
4.6 - Hazards and Hazardous Materials

4.6.1 - Introduction

This section describes the existing hazards and hazardous materials setting and their potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Phase I Environmental Site Assessment (Phase I ESA), prepared on March 28, 2006 by TRC Lowney. The Phase I ESA is included in this EIR as Appendix F.

4.6.2 - Environmental Setting

Hazardous Materials

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic (causes human health effects)
- Ignitable (has the ability to burn)
- Corrosive (causes severe burns or damage to materials)
- Reactive (causes explosions or generates toxic gases)

A hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that render a material hazardous also make a waste hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. The California Code of Regulations, Title 22, Sections 66261.20-24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

Record Search

A search of federal, State, and local databases by Environmental Data Resources, Inc. (EDR)—which list contaminated sites, Brownfield sites, underground storage tank (UST) sites, waste storage sites, toxic chemical sites, contaminated well sites, clandestine drug lab sites, and other sites containing hazardous materials—yielded two recorded sites within 1 mile of the project site. The two sites are summarized in Table 4.6-1. The project site was not listed on any databases.

Table 4.6-1: Recorded Sites Near the Project Site

Name	Location	Database(s)	Remarks
Woody’s Bait Shop	South of intersection of State Route 12 (SR-12) and Walters Road	SLIC	No information known about incident
Travis Air Force Base	0.75 mile northeast of project site	NPL, CORRACTS, Federal Lands, RODs	Superfund site, large-quantity hazardous materials handler
<p>Notes: SLIC = Spills, Leaks, Investigations, and Cleanups. Listings include unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated uses. NPL = National Priorities List (Superfund) CORRACTS = Resource Conservation and Recovery Act Corrective Action Activity RODs = Records of Decision (Superfund-related) Source: TRC Lowney, 2006.</p>			

Aerial Photographs

Aerial photographs of the project area dating to 1937 were obtained as part of the Phase I ESA process. The changes that occur to the project site and surroundings are summarized in Table 4.6-2.

Table 4.6-2: Aerial Photograph Summary

Year	Description
1937	The site appears to be in agricultural production with row crops visible. A creek pattern on the east portion of the site trending north to south is visible. All surrounding land uses are agricultural. Two small farm roads following the present-day alignments of Walters Road and Petersen Road are visible. Walters Road ends at Petersen Road.
1957	The site appears to be fallow. Petersen Road and Walters Road have been improved. Surrounding land uses appear to be unchanged.
1965	SR-12 is visible along the west and south sides of the site on the aerial photograph. The drainage ditch bisecting the site is visible. The site appears to be fallow, with a faint tilled pattern. A small apparent driveway and structure were faintly visible on the north-central portion of the site, along the northern boundary next to Petersen Road. The structure appears to be small and may have been a well pump shed or similar structure.
1970	The structure shown on the previous photo is not visible. All other aspects are similar to previous photograph.
1984	The northwestern portion of the project site appears have been graded. The Quail Glen subdivision north of the site is visible. New development is under construction on the east side of Walters Road.
1993	An east-west dirt road is visible on the project site. The Lawler Ranch subdivision is under construction on the south side of SR-12. More development is visible on the east side of Walters Road.
1998	A north-south dirt road apparently connecting Fulmar Drive and SR-12 crosses the project site. Walters Road has been extended from Petersen Road to SR-12, and Petersen Road no longer connects with SR-12. Most of the Lawler Ranch subdivision has been completed, but one area contains only streets.
Source: TRC Lowney, 2006.	

Topographical Maps

United States Geologic Survey 7.5-minute topographical quadrangles of the project area dating to 1914 were obtained as part of the Phase I ESA process. The changes that occur to the project site and surroundings are summarized in Table 4.6-3.

Table 4.6-3: Topographical Map Summary

Quadrangle	Year	Description
Antioch	1914	Project site is vacant. Petersen Road and Walters Road are shown.
Denverton	1918	Same as previous.
Pittsburgh	1953	Travis Air Force Base is shown northeast of the project site.
Denverton	1968	SR-12 is shown. The drainage ditch is shown as a blue-line drainage. Windmills are shown south of the project site.
Denverton	1973	A structure is shown adjacent to Petersen Road in the north-central portion of the site.
Denverton	1980	The structure is no longer shown. A subdivision is present to the northeast, and planned streets, including Fulmar Drive, are shown north of the project site.

Source: TRC Lowney, 2006.

Hazardous Materials

The Phase I ESA assessed the potential for hazardous materials to be present on the project site. A summary of the findings follows.

Asbestos

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is commonly used as an acoustic insulator, thermal insulation, fireproofing, and in other building materials. Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials are damaged or disturbed. When these fibers get into the air, they may be inhaled into the lungs, where they can cause significant health problems. The California Occupational Health and Safety Administration (Cal OSHA) defines asbestos-containing materials as any material that contains 0.1 percent asbestos by weight.

There are no structures on the project site. Historic aerial photographs indicate that a small, apparently agriculture-related structure was present on the site during the 1960s. However, recent site reconnaissance found no evidence or remnants of the structure. Therefore, asbestos-containing materials are unlikely to be present on the project site.

Lead

Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably paint. Lead may cause a range of health effects, from behavioral problems and learning disabilities to

seizures and death. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil.

There are no structures on the project site. Site reconnaissance found no evidence or remnants of the small agricultural structure that was on the project site during the 1960s. Therefore, the Phase I ESA concluded that lead-based paint and other lead-based building materials are unlikely to be present on the project site.

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are mixtures of man-made chemicals with similar chemical structures. PCBs can range from oily liquids to waxy solids. Because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications, including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other applications. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to cessation of production in 1977.

A pad-mounted transformer owned by Pacific Gas and Electric Company (PG&E) is located along the eastern border of the project site. This transformer may contain transformer oil. Although transformer oil is typically not highly toxic or mobile in the environment, it may contain PCBs. The transformer appeared to be in good condition, and no significant oil leaks were observed.

Mercury

Mercury is a naturally occurring element that is found in air, water, and soil that has traditionally been used to make products such as fluorescent lamps, switches, and thermometers. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people of all ages. Scientific studies have shown that high levels of mercury in the bloodstream of unborn babies and young children may harm the developing nervous system, making the child less able to think and learn.

There are no structures on the project site. Site reconnaissance found no evidence or remnants of the small agricultural structure that was on the project site during the 1960s. Therefore, the Phase I ESA concluded that mercury is unlikely to be present on the project site.

Chlorofluorocarbons

Chlorofluorocarbons (CFCs) were developed in the early 1930s and are used in a variety of industrial, commercial, and household applications. These substances are non-toxic, non-flammable, and non-reactive with other chemical compounds. These desirable safety characteristics, along with their stable thermodynamic properties, make them ideal for many applications—as coolants for commercial and home refrigeration units, aerosol propellants, electronic cleaning solvents, and blowing agents. CFCs contribute to depletion of the ozone layer and, consequently, to skin cancer and cataracts. CFCs also are greenhouse gases and contribute to global climate change.

There are no structures on the project site. Site reconnaissance found no evidence or remnants of the small agricultural structure that was on the project site during the 1960s. Therefore, the Phase I ESA concluded that CFC-containing equipment is unlikely to be present.

Pesticides

A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. The term pesticide applies to insecticides, herbicides, fungicides, and various other substances used to control pests. The health effects of pesticides depend on the type of pesticide. Examples of health risks posed by pesticides include cancer, nervous system damage, hormone or endocrine disruption, and eye or skin irritation.

Historic aerial photos indicate that the project site may have been used for agricultural purposes. During the course of agricultural use, pesticides likely were applied to crops in the normal course of farming operations. The Phase I ESA included limited soil testing of the project site for concentrations of organochlorine pesticides (DDT) and pesticide-related metals (arsenic, lead, and mercury). The results of the soil testing are summarized in Table 4.6-4.

Table 4.6-4: Limited Soil Testing Results

Measurement	Substance (ppm)			
	DDT	Arsenic	Lead	Mercury
Maximum concentration	0.339	13.00*	18.0	<0.20
Residential health screening level	1.600	0.07	150.0	18
Commercial health screening level	6.300	0.24	3,500.0	180
Notes: ppm = parts per million * Background concentrations for arsenic are typically between 10 ppm and 15 ppm in the San Francisco Bay Area region. Source: TRC Lowney, 2006.				

With the exception of arsenic, the concentrations of DDT pesticide-related metals shown in Table 4.6-4 are well below the residential California Human Health Screening Levels (CHHSLs). In some cases, the predictive risk-based models generate CHHSLs that are below typical background concentrations. If natural background concentrations are higher than the risk-based CHHSLs, an adjustment of the CHHSLs is warranted. An example is naturally occurring arsenic in soils, which frequently has a higher concentration than the risk-based concentration set at a one-in-one-million cancer risk. Background arsenic concentrations in San Francisco Bay Area soils are typically between 10 and 15 ppm; therefore, the arsenic concentrations on the project site are consistent with regional background levels. The Phase I ESA concluded that arsenic concentrations on the project site do not pose a hazard to human health or the environment.

Hydrocarbons/Aboveground and Underground Storage Tanks

Petroleum hydrocarbons are derived from crude oil, which is refined into various petroleum products such as diesel, gasoline, kerosene, lubricants, and heavy fuel oils. Hydrocarbons constituents include benzene, N-heptane, and toluene, and generate health effects such as cancer, leukemia, asthmatic bronchitis, kidney damage, and eye irritation. Hydrocarbons are stored in aboveground storage tanks (ASTs) and USTs. Leaking ASTs and USTs can result in contamination of groundwater sources or fire and explosion.

The Phase I ESA indicated that no ASTs or USTs were observed on the project site during the site reconnaissance. In addition, the ERD record search found no records indicating that any ASTs or USTs are present or were formerly present on the project site.

Radon

Radon is a carcinogenic, radioactive gas that originates from the natural breakdown of uranium in soil, rock, and water. Radon gas enters a building through cracks in foundations and walls. Once inside the building, radon decay products may become attached to dust particles and inhaled, or the decayed radioactive particles alone may be inhaled and cause damage to lung tissue. The U.S. Environmental Protection Agency (EPA) has established a safe radon exposure threshold of 4 picoCuries per liter of air (pCi/L).

Radon screening tests conducted in the site vicinity did not detect radon above 4 pCi/l at eight sites tested. The EPA has rated Solano County as a Radon Zone 3, with an average indoor activity level of less than 2 pCi/l radon. Accordingly, the project site is not likely impacted by the presence of radon gas.

Groundwater Contamination

Lead sources in drinking water typically include plumbing corrosion and erosion of natural deposits in the water distribution system. The Solano Irrigation District 2004 Annual Water Quality Report indicated that lead was not detected to exceed the maximum contaminant level (MCL) at 31 sites tested in 2002. The MCL for lead in drinking water is 15 parts per billion (ppb).

High-Voltage Power Lines

High-voltage power lines emit electromagnetic fields (EMFs), which have been alleged to be a cause of cancer. However, scientific research has never conclusively established a link between EMFs and cancer.

The nearest high-voltage power line to the site is a 110-kilovolt line, 0.5 mile to the northeast. This distance precludes the exposure of the project site to EMFs.

Aviation

Travis Air Force Base is located 0.75 mile northeast of the site. The Air Base is home to the 60th Air Mobility Wing and serves as the home base for the Wing's reserve counterpart, the 349th Air

Mobility Wing (Associate). The 60th Air Mobility Wing is the largest air mobility organization in the United States Air Force, with an all-jet fleet of C-5 Galaxy cargo aircraft, C-17 Globemaster III cargo aircraft, and KC-10 Extender refueling aircraft. The Air Base handles more passenger and cargo traffic through its airport than any other military air terminal in the United States. The Air Base includes approximately 7,944 active military personnel, 3,554 civilians, and 3,384 reservists.

Wildland Fires

Risks to human life and property from wildland fires are most acute in the wildland-urban interface, where urban development meets transitions to rural lands and wilderness. The project site is surrounded by urban uses to the west, north, and south. To the east is grazing land located within unincorporated Solano County. Solano County General Plan Health and Safety Element Figure 3 indicates that neither the project site nor the grazing land to the east is within an area designated as having an Extreme Wildfire Risk, High Wildfire Risk, or High Grassfire Risk.

4.6.3 - Regulatory Setting

Federal

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from their point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs complied with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

State**California State Aeronautics Act**

The State Aeronautics Act, Public Utilities Code (PUC) Section 21001, et seq., is the foundation for the California Department of Transportation's Division of Aeronautics aviation policies. The Division issues permits for, and annually inspects, hospital heliports and public-use airports, makes recommendations regarding proposed school sites within 2 miles of an airport runway, and authorizes helicopter landing sites at or near schools. Aviation system planning provides for the integration of aviation into transportation system planning on a regional, statewide, and national basis. The Division of Aeronautics administers noise regulation and land use planning laws that foster compatible land use around airports and encourages environmental mitigation measures to lessen noise, air pollution, and other impacts caused by aviation. The Division of Aeronautics also provides grants and loans for safety, maintenance, and capital improvement projects at airports.

California Health and Safety Code

The California Environmental Protection Agency has established rules governing the use of hazardous materials and the management of hazardous wastes. California Health and Safety Code Sections 25531, et seq., incorporate the requirements of Superfund Amendments and Reauthorization Act and the Clean Air Act as they pertain to hazardous materials. California Health and Safety Code Section 25534 directs facility owners storing or handling acutely hazardous materials in reportable quantities to develop a Risk Management Plan (RMP). The RMP must be submitted to the appropriate local authorities, the designated local administering agency, and the U.S. EPA for review and approval.

Aboveground Petroleum Storage Act

The Aboveground Petroleum Storage Act requires owners or operators of aboveground petroleum storage tanks to file a storage statement, pay a fee by July 1, 1990, and implement measures to prevent spills. The storage statement must include a name and address of the tank facility, a contact person, and the total storage capacity of all petroleum storage tanks at the facility. The facility must also prepare a Spill Prevention Control and Countermeasure (SPCC) plan that complies with EPA regulations on oil pollution prevention. Sites with a single AST exceeding 660 gallons or a cumulative storage capacity of greater than 1,320 gallons are subject to provisions of this act. Underground storage tanks are subject to the provisions of the California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Storage Tank Regulations.

Occupational safety standards exist in federal and State laws to minimize worker safety risks from both physical and chemical hazards in the work place. Cal OSHA and the federal Occupation Safety and Health Administration (OSHA) are the agencies responsible for assuring worker safety in the workplace. Cal OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. At sites known to be contaminated, a Site Safety Plan must be prepared to protect workers. The Site Safety Plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

Local

City of Suisun City General Plan

The City of Suisun City General Plan establishes the following policies that relate to hazardous waste management:

- No transportation of hazardous materials shall be permitted through residential areas.
- All hazardous wastes generated within Suisun City shall be neutralized onsite to a non-hazardous state prior to transportation offsite.
- All hazardous waste transfer stations, disposal facilities, and residual repositories shall be sited 2,000 feet away from Travis Air Force Base accident potential zones.
- All hazardous waste transfer stations, disposal facilities, and residual repositories are permitted only in industrially designated and zoned properties, in order to ensure that the impacts to residential and commercial areas are minimized.
- No hazardous waste storage facilities will be permitted south of SR-12 because of its proximity to the Suisun Marsh.
- All businesses shall describe their method of operation in the Business Management Plan to be submitted to the City and the County's Environmental Management Department for approval prior to issuance of a building permit, occupancy permit, or business license within Suisun City, unless the business obtains an exemption from the Solano County Environmental Health Department.
- All businesses generating hazardous wastes within Suisun City shall undergo quarterly inspections by an investigator approved by the City, who shall report any findings of hazardous material mishandling to the City and the County Department of Environmental Management. The inspection shall be paid for with fees collected from the business owner as provided by AB 2948 (Tanner Process) and established by Resolution of the Suisun City Council.

Solano County Hazardous Materials Program

The Solano County Environmental Health Department is responsible for regulating hazardous materials and wastes in the County. The Hazardous Materials Program includes permitting and inspection requirements for facilities that use hazardous materials. In addition, users of hazardous materials are required to submit a Hazardous Materials Business Plan to the department for review.

The Solano County Department of Environmental Management is the Certified Unified Program Agency (CUPA) for all cities and unincorporated areas within the county. The CUPA was created by the State Legislature to minimize the number of inspections and different fees businesses deal with. The CUPA manages these programs:

- The Department of Environmental Management conducts the permitting and inspection of businesses that handle quantities of hazardous materials/waste greater than or equal to 55 gallons, 500 pounds, or 200 cubic feet of a compressed gas at any time.
- In conjunction with the Hazardous Materials Business Plan Program, staff inspect businesses for compliance with the Hazardous Waste Control Act and inspect businesses that treat hazardous waste pursuant to permit by rule, conditional authorization, or conditional exemption.
- Hazardous Materials Management Plans address emergency response to incidents involving hazardous materials greater than or equal to 55 gallons, 500 pounds, or 200 cubic feet of gas that are handled by a business. Plans include an initial and annual inventory of hazardous materials. These include new or waste materials that are toxic, reactive, ignitable, or corrosive.

Solano County Airport Land Use Commission

The Solano County Airport Land Use Commission governs land use around the County's aviation facilities, including Travis Air Force Base. Land use policies for lands around Travis Air Force Base are established in the Travis Air Force Base Land Use Compatibility Plan. The plan designates various land use compatibility zones around Travis Air Force Base and specifies restrictions for each zone. The project site is within Zone C. The applicable policies of Zone C include a prohibition on children's schools, libraries, and hospitals, and flight hazards including glare, distracting lights, and sources of electrical interference with aircraft communications or navigation.

4.6.4 - Impacts and Mitigation Measures

This section discusses potential hazards and hazardous materials impacts associated with the development of the project. Mitigation measures are provided where appropriate.

Methodology

TRC Lowney prepared a Phase I ESA to document potential hazardous conditions on the project site and surrounding land uses. The Phase I ESA consisted of a review of local, State, and federal regulatory agency lists as compiled by EDR; a review of historic aerial photographs and topographic maps; a City and County Agency review; interviews with the Suisun City Fire Chief; and site reconnaissance.

TRC Lowney conducted an interview with the Fire Chief of the Suisun City Fire Department, Mr. Michael O'Brian. Mr. O'Brian indicated that, to his knowledge, there have been no spills or incidents on or near the project site during the 14 years he has worked for the Fire Department. Mr. O'Brian also indicated that a portion of the project site had been used to store equipment for the Ghilotti Construction Company from 1997 to 1998. TRC Lowney was not able to contact the construction manager in charge during the time equipment was stored on the site.

TRC Lowney personnel conducted site reconnaissance on February 16, 2006 to search for any possible indication of environmental concerns. A limited drive-by survey was conducted to evaluate adjacent land use.

Thresholds of Significance

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

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Refer to Section 7, Effects Found Not To Be Significant.)
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working the project area?
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (Refer to Section 7, Effects Found Not To Be Significant.)
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Past or Present Uses

Impact HAZ-1: **Development of the proposed project has the potential to expose to human health and the environment to hazardous materials associated with past or present site usage.**

Impact Analysis

Below is analysis of the proposed project's potential to result in exposure of persons or the environment to hazardous materials associated with past or present use of the project site or surrounding sites.

The Phase I ESA indicated that the project site is not listed on any databases listing hazardous materials sites compiled pursuant to Government Code Section 65962.5. Refer to Appendix F for a complete listing of the databases searched as part of the Phase I ESA. A review of historic aerial photographs and quadrangles of the project site and vicinity did not reveal evidence of past or present uses that would be likely sources of hazardous materials.

The records search indicated that Woody's Bait Shop and Travis Air Force Base are listed on databases of sites with potential hazardous materials contamination. The EDR Database indicated that Woody's Bait Shop, which is recorded on a database of hazardous materials spills, is located south of the intersection of Walters Road and SR-12; however, that location is occupied by single-family residences constructed in the 1990s. Therefore, it is believed that Woody's Bait Shop does not currently exist and does not pose a hazard to the project site. Travis Air Force Base is recorded on numerous databases, including those related to Superfund clean-up sites. However, the nearest portion of the Air Base is approximately 0.75 mile from the project site, which makes it highly unlikely that airbase-related contamination is present onsite.

Site Reconnaissance

Site reconnaissance of the project site by TRC Lowney and Michael Brandman Associates personnel did not find any evidence of contamination onsite. A PG&E pad-mounted transformer is located on the eastern portion of the project site near Walters Road and may contain PCBs.

Limited Soil Testing

The limited soil testing found that concentrations of pesticides and pesticide-related metals were either within regionally acceptable background levels or within acceptable exposure levels for residential land uses. Therefore, ground-disturbing activities are not expected to encounter hazardous concentrations of pesticides.

Summary

The one potential hazard onsite is the pad-mounted transformer. If improperly removed during construction, there is the potential for exposure to PCBs. Mitigation is proposed that would require the applicant to retain a certified contractor to relocate or remove the transformer. The implementation of this mitigation measure would reduce potential impacts to a level of less than

significant. Aside from the transformer, there is no other evidence or reason to believe that the past or present uses of the project site may pose a threat to human health or the environment.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-1 The project applicant shall retain a certified contractor to remove or relocate the electrical transformer on the project site. If there is evidence of transformer oil leakage, PCB testing shall be performed and the results shall be provided to the City of Suisun City.

Level of Significance After Mitigation

Less than significant impact.

Hazardous Materials Use, Transport, Storage, or Disposal

Impact HAZ-2: The proposed project may routinely transport, use, or dispose of hazardous materials.

Impact Analysis

This impact addresses impacts associated with hazards caused by the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, State, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. No significant impacts would occur during construction activities.

The proposed project would contain a 12-pump gas station, and petroleum products would be routinely transported, stored, and used onsite. The gas station would be subject to regular inspections by local and State agencies to ensure that all petroleum products are properly stored onsite. In addition, petroleum products transporters would be subject to federal regulations governing the transportation of those substances. Therefore, the fuel station would not be expected to create a significant hazard to the public or the environment.

The other commercial uses envisioned by the proposed project would not include large-quantity users of hazardous materials. Small quantities of hazardous materials would be used onsite, including cleaning solvents (e.g., degreasers, paint thinners, and aerosol propellants), mechanical fluids, fuels (e.g., propane), paints (both latex- and oil-based), acids and bases (such as many cleaners), disinfectants, metals (e.g., thermometers, batteries), and pesticides. These substances would be stored

in maintenance areas and would comply with all applicable storage, handling, usage, and disposal requirements. The potential risks posed by the use and storage of these hazardous materials are primarily limited to the immediate vicinity of the materials. Transport of these materials would be performed by commercial vendors who would be required to comply with various federal and State laws regarding hazardous materials transportation. As such, they are not expected to expose human health or the environment to undue risks associated with their use.

The Wal-Mart Supercenter would also implement a number of practices designed to eliminate or reduce the use of hazardous materials. Polyvinyl chloride (PVC) materials, which are commonly used in roofs but also contain toxins, would not be used in the roof membranes. The floor would be treated with an integrally colored concrete finish, which requires fewer chemical cleaners, wax, and wax strippers than a carpet or vinyl tile finish. The elimination of carpet and vinyl tile also addresses concerns related to manufacture and disposal of these materials, which commonly contain PVC. The air conditioning and HVAC equipment would use R-410a refrigerant instead of R-22. R-410a releases fewer ozone-depleting refrigerants than R-22. The Wal-Mart Supercenter would also utilize low-mercury lamps, the bulbs of which, unlike all other fluorescent lamps, are not considered hazardous material and can be disposed of in any landfill. Wal-Mart's standard practice is to recycle these lamps and, therefore, divert them from landfills.

In addition, the proposed project would prepare and submit a Hazardous Materials Management Plan to the Solano County Department of Environmental Management. This has been incorporated into the project as a mitigation measure. The implementation of this mitigation measure would reduce impacts associated with routine transport, use, or disposal of hazardous materials to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HAZ-2 Prior to construction, the applicant shall prepare and submit a Hazardous Materials Management Plan for the Solano County Department of Environmental Management. The plan shall address emergency response procedures and would include an initial inventory of hazardous materials, including new or waste materials that are toxic, reactive, ignitable, or corrosive.

Level of Significance After Mitigation

Less than significant impact.

Aviation Hazards

Impact HAZ-3: Development of the proposed project would not create or expose persons in the project area to aviation hazards.

Impact Analysis

The project site is located approximately 0.75 mile southwest of Travis Air Force Base and is within Zone C of the Travis Air Force Base Land Use Compatibility Plan. The plan establishes the following restrictions for Zone C to minimize aviation hazards:

- No more than an average of 75 persons per acre are permitted for the entire site.
- No more than 300 persons per any individual acre are permitted onsite at any given time.
- Children’s schools, day care centers, libraries, hospitals, nursing homes, and hazards to flight are prohibited land uses.
- A notice regarding aircraft operational impacts is required to be attached to the deed.
- Airspace review is required for all structures greater than 100 feet in height.

As described in further detail in Impact LU-4 in Section 4.8, Land Use, the proposed project would be consistent with the requirements of Zone C. In addition, as discussed in further detail in Impact NOI-5 in Section 4.9, Noise, the proposed project would not be exposed to excessive aviation noise levels from airbase operations. The proposed project does not contain any features that would create flight hazards and, therefore, would not create a hazard to aviation. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Emergency Response and Evacuation

Impact HAZ-4: The proposed project would not impair the implementation of, or physically interfere with, an adopted emergency response or evacuation plan.

Impact Analysis

The proposed project consists of commercial retail center and would not have any characteristics that would conflict with an adopted emergency response or evacuation plan. While the City of Suisun City does not have a specific adopted emergency response or evacuation plan, the County of Solano manages the following programs in support of emergency response and evacuation planning: Fire Coordination Program, Hazardous Materials Area Plan, Emergency Preparedness Program, and

Emergency Response Program. The project site is designated for General Commercial uses by the City of Suisun City General Plan, it is zoned for commercial uses, and the proposed project is consistent with the General Plan land use designation. Since it is consistent with the land use designation, the proposed project is consistent with the City of Suisun City's anticipated uses of the project site, including those related to public safety and emergency response. Therefore, the proposed project would not impair implementation or physically interfere with adopted emergency response or evacuation plan. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Wildland Fires

Impact HAZ-5: Development of the proposed project would not expose persons or structures to wildland fire hazards.

Impact Analysis

Solano County General Plan Health and Safety Element Figure 3 indicates that neither the project site nor the grazing land located to the east is within an area designated as having an Extreme Wildfire Risk, High Wildfire Risk, or High Grassfire Risk. Therefore, the project site would not be considered to have a high susceptibility for wildland fires, and the development of the proposed project would not expose persons or structures to substantial risks associated with such fires. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

4.7 - Hydrology and Water Quality

4.7.1 - Introduction

The following discussion addresses the existing surface and groundwater hydrology, drainage, water quality, and potential flooding conditions that characterize the project site and surrounding area. The impact analysis contained in this section is based, in part, on the Final Hydrologic Study prepared by Michael Brandman Associates, dated June 2007. The Hydrologic Study is provided in Appendix G. Additional information was obtained by the Stormwater Control Plan prepared by Robert A. Karn and Associates, dated November 2006.

