4.O Utilities, Service Systems, and Water Supply

4.O.1 Introduction

This section describes existing utilities and service systems in the Project Site and vicinity, including water and wastewater utilities, drainage facilities, and solid waste management. This section also provides a description of water demand, supply, and reliability associated with development of Project Site, including the proposed water transfer agreement for purchase and transfer of water supplies from the Oakdale Irrigation District (OID) to the City of Brisbane, along with an evaluation of environmental effects associated with the proposed water transfer agreement. Feasible mitigation measures are identified to reduce significant impacts. Energy, energy infrastructure, and renewable resources are discussed in Section 4.P, *Energy Resources*.

4.O.2 Environmental Setting

Water Supply

Service Within Brisbane

The City of Brisbane is the water retailer to a service area of almost 4 square miles and a service population of approximately 4,282 (approximately 1,920 service connections) (Flanagan, 2013). The City operates two water districts, which are managed as a single water system. The Brisbane Water District (BWD) serves Central Brisbane, Sierra Point, and the Baylands, while the Guadalupe Valley Municipal Improvement District (GVMID) covers an area of approximately 0.5 square mile and serves the Crocker Industrial Park and the North East Ridge residential development (City of Brisbane, 2006a). Both districts are interconnected, giving the City the capability of moving water, at no cost, between the two districts (City of Brisbane, 2006b). The existing Recology site is served by the San Francisco Public Utilities Commission (SFPUC).

Supply Source – SFPUC

The City does not have its own groundwater or surface water supplies and purchases potable water from the SFPUC, which owns and operates a regional water system that serves San Francisco and the southern San Francisco Bay Area region. The source of the SFPUC's water currently being delivered to Brisbane is primarily from Tuolumne River diversions, and tributaries thereto, stored in the Hetch Hetchy Reservoir and Lake Eleanor in Yosemite National Park, and Lake Lloyd in the Stanislaus National Forest, in combination with supply from the SFPUC's local East Bay (Alameda) and Peninsula watersheds. The Hetch Hetchy system water comes from Sierra snowmelt and is generally of high quality, requiring only primary disinfection and pH adjustment to control corrosion in the pipelines (SFPUC, 2005). Occasionally water supplies to the City may be supplemented or come directly from the SFPUC's reservoirs in the East Bay or San Mateo Peninsula from local runoff that flows into reservoirs in the Alameda and Peninsula watersheds. This water requires filtration and treatment and is usually blended with Hetch Hetchy water before it is sent to customers. The SFPUC delivers water to Brisbane through five turnouts along the Crystal Springs pipelines.

2009 Water Supply Agreement

In July 2009, the SFPUC entered into the Water Supply Agreement with its Wholesale Customers (2009 Agreement) to replace the original 1984 contract that expired in June 2009 (SFPUC, 2009). Individual contracts with each of the Wholesale Customers were then executed with term dates to begin on July 1, 2009 and expire on June 30, 2034. The 2009 Agreement outlines the water rates for the SFPUC's wholesale customers and the allocation of supply. The 2009 Agreement continues the 184 million gallon per day (mgd) Supply Assurance established in the 1984 Agreement. This Supply Assurance is the total maximum annual supply amount allocated to the Wholesale Customer group. It is not a guarantee for water delivery in every year, but is the basis for establishing individual allocations to each wholesale customer. These supply allocations can be reduced during water shortages, emergencies, or maintenance of the system, and the 2009 Agreement establishes the rules and procedures for such delivery reductions.

Water System Improvement Program

In October 2008, the SFPUC adopted the San Francisco Public Utilities Commission's Water System Improvement Program (WSIP) (SFPUC Resolution No. 08-200). The SFPUC's WSIP is an extensive $4.6 billion infrastructure program to upgrade the regional water system facilities that extend from the Sierra Nevada mountains to San Francisco to provide improved delivery and supply reliability. WSIP infrastructure projects throughout the SFPUC's regional system are well underway, including major reservoir and pipeline upgrades. The WSIP is designed to meet projected water delivery needs from the regional water system through a planning horizon year of 2030. Originally, the program included developing additional water supplies to meet future customer demands out to 2030. However, the program alternative adopted by the SFPUC, called the Phased WSIP Variant, provided for full implementation of all proposed WSIP facility improvements to achieve the public health, seismic safety, and delivery reliability goals as soon as possible, but phased implementation of the water supply program to meet projected water purchases through 2030 (SFPUC, 2011 – UWMP p. 22). As described in the SFPUC's 2010 Urban Water Management Plan (UWMP), the adopted WSIP included a requirement to re-evaluate 2030 demand projections for its water supply customers, supply purchase requests, and water supply options and make a decision by the end of 2018 about future water deliveries from the regional water system with respect to whether to increase the supply assurance on water deliveries from the regional system or not (SFPUC, 2011). Based on the water demand studies completed as part of developing the WSIP, the 2030 water purchase estimates by the Wholesale Customers were projected to increase to a maximum of 209 mgd, but the adopted WSIP program deferred the 2030 water supply element of the WSIP and held deliveries from the regional water system to the Wholesale Customer to the existing limit of 184 mgd. In accordance with the adopted WSIP, the SFPUC will revisit the demand projections and determine water supply deliveries through 2030 by 2018.

Additional Water Supply Provisions

The 2009 Agreement reflects the SFPUC's decision to re-evaluate customer demand and regional water system deliveries in 2018 by incorporating an "Interim Supply Limitation" that limits water sales to the SFPUC's Retail and Wholesale Customers to a combined total of 265 mgd from the

regional water system watersheds (i.e., the Tuolumne, Alameda, and Peninsula watersheds) through 2018. Under the Interim Supply Limitation, the Wholesale Customers receive a combined 184 mgd, representing 69.4 percent of the SFPUC's water supplies. Further, on December 14, 2010, the SFPUC established each individual wholesale customer's share of the Interim Supply Limitation, referred to as "Interim Supply Allocations" ("ISAs" – SFPUC Res. No. 10-0213), that is effective until December 31, 2018.

For BWD and GVMID, the 2009 Agreement includes a total supply guarantee (i.e., total maximum annual delivery of water supply) of 0.46 mgd for BWD and 0.52 mgd for GVMID for a combined 0.98 mgd (See **Table 4.O-1**) (SFPUC, 2009). BWD's and GVMID's combined Interim Supply Agreement is 0.96 mgd, almost their full maximum allocation (98 percent).

TABLE 4.O-1
SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC)
WATER SUPPLY GUARANTEE FOR CITY OF BRISBANE

Water District	100 Cubic Feet/Year	Million Gallons/Year	Million Gallons per Day
Brisbane Water District	224,435	167.88	0.46
Guadalupe Valley Municipal Improvement District	254,436	190.32	0.52
Total Supply Guarantee	**478,871**	**358.20**	**0.98**

SOURCE: SFPUC, 2009

Water Shortages

Per Article 3, Section 3.01 of the 2009 Agreement, although BWD and GVMID have a supply guarantee from the SFPUC, this guarantee can be reduced during emergencies, drought situations, or maintenance activities. According to the 2010 UWMP, the SFPUC can meet water demands for all wholesale customers in average and above average water years. In order to address allocation during dry years, the Interim Water Shortage Allocation Plan (IWSAP) was created and outlined reductions between the SFPUC and its Wholesale Customers (as a whole) of up to 20 percent. Each year, the SFPUC forecasts its total water supplies and the water demands of its customers to determine if water reductions are necessary. **Table 4.O-2** below shows wholesale customer allocations depending on the level of systemwide water reductions required. Under normal hydrologic conditions, Wholesale Customers receive 69.4 percent of the SFPUC's total water supply of 265 mgd, or 184 mgd. During a 20-percent reduction in total SFPUC supply (212 mgd total available), Wholesale Customers would receive 62.5 percent (or 132.5 mgd). Thus, a 20-percent systemwide drought reduction scenario results in a total 28-percent reduction in supplies for Wholesale Customers. Individual agency cutbacks could be higher depending on the allocation of the reduced supply (CDM Smith, 2012).

In addition, the SFPUC presented Wholesale Customer allocations in normal, dry, and multiple dry years in the 2010 UWMP through 2035 as shown in **Table 4.O-3** below. The table shows that the SFPUC would have sufficient water supplies to meet wholesale water demands through 2035,

TABLE 4.O-2
WATER SHORTAGE ALLOCATION PLAN

Level of Systemwide Reduction in Water Use Required	SFPUC Share of Water Available	
	Percent Total SFPUC Supply Available (Volume in MGD)	Percent Wholesale Customers Share of SFPUC Total (Volume in MGD)
No reductions	100% (265)	69.4% (184)
5% or less	95% (251.75)	64.5% (162.37)
6% through 10%	94% to 90% (249.1 to 238.5)	64% (152.64)
11% through 15%	89% to 85% (235.85 to 225.25)	63% (141.9)
16% through 20%	84% to 80% (222.6 to 212)	62.5% (132.5)

NOTE: This table is intended to provide the general ranges of reductions in supply and corresponding reduction in deliveries by the SFPUC on a systemwide level for all Wholesale Customers.

SFPUC = San Francisco Public Utilities Commission, mgd = million gallons per day

SOURCE: CDM Smith, 2012

TABLE 4.O-3
SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC) WHOLESALE ALLOCATIONS IN NORMAL, SINGLE DRY, AND MULTIPLE DRY YEARS

Year Types	Normal Year		Single Dry Year		Multiple Dry Years					
					Year 1		Year 2		Year 3	
Year	MGD	%	MGD	%	MGD	%	MGD	%	MGD	%
2010 through 2035	184.0	100	152.6	83	152.6	83	132.5	72	132.5	72

NOTE: mgd = million gallons per day

SOURCE: CDM Smith, 2012

with the assumption that the supply assurance of 184 mgd will not be exceeded by increased demands or from new water supplies developed beyond those necessary to meet demands of 2018. During the multiple dry years, a shortage of up to 17 percent could occur for Wholesale Customers and would affect both BWD and GVMID.

Current Water Use

The City of Brisbane's water use for 2006 through 2011 is presented in **Table 4.O-4**. The average annual use for the most recent year (2011) is 0.55 mgd. As shown in the table, annual water use has decreased within Brisbane almost by 0.1 mgd over the last 5 years, as it has generally across the Bay region, due to a combination of the economic recession, implementation of conservation measures, and drought years.

The existing Recology site that is partially within Brisbane and partially within San Francisco is provided with water service by the SFPUC directly. The most recent water demand for operations

TABLE 4.O-4
CITY OF BRISBANE ANNUAL WATER USE (2006 THROUGH 2011)

Year	BWD MG/Year	GVMID MG/Year	Total MG/Year	MGD
2006	132.51	102.68	235.19	0.65
2007	83.98	145.23	229.21	0.63
2008	98.52	137.18	235.70	0.65
2009	101.88	114.50	216.38	0.59
2010	97.49	106.64	204.13	0.56
2011	107.14	95.61	202.75	0.55

NOTE: BWD = Brisbane Water District, GVMID = Guadalupe Valley Municipal Improvement District, MG = million gallons, mgd = million gallons per day

SOURCE: Flannagan, 2012

at the Recology site was 0.05 mgd, used for drinking water, toilets, cooling towers, truck washes, and other uses specific to Recology's recycling processes (Arup North, 2010). Since Recology is supplied water by the SFPUC directly, its demand is not included in Brisbane's existing demand figures.

Projected Water Demand

The projected water demand for Brisbane from 2015 through 2035 is shown in **Table 4.O-5** below. Future water demands for the City of Brisbane (both BWD and GVMID) were developed in 2010 using a demand model called the DSS model (CDM Smith, 2012). The DSS model used water demand in 2001 as the base year to determine future demand to 2030. The model was also used to determine conservation potential. The results of the model were provided to the SFPUC to be used in planning studies for the WSIP and have been published in the SFPUC's 2010 Urban Water Management Plan (UWMP) (SFPUC, 2011). These projections account for changes to the California Plumbing Code requiring water-efficient plumbing fixtures and conservation measures that will continue to be implemented by the SFPUC in the future.[1] The SFPUC's 2010 UWMP estimated a demand of 1.07 mgd in 2035 for the City of Brisbane that was based on the DSS model projections through 2030 (CDM Smith, 2012) without the Baylands or three planned future Sierra Point developments.[2] Thus, even without proposed Project Site development and other developments at Sierra Point, these projections show that the City's water demand increases from the current level of 0.55 mgd presented for 2011 and would exceed the total supply assurance of 0.98 from the SFPUC sometime after 2015. Development and associated water demand have not

1 Low-flow plumbing fixtures, for example, are required by law. Thus, as older homes are sold, they are required to be upgraded to low-flow fixtures. As a result, it is reasonable to assume a certain number for homes will be upgraded each year and thus conservation amounts will increase. This can be true in other areas where conservation is required, such as possibly landscaping. The demand modelers tailored the assumptions for each city to reflect what each city actually requires in terms of conservation. The model assumptions are thorough and detailed. The conservation estimates are reasonable.

2 This modeling was initially done for the SFPUC's WSIP planning effort, by URS, with input from all customers such as Brisbane.

TABLE 4.O-5
EXISTING AND FUTURE PROJECTED WATER DEMAND FOR THE CITY OF BRISBANE 2011-2035 (in million gallons per day)

Water District	2011[1]	2015	2020	2025	2030	2035
BWD	0.29	0.49	0.50	0.51	0.52	0.53
GVMID	0.26	0.49	0.52	0.53	0.54	0.54
Total	**0.55**	**0.98**	**1.02**	**1.04**	**1.06**	**1.07**

NOTE: BWD = Brisbane Water District, GVMID = Guadalupe Valley Municipal Improvement District

[1] Column data from Table 4.O-4.

SOURCE: SFPUC, 2011

been increasing as rapidly as projected in the 2010 UWMP; nonetheless, it is projected that the City's demand will ultimately exceed its current water allocation from the SFPUC. By 2035, the projected demand of 1.07 mgd would be 0.9 mgd above the City's existing supply allocation from the SFPUC.

The most recent water demand projection for operations at the Recology site was 0.05 mgd. Since the Recology site expansion involves modernization of existing onsite facilities and consolidation of existing offsite facilities within San Francisco, Recology's total demand for water from the SFPUC is not expected to change as the result of the expansion proposed in the CPP-V scenario; no change in Recology operations is proposed under other Project Site development scenarios (Arup North, 2010).

Oakdale Irrigation District

As discussed in Chapter 3, *Project Description*, acquisition of a supplemental water supply via a water transfer with the Oakdale Irrigation District (OID) has been proposed to meet the water supply needs of Project Site development and a remaining increment of additional development allowed under the Brisbane General Plan. OID is located in the northeast portion of the San Joaquin Valley in Stanislaus and San Joaquin Counties. The majority of OID's water supplies come from pre-1914 surface water rights that enable OID to divert up to 257,074 acre-feet per year[3] (AFY) from the Stanislaus River at Goodwin Dam upstream of the City of Oakdale without restrictions. OID's rights to divert this water are senior to other rights along the river and give OID priority to divert over other downstream water rights holders.

In 2007 OID prepared, certified, and adopted the *Oakdale Irrigation District Water Resources Plan (WRP) Programmatic Environmental Impact Report* (PEIR) (State Clearinghouse Number 2006012075) to provide for the long-term management of its water resources. The WRP PEIR is incorporated in its entirety by reference into this EIR; it can be viewed at the City of Brisbane Community Development Department during normal working hours and is available online at

[3] One acre-foot is equal to 325,851.429 gallons. Therefore, 2,400 AFY is equivalent to 782,043,429.6 gallons per year, or 2.14 million gallons per day (mgd).

http://www.oidwaterresources.org/. The WRP goals included providing for long-term protection of OID's water rights, addressing regulatory challenges, rebuilding and modernizing the dated and inefficient water supply infrastructure, and developing affordable financing for future improvements. Recommendations for policy, organizational, and facility improvements to accommodate current and future water demands within OID are set forth in the comprehensive WRP. The WRP accounts for changes within OID's service area over the next 20 years, including water demand decreases due to land use changes from agriculture to urban and pasture to orchards, and water supply increases resulting from infrastructure improvements. As such, the WRP anticipates an increase in water supplies made available for transfer or annexation from 30,000 acre-feet to 50,000 acre-feet for firm water transfers, and from 11,000 acre-feet to 17,000 acre-feet for variable water transfers, resulting in a total volume (firm and variable) of available water equal to approximately 67,000 acre-feet by 2030. A "firm water transfer" is defined in the WRP as the quantity of water that would be made available in all water years irrespective of the hydrologic yield of the basin.

The WRP PEIR concluded that implementation of the WRP improvements in infrastructure would result in decreasing losses of water in OID's dated and leaky delivery system. The PEIR analyzed environmental impacts related to implementation of the WRP including those from construction and operation of improvements, operations, maintenance, and export of water to customers outside OID's service area. The PEIR provided program-level review of the impacts of such transfers within OID's service area and a description of existing transfers outside OID's service area of about 41,000 AFY. The PEIR concluded that there were no significant impacts on OID's service area from transfers to customers outside its service area. Subsequent to the approval of the WRP and certification of the WRP PEIR, transfers of up to 41,000 AFY water from OID's system to Modesto Irrigation District's (MID) system continued on a yearly basis until recently for purchasers including the Stockton East Water District and MID. Although the 2007 WRP PEIR did not analyze impacts of specific water transfers to specific recipients outside OID in the future, it did analyze continued and increased transfer of water outside the service area above the then-current volumes (41,000 AFY in 2007) up to 67,000 AFY and determined that such transfers would not result in significant environmental impacts occurring within the OID service area (OID, 2007). Environmental review of the proposed water transfer between OID and Brisbane tiers from the analysis set forth in OID's certified 2007 WRP PEIR and is provided in the impacts analysis section below (see Impact 4.O-1).

Water Service and Facilities

Water service is provided to the Baylands by the City through the Brisbane Water District, which as previously noted is one of the two separate water districts that are interconnected and are operated together by the City to maximize circulation and move water freely across the districts when needed.

Water Supply and Treatment

The water supplied by the SFPUC to Brisbane is primarily from the Tuolumne River, which is diverted and delivered via the Hetch Hetchy Reservoir and Aqueduct that are part of the SFPUC's

regional water system. This water comes from the High Sierra snowmelt and is generally of high quality, requiring only primary disinfection and pH adjustment to control corrosion in the pipelines (SFPUC, 2005). A smaller portion of water supplied by the SFPUC is from local runoff that flows into reservoirs in the Alameda and Peninsula watersheds. This water requires filtration and treatment, and is usually blended with Hetch Hetchy water before it is sent to customers. SFPUC water is continually monitored and tested to ensure it meets or exceeds United States Environmental Protection Agency (U.S. EPA) and California Department of Public Health (DPH) primary and secondary drinking water standards for disinfection and health safety (SFPUC, 2008). In addition, because there is a potential for degradation from loss of residual disinfectant and microbial growth due to excessive detention time in the City's distribution system (City of Brisbane, 2003b), the City monitors water at the water storage tanks and flushes water mains to maintain federal and state water quality standards.

