3.12 - Utilities and Service Systems

3.12.1 - Introduction

This section describes the existing utilities and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information provided by the City of Vallejo General Plan, the City of Vallejo website, the City of Vallejo 2005 Urban Water Management Plan (UWMP), the California Department of Resources Recycling and Recovery (CalRecycle) website, and responses to questionnaires sent to utility providers. Utility response letters are provided in Appendix H. A Water Supply Assessment (WSA) prepared by Wagner & Bonsignore Consulting Civil Engineers in September 2012 for the Draft Specific Plan (Plan) was also consulted and is included in Appendix I.

3.12.2 - Environmental Setting

Potable Water

The City of Vallejo's Water Division provides potable water service to the project area. Below is a summary of the City's municipal water system, based on information provided in the City's Final 2005 Urban Water Management Plan and the Water Supply Assessment prepared for the proposed project.

Water Supply

The City's water system currently uses surface water as its sole source of supply. No groundwater sources are utilized. The City brings surface water from five different sources into three treatment plants in order to serve customers in two different counties, Solano and Napa, and on an active military base, Travis Air Force Base. The City has five sources of surface water: Solano Project Water, State Water Project, Vallejo Permit Water, Lakes Frey and Madigan, and Lake Curry. Table 3.12-1 summarizes these surface water supplies including the capacity and safe yield of each surface water source in units of acre-feet per year (afy).

Table 3.12-1: Surface Water Sources

Source	Water Entitlements (afy)	Safe Yield (afy)	Remarks
State Water Project (SWP)	5,600	5,600	Solano County Water Agency (SCWA)
Vallejo Permit Water	22,800	22,800	Water rights and conveyance control with SCWA
Solano Project Water	14,600	14,600	Annual entitlement from U.S. Bureau of Reclamation through SCWA
Lakes Frey and Madigan	400	400	City water rights
Lake Curry	3,750	3,750	City water rights

Table 3.12-1 (cont.): Surface Water Sources

Source	Water Entitlements (AFY)	Safe Yield (afy)	Remarks
Total	**47,150**	**47,150**	

Notes:
Lake Curry was scheduled to be restored to full use after completion of the Lake Curry Water Conveyance Project. This project has not been completed but is scheduled to be completed in 2015. Until the project is complete, 1,500 afy of entitlement is available.
Source: City of Vallejo, 2006.

According to the Vallejo Sanitation and Flood Control District (VSFCD), raw water (untreated imports) is available at the project site. Raw water could be supplied through the future reclaimed water distribution system described below.

Projected Water Use

Water demands were projected through 2025 in the 2005 UWMP. To account for the 20-year supply/demand analysis required for the WSA, water demands through 2035 were estimated. Water demands through 2035 were extrapolated using the data presented in the 2005 UWMP. In the 2005 UWMP, water demands for all categories were constant from 2020 to 2025 (except the Vallejo Lakes System, which increased in 10 af increments every 5 years, and Travis AFB Deliveries which reached maximum water demand in 2025). For purposes of the WSA, it was assumed that water demands in 2030 and 2035 would be the same as in 2025 (Wagner, 2011). The increase by 10 af every 5 years for the Vallejo Lakes System was carried forward in 2030 and 2035. Projected water demands by category are presented in Table 3.12-2.

According to the WSA, it should be noted that the 2005 UWMP included water demands for three planned redevelopment projects in its service area: (1) Vallejo Station and Waterfront Development Project, (2) Downtown Vallejo Redevelopment Project and (3) Mare Island Redevelopment Project. The 2005 UWMP acknowledged the planned redevelopment of the Solano County Fairgrounds but determined that redevelopment plans for the fairgrounds were not detailed enough to assess the impact of this project on water supply.

Table 3.12-2: City of Vallejo Projected Water Demands by Category in Acre-Feet per Year (afy)

Category	2010	2015	2020	2025	2030	2035
City of Vallejo Water System	24,290	25,690	27,140	27,140	27,140	27,140
Vallejo Lakes System	340	350	360	370	380	390
Wholesale Customers						
Travis AFB Deliveries	3,860	4,330	4,790	5,250	5,250	5,250

Table 3.12-2 (cont.): City of Vallejo Projected Water Demands by Category in Acre-Feet per Year (afy)

Category	2010	2015	2020	2025	2030	2035
City of Benicia	1,100	1,100	1,100	1,100	1,100	1,100
City of American Canyon	750	750	750	750	750	750
Subtotal	5,710	6,180	6,640	7,100	7,100	7,100
Other Demands	1,000	1,000	1,000	1,000	1,000	1,000
Solano360 Specific Plan	0.0	94.4	188.8	188.8	188.8	188.8
Total Demands	**31,340**	**33,314**	**35,329**	**35,799**	**35,809**	**35,819**

Notes:
City of Vallejo System includes Single Family, Multi-Family, Commercial, industrial, institutional, landscaping, governmental, recreational, non-billed metered use, unaccounted for water and golf course irrigation.
Water demands associated with the Project are assumed to be 50% of total anticipated demand in 2015. Buildout of project expected by 2020.
Source: City of Vallejo, 2006.

Supply Reliability

In the WSA, available water supplies were compared to projected demands within the City, including the proposed project, in normal, dry and multiple dry years. The results are shown in Table 3.12-3 and indicate that in normal and single dry water years, the City's water supplies are sufficient to meet projected demands. Normal and single dry year water demand would not exceed 90 percent of supply in any year. According to the WSA, normal water demand would exceed 90 percent of supply in a projected second dry year in 2020, 2025, 2030 and 2035 (Wagner, 2012). A system-wide water use reduction of about 5 percent would be expected. The effect of the demand reduction by drought response measures is shown in Table 3.12-3. The 5-percent reduction would result in water demands no longer exceeding 90 percent of available supplies (Wagner, 2012).

