed development project or other project

[32] Hiser, Matt, 2013. Personal communication via email between Brian Boxer of ESA and Matt Hiser of Turner Construction. December 11, 2013.
[33] Hiser, Matt, 2013. Personal communication via email between Brian Boxer of ESA and Matt Hiser of Turner Construction. December 11, 2013.
[34] City of Sacramento Code 13.08.490.

could have a significant impact on the combined sewer system, the City requires an acceptable mitigation plan. The mitigation plan generally requires payment of fees in order to mitigate that project's impacts to the sewer system. Alternatively, a developer may mitigate impacts on the combined sewer system by getting City approval on a Mitigation Plan. Such a plan would be required to include on-site storage, retention, sewer main up-sizing, stormwater best management practices (BMPs), diversion of flows, rerouting of pipelines, replacement of pipelines, connection to separated areas, or other upgrades as warranted.

Facility Impact Fee

In addition to the Combined Sewer Development Fee, the SRCSD levies a fee for planning, designing, construction, and other costs related to wastewater conveyance, treatment, and disposal using SRCSD's facilities. Fee amounts are determined in coordination with SRCSD, the project applicant, and Sacramento County.

City of Sacramento 2030 General Plan

The following goals and policies from the 2030 General Plan are relevant to utilities with respect to the project.

Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high quality public infrastructure facilities and services throughout the city.

Policies

- **U 1.1.1 Provision of Adequate Utilities.** The City shall continue to provide and maintain adequate water, wastewater, and stormwater drainage utility services utility services to areas in the city currently receiving these services from the City, and shall provide and maintain adequate water, wastewater, and stormwater drainage utility services to areas in the city that do not currently receive these City services upon funding and construction of the infrastructure necessary to provide these City services.

- **U 1.1.6 Growth and Level of Service.** The City shall require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.

Goal U 4.1 Adequate Stormwater Drainage. Provide adequate stormwater drainage facilities and services that are environmentally-sensitive, accommodate growth, and protect residents and property.

Policies

- **U 4.1.1 Adequate Drainage Facilities**. The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.

- **U 4.1.4 Watershed Drainage Plans.** The City shall require developers to prepare watershed drainage plans for proposed developments that define needed drainage improvements per City standards, estimate construction costs for these improvements, and comply with the City's National Pollutant Discharge Elimination System (NPDES) permit.

- **U 4.1.5 New Development.** The City shall require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures to prevent on- or off-site flooding.

General Plan Consistency Analysis

Policies U.1.1.1 and U.1.1.6 address the commitment of the City to ensure that adequate water, wastewater and drainage facilities are provided for development within the City. The Proposed Project would contribute toward these efforts through payment of applicable fees. With respect to Goal U 4.1 and associated policies, the Proposed Project would manage increases in stormwater flow on site by temporarily detaining stormwater (see impact analysis below) as warranted, in order to ensure that the City's stormwater/combined sewer system would not be further stressed. Applicable plans, permit compliance, and drainage studies would be completed prior to construction. Please also refer to the impact analysis discussion below.

Methodology and Assumptions

The following impact analysis evaluates potential for Proposed Project related facilities to result in changes to existing infrastructure and supply relating to wastewater and stormwater. The analysis focuses primarily on potential impacts to facilities located outside of the Downtown project site.

Discontinuation of use of the existing Sleep Train Arena, combined with discontinuation of use for areas of the Downtown Plaza that would be removed, would partially offset anticipated increases in demand for water and sewer services for the Proposed Project. Anticipated wastewater generation was estimated based on the City's standard wastewater generation factors, derived from the Downtown Infrastructure Study.[35] Wastewater generation was calculated by proposed type of use within the Downtown project site.

Significance Criteria

The Proposed Project would result in a significant impact on wastewater or storm drainage utilities if it would:

1. result in inadequate wastewater capacity to serve the project's demand in addition to existing commitments; or

[35] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. IV-1 – IV-11.

2. require or result in either the construction of new wastewater treatment facilities or storm water drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental impacts.

Impacts and Mitigation Measures

Impact 4.11-5: The Proposed Project would discharge additional flows to the City's sewer and drainage systems, which could exceed existing infrastructure capacity.

Downtown Project Site

Construction

Excavation and pile driving during construction would encounter groundwater, which would require temporary dewatering. It is anticipated that approximately 1 million gallons per day (mgd) would be extracted over a period of 12 to 15 months during project construction. Groundwater extracted during construction would be discharged into either the City's combined sewer system (CSS) or into the separate drainage system that conveys stormwater flows to Storm Basin 52 before discharge to the Sacramento River (see section 4.6, Hazards and Hazardous Materials for a discussion of treatment and discharge of contaminated wastewater). During dry periods and minor storm events, these systems would have sufficient capacity to convey dewatering flows. However, in the event that construction period dewatering occurs during a major storm event, sufficient storm drain capacity in either the CSS or the Storm Basin 52 system might not be available to support dewatering discharges and existing capacity could be exceeded. This is considered a ***potentially significant*** impact.

Operation

Because the Downtown project site is served, in part, by the CSS, increases in wastewater and storm water runoff must be considered together. These three aspects of the Proposed Project would collectively have the potential to exacerbate periodic capacity shortfalls in the City's wastewater and stormwater conveyance systems. Each of these elements is discussed below.

Wastewater Flows

In order to calculate increases in wastewater for the Proposed Project, a comparison of existing flows from the Downtown project site was made. (Wastewater from the Sleep Train Arena does not discharge to the CSS or Basin 52, so it would not be considered in the calculations for conveyance, but is considered in the discussion of changes to wastewater treatment.)