4.7.2 - Environmental Setting

Climate

Precipitation in the Solano County is derived from frontal low-pressure systems that originate over the Pacific Ocean and travel generally west into California. The project site is situated in the central Coast Range, which is characterized by cool, wet winters and dry, warm summers. The mean annual precipitation is 20 inches; ranging from 12.32 inches (1971) to 44.28 inches (1983). The majority of the annual precipitation falls as rain during the period of November through April. The 10-year, 24-hour estimated maximum precipitation amount is 3.0 inches and the 100-year, 24-hour maximum precipitation amount is 4.5 inches for the project area.

Regional Hydrology

Solano County generally consists of level topography of alluvial origin within a portion of the Central Valley. The Vaca Mountains, part of the Coast Ranges, are a prominent feature rising immediately west of the County. The major streams in the County drain in an easterly or southerly direction from the Vaca Mountains to Suisun Marsh and the San Joaquin-Sacramento River Delta. Suisun City is situated on the north and east banks of Hill Slough, connected to Grizzly Bay by Suisun Slough, which links Suisun City to the Sacramento River and the San Francisco Bay. Grizzly Bay is a northern subembayment of Suisun Bay, which is composed of three main channels that flow east to west towards the Carquinez Strait. The deepest channel flows through Suisun Cutoff, north of Ryer Island, and along the southern end of Grizzly Bay. All three channels join at the Carquinez Strait, where they continue through to the southern section of San Pablo Bay and into San Francisco Bay.

The Department of Water Resources (DWR) maps the project area within the Suisun Slough hydrologic subarea of the Fairfield hydrologic area (USGS Cataloging Unit: 18050001). The Carquinez Strait is located at the western portion of the Suisun hydrologic unit and the larger Sacramento-San Joaquin River Delta (Delta). The project area drains directly into Hill Slough, which drains to the south and west into Suisun Slough. Hill Slough is fed by several local creeks, including Laurel and Ledgewood creeks to the west, Union Creek to the east, and, locally, McCoy Creek. McCoy Creek intercepts drainage runoff from areas to the north and west of the project area.

Local Surface Drainage Features

Drainage patterns within the project vicinity are highly modified by existing development, with runoff conveyed through a combination of engineered curb and gutter systems, roadside ditches, and linear, open channels. Open channels only remain on undeveloped lots such as the project site and undeveloped, urban reserve properties to the east. The onsite drainage channel extends for approximately 1,025 feet in a north to south direction and is a direct tributary to Hill Slough. The onsite channel was observed to have substantial vegetative growth, which included cattails, willows (*Salix* spp.), and Himalayan blackberry (*Rubis tricolor*).

Elevations in the immediate project vicinity range from sea level at Hill Slough to 20 feet above mean sea level (msl) near the intersection of Walters Road and Montebello Drive. Onsite topography is generally level, with existing site elevations ranging from 12 feet above msl near the southern corner to 18 feet above msl in the north-central portion of the site.

The project site is located within a small, isolated drainage catchment located east of McCoy Creek. As depicted in Exhibit 4.7-1, the upstream contributing drainage area is relatively small, only approximately 14.7-acres, with runoff originating from Petersen Road and a southeast section of the Quail Glen subdivision. The 20.8-acre project site represents over one-quarter of the approximately 72-acre drainage area. The other un-piped drainage feature within the project area is a roadside ditch located along the eastbound lane of State Route 12 (SR-12). These features along with runoff from portions of Walters Road converge to the south of the project site and enter a 42-inch drainage line that extends south along Lawler Ranch Parkway. The truck line transitions to a 52-inch, concrete-cast pipe and outfalls into Hill Slough further to the south.

All drainage flows by gravity to a submerged outfall in Hill Slough approximately 150 feet beyond the southern perimeter of the Lawler Ranch subdivision. A reconnaissance of the storm drain outfall revealed that the structure is deteriorating and possibly in need of rehabilitation. The existing outfall was observed to be cracking, and a sinkhole is forming above a portion of the trunk line approximately 30 feet north of the outfall. In addition, storm drain clogging from sediment, trash, and other organic debris was observed within numerous drainage facilities upstream of the project site; therefore, it is reasonable to infer that similar conditions may be present in downstream conveyance facilities. As a result, the capacity and overall performance of the downstream stormwater conveyance system are uncertain.

Tidal Influence

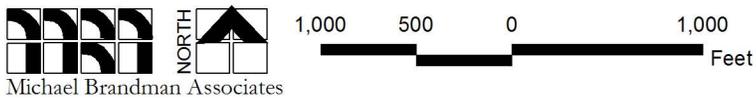
Hill Slough in the vicinity of the project area is under tidal influence. A tidal gate is located to the south of the Lawler Ranch Subdivision and approximately 400 feet southeast of the 52-inch outfall. As a result of tidal influence, the 52-inch outfall is generally submerged and only exposed during low tide. This tidal influence creates a backwater effect within the local drainage system and decreases the hydraulic head in up-gradient areas. Based on data acquired for the Suisun Slough Entrance of Grizzly Bay, during the period of record—September 1977 through April 1979—the highest observed



Legend

-  Project Drainage Area Boundary
-  Project Boundary

Source: USDA NAIP Solano (2005), City of Suisun City (2007), and MBA GIS (2007).



Michael Brandman Associates

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Exhibit 4.7-1 Project Drainage Area

water level was 6.81 feet mean sea level (msl) on February 5, 1978 (Control Tide Station: 9415144 Port Chicago). The mean tide level was 2.45 feet msl and the lowest observed water level was -0.83 feet msl on December 12, 1977.

The drainage engineering plans for the Lawler Ranch Subdivision indicate that the hydraulic grade lines do not exceed an elevation of 1.5 feet below the top of the curb when the tide elevation is 3.0 feet msl.

Soil Conditions

The NRCS Soil Survey for Solano County, California describes surface soils across the site as Antioch-San Ysidro complex, 0 to 2 percent slopes, Antioch-San Ysidro complex, thick surface, 0 to 2 percent slopes, and Pescadero clay loam. These soils are generally derived from alluvial and marine sediments and have deep profiles (> 60 inches), low soil strength, and contain large fractions of clay at depth. The Fairfield-Suisun Urban Runoff Management Program (FSURMP) maps these soils as hydrologic soil group¹ "D" in recognition of these general characteristics and poor drainage conditions.

Flooding

Local creeks within the project area include Ledgewood Creek, Laurel Creek, and McCoy Creek. Laurel and McCoy creeks are most significant to the City because of their proximity to urban areas and history of flooding, which has been aggravated by upstream urban runoff.

The Federal Emergency Management Agency (FEMA) provides information on flood hazard and frequency for cities and counties on its Flood Insurance Rate Maps (FIRM) and identifies designated zones of flood hazard potential. Flood Insurance Rate Map No. 0606310455B indicates that the project site is not a 100-year or 500-year flood hazard area.

Groundwater

The City of Suisun City overlies the Suisun-Fairfield Valley Groundwater Basin. The basin is underlain by a thick sequence of low-permeability, marine sedimentary deposits of the Great Valley Complex and ash and lava flows of Sonoma Volcanics origin. The most important water-bearing formations are the gravel and sand deposits within the older alluvium, which are up to 200 feet thick. Groundwater levels measured on the project site ranged from 5.8 to 7.1 feet below the ground surface (bgs). Groundwater flow is expected to follow the prevailing grade, which is generally southerly toward the Hill Slough.

The City of Suisun City does not use groundwater for its municipal water supply. No water supply or monitoring wells were observed on the project site.

¹ The hydrologic soil group is an identifier given to a soil that describes its ability to infiltrate water and produce water runoff. For example, a hydrologic soil group of A means that soil infiltrates water quickly, thus producing little runoff, while a hydrologic soil group of D means that a soil infiltrates water slowly, thus producing much runoff.

Water Quality

Surrounding land uses largely affect surface water quality, with both point-source and nonpoint-source discharges contributing contaminants to surface waters. A majority of the surrounding land area consists of residential subdivisions and undeveloped rangeland to the east. Pollutant sources in residential areas include streets, rooftops, exposed earth at construction sites, automobiles, and landscaped areas. Water quality impacts from construction are of particular concern. Grading for construction activity removes vegetation and exposes soil to erosion from wind and water. Erosion can result in sedimentation that ultimately flows into surface waters. Other contaminants in urban runoff include sediment, hydrocarbons, metals, pesticides, bacteria, and trash. Runoff from agricultural areas is characterized by constituents such as fertilizers, herbicides, and pesticides, and often contains bacteria, high nutrient content, and dissolved solids.

4.7.3 - Regulatory Setting

Generally, flows into local waterways (e.g., irrigation laterals and drains) during the dry season are composed of dam releases and non-point source runoff. This is particularly true for the waterways in the project area, which consist mainly of irrigation return flows and inflow from shallow groundwater. During the wet season, stormwater discharge conveys precipitation from areas of saturation or impermeable surfaces to low-lying collection areas and drainages. “First flush” storm events, during which pollutants that have accumulated throughout the dry season are concentrated with little dilution by the initial storm of the season, are thought to have the largest impact on receiving waters.

Section 303(d) of the 1972 federal Clean Water Act (CWA) requires that states develop a list of water bodies that do not meet water quality standards, establish priority rankings for waters on the list, and develop action plans called Total Maximum Daily Loads (TMDL), to improve water quality. The list of impaired water bodies is revised periodically (typically, every 2 years). Various federal, State, and local agencies have jurisdiction over the project site. Important agencies and statutory authorities relevant to water quality as it relates to the project are outlined below.

Federal

Clean Water Act

The CWA (33 USC 1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Important applicable sections of the Act are as follows:

- Section 301 prohibits the discharge of any pollutant by any person, except in compliance with Sections 302, 306, 307, 318, 402, and 404 of the CWA.
- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to “waters of the United States” to obtain certification from the State that the discharge will comply with other provisions of the Act. Certification is provided by the Regional Water Quality Control Boards.
- Section 402 establishes the National Pollution Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. This permit program is administered by the Regional Water Quality Control Boards, and discussed in detail below.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

Potential impacts arising from dredge and fill of waters of the United States are discussed in detail in Section 4.3, Biological Resources.

National Flood Insurance Program

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities complying with FEMA regulations that limit development in floodplains. FEMA issues flood insurance rate maps for communities participating in the NFIP. These maps delineate flood hazard zones in the community. Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It requires:

- Avoidance of incompatible floodplain development
- Consistency with the standards and criteria of the NFIP
- Restoration and preservation of the natural and beneficial floodplain values

State

Porter-Cologne Water Quality Control Act

The State of California’s Porter-Cologne Water Quality Control Act (California Water Code Section 13000, et seq.) provides the basis for water quality regulation within California. The Act requires a “Report of Waste Discharge” for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the State. Waste discharge requirements resulting from the report are issued by the Regional Water Quality Control Board (RWQCB), discussed below. In practice, these requirements are typically integrated with the NPDES permitting process.

San Francisco Bay Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) carries out its water quality protection authority through the adoption of specific Water Quality Control Plans (Basin Plans). These plans establish water quality standards for particular bodies of water. California water quality standards are

composed of three parts: the designation of beneficial uses of water, water quality objectives to protect those uses, and implementation programs designed to achieve and maintain compliance with the water quality objectives.

The Regional Water Quality Control Board, Bay Area Region (Bay Area Regional Board or RWQCB) is responsible for the Water Quality Control Plan, San Francisco Bay Basin. The RWQCB implements management plans to modify and adopt standards under provisions set forth in Section 303(c) of the CWA and California Water Code (Division 7, Section 13240). Under Section 303(d) of the 1972 CWA, the State is required to develop a list of waters with segments that do not meet water quality standards. The law requires the RWQCB to establish priority rankings for waters on the lists and develop action plans—Total Maximum Daily Loads, or TMDLs—to improve water quality.

The SWRCB adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California in 2000. This policy provides implementation measures for numerical criteria contained in the California Toxics Rule, promulgated in May 2000 by the Environmental Protection Agency (EPA). When combined with the beneficial use designations in the Basin Plan, these documents establish statewide water quality standards for toxic constituents in surface waters.

Total Maximum Daily Load

A TMDL refers to the amount of a specific pollutant a river, stream, or lake can assimilate and still meet federal water quality standards as provided in the CWA. A TMDL accounts for all sources of pollution, including point sources, non-point sources, and natural background sources. Section 303(d) requires that regulatory agencies determine TMDLs for all water bodies that do not meet water quality standards, and the Section 303(d) list of impaired water bodies described earlier provides a prioritization and schedule for development of TMDLs for the State.

The SWRCB, in compliance with the Section 303(d) of the Clean Water Act (33 USC Section 1313(d)), prepared, and EPA approved, a 2006 list of impaired water bodies in the State of California. The list includes a priority schedule for the development of TMDLs for each contaminant or “stressor” impacting the water body. Suisun Bay, Suisun Wetlands, and Suisun Slough are identified in the 2006 California Section 303(d) List and TMDL Priority Schedule as impaired water bodies for a variety of contaminants. Impaired water bodies are summarized below in Table 4.7-1. It should be noted that as of September 2005, Suisun Bay had been recommended for delisting for the pollutant Diazinon. In addition, Hill Slough (located in the Suisun Marsh) has been recommended to be listed for the pollutant mercury.

Table 4.7-1: Impaired Water Bodies

Suisun Bay		
Pollutant/Stressor	Potential Sources	Proposed TMDL Completion
Chlordane	Non-point source	2008
DDT	Non-point source	2008
Dieldrin	Non-point source	2008
Dioxin Compounds (including 2,3,7,8-TCDD)	Atmospheric deposition	2019
Exotic Species	Ballast water	2019
Furan Compounds	Atmospheric deposition	2019
Mercury	Industrial point sources Resource extraction Atmospheric deposition Natural sources Non-point source	2006
Nickel	Source unknown	2019
PCBs (Polychlorinated biphenyls)	Unknown point source	2006
PCBs (Polychlorinated biphenyls [dioxin-like])	Unknown nonpoint source	2019
Selenium	Industrial point sources Natural sources Exotic species	2019
Suisun Marsh Wetlands		
Pollutant/Stressor	Potential Sources	Proposed TMDL Completion
Metals	Agriculture Urban runoff/storm sewers Flow regulation/modification	2019
Nutrients	Agriculture Urban runoff/storm sewers Flow regulation/modification	2019
Organic Enrichment/Low Dissolved Oxygen	Agriculture Urban runoff/storm sewers Flow regulation/modification	2019
Salinity/TDS/Chlorides	Agriculture Urban runoff/storm sewers Flow regulation/modification	2019
Suisun Slough		
Pollutant/Stressor	Potential Sources	Proposed TMDL Completion
Diazinon	Urban runoff/storm sewers	2005
<p>Notes: The 2006 303(d) list has been approved by State Board and partially approved by the EPA. Full approval is pending further review of supporting information regarding Walnut Creek Wash (Los Angeles Region). Source: San Francisco Bay Regional Water Quality Control Board, 2006.</p>		

General Construction Stormwater NPDES Permit

The Bay Area RWQCB administers the NPDES stormwater permitting program in the Bay Area Region for construction activities. Construction activities disturbing 1 acre or more of land are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). For qualifying projects, the project applicant must submit a Notice of Intent (NOI) to the Regional Board to be covered by the General Construction Permit prior to the beginning of construction. The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which must also be completed before construction begins.

Implementation of the SWPPP starts with the commencement of construction and continues through the completion of the project. Upon completion of the project, the applicant must submit a Notice of Termination to the Regional Board to indicate that construction is completed.

The disturbance areas associated with construction of structures and facilities associated with the project is anticipated to exceed the threshold requiring coverage under the General Construction Permit.

Local

Fairfield-Suisun Urban Runoff Management Program

The City of Suisun City is currently subject to NPDES Permit No. CAS612005 issued under Order No. 95-079 on April 19, 1995 and amended through Order No. R2-2003-0034. The Fairfield Suisun Sewer District (FSSD) administers the municipal permit for both the City and the City of Fairfield. Provision C.3 of the Permit, which identifies new development and redevelopment performance goals, is intended to address pollutant discharges and changes in runoff flows through implementation of post-construction treatment measures, source control, and site design measures, to the maximum extent practicable. The City as a co-permittee is required to include conditions of approval in permits subject to Provision C.3.c to ensure that stormwater pollutant discharges are reduced by incorporation of treatment measures and other appropriate source control and site design measures, and that increases in runoff flows are managed in accordance with Provision C.3.f, to the maximum extent practicable. The conditions, at minimum, are required to address the following goals:

- (i) Require a project proponent to implement site design/landscape characteristics where feasible which maximize infiltration (where appropriate), provide retention or detention, slow runoff, and minimize impervious land coverage, so that post-development pollutant loads from a site have been reduced to the maximum extent practicable; and
- (ii) For new and redevelopment projects that discharge directly (not mixed with runoff from other developed sites) to water bodies listed as impaired by a pollutant(s) pursuant to CWA Section 303(d), ensure that post-project runoff does not exceed pre-project levels for such pollutant(s), through implementation of the control measures addressed in this provision, to the maximum extent practicable, in conformance with Provision C.1.

City of Suisun City General Plan

The City of Suisun City General Plan establishes the following policies that relate to hydrology and water quality:

- Natural watercourses and drainage channels shall be protected and preserved to the extent possible; runoff from urban development and upland watershed areas will be contained by channels and reservoirs to control debris, sediment, and the rate and dispersal of runoff. (Chapter VII - Open Space and Conservation, Policy 9)
- The City will require that new developments contain drainage features and facilities which channel run-off away from adjacent properties, control erosion, and assure that water quality will not be adversely affected. The City will encourage development designs which incorporate natural features into the drainage system provided water quality and erosion concerns are addressed. Drainage standards will be governed by the Development Guidelines and the Subdivision Ordinance. (Chapter VIII - Community Facilities and Services, Policy 5)

City of Suisun City Code

Chapter 13.08.010 of the City's Code prohibits the discharge of any of the following described waters or wastes to any public sewer:

- Any liquid or vapor having a temperature higher than 150 degrees Fahrenheit;
- Any water or waste that may contain more than 100 parts per million (ppm), by weight, of fat, oil or grease;
- Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas;
- Any garbage that has not been properly shredded. "Properly shredded garbage" means the wastes from the preparation, cooking and dispensing of food that has been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch in any dimension;
- Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewage works;
- Any water or waste having a pH lower than 5.5 or higher than 9.0 or having any other corrosive property capable of causing damage or hazard to structures, equipment or personnel of the sewage works;
- Any waters or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constituting a hazard to humans or animals, or creating any hazard in the receiving waters of the sewage treatment plant;

- Any waters or wastes containing suspended solids or dissolved matter of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant;
- Any noxious or malodorous gas or substance capable of creating a public nuisance; and
- Any septic tank sludge.

Chapter 13.08.020 requires the use of grease, oil and/or sand interceptors in instances where the proposed use requires the handling of liquid wastes containing grease in excessive amounts, flammable wastes, sand, and/or other harmful ingredients. In situations where an interceptor is required, the type and capacity of the interceptor requires approval by the City inspector and is required to be readily accessible for cleaning and inspection.

Chapter 13.08.040 of the City Code provides standards for when pretreatment facilities are required prior to the discharge of wastewater into the sanitary sewer system. Instances where pretreatment is required prior to discharge into the sanitary sewer system include any waters or wastes having:

- A five-day biochemical oxygen demand greater than 300 ppm by weight; or
- More than 350 ppm by weight of suspended solids; or
- Any quantity of substances having the characteristics described in Section 13.08.010;
- An average daily flow greater than two percent of the average daily sewage flow of the district.

Chapter 13.08.050 further requires that pre-treatment facilities be provided for any waters or wastes; they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.

Chapter 15.12 of the City's Municipal Code contains grading, erosion control and creekside development standards, guidelines, procedures and regulations necessary to comply with the provisions of Suisun Marsh Protection Act of 1977 and is a part of the Suisun City component of the Marsh Protection Plan. Article 2 of this chapter (Grading Permits) requires the acquisition of a grading permit prior to performing any grading, filling, excavation, or clearing of vegetation. In addition, Section 15.12.080 requires that a runoff control plan be submitted to the City and provide an indication of the calculated runoff from the site under natural conditions, and after development has been completed using City drainage standards. Article 3 (Erosion Control Standards) provides the standards and basic design principles to minimize the potential for erosion. Control measures are required to apply to all aspects of the proposed grading and are intended to be operational during all stages of development. Article 5 (Dust Control) requires applicants to take all necessary measures to prevent windblown dust and debris from spreading to property adjacent to and downwind of the construction site.

4.7.4 - Impacts and Mitigation Measures

This section discusses potential hydrology and water quality impacts associated with the development of the project. Mitigation measures are provided where appropriate.

Thresholds of Significance

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

- Violate any water quality standards or waste discharge requirements?
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (Refer to Section 7, Effects Found Not To Be Significant.)
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site?
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- Otherwise substantially degrade water quality?
- Place housing within a 100 year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (Refer to Section 7, Effects Found Not To Be Significant.)
- Place within a 100 year flood hazard area structures which would impede or redirect flood flows? (Refer to Section 7, Effects Found Not To Be Significant.)
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? (Refer to Section 7, Effects Found Not To Be Significant.)
- Inundation by seiche, tsunami, or mudflow? (Refer to Section 7, Effects Found Not To Be Significant.)

Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Violation of Waste Discharge Requirements

Impact HYD-1: **The propose project may violate waste discharge requirements.**

Impact Analysis

Chapter 13.08.010 of the City's Code prohibits the discharge of any water or waste that may contain more than 100 ppm, by weight, of fat, oil, or grease into the sanitary sewer collection system (CFR Title 40, Part 403.5, National Pretreatment Standards: Prohibited Discharges). As a result, the inclusion of a restaurant establishment, which uses large quantities of cooking oil and grease, carries the potential to exceed this waste discharge requirement without sufficient pre-treatment. The FSSD has implemented and is maintaining an EPA-approved pretreatment program in accordance with federal pretreatment regulations (40 CFR Part 403) in conjunction with Order No. R2-2003-0072, NPDES Permit No. CA0038024. Implementation of the prescribed mitigation in conjunction with compliance with FSSD's pretreatment program would minimize impacts to the FSSD's ability to comply with its WDRs under Order No. R2-2003-0072.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-1 Prior to issuance of occupancy permits, any restaurant establishments shall include oil/grease traps capable of pre-treating wastewater flows to as good as or better than typical domestic wastewater quality.

Level of Significance Before Mitigation

Less than significant impact.

Violation of Water Quality Standards During Construction

Impact HYD-2: **Construction activities associated with the proposed project may adversely impact water quality and result in substantial erosion or siltation on- or offsite.**

Impact Analysis

Development of the proposed project would require extensive construction and grading. During these activities, there would be the potential for surface water to carry sediment from onsite erosion and small quantities of pollutants into the stormwater system and local waterways. Soil erosion may occur along project boundaries during construction in areas where temporary soil storage is required. Small quantities of pollutants have the potential for entering the storm drainage system, thereby potentially degrading downstream water quality.

Construction of the proposed project would also require the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances would be utilized during construction. An accidental release of any of these substances could degrade the water quality of the surface water runoff and add pollution into the drainage system.

The NPDES stormwater permitting programs regulate stormwater quality from construction sites. Under the NPDES permitting program, the preparation and implementation of SWPPPs are required for construction activities on parcels more than 1 acre in size. The SWPPP must identify potential sources of pollution that may be reasonably expected to affect the quality of stormwater discharges as well as identify and implement BMPs that ensure the reduction of these pollutants during stormwater discharges. BMPs for stormwater quality treatment are classified as structural and non-structural. Structural measures may include biofilters, wetlands, infiltration basins, or mechanical structures designed to remove pollutants from stormwater. Non-structural measures such as street sweeping, public education, or hazardous substance recycling centers are preventive measures intended to control the source of pollutants.

Prior to construction grading, the applicant must file an NOI to comply with the General NPDES Construction Permit issued to the RWQCB and prepare the SWPPP, which addresses the measures that would be included in the project to minimize and control construction and post-construction runoff to the “maximum extent practicable.” In addition, project grading plans are required to conform to the drainage and erosion standards contained in Chapter 15.12 of the City’s Code.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-2a Prior to issuance of grading permits, the applicant shall submit an SWPPP and Grading Plan to the City of Suisun City for review and approval. The project SWPPP and Grading Plan shall identify specific actions and BMPs relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The plan(s) shall be reviewed and approved by the City prior to commencement of work and shall be made conditions of the contract with the contractor selected to build the project. The plans shall incorporate control measures in the following categories:

- Soil stabilization practices
- Dewatering practices (if necessary)
- Sediment and runoff control practices

- Monitoring protocols
- Waste management and disposal control practices

Once approved by the City, the applicant and his construction contractor shall be responsible throughout the duration of the project for installing, constructing, inspecting, and maintaining the control measures included in the SWPPP and Grading Plan.

MM HYD-2b

Prior to issuance of grading permits, the City shall ensure that the project SWPPP identifies pollutant sources that could affect the quality of stormwater discharges from the construction site. Control practices shall include those that effectively treat target pollutants in stormwater discharges. To protect receiving water quality, the SWPPP shall include, but not be limited to, the following elements:

- Temporary erosion control measures (such as fiber rolls, staked straw bales, detention basins, temporary inlet protection, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) shall be employed for disturbed areas.
- No disturbed surfaces will be left without erosion control measures in place during the winter and spring months.
- Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures. Of critical importance is the protection of the onsite drainage outlet at the southern corner of the property, the offsite culvert beneath SR-12, just west of the project site, and catch basins along Peterson and Walters roads.
- The construction contractor shall prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains.
- BMPs performance and effectiveness shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (inadvertent petroleum release) is required to determine adequacy of the measure.
- Native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance.

Level of Significance After Mitigation

Less than significant impact.

Violation of Water Quality Standards During Long-Term Operation

Impact HYD-3: Operational activities associated with the proposed project could adversely impact water quality and provide substantial additional sources of polluted runoff.

Impact Analysis

Development of the proposed project would create the potential for two substantial water quality effects. First, the existing vegetated pervious ground cover would be converted to impervious surfaces, including the rooftops and parking lots, which can neither absorb water nor remove pollutants. Secondly, urban development creates new pollution sources as human population density increases and brings with it proportionately higher levels of automobile use, landscaping, etc. Examples of such pollutants and their respective sources are heavy metals, such as copper from brake pad wear and zinc from tire wear; oil and grease from engines; and fertilizers and pesticides from landscaping. As a result of these two changes, the runoff leaving the developed urban area is significantly greater in volume, velocity, and pollutant load than the pre-development runoff from the same area. Further, these pollutants would be discharged directly to Hill Slough.