Normal water year demand would exceed 90 percent of available supply in a projected third dry year sequence in 2015, 2020, 2025, 2030, 2035. A system-wide water use reduction of about 10 percent would be expected. The effect of the demand reduction by drought response measures is shown in Table 3.12-3. The 10 percent reduction would result in water demands no longer exceeding 90 percent of available supplies (Wagner, 2012). Table 3.12-3 indicates that during second and third dry year sequences, a Stage II water shortage response (demand reduction of up to 10 percent of normal usage) would result in supplies at or exceeding 90 percent of demands.

Table 3.12-3: Comparison of City of Vallejo Water Supplies and Projected Water Demands

Water Year	2010	2015	2020	2025	2030	2035
Normal Year						
Supply	44,194	46,444	46,444	46,444	46,444	46,444
Demand	31,340	33,315	35,330	35,800	35,810	35,820
Difference = Surplus or (Deficit)	12,854	13,129	11,114	10,644	10,634	10,624
Difference (as percentage of supply)	29%	28%	24%	23%	23%	23%
Single Dry Year						
Supply	38,624	40,424	40,424	40,424	40,424	40,424
Demand	31,027	33,315	35,330	35,800	35,810	35,820
System Efficiencies (1% Vallejo System)	(243)	(257)	(271)	(271)	(271)	(271)
Difference = Surplus or (Deficit)	7,840	7,366	5,365	4,895	4,885	4,875
Difference (as percentage of supply)	20%	18%	13%	12%	12%	12%
Second Dry Year						
Supply	36,335	38,023	38,023	38,023	38,023	38,023
Demand	31,340	33,315	35,330	35,800	35,810	35,820
System Efficiencies (2% Vallejo System)	(486)	(514)	(543)	(543)	(543)	(543)
Difference = Surplus or (Deficit)	5,481	5,222	3,236	2,766	2,756	2,746
Difference (as percentage of supply)	15%	14%	9%	7%	7%	7%
Demand with Drought Response	30,854	32,801	33,048	33,494	33,504	33,513
Difference With Drought Response	5,481	5,222	4,975	4,529	4,519	4,510
Difference with Drought Response (percentage of supply)	15%	14%	13%	12%	12%	12%
Third Dry Year						
Supply	34,141	35,829	35,829	35,829	35,829	35,829
Demand	31,340	33,315	35,330	35,800	35,810	35,820
System Efficiencies (3% Vallejo System)	(729)	(771)	(814)	(814)	(814)	(814)
Difference = Surplus or (Deficit)	3,530	3,285	1,313	843	833	823
Difference (as percentage of supply)	10%	9%	4%	2%	2%	2%
Demand with Drought Response	30,611	29,290	31,064	31,487	31,496	31,505
Difference With Drought Response	3,530	6,539	4,765	4,342	4,333	4,324
Difference with Drought Response (percentage of supply)	10%	18%	13%	12%	12%	12%

Table 3.12-3 (cont.): Comparison of City of Vallejo Water Supplies and Projected Water Demands

Water Year	2010	2015	2020	2025	2030	2035
Notes: Annual water demands shown in Table 10 of the UWMP include all City demands (Vallejo City System, Vallejo Lakes System, Travis, Benicia, American Canyon, and Other as well as the water demands associated with the project. System efficiency demand reduction based on data presented in City's UWMP and is for sub-category Vallejo City System that is only a portion of the total water demands shown above. Source: Wagner & Bonsignore Consulting Civil Engineers, 2012.						

Project Vicinity Potable Water Distribution Facilities

According to the City of Vallejo Public Works Department Water Division, existing water main facilities are located adjacent to the project site along Coach Lane, Fairgrounds Drive, and Sage Street From the north, a 24-inch potable water main connects from across State Route 37 (SR-37) west along Sage Street to (Jansen, pers. comm.). Fairgrounds Drive before continuing to the west. A 12-inch potable water line taps the 24-inch potable water line at the southeast corner of Fairgrounds Drive and Sage Street and travels south along the western property boundary before connecting to a 24-inch water line at the intersection of Fairgrounds Drive and Coach Lane. A 12-inch water line connects the 24-inch water line at a point approximately 500 feet south of Fairgrounds Drive and Coach Lane and travels through the property to the south before intersecting with Coach Lane approximately 250 feet east of Fairgrounds Drive. This 12-inch water line continues east along Coach Lane before terminating at the southeast corner of the project site. At this point, an 8-inch water line taps the 12-inch water line and connects to the site.

Water service for the project would be provided by the City of Vallejo via the expansion of the existing water lines within the project area described above. The project would incorporate a pipeline and related appurtenances to facilitate recycled water distribution for irrigation purposes. Private pipelines exist throughout the Fairgrounds property as well. According to the City of Vallejo Public Works Department Water Division, the onsite system consists of a network of water service line and irrigation system lines. Locations of this onsite system have been compiled from archived Solano County Fairgrounds facility plans.

Wastewater

The Vallejo Sanitation and Flood Control District (VSFCD) provides wastewater transmission, treatment, and disposal for the City of Vallejo and outlying areas. According to the VSFCD, the current population served by the District is approximately 119,000 with a projected buildout limit ranging from 125,000 to 130,000. The VSFCD owns and operates the Ryder Street Wastewater Treatment Plant (WWTP), which treats domestic and industrial wastewater flows.

Collection System

The wastewater collection system consists of a variety of pipes required to convey flows from residential and commercial uses to the WWTP. These conveyance pipes are divided into four

elements: laterals, mains, trunks, and interceptors. The pipes range in diameter from 4 inches (laterals) to 60 inches (interceptors). The total network of pipes within the District service area is approximately 370 miles (530 miles including laterals). Because of old pipes and an elevated groundwater table, the collection system experiences significant wet weather flow.

With the project site, a large sewer line continues under Six Flags Discovery Kingdom and below private properties, residential and commercial streets for an overall length of approximately 4.5 miles until it reaches the Sears Point Pump Station on Sacramento Street. The flow is pumped for a length of approximately 2,300 feet, before flowing by gravity for a length of approximately 3.2 miles to the Ryder Street WWTP.