Water Distribution System

Five turnouts from the SFPUC Crystal Springs pipelines #1 and #2 supply water to the Brisbane area. Brisbane's water distribution system is made up of almost 25 miles of water mains, and is currently divided into six pressure zones (BWD 1 through 3 and GVMID 1 through 3)[4] serviced by four pumping stations and five storage tanks (City of Brisbane, 2003b). The Brisbane Supervisory Control and Data Acquisition system monitors and controls the City's water system. Two pump stations located in the hills south of downtown Brisbane serve demands in the upper Brisbane pressure zones and maintain storage in the Margaret and Glen Park tanks. Two pump stations located in the GVMID service area serve demand in upper GVMID pressure zones and maintain storage in the Crocker and Guadalupe tanks (Brown & Caldwell, 2011). **Figure 4.O-1** shows the existing water distribution system in Brisbane.

The BWD/GVMID system has three emergency water interconnections, two with Daly City to the north and one with California Water Service Company (CalWater) to the south (See **Figure 4.O-1**). Memorandums of Understanding exist between Brisbane and Daly City and between Brisbane and CalWater to provide emergency fire flow protection and an emergency water source during any unforeseen circumstances of short duration. The emergency water interconnections are intended only for emergency situations and not to provide water service to meet a higher daily demand than anticipated or to provide capacity for new service connections. The locations of the emergency water interconnections are as follows:

- **Carter Street and Guadalupe Canyon Parkway:** provides emergency water supply from Brisbane to Daly City.
- **Main Street, east of Linda Vista Drive:** provides emergency water supply from Daly City to Brisbane.
- **Shoreline Court, south of Sierra Point Parkway:** provides emergency water supply in both directions between Brisbane and CalWater.

[4] Two future pressure zones (BWD 4 and GVMID 4) are planned.

Water Storage

Brisbane has five existing water storage tanks (see **Figure 4.O-1** for locations), with capacities ranging from 0.2 million gallons (MG) to 1.0 MG, for a total water storage capacity of 2.9 MG (City of Brisbane, 2003b; Brown & Caldwell, 2011). According to the City's 2003 Water Master Plan, existing storage capacity may not be adequate for the City because:

- There is no storage within the BWD 1 and GVMID 1 pressure zones that connect directly to the SFPUC pipelines; therefore peak demand flows and fire flows must be drawn directly from these pipelines.
- The City may have difficulty providing emergency water delivery during times when SFPUC supplies are not available.
- An earthquake that damages SFPUC infrastructure may result in reduced deliveries to Brisbane.
- Areas around the San Bruno Mountain may need additional storage in order to provide adequate fire flows in the event of a wildfire.

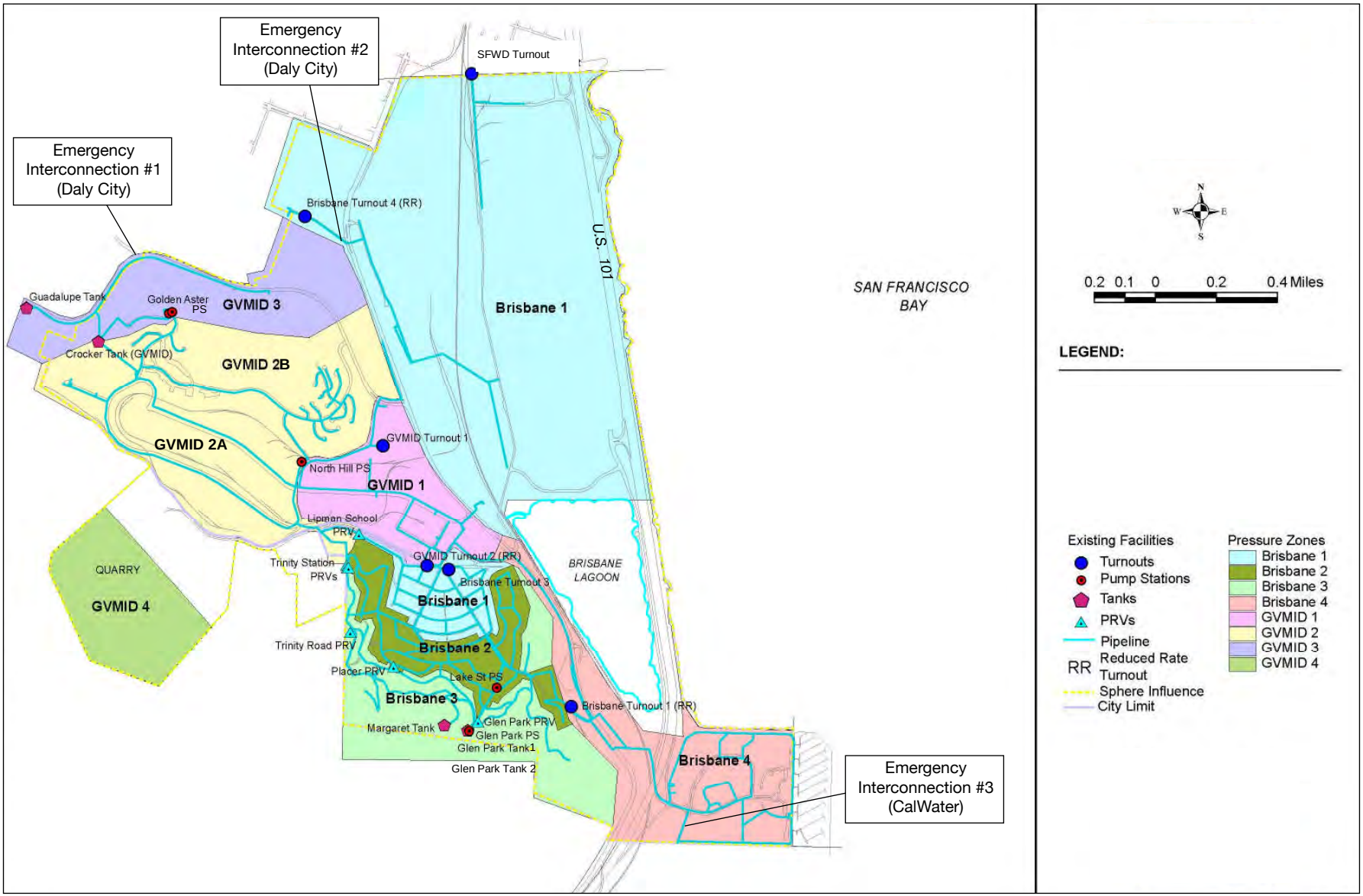
The City's 2003 Water Master Plan recommended a 1.3-MG storage tank increase to meet peak demands and fire flows. The plan also recommended a new 0.2-MG tank at the existing Glen Park Tank site at the southern end of the City and a new 1.1 MG tank off Guadalupe Canyon Parkway. The new 1.1-MG tank would be centrally located within the system and both new tanks would be close to several major potential fire flow locations (City of Brisbane, 2003b). In 2006, the second 0.2-MG tank was added to the Glen Park site, as recommended in the 2003 Water Master Plan, increasing the total storage from 2.7 MG to about 2.9 MG (Brown & Caldwell, 2011).

Recycled Water

The City does not currently have access to a supply of recycled water, and San Francisco currently produces and uses only a very small quantity of recycled water. Disinfected secondary-treated recycled water from the SFPUC's Southeast Water Pollution Control Plant (SEP) is used on a limited basis (less than 1 million gallons per day [mgd]) for plant wash-down operations, and is also provided to construction contractors for soil compaction and dust control during construction (SFPUC, 2006; SFPUC, 2011). This limited use of recycled water is generally not enough to offset existing retail water demands and does not affect wholesale customer demands. While there are additional recycled water projects currently under construction in San Francisco, they would not provide recycled water to Brisbane. Therefore, there is currently no opportunity for Brisbane to obtain recycled water.

Water Service to the Baylands Project Site

The Project Site is located within the BWD 1 pressure zone (see Figure 4.O-1). Existing City infrastructure includes a 12-inch water line that runs south of the northwestern corner of Bayshore Boulevard and Main Street and a 14-inch line that connects to the 12-inch line at Bayshore Boulevard and Main Street, which runs to Tunnel Avenue in the southwestern corner of the site. There is also a 12-inch line at the intersection of Bayshore Boulevard and Old County Road in the



SOURCE: City of Brisbane, 2011

Brisbane Baylands . 206069

Figure 4.O-1

City of Brisbane Existing Water Distribution System

southern portion of the site (City of Brisbane, 2006). GVMID has a 12-inch water line connected from the SFPUC meter facility on North Hill Drive near Guadalupe Canyon Parkway near the southwestern corner of the Project Site (City of Brisbane 2006).

There are several other existing water facilities in the vicinity of the Project Site:

- Daly City has a 6-inch water line on MacDonald Avenue near the northwest corner of the Project Site.
- The SFPUC has a12-inch water line on Tunnel Avenue at the north end of the site that provides water service to customers in Brisbane.
- GVMID has a 12-inch water line connected from the SFPUC meter facility on North Hill Drive near Guadalupe Canyon Parkway near the southwestern corner of the Project Site (City of Brisbane, 2006).

Wastewater

Wastewater services to the Baylands, except for the existing Recology site, are provided by the Bayshore Sanitary District (BSD) for all upland areas of the Baylands north of Brisbane Lagoon (see **Figure 4.O-2**). The BSD maintains wastewater collection facilities and contracts with the SFPUC for wastewater treatment. The existing Recology site is provided with wastewater services directly by the SFPUC. Wastewater generation for the Recology site is estimated to be 18.7 MG (Arup North, 2010).[5]

Bayshore Sanitary District

The BSD is a special district independent from the City. The BSD was created in 1925 to collect wastewater from unincorporated areas of San Mateo County. In 1963, when Brisbane was incorporated as a City and a remaining unincorporated area once referred to as Bayshore City was annexed to Daly City (Gallagher, 2005), the BSD was retained as the sewer agency serving the Bayshore area of Daly City and the northern portion of Brisbane, including the Baylands north of the lagoon. The Brisbane Industrial Park and the Kinder Morgan Energy Tank Farm are also within BSD jurisdiction and served by the BSD.

The BSD currently maintains three sewer lines within the Project Site: a line that flows to the Tunnel Avenue Interceptor, a line that flows to the Carlyle Pump Station, and a line along Geneva Avenue and associated side streets from Pasadena to Schwerin (BSD, 2001). The BSD does not own or operate wastewater treatment facilities and contracts with the SFPUC for the treatment of peak wastewater discharge of 6.7 mgd at the SEP. The current wastewater agreement prohibits the BSD's wastewater flows from containing any stormwater flows. The established protocol between the BSD and the SFPUC for any new development that would generate wastewater in excess of 0.200 mgd is for the BSD to notify staff at the SFPUC to confirm available capacity

[5] Wastewater generation from the Recology site is approximately the same as water use. Water use, and therefore wastewater flows, remain generally constant from year to year. The most recent information about water use at the Recology site is from 2008 (Arup North, 2010).

SOURCE: Bayshore Sanitary District, Undated

Brisbane Baylands . 206069

Figure 4.O-2
Bayshore Sanitary District Service Area

(UPC et al., 2011). Current annual BSD discharges to the SFPUC are approximately 0.41 mgd (Yeager, 2012). The BSD contract with the SFPUC does not have a maximum capacity allocation for wastewater discharge to the SEP (UPC et al., 2011).

The BSD has 53,810 feet of gravity-fed sewer lines that range from 6 to 24 inches in diameter. Approximately 17,460 feet of pipeline in the system date back to 1925 and have not been lined or replaced (BSD, 2006). Flows from Daly City and the Project Site are collected through a system of gravity pipes and force mains at the BSD lift station, at the intersection of Bayshore Boulevard and Industrial Way. From the lift station, wastewater flow is pumped to the SFPUC's 78-inch combined sewer line and eventually conveyed to the SEP (UPC et al., 2011).

The Carlyle Pump Station and force main were constructed in 1971 to replace an older pump station near Tunnel Avenue. The force main is a 3,320-foot-long asbestos cement-lined pipe with a 14-inch diameter that discharges into an SFPUC manhole (BSD, 2001).

Table 4.O-6 presents the wastewater flows for the BSD from 2007 to 2011.

TABLE 4.O-6
ANNUAL WASTEWATER FLOWS FOR BAYSHORE SANITARY DISTRICT, 2007-2011

	For Period Ending June 30				
	2011	**2010**	**2009**	**2008**	**2007**
Total Annual Flow (MG)	148.17	144.57	137.30	140.80	141.75
Daily Flow (mgd)	0.41	0.40	0.38	0.39	0.39

NOTES: MG = million gallons, mgd = million gallons per day

SOURCE: Adapted from Yeager, 2012

City of Brisbane

Wastewater collection is provided by the City to approximately 3,600 residences and several commercial and light industrial areas. The City has a contract with the SFPUC for the treatment of 6.0 mgd of total daily dry weather sewage flow (City of Brisbane, 1999) with a maximum peak dry weather daily flow of 6.7 mgd (UPC et al., 2011). The City's average daily dry weather wastewater flows for June through August 2011 were 0.11 mgd (Flanagan, 2012) or approximately 0.12 percent of the dry weather capacity at the SEP, and reported average wet weather flows are approximately 1.5 mgd (UPC et al., 2011) or approximately 0.6 percent of wet weather capacity at the SEP. Base sanitary dry weather flows projected for future buildout through 2020 (mainly planned developments and new office districts) are 0.45 mgd exclusive of future development of the Baylands (City of Brisbane, 2003a) which leaves approximately 5.5 mgd of wastewater flow capacity available for the City's contractual wastewater flow limit with the SFPUC.

Wastewater flows from the City are not allowed to contain stormwater. Wastewater flows are sent to the Valley Drive Pump Station, where flow is conveyed north on Bayshore Boulevard through force mains to a 78-inch combined storm and wastewater pipeline at Sunnydale Avenue operated

by the SFPUC. This line flows by gravity under US Highway 101 to the Harney Way Box Storage Culvert and Sunnydale lift station. Flow is then conveyed from the lift station through a series of conduits, tunnels, and additional lift stations, to the SFPUC's SEP for treatment (BKF, 2011).

The City's wastewater collection system is made up of approximately 80,000 feet of laterals, mains, and trunks; 20,000 feet of force mains; and four pumping stations. There are also approximately 4,350 feet of private sewers. Gravity collection system mains and small pumping stations convey the City's wastewater flow to the Valley Drive Pump Station. The wastewater is eventually delivered to the SFPUC interceptor and conveyed to the SEP.

An evaluation of the City's wastewater system conducted for the 2003 *Brisbane Sewer Master Plan* identified approximately 7,200 linear feet of sewer lines and 21 manholes that were in moderate to severely deteriorated condition that have since been repaired. Other issues of lower priority included needed repairs to several lift stations and replacement of additional pipelines. The evaluation concluded that, based on hydraulic modeling results, no new major pipeline facilities would be required to serve future planned development through 2020 (City of Brisbane, 2003a). This conclusion, however, does not include improvements that may be required as the result of Project Site development.

Project Site Sewer Facilities

Existing wastewater flows from the portion of the Project Site north of Brisbane Lagoon are collected and conveyed by the BSD to the SFPUC for treatment at the SEP through two connections to the existing SFPUC 78-inch diameter combined sewer transmission main (SFCS) located in Sunnydale Avenue and underneath portions of the Recology facility. The SFCS facility collects stormwater runoff and sewage flows. The catchment area for stormwater runoff consists of over 500 acres, including portions of San Francisco and Daly City. Wastewater flows are from San Francisco and lands within Brisbane and Daly City. From the combined sewer main, flows are eventually conveyed to the SEP. The Recology facility discharges directly into the SFCS main located in Sunnydale Avenue.

BSD wastewater lines currently serve the Industrial Way Industrial Park and other existing or demolished buildings within the former railyard portion of the Project Site. On the former landfill portion of the Project Site, wastewater from the existing tank farm is pumped from a small lift station at the tank farm through a 4-inch force main to the 21-inch BSD line on Tunnel Avenue. From the sewer main in Tunnel Avenue, flow is conveyed to the SFPUC transmission main and on to the SEP (UPC et al., 2011).

Wastewater Treatment by SFPUC

Located in the Bayview District of southeastern San Francisco**,** the SEP is a 250-mgd pure-oxygen activated-sludge treatment facility that provides secondary treatment and serves municipal and industrial customers on the east side of San Francisco, as well as Brisbane and the BSD. The treatment plant was originally constructed in 1952 and has been expanded several

times. The SEP is part of San Francisco's combined sewer system, which allows the collection and treatment of both wastewater and stormwater. The SEP does not have the capability to produce recycled water. It has a daily average design capacity of 85.4 mgd (City of Brisbane, 1999), a peak hour design capacity of 142 mgd, and can treat up to 250 mgd (100 mgd of primary treatment and 150 mgd of secondary treatment) of wet weather flows (SFPUC, 2003; SFPUC, 2010a). Dry-weather flow averages approximately 63 mgd (2003 to 2007 dry-weather average flows) (SFPUC, 2010a).

In dry weather, wastewater is sent to the SEP for secondary treatment before being discharged through the Southeast Bay Outfall. The Southeast Bay Outfall is a deep water outfall at Pier 80 with a capacity of 110 mgd and discharges directly to San Francisco Bay. During wet weather, the primary treated effluent (100 mgd) and up to 10 mgd of the secondary treated effluent are discharged to Southeast Bay Outfall. The remaining secondary effluent (140 mgd) is discharged through the Quint Street Outfall to Islais Creek (SFPUC, 2010a). The Islais Creek Outfall serves as a wet weather overflow point and receives treated secondary effluent during wet weather events. Flows are discharged into Islais Creek (which discharges into San Francisco Bay) through the shallow water Quint Street Outfall. The Quint Street Outfall is on the south bank of Islais Creek and has a capacity of 150 MGD (SFPUC, 2010a).

During wet weather, when the capacity of the SEP and the SFPUC's Combined Sewer Overflow storage facilities are exceeded, the additional flows are diverted to the North Point Water Pollution Control Plant (North Point Plant) in northern San Francisco for primary treatment before being discharged. The North Point Plant has a peak primary treatment capacity of 150 mgd. The Combined Sewer Overflow system is a series of storage tanks, tunnels, and overflow structures that store and provide primary treatment to both stormwater and wastewater during wet weather. If flows exceed the capacity of both treatment plants and the Combined Sewer Overflow system, they are discharged directly to San Francisco Bay through the SFPUC's near-shore outfalls (SFPUC, 2010b).