Anticipated wastewater generation was estimated based on the City's standard wastewater generation factors, derived from the Downtown Infrastructure Study. Wastewater generation was calculated by proposed type of use within the Downtown project site. Table 4.11-10 and Figure 4.11-3 provide estimates of existing wastewater generation, assuming that approximately 90% of the water delivered to the indoor areas of the existing Sleep Train Arena (water delivered to the arena for landscape watering is not considered), and 85% of the water delivered to the existing

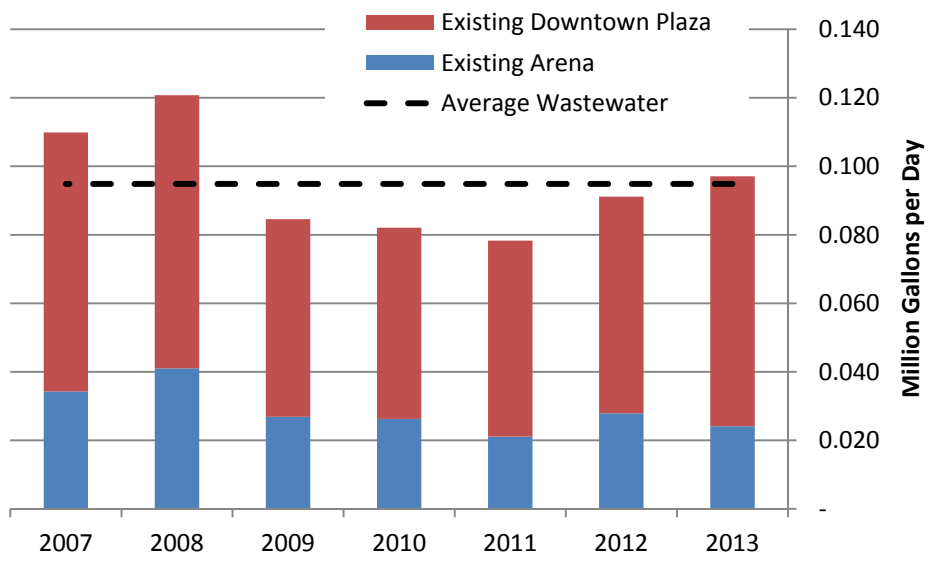
Downtown Plaza (slightly lower than the arena due to watering of limited landscaping) is eventually released to the City's sewer collection systems.

TABLE 4.11-10
ESTIMATED WASTEWATER GENERATION, 2007 TO 2013, MILLION GALLONS PER DAY

	Wastewater Generation (MGD)	
Year	**Downtown Plaza[1]**	**Sleep Train Arena[2]**
2013	0.073	0.024
2012	0.063	0.028
2011	0.057	0.021
2010	0.056	0.026
2009	0.058	0.027
2008	0.080	0.041
2007	0.076	0.034
Average	**0.066**	**0.029**

1. Assumes 85% of the water delivered to existing Downtown Plaza is released to City sewers as wastewater.
2. Assumes 90% of water delivered to the indoor areas of the existing Sleep Train Arena is released to City sewers as wastewater.

SOURCE: Calculated by ESA, 2013.



Source: Calculated by ESA, 2013.

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Figure 4.11-3
Estimated Wastewater Generation, 2007 to 2013, Million Gallons per Day

As shown in Table 4.11-11, the Proposed Project would result in a net increase of 0.17 mgd of wastewater within the Downtown project site. These flows would be discharged into the CSS.

TABLE 4.11-11
ANTICIPATED NET INCREASE IN WASTEWATER GENERATION FOR THE PROJECT

Land Use Category	Wastewater Generation Factor	Size	Units	Wastewater Generation (gpd*)
Retail/Commercial	62 gpd/1000 square feet	350,000	square feet	21,700
Office	62 gpd/1000 square feet	475,000	square feet	29,450
Hotel	170 gallons/ day per unit	250	rooms	42,500
Residential	170 gallons/ day per unit	550	units	93,500
Proposed ESC	N/A	N/A	N/A	48,710
Subtotal	**N/A**	**N/A**	**N/A**	**235,860**
Existing Arena	N/A	N/A	N/A	33,448
Existing Downtown Plaza	N/A	N/A	N/A	66,031
Net Increase Overall		**N/A**	**N/A**	**136,382**

* Gallons per day.
SOURCE: ESA, 2013.

As noted above, the CSS that serves the Downtown project site has more than enough capacity to convey wastewater flows during dry weather. During wet weather, wastewater in the CSS is commingled with stormwater. At these times, flow rates in the CSS can increase by a factor of approximately 2 to 3, and system capacity can be exceeded, particularly during peak flows.

The Proposed Project would increase wastewater average daily flows in the Downtown project site by approximately 0.17 mgd (see Table 4.11-11). During major storm events, additional capacity within the CSS could become limited by the influx of stormwater. During these periods, the Proposed Project plans to store peak wasteflows temporarily on site in one or more underground storage tank(s), as discussed in Chapter 2, Project Description. The proposed tank(s) would be sized to capture and hold peak flows from the ESC for 30 to 40 minutes, equivalent to 11,000 gallons of wastewater. Wastewater would be released from the vault incrementally, and/or would be held until additional capacity becomes available as stormwater flows subside.

Stormwater Flows

The Downtown project site is covered improved with impervious surfaces with the exception of a half-acre area at the southeast corner of 4th and J streets. After project implementation, the site would become completely impervious. The half-acre increase in impervious area that would result from project implementation would result in additional runoff from the site, but would not cause substantial alteration of onsite drainage, particularly because the parcel at the southeast corner of 4th and J streets slopes toward a connection with the storm drain system and minimal percolation currently occurs. During major storm events, stormwater conveyance capacity is limited in both the CSS and the Storm Basin 52 system. An increase in stormwater flows to these facilities during peak flow conditions would exacerbate capacity issues in both stormwater systems.

Dewatering

While portions of the proposed ESC would be constructed below grade, the facility would be waterproofed and therefore would not require dewatering. Therefore, this would result in a net reduction of the total volume of groundwater dewatered on site. More specifically, the portion of the subsurface parking for the existing Downtown Plaza that would be located within the ESC footprint would no longer require dewatering. The remaining subsurface parking area would be maintained (with reconfiguration to allow continued operation, if necessary) and would continue to be dewatered during operation. Groundwater from these areas would continue to be pumped into the CSS. The precise volume of near-term flow reductions to the CSS is not known, but is expected to vary seasonally and annually, concurrent with groundwater level fluctuations.