The VSFCD operates 18 collection system pump stations that vary in age, design flow, and design head. Within the project area, the Sears Point Pump Station is located near the intersection of Sears Point Road and SR-37. This facility lifts sewage collected from the northern portion of the District into the North Interceptor. The North Interceptor (gravity system) ranges from 36 to 48 inches in diameter and includes a single, 30-inch force main (Ohlemutz, pers. comm.).

Wastewater Treatment

Originally constructed in 1957, the Ryder Street WWTP has been modified several times. All wastewater collected by the District sewer system is routed to the Ryder Street WWTP. According to the VSFCD, the WWTP has a permitted capacity of 15.5 million gallons per day (MGD), but can treat up to 30 MGD for a 24-hour period during wet weather. The WWTP discharges treated wastewater through two export pipelines: the Mare Island Strait outfall and the Carquinez Strait outfall.

Project Vicinity Wastewater Collection Facilities

As mentioned in the Plan, based on discussions with the District Engineer it is not likely that any offsite improvements would be required to convey wastewater to the treatment plant. However, the VSFCD system model would need to be updated to verify pipeline capacity is sufficient during the design stage of the infrastructure. According to the Plan, new wastewater pipelines would be constructed in each backbone roadway providing service to each parcel. Existing public pipelines that traverse the plan area would be relocated as necessary to avoid conflicts with development.

Recycled Water

There is currently no reclaimed water produced at the WWTP beyond a small amount for use within the plant. However, the VSFCD is considering a reclaimed wastewater plant at the Fairgrounds to supply the Fairgrounds, Six Flags Discovery Kingdom, and Blue Rock Springs Golf Course.

Two non-potable water systems exist within the vicinity of the project site. One system is public and is owned, operated and maintained by the City of Vallejo. This pipeline is referred to by the City as the Cal-Pac line. The other system is privately is owned, operated and maintained by the

Fairgrounds/County Association. The pipeline is referred to by the Fairgrounds Association as the Lake Chabot line.

The supply source for the Cal-Pac system is the North Bay Aqueduct (NBA). The NBA is also one of the City's potable water supply sources. The Cal-Pac pipeline runs along the northern property line of the Fairgrounds site and currently delivers irrigation water to Blue Rock Springs golf course. The system has been utilized in the past to provide irrigation water to the Fairgrounds golf course and racetrack. A turnout in the system exists near the north end of the racetrack that could be utilized for future development on the Fairgrounds property.

The supply source for the Lake Chabot system is Lake Chabot itself and the tributary watershed area that drains to it. The Lake Chabot pipeline extends from Lake Chabot to the golf course near the middle of the Fairgrounds property. A pump station is located on the southeast shore of Lake Chabot that delivers water into the pipeline.

According to the Plan, a "purple-pipe" system is planned within each backbone roadway. The purple-pipe system would be installed in accordance with Title 22 standards for recycled water use in the event recycled water becomes available.

Storm Drainage

The VSFCD provides storm drainage service within the City, including the project area. The storm drain system includes the street storm drain inlets and ditches, which flow into the watershed's creeks and wetlands. It also includes several constructed basins used as detention basins, not for infiltration or groundwater recharge. Stormwater water, unlike wastewater, is not treated before entering into the creeks and wetlands, therefore measures are taken to ensure that pollutants do not enter the waterways.

As mandated by state requirements, the City of Vallejo is required to implement the Municipal Regional Permit (MRP), which includes business inspections. The City protects local creeks, wetlands, and Lake Chabot by enforcing businesses to comply with the MRP requirements and to follow Best Management Practices (BMPs). Discharging substances other than rainwater to a storm drain is prohibited by the city's Municipal Code, as well as by state and federal laws.

Project Vicinity Drainage Facilities

The primary drainage infrastructure improvements for the project include removing the site from the flood plain. The site is in the flood plain due to high offsite flows from the east and south. The flows enter the site from Central and South Rindler Creeks as well as Blue Rock Springs. The existing drainage channel on the site that connects to Lake Chabot is not sufficient to contain the offsite flows. Accordingly, in order to remove the site from the flood plain the existing Fairgrounds channel would be widened and deepened in addition to improving the existing culvert under Fairgrounds Drive. The channel improvements would reduce the flooding conditions for the mobile home park, although

additional improvements within the park would be required that would not be a part of this project. According to the District Engineer, the VSFCD would like to convey Central Rindler Creek through the proposed development (Ohlemutz, pers. comm.).

A new multi-purpose water feature would be constructed onsite to manage and reduce peak discharges from the plan area. The water feature would connect to an existing 84-inch underground pipe near the northwest corner of the project site. This main water feature within the project would be a dual use recreation amenity and onsite flood control system. According to the Plan, one primary objective of the water feature is to provide water quality benefits for the project and improve the water quality of the runoff prior to discharging into downstream facilities that lead to Lake Chabot.

Additional onsite water quality improvements would be implemented throughout the plan area, such as biotreatment facilities, to meet NPDES permit requirements. Onsite drainage systems within the streets would be designed in accordance with City and Vallejo Sanitation and Flood Control District (VSFCD) standards. Underground pipes would be designed to accommodate 15-year storm events. Surface flow in the streets would be designed to accommodate 100-year storm events by directing water to the onsite water feature or fairgrounds channel. New stormwater pipelines would be constructed in each backbone roadway providing service to each parcel. Existing pipelines that traverse the project site would be relocated as necessary to avoid conflicts with development.

Energy

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to Vallejo. Below is a discussion of each energy source.

Electricity

PG&E provides electricity to all or part of 47 counties in California, including Solano County, constituting most of the northern and central portions of the State. In 2009, PG&E obtained 36 percent of electricity from its own generation sources and the remaining 62 percent from outside sources. PG&E-owned generating facilities include nuclear, natural gas, and hydroelectric, with a net generating capacity of more than 6,800 megawatts. Outside suppliers to PG&E include the California Department of Water Resources, irrigation districts, renewable energy suppliers, and other fossil fuel-fired suppliers. PG&E operates approximately 141,000 circuit miles of transmission and distribution lines and is interconnected with electric power systems in the western Electricity Coordinating Council, which includes 14 western states; Alberta and British Columbia, Canada; and parts of Mexico. In 2009, PG&E delivered 85,625 gigawatt-hours (GWh) of electricity to its customers.