The Solids Handling Facility is the oldest facility at the SEP, built in 1951. Equipment at this facility is aging and, as a result, there are a variety of maintenance issues including structural integrity of the anaerobic mixers, ineffective mixing of the digesters, odor emissions, and foam. In addition, the Solids Handling Facility produces Class B biosolids that are reused for land application and landfill daily cover. Because of growing public concern and increased regulatory restrictions, reuse opportunities for Class B biosolids may not be possible through 2030. The 2010 Draft Sewer Master Plan (SFPUC, 2010a) recommends the construction of a new biosolids digester facility to replace the old SEP facility. The new facility would produce high quality (Class A) biosolids (SFPUC, 2010a).

The SFPUC operates its wastewater facilities in compliance with its National Pollutant Discharge Elimination System (NPDES) permits issued by the San Francisco Regional Water Quality Control Board (SFRWQCB) that allow discharge of treated wastewater effluent and surface stormwater flows to surface waters, and the United States Environmental Protection Agency (U.S. EPA) Combined Sewer Overflow Control Policy (SFPUC, 2010b).

Stormwater Drainage

Existing Stormwater Drainage

For the purposes of stormwater drainage, the Brisbane area is divided into two main watersheds: the Bayshore Basin (Guadalupe Canyon Parkway, Industrial Way, the Bayshore neighborhood of Daly City, and most of the Baylands), and the GVMID Basin (Central Brisbane, Crocker Park, most of the Northeast Ridge, and the Quarry) (City of Brisbane, 1993). There are also three smaller drainage basins in the city: the Beatty Basin at the northern tip of the City; the Downtown Basin encompassing the residential portion of the City; and the San Bruno/Bayshore Basin at the southern end of the City. Brisbane's storm drainage systems consist of open concrete ditches, underground gravity flow pipes, storm drain detention basins, and major outfalls that discharge into Brisbane Lagoon (Guadalupe Valley Drain) and San Francisco Bay (Eastern Bayshore Outfall) (City of Brisbane, 2004). A northeastern portion of the city that is not part of the Bayshore or GVMID Basins discharges to the 78-inch SFPUC pipeline at Beatty Avenue. Please see Figure 4.H-2, Watershed Boundaries, in Section 4.H, *Hydrology and Water Quality*, for a depiction of regional watersheds.

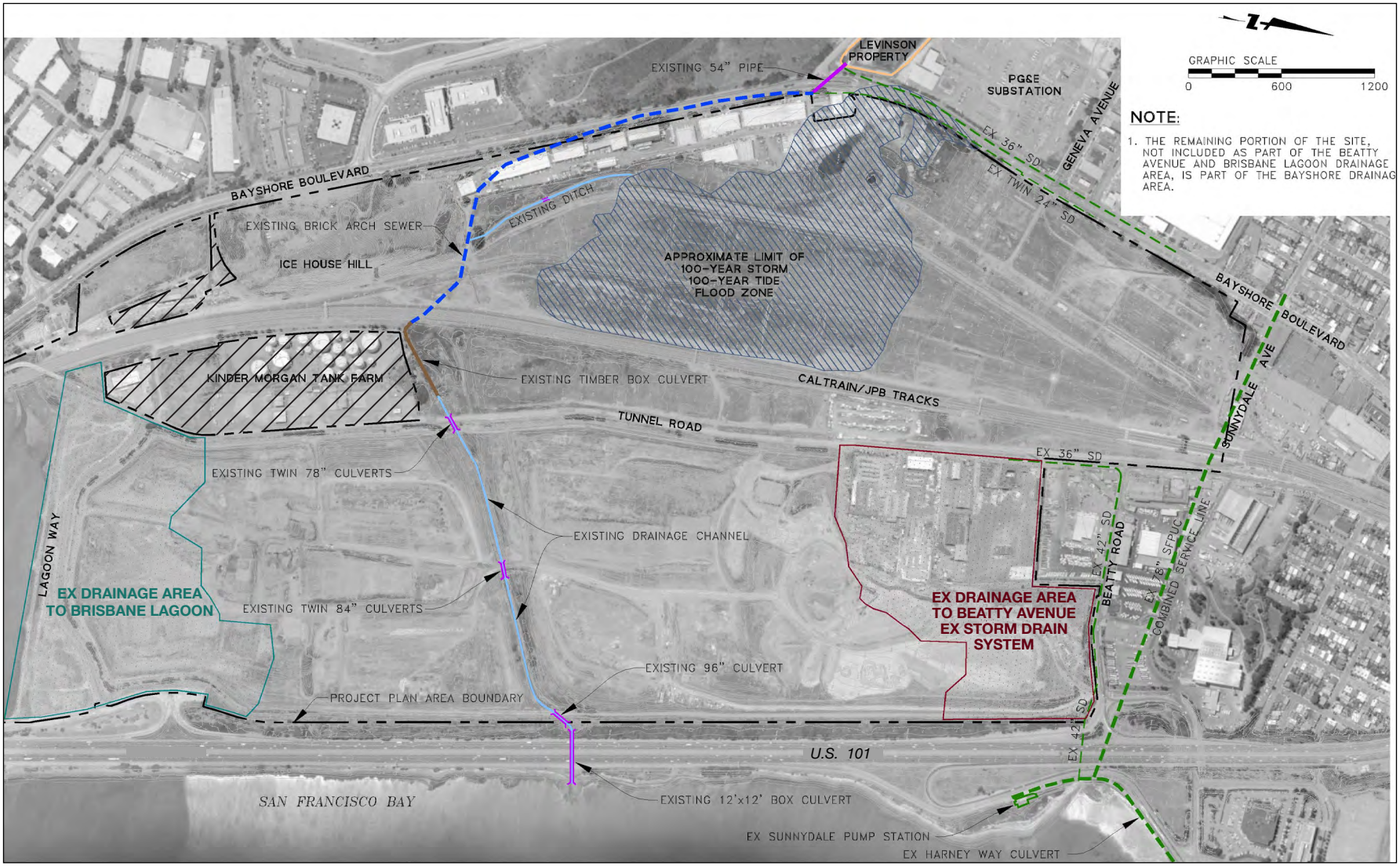
NPDES Permit

Brisbane operates under the 2009 San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Municipal Regional Stormwater NPDES Permit (ORDER R2-2009-0074, NPDES Permit No. CAS612008), issued by the SFRWQCB. As required by the permit, the City implements specific best management practices (BMPs) to help reduce pollutants and eliminate non-stormwater discharges to the storm drain system (SFRWQCB, 2009).

Stormwater Infrastructure at the Project Site

The majority of the Project Site is within the Bayshore and Beatty Avenue basins. The Bayshore Basin is approximately 994 acres and encompasses portions of Daly City and Brisbane, as described above. Stormwater from the 568 acres of the upstream basin (west of Bayshore Boulevard in Daly City), referred to as the Upper Reach, is collected by an underground drainage network leading to a series of open channels and conduits that flow through Brisbane and discharge to San Francisco Bay (Cities of Daly City and Brisbane, 1995). East of Bayshore Boulevard is the Lower Reach, which drains approximately 426 acres and is entirely in the City of Brisbane. A portion of the Project Site is within the Upper Reach of the Bayshore Basin. The Beatty Avenue basin is in the northeastern portion of the Project Site and drains 55 acres of the former landfill. The Brisbane Lagoon basin includes a 52-acre area of the former landfill and drains into Brisbane Lagoon. **Figure 4.O-3** shows the existing stormwater system within the Project Site.

The following is a brief overview of stormwater infrastructure within the Project Site, as described in the Brisbane Storm Drainage Master Plan Final Report (City of Brisbane, 2003c), the *Brisbane Baylands Specific Plan* (UPC, 2011), the Brisbane Baylands Draft Infrastructure Plan (BKF, 2011), and the Eastern Bayshore Drainage Outfall Study (Cities of Daly City and Brisbane, 1995).



SOURCE: BKF, 2011

Brisbane Baylands . 206069

Figure 4.O-3
Stormwater System on the Baylands Site

Brick Arch Sewer

Runoff from an open channel in the Upper Reach drains through an 8-foot-by-5-foot box culvert under Bayshore Boulevard and into a 3,500-foot-long brick arch sewer that is 7.5 feet high and 8 feet wide. The brick arch sewer conveys flows from the box culvert, along Bayshore Boulevard, to the east side of the Caltrain tracks.

Timber Box Culvert

The brick arch sewer discharges to a 440-foot-long, 5.3-foot wide-by-10-foot high timber box culvert in the former landfill area. The timber box culvert also conveys flows from the tracks to the lower open earth channel west of Tunnel Avenue.

Visitacion Creek

An open earth channel, approximately 2,400 feet long, runs east-west through the center of the Project Site near the former landfill. The top of the channel is approximately 60 feet wide and the bottom is approximately 17 feet wide. Three roads cross over the channel using double 84-inch and 96-inch diameter culverts. The channel discharges to San Francisco Bay though a 12-foot-by-12-foot box culvert under US Highway 101. This culvert is referred to as the Eastern Bayshore Outfall.

Railroad Yard Drainage Channel

An earthen railyard drainage channel runs parallel to Industrial Way and drains the former railyard. This channel discharges near the end of brick arch sewer, upstream of the Caltrain tracks.

Beatty Avenue

The Beatty Avenue stormwater system is not part of the Bayshore Basin and does not discharge to the Eastern Bayshore Outfall, but it is within the Project Site. This stormwater system is in the northeastern portion of the Baylands. Stormwater flows are conveyed through a 42-inch storm drain on Beatty Avenue from Tunnel Avenue to Alanna Way. The 42-inch storm drain discharges to a 30-inch storm drain that crosses under US Highway 101 and drains into the SFPUCs combined sewer system and into the Sunnydale pump station (Cities of Daly City and Brisbane, 1995).

Brisbane Lagoon

Approximately 52 acres of the former Landfill, adjacent to Brisbane Lagoon, drain to Brisbane Lagoon. Flow from the landfill is conveyed through shallow swales adjacent to Lagoon Way and discharges through culverts running under Lagoon Way. Flow then continues south to Brisbane Lagoon (BKF, 2011).

Non-Hazardous Solid Waste

The South San Francisco Scavenger Company (SSFSC) provides solid waste collection and recycling services to the City. Waste is transported to the Blue Line Transfer Incorporated Public Disposal and Recycling Facility for sorting and processing. The Blue Line Facility is located in South San Francisco and has a permitted capacity of 2,400 tons of waste per day and an average daily throughput of 1,200 tons a day (CalRecycle, 2012a).

In 2009, solid waste from Brisbane was sent to the Forward Landfill (San Joaquin County), Guadalupe Sanitary Landfill (Santa Clara County), Newby Island Sanitary Landfill (Santa Clara County), Ox Mountain Sanitary Landfill (San Mateo County), Recology Hay Road (Solano County), Zanker Material Processing Facility (Santa Clara County), and Zanker Road Class III Landfill (Santa Clara County) (CalRecycle, 2012b). **Table 4.O-7** shows the landfills receiving solid waste from Brisbane, their remaining capacities, and projected closure dates. Other landfills in the region that are actively accepting solid waste and could be used in the future include Kirby Canyon and Potrero Hills Landfill Recycling and Disposal Facility with a combined remaining capacity of 71,143,507 cubic yards and projected closure dates of December 21, 2022 and February 14, 2048, respectively (CalRecycle, 2012c). Adding these two additional landfills to the portfolio of existing landfill capacity results in an aggregate remaining estimated landfill capacity of 204,037,708 cubic yards.

TABLE 4.O-7
LANDFILLS RECEIVING SOLID WASTE FROM THE CITY OF BRISBANE

Name	Location (County)	Total Permitted Capacity (cubic yards)	Total Estimated Capacity Used (cubic yards) (% of total)	Remaining Estimated Capacity (cubic yards)	Estimated Closure Date	Permitted Maximum Disposal (tons/day)
Forward Landfill, Inc.	San Joaquin	51,040,000	27,340,000 (54%)	23,700,000	1/1/2020	8,668
Guadalupe Sanitary Landfill	Santa Clara	28,600,000	14,000,000 (49%)	14,600,000	1/1/2048	1,300
Newby Island Sanitary Landfill	Santa Clara	50,800,000	32,525,047 (64%)	18,274,953	6/1/2025	4,000
Ox Mountain Sanitary Landfill	San Mateo	37,900,000	N/A	44,646,148	1/1/2018	3,598
Recology Hay Road	Solano	37,000,000	6,567,000 (18%)	30,433,000	1/1/2077	2,400
Zanker Material Processing Facility	Santa Clara	540,100	N/R	540,100	12/31/2018	350
Zanker Road Class III Landfill	Santa Clara	1,300,000	600,000 (46%)	700,000	12/12/2003	1,300
Total		**207,180,100**		**132,894,201**		**21,616**

NOTE: N/R = not reported, N/A = not available

SOURCE: CalRecycle, 2012b

The City's overall landfill waste stream disposal was 5,661 tons in 2009, 5,497 tons in 2010, and 5,381 tons in 2011 (CalRecycle, 2012d). In 2010, Brisbane had approximately 45 different waste diversion programs in effect to reduce waste generation, including composting, recycling, and public education programs. The City's annual waste diversion rate[6] from 2005 to 2007 ranged from 73 percent to 75 percent (CalRecycle, 2011).

6 Diversion rate refers to the amount of waste diverted from landfills by composting, recycling, etc.

In the northeast portion of the Project Site (501 Tunnel Avenue) is the existing 259,000-square-foot solid waste transfer station and recycling complex operated by Recology San Francisco. This facility processes recyclable materials mainly from San Francisco. The San Francisco Board of Supervisors has mandated a goal of 75 percent waste diversion for all of San Francisco and zero waste by 2020. To meet this goal, Recology San Francisco has determined that expansion of its facility is necessary.[7]

4.O.3 Regulatory Setting

This subsection presents the applicable federal, state, and local laws, regulations, and policies as they relate to utilities.

Federal Regulations

Water

The federal Safe Drinking Water Act was established to protect the quality of drinking water in the United States. This law focuses on all waters actually or potentially designated for drinking use, whether from aboveground or underground sources. The Safe Drinking Water Act authorized the United States Environmental Protection Agency (U.S. EPA) to establish water quality standards and required all owners or operators of public water systems to comply with primary (health-related) standards. Section 4.H, *Hydrology and Water Quality*, of this EIR provides additional information on the Safe Drinking Water Act.

Wastewater and Stormwater

Section 402 of the Clean Water Act establishes the federal NPDES program, which regulates all point sources that discharge pollutants into the waters of the United States. Types of point source discharges that are regulated include any discharge of wastewaters to surface waters, including stormwater runoff from construction sites, wastewater treatment discharges to surface waters, and municipal storm water discharges. This program is managed by the U.S. EPA; however the U.S. EPA has delegated many of the permitting responsibilities to state agencies. In California, the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) administer permits for this program. Applicants must submit permit applications to the appropriate agency and along with a detailed Storm Water Pollution Prevention Plan outlining measures that will be implemented to prevent water pollution. See "Wastewater and Stormwater" under "State Regulations" below for more information.

While there are no specific federal regulations governing the use of recycled water, the U.S. EPA has published Guidelines for Water Reuse (U.S. EPA, 2004), including a discussion on types of reuse applications, technical issues in planning water reuse systems, water reuse regulations and guidelines in the U.S., legal and institutional issues, funding of water reuse systems, and public involvement programs. Recycled water use is primarily regulated by individual states.

[7] The proposed expansion of the existing Recology facility is included as part of the CPP-V Concept Plan scenario and is described in Chapter 3, *Project Description*, in this EIR.

Non-Hazardous Solid Waste

At the federal level, the U.S. EPA regulates the management of non-hazardous solid waste according to the Resource Conservation and Recovery Act (RCRA), Subtitle D. Subtitle D establishes state and local governments as the primary planning, regulating, and implementing agencies for management of solid waste. The U.S. EPA provides these governments with information, guidance, and policies to promote recycling, waste reduction, and safe handling of solid waste. As required by RCRA, the U.S. EPA has developed federal criteria for the design and operation of municipal solid waste landfills and other disposal facilities, which have since been adopted by most states, including California.

State Regulations

Water

California State Drinking Water Act

The California Safe Drinking Water Act authorizes the California Department of Public Health (DPH) to protect the public from contaminants in drinking water by establishing maximum contaminants levels that are as stringent as those required by the federal Safe Drinking Water Act.

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act of 1970 established the SWRCB and nine RWQCBs within California. These groups are the primary state agencies responsible for protecting California water quality to meet present and future beneficial uses and regulating appropriative surface rights allocations. The SFRWQCB is the regional board responsible for the Project Site and vicinity.

California Senate Bills 610 and 221

California Senate Bill (SB) 610 requires any project that meets the development criteria listed below and that would be subject to CEQA to obtain a Water Supply Assessment in order to determine if there is an adequate water supply to meet the project's demand. A city or county must request a Water Supply Assessment from the local water provider when the type of environmental review has been determined. The water agency is then required to provide the assessment no later than 90 days after the request. The governing board of the water agency must approve the assessment at a public meeting and the assessment must be included in the CEQA document. California SB 221 requires applicable projects as listed below to provide written proof of adequate water supply from the local water supplier before the final subdivision map can be approved. Projects would be subject to SB 610/221 if they meet one or more of the following criteria:

- 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 hotel or motel, or both, having more than 500 rooms.
- 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.
- A mixed-use project that includes one or more of the projects specified in this act.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project.

Because the proposed development of the Project Site meets several of these criteria, a water supply assessment was completed according to the requirements of SB 610. Further, because the City of Brisbane is its own water agency, the water supply assessment was completed by the City and is included as **Appendix L** in this EIR.

Wastewater and Stormwater

Recycled Water

In California, the Department of Public Health and the SWRCB are the primary agencies responsible for regulating the treatment, distribution, and use of recycled water. The main state laws and regulations governing the use of recycled water include:

- **California Health and Safety Code (Division 104; Part 12):** requires recycled water pipes installed above or below ground to be colored purple.
- **California Water Code (Division 7; Chapters 2,6, 7, and 22):** requires submission of an engineering report to the Department of Public Health and SWRCB for anyone proposing a recycled water project, in order to describe compliance with California Code of Regulations Title 22 requirements, establishes recycled water permits to streamline the permitting process for recycled water, prohibits unauthorized discharges of recycled water, and requires the use of recycled water for non-potable purposes whenever suitable recycled water is available.
- **Title 17 of California Code of Regulations (Division 1; Chapter 5):** sets specific infrastructure standards to prevent contamination of potable water with recycled water.
- **Title 22 of California Code of Regulations (Division 4; Chapters 1, 2, and 3):** contains regulations for the design of recycled water treatment plants and the treatment, distribution, and use of recycled water.

The California Water Code (Sections 13575-13583) contains the Water Recycling Act of 1991, which establishes a statewide goal of recycling 1 million acre-feet of water annually by the year 2010 and encourages retail water suppliers to increase the use of recycled water. This is meant to encourage state and local agencies to implement recycled water projects whenever feasible.