To address these concerns, the project applicant contracted with Robert A. Karn and Associates to prepare a Stormwater Control Plan (SCP) for the project. The SCP divides the project impervious areas into drainage management areas notated by dark lines in Exhibit 4.7-2. Runoff from each of these impervious drainage management areas is managed by routing it to a vegetated swale, infiltration planter, or proprietary device sized to treat runoff from that area. These drainage management features are expected to substantially reduce potential impacts to water quality as a result of project-related runoff.

The proposed project would utilize a flow hydraulic design basis for onsite treatment measures where the primary mode of pollutant removal depends on flow capacity, such as vegetated swales, sand filters, or wetlands. Order R2-2003-0034, Provision C.3 requires that these BMPs shall be sized to treat:

1. 10 percent of the 50-year peak flow rate; or
2. The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
3. The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.

The project SCP is sized to meet these requirements, primarily through means of infiltration. Infiltration BMPs are designed to capture a volume of stormwater runoff, retain it, and infiltrate that volume into the ground. The advantages of infiltration is that it reduces the volume of water that is discharged to receiving streams, thereby reducing some of the potential impacts caused by an excess flow as well as increased pollutant concentrations in the receiving stream. Infiltration systems can be designed to capture a volume of stormwater and infiltrate this water into the ground over a period of

several hours or even days, thereby maximizing the infiltrative capacity of the BMP. Pollutant removal occurs as water percolates through the various soil layers. As the water moves through the soil, particles can be filtered out. In addition, microorganisms in the soil can degrade organic pollutants that are contained in the infiltrated stormwater.

Although infiltration of stormwater has many benefits, it also has some drawbacks. First, the performance of infiltration BMPs is limited in areas with poorly permeable soils, such as the project site, which contains stiff clays at the surface and clayey loams in the subsurface. For this reason, permeability of soils must be verified. The State suggests that a percolation rate of 0.5 inches per hour or more, and a soil layer of 4 feet or more are critical for success. In addition, infiltration BMPs can experience reduced infiltrative capacity and even clogging, due to excessive sediment accumulation, thereby potentially requiring frequent maintenance to restore the infiltrative capacity of the system. Many failures can also be attributed to contractor inexperience and to improper design and siting.

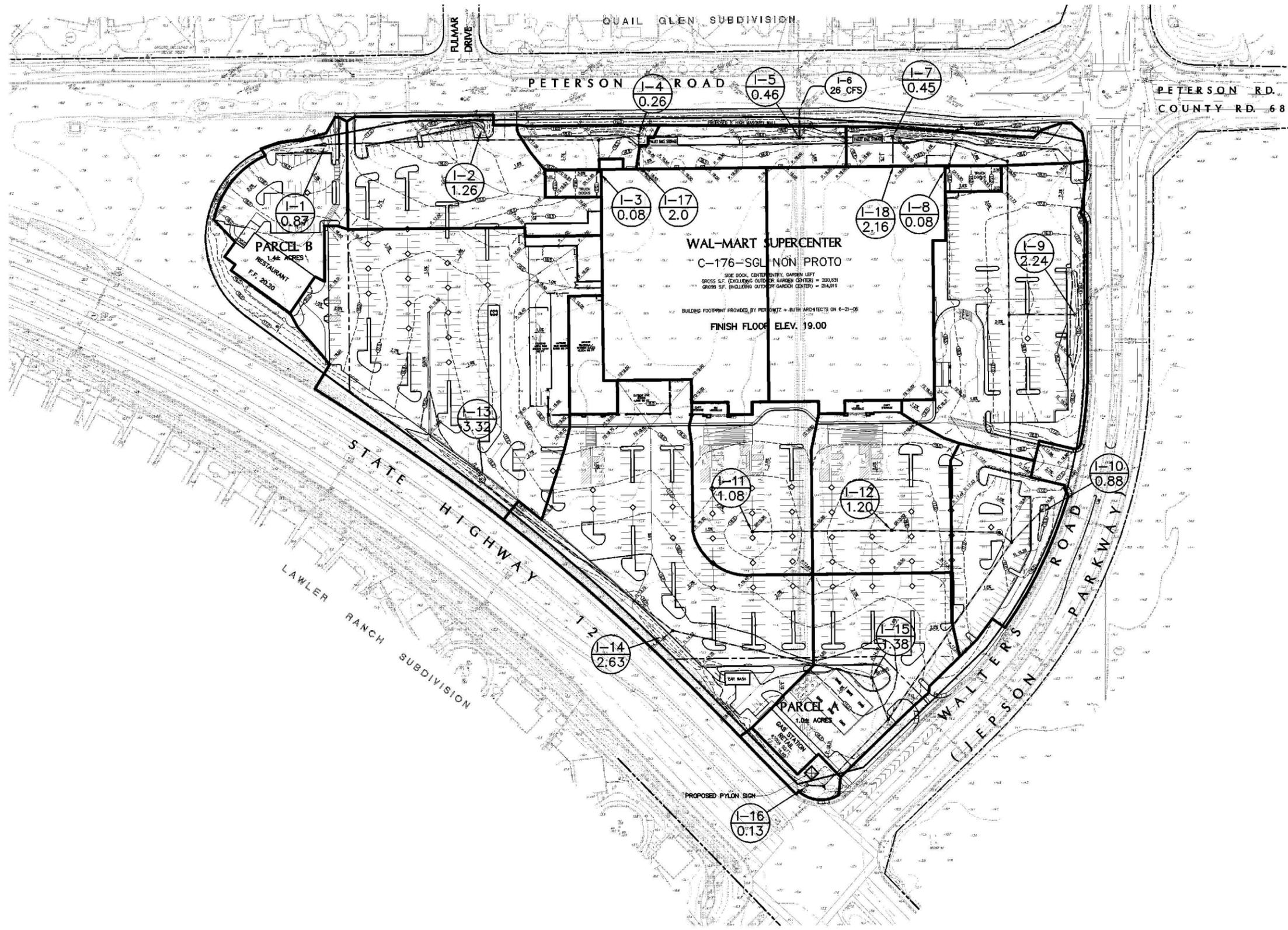
The incorporation of infiltration technologies also carries the potential to subject local groundwater resources to urban pollutants that may be present in runoff by creating a direct, more efficient conduit. Unmitigated, urban pollutants could eventually migrate laterally offsite. Based on these formalities, the implementation of the prescribed mitigation will be required to minimize potential water quality impacts from nonpoint sources of pollution to a level of less than significant. Note that the mitigation measure requires that stormwater quality treatment measures employing infiltration to demonstrate that such an approach is feasible, given the site-specific soil and groundwater conditions.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-3a Prior to approval of the final tentative map, the applicant shall prepare and submit a Landscaping Management Plan to the City of Suisun City for review and approval. The plan shall identify landscaping practices that would reduce discharge of herbicides, pesticides, fertilizers, and other contaminants to local waterways. All contractors involved in project-related landscaping conducted during the individual phases of development, as well as maintenance of landscaping following project completion, shall complete their work in strict compliance with the Landscaping Management Plan. The applicant shall be responsible for ensuring that requirements of the Landscaping Management Plan are provided to and instituted by future project tenants following project completion. The Landscaping Management Plan shall be prepared by a licensed landscape architecture firm with experience in methods to reduce or eliminate the use of landscape chemicals that could cause adverse effects to the environment. At a minimum, the Landscaping Management Plan shall:



Source: RAK Civil Engineers, 2006.



Michael Brandman Associates

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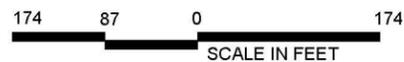


Exhibit 4.7-2
Project Stormwater Control Plan

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT

- Require that pesticides and fertilizers not be applied in excessive quantities, and applied only at times when rain is not expected for at least 2 weeks, in an effort to minimize leaching and runoff into the storm drainage system
- Encourage the use of organic fertilizers and mulching of landscaped areas to inhibit weed growth and reduce water demands
- Utilize native, perennial, drought-tolerant vegetation to minimize irrigation needs
- Specify the maintenance measures to be used (e.g., mowing) and specify an application schedule for all fertilizer amendments and pesticide applications
- Identify a list of preferred herbicides and pesticides, instances in which their use would be appropriate, and their associated application rates

MM HYD-3b

Prior to approval of the final tentative map, the applicant shall prepare and submit documentation to the City of Suisun City for review and approval identifying stormwater treatment measures. Project stormwater treatment measures shall meet the mandates of Order R2-2003-0034, Provision C, and shall provide treatment capacity for onsite runoff of up to 49.79 cfs during a 15-year storm event and 50.56 cfs during a 25-year storm event. Stormwater treatment measures shall include one or a combination of the following stormwater treatment devices:

- Retention/detention ponds
- Retention rooftops
- Green roofs (which incorporate vegetation) and blue roofs (which incorporate detention or retention of rain)
- Porous/permeable pavement
- Crushed stone reservoir base rock under pavements or in sumps
- Oil/grease separators for parking areas
- Compost berms
- Street sweeping

If, after further evaluation, the project engineer determines that infiltration is a feasible stormwater treatment measure, the project applicant shall provide supporting documentation to the City of Suisun City for review and approval. In accordance with RWQCB requirements, proposed infiltration devices shall meet, at a minimum, the following conditions:

1. Pollution prevention and source control measures shall be implemented at a level appropriate to protect groundwater quality at sites where infiltration devices are to be used.
2. Infiltration devices shall include an enforceable maintenance schedule to ensure they are adequately maintained over the long term to maximize pollutant removal capabilities.
3. Onsite percolation tests will be conducted for all sections of the project site where infiltration technologies are proposed to confirm adequate soil percolation.
4. The vertical distance from the base of any infiltration device to the seasonal high groundwater mark shall be at least 5 feet.

Level of Significance After Mitigation

Less than significant impact.

Alterations to Existing Drainage Patterns

Impact HYD-4: **Development of the proposed project would create additional impervious surface coverage and alter existing drainage patterns, potentially leading to downstream flooding or substantial erosion or siltation on- or offsite.**

Impact Analysis

Development of the project site has the potential to alter the infiltration characteristics of the project site, increasing both the volume and discharge rate of stormwater runoff, which could contribute to downstream flooding or exceed the capacity of stormwater drainage systems. Site grading will also change the drainage pattern of the site. Potential locations where erosion may occur after construction include scouring at storm drain outlets and unprotected soil where revegetation is unsuccessful.

Based on direction provided in Section 4.02 of the City's Standards, the Rational Method is recommended for use in estimating drainage discharges for a design storm event. The Rational Method is appropriate in situations where the drainage area is less than 640 acres and, therefore, is appropriate for the approximately 72-acre drainage area that contains the project site. The basic assumptions for the Rational Method are (1) the maximum runoff rate at any design point is a function of the average rate of rainfall during the time of concentration, and (2) the maximum rate of rainfall occurs during the time of concentration and the variability of the storm pattern is neglected.

The rational formula is: $Q = CIA$

Where:

Q = peak runoff rate in cubic feet per second (cfs)

C = runoff coefficient, which is the ratio of the peak runoff rate to the average rainfall rate for a duration equal to the time of concentration

I = intensity of rainfall for a duration equal to the time of concentration (T_c) in inches per hour

A = drainage area in acres (hectares)

After determining the cover (C) and time of concentration (T_c) values for the project, stormwater runoff scenarios were modeled, consisting of the common 24-hour storms for the 15-, 25-, and 100-year intervals. The project SCP and many flood control strategies do not require designs for the 100-year storm, but modeling this scenario provides an upper limit for comparison and also provides conservative stability analysis for the elements of the SCP. The following model input was used to estimate total runoff for each the project site and contributing drainage areas:

- Sub-Basin Area Units: Acres
- Storm Data: See Table 2 of the City's Standards.
- Sub-Area Land Use Details: Values obtained from Table 1 of the City's Standards
- Time of Concentration: See Figure 1/Table 2 of the City's Standards - Travel Time For Overland Flow.
- Results: See Table 1 of the City's Standards.

The results of the model analysis reveal the estimated rate of stormwater runoff (in cfs) and peak time (in hours) for all storm events considered in the analysis. Rates of runoff are the absolute maximum that would occur during a 24-hour storm. Based on the modeling calculations, the project would create a net increase of 22.90 cfs during a 15-year storm event when compared with existing conditions. Similarly, the net increase in peak runoff during a 25-year and 100-year storm event is estimated at 34.10 cfs and 68.22 cfs, respectively. Appendix G provides the input values and calculations used to derive these values.

The SCP for the project is designed to provide a treatment capacity for onsite runoff of up to 49.79 cfs during a 15-year event and 50.56 cfs during a 25-year event. These values are greater than the flow values obtained for post-project runoff volumes as presented in Appendix G. For that reason, this analysis concludes that the SCP provides minimal attenuation of post-construction drainage flows; therefore, it is reasonable to conclude that the project would result in a net increase in drainage discharge from the project site.

Suisun City Municipal Code Chapter 15.12.080 requires that a runoff control plan be submitted to the City for approval and that the plan demonstrate how peak runoff from the site will be minimized to pre-development conditions. As previously indicated, the proposed project's stormwater treatment measures provide minimal attenuation of the post-development runoff volumes; therefore, on the basis of the City's standards, this would be a potentially significant impact of the project.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-4 Prior to approval of the final map, the applicant shall prepare a Final Stormwater Control Plan for the project that will require approval from the City Engineer. The Drainage Plan shall incorporate measures to maintain runoff during peak conditions to pre-construction discharge levels. The Plan shall evaluate options for onsite detention including, but limited to, providing temporary storage within a portion or portions of the parking lot, an underground vault and/or linear facilities along the project site's southern and/or eastern perimeter, or a comparable onsite facility that would provide adequate capacity. Design specifications for the detention/retention facilities shall provide sufficient storage capacity to accommodate the 25-year, 24-hour storm event and comply with the City's requirements that runoff from storms up to the 100-year return frequency are conveyed through storm facilities and disposed of in a manner that protects public and private improvements from flooding hazards.

Level of Significance After Mitigation

Less than significant impact.

Exceedance of Capacity of Downstream Drainage Conveyance Systems

Impact HYD-5: Development of the proposed project would create or contribute runoff water that may exceed the capacity of existing or planned stormwater drainage systems.

Impact Analysis

Based on the findings of the Hydrologic Study, as provided in Appendix G, it is reasonable to conclude that the project would increase stormwater flows to downstream conveyance facilities. In addition to accommodating increased drainage flows from the developed project site, the downstream drainage conveyance facilities within Lawler Ranch would also need to continue to accommodate flows from subbasins B and C.

The capacity of a given pipeline diameter and type is generally contingent on the design flow and pipe slope, with the Manning Formula expressed as $Q/S^{1/2} = 1.486/n \times A \times R^{2/3}$. By evaluating the values of $1.488/n \times A \times R^{2/3}$ for various types and pipe diameters available, a pipe size can be selected for any $Q/S^{1/2}$ value. Under any given pipe flow condition, the area (A) and hydraulic radius (R) are constant for a particular size and shape of pipe. Therefore, the hydraulic capacity of a given pipe is primarily dependent on *n*, the roughness coefficient. For the purposes of this analysis, higher values of 0.012 and 0.013 are used to account for the buildup of foreign debris in the storm sewers as observed in up-gradient sections of the storm drain system.

Based on estimates provided by the American Concrete Pipe Association and using a conservative Manning's *n* value of 0.012, the 42-inch pipe immediate downstream of the project site would

theoretically have enough capacity to contain flows up to the 25-year storm event, which would produce up to 87.46 cfs at the point of convergence. However, using the same methodology, the calculations indicate that the 100-year event, which would produce up to 1549.00 cfs, could overwhelm the conveyance system.

Further, if the pipe slope were reduced to an effective gradient of 0.5 percent in response to periods of high tide or long-term incremental increases in sea level, the existing downstream conveyance system's capacity would be exceeded at the 25-year event (see Table 2 in Appendix G). On the basis of these findings, it is reasonable to conclude that flows at this convergence point could result in significant capacity reductions in the Lawler Ranch drainage system, thereby resulting in flooding within portions of the Lawler Ranch subdivision. Mitigation is proposed that would require the project applicant to investigate the condition of the downstream pipe to determine its adequacy to accept stormwater flows from the proposed project. If the pipe capacity or condition is deficient, the applicant must either correct the deficiencies (if feasible) or provide onsite retention to prevent the release of new net flows into the pipe. The implementation of this mitigation measure would reduce potential impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-5 Prior to approval of the final map, the City and the applicant shall investigate the condition of the downstream conveyance system within the Lawler Ranch subdivision to confirm that the capacity of the existing pipeline is sufficient to meet existing and project-related demands during 25-year and 100-year storm events. If observations indicate that restrictions in conveyance capacity are occurring as a result of foreign debris, the City/Applicant shall have the downstream conveyance system flushed to maximize the existing drainage capacity and confirm the integrity of the outfall structure. In the event that flushing the system proves infeasible or that drainage capacity or the integrity of the outfall structure is deficient to accommodate flows from the proposed project as set out above, the project applicant shall revise the project drainage plans to prevent the release of new net flows above the existing condition of the project site.

Level of Significance After Mitigation

Less than significant impact.

4.8 - Land Use

4.8.1 - Introduction

This section describes the existing land use setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the City of Suisun City General Plan adopted in May 1992; the Suisun City Code, last revised February 20, 2007; and the Travis Air Force Base Land Use Compatibility Plan adopted June 13, 2002.

4.8.2 - Environmental Setting

Land Use

Project Site

The project site is an approximately 20.8-acre undeveloped parcel located in the City of Suisun City at the intersection of State Route 12 (SR-12) and Walters Road. The project site mostly contains tall grasses. A drainage ditch bisects the property and serves to drain stormwater runoff from Petersen Road and the residences to the north. A pad-mounted transformer owned by Pacific Gas & Electric Company (PG&E) is located on the eastern boundary of the project site near Walters Road.

Surrounding Land Use

West

SR-12, a four-lane divided expressway, forms the northwest-southeast curving western boundary. Between SR-12 and the northwestern corner of the project is a mostly undeveloped, publicly owned parcel containing a pump station. This parcel mostly contains tall grasses. On the opposite side of SR-12 is the Lawler Ranch subdivision, which contains detached single-family residential uses developed in the early 2000s. A sound wall separates SR-12 from the Lawler Ranch subdivision.

North

Petersen Road, a two-lane undivided roadway with curb, gutter, and sidewalk on the north side, forms the northern boundary of the project site. The Central County Bikeway, a Class I bicycle facility, follows the north side of Petersen Road, and continues west along the north side of SR-12. North of Petersen Road is the Quail Glen subdivision, which contains detached, single-family residential uses developed in the 1980s. The residences abutting Petersen Road are protected by a 6-foot-high wooden fence.

East

Walters Road, a four-lane, divided arterial roadway, forms the eastern boundary of the project site. Curb and gutter are present on both sides of the roadway, and a sidewalk is located on the east side of the roadway. The median of Walters Road contains decorative metalwork. On the eastern side of Walters Road is grazing land. Most of this land is located in unincorporated Solano County and is designated for Extensive Agriculture; however, a 3.02-acre parcel located at the intersection of SR-12 and Walters Road is within the Suisun City limits.

A gas station and mini-mart occupy the northeastern quadrant of the intersection of Petersen Road and Walters Road. Approximately 0.75 mile northeast of the project site is Travis Air Force Base.

South

SR-12 and its signalized intersection with Walters Road are immediately south of the project site. South of SR-12 is the Lawler Ranch subdivision and a small-lot, detached, single-family residential subdivision developed in the early 1990s. Suisun Slough is located south of the subdivision.

General Plan and Zoning

Project Site Land Use Designations

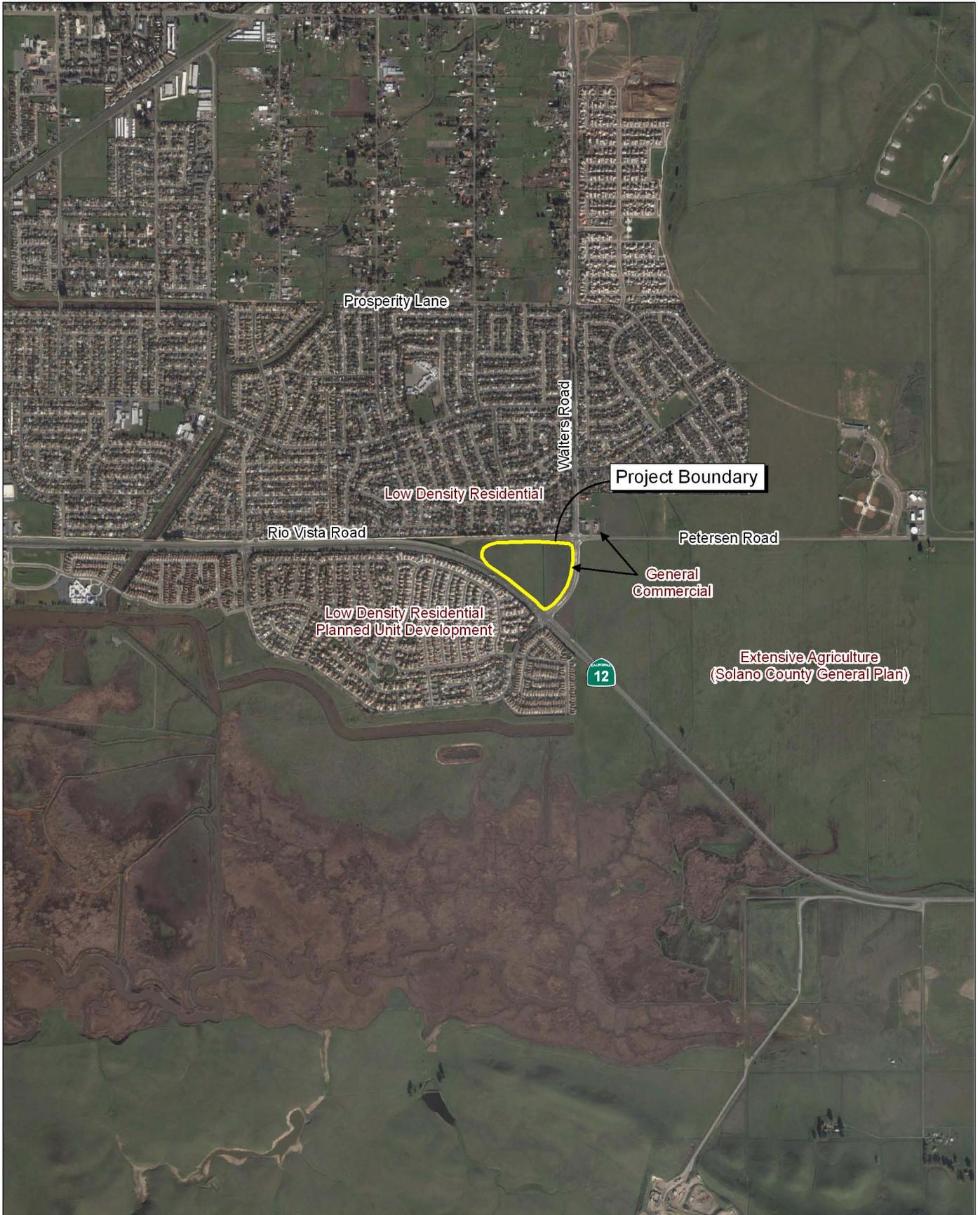
The project site is designated for General Commercial (GC) by City of Suisun City General Plan and zoned General Commercial (GC) by the Suisun City Zoning Ordinance. The general commercial district is established to allow for the provision of community-wide retail, office, institutional, and service uses, which are dependent upon location at or near major arterial street intersections, especially along SR-12 and Sunset Avenue. Because the project site is undeveloped, the current uses of the project site do not conflict with the City’s General Plan designation or Zoning Ordinances.

Surrounding Area Land Use Designations

The City of Suisun City General Plan and Zoning Ordinance designations for surrounding land uses are summarized in Table 4.8-1. The General Plan designations for the project site and surrounding areas are shown in Exhibit 4.8-1.

Table 4.8-1: Surrounding Land Use Designations

Direction	Land Use Description	General Plan Designation	Zoning Ordinance Designation
West	Vacant lot	General Commercial	General Commercial (CG)
West	Lawler Ranch Subdivision	Low Density Residential - Planned Unit Development	One Family Residential (R-S)
North	Quail Glen Subdivision	Low Density Residential	One Family Residential (R-S)
North	Gas Station and Mini Mart	General Commercial	Neighborhood Commercial (CN)
East	Grazing Land with Livestock (unincorporated Solano County)	Extensive Agriculture (Solano County General Plan)	Agriculture (A-1) (Solano County Zoning Ordinance)
East	Grazing Land with Livestock (City of Suisun City)	General Commercial	General Commercial (CG)
South	Small-lot Detached Single-Family Residential Subdivision	Low Density Residential - Planned Unit Development	One Family Residential (R-S)
<p>Notes: All General Plan and Zoning Ordinance designations are from the City of Suisun City General Plan and Suisun City Zoning Ordinance unless otherwise noted. Source: City of Suisun City, 2007.</p>			



Source: Google Earth



Michael Brandman Associates



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Exhibit 4.8-1 General Plan Map

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT

Travis Air Force Base

The project site is located approximately 0.75 mile southwest of Travis Air Force Base. The Air Base is home to the 60th Air Mobility Wing, and serves as the home base for the Wing's reserve counterpart, the 349th Air Mobility Wing (Associate). The 60th Air Mobility Wing is the largest air mobility organization in the United States Air Force, with an all-jet fleet of C-5 Galaxy cargo aircraft, C-17 Globemaster III cargo aircraft, and KC-10 Extender refueling aircraft. The Air Base handles more passenger and cargo traffic through its airport than any other military air terminal in the United States. The Air Base includes approximately 7,944 active military personnel, 3,554 civilians, and 3,384 reservists.

4.8.3 - Regulatory Setting

State

State Aeronautics Act

The State Aeronautics Act requires each county to establish an Airport Land Use Commission to regulate land use around airports, in order to protect public safety and ensure that land uses near airports do not interfere with aviation operations. The Solano County Airport Land Use Commission regulates land use around Travis Air Force Base by requiring compliance with the Travis Air Force Base Land Use Compatibility Plan. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission.

Local

City of Suisun City General Plan

The City of Suisun City General Plan, adopted on May 19, 1992, is a blueprint for land use and development activities in the Suisun Planning area. The General Plan is a long-range comprehensive planning document that embraces all aspects of existing and future physical development of the community, public and private. The City of Suisun City General Plan contains the following elements:

- Central Issues
- Community Character and Design
- Land Use
- Circulation and Transportation
- Housing
- Open Space and Conservation
- Community Facilities and Services
- Noise and Safety
- Financial Resources
- Plan Interpretation and Administration

Each General Plan element contains goals and policies to guide existing and future land use and development activities.