As Project development proceeds, it is anticipated that the City would require buildings with new foundations to be constructed so as to be waterproof, with existing dewatering phased out over time. This is anticipated to result in a total cessation of dewatering activity within the Proposed Project, with additional net reductions in dewatering flows to the CSS. Therefore, the project would result in a net benefit with respect to dewatering, in that the Proposed Project would reduce the volume of dewatering flows to the CSS, in comparison to existing conditions.

Summary

Under dry weather conditions and small storm events, there is adequate capacity in the City's sewer and drainage systems to accommodate project-related increases in wastewater, stormwater and groundwater discharges. Additionally, proposed reductions in operation period dewatering would reduce operation flows of dewatered groundwater to the CSS. However, during large storm events, the combined stormwater, wastewater and groundwater could exceed system capacity. This is considered a ***potentially significant*** impact.

<u>Mitigation Measure</u>

4.11-5 (ESC/PUD)

The project applicant shall manage wastewater, drainage and dewatered groundwater from the Proposed Project such that they shall not exceed existing CSS and Basin 52 system capacity by implementing one or more of the following or equally effective methods to be designed according to City standards and approved by the City Department of Utilities:

a. Install one or more tanks to hold wastewater, stormwater and/or construction period groundwater dewatering flows for a period of time and incrementally release flows at a rate that would not exceed existing capacity;

b. Suspend construction period dewatering activities during storm events; and/or

c. Design and implement off site improvements to increase capacity to accommodate project flows.

Impact Significance After Mitigation: Mitigation Measure 4.11-5 would require the implementation of measures to manage wastewater, drainage and dewatered groundwater flows in a manner that would not exceed existing capacity of the CSS and Basin 52 systems. Therefore, impacts to infrastructure capacity would be ***less than significant***.

Implementation of Mitigation Measure 4.11-5 could result in additional environmental effects, particularly if offsite improvements are constructed to upgrade the existing CSS or Basin 52 system. Because they would occur during construction, these impacts would be of short duration, and would be similar to the construction impacts identified in this Draft EIR, such as closure of traffic lanes, generation of air emissions and construction noise. Impacts resulting from installation of holding tanks within the Downtown project site are addressed throughout this Draft EIR. Suspension of groundwater pumping would not have adverse environmental effects.

Impact 4.11-6: The Proposed Project would discharge additional wastewater to the SRWWTP.

Downtown Project Site

Construction

Project construction would not result in additional wastewater discharges to the SRWWTP. Construction could result in a temporary decrease in flows to the SRWWTP, because existing facilities that generate wastewater within the Downtown project site would be discontinued. Up to 1.0 mgd of groundwater discharged to the SRWWTP during construction dewatering. However, as explained below, this is well within the SRWWTP's existing treatment capacity. Therefore, this impact is considered ***less than significant***.

Operation

As shown in Table 4.11-11, the Proposed Project would result in a minimal overall net increase in wastewater of 0.136 mgd. This change represents the net increase in wastewater flows that would require treatment by the SRWWTP under normal/dry weather conditions. The existing SRWWTP currently maintains a maximum average dry weather treatment capacity of 181 mgd. However, as of 2012, actual average dry weather flow for the facility was approximately 115 mgd, substantially lower than the facility's capacity.[36] Therefore, the SRWWTP has an available average dry weather treatment capacity of approximately 66 mgd. The proposed increase in wastewater flow amounts to 0.136 mgd. The SRWWTP would have sufficient capacity to serve the project. Additionally, existing flows within the CSS would be reduced by the proposed reduction in operation period dewatering, as discussed above. Available conveyance capacity in SRCSD's Interceptor pipeline are anticipated to be sufficient to meet project demand for wastewater, especially in light of dewatering reductions. Therefore, this impact is considered ***less than significant.***

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[36] Sacramento Regional County Sanitation District, 2012. *2012 State of the District Report*.

Offsite Digital Billboards

The proposed offsite digital billboards would not generate wastewater. Therefore, there would be ***no impact*** on the SRWWTP.

Mitigation Measure

None required.

Cumulative Impacts

The cumulative context for wastewater includes the service area for the SRWWTP. This includes the City of Sacramento, Citrus Heights, Folsom, Rancho Cordova, Elk Grove, West Sacramento, and select unincorporated areas of Sacramento County. For the combined sewer system, the cumulative context includes the area of downtown Sacramento that is served by the combined sewer system, including combined sewer system conveyance and wastewater treatment facilities. The cumulative context for stormwater includes the areas of the City served by the combined sewer system and Basin 52.

Impact 4.11-7: The Proposed Project would contribute to cumulative increases in demand for wastewater and stormwater facilities.

Anticipated cumulative development in the City of Sacramento, Citrus Heights, Folsom, Rancho Cordova, Elk Grove, West Sacramento, and applicable unincorporated areas of Sacramento County would result in a net increase in wastewater conveyed to the SRWWTP. Conveyance capacity needed for wastewater flows from Citrus Heights, Folsom, Rancho Cordova, and most of Elk Grove would be separate from the interceptor that serves the Downtown project site. Increasing demand for conveyance capacity from the remaining areas could put additional demands on the existing interceptor pipeline. The project's contribution to the cumulative impact is limited, however. As discussed previously, the Proposed Project would result in a net increase in wastewater generation requiring treatment by SRCSD of only 0.136 mgd per day. Also, the Proposed Project would include one or more on-site vaults in order to manage peak sewage generation flows from the proposed ESC, thereby minimizing large pulse flows during periods when the system is operating at or near capacity. The project's contribution to cumulative demand for wastewater treatment and conveyance would be less than cumulatively considerable.