Natural Gas

PG&E provides natural gas to all or part of 39 counties in California, including Solano County, comprising most of the northern and central portions of the State. PG&E obtains more than 70 percent of its natural gas supplies from western Canada and the balance from U.S. sources. PG&E

operates approximately 48,000 miles of transmission and distribution pipelines. In 2009, PG&E delivered 845 billion cubic feet (Bcf) of natural gas to its customers.

Solid Waste

Recology Vallejo provides residential and commercial garbage, yard waste, and curbside recycling services for Vallejo residents. In addition, Recology Vallejo operates the City's Permanent Household Hazardous Waste program and curbside recycling used oil and filter program.

Transfer Stations and Landfills

Solid waste from Vallejo is processed by Recology Vallejo at the Devlin Road Transfer Station located at 889 Devlin Road in American Canyon. The transfer station is operated by Northern Recycling Operations & Waste Services and is permitted to receive 1,440 tons of waste per day. In addition to receiving waste from disposal and recycling companies such as Recology Vallejo, it accepts garbage and bulky items (such as appliances, furniture, mattresses, etc.), refrigerators, auto batteries, latex paint, antifreeze, and used motor oil and filters.

In 2009, solid waste from Vallejo was landfilled at fifteen different landfills. The characteristics of each landfill are summarized in Table 3.12-4.

Table 3.12-4: Landfill Summary

Landfill	Location	Maximum Daily Throughput (tons/day)	Remaining Capacity (cubic yards)	Anticipated Closure Date
Acme Landfill	Martinez	1,500	175,000	2021
Altamont Landfill & Resource Recovery	Alameda County	11,500	45.7 million	2029
Azusa Land Reclamation Co. Landfill	Azusa	*	*	2025
Bakersfield Metropolitan (Bena) SLF	Caliente	4,500	34.9 million	2038
Forward Landfill	Manteca	8,668	23.7 million	2020
Guadalupe Sanitary Landfill	San Jose	1,300	14.6 million	2010**
Keller Canyon	Pittsburg	3,500	59 million	2030
L and D Landfill Co	Sacramento	2,540	4.1 million	2016
Newby Island Sanitary Landfill	Milpitas	4,000	18.3 million	2025
Potrero Hills	Suisun City	4,330	13.8 million	2011**
Recology Hay Road	Vacaville	2,400	30.4 million	2077

Table 3.12-4 (cont.): Landfill Summary

Landfill	Location	Maximum Daily Throughput (tons/day)	Remaining Capacity (cubic yards)	Anticipated Closure Date
Redwood Sanitary	Novato	2,300	12.9 million	2039
Sacramento County Landfill (Kiefer)	Sacramento	*	112.9 million	2064
Vasco Road Sanitary Landfill	Livermore	2,250	9.9 million	2019
Yolo County Central Landfill	Davis	1,800	37.3 million	2081

Notes:
* Information Unavailable.
** Closure date listed as of June 30, 2011.
Source: Cal Recycle, 2011.

Waste Diversion Targets

Table 3.12-5 summarizes the City of Vallejo's disposal rate targets, as identified by Cal Recycle. As shown in the table, the City is currently meeting its disposal rate targets.

Table 3.12-5: City of Vallejo Disposal Rate Targets

Pounds per Day			
Population		Employment	
Target	Actual	Target	Actual
5.5	3	24.1	12.4

Source: Cal Recycle, 2011.

3.12.3 - Regulatory Framework

State

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code Sections 10610-10656) requires that all urban water suppliers with at least 3,000 customers prepare urban water management plans and update them every 5 years. The act requires that urban water management plans include a description of water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions. Specifically, urban water management plans must:

- Provide current and projected population, climate, and other demographic factors affecting the supplier's water management planning;

- Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier;
- Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage;
- Describe plans to supplement or replace that source with alternative sources or water demand management measures;
- Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (associated with systems that use surface water);
- Quantify past and current water use;
- Provide a description of the supplier's water demand management measures, including schedule of implementation, program to measure effectiveness of measures, and anticipated water demand reductions associated with the measures;
- Assess the water supply reliability.

Pursuant to the Urban Water Management Planning Act, the City of Vallejo maintains an Urban Water Management Plan and is in the process of preparing an update to its plan.

Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance was adopted by the Office of Administrative Law in September 2009 and requires local agencies to implement water efficiency measures as part of its review of landscaping plans. Local agencies can either adopt the Model Water Efficient Landscape Ordinance or incorporate provisions of the ordinance into code requirements for landscaping. For new landscaping projects of 2,500 square feet or more that require a discretionary or ministerial approval, the applicant is required to submit a detailed Landscape Documentation Package that discusses water efficiency, soil management, and landscape design elements.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to (1) assure California utility customers safe, reliable utility service at reasonable rates, (2) protect utility customers from fraud, and (3) promote a healthy California economy. The Public Utilities Code, adopted by the legislature, defines the jurisdiction of the CPUC.

Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings

Title 24, Part 6, of the California Code of Regulations establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The standards were updated in 2005 and recently amended in 2008. The 2008 standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 151.2 GWh/y of electricity

savings and 3.3 million therms. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC]; and water heating systems), indoor and outdoor lighting, and illuminated signs.