Stormwater Discharges

Any action or project that disturbs more than one acre of soil resulting in waste discharge to waters of the State must obtain a NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Construction General Permit

CAS000002, Board Order No. 2009-0009-DWQ, and amended by Board Order No. 2010-0014-DWQ). Construction activities subject to this permit include clearing, grading, excavation, stockpiling and other disturbances to the land. While this is a federally required permit under the Clean Water Act, in California the SWRCB and nine RWQCBs are responsible for the implementation of the NPDES permitting process at the state and regional levels, respectively. For development on the Project Site, the SFRWQCB would issue this permit to the project applicant and the applicant's associated construction contractor(s). See the discussion of water quality in Section 4.H, *Hydrology and Water Quality*, of this EIR for information on the NPDES General Permit for Construction under the NPDES program.

The NPDES program also regulates stormwater discharges from municipal sewer systems. Stormwater discharge from the City of Brisbane, including the Project Site, is currently covered under the Municipal Regional Stormwater NPDES Permit (NPDES Permit No. CAS612008), issued October 14, 2009 by the SFRWQCB. This permit, which expires on November 30, 2014, outlines specific measures to be implemented to reduce stormwater runoff and pollution and describes required monitoring and reporting procedures. See the discussion of water quality in Section 4.H, *Hydrology and Water Quality*, of this EIR for information on municipal separate storm sewer systems under the NPDES program.

Non-Hazardous Solid Waste

California Integrated Waste Management Act

The California Integrated Waste Management Act (Assembly Bill [AB] 939) was signed into law in 1989. Under AB 939, the six-member California Integrated Waste Management Board (CIWMB) was established with the authority to manage solid waste in the State of California to protect public health and the environment. AB 939 required all cities and counties to divert 25 percent of solid waste from landfills and transformation facilities by 1995 and 50 percent of all solid waste by January 1, 2000. Each county was required to create a task force to develop city and unincorporated area source reduction and recycling elements and a countywide siting element for disposal sites for waste disposal capacity. The plans must promote 1) source reduction, 2) recycling and composting, and 3) environmentally safe transformation and land disposal. AB 939 also facilitated the development of a statewide system of permitting including inspections, enforcement, and solid waste facilities maintenance.

SB 63, signed into law on July 28, 2009, abolished the CIWMB as of January 1, 2010 and transferred its duties and responsibilities to the Department of Resources Recycling and Recovery, referred to as CalRecycle.

Assembly Bill 341

AB 341, signed into law on October 6, 2011, mandates that California reduce, recycle, or compost 75 percent of solid waste by the year 2020. CalRecycle is responsible for developing a plan to achieve that goal and has drafted a working document to spur discussion among interested parties on the future development of the final plan.

Senate Bill 1374

SB 1374 was signed into law in 2002 and contains requirements for diversion of construction and demolition wastes by local governments. As part of SB 1374, CalRecycle is required to provide information to jurisdictions and general contractors on methods and activities to divert construction and demolition materials. This bill also directs CalRecycle to develop and adopt a model construction and demolition debris diversion ordinance for voluntary use by local jurisdictions. CalRecycle adopted a model at its March 16, 2004 meeting (agenda item 13). The City of Brisbane has adopted a construction and demolition ordinance, as described below under "Local Regulations."

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act of 1991 (AB 1327) requires local jurisdictions to adopt an ordinance requiring commercial, industrial, or institutional buildings, marinas, or residential buildings to provide adequate storage areas to collect and load recyclable materials. As required by AB 1327, CalRecycle developed a model ordinance for adoption by local agencies that did not have an existing ordinance. The City of Brisbane has adopted an ordinance for collection and loading of recyclable materials, as described below under "Local Regulations."

Title 17 of California Code of Regulations

Title 17 of the California Code of Regulations (Division 7; Chapters 3 through 10) outlines specific regulations for non-hazardous solid waste management and presents guidelines for preparing Countywide or Regional Integrated Waste Management Plans.

Title 2 of California Code of Regulations

Title 2 of the California Code of Regulations (Division 2) describes criteria for waste disposal on land, including solid waste facility and landfill permitting, siting, construction, operation, maintenance, and closure.

Other

California Occupational Safety and Health Requirements for Excavation

The California Occupational Safety and Health Regulations outline specific requirements for any person planning to conduct excavation. The excavator is required to notify the Underground Service Alert at least 2 days prior to excavation and to delineate the area to be excavated. Any operator of a subsurface utility in the area who receives notification must locate and field mark the approximate location of any utilities that could be affected by the excavation. Utilities in conflict with the excavation must be exposed by digging with hand tools prior to the use of any power equipment (Underground Service Alert, undated).

California Public Utilities Commission

The California Public Utilities Commission (CPUC) has constitutional authority to regulate privately owned public utilities, including electric, natural gas, telecommunications, water,

railroad, rail transit, and passenger transportation companies. As part of its mission the CPUC "…ensures the provision of safe, reliable utility service and infrastructure at reasonable rates" to its consumers including a commitment to enhancement of the environment and a "healthy California economy." The CPUC regulates utility services and promotes innovation as well as a competitive marketplace for services (CPUC, 2007).

Local Regulations

Water

Brisbane Municipal Code

Chapter 13.12 of the Brisbane Municipal Code contains provisions for water fees, connection fees, and the responsibilities for maintenance of water meters and laterals. New water connections require an application to be submitted to the Director of Public Works.

Brisbane General Plan

Chapter IX, Conservation, of the Brisbane General Plan (City of Brisbane, 1994) includes the following policy and programs regarding water conservation:

> ***Policy 138*:** Encourage conservation of domestic water.
>
> > *Program 138a*: Require the use of water conserving fixtures in new construction and remodeling projects.
> >
> > *Program 138b*: Encourage the use of water conserving landscape and irrigation systems.
> >
> > *Program 138c*: Utilize, if safe and appropriate, recycled water for landscape irrigation and dust control.
> >
> > *Program 138d*: Provide public information on water conservation practices.
> >
> > *Program 138e*: As a part of the land use planning process, consider how water conserving features are incorporated into project design.

Chapter X, Community Health and Safety, of the Brisbane General Plan (City of Brisbane, 1994) includes the following policies and programs regarding water supply and quality:

> ***Policy 207*:** Establish pressure zone(s) for water improvements and prohibit private on-site water tanks.
>
> ***Policy 208*:** If new development occurs, require infrastructure to be installed to City standards.
>
> > *Program 208x*: In conjunction with land use development applications for vacant lands, require studies to estimate the needs for domestic water and fire protection and require infrastructure to be designed and installed, at the developer's expense, to the satisfaction of the City.
>
> ***Policy 209*:** Require, as feasible, all trunk water lines to be installed in dedicated public streets.

***Policy 210*:** Developers and property owners who wish to build on their land in undeveloped areas where infrastructure does not currently exist shall provide the infrastructure for water distribution, fire protection and water connections to the City's service at their own expense.

***Policy 211*:** On an ongoing basis, review requirements for fire protection.

***Policy 224*:** In conjunction with development applications that place substantial increased demands upon the existing system, require that the system be upgraded or replaced to the satisfaction of the City. Contributions from responsible parties should be proportional to the impact of their projects.

Wastewater

Brisbane Municipal Code

Title 13.04 of the Brisbane Municipal Code provides standards for the installation and use of sanitary sewers as well as the types of waste that can be discharged.

Brisbane General Plan

Chapter X, Community Health and Safety, of the Brisbane General Plan (City of Brisbane, 1994) includes the following applicable policies and program regarding wastewater infrastructure and service:

***Policy 213*:** If new development occurs, require trunk and lateral lines to be installed to City standards.

Program 213a: In conjunction with land use development applications for vacant lands, require studies to determine capacity and design requirements for sanitary sewer services and require infrastructure design and installation to the satisfaction of the City at developer's expense.

***Policy 214*:** Require, as feasible, that all sanitary sewer lines be installed within dedicated public streets.

***Policy 215*:** Sanitary sewer service to undeveloped areas where facilities do not currently exist shall be installed and connected to the City's system at the property owner or developer's expense.

***Policy 216*:** If development occurs, extend City sanitary sewer service to currently undeveloped areas so that all new users within the City Limits are served by the City as legally permissible.

Stormwater

Chapter X, Community Health and Safety, of the Brisbane General Plan (City of Brisbane, 1994) includes the following applicable policies and programs regarding stormwater infrastructure and quality:

***Policy 221*:** If new development occurs, require storm drain systems to be installed to City standards.

Program 221a: In conjunction with land use development applications for vacant lands, require studies to determine design requirements to collect and remove stormwater from the property or reuse stormwater to benefit the public. Require facilities to be designed and installed to City standards, at developer's expense.

***Policy 222*:** Require that all storm drain lines be installed within dedicated public streets.

***Policy 223*:** Storm drains in undeveloped areas where facilities do not currently exist shall be installed at the property owner or developer's expense.

***Policy 224*:** In conjunction with development applications that place substantial increased demands upon the existing system, require that the system be upgraded or replaced to the satisfaction of the City. Contributions from responsible parties should be proportional to the impact of their projects.

Program 228d: Comply with National Pollutant Discharge Elimination System, as required.

Non-Hazardous Solid Waste

Brisbane Municipal Code

Chapter 15.75 of the Brisbane Municipal Code requires that 50 percent of construction and demolition debris be either recycled or reused to reduce landfill disposal. Before a building permit can be obtained, an applicant must submit a Recycling and Waste Reduction Plan and provide a cash deposit, which is refundable if 50 percent of all wastes have been diverted. The applicant is required to keep receipts and other records in order to provide proof that the wastes have been diverted. Records and receipts must be submitted to the City no later than 60 days following the completion of a project, and may also be required throughout construction. For projects that take more than 6 months or projects with a value of more than $1 million, progress reports during the construction may be required.

Chapter 18.32 of the Brisbane Municipal Code establishes a citywide recycling program for all city residents and describes requirements for the collection and disposal of recyclable materials.

Brisbane General Plan

Chapter IX, Conservation, of the Brisbane General Plan (City of Brisbane, 1994) includes the following applicable policy and programs regarding solid waste:

***Policy 143*:** Maximize opportunities to recycle solid waste.

Program 143a: Continue to participate in joint planning and collection programs with other agencies, such as those required by AB 939, to manage solid waste in order to maximize reclamation and reuse of the resources contained in the solid waste stream and reduce the impacts on landfills.

Program 143e: In the review of land use development applications, consider design factors pertaining to the storage and disposal of recycling materials.

4.O.4 Impacts and Mitigation Measures

Significance Criteria

Criteria outlined in the CEQA Guidelines were used to determine the level of significance of identified impacts on utilities and service systems. Appendix G of the CEQA Guidelines indicates that a project would have a significant effect on the environment if it were to:

- Not have sufficient water supplies available to serve the project from existing entitlements and resources, and would require new or expanded entitlements;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Result in the construction of new water, wastewater treatment, or stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Exceed wastewater treatment requirements of the SFRWQCB;
- Be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs;8 or
- Not comply with federal, state, or local statutes or regulations related to solid waste.

Impact Assessment Methodology

Impacts of Project Site development were assessed according to the significance criteria stated above. Information on utility demands and proposed infrastructure for the DSP and DSP-V scenarios was obtained from the Brisbane Baylands Infrastructure Plan, which was prepared by BKF in 2011 (**Appendix B**) and submitted to the City along with the Brisbane Baylands Specific Plan (UPC, 2011). Appendix L of this EIR contains the "Water Use Projections and Water Balance for Base Land Use Scenario (DSP) and Entertainment Land Use Scenario (DSP-V)" Technical Memo prepared by Brown and Caldwell that provides water demands (both indoor and outdoor irrigation) for the DSP and DSP-V Concept Plan scenarios (Brown and Caldwell, 2011). Both the infrastructure plan and the water use projections technical memo were peer-reviewed on behalf of Brisbane by CDM Smith, who prepared a water supply assessment (WSA) for the Project in compliance with SB 610 requirements (Appendix L).

Water Demand and Wastewater Generation Estimates

Water consumption and wastewater generation figures for the DSP and DSP-V scenarios were provided by Brown and Caldwell (2011) and independently peer-reviewed by CDM Smith of behalf of the City for technical adequacy. Water consumption and wastewater generation for the CPP and CPP-V scenarios were developed by CDM Smith for the water supply assessment by applying the water demand and wastewater generation rates used for the DSP and DSP-V

8 This threshold is analyzed in two separate impact statements, one addressing impacts during construction of Project Site development and one addressing impacts during operation of Project Site development.

scenarios to the land uses proposed for the CPP and CPP-V scenarios. Water demand per square foot for the DSP and DSP-V land use types was calculated and then applied to each of the different land use types of the CPP and CPP-V. If the rates per square foot varied between the DSP and DSP-V scenarios for the same land use type, the higher rate was applied to the CPP and CPP-V scenarios to ensure a conservative estimate of water demand for the scenarios.

Water Demand under Water Savings Programs

Brown and Caldwell also calculated water demand for Project Site development under five different Water Savings Programs (A through E) (See EIR Appendix B for the Brisbane Baylands Infrastructure Plan and the appendices of Appendix L for the Brown and Caldwell technical memo). The Water Savings Programs include educational, physical, and regulatory measures to reduce water demand and increase water use efficiency. Each of the programs builds on the previous program and progressively adds more stringent measures to reduce water use and conserve water. As described in Chapter 3, *Project Description*, the Project Site development under all four scenarios includes implementation of Water Savings Program E, which is the most extensive and rigorous of the programs (described in more detail below). Water Savings Program E includes all of the conservation measures identified in Water Savings Programs A through D, plus the additional construction of an onsite recycled water plant that would reduce overall water demand of Project Site development by providing recycled water for non-potable uses. The actual construction of the recycled water plant would not be completed until a sufficient amount of Project Site development has been completed generating sufficient wastewater to allow for efficient operation of the plant and related recycled water system, which is expected to occur by year 15 of Project Site development. Therefore, to account for a 15-year time lag between start of development and availability of recycled water onsite to offset potable water demands, two different water demand scenarios are presented, one without the recycled water plant in operation to provide recycled water (Water Savings Program D) and one with the recycled water plant in operation providing recycled water for irrigation and other non-potable uses (Water Savings Program E). It is assumed that for up to the first 15 years of the Project Site's 20-year buildout, water demand could be higher until the water recycling plant is brought online and working at full capacity to deliver recycled water. Under Program D, summer water demands are higher than winter demand because of irrigation requirements. Because Program E would use recycled water for all irrigation, water demands are the same in the summer and winter.

Water Supply Assessment

The Water Supply Assessment prepared by CDM Smith for Project Site development (Appendix L) evaluates the water demands for each of the four Project site development scenarios (DSP, DSP-V, CPP, and CPP-V) under both Water Savings Programs D (without the recycled water plant) and E (with the recycled water plant). The WSA was completed to meet SB 610 requirements to determine if there are sufficient water supplies to meet the Project's water demands through 2035.

Wastewater Generation Estimates

With respect to wastewater generation projections for Project Site development, as stated in the Brisbane Baylands Infrastructure Plan, industry standards indicate that wastewater demands in general are 90 percent of water demand; however, a more conservative value of 95 percent of the proposed Project Site development water demand was used to calculate wastewater demands (BKF, 2011), recognizing the relatively high development intensity of proposed Project Site development under each scenario in relation to the amount of land devoted to irrigated landscaping.

Water Savings Programs D and E

Water Savings Program D includes several measures to conserve water, while Water Savings Program E includes all the applicable measures in Program D as well as the construction of an onsite recycled water plant to allow for the use of recycled water for all outdoor irrigation and non-potable indoor plumbing for toilets and cooling water within the Project Site. (For further information on these water savings programs see EIR Appendix B for the Brisbane Baylands Infrastructure Plan and the appendices of Appendix L for the Brown and Caldwell technical memo).

Water Savings Program D (without onsite recycled water plant) includes the following water savings measures:

- **water budgets** that compare the supply to the demand of Project Site development as presented in the Water Supply Assessment to ensure the appropriate level of development in relation to limits on water supplies in the future;
- **public outreach information** that includes promoting watershed stewardship such as preventing contaminants from entering stormwater, conserving precious water supplies, and funding environmental education initiatives;
- **landscape requirements for new systems** that require tracking and managing irrigation water use through the installation of a dedicated irrigation water service, preventing dry weather runoff from faulty irrigation systems, and enforcement of non-watering days;
- **water audits for commercial users** that offer expert evaluation of indoor and outdoor water use for any building type, including assessing the water efficiency of plumbing fixtures and landscape irrigation, identifying leaks, and providing information about incentives available for replacing inefficient fixtures and review customer water use history;
- **water audits for hotels-motels** that offer expert evaluation of indoor and outdoor water use for any building type, including assessing the water efficiency of plumbing fixtures and landscape irrigation, identifying leaks, and providing information about incentives available for replacing inefficient fixtures and review customer water use history;
- requirements for **multi-family unit sub-metering** to more accurately bill individual households for water use and provide residents with incentives to use water more efficiently;
- multi-family residential efficient **clothes washer rebate**;
- **Water Alliances for Voluntary Efficiency (WAVE) Program (USEPA) for Hotels** that provides hotels with tools to increase water use efficiency and decrease water costs;
- **dedicated landscape meters** for outdoor irrigation use;

- **native plant landscaping** incorporating plants with low to no water demands;
- **subsurface irrigation for turf** to decrease water lost to evaporation from above-ground sprinklers or misters;
- **hardscape** (e.g., area is covered with materials other than vegetation) to increase stormwater infiltration and decrease irrigation demand;
- **high efficiency toilets** (1.28 gallons per flush [gpf] or less) or dual-flush toilets (0.8 gpf half-flush and 1.6 gpf full-flush) in new commercial, industrial, and institutional buildings;
- **automatic faucets with on/off valves** that prevent wasted water; and
- **waterless urinals**.

Water Savings Program E includes all of the measures listed above for Program D plus the construction of an onsite recycled water plant to provide recycled water for irrigation and other non-potable uses. As discussed above, implementation of Water Savings Program E is proposed as part of Project Site development; however, as also explained above, it is assumed that the onsite recycled water plant would not be constructed until year 15 and operational the next year; therefore, the impacts of the Project on water supply are evaluated under both Water Savings Programs D and E.

Solid Waste Generation Estimates

Solid waste generation rates for construction and operation of all development scenarios were obtained from a variety of sources, as discussed under "Project Impacts and Mitigation Measures" below.

Impacts of Constructing Onsite Utilities

Impacts related to construction of onsite utilities to serve proposed Project Site development are analyzed in the relevant environmental topic area sections throughout this EIR and summarized here in Impact 4.O-3.

Project Impacts and Mitigation Measures

Impact 4.O-1: Would existing entitlements and resources provide sufficient water supplies to serve the Project, or would it require new or expanded entitlements?