Under existing conditions, the wastewater conveyance and storage systems within the Downtown area routinely flood and overflow during major storm events. The vast majority of existing land area within the areas served by these systems is hardscape and impervious. However, new project development that may occur in coming years could convert some of the limited remaining pervious areas to impervious surfaces. Therefore, new development in areas served by the combined sewer system or Basin 52 could result in a net increase in stormwater flows directed to these systems. This would result in a potentially significant cumulative impact to existing stormwater management facilities. In addition, as discussed in Impact 4.11-5, the Proposed

Project has several components—peak wastewater flows, increased stormwater runoff and dewatering--that could further tax the drainage system during major storm events. During these periods, the project contribution to cumulative increases in the CSS and Basin 52 could exacerbate the lack of capacity in the system.

The Downtown Infrastructure Study identifies a number of improvements to the drainage and sewer systems in the vicinity of the Downtown project site. If these improvements were fully implemented, there would be additional capacity within the system, which would reduce the potential for existing and future flows to exceed system capacity. However, funding for these improvements has not been secured and it is not known when they would be constructed. Because the existing system is already periodically at capacity, and new development and the Proposed Project would add flows to the system, the cumulative impact is considered ***significant***.

Mitigation Measure

4.11-7 (ESC/PUD)

Implement Mitigation Measure 4.11-5.

Impact Significance After Mitigation: Mitigation Measure 4.11-5 would fully offset the project contribution to the sewer and wastewater systems by requiring that the applicant construct appropriate facilities to delay discharge of wastewater, groundwater and/or stormwater. With mitigation, the project contribution would be ***less than significant***.

Impact 4.11-8: The Proposed Project would contribute to cumulative increases in demand for wastewater treatment capacity at the SRWWTP.

As development occurs throughout the region, wastewater flows requiring treatment at the SRWWTP will increase. The SRWWTP currently has an excess capacity of 66 mgd, which would be available for a substantial portion of growth in the region. The SRCSD's 2020 Master Plan identifies improvements needed to expand to 207 mgd, in order to accommodate growth in its service area through 2020 based on SACOG projections. Additionally, the SRCSD is considering upgrades to enable compliance with revised and anticipated Regional Board effluent requirements.

The project's contribution to cumulative scenario significant impacts would be minor. The Proposed Project would increase wastewater requiring treatment by 0.136 mgd and the Proposed Project would fit within the growth projections used to prepare the 2020 Master Plan. Therefore, the project contribution would not be considerable, and the resulting impact would be ***less than significant.***

Mitigation Measure

None required.

4.11.3 Solid Waste

Environmental Setting

Solid Waste Management

On an annual basis, the City disposes of approximately 427,000 tons of solid waste, including approximately 292,000 tons sent to landfills.[37] Several facilities provide solid waste disposal services to the City of Sacramento. These include the following:

- Lockwood Landfill, located in Sparks, Nevada. The landfill currently receives approximately 5,000 tons per day of waste including municipal solid waste (MSW) and construction debris. It has a total capacity of 302.5 million cubic yards, including approximately 270 million cubic yards of available capacity.[38] Approximately 800 tons per day arrive from the City of Sacramento.

- Kiefer Landfill, located in Sloughouse, California, is operated by Sacramento County and maintains a permitted capacity of 10,815 tons per day. The landfill has nearly 113 million cubic yards of available capacity, and is estimated to have sufficient capacity to maintain operations through 2064.[39]

- L and D Landfill, located off of Fruitridge Road in Sacramento, California, is operated by L and D Landfill, LP. The landfill has a maximum capacity of 2,540 tons per day, with a maximum permitted capacity of 6,031,055 cubic yards, sufficient to provide service through 2023. A large volume transfer facility is also located on site.[40]

- Yolo County Central Landfill, located north of Davis, California, is operated by the Yolo County Planning and Public Works Department. The facility maintains a maximum daily throughput of 2,800 tons per day, with a maximum permitted capacity of 49 million cubic yards. The facility is expected to have sufficient capacity to allow operations through 2081.[41]

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37 City of Sacramento, 2009. *Sacramento 2030 General Plan Master Environmental Impact Report*. Certified March 3, 2009. p. 6.11-66.

38 State of Nevada Bureau of Waste Management, 2013. *Lockwood Regional Landfill*. http://ndep.nv.gov/bwm/landfill_lockwood.htm. Accessed October 16, 2013. p. 1.

39 CalRecycle, 2013. *Solid Waste Information System*. http://www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx. Accessed September 19, 2013. pp. 1-2.

40 CalRecycle, 2013. *Solid Waste Information System*. http://www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx. Accessed September 19, 2013. pp. 1-2.

41 CalRecycle, 2013. *Solid Waste Information System*. http://www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx. Accessed September 19, 2013. pp. 1-2.

- Forward Landfill, located southeast of Stockton, California, is operated by Allied Waste North America. The landfill has a maximum daily throughput of over 17,000 tons, with a remaining capacity of approximately 64 million cubic yards. [42]

Solid waste collection in the City is provided by the City, which offers commercial and residential solid waste collection, and by permitted private haulers. Construction and demolition waste is collected by both the City and by private companies. Commercial solid waste collected by the City is conveyed to one of two transfer stations: the Sacramento Recycling and Transfer Station owned by BLT Enterprises, or the North Area Transfer Station, owned by Sacramento County. City waste transported from the City's transfer stations is then transported to the Lockwood Regional Landfill located in Sparks, Nevada. Waste is also processed at the North Area Recovery Station. Waste brought to this station is transported to the Kiefer Landfill. Construction and demolition waste collected within the City may be disposed of at Kiefer Landfill, L and D Landfill, the Yolo County Landfill, or Forward Landfill.

Offsite Digital Billboards

Solid waste management for the proposed offsite digital billboards would be the same as discussed above for the proposed ESC.

Regulatory Setting

The following discussion provides a summary of local regulations and requirements that are applicable to the project.

Sacramento Regional Solid Waste Authority

The Sacramento Regional Solid Waste Authority (SWA) was initially formed in 1992 in order to oversee solid waste, recycling, and disposal needs in the greater Sacramento area. The SWA is a Joint Powers Authority that is funded by franchise fees. The SWA is overseen by a Board of Directors, which is composed of elected officials from member cities (currently the City of Sacramento) and Sacramento County. The SWA regulates commercial solid waste collection by franchised haulers through ordinances. SWA ordinances include the requirement that franchised haulers achieve a 30 percent recycling rate and to offer recycling services to businesses and multi-family dwelling units.