California Green Building Standards Code

The California Green Building Standard Code was adopted January 12, 2009. The purpose of this code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories:

- Planning and design
- Energy efficiency
- Water efficiency and conservation
- Material conservation and resource efficiency
- Environmental air quality

The Code addresses exterior envelope, water efficiency, and material conservation components. The aim is to reduce energy usage in non-residential buildings by 20 percent by 2015 and help meet reductions contemplated in AB 32. With the 2008 Building Code, a 15 percent energy reduction over 2007 edition is expected. Compliance is mandatory as of January 1, 2011.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed Assembly Bill (AB) 939, the California Integrated Waste Management Act of 1989, effective January 1990. The legislation required each local jurisdiction in the State to set diversion requirements of 25 percent by 1995 and 50 percent by 2000; established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated. In 2007, Senate Bill (SB) 1016, Wiggins, Chapter 343, Statutes of 2008, introduced a new per capita disposal and goal measurement system that moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities. Vallejo's disposal rate goal is 5.5 pounds per person per day.

Local

City of Vallejo

General Plan

The City of Vallejo General Plan establishes the following applicable goals and policies related to utilities and service systems that are applicable to the proposed project:

Other Services Goal: To provide an efficient and financially sound system of urban services to protect the health, safety, and general welfare of Vallejo area residents.

- **Policy 2:** New development should bear the costs to extend or upgrade public services and/or provide or upgrade public facilities to serve the new development proportionately to the demand generated by the new development. It is recognized that in some instances the City may also participate in the cost to extend public services and/or public facilities to areas in which such services/facilities do not currently exist when the City makes a specific finding that such an extension will benefit the community.
- **Policy 9:** Solid Waste Collection:
  - The City should establish programs that encourage recycling of materials and should initiate recycling of materials used during governmental operation.
  - Implement the adopted Source Reduction and Recycling Element and Household Hazardous Waste Element.

3.12.4 - Methodology

MBA consulted with public service providers regarding their ability to serve the proposed project. Letters were sent to the City of Vallejo Public Works Department and the Vallejo Sanitation and Flood Control District. The responses received from these agencies and entities are provided in Appendix H.

Additionally, MBA reviewed information contained in the City of Vallejo General Plan, the Vallejo Municipal Code, the Cal Recycle website, the City of Vallejo website, the PG&E 10-K Annual Report, and the Water Supply Assessment prepared by Wagner & Bonsignore Consulting Civil Engineers.

Information about projected utility loads was provided by the United States Energy Information Administration.

3.12.5 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether impacts to utilities and service systems are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

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

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with federal, state, and local statutes and regulations related to solid waste?

3.12.6 - Project Impacts and Mitigation Measures

Potable Water

Impact USS-1:	The proposed project would increase water demand but would not require additional entitlements and supplies.

Impact Analysis

This impact analysis addresses checklist items b) and d) related to potable water.

Entertainment Area

Water service for the proposed project would be provided by the City of Vallejo by connecting to an existing water main located in Fairgrounds Drive. Based on discussions with the City's Public Works Department Water Division, a new 24-inch water main would likely be required to be installed in Fairgrounds Drive. However, this would need to be confirmed after water modeling which would occur during the project's design phase (Ragan, pers. comm.).

In response to MBA's letter, the Vallejo Public Works Department Water Division responded that there are no known adverse impacts to the City's water system from the proposed project (Jansen, pers. comm.). This response is included in Appendix H.

Water Supply Assessment

As discussed above, a Water Supply Assessment was prepared in September 2012 by Wagner & Bonsignore Consulting Civil Engineers for the Plan. The following summarizes the information and conclusions presented in the WSA.

Table 3.12-6 lists the Solano360 Specific Plan areas and associated water demands. Additional residential development beyond 50 units would require further environmental review. The total annual water demand for the proposed project is 299.8 afy (137.1 afy Irrigation Demand, 162.7 afy Non-Irrigation Demand).

Table 3.12-6: Solano360 Specific Plan Projected Water Demands

Land Use	Site Area (Acres)	Annual Water Demands					
		Million Gallons (MG)		Acre-Feet (af)		Total Demands (Irrigation and Non-Irrigation)	
		Irrigation	Non-Irrigation	Irrigation	Non-Irrigation	MG	AF
Fairgrounds	35.18	13.2	2.5	40.5	7.7	15.7	48.2
Entertainment-Mixed Use	18.79	3.5	20.6	10.7	63.2	24.1	73.9
Entertainment-Commercial	30.0	13.8	27.0	42.4	82.9	40.8	125.3
Residential (50 dwelling units)	NA	0.0	2.9	0.0	8.9	2.9	8.9
Fairgrounds Channel	18.04	1.7	0.0	5.2	0.0	1.7	5.2
Transit/North Parking Center	2.21	0.3	0.0	0.9	0.0	0.3	0.9
Other Parking	24.75	3.4	0.0	10.4	0.0	3.4	10.4
Major Roads	14.15	3.3	0.0	10.1	0.0	3.3	10.1
Creek Park	5.99	5.5	0.0	16.9	0.0	5.5	16.9
Total	149.11	44.7	53.0	137.1	162.7	97.7	299.8

Notes:
Irrigation water demands can be met by non-potable supplies.
Irrigation water demand for Creek Park includes water demand associated with replenishing evaporative losses from water feature.
Source: Ragan August 23, 2012.

The total increase in demand on the City's water supply resulting from the proposed project is 188.8 afy. It is assumed that at least 77 afy of irrigation demands would be met via Lake Chabot irrigation water. Additionally, the 34 afy of City water supply that has been historically used at the project site is subtracted from the total demand. While a portion of the increase in water demands could be met via non-potable supplies in the form of Lake Chabot irrigation water or other recycled water, it is assumed that the total increase in water demand would be met via City water supplies. This is a conservative estimate. Table 3.12-7 illustrates the increase in water demand when historical water use at the fairgrounds is taken into consideration.

Table 3.12-7: Net Increase in Water Demands at Project Site Resulting from Solano360 Specific Plan

Water Demand	Solano360 Specific Plan	Historical/Existing at Plan Site	Difference/ Net Increase
Irrigation Water Demand	137.1	77	60.1
Non-Irrigation Water Demand	162.7	34	128.7
Total	299.8	111	188.8

Source: Wagner & Bonsignore Consulting Civil Engineers, 2012.