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
SM	SM	SM	SM

SU = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

DSP, DSP-V, CPP, and CPP-V

Summary

The City of Brisbane does not have adequate existing water supplies to serve proposed Project Site development under any of the four scenarios. As a result, a new supplemental water supply – a surface water transfer of 2,400 AFY from OID to Brisbane, and an extensive water conservation program (Water Savings Program E) that includes demand management measures and provision of recycled water via an

onsite recycled water plant, are included as part of Project Site development. The proposed OID water transfer coupled with the proposed water conservation and recycled water actions would provide adequate water supply to meet the long-term water supply needs of Project Site development under all four scenarios. Thus, while Project Site development would require new water supply, this supply would be provided as part of Project Site development; therefore the impact on water supply would be less than significant.

While there would be sufficient water supply to meet the long-term annual water demands of Project Site development if the proposed water transfer agreement is approved, the City has determined that it does not have existing facilities that could provide adequate peak day / peak hour water flow to the Project Site in the event of an emergency. Additional storage capacity within the City is needed to provide adequate fire flows and meet peak daily water demands. This would be a significant but mitigable impact.

The OID water transfer of 2,400 AFY to Brisbane would contribute to a potential impact on the Tuolumne River associated with changes in the SFPUC's existing reservoir release pattern from Hetch Hetchy Reservoir that, in some years, could lead to flow changes that could adversely affect streamside meadows and other alluvial deposits. This impact was first identified in the SFPUC WSIP Program EIR (SF Planning Department, 2008) as a consequence of the SFPUC's proposed WSIP and in October 2008 the SFPUC adopted a mitigation measure to address this impact as part of its approval of its Phased WSIP Variant (SFPUC Resolution No. 08-200). In implementing this adopted mitigation measure, the SFPUC will modify the way it releases water from Hetch Hetchy Reservoir such that significant impacts to the streamside meadows and other alluvial deposits along the Tuolumne River below this reservoir will be avoided. Although the SFPUC has already adopted the mitigation measure needed to address this impact, this impact is considered significant but mitigable for this Project as well, and that same mitigation measure is also included here as Measure 4.O-1b for the proposed Brisbane-OID water transfer. This issue is also disclosed in Section 4.C *Biological Resources,* in this EIR.

Water Supply Adequacy

As described above, because the actual construction of the onsite recycled water plant may not be completed until as late as 15 years into development of the Project Site, two different water demand scenarios were evaluated, one without the recycled water plant making recycled water available to offset some of the potable demand, and one with the recycled water plant in operation providing recycled water for irrigation and other non-potable uses. As a result, for the first 15 years of Project Site development, potable water demand would be higher until the onsite recycled water plant was brought online and working at full capacity to provide recycled water for non-potable irrigation and other uses.

Water demand was estimated in 2011 by Brown and Caldwell (Brown and Caldwell, 2011) for the DSP and DSP-V scenarios with and without the recycled water plant as part of the infrastructure planning for the Brisbane Baylands Specific Plan.[9] Water demands for the CPP and

[9] Water demand estimates prepared by Brown and Caldwell were independently reviewed by CDM Smith on behalf of the City as part of the preparation of this EIR.

CPP-V scenarios were then calculated using the water demand per square foot of building area that was used for the DSP and DSP-V scenarios and applying that demand factor to each of the land uses proposed under the CPP and CPP-V scenarios. If the rates per square foot varied between the DSP and DSP-V scenarios for the same land use type, the higher rate was applied to both the CPP and CPP-V scenarios. **Table 4.O-8** below presents estimated water demand for both water savings programs (i.e., without and with the recycled water plant delivering recycled water to the Project Site development). The table includes projected water demand for the Project Site alone, water demand with other projected City water demands, and water demand for projected City buildout (i.e., with three future developments planned for Sierra Point that were not included in the DSS model projections of water demand prepared for Brisbane).

As described in Subsection 4.O.2, *Environmental Setting*, under "Water Supply," Brisbane's current water supply allocation from the SFPUC is not sufficient to meet the Project Site development needs combined with other projected future water needs of the City under buildout of the General Plan, based upon the DSS model. Potable water supply for Project Site development would be provided through a proposed water transfer agreement between the City and OID.[10] The majority of OID's water supplies come from pre-1914 surface water rights that enable OID to divert up to 257,074 AFY from the Stanislaus River. The proposed water transfer agreement between OID and the City guarantees the transfer of up to 2,400 AFY (less than 1 percent of OID's total water diversion rights) for a term of 50 years with the option of renewal (Oakdale Irrigation District, 2012). The water from OID would come without any restrictions for diversion from the State Water Resources Control Board (SWRCB) because OID has pre-1914 water rights that are not regulated by the SWRCB.

As described previously in Chapter 3, *Project Description*, the proposed water transfer would be implemented by OID physically delivering up to 2,400 AFY of water into the Modesto Irrigation District (MID) system, via existing facilities (i.e., released from OID's Claribel canal system generally located near Claribel Road south of the City of Riverbank into MID's South Main Canal). MID would make use of the 2,400 AFY and, in turn, would hold an equivalent amount in storage in New Don Pedro Reservoir, located downstream from the SFPUC's Hetch Hetchy Reservoir on the Tuolumne River and northeast La Grange. By a similar exchange, MID would forego delivery of 2,400 AFY from the SFPUC's Hetch Hetchy system. Thus, the SFPUC would reduce its water bypass or releases from Hetch Hetchy Reservoir to the Tuolumne River by up to 2,400 AFY. The SFPUC has a water bank account in New Don Pedro Reservoir, and MID would credit the SFPUC with the annual amount provided by OID to the City, up to the maximum 2,400 AFY. The SFPUC would, in turn, deliver up to 2,400 AFY from its regional water supply system to Brisbane using existing water supply infrastructure and operational plans. The City is responsible for establishing the necessary exchange and wheeling agreements to accomplish the transfer of water from OID to MID and from MID to the SFPUC.

[10] A potential project alternative consisting of approval of the project components described in Table 3-1, except for the proposed water supply transfer, was considered as part of the alternatives evaluated in this EIR. That alternative was, however, rejected since Project site development would not be feasible without a firm water supply, which would not exist in the absence of the proposed water transfer agreement.

TABLE 4.O-8
PROJECTED WATER DEMAND UNDER BOTH WATER SAVINGS PROGRAMS D AND E
(in million gallons per day)

Concept Plan Scenario (Water Savings Program)	Project Average Daily Water Demand	Project Average Daily Irrigation Demand	Total Project Demand[1]	Projected Project Demand + Projected City Water Demand (+ demand from Sierra Point development)				
				2015	2020	2025	2030	2035
DSP(D)	1.333[a]	0.304[a]	1.638[a]	2.618 (3.029)[a]	2.658 (3.069)[a]	2.678 (3.089)[a]	2.698 (3.109)[a]	2.708 (3.119)[a]
	1.333[b]	0[b]	1.333[b]	2.313 (2.725)[b]	2.353 (2.765)[b]	2.373 (2.785)[b]	2.393 (2.805)[b]	2.403 (2.815)[b]
DSP(E)	0.955[a]	0[a]	0.955[a]	1.935 (2.347)[a]	1.975 (2.387)[a]	1.995 (2.407)[a]	2.015 (2.427)[a]	2.025 (2.437)[a]
	0.955[b]	0[b]	0.955[b]	1.935 (2.347)[b]	1.975 (2.387)[b]	1.995 (2.407)[b]	2.015 (2.427)[b]	2.025 (2.437)[b]
DSP-V(D)	1.386[a]	0.304[a]	1.691[a]	2.671 (3.082)[a]	2.711 (3.122)[a]	2.731 (3.142)[a]	2.751 (3.162)[a]	2.761 (3.172)[a]
	1.386[b]	0[b]	1.386[b]	2.366 (2.777)[b]	2.406 (2.817)[b]	2.426 (2.837)[b]	2.446 (2.857)[b]	2.456 (2.867)[b]
DSP-V(E)	0.980[a]	0[a]	0.980[a]	1.960 (2.371)[a]	2.000 (2.411)[a]	2.020 (2.431)[a]	2.040 (2.451)[a]	2.050 (2.461)[a]
	0.980[b]	0[b]	0.980[b]	1.960 (2.371)[b]	2.000 (2.411)[b]	2.020 (2.431)[b]	2.040 (2.451)[b]	2.050 (2.461)[b]
CPP(D)	0.883[a]	0.511[a]	1.394[a]	2.374 (2.785)[a]	2.414 (2.825)[a]	2.434 (2.845)[b]	2.454 (2.865)[a]	2.464 (2.875)[a]
	0.883[b]	0[b]	0.883[b]	1.863 (2.274)[b]	1.903 (2.314)[b]	1.923 (2.334)[b]	1.943 (2.354)[b]	1.953 (2.364)[b]
CPP(E)	0.588[a]	0[a]	0.588[a]	1.568 (1.979)[a]	1.608 (2.019)[a]	1.628 (2.039)[a]	1.648 (2.059)[a]	1.658 (2.069)[a]
	0.588[b]	0[b]	0.588[b]	1.568 (1.979)[b]	1.608 (2.019)[b]	1.628 (2.039)[b]	1.648 (2.059)[b]	1.658 (2.069)[b]
CPP-V(D)	0.771[a]	0.511[a]	1.282[a]	2.262 (2.674)[a]	2.302 (2.714)[a]	2.322 (2.734)[a]	2.342 (2.754)[a]	2.352 (2.764)[a]
	0.771[b]	0[b]	0.771[b]	1.751 (2.163)[b]	1.791 (2.203)[b]	1.811 (2.223)[b]	1.831 (2.243)[b]	1.841 (2.253)[b]
CPP-V(E)	0.485[a]	0[a]	0.485[a]	1.465 (1.876)[a]	1.505 (1.916)[a]	1.525 (1.936)[a]	1.545 (1.956)[a]	1.555 (1.966)[a]
	0.485[b]	0[b]	0.485[b]	1.465 (1.876)[b]	1.505 (1.916)[b]	1.525 (1.936)[b]	1.545 (1.956)[b]	1.555 (1.966)[b]

NOTES:

[1] Total demand figures may vary from the sum of average daily and irrigation demands due to rounding.

Red shading highlights the Project scenario (DSP-V Program D) with the highest water demand, and blue shading highlights the Project scenario (CPP-V Program E) with the lowest water demand.

[a] Summer – approximately April through November (228 days)
[b] Winter – approximately December through March (137 days)

SOURCE: Brown and Caldwell, 2011 for DSP and DSP-V (see text for explanation of how CPP and CPP-V values were calculated using Brown and Caldwell data); CDM Smith, 2012 for projections

In accordance with its adopted WRP, OID is actively transferring some of its water to others outside of its district. Under its adopted WRP, OID plans to transfer up to 67,000 AFY of its water to others outside of OID by 2030. At present OID has renewed commitments to various transfers totaling 27,400 AFY, including the Brisbane transfer (OID, 2012). This is less than the approximately 41,000 AFY that OID historically transferred (as recently as 2010) and approximately 39,600 AFY less than the 67,000 AFY that OID expects to transfer out of its service area with complete implementation of the WRP.

OID's WRP accounts for changes within OID's service area over the next 20 years, including water demand decreases due to land use changes from agriculture to urban and pasture to orchards, and water supply increases resulting from infrastructure improvements reducing "leaks" in the aging canal system and reducing inefficient measurement and control of deliveries as well as new controls to reduce outflow losses,. As such, the WRP anticipates an increase in water supplies made available for transfer or annexation from 30,000 acre-feet to 50,000 acre-feet for firm water transfers, and from 11,000 acre-feet to 17,000 acre-feet for variable water transfers, resulting in a total volume (firm and variable) of available water equal to approximately 67,000 acre-feet by 2030. A "firm water transfer" is defined in the WRP as the quantity of water that would be made available in all water years irrespective of the hydrologic yield of the basin, as is reflected in the water transfer agreement between OID and the City of Brisbane.

Table 4.O-9 below shows the total water supply available to the City with the proposed OID water transfer and total SFPUC supply currently available during normal, single dry, and multiple dry water years. The table shows the same total water supply for a single dry year and the first year in a multiple dry year, and the same total water supply for the second and third years in a multiple dry year.

Table 4.O-10, below, presents the difference between the projected total water demand for Project Site development and total supply with the proposed OID water transfer and SFPUC water supplies for each water year type required by SB 610 for Water Supply Assessments. When there is a water supply shortage, the shortage amount is shown in parentheses. As shown in Table 4.O-10, in combination with buildout of the Brisbane General Plan, the DSP and DSP-V scenarios would not have sufficient water from the beginning during drought periods under Water Savings Program D, and the CPP scenario would not have sufficient water supply by about 2030 onward under the same Water Savings Program D. Further, water supplies would barely meet demand in 2035 under Water Savings Program D for the CPP-V scenario in combination with buildout of the Brisbane General Plan. All Project Site development scenarios would have sufficient water supplies for all water year types through 2035 in combination with buildout of the Brisbane General Plan with implementation of Water Savings Program E.

As shown in Table 4.O-8, water demand for at buildout of proposed Project Site development would be lowest under the CPP-V development scenario with Water Savings Program E (0.485 mgd), with highest water demand occurring under the DSP-V development scenario with Water Savings Program D (1.691 mgd).

TABLE 4.O-9
CITY OF BRISBANE'S PROJECTED WATER SUPPLY IN NORMAL, SINGLE DRY, AND MULTIPLE DRY YEARS WITH OAKDALE IRRIGATION DISTRICT TRANSFER

Year Type[1]	Normal Year		Single Dry Year		Multiple Dry Years					
					Year 1		Year 2		Year 3	
Source	**Volume (mgd)**	**%**	**Volume (mgd)**	**%**	**Volume (mgd)**	**%**	**Volume (mgd)**	**%**	**Volume (mgd)**	**%**
SFPUC	0.980	100	0.813	83	0.813	83	0.706	72	0.706	72
OID Transfer	2.143	100	2.143	100	2.143	100	2.143	100	2.143	100
Total Supply[2]	**3.12**		**2.96**		**2.96**		**2.85**		**2.85**	

NOTES: SFPUC = San Francisco Public Utilities Commission, OID = Oakdale Irrigation District, mgd= million gallons per day

1 The percent reductions for single and multiple dry years are based on the total SFPUC wholesale water allocation reductions. The actual required reductions for the Brisbane Water District (BWD) and Guadalupe Valley Municipal Improvement District (GVMID) will be based on the Tier 2 Drought Implementation Plan (DRIP) (adopted in 2011) that calculates the reduced allocation on a formula factoring in (1) both agencies' Supply Guarantee from the SFPUC, (2) both agencies' purchases from the SFPUC during the 3 years preceding adoption of the DRIP (2008-2011), and (3) the rolling average of the actual water purchased from the SFPUC over the 3 years preceding any drought.

2 Total values are rounded and may not match the sum of values above.

SOURCE: CDM Smith, 2012

TABLE 4.O-10
PROJECTED DIFFERENCE BETWEEN TOTAL BUILDOUT DEMAND AND SUPPLY FOR NORMAL, DRY, AND MULTIPLE DRY WATER YEARS[1]EXPRESSED AS SURPLUS OR (SHORTAGE) IN MILLION GALLONS PER DAY FOR BOTH WATER SAVINGS PROGRAMS D AND E

Project Scenario (Water Savings Program)	2015			2020			2025			2030			2035		
	Normal	Dry	Multi Dry	Normal	Dry	Multi Dry	Normal	Dry	Multi Dry	Normal	Dry	Multi Dry	Normal	Dry	Multi Dry
DSP(D)	0.091	(0.069)	(0.179)	0.051	(0.109)	(0.219)	0.031	(0.129)	(0.239)	0.011	(0.149)	(0.259)	0.001	(0.159)	(0.269)
DSP(E)	0.773	0.613	0.503	0.733	0.573	0.463	0.713	0.553	0.443	0.693	0.533	0.423	0.683	0.523	0.413
DSP-V(D)	0.038	(0.122)	(0.232)	(0.002)	(0.162)	(0.272)	(0.022)	(0.182)	(0.292)	(0.042)	(0.202)	(0.312)	(0.052)	(0.212)	(0.322)
DSP-V(E)	0.749	0.589	0.479	0.709	0.549	0.439	0.689	0.529	0.419	0.669	0.509	0.399	0.659	0.499	0.389
CPP(D)	0.335	0.175	0.065	0.295	0.135	0.025	0.275	0.115	0.005	0.255	0.095	(0.015)	0.245	0.085	(0.025)
CPP(E)	1.141	0.981	0.871	1.101	0.941	0.831	1.081	0.921	0.811	1.061	0.901	0.791	1.051	0.891	0.781
CPP-V(D)	0.446	0.286	0.176	0.406	0.246	0.136	0.386	0.226	0.116	0.366	0.095	0.096	0.356	0.196	0.086
CPP-V(E)	1.244	1.084	0.974	1.204	1.044	0.934	1.184	1.024	0.914	1.164	1.004	0.894	1.154	0.994	0.884

NOTES:

1 The percent reductions for single and multiple dry years are based on the total San Francisco Public Utilities Commission (SFPUC) wholesale water allocation reductions. The actual required reductions for the Brisbane Water District (BWD) and Guadalupe Valley Municipal Improvement District (GVMID) will be based on the Tier 2 Drought Implementation Plan (DRIP) (adopted in 2011) that calculates the reduced allocation on a formula factoring in (1) both agencies' Supply Guarantee from the SFPUC, (2) both agencies' purchases from the SFPUC during the 3 years preceding adoption of the DRIP (2008-2011), and (3) the rolling average of the actual water purchased from the SFPUC over the 3 years preceding any drought.

SOURCE: CDM Smith, 2012

The total future water demand for the City in 2035 with buildout of both proposed Project Site development and the Brisbane General Plan (i.e., including the additional developments at Sierra Point) would range from 1.555 mgd for the CPP-V scenario to 2.761 mgd for the DSP-V scenario, as highlighted in Table 4.O-8. The proposed OID agreement provides a water transfer of up to a maximum of 2.143 mgd (2,400 AFY) for a 50-year term. In combination with Brisbane's SFPUC supply of 0.980 mgd, the OID transfer would provide the City a total of 3.123 mgd. Thus, there would be adequate water supply to serve the City's water demand, along with buildout of any of the Project Site development scenarios, for every water year type (including single and multiple dry years) through 2035 with the Water Savings Program E and impacts would be less than significant.

Conclusion: Existing City water supply would be inadequate to meet demands for Project Site development in combination with City General Plan buildout through 2035 under all four Project scenarios. However, with implementation of the proposed OID water transfer agreement along with implementation of Water Savings Program E, sufficient firm water supply would be available for Project Site development under all four scenarios in combination with General Plan buildout and no significant water supply impact would result.

Water Storage Capacity

While there would be sufficient water supply to meet the long-term annual water demands of Project Site development if the proposed water transfer agreement is approved, the City has determined that it does not have existing facilities that could provide adequate peak day / peak hour water flow to the Project Site in the event of an emergency. Additional storage capacity within the City is needed to provide adequate fire flows and meet peak daily water demands. Local water storage capacity is critical for providing reserve for fire flow, reserve for emergency conditions, and pressure equalization during peak demands. Proposed Project Site development would require additional water storage for the purpose of maintaining fire flows within the Project Site and providing emergency supply. The City's goal is to ensure that sufficient infrastructure is in place in order to provide the ability to equalize peak demands within its own system without depending on the SFPUC's system to provide the required storage volume in the future. Mitigation Measure 4.O-1 would require that the Project Site development applicant pay its fair share costs to Brisbane to develop the necessary storage capacity for fire flow and peak day water service to the Project Site.