City of Sacramento 2030 General Plan

The following goals and policies from the 2030 General Plan are relevant to utilities with respect to the project.

Goal U 5.1 Solid Waste Facilities. Provide adequate solid waste facilities, meet or exceed State law requirements, and use innovative strategies for economic and efficient collection, transfer, recycling, storage, and disposal of refuse.

[42] CalRecycle, 2013. *Solid Waste Information System.* http://www.calrecycle.ca.gov/SWFacilities/Directory/search.aspx. Accessed September 19, 2013. pp. 1-2.

Policies

- **U 5.1.1 Zero Waste.** The City shall achieve zero waste to landfills by 2040 through reusing, reducing, and recycling solid waste; and using conversion technology if appropriate.

- **U 5.1.16 Recycling and Reuse of Construction Wastes.** The City shall require recycling and reuse of construction wastes, including recycling materials generated by the demolition and remodeling of buildings, with the objective of diverting 85 percent to a certified recycling processor.

General Plan Consistency Analysis

Regarding solid waste, the Proposed Project would be consistent with Goal U 5.1 and associated policies by supporting recycling programs, and implementing construction waste recycling and reuse practices.

Construction and Demolition Debris Recycling Ordinance

The City of Sacramento requires that, with certain exceptions, construction projects valued at $250,000 or more must recycle a minimum of 50 percent of demolition debris.

Methodology and Assumptions

The following impact analysis evaluates the potential for Proposed Project related facilities to result in changes to existing infrastructure and supply relating to solid waste. The analysis focuses on wastes generated by the Proposed Project and potential impacts to facilities located outside of the Downtown project site. Potential changes in solid waste generation are evaluated using waste generation factors shown in Table 4.11-11. These factors were used to calculate existing waste generation based on average occupancy of the Downtown Plaza for 2004 through 2012, and based on existing square footage at the Sleep Train Arena. Estimated solid waste generation for the Proposed Project was also calculated based on factors shown in Table 4.11-11, and existing waste generation was subtracted from anticipated waste generation to identify the net increase in waste associated with the Proposed Project.

Significance Criteria

The Proposed Project would result in a significant impact on utilities if it would:

1. require or result in either the construction of new solid waste facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

Impacts and Mitigation Measures

Impact 4.11-9: The Proposed Project would generate additional solid waste.

Downtown Project Site

Construction

Project construction would include demolition of existing facilities located on site, and replacement of those facilities with the Proposed Project. Demolition of existing facilities would generate approximately 37,000 cubic yards of demolition waste, which would include concrete, metal, wood, plastics, and various other demolition related material. Following demolition and site clearing, construction of the Proposed Project would result in the generation of various construction period wastes including scrap lumber, scrap finishing materials, various scrap metals, and other recyclable and non-recyclable construction related wastes.

Construction waste would be managed in accordance with ordinances promulgated by the SWA – in particular, in accordance with SWA's requirement that haulers achieve a 30 percent recycling rate, as discussed previously. Recyclable construction materials, including concrete, metals, wood, and various other recyclable materials would be diverted to recycling facilities. The Proposed Project would also comply with City requirements to divert a minimum of 50% of construction wastes to a certified recycling processor. The Proposed Project proposes to recycle up to 75% of these materials, resulting in only approximately 1,460 cubic yards that would be landfilled. Adhering to these requirements would minimize the total volume of demolition and construction waste that would be landfilled, but would not avoid landfilling entirely. Landfilled waste would be delivered to one or more of the following facilities: Lockwood Landfill, Kiefer Landfill, L and D Landfill, Yolo County Central Landfill, or Forward Landfill. In consideration of the large volume of landfill capacity available to serve the project, sufficient landfill capacity would be available to serve the Proposed Project during construction, the Proposed Project would not require new or expanded solid waste management or disposal facilities, and potential operation period impacts on landfills would be ***less than significant***.

Operation

Project operation would result in the generation of municipal wastes in accordance with the proposed increase in use intensity on site. Proposed operation period wastes would include household, commercial, residential, office, and ESC-related wastes. As shown in Table 4.11-12, the existing arena plus Downtown Plaza mixed use results in the generation of approximately 2,815 tons of waste per year. As shown in Table 4.11-12, upon buildout, the Proposed Project would generate a total of approximately 3,670 tons of solid waste per year, for a net increase of 856 tons per year over existing conditions.

TABLE 4.11-12
ESTIMATED SOLID WASTE GENERATION, EXISTING FACILITIES

Land Use Category	2004-2012 Average Occupied Area	Units	Solid Waste Generation Factor	Solid Waste Generation (tons/yr)
Retail/Commercial	493,294	square feet	2.5 lb/100 sf-d	2,251
Office	139,057	square feet	1 lb/100 sf-d	254
Hotel	0	units	3.2 lbs/unit=day	0
Residential	0	units	0.7 tons/unit-yr	0
Arena	480,000	square feet	Usage data, 2012	310
Total				2,815

SOURCE: Waste hauling records from the existing Sleep Train Arena; other values calculated (estimated) by ESA, 2013

TABLE 4.11-13
ESTIMATED SOLID WASTE GENERATION, PROPOSED FACILITIES AND NET INCREASE

	Proposed Use	Units	Solid Waste Generation Factor	Solid Waste Generation (tons/yr)	Net Increase (tons/yr)
Retail/Commercial	350,000	square feet	2.5 lb/100 sf-d	1,597	-654
Office	475,000	square feet	1 lb/100 sf-d	867	613
Hotel	250	units	3.2 lbs/unit=day	146	146
Residential	550	units	0.7 tons/unit-yr	385	385
ESC	697,000	square feet	1.29 tons/1000 sf-yr	676	365
Total				3,670	856

SOURCE: Calculated by ESA, 2013

Waste generated by the Proposed Project would be removed from the site by the City and/or private haulers, and either recycled in accordance with City programs and requirements, or landfilled at Kiefer Landfill or transported and landfilled at the Lockwood Landfill in Sparks, Nevada. As noted previously, these facilities together currently have approximately 383 million cubic yards[43] in available capacity. Project related wastes would represent less than one tenth of one percent of total annual capacity for these two landfills. Because, sufficient landfill capacity would be available to serve the project, the Proposed Project would not require new or expanded solid waste management or disposal facilities. Additionally, implementation of typical recycling rates and SWA recycling requirements would result a portion of the total waste stream being diverted to recycling. This would further minimize impacts to landfill capacity. Therefore, the impact would be ***less than significant.***

[43] One cubic yard is equivalent to approximately 0.1125 tons uncompacted, or approximately 0.375 tons compacted, as waste would arrive at the landfill from trucks or other transport equipment.