Suisun City Code

The Suisun City Code, which includes the Zoning Ordinance, sets forth regulations to ensure that development and land use activities protect and promote the health, safety, comfort, convenience, prosperity, and general welfare of residents and businesses in the City. The purposes of the City Code are to:

- Protect the established character and social and economic values of agricultural, residential, commercial, industrial, recreational and other areas within the City that have developed in a healthy and orderly manner
- Encourage beneficial development of those areas that have grown with conflicting or uneconomic patterns of use
- Assist in providing a definite and publicly approved plan of development to guide, control and stimulate the future growth of the City in accordance with the need of the City and in proper relation to other land use areas in the region

Travis Air Force Base Land Use and Compatibility Plan

The Travis Air Force Base Land Use Compatibility Plan was adopted by Solano County on June 13, 2002. The plan identifies land use compatibility policies applicable to future development in the vicinity of Travis Air Force Base. The policies are designed to ensure that future land uses in the surrounding area will be compatible with aircraft activity at the Air Force Base. The project site is located within Zone C (Traffic Pattern) of the Travis Air Force Base Land Use Compatibility Plan.

4.8.4 - Methodology

Analysis in this section is based on reconnaissance of the project site and surrounding land uses and reviews of the City of Suisun City General Plan, the Suisun City Code and Zoning Ordinances, and the Travis Air Force Base Land Use Compatibility Plan.

4.8.5 - Impacts and Mitigation Measures

This subsection analyses environmental impacts related to land use that could result from the proposed project. Mitigation measures are provided where appropriate.

Thresholds of Significance

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

- Physically divide an established community?
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal

program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

- Conflict with any applicable habitat conservation plan or natural communities conservation plan? (Refer to Impact BIO-8, Section 4.3, Biological Resources.)

Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate. Note that the proposed project's consistency with the City of Suisun City General Plan, the Suisun City Zoning Ordinance, and the Travis Air Force Base Land Use Compatibility Plan are discussed under separate impacts (Impacts LU-2, LU-3, and LU-4, respectively).

Division of an Established Community

Impact LU-1: The proposed project would not divide an established community or create conflicts with neighboring land uses.

Impact Analysis

The proposed project consists of approximately 227,019 square feet of commercial retail uses on a 20.8-acre undeveloped site. No established communities exist on the project site. In addition, the project site does not contain any features that link communities (e.g., a bridge). Therefore, the proposed project would not physically divide an established community.

The project site is surrounded by residential uses to the west, north, and south, and grazing land to the east. The Lawler Ranch subdivision south of the project site is visually screened by a sound wall along SR-12, and the residences in the Quail Glen subdivision to the north of the project site are screened by a 6-foot wooden fence and mature landscaping. SR-12 serves as an existing physical barrier between these two residential areas. The development of the proposed project would not create land use conflicts with neighboring land uses because of the location of the project site and nature of the proposed project. The proposed project would abut SR-12 and Walters Road and would not be directly adjacent to any residential land use. An 8-foot-high masonry wall would be installed along the north side of the proposed project wall that would serve to visually screen the Wal-Mart Supercenter loading docks from the Quail Glen subdivision and attenuate noise from loading and unloading activities. This would reduce the potential for land use conflicts between the proposed project and the residential uses to the north. The residential uses in the Lawler Ranch subdivision would not have direct views of the project site because of the existing sound wall and because they are separated from the project site by SR-12. Therefore, land conflicts would not occur, and impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Land Use

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

General Plan Consistency

Impact LU-2: The proposed project would be consistent with the policies of the City of Suisun City General Plan.

Impact Analysis

The project site is designated General Commercial by the City of Suisun City General Plan. The proposed project consistency with this land use designation is analyzed in Table 4.8-2.

Table 4.8-2: General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
II - Central Issues	13	New development that is additive (not replacement housing or commercial development resulting from Redevelopment Agency activities) will be expected and required to fully fund the need for additional facilities that such development generates, as calculated by the CIP. The City and the Redevelopment Agency shall jointly determine which specific development projects are to be considered to be “additive” and which are “replacement” for the purpose of fulfilling this policy.	Consistent: The proposed project would provide development fees for capital improvements to public facilities and utility systems. The project would also provide fair-share payments for roadway improvements necessary to mitigate the impacts of project-generated traffic. The proposed project would be consistent with this policy.
	14	All proposed development projects shall be reviewed for specific and cumulative impacts on public facilities and services, as well as other potential environmental impacts.	Consistent: This Draft EIR provides analysis of the proposed project’s individual and cumulative impacts. The proposed project would be consistent with this policy.
	15	All proposed development projects must demonstrate that the public facilities impacts will be mitigated either of three ways: <ul style="list-style-type: none"> • Payment of development impact fees that will provide a proportionate share of the facilities needed as a result of the proposed development; the level of fees to be paid shall be established by the CIP and updated on at least a biannual basis. 	Consistent: The proposed project would provide development fees for capital improvements to public facilities and utility systems, including those identified in the CIP. The project would also provide fair-share payments for roadway improvements necessary to mitigate the impacts of project-generated traffic. The proposed project would be consistent with this policy.

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
<p><i>cont.</i></p>		<ul style="list-style-type: none"> • Construction or provision of the needed facilities at a stage in the development of the project where the additional facilities and services will be needed, as determined by the City. • Entering into an assessment district or equivalent financing mechanism to the satisfaction of the City that will provide the funding for the necessary facilities at the time they are needed. 	
	<p>16</p>	<p>Prior to issuance of construction permits, the project developer shall demonstrate that the necessary facility or equipment will be provided in a timely manner, as described above. If the CIP has not scheduled the necessary facilities for construction or purchase at the proper time to fulfill this requirement, the developer may elect to construct the facility or purchase the equipment ahead of the CIP schedule. A binding commitment for this purpose that is satisfactory to the City shall be executed prior to issuance of permits.</p>	<p>Consistent: The proposed project would provide development fees at the time building permits are sought for capital improvements to public facilities and utility systems, including those identified in the CIP. The project would also provide fair-share payments for roadway improvements necessary to mitigate the impacts of project-generated traffic. The implementation of the subsequent capital improvements would occur either prior to project occupancy (e.g., roadway improvements) or prior to the point at which facilities become obsolete or antiquated (e.g., fire and police facilities). The proposed project would be consistent with this policy.</p>
<p>III - Community Character and Design</p>	<p>2</p>	<p>The visual aspects of development (signs, fences, walls, landscaping, screening, lighting, color, materials, size, bulk, height, etc.) must be integrated and relate to their surroundings in a complimentary manner.</p>	<p>Consistent: The proposed project's design is intended to create a visually appealing commercial retail center. The buildings contain architectural design elements that are consistent with other new retail development projects in the region. The proposed project proposes landscaping throughout the project site. Building, landscaping, and other design elements would be reviewed by the City for consistency with City design standards. The proposed project would be consistent with this policy.</p>

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
<i>cont.</i>	3	New development will be expected to adhere to a continually improving standard of design quality, environmental sensitivity, and image of the community. The quality of all private and public development should be upgraded with the addition of each new development project.	Consistent: The proposed project incorporates architectural design elements and landscaping intended to create a visually appealing contemporary retail center. The project incorporates design elements (e.g., sound walls, siting of vehicular access points, landscaping) to minimize its impact on surrounding land uses. The proposed project would be consistent with this policy.
	8	Infill development should be of superior quality than the surrounding development, particularly older developments from the 1960s and 1970s. Infill development should be sensitive to their surroundings and not appear out of scale, at odds in design, or overly dense in relation to neighboring land uses.	Consistent: The proposed project incorporates architectural design elements and landscaping intended to create a visually appealing contemporary retail center. The project incorporates design elements (e.g., sound walls, siting of vehicular access points, landscaping, etc.) to minimize its impact on surrounding land uses. In addition, the proposed project is within with allowable Floor Area Ratio (FAR) of the General Commercial land use designation, and, therefore, would not be out of scale or of extreme density for the project site. The proposed project would be consistent with this policy.
	15	New developments should enhance the appearance of the community along arterial streets, collector streets, and at major entry ways to the City. Development design should reduce visual clutter through the undergrounding of utility lines, the regulation of signs, and the use of trees and other landscaping.	Consistent: The access points to the proposed project would receive design treatments intended to visually appeal to passing motorists. All project utilities would be located underground. Signage would be consistent with City standards related to size and location. Landscaping would be provided along the project frontage, in parking areas, and around buildings. The proposed project would be consistent with this policy.
	16	The General Plan Land Use Map will identify the key entry ways into the City. Major entry ways include Highway 12 east of the City limits near the future Walters Road extension, Sunset Avenue at the Southern Pacific	Consistent: A monument entry point with lettering reading "Welcome to Suisun City" would be located at the intersection of SR-12 and Walters Road. The monument would contain an elevated electronic

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
cont.		Railroad tracks, Walters Road between Tabor Avenue and Prosperity Lane, and Highway 12 between Ledgewood Creek and the overpass.	sign. Landscaping would be located around the monument to enhance its visual appeal. The proposed project would be consistent with this policy.
	18	The City will implement set back requirements for buildings at key entry ways to the City to ensure that the intent of this section is achieved. Through its Development Guidelines, the City will ensure that buildings at key entry ways are designed to accent the entry way and accommodate entry signage and related features.	Consistent: The gas station convenience store and pump canopy are set back from the intersection of SR-12 and Walters Road to allow for the monument entry point that would face the intersection. The proposed project would be consistent with this policy.
	19	<p>The City will require that arterial and collector streets contain sufficient widths to allow for landscaping along the right-of-way, such as landscaping strips between street and sidewalk, landscaped medians, and landscaping along sound walls and entry walls. Landscape setbacks vary depending on character, function, and location of streets. Appropriate landscaping widths and setbacks are specified by the Development Guidelines and the Downtown/Waterfront Specific Plan.</p> <p>Developments proposed along Highway 12 will be conditioned by development review procedures and will avoid the creation of foreground views which will be detrimental to the objectives of maintaining and improving visual quality along the Highway. Development projects which fall within the foreground view from Highway 12 and which are adjacent to Highway 12 right-of-way will be subject to conditions of approval which provide for sound control and the installation of ornamental landscaping along the highway right-of-way. Site planning, landscaping, and building configurations will be controlled by the City's Development Guidelines.</p>	Consistent: The proposed project incorporates landscaping along its frontages with SR-12, Walters Road, and Petersen Road. In addition, the proposed project's setbacks from SR-12 are consistent with the minimum setbacks identified in the Development Guidelines. The proposed project would be consistent with this policy.

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
<i>cont.</i>	22	Development design should seek to reduce the visual perception of automobile domination. Design considerations include the location of garages relative to the “streetscape,” the use of architectural features and landscaping to reduce the prominence of garages, the use of planting strips, street design, and the use of variable lot sizes and setbacks.	Consistent: The proposed project would locate all structures at various points around the project near intersections and along roadway frontages. The siting of buildings is intended to avoid a “strip mall” appearance. Landscaping would be located along project frontages to minimize views of parking areas. The proposed project would be consistent with this policy.
IV - Land Use Element	14	<p>General Community Commercial. The purpose of this designation is to allow multi-acre planned commercial developments that contain retail, personal and businesses services, and/or office uses intended to serve the entire City. The location of such uses is generally depended on access to arterial streets. General commercial land uses located adjacent to residential uses should have proper screening and site design to minimize noise and other land use conflicts. The site and building design of these uses should enhance the character of Suisun City.</p> <p>Examples of current and anticipated land uses are: convenience goods and personal services, soft goods, large variety stores and/or junior department stores, supermarkets, general merchandise discount department stores, restaurants, theaters, businesses and professional offices, banking, and other financial institutions, and similar uses.</p> <p>Two existing retail and office centers that have been developed under this classification are at the intersection of Highway 12 and Sunset Avenue and Highway 12 and Marina Boulevard. These sites include approximately 100 acres of commercial use for convenience goods, shopping goods, personal and household services. The north side of this area, Suisun</p>	<p>Consistent: The proposed project is a commercial retail center on 20 acres, located at the intersection of SR-12 and Walters Road. The proposed project’s end users (Wal-Mart Supercenter, a sit-down restaurant or retail, and a gas station) are consistent with allowable land uses identified in the policy. On the opposite side of Petersen Road from the project site is a residential neighborhood. The proposed project is proposing to install an 8-foot-high block wall along its frontage with Petersen Road to attenuate noise from the Wal-Mart Supercenter. Landscaping would also be installed along the project frontages to soften the proposed project’s aesthetic appearance.</p> <p>The proposed project would have an FAR of 0.25. The proposed project’s employment is estimated to be 375 workers, which translates to a density of 18 workers per acre.</p> <p>The building height would be a maximum of 40 feet, 8 inches, which is consistent with the three-story height limitation. The proposed project would be consistent with this policy.</p>

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
<i>cont.</i>		<p>Commercial Center PUD, contains approximately 70 acres. The south side, approximately 30 acres, is partly developed with the Marin Shopping Center and a mobile home park. Buildings in the General Commercial classification should be a maximum of three stories. The maximum coverage of buildings and paved surfaces (including parking) should be no more than 80 percent of the land area, and the maximum floor area ratio should be 1.0. The average FAR is more likely to be 0.35 when parking and landscaping requirements are considered. At this building intensity, the maximum worker density would range from 40 to 175 persons per acre, depending on the types of land uses, with the average worker density ranging from 15 to 60 workers per acre. The maximum building intensity could only be achieved with a three-story building and underground or multi-story parking.</p>	
VII - Open Space and Conservation	9	<p>Natural watercourses and drainage channels shall be protected and preserved to the extent possible; runoff from urban development and upland watershed areas will be contained by channels and reservoirs to control debris, sediment, and the rate and dispersal of runoff.</p>	<p>Consistent: The man-made drainage ditch that traverses the project site would be re-routed and culverted as part of the proposed project. This drainage ditch is culverted north and south of the project site. It is not feasible to incorporate the open drainage ditch into the proposed project because of health and safety concerns and the economic and technical limitations of designing a Wal-Mart Supercenter and parking areas around the drainage ditch. The proposed project's storm drainage system would also include water quality treatment features to control sediment and urban pollutants. While the proposed project would not achieve the policy's objective of preserving drainage channels, it is consistent with the policy's acknowledgement of the limitations to accomplishing such an objective,</p>

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
<i>cont.</i>			and, as noted above, the project is consistent with the policy's intent to control debris, sediment, and the rate and dispersal of runoff.
VIII - Community Facilities and Services	4	Suisun will require that all development connect to the regional sewer system. Standards for trunk lines and connections to individual properties will be governed by the Suisun City Subdivision Ordinance.	Consistent: The proposed project would be served by the Fairfield-Suisun Sewer District. The project sewer connections would comply with City requirements. The proposed project would be consistent with this policy.
	5	The City will require that new developments contain drainage features and facilities which channel run-off away from adjacent properties, control erosion, and assure that water quality will not be adversely affected. The City will encourage development designs which incorporate natural features into the drainage system provided water quality and erosion concerns are addressed. Drainage standards will be governed by the Development Guidelines and the Subdivision Ordinance.	Consistent: The proposed project would provide an onsite drainage system to collect and regulate the release of runoff into downstream waterways. The proposed project's storm drainage system would also include water quality treatment features to control sediment and urban pollutants. To the extent feasible, natural features such as bioswales will be included in the onsite drainage system. The proposed project would be consistent with this policy.
IX - Noise and Safety	1	Those lands within the area covered by the Travis Air Force Base Comprehensive Airport Land Use Plan must comply with the noise and land use compatibility requirements of that plan. The Land Use Map will take into account noise contours (Figure 4 of the Airport Plan).	Consistent: The proposed project's consistency with the Travis Air Force Base Comprehensive Airport Land Use Plan is analyzed in Impact LU-4 below. The proposed project is located within a 60- to 65-dBA contour of Travis Air Force Base and its uses are acceptable for such a noise contour. The proposed project would be consistent with this policy.
	4	In designating the appropriate location of commercial and industrial land uses vis-à-vis residential land uses, the City shall seek to minimize potential noise conflicts by assuring that noise received by commercial or industrial land uses does not exceed a CNEL 65 dB. To ensure that recommended standards for exterior and interior noise are not exceeded, the City may require	Consistent: Vehicle trips generated by the proposed project would not cause roadway noise levels on residential streets near the project site (Fulmar Drive, Petersen Road, and Bella Vista Drive) to exceed 65 dBA. Roadway noise levels on several major arterial highways and roadway near the project site (SR-12, Walters Road, Marina Boulevard,

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
cont.		commercial and industrial developments to adopt noise mitigation measures and may require residential developments near commercial and industrial uses to mitigate potential noise exposure through site design and other appropriate measures. Mitigation measures may include restrictions on the hours of operation of certain equipment, the construction of a sound wall or earth berming to protect residential land uses from the sources of noise, minimum distance requirements for dwelling units and commercial/industrial buildings, and construction requirements to reduce interior noise levels.	<p>and Tabor Avenue) would exceed 65 dBA in Year 2020 under the without project scenario; therefore, vehicle trips generated by the proposed project would not cause noise levels to exceed 65 dBA.</p> <p>In addition, the proposed project would implement noise mitigation measures to reduce its potential stationary noise impacts on surrounding land uses.</p> <p>Finally, an 8-foot masonry block wall would be located along Petersen Road to shield the residential neighborhood to the north from noise generated in the Wal-Mart Supercenter loading area. The proposed project would be consistent with this policy. Refer to Section 4.9, Noise for further discussion.</p>
	6	The siting of all new land uses and the construction of all new buildings shall conform to the latest seismic requirements of the Uniform Building Code, any amendments to that code adopted by the State Building Standards Commission, and to any additional requirements imposed by the Seismic Safety Commission.	<p>Consistent: A Geotechnical Investigation was prepared for the proposed project by TRC Lowney. The Geotechnical Investigation set forth recommendations for site preparation and grading that will be implemented during construction. These recommendations are in accordance with the California Building Standards Code. In addition, all structures would adhere to California Building Standards Code requirements. The proposed project would be consistent with this policy. Refer to Section 4.5, Geology, Soils, and Seismicity for further discussion.</p>
	7	<p>Appropriate site investigation may be required at the outset of development projects. For lands confirmed by site investigation to be prone to ground failure, the following procedures shall be followed.</p> <p>a) All proposed site modifications, structures, roads, and utility installations will be completed</p>	<p>Consistent: A certified engineer licensed by the State prepared the Geotechnical Investigation for the proposed project. The Geotechnical Investigation indicated that the project site has low susceptibility for ground failure and liquefaction. The proposed project would be consistent with this policy. Refer to Section</p>

Table 4.8-2 (Cont.): General Plan Consistency Analysis

Chapter	Policy No.	Policy	Consistency Analysis
<i>cont.</i>		according to the recommendations of a qualified civil engineer licensed by the State of California. b) The City may retain an independent consultant to evaluate the site investigations and professional recommendations required in 3a [sic]. The costs of such consulting services shall be borne by the applicant.	4.5, Geology, Soils, and Seismicity for further discussion.
	17	The City shall provide for adequate emergency vehicle access in new developments. The City’s subdivision standards are currently adequate to provide sufficient road widths for emergency access.	Consistent: All five project vehicular access points would be a minimum of 30 feet in width, which would be adequate for emergency vehicle access. The City will review the project site plan prior to final approval. The proposed project would be consistent with this policy.
Source: Michael Brandman Associates, 2007.			

As discussed in Table 4.8-2, the proposed project would be consistent with all applicable General Plan policies. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Zoning Ordinance Consistency

Impact LU-3: The proposed project would be consistent with the requirements of the Suisun City Zoning Ordinance.

Impact Analysis

The project site is zoned General Commercial (CG) by the Suisun City Zoning Ordinance. The Zoning Ordinance lists the following as permitted uses within the General Commercial (CG) district:

- Apparel and accessory stores
- Auto and home supply stores

- Eating and drinking places, except bars, taverns, nightclub-discotheques and adult nightclubs
- Food stores
- Furniture, home furnishings, and equipment stores
- General merchandise stores, except department stores
- Hardware stores
- Photographic and portrait studios
- Nursery/landscaping business
- Any other retail, service, public, or quasi-public use which is similar in nature, function, or operation to permitted uses listed

The proposed project consists of a Wal-Mart Supercenter, a sit-down restaurant, and a gas station with an associated convenience retail store and automated car wash.

The Wal-Mart Supercenter would retail a wide variety of goods and services that would be in accordance with the permitted uses of the General Commercial (CG) district. Examples include apparel, home supplies, groceries, home furnishings, general merchandise, and a photography studio. The garden center would also be a permitted use.

The sit-down restaurant would be consistent with the permitted eating and drinking provisions uses of the General Commercial (CG) district. The alternative uses for this parcel include a single-tenant retailer with a use complementary to the Wal-Mart Supercenter, or a multi-tenant building with a variety of general retail and casual food service uses, also complementary to the Wal-Mart Supercenter. As previously discussed, retail and casual food uses are permitted uses within the General Commercial (CG) district.

The Zoning Ordinance allows one highway-oriented use by right at a General Commercial (CG) zoned arterial intersection. Because gas stations provide fuel for vehicles, they are considered highway-oriented uses. The proposed project's gas station would be located at the intersection of SR-12 and Walters Road and would be consistent with the provision requiring highway-oriented uses to be located at arterial intersections. Therefore, the gas station would be consistent with the General Commercial (CG) district regulations.

In addition, the General Commercial (CG) district regulations restrict building height to a maximum of 35 feet and require that every building site (i.e., each individual parcel) have an area of at least 7,500 square feet. Exceptions to these building height restrictions are permitted with a Conditional Use Permit (CUP). The maximum building height of the Wal-Mart Supercenter would be 40 feet, 8 inches and, therefore, would require a CUP. The maximum height of the restaurant and the gas station would be less than 35 feet and would be consistent with the building height regulations. The

Land Use

project site would be subdivided into three parcels: 1.05 acres, 1.41 acres, and 18.34 acres. Each of the acreage figures is substantially larger than 7,500 square feet. With the issuance of the CUP for the Wal-Mart Supercenter building height exception, the proposed project would be consistent with the General Commercial (CG) district regulations.

The Zoning Ordinance requires land uses with outdoor sales, drive-thrus, and alcohol sales to obtain CUPs. The Wal-Mart Supercenter would contain all three characteristics and therefore, would require CUPs for each one. Both the sit-down restaurant and the gas station retail store would sell alcohol and, therefore, would require individual CUPs. The issuance of CUPs would ensure that these project uses are consistent with the General Commercial (CG) district regulations. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Travis Air Force Base Land Use Compatibility Plan Consistency

Impact LU-4: The proposed project would be consistent with the requirements of the Travis Air Force Base Land Use Compatibility Plan.

Impact Analysis

The project site is located within Zone C of the Travis Air Force Base Land Use Compatibility Plan. The plan establishes the following restrictions for Zone C:

- No more than an average of 75 persons per acre is permitted for the entire site.
- No more than 300 persons per any individual acre onsite at any given time.
- Children's schools, day care centers, libraries, hospitals, nursing homes, and hazards to flight are prohibited land uses.
- A notice regarding aircraft operational impacts is required to be attached to the deed.
- Airspace review is required for all structures greater than 100 feet in height.

The project site covers 20.8 acres and, therefore, would have average gross allowable usage intensity of 1,560 people at any one time (20.8 acres x 75 persons per acre).

The Transportation, Circulation, and Parking Impact Study, prepared in August 2007 by Kimley-Horn and Associates, Inc. (contained in its entirety in Appendix J), indicated that the proposed project

would generate 877 trips during the weekday afternoon peak hour. This figure includes trips by customers and employees and represents one of the peak periods of vehicular trips to and from the project site. The 877 trips consist of 442 vehicles entering the project and 435 vehicles exiting the project during the 2-hour (4 p.m. to 6 p.m.) peak period. Note that the trip generation figure represents the total number of vehicles that would be on the site at any time during the 2-hour period and should not be interpreted to indicate that all 877 vehicles would be onsite for the full 2 hours.

The most intensive proposed use on the site is the Wal-Mart Supercenter. The Wal-Mart Supercenter building area is approximately 4.6 acres and, therefore, would have a maximum allowable usage intensity of 1,380 people (4.6 acres x 300 persons per acre). Approximately 150 employees would work at the Wal-Mart Supercenter during a typical shift, which would allow for a maximum of 1,230 customers at any one time. Because most customers of the Wal-Mart Supercenter would be expected to drive to the store, parking capacity would serve as a limiting factor to the maximum number of customers that could be in the store at any one time. There would be a total of 1,014 parking spaces onsite, with 921 spaces assigned to the Wal-Mart Supercenter. The remaining 93 parking spaces would be assigned to the sit-down restaurant and gas station. Because both the restaurant and gas station would be open for business during at the time of peak usage of the Wal-Mart Supercenter, it will be assumed that their customers and employees would fill the 93 spaces assigned to those uses. The 921 spaces assigned to the Wal-Mart Supercenter would be further reduced by employee parking, and the actual number of spaces available for customers would be estimated to be around 850.

However, it would be extremely unlikely that 850 spaces would be filled at any one time. As previously mentioned, the Transportation, Circulation, and Parking Impact Study indicated that 877 vehicle trips would occur for the total project during the 2-hour weekday afternoon peak period. Because not all 877 vehicle trips would be onsite for the full 2 hours, it will be assumed that an average of 439 vehicles will be onsite during the entire 2 hours. If each vehicle averaged two persons, 878 persons would be onsite. The 878-person figure is for the entire project, including Wal-Mart Supercenter, restaurant, and gas station, and would be less than the 1,230-customer limit for the Supercenter only.

Furthermore, the Wal-Mart Supercenter is a retail establishment and not a place where people tend to congregate. Customers generally circulate through the store, walking up and down the aisles as part of their shopping process. Moreover, the Wal-Mart Supercenter does not provide an environment conducive for people to congregate. Except for a possible fast-food restaurant within the store that may include some seating for patrons, the Wal-Mart Supercenter does not include amenities for people to sit and spend any significant amount of time. The store is designed to meet customers' shopping needs quickly and efficiently. On average, customers spend very little time in a Supercenter.

The sit-down restaurant would occupy 1.41 acres and, therefore, would have a maximum allowable usage intensity of 423 persons (1.41 acres x 300 persons per acre). The restaurant is estimated to

employ 25 persons and would have an allowable customer capacity of 398 persons. The restaurant is expected to generate 53 peak-hour trips between 4 p.m. and 6 p.m. If the average customer spends 60 minutes inside the restaurant, and there is an even distribution of the 53 peak-hour trips between 4 p.m. and 6 p.m., 27 trips would be onsite at any one time. Assuming five persons per trip, 135 customers would be in the restaurant. When added to the number of employees, the total number of people in the restaurant would be 160, which is well below the allowable total of 423. Note that the sit-down restaurant represents the most intensive use of this parcel, and other potential uses (retail or casual food) would generate fewer trips.