See further discussion of water storage facilities under Impact 4.O-3 below.

Conclusion: Existing water storage facilities would not provide adequate peak day / peak hour water flow to the Project in the event of an emergency. Additional storage capacity within the City is needed to provide adequate fire flows and meet peak daily water demands. Mitigation Measure 4.O-1a is recommended.

Mitigation

Mitigation Measure Applicability by Scenario			
DSP	**DSP-V**	**CPP**	**CPP-V**
✓	✓	✓	✓
✓ = measure applies - = measure does not apply			

Mitigation Measure 4.O-1a: The City shall issue building permits for habitable structures only after it determines that sufficient water storage is available and connected to the Project Site's water delivery system. Water storage facilities shall be constructed either by the Brisbane Baylands developer or by the City, as mutually agreed. Should the City construct facilities, site-specific development projects shall reimburse the City for their fair share of costs, as determined by the City of Brisbane Public Works Department, for the development of water storage to provide fire flows and peak daily water demands to serve Project Site development. Prior to issuance of the first permit of occupancy, site-specific development projects shall verify the availability of adequate water storage capacity to provide fire flows and meet peak daily water demands to serve Project Site development. Each required specific plan for development within the Project Site shall include this mitigation measure as a requirement for future development.

Conclusion with Mitigation: With the inclusion of **Mitigation Measure 4.O-1a**, the potential for insufficient water storage would be a less-than-significant impact for all four Project Site development scenarios.

Effects of Proposed OID Water Transfer

As discussed in Subsection 4.O.2, *Environmental Setting*, above, the proposed annual surface water transfer of 2,400 AFY from OID to Brisbane represents a small part of OID's plan to sell and transfer up to 67,000 AFY of its surface water to others outside of its district. OID's water transfer plans are a key element of its Water Resources Plan (WRP) adopted in 2007. The sale and transfer of some of its water to others is an important strategy by which OID is securing the funding required to make needed improvements to its facilities to improve system and supply reliability to its customers. OID prepared a CEQA Program EIR (PEIR) on the WRP to analyze the effects of its long-term water management plans including the proposed water transfers (OID, 2007). This assessment of the effects of the OID water transfer of 2,400 AFY to Brisbane to be implemented as part of the Project tiers from OID's 2007 WRP PEIR.[11]

Effects on OID and Stanislaus River Resources. The transfer of 2,400 AFY of surface water from OID to Brisbane would not result in significant environmental effects on the Stanislaus River or its associated environmental resources. OID historically has sold and transferred approximately 41,000 AFY of surface water out of its district to others. OID's adopted Water Resources Plan calls for long-term, firm water transfers of 30,000 to 50,000 AFY and an additional 11,000 to 17,000 AFY of variable water transfers, for a total of up to 67,000 AFY of

[11] Public Resources Code Sections 21093 and 21094 and CEQA Guidelines Section 15142 provide for tiering environmental review of a later project from a prior environmental impact report prepared and certified for a program, plan, policy, or ordinance. Tiering is appropriate for a later project when it is "consistent with the program, plan, policy, or ordinance for which an environmental has been prepared and certified." When tiering is used, CEQA requires that the later environmental impact report refer to the prior environmental impact report and state where a copy of the prior environmental impact report may be examined. The OID WRP PEIR can be viewed at the City of Brisbane Community Development Department during normal working hours and is available online at http://www.oidwaterresources.org/

transfers by the year 2030. In accordance with its adopted Water Resources Plan, on top of the 41,000 AFY now available for transfer, OID will make additional water available for transfer by increasing water conservation within its district through improvements to its in-district water delivery system. In addition, pending land use changes within the district (from pasture to orchard and from agricultural to residential/urban uses) will result in some reductions in water use within the district. As a result, water that is currently and has historically been diverted from the Stanislaus River and used within the district will be available for transfer without increasing diversions from the Stanislaus River. The 2,400 AFY of water that OID would transfer to Brisbane as part of Project Site development is water that previously has been transferred to another entity outside the district; no new diversions from the Stanislaus River would occur and no impact on the river or its resources (i.e., water resources, water quality, biological resources, aesthetic resources, or recreation resources) would occur as a result of the proposed transfer.

Further, the proposed OID water transfer to Brisbane would not result in significant impacts on OID's water supply availability or ability to meet the services needs within its district. OID's 2007 Water Resources Plan establishes a long-term program to improve water supply and system reliability for OID's existing and future customers (OID, 2007[DEIR, Executive Summary p. IV]). In developing the water transfer element of its plan, OID carefully and conservatively reserved adequate water supply for long-term needs within the district for existing and future customers and also considered the future water supply needs of neighboring cities (OID, 2007 [DEIR, Chapter 2, Program Description and Alternatives, subsection 2.2.13, p. 2-93). OID's water transfer program identifies planned targets for both firm and variable water transfers; the variable transfers, which are shorter term, give OID added flexibility to maximize the continual beneficial use of its surface water rights by entering into some transfers in the near term while reserving control of adequate supply to meet evolving future local needs for additional supply. The transfer of 2,400 AFY from OID to Brisbane represents a small percentage (about 6 percent) of the 41,000 AFY has been historically diverted from the Stanislaus River and transferred out of the district and would not result in a significant impact on OID customers. Similarly, transfer of this water would not result in harm to other downstream water users. This transfer represents some of the 41,000 AFY of water that OID has previously transferred to other entities outside the district and does not involve increased diversion from the Stanislaus River that would reduce available supplies for other downstream users; in essence, no physical change to the river or water resources within and downstream of the district would result from the transfer.

Finally, transfer of the 2,400 AFY from the OID system would not require any new or expanded facilities within the OID service area. Again, this amount of water is within the 41,000 AFY has already historically transferred out of the district. For this transfer, OID would use existing facilities and interconnections to move the water to the neighboring MID system.

Effects on MID and SFPUC Supply Availability. To effect the transfer of 2,400 AFY from OID to Brisbane, this amount of water would be delivered by OID into the neighboring MID system. No new or expanded facilities are required for MID to receive this amount of transfer water from OID. MID would make use of 2,400 AFY within its service area and, in return, MID would hold a like amount in New Don Pedro Reservoir and credit this amount to the SFPUC. MID is a co-owner and

operator of New Don Pedro Reservoir (along with the Turlock Irrigation District [TID], which stores water diverted under MID and TID water rights from the Tuolumne River). Thus, MID would use the 2,400 AFY from OID instead of taking it out of New Don Pedro Reservoir. In turn, the SFPUC would retain 2,400 AFY in Hetch Hetchy Reservoir instead of releasing it downstream into the Tuolumne River for storage in New Don Pedro Reservoir. There would simply be a substituting of 2,400 AFY of OID water for an equal amount of water that otherwise would have been released by the SFPUC and diverted by MID from New Don Pedro Reservoir. Thus, the proposed water transfer would have no net effect on the amount of storage in Don Pedro Reservoir, total diversions from the Tuolumne River, or supply availability for MID or the SFPUC.

Effects on Tuolumne River Resources. As the result of the proposed water transfer agreement, there would be a change in the amount of water released from Hetch Hetchy Reservoir flowing down the segment of the Tuolumne River between Hetch Hetchy Reservoir and New Don Pedro Reservoir. As noted above, to implement the OID to Brisbane water transfer, the SFPUC would hold 2,400 acre-feet per year in Hetch Hetchy instead of releasing it down the Tuolumne River for capture by MID/TID in New Don Pedro Reservoir and redirect that 2,400 acre-feet per year to Brisbane through its regional water system. The SFPUC evaluated the effects of increasing diversions from the Tuolumne River and, in turn, reducing flow releases from Hetch Hetchy Reservoir on the Tuolumne River and its resources in the Program EIR it prepared on its Water System Improvement Program (WSIP) (San Francisco Planning Department, 2008). This Program EIR is incorporated by reference; it is available for review on the SF Planning Department website [http://www.sf-planning.org/index.aspx?page=1829] and also at the City of Brisbane Planning Department during regular business hours.

The EIR evaluated the impacts of a range of possible additional diversions from the Tuolumne River from 2 mgd to 24 mgd. The original proposal for the WSIP included provision of additional supply from the regional water system to meet customer demands through the year 2030. This included additional diversion of Tuolumne River supply under the SFPUC's existing water rights of approximately 24 mgd on an average annual basis. As described above in the setting section, the SFPUC did not adopt the full WSIP as originally proposed but instead adopted a variation of the program called the Phased WSIP Variant. The adopted WSIP provides for the water delivery needs of the regional water system customers only through the year 2018 instead of 2030. The approved program results in an increased diversion from the Tuolumne of 2 mgd, which is the result of improving the delivery reliability of the regional water system through various conveyance capacity improvements coupled with a proposed dry-year water transfer so that the SFPUC could secure a supplemental supply in drought years. The SFPUC is nearing completion on many of the infrastructure projects approved as part of the WSIP and is targeting 2019 for completion of the full system upgrade program. In 2012, the SFPUC also initiated processing of the proposed long-term 2-mgd dry year water transfer, which was to have come from MID and/or TID, but has tabled that action for the time being. At this time, the SFPUC is pursuing a one-year transfer of 2 mgd from OID for 2014 only to address anticipated drought conditions.

As described and analyzed in the WSIP PEIR (Vol. 7a, p. 13-8, Table 13.2, and Vol. 8, Appendix O-3), the adopted WSIP would result in an increase in average annual diversions of

2 mgd from the Tuolumne River over existing conditions in the area along the Tuolumne River between Hetch Hetchy and Don Pedro Reservoirs. The WSIP PEIR described and analyzed impacts on the following potentially affected resources (see PEIR Vol. 3, Section 5.3, and Vol. 7a, Sections 14.5, 14.6, and 14.7): stream flow and reservoir water levels; geomorphology; surface water quality; surface water supplies; groundwater; fisheries; terrestrial biological resources, recreational and visual resources; and energy resources. With one exception, the WSIP PEIR determined that impacts of the adopted WSIP—including the MID water transfer—on potentially affected resources in the Tuolumne River watershed and downstream water bodies would be less than significant, and no mitigation measures would be required. The one exception is that the WSIP PEIR identified potentially significant—but mitigable—impacts to terrestrial biological resources in the Tuolumne River watershed due to an increase in average annual diversions from the Tuolumne River and the associated modifications in releases from Hetch Hetchy Reservoir. These impacts were identified for the reach of the river between Hetch Hetchy Reservoir (O'Shaughnessy Dam) and Don Pedro Reservoir, with particular impacts to meadow and alluvial features in this reach, including the Poopenaut Valley, and are explained below. Because impacts on biological resources are based on changes in stream flow, the WSIP impacts on stream flow are briefly described first, followed by the description of the potentially significant impact on biological resources. Please see WSIP PEIR, Vol. 3, Section 5.3, as augmented in Vol. 7a, Sections 14.5, 14.6, and 14.7, for a description of the less-than-significant impacts on the other potentially affected resources.

The WSIP PEIR determined that the WSIP would result in slight modifications to volume, frequency and timing of releases from Hetch Hetchy Reservoir, thereby changing flow patterns in the Tuolumne River below the reservoir compared to the baseline conditions (WSIP PEIR, Vol. 3, Section 5.3; Vol. 7a, Section 14.6; and Vol. 8, Appendix O-3). Below Hetch Hetchy Reservoir, the effects of the 2 mgd increased diversion would generally consist of a few days delay in releases of water from the reservoir and a slight reduction in the total volume of releases to the river in normal, below-normal, and dry years, and a slight increase in reservoir releases in wet years. While these changes were determined to be less than significant relative to stream flow, the WSIP PEIR determined that the WSIP would result in *potentially significant* impacts on terrestrial biological resources along the Tuolumne River from O'Shaughnessy Dam to Don Pedro Reservoir, and specifically to the sensitive wetland and riparian habitat and associated plant and wildlife species in the Poopenaut Valley (WSIP PEIR Impact 5.3.7-2, Vol. 3, pp. 5.3.7-21 to 5.3.7-22, and Vol. 7a, pp. 14.6-1 to 14.6-13). The WSIP PEIR also determined that implementation of Mitigation Measure 5.3.7-2, Controlled Releases to Recharge Groundwater in Streamside Meadows and Other Alluvial Deposits (WSIP PEIR, Vol. 4, Section 6.4.2, pp. 6-49 to 6-50), would reduce the severity of this impact to a less-than-significant level. Mitigation Measure 5.3.7-2, which was adopted by the SFPUC in October 2008 (SFPUC Resolution 08-200) as part of the WSIP approval and adoption of the Mitigation Monitoring and Reporting Program, requires the SFPUC to manage releases from Hetch Hetchy Reservoir to promote recharge of groundwater in riverside meadows in the Poopenaut Valley and streamside alluvial deposits. With implementation of this measure, it is expected that meadow conditions in the Poopenaut Valley will be maintained in the pre-WSIP state or improved.

The OID-Brisbane water transfer would contribute to this potential impact on the Tuolumne River associated with changes in the SFPUC's existing reservoir release pattern from Hetch Hetchy

Reservoir that, in some years, could lead to flow changes that could adversely affect streamside meadows and other alluvial deposits. The SFPUC is implementing the following adopted WSIP PEIR mitigation in order to reduce potential impacts to the streamside meadows and other alluvial deposits along the Tuolumne River below this reservoir to less than significant. The SFPUC's mitigation action will, in effect, address this impact and remedy it such that it would not continue to be an impact issue for a transfer such as proposed between OID and Brisbane. However, in an abundance of caution, this impact is considered to be significant but mitigable for the OID-Brisbane water transfer element of the Project and the following mitigation measure 4.O-1b is recommended:

Mitigation Measure 4.O-1b: Controlled Releases to Recharge Groundwater in Streamside Meadows and Other Alluvial Deposits. As part of this measure the SFPUC will gather baseline data regarding the extent, species composition and condition of the existing meadow vegetation within the Poopenaut Valley. Some of these environmental baseline data may be available as a result of current study efforts in the Poopenaut Valley. As needed, the SFPUC will augment this information by carrying out vegetation composition surveys in the meadow before implementing the WSIP and at 5 year intervals after WSIP implementation to assess the efficacy of mitigation releases in maintaining or improving the percentage cover of meadow species as described by Ratliff (1985). The basic methodology for baseline vegetation survey and subsequent mitigation monitoring will be generally accepted quantitative vegetation sampling methods to permit statistical comparison of vegetation composition over time, as well as mapping the meadow vegetation in the Poopenaut Valley. The SFPUC will retain the services of a qualified biologist to assist in shaping the releases from Hetch Hetchy Reservoir in consideration of baseline and future meadow vegetation data. If a significant decline in the extent or diversity of native meadow vegetation occurs, releases will be modified as needed to achieve the mitigating effect of sustaining the existing meadow communities.

Mitigation Measure Applicability by Scenario			
DSP	**DSP-V**	**CPP**	**CPP-V**
✓	✓	✓	✓
✓ = measure applies - = measure does not apply			

The SFPUC will manage reservoir releases for this purpose by releasing the expected available volume of water in the reservoir in a pattern that provides flows of a magnitude that inundate the meadows and streamside alluvial deposits for as long as possible. For example, rather than making releases at a constant rate each day (e.g., releasing 1,000 cfs for seven days), the SFPUC could release the same volume of water but with varying cfs rates, creating flow pulses to meet the objective. As part of this measure the SFPUC will gather baseline data regarding the extent, species composition and condition of the existing meadow vegetation within the Poopenaut Valley. Some of these environmental baseline data may be available as a result of current study efforts in the Poopenaut Valley. As needed, the SFPUC will augment this information by carrying out vegetation composition surveys in the meadow before implementing the WSIP and at 5 year intervals after WSIP implementation to assess the efficacy of mitigation releases in maintaining or improving the percentage cover of meadow species as described by Ratliff (1985).

The basic methodology for baseline vegetation survey and subsequent mitigation monitoring will be generally accepted quantitative vegetation sampling methods to permit statistical comparison of vegetation composition over time, as well as mapping the meadow vegetation in the Poopenaut Valley. The SFPUC will retain the services of a qualified biologist to assist in shaping the releases from Hetch Hetchy Reservoir in consideration of baseline and future meadow vegetation data. If a significant decline in the extent or

diversity of native meadow vegetation occurs, releases will be modified as needed to achieve the mitigating effect of sustaining the existing meadow communities.

Conclusion with Mitigation: With the inclusion of **Mitigation Measure 4.O-1b**, the potential for impacts to streamside meadows and other alluvial deposits along the Tuolumne River due to reduced flow releases in the reach of the river below Hetch Hetchy Reservoir to New Don Pedro Reservoir associated with the 2 mgd (2,400 acre-feet per year) OID-Brisbane water transfer would be a less-than-significant impact for all four Project development scenarios.

Effects on SFPUC System Capacity. To complete the water transfer, physically, from OID to Brisbane, the SFPUC would deliver 2,400 AFY from its regional water system to Brisbane. Brisbane would negotiate an agreement with the SFPUC to wheel the OID transfer water through the SFPUC's regional water system in accordance with the provisions in the California Water Code. Water Code section 1810 provides "neither the State, nor any regional or local public agency may deny a bona fide transferor of water the use of a water conveyance facility which has unused capacity, for the period of time for which that capacity is available, if fair compensation is paid for that use." Fair compensation is "the reasonable charges incurred by the owner of the conveyance system, including capital, operation, maintenance, and replacement costs, increased costs from any necessitated purchase of supplemental power, and including reasonable credit for any offsetting benefits for the use of the conveyance system." Section 1810 of the Water Code also requires that "use of a water conveyance facility be made without injuring any legal user of water and without unreasonably affecting fish, wildlife, or other instream beneficial uses and without unreasonably affecting the overall economy or the environment of the county from which the water is being transferred."

As discussed in Subsection 4.O.2, *Environmental Setting*, above, Brisbane is already one of the SFPUC's wholesale customers and there are already facilities in place that deliver SFPUC water to Brisbane. No new facilities would be required. The SFPUC regional water system has the capacity to convey 2,400 AFY of water to Brisbane without adversely affecting the SFPUC's operations or delivery capability to its customers. The average annual water delivery through the SFPUC's regional water system is 265 mgd. In October 2008, the SFPUC adopted its Water System Improvement Program (WSIP), a comprehensive program to make improvements to facilities throughout the regional water system to improve seismic reliability, water quality, supply and system reliability and, to develop adequate supplemental supplies to meet level of service objectives through the planning horizon year 2030. At the time the WSIP was developed, the 2030 total water delivery demand on the regional water system was projected to be 300 mgd (209 mgd for the Wholesale Customers, which includes Brisbane). The SFPUC adopted a variation of the originally proposed program called the Phased WSIP Variant that approved immediate implementation of all facility improvement projects to meet 2030 service goals but phased implementation of the water supply delivery element. As a result, water delivery from the regional water system was limited to 265 mgd (184 mgd for the Wholesale Customers) while facility improvements underway will give the regional water system the capacity to deliver up to 300 mgd, the projected 2030 water delivery demand. The adopted WSIP requires the SFPUC to reevaluate 2030 water delivery demands and make a decision regarding whether or not to increase deliveries from the regional water system above the 265 mgd by the end of 2018.