Offsite Digital Billboards

Construction of the proposed offsite digital billboards would involve limited generation of solid waste associated with the installation of these facilities. Construction wastes would include scrap concrete, wood, metals, and other recyclable and non-recyclable construction related wastes. All construction period disposal would adhere to applicable City and state requirements, as discussed previously. Based on the limited extent of proposed construction at the offsite digital billboard sites, it is anticipated that sufficient landfill capacity would be available to serve the project, and that the Proposed Project would not result in or require construction of new solid waste management, processing, or storage facilities. Operation of the proposed offsite digital billboards would not generate municipal solid waste. Therefore, this impact is considered ***less than significant.***

Mitigation Measure

None required.

Cumulative Impacts

The following discussion provides an analysis of cumulative level impacts that could occur as a result of project implementation. The cumulative context for solid waste includes all development within the Sacramento Regional County Solid Waste Authority's service area, including the City of Sacramento and unincorporated portions of Sacramento County.

Impact 4.11-10: The Proposed Project would contribute to cumulative increases in solid waste.

As discussed therein, Lockwood Landfill, which is one of the primary landfills used for the City, is expected to have sufficient capacity to maintain operation for at least 100 years. Similarly, Kiefer Landfill, which is the other primary landfill used by the City, maintains approximately 51 years of available capacity. Growth proposed under the 2030 General Plan would result the production of an additional 282,950 tons of solid waste per year, less mandatory reductions of at least 50% by 2030, resulting in approximately 141,475 tons of solid waste per year (388 tons per day), in addition to existing waste generation.37 Available landfill capacity would be sufficient to accommodate these increases, along with the additional estimated 1,036 tons per year from the Proposed Project. Note also that due to recent economic conditions, development proposed under the 2030 General Plan exceeds more recent projections, and the 141,475 tons per year estimate shown above likely represents a conservative overestimate of waste generation. For these reasons, cumulative solid waste impacts would be ***less than significant***.

Mitigation Measure

None required.

4.11.4 Energy

Environmental Setting

Electricity

Electricity service within the Downtown project site and vicinity is provided by the Sacramento Municipal Utility District (SMUD). Electricity transmission lines in the Proposed Project and vicinity are primarily routed underground. The downtown Sacramento area generally is supplied by a series of underground 115 kilovolt (kV) transmission lines. These feed underground 12 kV and 21 kV distribution lines. An underground 115 kV loop connects SMUD Station A located at 6th and H Streets, Station B located at 19th and O Streets, and Station D located at 8th and R Streets. The 12 kV system is considered a high reliability network, with redundant feeds. It is intended to serve downtown Sacramento's core area. The 21 kV system serves areas that generally are not served by the 12 kV system, especially within the southern portion of downtown Sacramento.

Key transmission lines that could be used to supply the Proposed Project include a 21 kV distribution network and a 12 kV distribution network, including distribution lines, pad mounted transformers, and network/distribution manholes. The 115 kV transmission circuit also crosses the Downtown project site in north-south alignment; however, this transmission line does not directly serve the existing site and would not be used to supply power to the project. [44]

SMUD is planning to extend the existing 21 kV system in the immediate vicinity of the project, with additional future extensions anticipated along J Street and nearby alleyways. The project would be served by a combination of the 12 kV and 21 kV distribution systems. The existing 12 kV network has limited capacity for expansion; however, the 21 kV system has additional capacity that could be used for additional supply to the Proposed Project if needed.[45]

Table 4.11-14 summarizes estimated electricity demand for the existing Downtown Plaza and the existing Sleep Train Arena. Estimates for the Downtown Plaza were calculated based on electricity consumption factors used by the City to calculate demand for each of the use categories shown. Sleep Train Arena data reflect consumption at the existing arena, based on 2012 data. As shown, current electricity demand includes 2,826 kW for the Downtown Plaza, 4,795 kW for the Sleep Train Arena, for a total of 7,621 kW for all existing facilities.

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[44] Nolte, 2011. *Downtown Infrastructure Study*. September 2011.pp. VII-1, VII-3.
[45] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. VII-1 – VII-2.

TABLE 4.11-14
ELECTRICITY DEMAND, EXISTING FACILITIES

Land Use Category	2004-2012 Average Occupied Area	Units	Electricity Demand Factor	Electricity Demand (kW)
Retail/Commercial	493,294	square feet	0.0056 kW/sf	2,762
Office	139,057	square feet	0.00046 kW/sf	64
Hotel	0	units	2.44 kW/unit	0
Residential	0	units	4.22 kW/unit	0
Arena	480,000	square feet	Usage data, 2012	4,795
Total	N/A	N/A	N/A	7,621

SOURCE: ESA, 2013

Natural Gas

Natural gas service within the Downtown project site and vicinity (as well as the greater Sacramento area) is provided by PG&E. The downtown Sacramento area generally is served by a grid system of high pressure natural gas distribution pipelines that range in size from 4 inches to 12 inches in diameter. A secondary, low pressure system is composed of primarily 1-inch and 2-inch diameter pipelines that in some cases run parallel to high pressure mains. High pressure mains within or adjacent to the Downtown project site include 4-inch and 8-inch mains that run along J Street, 4-, 6-, and 8-inch mains that run along L Street, 3, 4, and 8-inch mains along 7th Street, a 4-inch main that runs along the southern end of 6th Street, and various 2-inch low pressure distribution lines. [46]