According to the WSA, the City's total projected water supplies during normal and single-dry years during a 20-year projection would meet the projected water demands associated with the project in addition to existing and planned future uses. Annual supplies would exceed demands by approximately12 to 29 percent per year.

In a multiple dry year sequence, specifically a Second Dry Year, the City's total projected water supplies would fall within 90 percent of projected water demands in 2020, 2025, 2030, and 2035. Reductions in demands by 5 percent in those years, pursuant to Stage II of the City's Water Shortage Response Plan would result in available supplies to meet demands. A reduction in demands by 5 percent in these years would ensure that water demands do not exceed 90 percent of available supplies.

During a Third Dry Year, the City's total projected water supplies would fall within 90 percent of projected water demands in 2015, 2020, 2025, 2030, and 2035. Reductions in demands by 10 percent in those years, pursuant to Stage II of the City's Water Shortage Response Plan would result in available supplies to meet demands. A reduction in demands by 10 percent in these years would ensure that water demands do not exceed 90 percent of available supplies.

Provided that water demands are reduced in multiple dry years; 5 percent demand reduction in a second dry year in 2020, 2025, 2030, and 2035) and 10 percent demand reduction in a third dry year in 2015, 2020, 2025, 2030, and 2053, the City currently has sufficient existing water supply to meet the projected water demands of the proposed project while continuing to support its existing customers and the demands of other planned development.

The City employs a five-stage water-shortage response plan that is triggered at prescribed levels. Water shortage stages are monitored, reported, and acted upon according to the plan set out in the reduction-measuring mechanism for each stage. Each stage consists of specific prohibitions, regulations, fines, penalties and rate structure to encourage the appropriate level of water conservation. The City's analysis of available supply and demand indicate that the City is not anticipated to have to implement any conservation above Stage II.

Following the guidelines set forth in the City's UWMP, in instances where water demand has exceeded 90 percent of available supply, Stage II water shortage requirements are necessary. In dry years, the City reduces its demand internally, by implementing system-wide efficiencies within the City's distribution system. This results in 1 percent, 2 percent and 3 percent demand reductions in single dry year, second dry year, and third dry year sequences, respectively. The City achieves these demand reductions by reducing its operational use of water, such as by limiting or eliminating water line flushing, among others (City of Vallejo 2006). These demand reductions occur before drought-response measures are implemented and required of the City's water customers.

Conclusion

In summary, the WSA concluded that the City of Vallejo has sufficient existing water supply to serve the proposed project as well as existing customers and future planned growth. Additional details regarding the proposed project's water supply are available in the Water Supply Assessment included in Appendix I. Moreover, the City of Vallejo indicated that the proposed project would not result in adverse impacts to the City's water system. Impacts would be less than significant.

Fairgrounds

The fairgrounds area of the project site was included in Table 3.12-6 above, which describes the project's water demand. As concluded above, the water system has sufficient capacity to serve the proposed project, including the fairgrounds development. Impacts would be less than significant.

Level of Significance Prior to Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Wastewater

Impact USS-2: The proposed project would be served by adequate wastewater treatment capacity.

Impact Analysis

This impact analysis addresses checklist items a), b), and e) related to wastewater.

Entertainment Area

As described above, from the project site, a large sewer line continues under Six Flags Discovery Kingdom and below private properties, residential and commercial streets for an overall length of approximately 4.5 miles until it reaches the Sears Point Pump Station on Sacramento Street. The flow is pumped for a length of approximately 2,300 feet, before flowing by gravity for a length of approximately 3.2 miles to the Ryder Street WWTP. The proposed project would construct pipelines in each backbone roadway that would route sanitary sewage flows to the existing system on Fairgrounds Drive. Potential environmental impacts related to this pipeline construction have been analyzed as part of this Draft EIR.

The proposed development of the project site will increase demand on the existing sanitary sewer system. The existing sanitary sewer pipeline in Fairgrounds Drive will serve both the proposed entertainment and open space area and future fairgrounds area. As mentioned in the Plan, based on discussions with the District Engineer it is not anticipated that any offsite improvements would be required to convey wastewater to the treatment plant, but this would need to be confirmed by updating the system-wide model during the design stage of the project.

Mackay and Somps prepared a sanitary sewage demand analysis for the proposed project. Table 3.12-8 illustrates the sanitary sewage demand generated by the project based upon the proposed land uses within the Plan. Additional residential development beyond 50 units would require further environmental review. Average daily and annual sewage generation rates used in the estimate are based on industry standard values as noted in the estimate. The proposed project would be expected to generate 150,000 gallons of wastewater per day on average at time of project buildout. On an annual basis, this would represent approximately 53.1 million gallons of wastewater.

Table 3.12-8: Solano360 Sanitary Sewage Demand

Land Use	Area (acres)	Average Non-Irrigation Water Demand (gpd/ac)[1]	Average Annual Non-Irrigation Water Demand (MG)[2]
Fairgrounds	40.07	169	2.5
Entertainment Mixed Use (Retail at 31%)	5.86	1,394	3.0
Entertainment Mixed Use (Office at 53%)	10.02	3,267	11.9
Entertainment Mixed Use (Restaurant at 16%)	3.03	5,227	5.8
Residential (assumes vertically integrated above commercial)	NA	NA	2.9
Entertainment Commercial	30.01	2,466	27.0
Total	88.99	NA	53.1

Notes:
[1] Source of demand factors:
Fairgrounds Employees: Wastewater Treatment & Reuse, Metcalf & Eddy, 4th ed., 2003 value for office use.
Fairgrounds Visitors: Wastewater Treatment & Reuse, Metcalf & Eddy, 4th ed., 2003 value for fairground use.
Fairgrounds RV Park: Wastewater Treatment & Reuse, Metcalf & Eddy, 4th ed., 2003 value for RV Park.
EMU: City of Los Angeles CEQA Thresholds Guide – Sewage Generation Factors – assumes sewage use is representative of indoor potable water use.
Residential: City of Los Angeles CEQA Thresholds Guide – Sewage Generation Factors for a 2 Bedroom Condo – assumes sewage use is representative of indoor potable water use.
EC: Discovery Kingdom non-irrigation use as measured by VSFCD divided by DK gross acreage – assumes EC will be a similar theme park use with similar water demand.
[2] MG = million gallons
Source: Mackay & Somps, 2012.