The gas station would occupy 1.05 acres and, therefore, would have a maximum allowable usage intensity of 315 persons (1.05 acres x 300 persons per acre). The restaurant is estimated to employ five persons and would have an allowable customer capacity of 310 persons. The gas station is expected to generate 80 peak-hour trips between 4 p.m. and 6 p.m. If the average customer spends 10 minutes at the gas station, and there is an even distribution of the 80 peak-hour trips between 4 p.m. and 6 p.m., seven trips would be onsite at any one time. Assuming five persons per trip, 35 customers would be at the gas station. When added to the employees, the total number of people at the gas station would be 40, which is well below the allowable total of 315.

The proposed project would not contain any prohibited uses, including children's schools, day care centers, libraries, hospitals, nursing homes, and hazards to flight. All structures would be 40 feet, 8 inches or less in height.

Therefore, the proposed project would be consistent with requirements of Zone C and would not conflict with the Travis Air Force Base Land Use Plan. Impacts would be less than significant.

Note that, as part of the entitlement process, a notice will be attached to project site deed advising the landowner about the presence of Travis Air Force Base and the restrictions of Zone C.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

4.9 - Noise

4.9.1 - Introduction

This section describes the existing noise setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on noise modeling performed by Michael Brandman Associates. The noise modeling is contained in Appendix H, Noise Analysis. Additional information was obtained from the City of Suisun City General Plan, adopted in 1992, and the Travis Air Force Base Land Use Compatibility Plan, adopted on June 12, 2002. This section analyzes impacts related to construction noise, vibration, operational noise, and aviation noise.

4.9.2 - Environmental Setting

Acoustical Terminology

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted sound. Sound is characterized by various parameters that describe the rate of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The unit of sound pressure ratioed to the faintest sound detectable by a keen human ear is called a decibel (dB).

A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The zero point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

Because sound or noise can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale similar to the Richter scale used for earthquake magnitude is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called “A weighting,” written as dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Any further reference to decibels in this report written as “dB” should be understood to be A-weighted values.

Time variations in noise exposure are typically expressed in terms of a steady-state energy level equal to the energy content of the time-varying period (called L_{eq}) or, alternately, as a statistical description

of the sound pressure level that is exceeded over some fraction of a given observation period. Finally, because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, State law requires that, for planning purposes, an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL).

Many methods have been developed for evaluating community noise to account for, among other things:

- Variation in noise levels over time
- Influence of periodic individual loud events
- Community response to changes in the community noise environment

Numerous methods have been developed to measure sound over a period of time. These methods include:

- Equivalent Sound Level (L_{eq})
- Community Noise Equivalent Level (CNEL)
- Day/Night Average Sound Level (L_{dn})

These methods are described and defined below.

L_{eq}

Time variations in noise exposure are typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}) or, alternately, as a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period. For example, the noise levels exceeded on 10 percent of readings is called L_{10} , the median (50th percentile) reading is called L_{50} , etc.

CNEL

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, State law requires that, for planning purposes, an artificial dB increment penalty be added to quiet time noise levels in a 24-hour noise descriptor called CNEL.

L_{dn}

Another commonly used method is the day/night average level or L_{dn} . The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period, called the L_{eq} . The L_{dn} is calculated by averaging the L_{eq} for each hour of the day at a given location after penalizing the “sleeping hours” (defined as 10:00 p.m. to 7:00 a.m.) by 10 dBA to account for the increased sensitivity of people to noises that occur at night. The maximum noise level recorded during a noise event is typically

expressed as L_{max} . The sound level exceeded over a specified time can be expressed as L_n (e.g., L_{90} , L_{50} , L_{10}). L_{50} equals the level exceeded 50 percent of the time; L_{10} equals the level exceeded ten percent of the time, and so on.

As previously mentioned, people tend to respond to changes in sound pressure in a logarithmic manner. In general, a 3-dB change in sound pressure level is considered a “just detectable” difference in most situations. A 5-dB change is readily noticeable and a 10-dB change is considered a doubling (or halving) of the subjective loudness. Note that a 3-dB increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume, or by about a 7-mile-per-hour increase or decrease in speed.

For each doubling of distance from a point noise source, the sound level will decrease by 6dB. In other words, if a person is 100 feet from a machine and moves 200 feet from that source, sound levels will drop by approximately 6 dB. Moving 400 feet away, sound levels will drop approximately another 6 dB. For each doubling of distance from a line source, such as a roadway, noise levels are reduced 3 to 5 decibels, depending on the ground cover between the source and the receiver.

Noise Exposure

An interior CNEL of 45 dB is mandated by the State of California Noise Insulation Standards (CCR, Title 24, California Building Code, Division II, Appendix Chapter 12, Section 1208) for multiple-family dwellings and hotel and motel rooms. Since normal noise attenuation within residential structures with closed windows is about 20 dB, an exterior noise exposure of 65 dBA CNEL allows the interior standard to be met without any specialized structural attenuation (dual-paned windows, etc.). A noise level of 65 dB is also the level at which ambient noise begins to interfere with one’s ability to carry on a normal conversation at reasonable separation without raising one’s voice. Table 4.9-1 summarizes typical noise sources, levels, and responses.

Table 4.9-1: Noise Levels and Human Response

Noise Source	Noise Level (dBA)	Response
Library	30	Very quiet
Refrigerator humming	40	Quiet
Quiet office	50	Quiet
Normal conversation	60	Intrusive
Vacuum cleaner	70	Telephone use difficult
Freight train at 50 feet	80	Interferes with conversation
Heavy duty truck at 50 feet	90	Annoying
Jet takeoff at 2,000 feet	100	Very annoying; hearing damage at sustained exposure levels
Unmuffled motorcycle	110	Maximum vocal effect; physical discomfort

Table 4.9-1 (Cont.): Noise Levels and Human Response

Noise Source	Noise Level (dBA)	Response
Jet takeoff at 200 feet	120	Regular exposure over 1 minute risks permanent hearing loss
Shotgun firing	130	Pain threshold
Carrier jet operation	140	Harmfully loud
Source: Melville C. Branch and R. Dale Beland, 1970.		

A noise exposure of 65 dBA CNEL is typically the exterior-noise land use compatibility guideline for new residential dwellings in California. Because retail commercial uses are not occupied on a 24-hour basis, the exterior noise exposure standard for less sensitive land uses generally is less stringent. Unless commercial projects include noise-sensitive uses such as outdoor dining, noise exposure is generally not considered a commercial facility siting constraint for typical commercial development noise exposures.

Groundborne Vibration

Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibrations typically cause a nuisance only to people, but at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically an annoyance only indoors, where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may consist of the rattling of windows or dishes on shelves.

Peak particle velocity (PPV) relates to the maximum instantaneous peak of the vibration signal and is often used in measuring the magnitude of vibration. Scientific studies have shown that human responses to vibration vary by the source of vibration: continuous or transient. Continuous sources of vibration include construction, while transient sources include truck movements. Generally, the thresholds of perception and annoyance are higher for transient sources than continuous sources. Table 4.9-2 shows PPV levels for continuous and transient sources and the associated human response.

Table 4.9-2: Vibration Levels and Human Response

Peak Particle Velocity (inches/second)		Human Response
Continuous	Transient	
0.40	2.00	Severe
0.10	0.90	Strongly perceptible

Table 4.9-2 (Cont.): Vibration Levels and Human Response

Peak Particle Velocity (inches/second)		Human Response
Continuous	Transient	
0.04	0.25	Distinctly perceptible
0.01	0.04	Barely perceptible

Source: California Department of Transportation, 2004.

Existing Ambient Noise Environment

Sensitive Receptors

Sensitive receptors are land uses that are sensitive to increases in ambient noise levels. Examples of sensitive receptors include hospitals, schools, convalescent facilities, and residential areas. Sensitive receptors in the project vicinity include the Lawler Ranch subdivision to the south and west of the project site, the Quail Glen subdivision north of the project site, and residential areas located along roadways affected by project-related traffic. The backyards of residences in the Quail Glen subdivision are protected by a 6-foot-high wooden fence on top of a 2-foot-tall earthen berm. A masonry wall that varies in height from 6 to 10 feet separates the residents of the Lawler Ranch subdivision from SR-12 and the project site. These walls effectively shield the first floors of these residences from views of project site, and by blocking this line of site they are at least partially shielded—masonry walls are typically more effective than wood fences in reducing noise—from noise generated at the project site. There are two schools located within 2 miles of the site. Suisun Elementary School is less than 1 mile northwest of the site on Pintail Drive and Tolenas Elementary School is roughly 1.25 miles north of the site on Tolenas Avenue.

Existing Ambient Noise Levels in Project Vicinity

The existing ambient noise levels in the immediate project vicinity are defined primarily by traffic on SR-12 and Walters Road, train movements (from horns) on the Union Pacific Railroad approximately 1.5 miles northwest of the site, and aircraft activity associated with Travis Air Force Base.

To quantify existing ambient noise levels in the immediate project vicinity, short-term and continuous noise level measurements were performed. Metrosonics Model dB-308 sound level meters were used for the ambient noise level measurements. The meters were calibrated before and after the measurements were taken to ensure their accuracy. The meters were programmed to record the maximum (L_{max}), average (L_{eq}), L_{10} , and L_{90} noise levels.¹ Exhibit 4.9-1 shows the location of each of the noise measurements. The continuous (24-hour) noise level measurements were conducted at locations representative of the existing noise levels for the residential communities north and south of the site most likely to be affected by onsite operational noise. Long-term measurements were taken at

¹ L_{10} is the noise level that is equaled or exceeded 10 percent of the specified time period. L_{10} is often considered the maximum noise level averaged over the specified time period. L_{90} is the noise level that is equaled or exceeded 90 percent of the specified time period. L_{90} is often considered the background noise level averaged over the specified time period.

sensitive receptor locations closest to the project site and most likely to be affected by onsite operational noise. Short-term measurement locations were taken at more distant receptor sites that would likely be affected more by project-related traffic than by onsite operational noise. The noise measurements are summarized in Table 4.9-3. Exhibits 4.9-2 through 4.9-6 show graphs of the 24-hour measurements.

Table 4.9-3: Existing Noise Measurements

Location ¹	Time Period ²	L _{eq} (dBA)	Noise Sources
LT-1: southwest corner of Lawler Ranch Parkway and SR-12 (100 and 150 feet from the center of Lawler Ranch Parkway and SR-12, respectively)	24-hour CNEL measurements: Day 1: 75 dBA Day 2: 74 dBA Day 3: 75 dBA	Hourly L _{eq} : 61.5 to 73.5 dBA	<ul style="list-style-type: none"> Traffic on Lawler Ranch Parkway Traffic on SR-12 Aircraft associated with Travis Air Force Base
LT-2: north side of Petersen Road (between Fulmar Drive and Walters Road, 60 feet from roadway centerline and adjacent to residential fence)	24-hour CNEL measurements: Day 1: 64 dBA Day 2: 63 dBA	Hourly L _{eq} ranged from 47.2 to 64.2 dBA	<ul style="list-style-type: none"> Traffic on Petersen Road (minor) Traffic on SR-12 Dog barking
ST-1: Fulmar Drive (between Pelican Way and Swift Court, 25 feet from roadway centerline)	Weekday, a.m. peak hour Saturday, mid-afternoon	63.2 54.8	<ul style="list-style-type: none"> Traffic on Fulmar Drive Traffic on SR-12
ST-2: Lawler Ranch Parkway (between SR-12 and Potrero Circle, 25 feet from roadway centerline)	Weekday, a.m. peak hour Saturday, mid-afternoon	62.6 62.5	Traffic on Lawler Ranch Parkway
ST-3: Walters Road (between Petersen Road and Montebello Drive, 50 feet from roadway centerline)	Weekday, a.m. peak hour Saturday, mid-afternoon	70.2 69.6	<ul style="list-style-type: none"> Traffic on Walters Road Aircraft associated with Travis AFB
ST-4: SR-12 at Woodlark Drive (approx. 100 feet from SR-12 roadway centerline)	Weekday, a.m. peak hour Saturday, mid-afternoon	75.4 72.9	Traffic on SR-12
ST-5: Marina Boulevard (between SR-12 and Lotz - 60 feet from roadway centerline)	Weekday, a.m. peak hour Saturday, mid-afternoon	65.0 62.1	<ul style="list-style-type: none"> Traffic on Marina Boulevard Traffic on SR-12
<p>Notes:</p> <p>¹ Locations correspond to those shown in Exhibit 4.9-1.</p> <p>² Short-term measurements reflect a 5-minute period. The weekday short-term measurements were taken during the a.m. peak hour between 7:00 and 9:00 a.m. on Thursday, December 14, 2006. The Saturday short-term measurements were taken during the mid-afternoon between 2:00 and 4:00 p.m. on December 16, 2006.</p> <p>LT = Long-term measurement location ST = Short-term measurement location Source: Michael Brandman Associates, 2007.</p>			



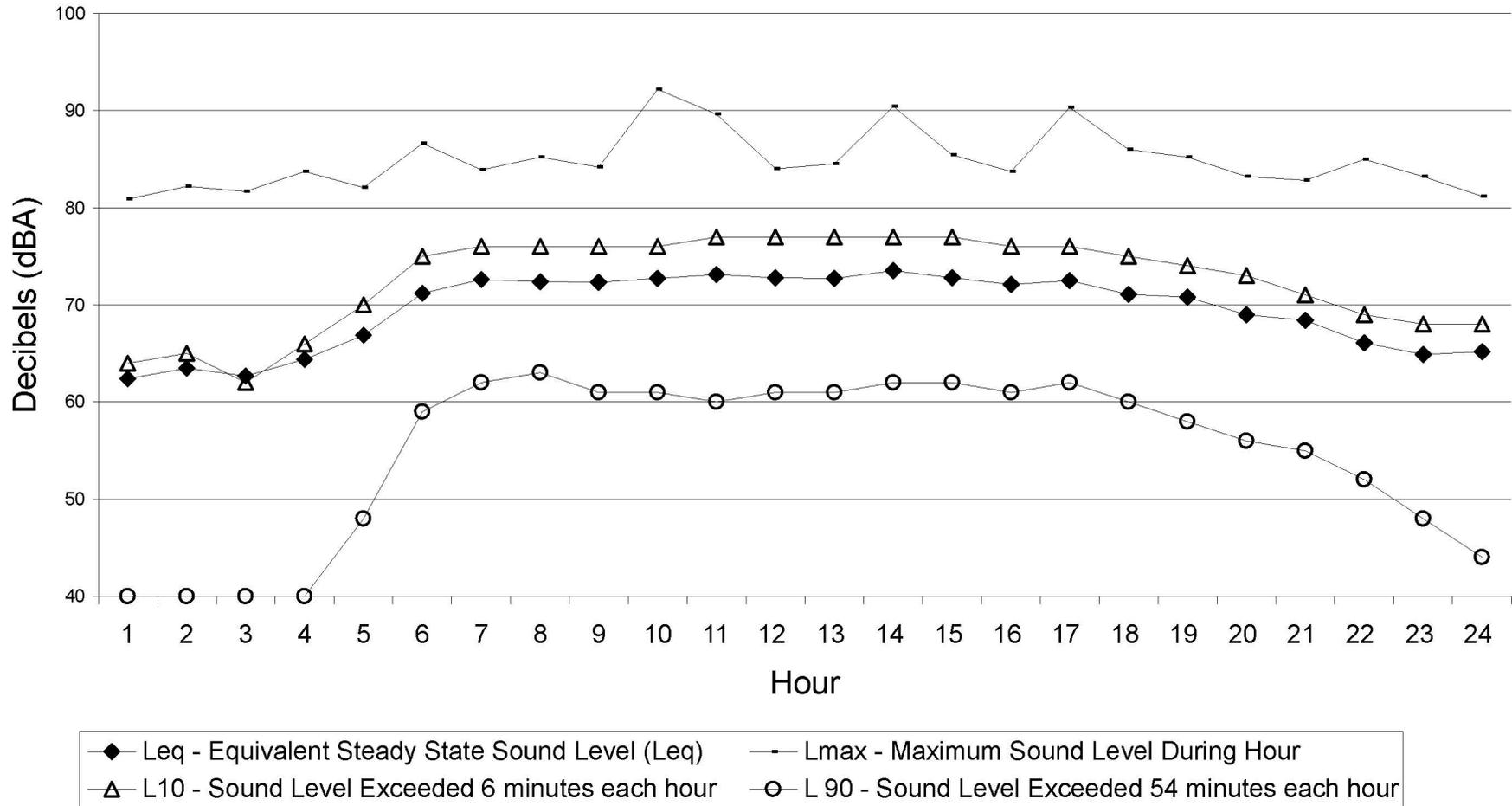
Source: Google Earth and MBA Field Data.



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Exhibit 4.9-1 Noise Measurement Locations

24-Hour Noise Measurements Site LT-1: SR 12 at Lawler Ranch Road Day 1 - December 12/13, 2006



Source: Michael Brandman Associates, 2007.



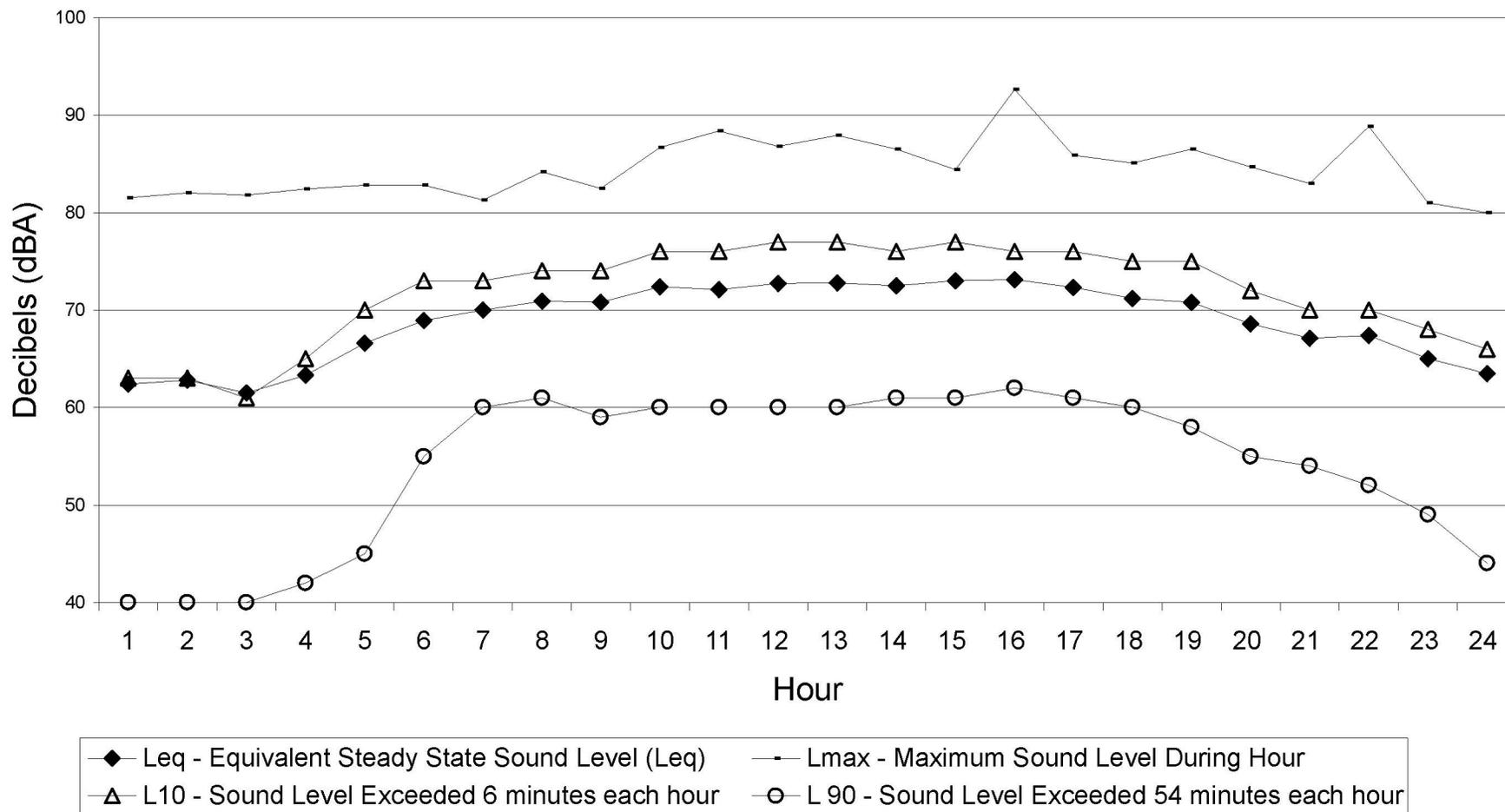
Michael Brandman Associates

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Exhibit 4.9-2
State Route 12 / Lawler Ranch Road
Day 1 Noise Measurement Plots

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
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24-Hour Noise Measurements Site LT-1: SR 12 at Lawler Ranch Road Day 2 - December 13/14, 2006



Source: Michael Brandman Associates, 2007.



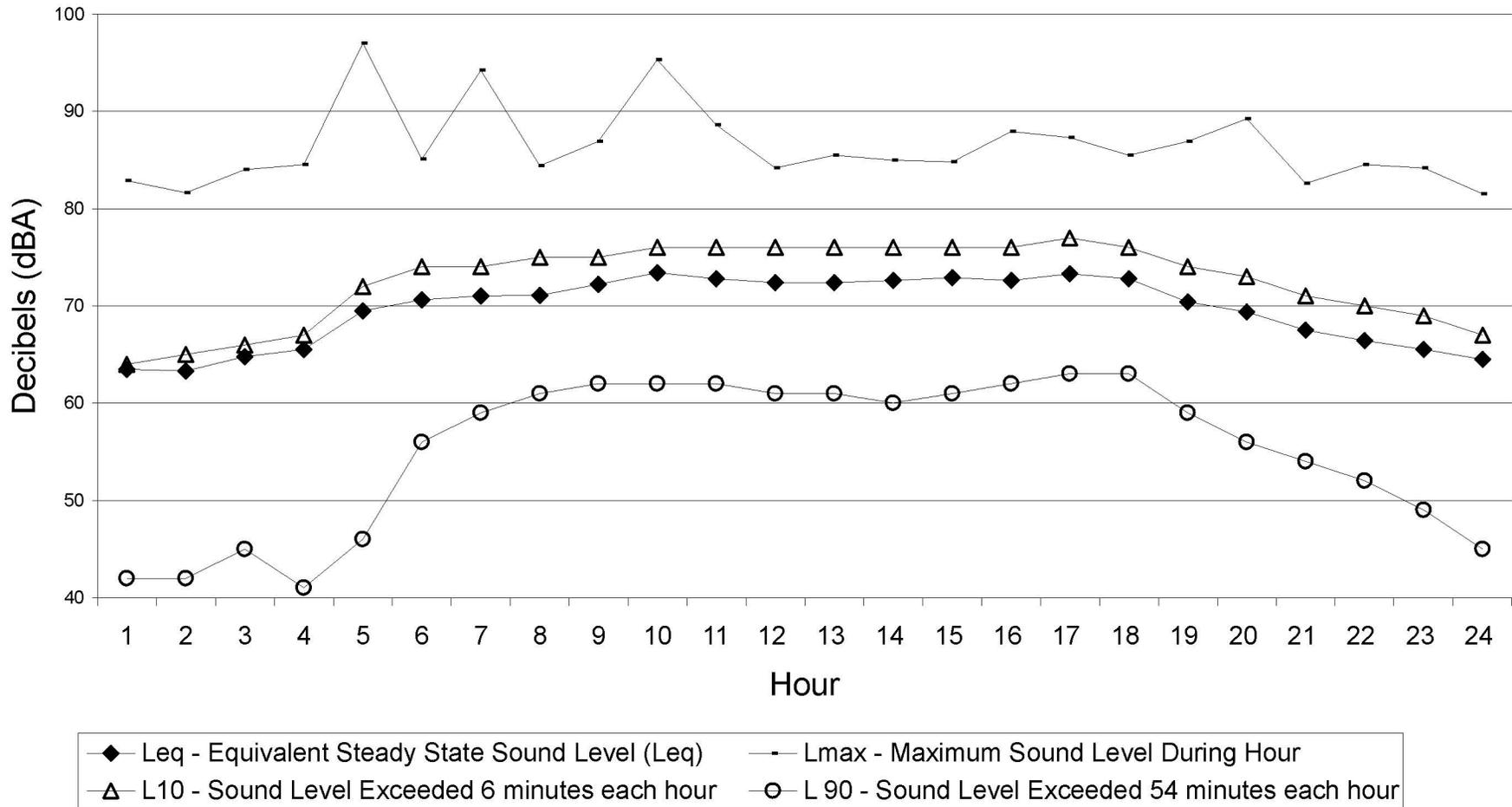
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Exhibit 4.9-3
State Route 12 / Lawler Ranch Road
Day 2 Noise Measurement Plots

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ENVIRONMENTAL IMPACT REPORT

24-Hour Noise Measurements Site LT-1: SR 12 at Lawler Ranch Road Day 3 - December 14/15, 2006



Source: Michael Brandman Associates, 2007.