The proposed 2,400 AFY (2.143 mgd) water transfer represents 0.8 percent of the SFPUC's 265 mgd average annual water deliveries through the regional water system. The actual deliveries through the system vary from year to year as well as seasonally and have been as high as 300 mgd. The proposed annual water transfer volume represents a small fraction of the overall system capacity and, in combination with the SFPUC's annual deliveries, flows through the system would remain within the system capacity. Further, insofar as the SFPUC is now completing WSIP facility improvement projects that will fortify the regional water system's ability to reliably deliver up to 300 mgd, the regional water system capacity will be improved further. On an annual basis, the proposed OID to Brisbane transfer of 2,400 AFY would not have a significant impact on the SFPUC system capacity or ability to achieve the SFPUC level of service objectives for its customers.

However, there are and will be times when the SFPUC regional water system is operated at full capacity in order to refill reservoirs after the dry season or a drought period and/or to allow for maintenance shutdowns in parts of the system. As a result, the SFPUC system may not have capacity on any given day to deliver 2 mgd such that water delivery to Brisbane through the SFPUC system complies with the State's water wheeling requirements and does not unduly impinge on the SFPUC's daily or seasonal system capacity and ability to operate its system in a manner consistent with its level of service goals and customer delivery needs. However, given the relatively small volume of water that Brisbane proposes to wheel through the SFPUC regional water system it is expected that the transfer will be implemented in a manner that meets Brisbane's water supply needs (2,400 acre-feet per year and 2 mgd) and does not adversely affect SFPUC's system capacity. See **Section 6.3, Cumulative Impacts**, for a discussion of cumulative effects on the SFPUC system capacity and operations as a result of this transfer coupled with other future potential proposals to wheel water through the SFPUC regional water system.

Conclusion: The OID water transfer of 2,400 AFY to Brisbane would have no significant impacts on OID or Stanislaus River resources or on MID or SFPUC systems.

Impact 4.O-2: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
LTS	LTS	LTS	LTS

SU = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

DSP, DSP-V, CPP, and CPP-V

Development of the Project Site would result in a substantial increase in the generation of wastewater within the Project Site. For planning purposes, average daily wastewater generation for Project Site development was calculated based on 95 percent of the total water demand (see **Table 4.O-11**).

TABLE 4.O-11
ESTIMATED SEWAGE GENERATION
(in million gallons per day)[1]

Scenario		Average Daily Water Demand	Average Daily Sewage Generation	Average Daily Water Demand	Average Daily Sewage Generation
		No Onsite Recycled Water Plant (with Water Savings Program D)		Onsite Recycled Water Plant (with Water Savings Program E)	
DSP	Summer	1.638	1.556	0.955	0.908
	Winter	1.333	1.267	0.955	0.908
DSP-V	Summer	1.691	1.606	0.980	0.931
	Winter	1.386	1.317	0.980	0.931
CPP	Summer	1.394	1.324	0.588	0.558
	Winter	0.883	0.839	0.588	0.558
CPP-V	Summer	1.282	1.218	0.485	0.461
	Winter	0.771	0.733	0.485	0.461

NOTES:
Summer = 228 days
Winter = 137 days

[1] Sewer demand calculated as 95 percent of water demand.

SOURCE: Brown and Caldwell, 2011 (for DSP and DSP-V) (See text for explanation of how CPP and CPP-V water demand values were calculated from using Brown and Caldwell data.)

Each of the four development scenarios includes development of an onsite recycled water plant (RWP) that would produce recycled water upon its completion, which is expected to occur by year 15 in the development buildout schedule as described under "Impact Assessment Methodology" above. Therefore, Table 4.O-11 presents two sets of wastewater demand estimates: one assuming no onsite recycled water plant and one assuming the onsite recycled water plant is constructed and operating at full capacity. Until the onsite recycled water plant is in full operation, all wastewater flows would be discharged to the existing BSD wastewater collection system and sent to the SFPUC's SEP for treatment and discharge to San Francisco Bay. This would require the BSD to notify the SFPUC and obtain its approval for the additional flows from the Project Site. The SFPUC generally approves such requests, provided that the additional flows are within the contracted capacities, as would be the case for wastewater generated within the Project Site. Because the proposed Recology expansion under the CPP-V scenario represents a modernization and consolidation of existing facilities within San Francisco, wastewater discharge to the SFPUC under this scenario would not increase significantly over the levels of discharge that Recology makes to the SFPUC wastewater system. Recology would continue to be served by direct connection to the SFPUC. The Recology site wastewater discharge would be approximately 0.053 mgd.

Prior to construction of new uses within the Project Site, a Wastewater System Master Plan would be prepared in coordination with the City, SFPUC, and BSD, including detailed system layouts, specifications, number of pump stations, pump station design criteria, recycled water plant capacity requirements and design, and phasing of the new wastewater system in relation to phasing of Project Site development. Design reports for the new recycled water plant would be coordinated with the City of Brisbane and BSD to determine specific design requirements. The

amount of raw sewage during the first increments of Project Site development would be discharged to the BSD collection system (and on to the SFPUC collection system for treatment). The amount of wastewater discharged to BSD and SFPUC would vary depending on a number of factors, including the construction phasing of the onsite recycled water plant, the initial capacity of the facility, and the demand for non-potable water. Once the recycled water plant is constructed and in operation, most of the liquid waste component of the wastewater flows from the Project Site would be diverted to the recycled water plant, while the solids and some of the liquid would continue to be discharged to the BSD and eventually the SFPUC SEP system for treatment. Any recycled water produced at the onsite recycled water plant in excess of proposed Project Site development demand also would be discharged to the proposed Project Site's wastewater system for treatment at the SEP by the SFPUC.

Sewage Generation Without Onsite Recycled Water Plant (Water Savings Program D)

Project Site development's average daily wastewater generation would range from approximately 0.733 mgd (for the CPP-V in winter) to 1.606 mgd (for the DSP-V scenario in summer) without construction of the onsite recycled water plant. Because the Baylands north of Brisbane Lagoon is within the boundaries of the BSD, the BSD is the only entity authorized to provide wastewater services for the Project Site development. Without the onsite recycled water plant, all wastewater flows would be sent to the BSD wastewater collection system and then to the SFPUC's SEP for treatment. The City has a contractual maximum dry weather wastewater flow of 6.0 mgd with the SPFUC for treatment at the SEP. The BSD average daily wastewater flows in 2011 were approximately 0.406 mgd. With Project Site development, the BSD's wastewater flows would increase to a maximum of 2.012 mgd. Because the BSD's contract with the SFPUC has no wastewater flow limits, Project Site development would not exceed wastewater flow limits. However, the BSD is required to notify the staff of the SFPUC of new development projects requiring wastewater treatment above 0.200 mgd to confirm capacity at the SEP.

As noted above, base sanitary dry weather flows projected for the City through 2020 (mainly planned developments and new office districts) are 0.45 mgd. Project Site development would generate up to 1.606 mgd of daily dry weather wastewater flows (without the onsite recycled water plant), which would result in total dry weather flows of up to 2.056 mgd, or 3.944 mgd less than the City's contractual maximum flow of 6.0 mgd to the SEP.

Sewage Generation With Onsite Recycled Water Plant (Water Savings Program E)

With construction of the onsite recycled water plant, wastewater generation from Project Site development would range from approximately 0.461 mgd (for the CPP-V in winter) to 0.931 mgd (for the DSP-V scenario in summer). At full capacity, the recycled water plant would be designed to treat most of the liquid wastewater component generated from development within the Project Site.[12] The remaining liquid waste and all of the solid waste would continue to be discharged to the BSD system and on to the SFPUC SEP for treatment and disposal.

[12] The onsite recycled water plant would be designed only for treatment of wastewater generated within the Project Site and would not accept flows from outside of the Baylands. Wastewater generated by the existing Recology facility, including the proposed Recology site expansion (CPP-V scenario), would be transported directly to the SFPUC and would not be treated at the onsite recycled water plant.

The BSD provides wastewater services to the upland portion of the Project Site. This also applies to any future wastewater treatment that provides recycled water. Because wastewater generation rates are lower under this option than the option without the onsite recycled water plant described above, wastewater flows would not exceed the BSD's existing contracted dry weather flows with the SFPUC. Similarly, if the entire Project Site were to be annexed into the City's wastewater service area, the wastewater generated by Project Site development would not exceed Brisbane's contracted dry weather flows with the SFPUC.

Conclusion: Based on existing and projected wastewater flows from the BSD and the City to the SFPUC, development of the Project Site with or without the onsite recycled water plant would not exceed either the BSD's or the City's contractual capacity for wastewater treatment by the SFPUC. Further, the Recology site wastewater discharge to the SFPUC would only increase by approximately 0.002 mgd. Therefore, adequate treatment capacity at the SFPUC would be available for wastewater generated within the Project Site, and impacts would be less than significant.

Wastewater generated by development within the Project Site is proposed to be discharged into the BSD system for treatment at the SFPUC SEP. Midway through the Project Site development buildout (about year 15), an onsite recycled water plant would be constructed to produce recycled water to meet non-potable water needs on the Project Site and reduce potable water demand. The recycled water plant would therefore reduce the liquid wastewater flows requiring offset conveyance and treatment. Adequate conveyance and treatment capacity are available in the BSD and SFPUC SEP systems under existing contract arrangements to handle wastewater flows from Project Site development. As a result, wastewater flows from Project Site development would be properly treated and disposed of through facilities that comply with SFRWQCB wastewater treatment requirements and impacts would be less than significant.

Impact 4.O-3: Would the Project result in the construction of new water, wastewater treatment, and/or stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
SU	SU	SU	SU

SU = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

Water Storage Facilities for DSP, DSP-V, CPP, and CPP-V

As discussed above in Impact 4.O-1 under the discussion of "Water Storage Capacity," additional local storage capacity within the City to provide for fire flows and peak day demand would be needed for the City to serve development on the Project Site. Mitigation Measure 4.O-1 requires the developer to either construct facilities or reimburse the City for a fair share of the costs borne by the City should the City construct local storage and water delivery facilities. Thus, the Project would require the construction of new or expanded local water storage and conveyance infrastructure.

While the City has future plans to build a water storage tank to directly provide fire flow demand and peak demand equalization to lower pressure zones, including the Project Site, funding has not been identified, nor has a specific site or schedule for construction been developed for new water storage tanks. The location, design, and method of construction for future water storage facilities to serve Project Site development has not been determined, but it can be assumed that in order to provide for sufficient water pressure to the Project Site, a new storage tank would need to be located at an elevation higher than the Project Site, most likely in a hillside location. Construction of a new storage tank could result in environmental impacts due to (1) siting, which could affect slope stability or visual, biological, land use, and/or cultural resources; and (2) construction, which could result in noise, dust, other air pollutant emissions, soil erosion, and possible water quality effects. While it is likely that impacts of siting and constructing such a storage facility could be avoided or mitigated to less-than-significant levels through a combination of siting options and mitigation measures, at this time without site-specific information these impacts are considered to be significant unavoidable.

Conclusion: In the absence of information regarding location, design, and method of water storage facility construction, it must be assumed that constructing a new storage tank on a hillside could result in significant environmental impacts in areas such as visual resources, slope stability, erosion and water quality, and possibly biological resources. While it is likely that impacts of siting and constructing such a storage facility could be avoided or mitigated to less-than-significant levels through a combination of siting options and mitigation measures, at this time without site-specific information these impacts are considered to be significant unavoidable.

Water Treatment Facilities for DSP, DSP-V, CPP, and CPP-V

No water treatment facilities would be needed or constructed as part of development of the Project Site, and there would be no impact.

Conclusion: No impact would occur.

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
-	-	-	-

SU = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

Recycled Water Plant for DSP, DSP-V, CPP, and CPP-V

Proposed Project Site development includes construction of a recycled water plant that would treat sewage generated within the Project Site and supply recycled water for irrigation and non-potable plumbing via a dual-piped plumbing system.[13] Impacts of the onsite recycled water plant operations in relation to applicable wastewater treatment requirements are discussed under Impact 4.O-4, below.

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
SU	SU	SU	SU

S = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

[13] As previously noted, during the early to middle portions of Project Site development, sewage generated within the Project Site would flow to the Bayshore Sanitary District's collection system for delivery to the SFPUC and treatment at the SEP.

Impacts related to aesthetics of Project Site development, including the proposed treatment facility, are addressed in Section 4.A, *Aesthetics*. As noted in that section, since the recycled water plant would be no greater in height or bulk than other building within the Project Site, the plant would not contribute to loss of blue water views of San Francisco Bay. In addition, Mitigation Measure 4.A-3 is proposed to ensure that outdoor storage of materials and equipment would be screened from public view. Aesthetic impacts of the recycled water plant would therefore be less than significant.

Air quality impacts of the onsite recycled water plant are included in the air quality impacts evaluated in Section 4.B, *Air Quality*. While the recycled water plant would be required to meet Bay Area Air Quality District (BAAQMD) emissions standards and therefore be considered to have less-than-significant air quality impacts, the plant would contribute to the significant unavoidable air quality impacts identified in that section. To address odor impacts, the following requirements would be included in the design of the recycled water plant:

- Odor control using activated carbon canister shall be provided for all air that is vented from lift stations.
- For treatment units, all odor control systems shall be two state – biological technology, such as bulk media bio-filtration, followed by activated carbon.
- Any conventional recycled water plant shall be fully enclosed in a building and ventilated through a two-stage odor scrubbing system.

Biological resources impacts of the onsite recycled water plant are included in the evaluations set forth in Section 4.C, *Biological Resources*. As noted in that section, impacts on biological resources would occur as the result of Project Site remediation and grading. Development and operation of the recycled water plant would be required to comply with the applicable mitigation measures set forth in Section 4.C and would therefore result in less-than- significant impacts on biological resources.

Cultural resources impacts of the onsite recycled water plant are included in the evaluations set forth in Section 4.D, *Cultural Resources*. As noted in that section, impacts on cultural resources would occur as the result of Project Site remediation and grading, as well as reuse of historic structures and development adjacent to those structures. Development and operation of the recycled water plant would be required to comply with the mitigation measures set forth in Section 4.D and would therefore result in less-than-significant impacts on cultural resources.

Geologic, soils, and seismic impacts of the onsite recycled water plant are included in the evaluations set forth in Section 4.E, *Geology, Soils, and Seismicity*. As discussed in that section, geologic and seismic impacts are related to the structural design of buildings to be developed within the Project Site. Because site remediation and grading would be required to provide a stable base for Project Site development and the recycled water plant would be required to meet all applicable seismic design standards, impacts would be less than significant.

Greenhouse gas emissions are included in the evaluations set forth in Section 4.F, *Greenhouse Gas Emissions*. While the recycled water plant would be required to meet applicable emissions

standards, plant operations would contribute to the significant unavoidable greenhouse emissions impacts identified in that section for the CPP and CPP-V scenarios. Greenhouse gas impacts of the DSP and DSP-V scenarios would be less than significant.

Evaluation of hazards and hazardous materials impacts of the onsite recycled water plant is included in the evaluations set forth in Section 4.G, *Hazards and Hazardous Materials*. As discussed in that section, the primary hazards and hazardous materials impacts of Project Site development relate to the required remediation of the former railyard and landfill areas onsite. Operation of the proposed recycled water plant would involve the storage and use of hazardous materials common to the operation of treatment plants. The proposed onsite recycled water plant would be required to meet all applicable safety regulations, and impacts are therefore considered to be less than significant.

Hydrology and water quality impacts associated with the onsite recycled water plant are included in the evaluations set forth in Section 4.H, *Hydrology and Water Quality*. As discussed in Section 4.H, hydrologic impacts would result from the increase in impervious surfaces onsite in the form of buildings, parking areas, streets and sidewalks, and other hardscape areas. The impervious surfaces that would be created as the result of recycled water plant development were accounted for in the evaluation of increased runoff and flooding potential addressed in Section 4.H. Treatment plant design and operations would also be required to meet applicable wastewater discharge requirements, as well as all applicable provisions of National Pollutant Discharge Elimination System (NPDES) permits and hazardous materials storage regulations to prevent contamination of surface water runoff. Hydrology and water quality impacts of the recycled water plant would therefore be less than significant.

Energy resources impacts of the onsite recycled water plant are included in the evaluations set forth in Section 4.P, *Energy Resources*. As discussed in that section, as the result of a substantial commitment to onsite renewable energy generation, energy impacts would be less than significant. In addition, as discussed in Chapter 3, *Project Description*, energy use of the onsite recycled water plant would be reduced through co-generation facilities at the plant if they are determined to be feasible.

Conclusion: The proposed new recycled water plant included in the Project would have significant impacts in relation to aesthetic resources, air quality, biological resources, cultural resources, and other areas. Specific mitigation measures are identified below.

Mitigation: This EIR recommends the following applicable mitigation measures: Mitigation Measure 4.A-3 (screening of outdoor storage); Mitigation Measures 4.B-2a and 4.B-2b (construction emissions); Mitigation Measures 4.C-1a through 4.C-1c, Mitigation Measures 4.C-2a through 4.C-2c, and Mitigation Measures 4.C-4d and 4.C-4e (biological resources); Mitigation Measures 4.D-2 and 4.D-4 (archaeological resources and human remains); Mitigation Measures 4.G-2a and b (site

Mitigation Measure Applicability by Scenario

DSP	DSP-V	CPP	CPP-V
✓	✓	✓	✓

✓ = measure applies
- = measure does not apply

remediation); Mitigation Measure 4.G-2d (NPDES permitting), Mitigation Measure 4.G-2e (hazardous materials business plan), Mitigation Measures 4.G2f through h (soil vapor barriers), Mitigation Measure 4.G-3 (school facilities construction), Mitigation Measure 4.J-1a and Mitigation Measures 4.J-4a and 4.J-4b (construction period noise); and Mitigation Measure 4.N-12 (construction circulation patterns).

Conclusion with Mitigation: As described in each of the sections cited above, even with implementation of the mitigation measures identified in this EIR, recycled water plant operations would contribute to significant unavoidable air quality impacts, as well as to significant unavoidable greenhouse gas impacts in the CPP and CPP-V scenarios.