High-pressure lines carry gas at approximately 40 pounds per square inch (psi), whereas low pressure lines carry gas at about 0.25 psi. Most services in downtown Sacramento are provided from low pressure lines, except for major users that exceed about 3,000 cubic feet of natural gas per hour. [47]

PG&E has proposed limited upgrades in the Proposed Project vicinity in support of providing ongoing service. Specifically, the company has proposed replacement of an existing 2-inch line located in the I/J Street alley between 3rd and 5th Streets, with a high pressure 4-inch main. No major improvements are anticipated in support of the project, and PG&E anticipates that it would be able to provide service to any proposed low-pressure connection within the Downtown project site and vicinity. [48]

Offsite Digital Billboards

Digital signs would require electricity for operation. All proposed offsite digital billboard locations are situated within SMUD's service area for electricity. Therefore, all proposed offsite

[46] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. VI-1 – VI-2.
[47] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. VI-1 – VI-2.
[48] Nolte, 2011. *Downtown Infrastructure Study*. September 2011. pp. VI-1 – VI-2.

digital billboards would be supplied by SMUD. Generally, electricity supply needed for the proposed signs is either already available on site, or would be made available via connection to an existing tie in located immediately off site. The offsite digital billboards would not require natural gas.

Regulatory Setting

The following discussion provides a summary of state and local regulations and requirements that are applicable to the Proposed Project.

State

California Public Utilities Commission Requirements

The California Public Utilities Commission (CPUC) oversees requirements that are applicable to the design, installation, and operation/management of public utilities within the state. These include utilities that provide electricity, natural gas, and water. The CPUC requires that all utilities must be underground if the developable lots are less than three acres in size; however, lots larger than 3 acres in size are not subject to this requirement. CPUC also requires acquisition of permits for the construction of certain power line facilities or substations if the voltages would exceed 50 kV or if the substation would require the acquisition of land or an increase in voltage rating above 50 kV. Distribution lines and substations with voltages under 50 kV do not need to comply with this Decision, although the utility must still comply with local regulations and requirements.

City of Sacramento 2030 General Plan

The following goals and policies from the 2030 General Plan are relevant to utilities with respect to the project.

Goal U 1.1 High-Quality Infrastructure and Services. Provide and maintain efficient, high quality public infrastructure facilities and services throughout the city.

Policies

- **U 1.1.11 Underground Utilities.** The City shall require undergrounding of all new publicly owned utility lines, encourage undergrounding of all privately owned utility lines in new developments, and work with electricity and telecommunications providers to underground existing overhead lines.

- **U 6.1.5 Energy Consumption per Capita.** The City shall encourage residents and businesses to consume 25 percent less energy by 2030 compared to the baseline year of 2005.

- **U 6.1.7 Solar Access.** The City shall ensure, to the extent feasible, that sites, subdivisions, landscaping, and buildings are configured and designed to maximize solar access.

- **U 6.1.8 Other Energy Generation Systems.** The City shall promote the use of locally shared solar, wind, and other energy generation systems as part of new planned developments.

General Plan Consistency Analysis

Regarding Policy U 1.1.11, the Proposed Project would include undergrounding of applicable utilities. Through implementation of LEED certification programs and other anticipated efforts to reduce energy consumption and support efficiency, the Proposed Project would comply with policies directing reductions in energy consumption and, as feasible/applicable, implementation of renewable energy (Policies U 6.1.4 through U 6.1.8).

Methodology and Assumptions

The following impact analysis evaluates potential for Proposed Project related facilities to result in changes to existing infrastructure and supply relating to electricity and natural gas. The analysis focuses primarily on potential impacts to facilities located outside of the Downtown project site. Anticipated increases in demand for energy use were calculated by identifying and/or estimating existing demand for the existing Sleep Train Arena and the existing Downtown Plaza. Because these uses would be discontinued, these values were subtracted from the total anticipated energy demand of the project. Thus, potential impacts discussed below are evaluated for the net increase in demand that would result from project implementation.

Significance Criteria

The Proposed Project would result in a significant impact on utilities if it would:

1. require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impacts and Mitigation Measures

Impact 4.11-11: The Proposed Project would increase demand for energy, specifically electricity and natural gas.

Downtown Project Site

Construction

Project construction would require limited electrical or natural gas services. Construction period power would be provided on site by a combination of existing utility connections and small, portable, construction site generators. The Project would also be required to comply with SMUD’s pre-construction schedule requirements, which would ensure that sufficient electricity would be provided to the facility during and after construction, and also to existing facilities that would remain operational following completion of Project elements, including the proposed ESC. Therefore, adherence to these requirements would ensure that project construction would not

result in or require new or expanded energy production or transmission facilities. This impact is considered **less than significant**.

Operation

As noted previously, the Proposed Project would be served by a number of connections to SMUD's existing 21 kV distribution network, and via existing connections to SMUD's 12 kV distribution network. Table 4.11-15 summarizes anticipated electricity demand from the project, including the net increase over existing demand. To review existing electricity demand, please refer to Table 4.11-14. As shown in Table 4.11-15, the Proposed Project would result in a net increase in demand of approximately 4,988 kW. This figure accounts for peak demands from the proposed ESC, in order to ensure that sufficient supply would be available during major events.

TABLE 4.11-15
ELECTRICITY DEMAND, PROPOSED FACILITIES AND NET INCREASE

Land Use Category	Proposed Use	Units	Electricity Consumption Factor	Electricity Consumption (kW)	Net Increase (kW)
Retail/Commercial	350,000	square feet	0.0056 kW/sf	1,960	-802
Office	475,000	square feet	0.00046 kW/sf	219	155
Hotel	250	units	2.44 kW/unit	610	610
Residential	550	units	4.22 kW/unit	2,321	2,321
ESC	697,000	square feet	N/A	7,500	2,705
Total	**N/A**	**N/A**	**N/A**	**12,610**	**4,988**

SOURCE: ESA, 2013

The project would require installation of additional facilities on site, including additional pad mounted transformers, transformer vaults, network and distribution manholes, and additional distribution lines throughout the Downtown project site. However, SMUD has reviewed the Proposed Project and confirmed it will be able to serve the Proposed Project's demand load.[49] It is anticipated that the utility would be able to serve the Proposed Project without additional requirements for new offsite electricity supply or conveyance facilities.