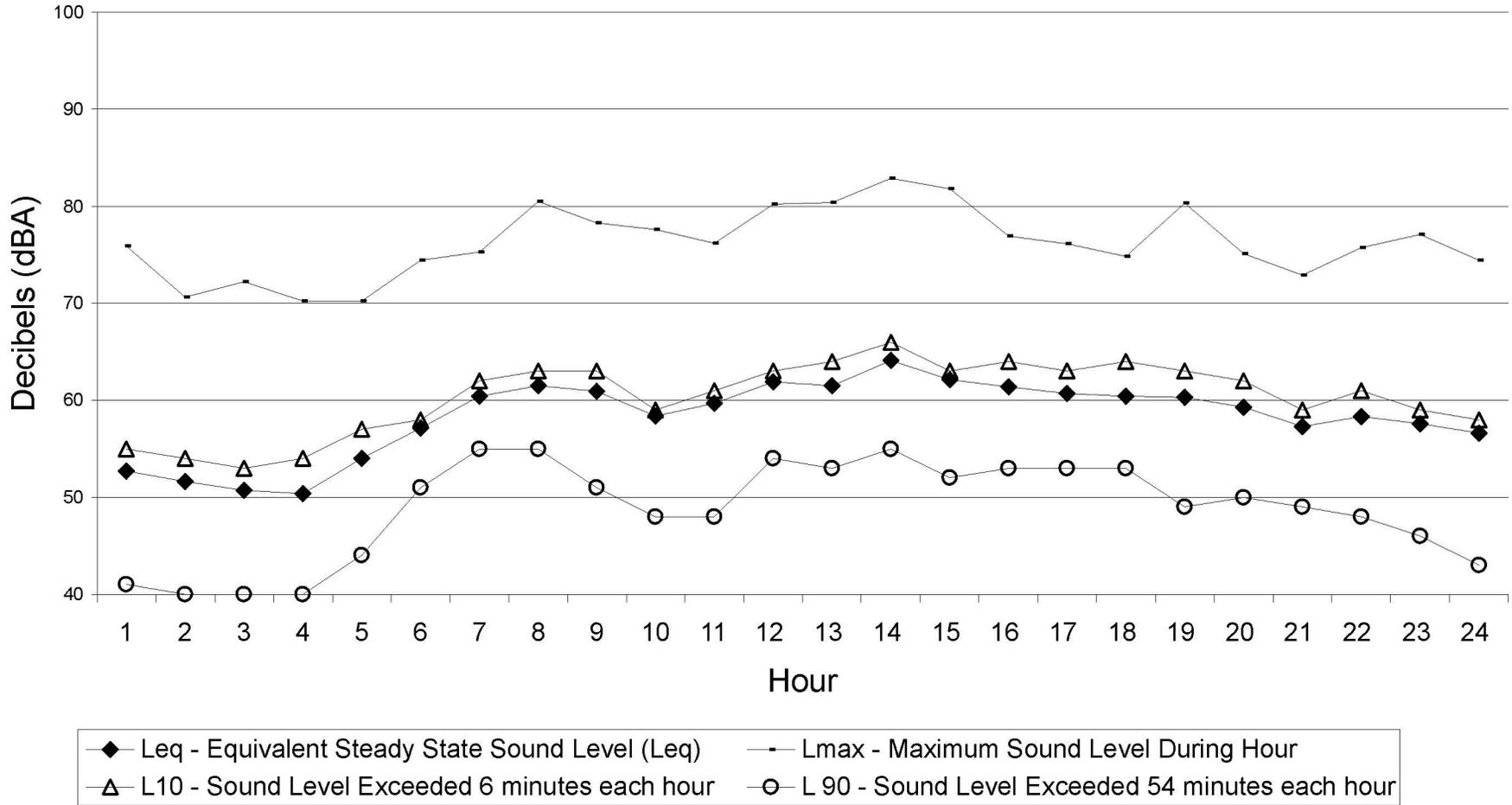
Michael Brandman Associates

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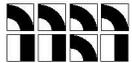
Exhibit 4.9-4 State Route 12 / Lawler Ranch Road Day 3 Noise Measurement Plots

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT

24-Hour Noise Measurements Site LT-2: Petersen Road Day 1 - December 12/13, 2006



Source: Michael Brandman Associates, 2007.



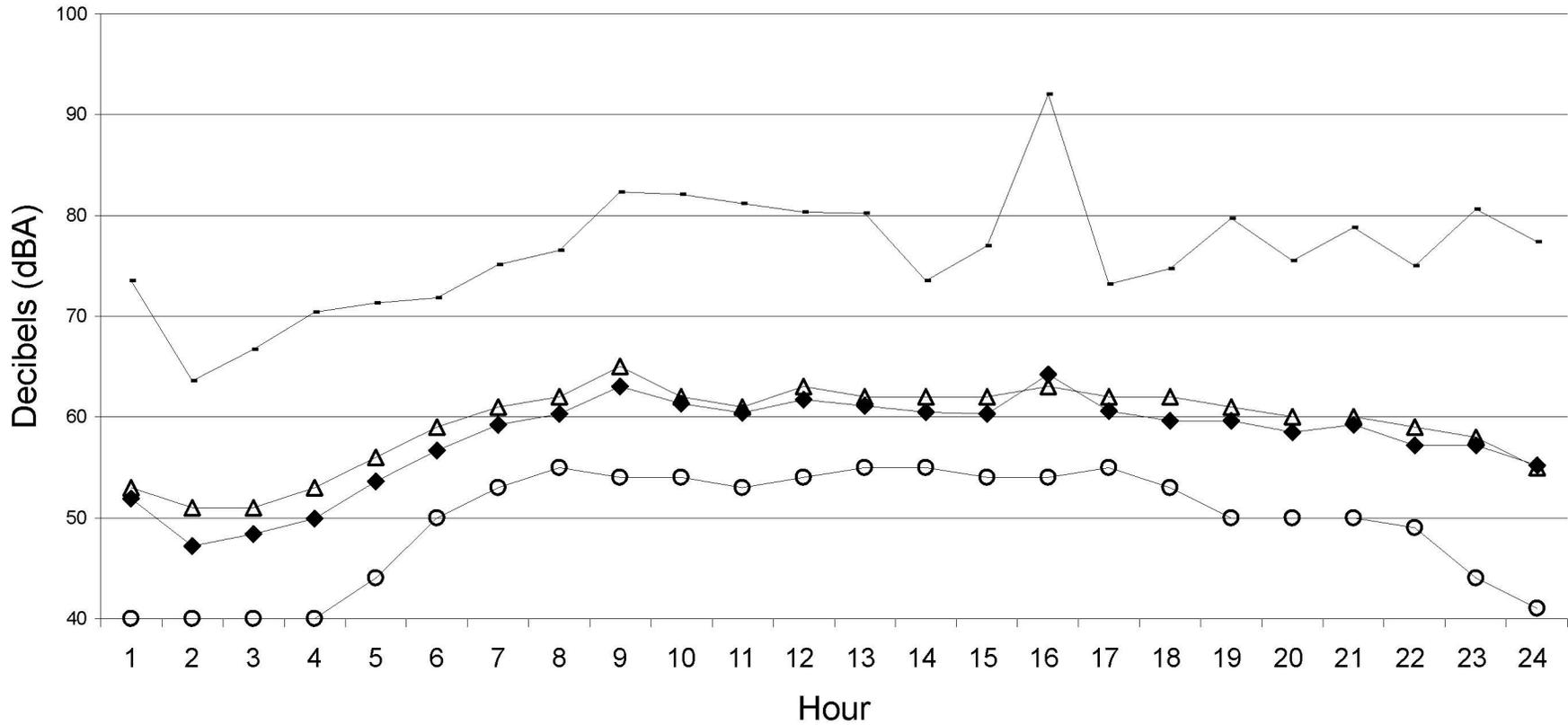
Michael Brandman Associates

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Exhibit 4.9-5 Petersen Road Day 1 Noise Measurement Plots

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ENVIRONMENTAL IMPACT REPORT

24-Hour Noise Measurements Site LT-2: Petersen Road Day 2 - December 13/14, 2006



◆ Leq - Equivalent Steady State Sound Level (Leq) - - - Lmax - Maximum Sound Level During Hour
 ▲ L10 - Sound Level Exceeded 6 minutes each hour ○ L90 - Sound Level Exceeded 54 minutes each hour

Source: Michael Brandman Associates, 2007.



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Exhibit 4.9-6
Petersen Road Day 2
Noise Measurement Plots

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 ENVIRONMENTAL IMPACT REPORT

4.9.3 - Regulatory Framework

State

Title 24 of the California Code of Regulations

Title 24 of the California Code of Regulations, the California Building Code, contains the State Noise Insulation Standards (Division 2, Appendix Chapter 12, Section 1208), which specify interior noise standards for new hotels, motels, apartment houses, and dwellings other than single-family dwellings. Such new structures must be designed to reduce outdoor noise to an interior level of [no more than] 45 L_{dn}. The California Noise Standards also establish standards for sound isolation of separation walls, corridor walls, and floor/ceiling assemblies in multi-family residential construction.

Caltrans Vibration Exposure Thresholds

Construction vibration is regulated in accordance with standards established by the Transportation and Construction-Induced Vibration Guidance Manual issued by the California Department of Transportation (Caltrans). Table 4.9-4 presents these standards. Continuous sources include the use of vibratory compaction equipment and other construction equipment that create vibration other than in single events. Transient sources create a single isolated vibration event, such as tractor-trailer movements. Thresholds are provided for both structural damage and annoyance. Structural damage thresholds are considered the CEQA significance thresholds; however, annoyance thresholds are also provided for the purposes of context.

Table 4.9-4: Vibration Exposure Thresholds

Type of Structure	Threshold	Maximum Peak Particle Velocity (inches/second)	
		Continuous Sources	Transient Sources
Newer residential structures	Structural damage	0.5	1.0
	Annoyance	0.1	0.9

Source: California Department of Transportation, 2004

Local

City of Suisun City General Plan

The City of Suisun City General Plan contains the following noise goal and objective, with relevant policies.

Goal: To reduce human exposure to noise to acceptable levels.

Objective: To achieve levels of noise exposure for various types of land uses and human activities so that ambient, stationary, and vehicular noise will not unnecessarily impede these activities.

- Policy 1: Travis Air Force Base Plan. Those lands within the area covered by the Travis Air Force Base Comprehensive Airport Land Use Plan must comply with the noise and land use

compatibility requirements of that plan. The Land Use Map will take into account noise contours (Figure 4 of the Airport Plan).

- The Plan recommends the evaluation on a case-by-case basis of certain retail and commercial land uses in areas subject to noise levels of 70–80 dBA, and generally recommends only certain manufacturing, motor vehicle, railroad, and agricultural land uses in areas subject to noise in excess of 80 dBA.
 - The City will refer to Table 1 of the Airport Plan, “Land Use Compatibility Guidelines,” in determining the compatibility of land uses at various noise levels. Those land uses, which may be conditionally allowed under the Guidelines, will be required to adopt mitigation measures as recommended in Appendix F of the Airport Plan, “Noise Level Reduction Measures.”
- Policy 3: Commercial Vehicles. Commercial vehicles shall be prohibited in residential areas except to make deliveries to, or provide services to, residences.
 - Policy 4: Protection of Residential Land Uses from Non-Residential Noise Sources. In designating the appropriate location of commercial and industrial land uses in comparison with residential uses, the City shall seek to minimize potential noise conflicts by assuring that noise received by the commercial or industrial land uses does not exceed 65 CNEL. To ensure that recommended standards for exterior and interior noise are not exceeded, the City may require commercial and industrial developments to adopt noise mitigation measures, to mitigate potential noise exposure through site design and other appropriate measures. Mitigation measures may include restrictions on the hours of operation of certain equipment, the construction of a sound wall or earth berming to protect residential land uses from the sources of noise, minimum distance requirements for dwelling units and commercial/industrial buildings, and construction requirements to reduce interior noise levels.

The City of Suisun City General Plan Noise Element also adopts the noise standards set forth in the Solano County General Plan Health and Safety Element. The City has adopted the County’s exterior and interior noise exposure standards for those land use categories shown in Exhibit 4.9-7 and Table 4.9-5, respectively. Table 4.9-5 includes interior noise standards not to be exceeded. For example, the indoor area of residences is not to exceed 45 CNEL. Exhibit 4.9-7 shows exterior noise exposure standards. Using residences as an example, Exhibit 4.9-7 shows that exterior (outdoor) noise levels: below 60 CNEL are considered acceptable; between 60 and 65 CNEL are considered conditionally acceptable (and new residential development should only occur after a detailed analysis of noise impacts); noise levels between 65 and 70 CNEL should generally be avoided; and in areas where the noise level is above 75 CNEL, new residential development is prohibited.

Land Use	Exterior Noise Level Ranges (CNEL dBA)						
	55	60	65	70	75	80	
Residential - Single Family, Multi-Family, Group Quarters, Mobile Homes	Green	Green	Blue	Yellow	Yellow	Red	
Transient Lodging - Motels, Hotels	Green	Green	Blue	Yellow	Yellow	Red	
Schools, Libraries, Churches, Hospitals, Convalescent Homes	Green	Green	Blue	Yellow	Yellow	Red	
Playgrounds, Neighborhood Parks	Green	Blue	Blue	Yellow	Yellow	Red	
Office Buildings - Personal Business and Professional Services	Green	Green	Blue	Blue	Yellow	Red	
Commercial - Retail, Movie Theaters, Restaurants	Green	Green	Blue	Blue	Yellow	Red	
Commercial - Wholesale, Industrial, Manufacturing, Utilities	Green	Green	Green	Blue	Blue	Yellow	
Noise-Sensitive Manufacturing and Communications	Green	Blue	Blue	Blue	Yellow	Yellow	Red
Key:	Green	Acceptable			Yellow	New development should generally be avoided.	
	Blue	New development allowed only after detailed analysis			Red	New development not allowed	

Source: Solano County General Plan Health and Safety Element, Table 1 (incorporated by reference in the City of Suisun City General Plan).



Michael Brandman Associates

Exhibit 4.9-7 City of Suisun City Land Use Compatibility Noise Standards

Table 4.9-5: City of Suisun City Land Use Compatibility Guidelines for Interior Noise

Land Use Category	Maximum Allowable Interior CNEL (dBA)
Residential	45
Transient lodging	45
School, classrooms, libraries, churches	45
Hospitals, convalescent homes	45
Notes: The acceptable interior noise level for other uses (offices, theaters, commercial, industrial) is dependent upon the specific nature of the indoor activity. Source: City of Suisun City, 1992. City of Suisun City General Plan.	

City of Suisun City Municipal Code

Suisun City Municipal Code Chapters 15.04 and 15.12 regulate and control noise from construction activities through limitations on hours. For general construction activities, Section 15.04.075 restricts the operation of construction equipment and outdoor construction or repair work within 500 feet of any occupied residences to the hours between 7:00 a.m. and 10:00 p.m., Monday through Saturday, and between 8:00 a.m. and 10:00 p.m. on Sundays. This section also prohibits interior work that would create noise or disturbance noticeable to a reasonable person of normal sensitivity in the surrounding neighborhood. For the purposes of dust control, Section 15.12.320 further restricts construction hours for equipment used in earthwork, trenching, and concrete or paving activities; these activities are allowed between 7:00 a.m. and 6:00 p.m., Monday through Friday, between 9:00 a.m. and 5:00 p.m. on Saturdays, and prohibited on Sundays (except for the use of water trucks for dust control, which may operate between 9:00 a.m. and 5:00 p.m.).

Solano County Airport Land Use Commission

Travis Air Force Base is located 1 mile east of the project site. Noise from aircraft activity at the air base influences the noise environment at and within the vicinity of the project site. Land use around the air base is subject to a land use compatibility plan adopted by the Solano County Airport Land Use Commission. The purpose of the Travis Air Force Base Land Use Compatibility Plan is to protect new development from impacts with the existing airports and to protect the air base from encroachment of incompatible uses. Table 4.9-6 summarizes the Travis Air Force Base Land Use Compatibility Plan’s applicable noise exposure requirements for commercial retail land uses.

Table 4.9-6: Travis Air Force Base Land Use Compatibility Plan Noise Compatibility Criteria

Land Use	CNEL (dB)				
	55	60	65	70	75
Offices, retail trade					
Key:		Normally Acceptable			Normally Unacceptable
		Marginally Acceptable			
Source: Solano County Airport Land Use Commission. Travis Air Force Base Land Use Compatibility Plan, Table 2B. Adopted June 12, 2002.					

4.9.4 - Methodology

The following noise analysis utilized accepted noise-prediction and sound-propagation algorithms to predict project-generated noise levels and changes in ambient noise levels resulting from the project. Specific noise sources evaluated in this section include onsite construction and operational activities, and offsite traffic.

Short-term noise impacts were evaluated based on typical noise levels associated with construction equipment, derived from existing environmental documentation. Predicted areas of potential impact were calculated assuming an average noise attenuation rate of 6 dBA per doubling of distance from the source. Long-term noise impacts were evaluated based on predicted near-term and future cumulative traffic noise levels, with and without implementation of the proposed project. Traffic noise levels were predicted using the Federal Highway Administration (FHWA) roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the traffic analysis prepared for this project and assuming an average noise attenuation rate of 3 to 4.5 dBA per doubling of distance from the roadway. Residences in the project area are largely shielded from traffic noise on SR-12 and other major arterials by existing sound walls. However, based upon the results of the initial screening model runs, the modeling conducted for this analysis did not have to consider natural or man-made shielding, such as vegetation, berms, walls, or buildings. All buildings provide some exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides a minimum exterior-to-interior noise reduction of 25 dBA with its windows closed; whereas a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate glass windows of 0.25-inch thickness typically provides an exterior-to-interior noise reduction of 30–40 dBA with its windows closed. The noise modeling is provided in Appendix H.

Data and analytical methodologies from analyses conducted as part of the environmental review for other proposed Wal-Mart Supercenter stores in Stockton, Antioch, and Fairfield, and the Gentry-Suisun Project (which could include “big box” retailers similar to a Wal-Mart Supercenter) in Suisun City were used to estimate potential stationary source noise levels resulting from operation of the

proposed project at nearby residences. This data includes short-term noise measurement data and observations. The proposed project would include an 8-foot-tall masonry wall along the northern portion of the property that would extend roughly the length of the proposed Wal-Mart Supercenter building (see Exhibit 3-3 in Section 3, Project Description). In combination with the existing fences along the north side of Petersen Road, the proposed 8-foot-tall wall would effectively block most noise of the project site and, as such, noise generated at the site from residences north of Petersen Road.

Vibration impacts were assessed in relation to Caltrans' Transportation and Construction-Induced Vibration Guidance Manual. The guidance manual uses PPV to quantify vibration amplitude. Peak particle velocity is defined as the maximum instantaneous peak of the vibratory motion and was used in assessing groundborne vibration impacts.

4.9.5 - Impacts and Mitigation Measures

This section discusses potential noise impacts associated with the development of the project. Mitigation measures are provided where appropriate.

Thresholds of Significance

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

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Neither the CEQA Guidelines nor the City of Suisun City General Plan provides a definition of what constitutes a substantial noise increase. A common practice has been to assume that minimally perceptible to clearly noticeable increases of 3–5 dBA represent a significant increase in ambient

noise levels. A sliding scale is commonly used to identify the significance of noise increases, allowing greater increases at lower absolute sound levels than at higher sound levels. This approach is based on research that relates changes in noise to the percentage of individuals that would be highly annoyed by the change (FICON, 1992). The significance criteria for changes in noise from project operations are as follows:

- A 3-dBA CNEL increase in noise as a result of project operations, if the existing noise level already exceeds the “Acceptable” range for the land use (60 dBA CNEL or less for residential uses—see Exhibit 4.9-7 and Table 4.9-5).
- A 5-dBA CNEL increase in noise as a result of project operations, if the existing noise level is in the “Acceptable” range and the resulting level remains within the “Acceptable” range for the land use.

In addition, neither the CEQA Guidelines nor the City of Suisun City General Plan provides a definition of what constitutes exposure to excessive vibration. However, the Transportation- and Construction-Induced Vibration Guidance Manual published by the California Department of Transportation establishes vibration thresholds for “newer” residential structures, which would be the structures most susceptible to vibration caused by the proposed project. The proposed project would have a significant vibration impact if it would:

- Create construction (continuous) vibration at the nearest residence at or above 0.5 PPV
- Create tractor-trailer (transient) vibration at the nearest residence at or above 1.0 PPV

Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Construction Noise

Impact NOI-1: Development of the proposed project would result in temporary noise impacts during project construction.

Impact Analysis

Construction noise represents a short-term increase in ambient noise levels. Noise and vibration impacts from construction activities associated with the proposed project would be a function of the noise and vibration generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Short-term noise impacts could occur during construction activities, either from the noise impacts created from the transport of workers and movement of construction materials to and from the project site, or from the noise generated onsite during ground clearing, excavation, grading, and construction activities. In addition, certain types of construction equipment generate impulsive noises (such as pile

driving), which can be particularly annoying. Table 4.9-7 shows typical noise levels resulting from the simultaneous operation of construction equipment during different construction stages. Table 4.9-8 lists typical construction equipment noise levels for equipment that could be used during construction of the proposed project. Construction activities are carried out in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase.

Table 4.9-7: Typical Construction Phase Noise Levels

Construction Phase	Noise Level (dBA) ¹
Ground clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89
Notes: ¹ Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase. Source: U.S. Environmental Protection Agency, 1971.	

Table 4.9-8: Noise Associated With Typical Construction Equipment

Construction Equipment	Maximum Noise Levels (dBA at 50 feet from source)
Grading	89
Backhoe	90
Pneumatic tools	88
Air compressor	86
Crane	83
Plate compactor	89
Concrete vibrator	85
Pile driver	101
Heavy truck	87
Source: Federal Transit Administration, 1995	

The residential land uses to the north of the project site are the sensitive receptors of most concern as they relate to project construction noise. The edge of the project site is as close as 100 feet from the

backyards of these residences. Table 4.9-9 provides the estimated maximum noise levels these residences would be expected to experience during typical construction phases. Assuming that noise attenuation from the equipment would be approximately 6 dB for each doubling of distance, the noise level at the nearest residences could be as high as 84 dB during various phases of typical project construction activities. Noise at these levels would result in a temporary increase in ambient noise levels. While it is not expected that pile driving would be required for the project, pile driving (if required for building footings) could occur as close as 175 feet from residences to the north and could result in noise levels as high as 90 dBA at the nearest residences. Although construction activities would likely occur during daytime hours, construction noise could still be considered substantially disruptive to residents, particularly if pile-driving activities are required for project buildings. However, periods of intrusive noise exposure would be temporary, and noise generated by project construction would be partially masked by the noise from traffic on SR-12 and Walters Road. Note that construction noise often varies significantly on a day-to-day basis, and the noise levels shown in Table 4.9-9 represent a worst-case scenario. Such worst-case scenarios would likely exist only for short periods at any particular residence on a given day. During these times, outdoor activities at the affected residences would be negatively affected by noise, and indoor levels (typically 20 to 30 dBA lower) could be negatively affected. On most days during the construction, most of the nearest residences would not experience worst-case noise levels, but they would experience periodic exterior noise levels that could be 3 to 10 decibels above the existing ambient noise levels. Such intermediate noise levels would be very noticeable at exterior locations (such as yards and patios) but would not eliminate the use of exterior areas. This is a potentially significant impact.

Table 4.9-9: Estimated Maximum Construction Noise Levels During Typical Construction Activities

Receptor	Distance From Project Site (feet)	Maximum Noise Levels (dBA)
Residences on north side of Peterson Road	100 (175 for pile driving)	84 (90 for pile driving)
Notes: Noise levels based on construction noise at 90 dB measured at 50 feet from project site; assumes a 6-dB reduction for each doubling of distance. Source: Michael Brandman Associates, 2007.		

Mitigation is proposed that would require the applicant to implement construction noise control measures into the project and comply with City’s construction noise requirements. Implementation of the mitigation measures listed below would significantly reduce construction-related noise impacts by requiring equipment to be in proper working order, locating staging areas as far from adjacent residences as feasible, and prohibiting construction activities during the most noise-sensitive hours of the day. Further, the mitigation measures would ensure that the City has authority to implement additional hourly noise limits or other noise reduction measures to address nuisance noise. However, the mitigation measures would not reduce this impact to less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- MM NOI-1a** Construction contractors shall be required to ensure that construction equipment is well tuned and maintained according to the manufacturer's specifications, and that the equipment's standard noise reduction devices are in good working order.
- MM NOI-1b** Consistent with Suisun City Municipal Code Chapters 15.04 and 15.12, construction activities shall be limited as follows:
- For general construction activities, the operation of construction equipment and outdoor construction or repair work within 500 feet of any occupied residences shall be limited to the hours between 7:00 a.m. and 10:00 p.m., Monday through Saturday, and between 8:00 a.m. and 10:00 p.m. on Sundays. Given the particularly annoying nature of pile-driving noise, pile-driving activities (if required) shall be limited to between the hours of 8:00 a.m. and 7:00 p.m.
 - For all earthwork, trenching, and concrete or paving activities, construction activities shall be limited to the hours between 7:00 a.m. and 6:00 p.m., Monday through Friday, between 9:00 a.m. and 5:00 p.m. on Saturdays, and prohibited on Sundays (except use of water trucks for dust control, which may operate between 9:00 a.m. and 5:00 p.m.).
- MM NOI-1c** Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (according to the manufacturers' specifications) and by shrouding or shielding impact tools. All equipment shall have sound-control devices no less effective than those provided by the manufacturer.
- MM NOI-1d** Construction activities contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from adjacent residences. Activities within these staging areas shall conform to the time limitations established in Mitigation Measure NOI-1b.
- MM NOI-1e** To further address the nuisance impact of project construction, construction contractors shall implement the following:
- Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a day and evening contact number for the City in the event of problems.

- An onsite complaint and enforcement manager will be posted to respond to and track complaints and questions related to noise.

MM NOI-1f The Applicant shall incorporate into all contract specifications a provision that allows additional noise mitigation measures to be implemented during project construction at the discretion of the City. The need for additional adaptive management noise control measures may be triggered by noise complaints received by the City or concerns noted during site inspections conducted by the City. Additional adaptive management control measures could include the following:

- Further limitations on the hours during which construction activities could occur
- Changing the location of stationary construction equipment or staging areas
- Shutting off idling equipment
- Rescheduling construction activities
- Notifying adjacent residents in advance of construction work
- Installing acoustic barriers around stationary construction noise sources

MM NOI-1g If pile driving is required for building construction, construction contractors shall incorporate the following additional requirements:

- Wherever possible, sonic or vibratory pile drivers will be used instead of impact pile drivers (sonic pile drivers are only effective in certain soils).
- Engine and pneumatic exhaust controls on pile drivers will be required as necessary to ensure that exhaust noise from pile driver engines are minimized to the extent feasible.
- Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.
- Occupied residences within 500 feet of pile driving activities shall be notified of pile-driving activities at least 2 weeks prior to the commencement of pile driving.

Level of Significance After Mitigation

Significant unavoidable impact.

Groundborne Vibration

Impact NOI-2: Project construction and operational activities would not expose persons to excessive groundborne vibration.

Impact Analysis

This impact discussion analyzes the potential for short-term construction and long-term operational activities to excessive levels of groundborne vibration.

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The primary sources of vibration during construction would be from bulldozers, backhoes, crawler tractors, and scrapers. A vibratory roller would produce the greatest amount of vibration on the project site during typical construction activities, with a 0.210 PPV at 25 feet. If pile driving were required for building footings, these activities could produce a maximum 1.518 PPV at 25 feet. As noted under Impact NOI-1, the nearest sensitive receptors are the residences on the north side of Petersen Road. These residences were built in the 1980s, would be classified as “newer” residential structures, and, therefore, would have a continuous-vibration-exposure structural damage threshold of 0.5 PPV and an annoyance threshold of 0.1 PPV. The nearest construction activities would be approximately 100 feet from the residences. If required, the nearest pile-driving activities would be at a distance of 175 feet. Table 4.9-10 provides the estimated construction vibration levels at the residences.