Stormwater Drainage Facilities for DSP, DSP-V, CPP, and CPP-V

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
SM	SM	SM	SM

SU = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

As discussed in Section 4.H, *Hydrology and Water Quality*, new development within the Project Site would increase the amount of impervious surfaces and, as a result, would increase stormwater runoff. To address the increased stormwater runoff, Project Site development would include improvement and expansion of the existing stormwater drainage system. The improvements proposed for the Project Site include grading; removal of existing storm water infrastructure; and installation of new HDPE pipe, concrete pipe, box culverts, and storage basins. The detention capacity of the Center Drainage Channel would be increased and culverts would be installed at the railroad crossing. Two existing culverts under Tunnel Avenue and Frontage Road would also be replaced. The existing stormwater infrastructure associated with the Beatty Avenue drainage area would be removed and the catchment area would be realigned to drain into the Project Site stormwater system. Stormwater treatment would likely consist of a combination of volume- and flow-based treatments such as bioswales that would help to slow stormwater and prevent overflow offsite. Final stormwater drainage system elements have not yet been designed; therefore additional infrastructure may be required.

Several existing utility lines and other associated infrastructure are present within the Project Site. Excavation or use of heavy equipment to install new wastewater and stormwater drainage infrastructure could damage existing underground or overhead utility lines. Prior to any earth-moving or construction activities, construction contractors operating within the Project Site would be required to contact Underground Service Alert for Northern California, as required by law under Cal/OSHA, and consult with existing property owners and utility companies to locate all existing aboveground and underground utility lines and associated infrastructure, as required by law. Construction contractors would also inform construction crews of the utility locations and clearly identify all utilities on site plans, as required by law under Cal/OSHA. Also, as required by law, contractors would prepare emergency response plans with contact information and appropriate notification and response procedures in the event that any utilities are accidentally damaged during construction. Removal of existing sewer and stormwater infrastructure would be phased to prevent disruption of sewer service and prevent localized flooding.

Conclusion: Construction of the new stormwater drainage facilities would contribute to significant impacts of Project Site development in relation to hazardous materials, hydrology and water quality, geology and soils, vegetation and wildlife, air quality, traffic, and noise, as discussed in sections throughout this EIR.

> **Mitigation:** Construction impacts and, as needed, mitigation measures and other regulatory requirements are analyzed and provided in Section 4.B, *Air Quality*; Section 4.C, *Biological Resources*; Section 4.E, *Geology, Soils, and Seismicity*; Section 4.G, *Hazards and Hazardous Materials*; Section 4.H, *Hydrology and Water Quality*; Section 4.J, *Noise and Vibration*; and Section 4.N, *Traffic and Circulation*.

Conclusion with Mitigation: As described above, with implementation of the mitigation measures identified in this EIR, impacts of construction of drainage facilities would be less than significant.

Impact 4.O-4: Would the Project generate wastewater that would exceed wastewater treatment requirements of the San Francisco Regional Water Quality Control Board (SFRWQCB)?

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
LTS	LTS	LTS	LTS

SU = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

DSP, DSP-V, CPP, and CPP-V

Construction and operation of an onsite recycled water plant would require detailed engineering design, development, and approval of wastewater treatment requirements by the SFRWQCB, and further project-level environmental evaluation specific to recycled water plant construction and operation. There are two proposed options for the onsite recycled water plant to produce recycled water: either a mechanical scalping treatment plant or a natural system scalping treatment plant. Whether it uses mechanical or natural scalping treatment, the facility would be designed and engineered to produce tertiary-treated effluent that conforms to the requirements of California Code of Regulations Title 22 for unrestricted reuse of recycled water to replace the use of potable water onsite for irrigation, toilet flushing demands, and other non-potable uses. Operation of either type of plant would include the ability to modulate the amount of recycled water produced for serving the Project Site development, thereby allowing for excess raw sewage to be pumped directly to the SFPUC SEP for treatment, and thereby only treating enough raw sewage onsite for recycled water demands. The mechanical scalping plant would process the raw sewage, send screened particulates and dewatered grit to a landfill, and pump the biosolids diluted with raw sewage to the SFPUC SEP for treatment. The mechanical scalping plant would use a mechanical bioreactor and hypochlorite methods to produce recycled water that meets Title 22 standards. The natural scalping plant would essentially process solids similar to the mechanical scalping plant, then use a wetland treatment system, sand filters, microfiltration, ultra-violet light, and hypochlorite treatment to produce recycled water. In either case, the onsite recycled water plant would be required to comply with the SFPUC's SEP pre-treatment requirements and discharge

limitations and meet Title 22 standards. Depending on the recycled water demand needed for Project Site development, the recycled water plant may discharge a blend of excess produced recycled water and raw sewage to the SEP for treatment. The SEP is permitted through the U.S. EPA and SFRWQCB to meet required waste discharge criteria. The BSD would notify the SFBRWQCB before use delivering recycled water to the Project Site development. Therefore, operation of the recycled water plant would result in less-than-significant impacts in relation to wastewater discharge requirements.

Conclusion: The impact would be less than significant, and no mitigation is required.

Impact 4.O-5: Would the Project be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs during construction?

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
LTS	LTS	LTS	LTS

SU = Significant Unavoidable
SM = Significant but Mitigable
LTS = Less than Significant
- = No Impact

DSP, DSP-V, CPP, and CPP-V

Solid Waste Generation during Construction

Buildout of the Project Site is anticipated to occur over a 20-year period and would generate a substantial amount of solid waste such as wood, metal, concrete, bricks, drywall/gypsum/sheetrock, carpet, and dirt/fill during construction. Commercial construction was assumed to generate approximately 2.5 pounds of solid waste per square foot of building area (U.S. EPA, 2009), while residential construction (single- and multi-family) was assumed to generate approximately 4.39 pounds per square foot of building area (U.S. Green Building Council, 2007). All other land use types were assumed to generate 4.34 pounds per square foot of building area (U.S. Green Building Council, 2007).

To accommodate proposed Project Site development, each of the four Project Site development scenarios would result in removal of the existing industrial park. For evaluation purposes, the solid waste generation for demolition is assumed to be 4.39 pounds per square foot.

The existing lumberyard would be relocated under each of the scenarios. It is assumed that the existing structures would be demolished. For evaluation purposes, the solid waste generation for lumberyard demolition is also assumed to be 4.39 pounds per square foot.

Using the waste generation estimates for new construction, Project Site development construction activities are anticipated to generate 16,505 to 26,359 tons of solid waste (see **Table 4.O-12** below).

TABLE 4.O-12
SOLID WASTE GENERATION ESTIMATES FOR CONSTRUCTION

Scenario/Variant	New Development (square feet)	Total Solid Waste Generation[1] (pounds)	Total Solid Waste Generation (tons)	Solid Waste Generation (cubic yards[2])
DSP	12,096,300	52,761,646	26,381	87,928
DSP-V	12,049,400	53,078,636	26,539	88,454
CPP	7,742,600	33,010,772	16,505	55,011
CPP-V	8,072,600	33,318,912	16,659	55,524

NOTES:
1 Waste generation rates = 2.5 pounds per square foot for commercial uses (U.S. Green Building Council, 2007), 4.39 pounds per square foot for residential uses, and 4.34 pounds per square foot for all other land use types (U.S. EPA, 2009).
2 There are approximately 3.333 cubic yards of solid waste in 1 ton, based on the average compaction rate for household trash (Colorado DPHE, undated).

SOURCE: ESA 2013

Construction Solid Waste Diversion and Recycling Requirements

Chapter 15.75 of the Brisbane Municipal Code sets forth requirements for solid waste diversion and recycling. Section 15.75.030 requires that construction and demolition debris generated from every covered project[14] be diverted from going to a landfill by using recycling, reuse, and diversion programs to achieve the following diversion rates:

- Demolition: One hundred percent (100%) of inert solids, trees, stumps, and associated vegetation and fifty percent (50%) of the remaining demolition debris tonnage.
- Construction, remodeling and re-roofing projects: Fifty percent (50%) of all construction and demolition debris tonnage.

Section 15.75.040 of the Brisbane Municipal Code requires every applicant for a construction or demolition permit to submit a "Recycling and Waste Reduction Plan" to define how these required diversion rates will be met.

Thus, a minimum of 50 percent of construction waste generated within the Project Site as described in Table 4.O-12 would need to be recycled or reused. The remainder of the solid waste (approximately 27,506 to 44,227 cubic yards) would be sent to local area landfills.

Impact on Landfill Capacity

The combined remaining capacity of the local area landfills is 200,492,708 cubic yards. Solid waste disposed of during construction of Project Site development would represent 0.014 to 0.022 percent of the remaining capacity. There would be no limitation on disposal of construction

14 Chapter 15.75 defines a covered project as:
- Demolition work only, involving an area greater than two hundred (200) square feet, as determined by the building official;
- The renovation, remodel or addition to an existing structure, or the construction of a new structure where the cost of the work exceeds seventy-five thousand dollars ($75,000.00), as determined by the building official;
- Re-roofing of an existing structure involving an area in excess of five hundred (500) square feet.

waste from the Project Site as local landfills that would accept this kind of waste have an estimated closure date of 2077 or earlier.

Considering the solid waste from construction within the Project Site represents a small proportion of remaining landfill capacity, the fact that the solid waste would be generated and disposed of over a period of 30 years, and the fact that one landfill has enough remaining capacity until 2077, there is adequate existing landfill capacity to accept all Project Site construction waste and impacts would be less than significant.

Conclusion: The impact would be less than significant, and no mitigation is required.

Impact 4.O-6: Would the Project be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs during operation?

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
LTS	LTS	LTS	LTS

SU = Significant Unavoidable
SM = Significant, but Mitigable
LTS = Less than Significant
- = No Impact

DSP, DSP-V, CPP, and CPP-V

Operational Solid Waste Generation

Solid waste generation for the each of the Project Site development scenarios was estimated using CalRecycle Solid Waste Generation Rates for Commercial, Industrial, Residential, and Services Developments (CalRecycle, 2011). These rates are based on the total square feet or total number of units for each land use type. **Table 4.O-13** presents the solid waste estimates for each of the four Concept Plan scenarios, and **Table 4.O-14** shows the generation rates used to calculate the total solid waste generation.

Impact on Transfer Facility and Landfill Capacity

The South San Francisco Scavenger Company (SSFSC) currently provides solid waste collection and recycling services to the City of Brisbane, including the Project Site. The SSFSC uses the Blue Line Transfer Facility, which is designed to handle 4,300 tons of waste per day and has a permitted capacity of 2,000 tons per day (tons/day). The largest quantity of solid waste generated by the Project would be 66.2 tons/day. The Blue Line Transfer Facility currently processes 1,200 tons/day. The increase in solid waste from the Project would result in the Blue Line Transfer Facility processing up to 1,266.2 tons/day; therefore, the SSFSC Blue Line Transfer Facility would have adequate capacity to handle the waste (BKF, 2011).

After the waste is sorted at the Blue Line Transfer Facility, remaining waste would be delivered to a landfill. As described in Subsection 4.O.2, *Environmental Setting*, above, the regional landfills that currently serve Brisbane would be expected to serve Project Site development in the future. At buildout, development within the Project Site could generate up to 221 cubic yards per day and up to 80,594 cubic yards per year of solid waste under the DSP-V scenario. The remaining scenarios would generate less waste (see Table 4.O-13). The combined remaining capacity of regional landfills is approximately 200,492,708 cubic yards. With the current

TABLE 4.O-13
ESTIMATED SOLID WASTE GENERATION[1] BY SCENARIO

Scenario/Variant	Tons/Day	Cubic Yards[2]/Day	Tons/Year	Cubic Yards[2]/Year
DSP	56.9	190	20,775	69,244
DSP-V	66.2	221	24,181	80,594
CPP	54.7	182	19,948	66,486
CPP-V	52.5	175	19,158	63,855

NOTES:
1 Waste generation was calculated using rates presented in Table 4.O-14.
2 There are approximately 3.333 cubic yards in 1 ton based on the average compaction rate for household trash (Colorado DPSE, undated).

SOURCE: ESA 2013

TABLE 4.O-14
SOLID WASTE GENERATION RATES

Land Use Type	Solid Waste Generation Rate	Source
Conference	10 lbs/1,000 sq ft/day (Office Rate)	CIMWB Commercial Rates
Hotel	2 lbs/room/day	CIMWB Services Rates
Residential	10 lbs/dwelling unit/day	CIMWB Residential Rates
Commercial/Office/Retail	13 lbs/1,000 sq ft/day (Commercial Rate)	CIMWB Commercial Rates
Office/Institutional	10 lbs/1,000 sq ft/day (Office Rate)	CIMWB Commercial Rates
Research and Development	10 lbs/1,000 sq ft/day (Office Rate)	CIMWB Commercial Rates
Public/Civic/Cultural	10 lbs/1,000 sq ft/day (Office Rate)	CIMWB Commercial Rates
Arena	3.12 lbs/100 sq ft /day (Other Services Rate)	CIMWB Services Rates
Theatre	3.12 lbs/100 sq ft /day (Other Services Rate)	CIMWB Services Rates
Multiplex	3.12 lbs/100 sq ft/day (Other Services Rate)	CIMWB Services Rates
Exhibition	3.12 lbs/100 sq ft/day (Other Services Rate)	CIMWB Services Rates
Industrial/Warehousing	62.5 lbs/1,000 sq ft/day (Industrial Rate)	CIMWB Industrial Rates
Entertainment/Cultural	3.12 lbs/100 sq ft /day (Other Services Rate)	CIMWB Services Rates
Resource Recovery	None	None

NOTES:
sq ft = square feet
lbs = pounds

SOURCE: CalRecycle, 2011

recycling and diversion rates of the City and the near future implementation of CalRecycle's plan to implement AB 341, Project Site development would result in the disposal of between 25 to 30 percent of the waste generated by Project Site land uses, resulting in a total of approximately 604,455 cubic yards of waste sent to regional landfills over a 20-year period. This would represent approximately 0.3 percent of the remaining capacity of regional landfills.

The CCP-V scenario would include expansion of the existing Recology site. This facility provides recycling services to the City and County of San Francisco. Because it is a San

Francisco facility, expansion of the Recology facility under the CPP-V scenario is not expected to increase the potential for recycling or decrease the amount of solid waste generated by development of the Project Site. However, because the Recology site expansion is needed to attain San Francisco's goal of capturing 100 percent of its recyclable materials, the CPP-V scenario would facilitate a substantial increase in recycling with concurrent reduction in solid waste deposited in landfills by the City and County of San Francisco.

Solid waste from Project Site development would represent a small portion of remaining landfill capacity when taking into account implementation of programs required by Chapter 8.32 of the Brisbane Municipal Code for recycling, recovery, and participation in programs to reduce the quantity of waste sent to landfills, as described in Impact 4.O-7 below.[15] In addition, one landfill has enough remaining capacity to remain open until 2077. For these reasons, it is anticipated that existing landfills would have adequate capacity to accept all Project Site development-related waste through 2077. The existing landfills would have sufficient capacity to serve Project Site development, and impacts would be less than significant.

Conclusion: The impact would be less than significant, and no mitigation is required.

Impact 4.O-7: Would the Project comply with existing federal, state, and local statutes and regulations related to solid waste?

Impact Significance by Scenario (before Mitigation)			
DSP	**DSP-V**	**CPP**	**CPP-V**
LTS	LTS	LTS	LTS

SU = Significant Unavoidable SM = Significant but Mitigable
LTS = Less than Significant
- = no impact

DSP, DSP-V, CPP, and CPP-V

Project Site development would generate a substantial amount of solid waste, with a temporary waste stream generated during construction and a permanent waste stream generated from the new developed land uses after construction is complete. Disposal of Project Site development demolition and construction-generated solid waste in a landfill must comply with Section 15.75 of the Brisbane Municipal Code, while operation of uses within the Project Site would be required to participate in the City's ongoing waste diversion programs.

Requirements for Construction Waste

Applicants for demolition and building permits within the Project Site would be required to develop and implement a Recycling and Waste Reduction Plan in compliance with Chapter 15.75 of the Brisbane Municipal Code, which requires that 50 percent of construction and demolition debris be either recycled or reused. Pursuant to the requirements of the Brisbane Municipal Code, this plan would be submitted with the appropriate fee to the City of Brisbane prior to issuance of a building permit. The plan would identify the following:

[15] In 2010, Brisbane had approximately 45 different waste diversion programs in effect, including composting, recycling, and public education programs (CalRecycle, 2012e). The City's annual waste diversion rate from 2005 to 2007 ranged from 73 percent to 75 percent (CalRecycle, 2011).

- Recycling and Waste Reduction Plan Manager
- Roles and responsibilities of persons overseeing the plan
- Estimates of the types and quantities of construction wastes
- Materials to be recycled/reused (cardboard, metal, brick, acoustical tile, concrete, plastic, clean wood, glass, gypsum wallboard, metal, or carpet, insulation)
- Designated spaces or container locations for materials to be recycled/reused
- Measures for testing soils and any other materials that may require following procedures related to hazardous wastes
- Solid waste and recycling providers and waste removal schedules
- Documentation procedures
- Education Program requirements to inform all construction crews on how to separate recyclable/reusable materials and where the materials should be placed

Construction activities may also generate waste that is classified as hazardous. A substantial amount of soil would need to be removed from the Project Site prior to construction. As discussed in Section 4.G, *Hazards and Hazardous Materials*, this soil could contain contaminants from the former landfill and railyard. Other hazardous wastes that may be generated during construction include paints, solvents, and fuels. All hazardous waste would be disposed of at a landfill that is licensed to accept hazardous wastes. Licensed contractors in compliance with current hazardous waste regulations would be hired to transport hazardous waste offsite using approved hauling methods and routes. Analysis of the environmental impacts from potential contaminated soil is provided in 4.G, *Hazards and Hazardous Materials*.

Requirements for Operational Waste

All new uses developed as part of Project Site development would receive solid waste services from the SSFSC and all non-hazardous solid waste would be disposed of in a permitted landfill. In an effort to reduce the impact on landfill capacity and to comply with City General Plan goals, development within the Project Site would be required to participate in ongoing city solid waste diversion programs and implement an onsite recycling program to reduce solid waste diverted to landfills by at least 50 percent. This program would be submitted to the City for approval prior to the issuance of the building permits. This program would include:

- Composting using source-separation containers at each building for disposal of organic food and landscaping materials
- Development of an onsite composting facility, with full documentation of how any impacts such as odors and noise from such a facility would be adequately mitigated by appropriate siting and construction provisions
- Provisions for all buildings, open spaces, parking lots, and trails to be equipped with recycling containers to separate plastic, paper, aluminum, glass, cardboard, and other commercially recyclable materials
- Signage posted near recycling containers to encourage recycling

- A Public Awareness Program to encourage residents and businesses to implement recycling, composting, and waste reduction

Conclusion: Overall, incorporation of a Recycling and Waste Reduction Plan as required by the Brisbane Municipal Code for construction and development of a long-term recycling and composting program would ensure that the proposed Project would comply with existing laws, regulations, and local policies regarding solid waste. Therefore, this impact would be less than significant, and no mitigation is required.

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