According to the VSFCD, the WWTP is currently handling approximately 9 million gallons per day (MGD) and has a permitted capacity of 15.5 MGD, but can treat up to 30 MGD for a 24-hour period during wet weather. Based on available capacity, the wastewater treatment facility could readily accommodate the proposed project's wastewater flows without a need for new or expanded facilities. Further, in response to MBA's letter, the VSFCD concluded that the capacity of the sewer system would be adequate to support wastewater flows from land uses in the current land use plan. However, if operation of the proposed water feature includes any discharges to sanitary sewers, or if high-intensity uses (such as a water park) become part of the development, a recalculation of the sewer capacity would be required (Ohlemutz, pers. comm.). This response is included in Appendix H. In

the event the proposed design of the water feature changes to discharge to the sewer system, additional environmental review would be required. Impacts would be less than significant.

Fairgrounds

The fairgrounds portion of the project site was included in Table 3.12-8 above which describes the project's sanitary sewer demand. As concluded above, the sewer system has sufficient capacity to serve the proposed project, including the fairgrounds development. Impacts would be less than significant.

Level of Significance Prior to Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Stormwater Drainage Facilities

Impact USS-3:	**The project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

Impact Analysis

This impact analysis addresses checklist item c).

Entertainment Area and Fairgrounds

As discussed in Section 3.8, Hydrology and Water Quality, the development of the proposed project would result in approximately 97 acres of impervious surface coverage on the project site, creating an increase in runoff from the site and potentially causing flooding and erosion in downstream waterways (Ragan, pers. comm.).

The primary drainage infrastructure improvements for the project would remove the site from the flood plain. The site is in the flood plain, due to high offsite flows from the east and south. The flows enter the site from Central and South Rindler Creek as well as Blue Rock Springs. The existing drainage channel on the site that connects to Lake Chabot is not sufficient to contain the offsite flows. Accordingly, in order to remove the site from the flood plain the existing Fairgrounds channel would be widened and deepened in addition to improving the existing culvert under Fairgrounds Drive. Portions of the plan area may also be removed from the flood plain by placing fill material to raise the ground elevations. The proposed cross-section of the Fairgrounds Channel would include an 8-foot-wide, 1-foot-deep meandering low-flow "notch"; a 40- to 50-foot-wide, a 2-foot-deep, low-flow channel section; and a 20- to 50-foot-wide, 5- to 7-foot-deep upper level bench. Side slopes are planned at a minimum of 3:1, but may be flattened to 4:1 where possible. The overall depth of the

channel varies from 5 to 9 feet. The channel ranges in overall width from 100± to 180± feet at the top of bank as shown on Figure 6.1 of the Specific Plan. Design guidelines associated with the channel improvements are provided in Chapter 4 of the Specific Plan. The channel improvements would reduce the flooding conditions for the Newell mobile home park.

A new multi-purpose water feature would be constructed onsite to manage and reduce peak discharges from the plan area. The water feature would connect to an existing 84-inch underground pipe near the northwest corner of the project site. This main water feature within the project would be a dual use recreation amenity and onsite flood control system. According to the Plan, one primary objective of the water feature is to provide water quality benefits for the project and improve the water quality of the runoff prior to discharging into downstream facilities that lead to Lake Chabot.

Additional onsite water quality improvements would be implemented throughout the plan area, such as biotreatment facilities, to meet NPDES permit requirements. Onsite drainage systems within the streets would be designed in accordance with City and Vallejo Sanitation and Flood Control District (VSFCD) standards. Underground pipes would be designed to accommodate 15-year storm events. Surface flow in the streets would be designed to accommodate 100-year storm events by directing water to the onsite water feature or fairgrounds channel. New stormwater pipelines would be constructed in each backbone roadway providing service to each parcel. Existing pipelines that traverse the project site would be relocated as necessary to avoid conflicts with development.

These proposed drainage improvements would not result in significant environmental effects. Accordingly, impacts would be less than significant.

Level of Significance Prior to Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Solid Waste

Impact USS-4:	**The proposed project may generate substantial amounts of solid waste during both construction and operations.**

Impact Analysis

This impact analysis addresses checklist items f) and g) and assesses whether the proposed project would be served by a landfill with adequate capacity or comply with federal, state, and local statutes and regulations related to solid waste. Solid waste would be generated by construction and operational activities. Each is discussed below.

Entertainment Area and Fairgrounds

Construction Waste

Short-term construction waste generation is summarized in Table 3.12-9. The estimate of 941 tons was calculated using an average of 3.89 pounds of debris per square foot of non-residential construction and .23 ton per dwelling unit for multi-family residential construction.

Table 3.12-9: Estimated Construction Waste Generation

Land Use	Waste Generation Rate	Square Footage/Units	Construction Waste Generation (tons)
Retail	3.89 pounds/square foot	109,314	213
Office		218,257	425
Fairgrounds		149,500	291
Multi-Family Residential	.23 tons/unit/year	50 units	12
Total	—	**477,071**	**941**

Note:
1 ton = 2,000 pounds
Source: U.S. Environmental Protection Agency, 1998; Michael Brandman Associates, 2012.

While the estimate of 941 tons of construction waste would be an extremely small amount relative to remaining capacity at Keller Canyon Landfill (59 million cubic yards), which was identified as a likely service provider by the City, mitigation is proposed that would require the project applicant to retain a contractor to recycle construction and demolition debris. The Keller Canyon Landfill currently receives an average of 2,500 tons per day of materials for disposal (Fernandez, pers. comm.) The implementation of this mitigation measure would reduce potential impacts to a level of less than significant.