Table 4.9-10: Estimated Maximum Construction Vibration Levels

Receptor	Distance From Nearest Construction Activity (feet)	Predicted Maximum Peak Particle Velocity (inches/second)	Significance Thresholds (inches/second)	
			Structural Damage	Annoyance
Residences on north side of Peterson Road	100 (175 for pile driving)	0.03 ¹ (0.08 for pile driving)	0.5	0.1
Notes: ¹ Predicted Maximum Peak Particle Velocity assumed a worst-case scenario of a vibratory roller operating at 100 feet from the nearest residence. Source: Michael Brandman Associates, 2007.				

As shown in the table, 0.03 PPV is the maximum vibration the residences would be expected to experience; although, if pile driving were required, the maximum vibration level would be increased to 0.08 PPV. These vibration levels are below both the 0.5 PPV structural damage and 0.1 PPV annoyance significance levels. Therefore, construction-related vibration from the proposed project would be less than significant.

Operational Vibration

Tractor-trailer movements to and from the Wal-Mart Supercenter loading docks would occur on Petersen Road. As such, the residences on the north side of Petersen Road are receptors of concern as they relate to operational vibration. A typical tractor-trailer would be expected to generate an average

vibration of 0.076 PPV at a distance of 25 feet. Because transient tractor-trailer movements are infrequent and intermittent vibration sources, they are subject to higher exposure thresholds. The residences have a transient vibration exposure structural damage threshold of 1.0 PPV and an annoyance threshold of 0.9 PPV. Table 4.9-11 provides the estimated maximum vibration levels the residences would experience from project-related truck movements.

Table 4.9-11: Estimated Maximum Operational Vibration Levels

Receptor	Distance From Nearest Truck Movement (feet)	Predicted Maximum Peak Particle Velocity (inches/second)	Significance Thresholds (inches/second)	
			Structural Damage	Annoyance
Residences on north side of Peterson Road	50	0.03	1.0	0.9
Notes: Predicted Maximum Peak Particle Velocity assumed a worst-case scenario of a tractor-trailer movement at 50 feet from the nearest residence. Source: Michael Brandman Associates, 2007.				

As shown in Table 4.9-11, 0.03 PPV is the maximum vibration the residences would be expected to experience from tractor-trailers serving the project site. This vibration level is below both the 1.0 PPV structural damage and 0.9 PPV annoyance significance levels. Therefore, the operational vibration from the proposed project would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Operational Noise - Stationary Sources

Impact NOI-3: Proposed onsite commercial uses would potentially result in operational noise impacts on neighboring residential areas.

Impact Analysis

During the long-term or operational phase of the proposed project, onsite activities would create potential noise impacts. The Wal-Mart Supercenter and the fuel station would be open 24 hours per day, 7 days per week. The sit-down restaurant would be expected to operate from 5 a.m. to 1 a.m. Stationary sources of noise would include noise from truck loading and unloading activities in delivery areas, truck movement on- and offsite, parking lot activities, outdoor garden center activities, and other noise-generating activities (e.g., heating, ventilation, and air conditioning [HVAC] equipment and trash compactor use). Below is a discussion of stationary noise impacts from each

source followed by a summary of the overall potential for operational noise impacts on adjacent residential areas. This analysis focuses largely on the residences north of Petersen Road, since they are closer to the site, and to loading/unloading and other heavy equipment use areas. Also, based on noise measurements and field observations, these residences experience a lower existing noise environment than residents south of the site and are more likely to be affected by project operations. Further, noise-generating activities associated with the restaurant and fuel station (e.g., deliveries, trash removal) would be masked and shielded from residences southwest of the site by traffic on SR-12 and the existing 6- to 10-foot masonry wall, respectively.

Loading/Unloading Activities and Outdoor Pallet/Bale Storage Areas

To assess loading dock activity and outdoor pallet/bale storage area noise impacts at the nearest noise-sensitive land uses (residences located north of the site and Petersen Road), reference noise levels of 80 L_{max} and 60 L_{eq} at a distance of 50 feet were used. Residential properties in the Quail Glen subdivision to the north would be entirely shielded from forklift and pallet/bale storage area noise by the proposed 8-foot-tall masonry wall; therefore, this analysis focuses on noise from loading dock areas. The data used in this analysis takes into account noise generated by truck arrivals and departures (including trucks with transportation refrigeration units [TRUs]) from the unloading areas located on the east and west sides of the proposed Wal-Mart Supercenter, trucks backing into the docks (including backup beepers), air brakes, idling and other related truck unloading noise (such as forklift activity, which is generally inside the trucks backed up to the loading dock and inside the store delivering the materials). The noise data are consistent with noise levels used to analyze noise impacts for other Wal-Mart Supercenters (Fairfield, Stockton, and Suisun, California)

The distance between the nearest backyard fence lines of residential properties in the Quail Glen subdivision to the north and the proposed truck unloading areas of the Wal-Mart Supercenter would be approximately 150 feet. At this distance, unmitigated loading dock area noise at the property lines would be approximately 51 L_{eq} and 71 L_{max} . The proposed 8-foot-tall masonry wall would shield those residences in the Quail Glen subdivision from much of the noise from loading/unloading activities. It is conservatively estimated that the proposed sound wall would achieve a minimum noise-level reduction of 5 dBA, thereby reducing noise levels to 46 L_{eq} and 66 L_{max} .

In order to assess compliance with the City of Suisun City's exterior noise level standards, the predicted loading/unloading noise levels were converted to a CNEL value. To calculate the CNEL associated with this noise source at the closest residences, it was estimated that the loading docks could be active for up to 24 hours per day. Therefore, the calculated CNEL at the closest residences from these activities would be roughly 53 dBA. When added to the existing measured noise levels, the resultant exterior noise level at the property line of residences north of Petersen Road would be 64 dBA CNEL, an increase of less than 1 dBA CNEL from existing measured levels. This level (53 dBA from project operations) would comply with the City of Suisun City exterior noise level standard of 65 dBA CNEL and would not cause a substantial (3-dBA) increase relative to existing conditions.

Truck Movements: Onsite and Offsite

Consistent with Noise Policy 3 (Commercial Vehicles), trucks making deliveries to the project site would primarily use SR-12 and Walters Road (a major arterial), thereby avoiding residential streets. Access for truck deliveries to the Wal-Mart Supercenter western loading dock and restaurant would be from an unsignalized, full-access point on Petersen Road. The northernmost right-in, right-out access point on Walters Road (north driveway) would provide primary access to the Wal-Mart Supercenter's eastern loading dock. Fuel and other delivery trucks accessing the fuel station would use the southernmost right in, right-out access point on Walters Road (south driveway).

A truck pass-by reflects the passing of a single truck—a single truck entering and leaving from the same direction—would generate two pass-by events. Truck pass-bys en route to loading dock areas are expected to be relatively brief and are estimated to produce an average Sound Exposure Level (SEL) of about 87 dBA at a distance of 50 feet. The typical L_{max} level that is due to a truck pass-by has been measured to be approximately 75 dBA at a distance of 50 feet. For this assessment, the nearest residential locations north of Petersen Road are about 125 feet away from onsite truck passage areas and as close as 60 feet from trucks accessing the site from Petersen Road. While the proposed 8-foot-tall masonry wall would reduce noise levels from onsite truck movements, the existing 6-foot-tall backyard fence on a 2-foot-tall berm would be the only shielding for residences from offsite truck pass-bys on Petersen Road.

The predicted L_{eq} at the nearest residences resulting from truck passages would depend on the number of hourly truck operations. Truck activity at the Wal-Mart Supercenter would include between five and seven daily tractor-trailer (18-wheeler) deliveries and between 10 and 12 smaller vendor truck deliveries per day, 5 days per week. Based on data collected at other Wal-Mart Supercenters, it is conservatively assumed that up to 10 truck pass-bys could occur during any given daytime hour, while not more than five per hour would be expected during nighttime hours. The number of truck deliveries associated with the restaurant and fuel station would be substantially lower than that of the proposed Wal-Mart Supercenter. The types of trucks making deliveries to these businesses are also likely to be smaller (aside from gasoline trucks) than those making deliveries to the Wal-Mart Supercenter. Truck delivery noise associated with the restaurant and fuel station would be masked and shielded from residences southwest of the site by traffic on SR-12 and by the existing 6- to 10-foot masonry wall, respectively. As such, truck delivery noise impacts related to the fuel station and restaurant are considered less than significant and are not discussed further herein. Assuming 50 percent of the Wal-Mart Supercenter truck pass-bys would be associated with each loading dock, residences north of Petersen Road could be exposed to potential onsite and offsite noise associated with up to five and three truck pass-bys during each daytime and nighttime hour, respectively.

Based on these projections, the worst-case unmitigated hourly L_{eq} from offsite truck pass-bys was computed at the nearest residential property lines 60 feet to the north, assuming a 4.5-dBA decrease for each doubling of distance from the source to be 57 and 55 dBA during daytime and nighttime hours, respectively. At a distance of 125 feet and assuming the proposed 8-foot-tall masonry wall

would afford a minimum 5-dBA reduction in noise, the worst-case hourly L_{eq} from onsite truck-pass-bys would be 47 and 45 dBA during daytime and nighttime hours, respectively.

In order to assess compliance with the City of Suisun City's exterior noise level standards, the predicted truck circulation noise levels must be converted to a CNEL value. To calculate the CNEL associated with this noise source at the closest residences, it was assumed that five truck pass-bys could occur during each daytime hour and three during each nighttime hour in proximity to the residences north of Petersen Road. Therefore, the calculated CNEL at the closest residences from these activities would be roughly 62 dBA. When added to the existing measured noise levels, the resultant exterior noise level at the property line of residences north of Petersen Road would be 66 dBA CNEL, a roughly 2-dBA CNEL increase from existing measured levels. This level (62 dBA from the trucks alone) would comply with the City of Suisun City exterior noise-level standard of 65 dBA CNEL and would not cause a substantial (3-dBA) increase relative to existing conditions. However, these truck movements would cause overall noise levels to exceed the City of Suisun City's exterior noise-level standard of 65 dBA CNEL; as such, this would be considered a significant impact of the project.

Parking Lot Activities

Parking lot noise consists of a variety of noise sources such as vehicle movement through the lot, vehicles starting, people conversing, car alarm systems, doors slamming, customers loading/unloading, among others. Noise in the main parking lot would largely be shielded from residences north of Petersen Road. The center of the westernmost parking lot for the proposed project is located roughly 200 feet from these residents. For the purposes of this analysis, this distance would be considered the focal point where parking activity noise is generated.

As a means of determining the noise levels caused by parking lot activities, noise level data collected at various other shopping center parking areas was used. A typical SEL caused by vehicle arrivals/departures, including doors slamming and people conversing is approximately 71 dBA at a distance of 50 feet. It is assumed that up to 12,000 vehicles would enter and leave the parking lot on a daily basis. For the purposes of this analysis, it was assumed that the parking lot activity would be spread evenly during all operating hours. Note that this is a conservative assumption, because the amount of parking lot activity occurring during nighttime noise-sensitive hours is likely well below that of daytime hours. Parking lot noise levels were calculated using the following formula:

$$\text{CNEL} = 71 + 10 \log (N_{eq}) - 49.4$$

where 71 is the mean SEL for an automobile operation, N_{eq} is the equivalent number of parking lot operations in a given 24-hour period (N_{eq} is estimated to be 13,857 for this project, assuming 25

percent of the parking lot activities would occur in the westernmost lot and after applying nighttime penalties)² and 49.4 is 10 times the logarithm of the number of seconds in a 24-hour period.

Using the data described above, the proposed parking lot would result in noise levels of approximately 63 dBA CNEL at a distance of 50 feet. At a distance of 200 feet from the center of the lot, the predicted noise levels would be 51 dBA CNEL. These noise levels do not take into account shielding from the building or from the 8-foot-tall masonry wall, as the line of sight of parking lot areas from all residences north of Petersen Road is not effectively blocked. When added to the existing measured noise levels, the resultant exterior noise level at the property line of residences north of Petersen Road would be 64 dBA CNEL, an increase of less than 1 dBA CNEL from existing measured levels. This level (51 dBA CNEL) would comply with the City of Suisun City exterior noise level standard of 65 dBA CNEL and would not cause a substantial (3-dBA) increase relative to existing conditions.

Outdoor Garden/Seasonal Center Activities

Outdoor garden areas of Wal-Mart Supercenter stores typically have speakers similar to those inside the store that are used to page store personnel. The noise generation of these public address (PA) systems is dependent on many variables (e.g., number of speakers, amplifier settings, speaker locations and direction, frequency of use). For this analysis, it was assumed that a desired maximum level of 75 dBA at the outdoor garden/seasonal center and bagged goods area (10 dBA over normal conversational levels for speech intelligibility) would be desired, and that the distance between the shoppers and the speakers would be approximately 20 to 30 feet. The outdoor garden/seasonal area would be about 200 feet from residents north of Petersen Road. The reference levels would be attenuated to approximately 55 to 60 L_{max} by distance alone. By also considering the directionality of the speakers, shielding provided by the Wal-Mart building itself, and the proposed 8-foot-tall masonry wall, the noise levels would drop to below 50 dBA at the residences 200 feet to the north, across Petersen Road. Use of the PA system would be limited and would not be expected to cause noise levels that would cause an exceedance of City of Suisun City exterior noise level standards or cause a substantial (3-dBA) increase relative to existing conditions.

Heating, Ventilation, and Air Conditioning and Cold Food Storage Units

The HVAC system for the proposed Wal-Mart Supercenter store would likely consist of packaged rooftop air conditioning systems. No final design is available at this time for the type, number, and location of the rooftop mechanical units. The inclusion of rooftop parapets is also unknown, but it is assumed that the edge of the building roof would provide a certain degree of shielding and noise reduction. Rooftop HVAC units typically generate noise levels of approximately 55 dBA at a reference distance of 100 feet from the operating units during maximum heating or air conditioning operations. The minimum distance between the residences north of the site and the Wal-Mart

² The L_{eq} applies a penalty of 3 times the number of operations that occur during the evening period (7:00 p.m. to 10:00 p.m.) and 10 times the number of operations that occur during the nighttime period (10:00 p.m. to 7:00 a.m.).

Supercenter building is about 175 feet. Therefore, with the attenuation of noise by distance and partial shielding by the building itself (5 dBA), noise levels attributable to the HVAC system would be 45 dBA. Assuming continuous operation over a 24-hour period, the predicted noise levels would be 52 dBA CNEL. When added to the existing measured noise levels, the resultant exterior noise level at the property line of residences north of Petersen Road would be 64 dBA CNEL, an increase of less than 1 dBA CNEL relative to existing measured levels. This level (52 dBA CNEL) would comply with the City of Suisun City exterior noise level standard of 65 dBA CNEL and would not cause a substantial (3-dBA) increase relative to existing conditions.

Noise levels from cold food storage units at a Wal-Mart Supercenter facility similar to the proposed project were measured and found to be 66 L_{eq} at 50 feet. No final design is available at this time for the type, number, and location (ground level or rooftop) of the cold food storage units. The minimum distance between the residences north of the site and the Wal-Mart Supercenter building is about 175 feet. The inclusion of rooftop parapets is also unknown, but it is assumed that the edge of the building roof or the proposed 8-foot-tall masonry wall would provide a certain degree of shielding and noise reduction. Therefore, with the attenuation of noise by distance and at least partial shielding by either the building itself or the 8-foot-tall wall (5 dBA), noise levels attributable to cold food storage units would be approximately 50 dBA. Assuming constant operation over a 24-hour period, the predicted noise levels would be 57 dBA CNEL. When added to the existing measured noise levels, the resultant exterior noise level would be 65 dBA CNEL, a roughly 1-dBA CNEL increase over existing measured levels. This level (57 dBA CNEL) would comply with the City of Suisun City exterior noise level standard of 65 dBA CNEL and would not cause a substantial (3-dBA) increase relative to existing conditions.

Site Maintenance

Maintenance activities associated with project-related parking and landscaped areas could include the use of parking lot sweepers and leaf blowers. Leaf blower noise levels have been measured to be in the range of 69 to 81 dBA at a distance of 50 feet from the operator. At a distance of 125 feet from residents north of Petersen Road, the reference levels would be attenuated to approximately 61 to 73 dBA by distance alone; the 8-foot wall would further reduce these levels to no more than 56 to 68 dBA at any time, when the leaf blowers are at the closest location to the residences north of Petersen Road. Use of parking lot sweepers and leaf blowers would be limited and would not be expected to contribute to the noise environment such that the overall CNEL noise level at the property line of residences north of Petersen Road would exceed City of Suisun City exterior noise level standards (65 dBA CNEL) or cause a substantial (3-dBA) increase relative to existing conditions. However, noise at these levels would be significantly above measured noise levels, particularly during nighttime hours.

Trash Compactor/Garbage Areas

Most Wal-Mart Supercenter stores use trash compactors. The proposed location of trash areas is unknown at this time, though for most Wal-Mart Supercenter stores, they are typically located in

loading dock areas. The loading dock areas used to evaluate the potential for trash compactor noise impacts are located as close as they could be to offsite residences, so the analysis herein reflects the worst-case scenario. Trash compactor noise was measured at another Wal-Mart Supercenter, and both the L_{eq} and L_{max} were 57 dBA at 50 feet. It is assumed that two trash compactors would be located at the loading docks on the east and west sides of the proposed Wal-Mart Supercenter (one at each loading dock). At a distance of 175 feet, the minimum distance between the truck loading bays and residences to the north, the predicted unmitigated noise levels would be 46 dBA by distance alone and would further be attenuated by the 8-foot wall, resulting in a noise level of approximately 41 dBA at the nearest residences north of Petersen Road. Trash-compactor removal activities would be limited and would not be expected to cause noise levels that would exceed City of Suisun City exterior noise level standards or cause a substantial (3-dBA) increase relative to existing conditions.

Summary and Combined Effects of Stationary Noise Sources

Noise from individual stationary sources of noise is discussed above. Individually, these sources, aside from truck delivery activities, would not cause a significant increase in noise at nearby residences. It is anticipated, however, that their combined operation could cause unmitigated noise levels to increase to 67 dBA CNEL, an increase of 3 dBA over existing conditions, an exceedance of the City's recommended 65 dBA CNEL exterior noise level standard, and at a level inconsistent with Noise Policy 4 (Protection of Residential Land Use from Non-Residential Sources) of the City of Suisun City General Plan. While mitigation that would limit nighttime noise-generating activities and more effectively shield offsite residences from onsite stationary noise sources would be required, the potential still remains for noise from stationary noise sources, particularly when combined with project-related traffic (discussed below in Impact NOI-4) at the property line of residences north of Petersen Road, to exceed the City's exterior noise level standards and to increase by 3 dBA over existing conditions. Therefore, even with the mitigation measures proposed, this would be significant unavoidable impact of the proposed project.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- MM NOI-3a** The following activities shall be prohibited between the hours of 10:00 p.m. and 7:00 a.m.:
- Use of loudspeaker or loudspeaker systems in outdoor garden/seasonal center and other areas
- MM NOI-3b** The following activities shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m.:
- Garbage/recycling removal activities

- Use of parking lot sweeping units (e.g., air system sweeping devices, truck-mounted parking lot sweeping devices, or similar devices) and landscape equipment (e.g., leaf blowers).

MM NOI-3c The project applicant shall incorporate the following design features into the final site plans:

- Building equipment (e.g., HVAC units and cold food storage units) shall be located away from nearby residences and properly shielded by either a rooftop parapet or other enclosure that effectively blocks the line of sight of the source from nearby residences.
- Wing-walls around truck wells and rubberized gaskets at loading bays shall be implemented at the primary loading docks of each building.
- Any outdoor loudspeaker system speakers shall be directed away from residences. Speaker volumes shall be adjusted to minimize noise at nearby residences.

MM NOI-3d The project applicant shall minimize truck delivery noise to the Wal-Mart Supercenter western loading dock either by limiting deliveries to the hours between 7:00 a.m. and 10:00 p.m. or by limiting nighttime truck access (ingress and egress) to the northernmost access point on Walters Road (north driveway).

MM NOI-3e Consistent with Mitigation Measure AIR-9, signage shall be posted informing truck drivers of California Air Resources Board (CARB) regulations, including requirements related to shutting off truck engines when not in use, the 5-minute limitation on idling, and the limitation on TRU operations to no more than 120 minutes within loading dock areas or elsewhere on the project site.

MM NOI-3f Following grading and site work and prior to construction of onsite buildings, the project applicant shall construct the proposed 8-foot-tall masonry wall along the northern portion of the property that would extend roughly the length of the proposed Wal-Mart Supercenter building. The wall shall be constructed of solid material and be of sufficient density to minimize noise transmission. For maximum effectiveness, the wall must be continuous and relatively airtight along its length and height. The final design/specifications shall be developed in consultation with a qualified noise professional.

Level of Significance After Mitigation

Significant unavoidable impact.

Operational Noise - Vehicular Sources

Impact NOI-4: Project-related vehicle traffic would not substantially increase roadside noise levels in the project vicinity under near-term (2008) or long-term (2030) conditions.

Impact Analysis

This impact assesses impacts on nearby land uses from vehicular trips associated with project operations. Impacts were modeled under Year 2008 and Year 2030 conditions and are based upon the traffic conditions identified in the Draft Transportation, Circulation, and Parking Impact Study, prepared by Kimley-Horn and Associates, Inc., dated November 2006; and on revised Year 2008 traffic volumes from the updated traffic study completed in June 2007 for the proposed project³.

Year 2008

Based on the traffic analysis prepared for this EIR, the proposed project would be expected to generate up to 507 additional weekday morning (AM) and 925 afternoon (PM) peak-hour vehicle trips. These additional trips would be distributed over the local street network and could affect roadside noise levels.

To assess the impact of project traffic on roadside noise levels, noise level predictions were made using the FHWA noise prediction model for those roadway segments most affected by project-related traffic. Table 4.9-12 shows traffic-noise modeling results (using traffic estimates prepared for this project) for the receptors located adjacent to these roadway segments. The modeled results reflect noise levels at a distance of 50 feet from the roadway centerline, except in the case of Air Base Parkway and SR-12, where the noise levels reflect a distance of 100 feet from the roadway centerline. The model is based on the Calveno reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volumes, speed, roadway configuration, and the acoustical characteristics of the site.

Table 4.9-12: Existing and Year 2008 Traffic-Related Noise Levels

Roadway Segment	Modeled PM Peak-Hour Noise Levels, dBA, $L_{eq}^{1,2}$				
	Existing	Year 2008		Project-Related Increase ³	Significant? ⁴
		Without Project	With Project		
Air Base Parkway (west of Walters Road)	69.2	71.8	71.8	0.0	No
Air Base Parkway (east of Walters Road)	69.6	72.6	72.8	0.2	No
Bella Vista Drive (between Langley Way and Walters Road)	59.4	60.3	60.4	0.1	No

³ The final, updated traffic report prepared in June 2007 had slightly lower PM peak-hour vehicle trips (877 vs. 925) than the levels included in the November 2006 report that are considered in this impact analysis. Thus, the noise levels in this analysis are conservative and slightly overstate the likely noise impacts of the traffic increases.

Table 4.9-12 (Cont.): Existing and Year 2008 Traffic-Related Noise Levels

Roadway Segment	Modeled PM Peak-Hour Noise Levels, dBA, L _{eq} ^{1,2}				
	Existing	Year 2008		Project-Related Increase ³	Significant? ⁴
		Without Project	With Project		
Bella Vista Drive (between Walters Road and Charleston Street)	59.1	61.7	61.5	-0.1	No
Fulmar Drive (between Petersen Road and Swift Court)	52.4	52.4	57.2	4.8	No
Lawler Ranch Parkway (between SR-12 and Anderson Drive)	59.6	60.0	60.4	0.4	No
Marina Boulevard (between SR-12 and Lotz Way)	63.1	64.7	64.7	0.1	No
Marina Boulevard (between Pintail Drive and SR-12)	59.5	61.9	62.1	0.3	No
Petersen Road (between Fulmar Drive and Walters Road)	57.9	57.9	59.9	2.0	No
SR-12 (between Emperor Drive and Woodlark Drive)	69.9	71.5	71.8	0.3	No
SR-12 (between Woodlark Drive and Walters Road)	69.7	71.4	71.7	0.3	No
SR-12 (east of Walters Road)	67.7	68.3	68.4	0.1	No
Tabor Avenue (east of Walters Road)	52.3	62.7	63.0	0.4	No
Walters Road (between Potrero Circle and SR-12)	64.0	64.1	64.6	0.5	No
Walters Road (between Petersen Road and Montebello Drive)	70.1	72.5	73.1	0.6	No
Walters Road (between Montebello Drive and Pintail Drive)	69.8	72.3	72.8	0.5	No
Walters Road (between Pintail Drive and Bella Vista Drive)	69.9	72.3	72.8	0.5	No
Walters Road (between Bella Vista Drive and Tabor Avenue)	70.3	72.6	73.1	0.5	No
Walters Road (between Tabor Avenue and Air Base Parkway)	71.2	73.2	73.6	0.3	No

Notes:

¹ Traffic noise levels were predicted using the FHWA roadway noise prediction model (FHWA-RD-77-108) based on traffic data obtained from the traffic analysis prepared for this project (Kimley-Horn and Associates, Inc. 2006 and 2007). Predicted noise levels assume no natural or man-made shielding (e.g., vegetation, berms, walls, buildings).

² Distance from centerline of road is 15 meters (approximately 50 feet) for all modeled roadways, except Air Base Parkway and SR-12, where the distance from the centerline of the road is 30 meters (approximately 100 feet).

³ Numbers may not sum because of rounding.

⁴ Considered significant if the incremental increase in noise is greater than 5 dBA L_{eq} in a noise environment of 60 dBA CNEL or less or an increase of 3 dBA L_{eq} in a noise environment greater than 60 dBA CNEL.

Source: Michael Brandman Associates, 2007.

As shown in Table 4.9-12, the proposed project would not substantially increase roadside noise levels along these segments. The greatest increase in noise levels when comparing the Without Project scenario to the With Project scenario would be along Fulmar Drive north of Petersen Road, where the proposed project would result in a 4.8-dBA increase in afternoon peak-hour noise levels. While this increase would be perceptible, the resultant noise level would be below 60 dBA and would not exceed 5 dBA, the level needed to trigger a significant impact. Noise levels along other roadway segments affected by the project would increase by less than 3 dBA and would not be considered significant.