Natural gas would be used on site for the proposed ESC, but also for proposed residential, commercial, and office uses. The primary use of natural gas within these areas would be for space heating and water heating. As noted above, it is not anticipated that the Proposed Project would result in new requirements for major improvements or other new infrastructure off site. PG&E anticipates that its existing facilities would be sufficient to provide service to the project. Additional on-site facilities (distribution lines) would be constructed within the Downtown project site. However, construction of these facilities would be included within the scope of the project. Therefore, potential effects on energy related facilities would be limited, and this impact is considered ***less than significant***.

[49] Bodipo-Memba, Jose, 2013. Personal communication via e-mail between Robert Eckard of ESA and Jose Bodipo-Memba of the Sacramento Municipal Utility District. October 30, 2013.

Offsite Digital Billboards

The proposed offsite digital billboards would not require natural gas during construction or operation. During operation, the proposed offsite digital billboards would require electricity. Electricity would be provided by SMUD via connections to existing distribution lines located either on or adjacent to the proposed offsite digital billboard sites. Therefore, additional offsite energy facilities are not expected to be required, and this impact is considered ***less than significant.***

Mitigation Measure

None required.

Impact 4.11-12: Project construction could interfere with a buried, existing 115-kV power line.

Downtown Project Site

Construction

SMUD's existing power distribution infrastructure on the Downtown project site includes an existing 115-kV power line that crosses the project site in a north-south alignment, as discussed above. This power line is sensitive to weight, and could be harmed or crushed in the event that heavy equipment or other heavy objects are placed on top of the line during project construction. Damage to the existing line could result in an interruption of electricity supply. This impact is considered ***potentially significant***.

Operation

Operation of the project is not anticipated to interfere with the 115-kV power line. No impact would occur.

Offsite Digital Billboards

The proposed offsite digital billboards would not interfere with the 115-kV power line. No impact would occur.

Mitigation Measure

4.11-12 (ESC/PUD)

Prior to the initiation of construction, the project applicant shall work with SMUD to identify the location of the 115-kV, and shall implement measures to avoid the use of heavy machinery or the placement of heavy objects on or in the immediate vicinity (i.e., within 10 feet on either side of the line) of the line during construction. The applicant shall work with SMUD to identify maximum weight limits within the 10-foot buffer area prior to the initiation of construction activities on site.

Impact Significance After Mitigation: Mitigation Measure 4.11-12 would protect the 115-kV from damage, thereby reducing the above impact to a ***less-than-significant*** level.

Cumulative Impacts

The following discussion provides an analysis of cumulative level impacts that could occur as a result of project implementation. The cumulative context for energy includes those facilities that directly serve SMUD's and PG&E's service areas.

Impact 4.11-13: The Proposed Project would contribute to cumulative increases in demand for energy.

Continued growth throughout SMUD's and PG&E's entire service areas could contribute to ongoing increases in demand for electricity and natural gas. These anticipated increases would be countered, in part, by ongoing increases in national, statewide, and local requirements and incentives to support construction or retrofit of buildings with increased energy efficiency. For electricity supply, overall electricity supply during most conditions is adequate. However, as demand continues to increase in SMUD's service area, temporary shortfalls could occur on SMUD's system (and other portions of the statewide grid) during temporary periods of high peak demand, SMUD is actively planning for anticipated increases in peak demand through 2050. Peak demands occur during the summer during hot weather conditions when people run their air conditioners. Although SMUD's facilities reach peak demand for only about 40 hours per year, meeting demand during peak periods is a key planning consideration for the utility.[50] SMUD is actively planning to offset growth in peak demands by encouraging and deploying energy efficiency and conservation measures within its service area.[51] Through a combination of increases in efficiency and deployment of power management strategies including power imports during peak periods, SMUD expects to maintain sufficient capacity to provide power to its service area, including the project, at least through 2050.

With respect to natural gas, PG&E sources natural gas from a combination of producers and suppliers located in Canada and the U.S. Southwest. The utility maintains contracts with producers and suppliers over daily, monthly, and longer term agreements. PG&E also maintains gas storage facilities and a network of conveyance and distribution pipelines within its service area. In order to address future increases in demand, PG&E maintains an active planning process to identify and deploy additional conservation measures to minimize increases in demand, to secure continued natural gas supply, and to maintain sufficient distribution system capacity within its service area. With respect to the Downtown project site and vicinity, existing and planned infrastructure is anticipated to be sufficient to maintain service to the Proposed Project

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50 SMUD, 2013. *The Challenge of Peak Demand*. https://www.smud.org/en/about-smud/company-information/challenge-of-peak-demand.htm. Accessed October 16, 2013.

51 SMUD, 2013. *The Challenge of Peak Demand*. https://www.smud.org/en/about-smud/company-information/challenge-of-peak-demand.htm. Accessed October 16, 2013.

and other cumulative projects. Therefore, the project contribution to cumulative demand for natural gas supply would not be cumulatively considerable.

Additionally, conservation policies promulgated by the City, including those set forth in the City's 2030 General Plan (energy rebate programs, energy efficiency improvements, energy efficiency audits, and energy efficient incentives, among others) are expected to support increased energy conservation among development projects within the City. Although continued development including the Proposed Project could result in an overall increase in energy demand on suppliers, anticipated increases would be affected positively by these requirements. Cumulative impacts on energy production and transmission facilities therefore are not significant and the project's contribution is not cumulatively considerable. As such ,this impact is considered ***less than significant***. Potential for interference with the existing 115-kV power line, as discussed for 4.11-12, is considered a site specific impact only, and therefore was not considered in this evaluation of cumulative scenario impacts.

Mitigation Measure

None required.

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