According to the Solano360 Preliminary Construction Cost Budget Estimate, total existing fair facilities (including the golf course and horse racing facilities) comprise 428,388 square feet (Mackay and Somps 2012). During Phase 1, a total of 27,180 square feet of facilities would be demolished including the, concourse restroom, twilight patio office, and exposition hall. Facilities to be demolished during Phase 2 include the administration building, director's trailer, security office, golf course, and horse racing facilities for a total of 298,715 square feet. During Phase 3, the civic building, concert arena grandstand cover, and television towers would be demolished for a total of 17,525 square feet.

Operational Waste

Operational solid waste generation estimates were calculated using a standard commercial waste generation rate provided by the CalRecycle (formerly California Integrated Waste Management Board). The proposed project's waste generation calculations are provided in Table 3.12-10. As shown in the table, the proposed project is expected to create 1,168 tons of waste annually.

Table 3.12-10: Estimated Operation Waste Generation

Land Use	Waste Generation Rate	Square Footage/Units	Annual Waste Generation (tons)
Retail	4.8 pounds/square foot/year	109,314	262
Office		218,257	524
Fairgrounds		149,500	359
Multi-Family Residential	.46 ton/unit/year	50 units	23
Total	—	**477,071**	**1,168**

Notes:
1 ton = 2,000 pounds
Source: California Integrated Waste Management Board, 2006; Michael Brandman Associates, 2012.

The Vallejo Public Works Department Recycling Coordinator provided a letter dated October 18, 2011 (Appendix H) confirming that Keller Canyon Landfill has sufficient capacity to serve the proposed project (Crutchfield, pers. comm.).

Mitigation is proposed that would require the project applicant to submit a Recycling and Waste Reduction Plan to the City for review and approval for the proposed project. The plan would identify practices and onsite facilities necessary to ensure that recoverable materials and green waste are diverted from the waste stream to the maximum extent feasible. The plan would also identify a qualified contractor, such as Recology American Canyon, to provide collection services. The implementation of these mitigation measures would reduce solid waste generation, thereby decreasing demand for landfill capacity.

Level of Significance Prior to Mitigation

Potentially significant impact.

Mitigation Measures

Entertainment Area

MM USS-4a Prior to issuance of building permits for the proposed project, the project applicant shall retain a qualified contractor to perform construction debris recycling. The applicant shall establish an objective of diverting a minimum of 50 percent of construction debris from the waste stream, as required by the 2010 California Green Building Standards Code. The project applicant shall provide documentation to the satisfaction of the City of Vallejo demonstrating that construction and demolition debris was recycled.

MM USS-4b Prior to issuance of the final certificates of occupancy for the proposed project, the project applicant shall install onsite facilities necessary to collect and store recyclable materials. Recyclable collection facilities shall be located in public spaces and clearly identify accepted materials.

Fairgrounds

MM USS-4c Prior to the commencement of construction for the proposed project, the project applicant shall retain a qualified contractor to perform construction debris recycling. The applicant shall establish an objective of diverting a minimum of 50 percent of construction debris from the waste stream, as required by the 2010 California Green Building Standards Code.

MM USS-4d Prior to final occupancy for the proposed project, the project applicant shall install onsite facilities necessary to collect and store recyclable materials. Recyclable collection facilities shall be located in public spaces and clearly identify accepted materials.

Level of Significance After Mitigation

Less than significant impact.

Energy

Impact USS-5: The proposed project would not result in the inefficient, unnecessary, or wasteful consumption of energy.

Impact Analysis

PG&E would provide electricity and natural gas to the proposed project. A 12-inch steel gas transmission pipe runs through the site. However, according to the Plan, it is anticipated that a majority of the transmission pipe would need to be relocated as part of the proposed development.

Table 3.12-11 provides an estimate of the proposed project's annual energy consumption. These figures were derived from energy consumption rates provided by the United States Energy Information Administration. The proposed project's energy usage estimates are based on national consumption figures for commercial buildings that operate between 85 and 167 hours per week. Estimates for the proposed project likely overstate actual consumption, because they include structures located in different climate regions or states with less stringent energy efficiency standards than California. As shown in the table, the proposed project is anticipated to require 10.7 million kilowatt-hours annually of electricity and require 25.1 million cubic feet annually of natural gas. The energy demand for the proposed project would not contribute to a significant increase in energy consumption within PG & E's northern and central California service area.

The proposed project's structures would be designed in accordance with all applicable state energy efficiency requirements, including Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. (Title 24 includes the Green Building Standards Code). These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), indoor and outdoor lighting, and illuminated signs. The incorporation of the 2008 Title 24 standards into the project would ensure that the project would

not result in the inefficient, unnecessary, or wasteful consumption of energy. Energy conservation is discussed in further detail in Section 6, Other CEQA Considerations, of this Draft EIR.

Table 3.12-11: Estimated Energy Demand

Land Use	Source	Annual Consumption Rate	Square Footage	Annual Consumption
Retail	Electricity	22.1 kWH/square foot	109,314	2.4 million kWH
	Natural Gas	47.7 cubic feet/square foot		5.2 million cubic feet
Office	Electricity	22.1 kWH/square foot	218,257	4.8 million kWH
	Natural Gas	47.7 cubic feet/square foot		10.4 million cubic feet
Fairgrounds	Electricity	22.1 kWH/square foot	149,500	3.3 million kWH
	Natural Gas	47.7 cubic feet/square foot		7.1 million cubic feet
Multi-Family Residential	Electricity	4,434 kWH/dwelling unit	50 units	221,700 kWH
	Natural Gas	48,138 cubic feet/dwelling unit	50 units	2.4 million cubic feet
Total	Electricity	—	**477,071**	**10.7 million kWH**
	Natural Gas	—		**25.1 million cubic feet**

Note:
kWH = kilowatt hours
Source: United States Energy Information Administration, 2008; PG&E 10-K Annual Report, 2009; Michael Brandman Associates, 2012.

Level of Significance Prior to Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.12.7 - Residual Significant Impacts

None identified.