Year 2030

The Year 2030 vehicular noise impact analysis includes trips from the proposed project and from other pending and approved projects in the region. These projects are listed in Table 6-1 in Section 6, Other CEQA Considerations, of this EIR. To assess the effect of project traffic on roadside noise levels for the year 2030, noise level projects were made using the FHWA noise prediction model. Modeling results are shown in Table 4.9-13. The modeled results reflect noise levels at a distance of 50 feet from the roadway centerline, except in the case of Air Base Parkway and SR-12, where the noise levels reflect a distance of 100 feet from the roadway centerline.

Table 4.9-13: Year 2030 Traffic-Related Noise Levels

Roadway Segment	Modeled PM Peak-Hour Noise Levels, dBA, $L_{eq}^{1,2}$			
	Year 2030		Project-Related Increase ³	Significant? ⁴
	Without Project	With Project		
Air Base Parkway (west of Walters Road)	72.3	72.3	0.0	No
Air Base Parkway (east of Walters Road)	72.7	73.0	0.2	No
Bella Vista Drive (between Langley Way and Walters Road)	62.9	63.1	0.2	No
Bella Vista Drive (between Walters Road and Charleston Street)	62.2	62.4	0.2	No
Fulmar Drive (between Petersen Road and Swift Court)	52.6	57.4	4.8	No
Lawler Ranch Parkway (between SR-12 and Anderson Drive)	63.1	63.3	0.2	No
Marina Boulevard (between SR-12 and Lotz Way)	66.2	66.2	0.0	No
Marina Boulevard (between Pintail Drive and SR-12)	62.3	62.6	0.2	No
Petersen Road (between Fulmar Drive and Walters Road)	58.1	60.4	2.2	No
SR-12 (between Emperor Drive and Woodlark Drive)	73.1	73.3	0.2	No

Table 4.9-13 (Cont.): Year 2030 Traffic-Related Noise Levels

Roadway Segment	Modeled PM Peak-Hour Noise Levels, dBA, $L_{eq}^{1,2}$			
	Year 2030		Project-Related Increase ³	Significant? ⁴
	Without Project	With Project		
SR-12 (between Woodlark Drive and Walters Road)	73.1	73.4	0.2	No
SR-12 (east of Walters Road)	70.7	70.8	0.0	No
Tabor Avenue (east of Walters Road)	65.0	65.3	0.2	No
Walters Road (between Potrero Circle and SR-12)	67.5	67.8	0.3	No
Walters Road (between Petersen Road and Montebello Drive)	72.8	73.5	0.7	No
Walters Road (between Montebello Drive and Pintail Drive)	72.7	73.4	0.7	No
Walters Road (between Pintail Drive and Bella Vista Drive)	72.9	73.5	0.6	No
Walters Road (between Bella Vista Drive and Tabor Avenue)	73.1	73.7	0.5	No
Walters Road (between Tabor Avenue and Air Base Parkway)	74.3	74.7	0.4	No
Notes:				
¹ Traffic noise levels were predicted using the FHWA roadway noise prediction model (FHWA-RD-77-108) based on traffic data obtained from the traffic analysis prepared for this project (Kimley-Horn and Associates, Inc. 2006 and 2007). Predicted noise levels assume no natural or man-made shielding (e.g., vegetation, berms, walls, buildings).				
² Distance from centerline of road is 15 meters (approximately 50 feet) for all modeled roadways, except Air Base Parkway and SR-12 where the distance from the centerline of the road is 30 meters (approximately 100 feet).				
³ Numbers may not sum due to rounding.				
⁴ Considered significant if the incremental increase in noise is greater than 5 dBA L_{eq} in a noise environment of 60 dBA CNEL or less or an increase of 3 dBA L_{eq} in a noise environment greater than 60 dBA CNEL.				
Source: Michael Brandman Associates, 2007.				

As shown in Table 4.9-13, the proposed project would not substantially increase roadside noise levels along these segments when considered in combination with past, current, and probable future projects. The greatest increase in noise levels when comparing the Without Project scenario to the With Project scenario would be along Fulmar Drive north of Petersen Road, where the proposed project would result in a 4.8-dBA increase in PM peak-hour noise levels. While this increase could be perceptible, the resultant noise level would be below 60 dBA and would not exceed 5 dBA, the level needed to trigger a significant impact. Noise levels along other roadway segments affected by the project would increase by less than 3 dBA and would not be considered significant.

Summary of Impacts

Under both Year 2008 and Year 2030 conditions, traffic generated by the proposed project would not exceed the 5-dBA incremental increase threshold or the 3-dBA threshold in locations where it would

apply. However, Petersen Road already experiences a project impact from stationary sources (discussed above in Impact NOI-3), and the contribution of additional traffic on Petersen Road would exacerbate that condition. On Petersen Road, project-related traffic alone would not meet or exceed the thresholds of significance, but the project would contribute additional noise to a significant and unavoidable impact already identified. Therefore, the proposed project's project-related traffic contribution would also be considered significant and unavoidable. Mitigation is proposed that would reduce vehicular noise impacts on surrounding land uses; however, they would not fully reduce vehicular noise to acceptable levels. Therefore, this would be a significant unavoidable impact of the proposed project.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM NOI-4 The project applicant shall offer to replace the wood portion of the existing 6-foot-high wooden fence on top of a 2-foot tall earthen berm, with a 6-foot-high solid masonry wall for residences located between Fulmar Drive and Walters Road. If accepted by affected residences, prior to grading and site work, the project applicant shall construct the replacement masonry wall along the north side of Petersen Road so that it would extend from Fulmar Drive to Walters Road. The wall shall be constructed of solid material and shall be of sufficient density to minimize noise transmission. For maximum effectiveness, the wall must be continuous and relatively airtight along its length and height. The final design and specifications shall be developed in consultation with a qualified noise professional.

Level of Significance After Mitigation

Significant unavoidable impact.

Aviation Noise

Impact NOI-5: The proposed project would not expose employees or customers to excessive levels of aviation noise from Travis Air Force Base.

Impact Analysis

Travis Air Force Base Land Use Compatibility Plan Figure 2B indicates that the project site is within a 65-CNEL dBA aviation noise contour. As shown in Table 4.9-6, the proposed project's retail uses would be considered "marginally acceptable." The Travis Air Force Base Land Use Compatibility Plan defines land uses that are "marginally acceptable" within a 65-CNEL dBA contour as those with minimal outdoor activities and which implement construction features that provide sufficient noise attenuation (e.g., air conditioning so that windows can be kept closed). The proposed project consists of a Wal-Mart Supercenter, a sit-down restaurant, and a gas station with a convenience store. All buildings would contain climate control systems and sealed windows. Employees of these uses would work primarily inside the buildings and would work outside infrequently or for small periods.

The Wal-Mart Supercenter garden center would be partially enclosed; a portion of it would be outdoors. Employees working within the garden center area would be inside most of the time and would have limited exposure to noise from aircraft overflights. Customers of the Wal-Mart Supercenter and sit-down restaurant would spend most of their time inside each respective building. Customers of the gas station would fill up their vehicles outdoors; however, the typical customer would be onsite for an average of 5 to 10 minutes, which would not constitute a significant amount of outdoor activity. In addition, roadway noise from Walters Road and SR-12 likely would mask aviation noise at the gas station.

Conventional building practices provide significant exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides a minimum exterior-to-interior noise reduction of 25 dBA with its windows closed, whereas a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate glass windows of 0.25-inch thickness typically provides an exterior-to-interior noise reduction of 30–40 dBA with its windows closed.

Therefore, the proposed project would be consistent with the noise standards of the “marginally acceptable” designation and, as such, with Noise Policy 1 (Travis Air Force Base Plan) of the City of Suisun City General Plan; employees and workers would not be exposed to excessive levels of aviation noise. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

4.10 - Public Services and Utilities

4.10.1 - Introduction

This section describes the existing public services and utilities setting and potential effects from project implementation on the site and its surrounding area. Descriptions of services provided and analysis in this section are based on the City of Suisun City General Plan, dated May 1992; the Solano County Water Agency Briefing Book, dated January 2002; the Suisun Solano Water Authority Urban Water Management Plan, dated October 2006; and responses to questionnaires sent to each public service and utility provider by Michael Brandman Associates. The questionnaire responses are included in this EIR as Appendix I. Information for the water supply analysis was also obtained from the Gentry-Suisun Project Second Partially Recirculated Draft EIR, dated August 2007.

4.10.2 - Environmental Setting

Fire Protection

The Suisun City Fire Department (Fire Department) provides fire protection to Suisun City. The Fire Department currently has one station that also serves as headquarters, located at 621 Pintail Drive, approximately 1.4 miles from the project site. The Fire Department provides fire protection and emergency services, including fire suppression, medical response, and response to natural and human-caused disasters.

Staffing and Equipment

The Fire Department is currently staffed with one paid fire chief and two paid station captains. The remaining staff are volunteers consisting of a deputy fire chief, two battalion chiefs, six captains, three lieutenants, and approximately 35 firefighters. Paid staff and volunteers keep a minimum single engine company, with three staffed positions, on duty 24 hours a day, 7 days a week.

Equipment currently consists of three Type 1 engines, one Type 3 ladder truck (a 65-foot water tower, not a true ladder), one Type 3 quick attack engine, two command vehicles, one Type 3 wildland brush engine, one Type 4 grass patrol, and a utility vehicle. All equipment is housed at the fire station.

Response Times

The Fire Department's goal is 5 minutes or less for 90 percent of responses inside city limits. In 2005, the Department responded to 1,652 responses inside city limits and 44 responses outside city limits, totaling 1,696 responses. In 2005, the Fire Department achieved a response time of 5 minutes or less, 79 percent of the time, for responses inside city limits.

The Fire Department divides the City into nine zones with one additional zone (Zone 101) to represent calls from outside city limits. The project site is located in Zone 5. In 2005, the average response time in Zone 5 was 4.43 minutes.

The Fire Department is planning to develop two new fire stations and add full-time personnel to staff two engine companies over the next 10 to 15 years.

Police Protection

The Suisun City Police Department (Police Department) provides police protection to Suisun City. The Police Department is headquartered at 701 Civic Center Boulevard in Suisun City, and is approximately 3.7 miles from the project site. The Police Department also operates a substation in Petersen Ranch in the northern part of the City.

Staffing

Police Department staffing consists of 24 sworn officers: one chief of police, one lieutenant, one civilian administrator, four sergeants, and 18 officers. The ratio of sworn officers to population is approximately one officer for every 1,167 residents. Additionally, there are six communication technicians and three community service officers.

Programs in the department include youth services division, school resource officer, investigations unit, traffic unit, code enforcement officer, and a crime prevention specialist.

The Police Department also has a Boating Enforcement Unit that consists of two boats and two personal watercraft. The Boating Enforcement Unit patrols the waterways within the City of Suisun City and nearby waterways in unincorporated Solano County, pursuant to an agreement with Solano County Sheriff's Office and the United States Coast Guard.

The Solano County Sheriff's Office provides additional support services to the City under a Memorandum of Understanding.

Response Times

The Police Department's goal is to respond to priority-one calls in less than 3 minutes. Average response times for priority-one calls for service averaged approximately 2.5 minutes during the first six months of 2006. The average response time for non-emergency calls was approximately 21 minutes.

Potable Water

The Suisun-Solano Water Authority (SSWA) manages water supply and distribution within Suisun City. SSWA is a joint powers authority between the City of Suisun City and the Solano Irrigation District (SID). Both Suisun City and the SID contract with the Solano County Water Agency for water supplies from the federal Solano Project. Solano County Water Agency is the contracting agency with the United States Bureau of Reclamation for water supplies from the Solano Project. Suisun City has entitlements to water from the State Water Project.

Water Supply

SSWA's two sources of available water supply are the Solano Project and the State Water Project. Suisun City's entitlements from each source are summarized in Table 4.10-1 and Table 4.10-2. Each source is discussed in greater detail below.

Table 4.10-1: Solano Project Entitlements

Agency	Annual Entitlement (acre-feet)
Suisun City	1,600
Solano Irrigation District	141,000
Source: City of Suisun City, 2007.	

Table 4.10-2: State Water Project Entitlement

Agency	Annual Entitlement (acre-feet)				
	2000	2005	2010	2015	2020
Suisun City	550	800	1,050	1,300	1,300
Source: City of Suisun City, 2007.					

Solano Project

The Solano Project was created in the 1940s and 1950s and is the main water supply to the SSWA. The Solano Project watershed includes 576 square miles above Monticello Dam, and the Lake Berryessa reservoir provides a storage capacity of 1,602,000 acre-feet. The average annual inflow from Putah Creek is estimated at 360,000 acre-feet. The inflow over the period of record has varied from a maximum of 1,140,000 acre-feet in 1983 to a minimum of 35,000 acre-feet in 1941. The Lake Berryessa storage capacity allows Solano Project water users the ability to store and carry over 440 percent of the Solano Project’s average annual yield. With a 1,602,000 acre-foot reservoir, a pre-project operation study estimated the safe annual yield at 262,000 acre-feet. The annual contractual entitlements of Solano Project water users are 207,350 acre-feet. The remaining inflow covers the reservoir evaporation losses and downstream flow requirements. During a normal rainfall year, defined as a year when the average annual runoff for the Solano Project is available, the SSWA would be able to meet its demands using water allocations mentioned above. During drought years 1987 to 1992, the cumulative Putah Creek runoff to Lake Berryessa was approximately 800,000 acre-feet. Table 4.10-3 summarizes the historic water Solano Project deliveries to City of Suisun City and SID. As shown in the table, the Solano Project has typically been able to deliver the full amount of Suisun City’s entitlement.

Table 4.10-3: Historic Solano Project Water Supply Deliveries (Acre-Feet)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Suisun City	1,600	1,600	1,256	1,600	1,436	1,600	1,600	1,600	1,600	1,600	1,600	1,600
SID-Suisun	1,863	1,318	2,003	1,768	2,393	2,261	2,573	2,748	2,425	2,846	2,779	3,159
Total	3,463	2,918	3,259	3,368	3,829	3,861	4,173	4,384	4,025	4,446	4,379	4,759
Source: City of Suisun City, 2007.												

Solano Project Facilities

Water is conveyed from Lake Berryessa down Putah Creek from Monticello Dam and re-captured by Putah Diversion Dam, approximately 13 miles downstream. The water is diverted through the Putah South Canal to the Cement Hill Water Treatment Plant, where the water is treated and piped to Suisun City through Tolenas. Monticello Dam has a storage capacity of approximately 1.6 million acre-feet of water; Lake Solano, impounded by Putah Diversion Dam, can store a maximum of 750 acre-feet. The Putah South Canal, 33 miles in length, winds its way from Lake Solano south through Fairfield and west toward Cordelia. The canal has a maximum capacity of 956 cubic feet per second.

Solano Project Reliability and Quality

The reliability of Solano Project water is determined by calculating the firm yield. The firm yield is an engineering calculation based on providing a specified water amount (the firm yield) every year during the driest hydrologic period on record. For the Solano Project, the driest hydrologic period on record was from 1916 to 1934. This is a conservative method of determining a water supply from a reservoir and results in a very dependable water supply. The main factor affecting Solano Project reliability is the frequency of long droughts, which could result in major drawdown of Lake Berryessa. In the event of drawdown, the Solano Project participating agencies (cities and districts that contract with SCWA) have entered into a separate agreement to reduce deliveries based upon storage levels in Lake Berryessa. Solano Project water requires very little treatment to provide safe, palatable water.

Putah Creek Accord

Water flows in Putah Creek are governed by the Putah Creek Accord, which was created in 2000 to resolve long-standing differences over flow levels in the waterway. Ten agencies, including the City of Suisun City, are party to the Putah Creek Accord. The parties agreed that a maximum of 248,000 acre-feet per year could be diverted from Putah Creek by Solano Project water users from the Solano Project for beneficial use. Under the Putah Creek Accord, all parties agreed to the establishment of the minimum Solano Project releases and minimum instream flows for Putah Creek downstream of the Putah Diversion Dam (Lower Putah Creek). The parties also established management measures for the benefit of fish and riparian habitat in and adjacent to the creek.

The instantaneous releases at the Putah Diversion Dam are required to be equal to or exceed 90 percent of the applicable mean daily release requirement, shown in Table 4.10-4. The above release schedule is required to maintain, or exceed, the flows shown in Table 4.10-5 in Lower Putah Creek. The instantaneous flow, as measured near the Interstate 80 bridge over Putah Creek, is required to equal, or exceed, 90 percent of the applicable mean daily flow at all times. During years when total storage in Lake Berryessa is less-than 750,000 acre-feet as of April 1, the release and instream flow requirements shown in Table 4.10-4 and Table 4.10-5 are superseded by drought year flows, as shown in Table 4.10-6.

Table 4.10-4: Required Mean Daily Release

Mean Daily Release (Cubic Feet Per Second)											
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
20	25	25	25	16	26	46	43	43	43	34	20

Source: City of Suisun City, 2007.

Table 4.10-5: Required Mean Daily Flow

Mean Daily Flow (Cubic Feet Per Second)											
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
5	10	10	15	15	25	30	20	15	15	10	2

Source: City of Suisun City, 2007.

Table 4.10-6: Required Drought Year Flow

Mean Daily Release (Cubic Feet Per Second)											
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
15	25	25	25	16	26	46	33	33	33	26	15

Source: City of Suisun City, 2007.

State Water Project

The State Water Project exports water from Northern California to parts of the San Francisco Bay Area, San Joaquin Valley, and Southern California. Along with the Federal Central Valley Project, the State Water Project is a major water supplier in California. The State Water Project contracts with 29 public agencies for water supplies, including the Solano County Water Agency. The State Water Project has storage from Oroville Reservoir; however, most of the supply comes from Sacramento Valley runoff.

Currently, Suisun City does not use water from the North Bay Aqueduct because the SSWA lacks conveyance and treatment facilities to utilize North Bay Aqueduct water. However, Suisun City does have the opportunity to transfer or exchange its State Water Project entitlement with other Solano County water users with access to the North Bay Aqueduct during periods of water shortage.

State Water Project Facilities

The North Bay Aqueduct is part of the State Water Project, which exports water from Northern California to parts of the San Francisco Bay Area, the San Joaquin Valley, and Southern California. The North Bay Aqueduct is an underground pipeline that runs from Barker Slough in the Delta to Cordelia Forebay, just outside of Vallejo. From the Cordelia Forebay, water is pumped to Napa

County, Vallejo, and Benicia. Other major facilities of the State Water Project are the Banks Pumping Station in the South Delta, the California Aqueduct, Lake Oroville, and the San Luis Reservoir located south of the Delta.

State Water Project Reliability

The reliability of the State Water Project is not as good as was first anticipated. Additional dams and reservoirs were to be built to meet the ultimate contractual demands of 4.2 million acre-feet per year. Currently, the State Water Project has a firm yield of less than 2.3 million acre-feet per year, meaning that in dry years and even in some normal years, it would not be able to deliver its full contractual amount. For example, in 1991 and 1992, supplies for urban contractors were reduced to 30 percent and 45 percent of contracted supply, respectively. In 2001, supplies were curtailed to 39 percent of contracted supply. Concerning water quality, the Delta water from the North Bay Aqueduct is of lesser quality and requires more treatment than water from the Solano Project.

Demand

Current Demand

The City of Suisun City's annual water consumption between 1999 and 2002 is summarized in Table 4.10-7. Based on the supply figures shown in Table 4.10-3, adequate water supplies are available to meet existing demand.

Table 4.10-7: Suisun City Annual Water Consumption 1999–2002

Source	1999	2000	2001	2002
Solano Project ¹	1,763	1,689	1,600	1,584
Suisun-Solano Water Authority	2,412	2,690	3,159	3,236
State Water Project (North Bay Aqueduct)	—	—	—	—
Total	4,175	4,379	4,759	4,820
Notes: ¹ Based on project year March–February. Includes carry-over, if available; therefore, may exceed contract amount. Source: Solano County Water Agency, 2004.				

Water Balance

Pursuant to the State Urban Water Management Planning Act, SSWA prepared and adopted an Urban Water Management Plan in October 2006. The Urban Water Management Plan provides water consumption estimates by customer type through 2030. Overall water consumption is expected to increase 33 percent between 2005 and 2030. SSWA's past and projected water use is shown in Table 4.10-8. As shown in the table, Suisun City is projected to demand 6,700 acre-feet of water in 2030.

Table 4.10-8: Past and Projected Use by Customer Type

Land Use	Historic and Projected Use (Acre-Feet Per Year)						
	2000	2005	2010	2015	2020	2025	2030
Single-family	2,239	3,131	3,500	3,642	3,753	3,868	3,993
Multi-family	383	311	347	359	367	376	387
Commercial industrial and institutional	146	175	208	253	266	276	275
Landscape irrigation	242	391	481	599	635	664	664
Other (hydrants)	—	9	11	14	15	16	16
Lost water*	N/A	1,024	1,162	1,237	1,287	1,329	1,365
Total	3,010	5,041	5,709	6,104	6,323	6,529	6,700
Notes: * Lost water is water that is unaccounted for and represents the difference between water production and water consumption. Source: Solano County Water Agency, 2004.							

The City’s existing and planned sources of water are shown below in Table 4.10-9. The Suisun-Solano Water Authority provides additional water to Suisun City on an as-needed basis from the Solano Irrigation District’s Solano Project allotment. The supply figures in Table 4.10-9 represent reliable long-term water available to SSWA.

Table 4.10-9: Existing and Planned Sources of Water

Supply Source	Current and Planned Water Supplies (acre-feet per year)					
	2005	2010	2015	2020	2025	2030
Solano Project	1,600	1,600	1,600	1,600	1,600	1,600
Suisun-Solano Water Authority	3,441	4,110	4,505	4,723	4,928	5,099
Total	5,041	5,710	6,105	6,323	6,528	6,699
Source: Solano County Water Agency, 2004.						

The Urban Water Management Plan also provides projected supply and demand figures for normal years through 2030, single dry years, and for multiple dry years through 2025. Projected supply and demand comparisons for normal year, single dry year, and multiple dry years, are summarized in Table 4.10-10, Table 4.10-11, and Table 4.10-12, respectively.

Table 4.10-10: Projected Normal-Year Supply and Demand Comparison

	2010	2015	2020	2025	2030
Supply totals (acre-feet per year)	5,710	6,105	6,323	6,528	6,699
Demand totals (acre-feet per year)	5,710	6,105	6,323	6,528	6,699
Difference (supply minus demand)	—	—	—	—	—
Source: Suisun-Solano Water Authority, 2006.					

Table 4.10-11: Projected Single Dry-Year Supply and Demand Comparison

	2010	2015	2020	2025	2030
Supply totals (acre-feet per year)	5,684	5,522	5,644	5,644	5,644
Demand totals (acre-feet per year)	5,684	5,522	5,644	5,644	5,644
Difference (supply minus demand)	—	—	—	—	—
Source: Suisun-Solano Water Authority, 2006.					

Table 4.10-12: Projected Multiple Dry-Year Supply and Demand Comparison

	2021	2022	2023	2024	2025
Supply totals (acre-feet per year)	5,012	5,012	5,012	5,012	5,012
Demand totals ¹ (acre-feet per year)	5,012	5,012	5,012	5,012	5,012
Difference (supply minus demand)	—	—	—	—	—
Notes: ¹ Demand totals for dry years are expected to be less than normal-year demand totals because of conservation measures outlined in the Urban Water Management Plan. Source: Suisun-Solano Water Authority, 2006.					

As shown in the tables above, SSWA expects to be able to deliver adequate water supplies to the City of Suisun even in multiple dry years, with the exception of possibly 1 acre-foot in the year 2030. The assumptions are based on the reliability of Solano Project water and the implementation of conservation methods during drought conditions. Drought stages and water reduction goals are based on Lake Berryessa water levels. The Water Shortage Contingency Plan contained in the SSWA Urban Water Management Plan outlines the mandatory prohibitions, penalties, and consumption reduction methods to be implemented during drought conditions. In addition, Solano Project contracting cities have entered into an agreement, the Solano Project Drought Measures Agreement, to reduce deliveries and share water during periods of drought.

City of Suisun City Treatment Facilities

Under the authority of SSWA, SID operates the Cement Hill Water Treatment Plant to treat water on Suisun's behalf. The treatment plant treats Suisun's 1,600 acre-feet of Solano Project contract water and delivers it to its service area for distribution. The treatment plan has a maximum daily capacity of 8.5 mgd, and staff testing indicates that the plant would likely be able to maintain a 1-day peak flow of 9.0 mgd.

The treatment plant currently lacks adequate capacity to treat the amount of water projected to be demanded on a daily basis from future growth. The projected maximum day water demand in the service area at buildout is 7,691 gpm or 11.08 mgd. In July 2007, the SSWA Board of Directors approved moving forward with a plan to develop new treatment capacity at the Cement Hill and Gregory Hill water treatment plants that would bring total treatment capacity to 13.0 mgd. At the time of this writing, SSWA's consultant is preparing a rate study to identify funding necessary for the project.

Wastewater

The Fairfield-Suisun Sewer District (FSSD) provides wastewater collection and treatment for the cities of Fairfield and Suisun City. The City of Suisun City also provides wastewater collection. Below is a discussion of the collection system, treatment plant, and future capacity improvements.

Collection System

FSSD and the City of Suisun City both provide collection in the city limits. FSSD owns and operates all sewer lines of 12 inches or greater in diameter, while the City owns and operates all sewer lines of less than 12 inches in diameter. Each entity operates pump stations on its sewer lines. The FSSD-operated portion of the collection system includes a total of approximately 340,000 lineal feet (64 miles) of gravity sewer ranging from 12-inch to 48-inch diameter.

FSSD has spent approximately \$20 million on collection system upgrades over the past 15 years. Projects have included upgrades for capacity deficient sewers, rehabilitation of old or leaking sewers with modern, leak-resistant materials, and pump stations upgrades to increase capacity and improve reliability.

Wastewater Treatment Plant

FSSD operates a tertiary treatment facility at 1010 Chadbourne Road in the southern portion of the City of Fairfield. The facility has a permitted dry weather capacity of 17.9 mgd and a wet-weather capacity of 35 mgd, with 75 million gallons of equalization storage facilities to handle peak wet-weather flows. The average daily flow is 16 mgd and the maximum daily flow is 34 mgd. The treatment facility complies with all federal and State water quality discharge requirements. Of the total flow treated, approximately 10 percent is reclaimed for agricultural irrigation. The remainder of the flow is discharged year-round to Boynton Slough and Suisun Slough via a 1.25-mile outfall line.

FSSD is planning to develop a new 2.5-mile outfall line that will discharge flows into Chadbourne Slough.

Future Demand

FSSD’s existing master plan sets forth the framework for guiding the expansion of its facilities through 2020. The master plan considers the existing and planned land uses within its service area and sets forth specific capital improvements needed to meet the future wastewater demands of users within its boundaries. FSSD is currently undertaking an expansion of its treatment plant that would increase average dry-weather capacity to 23.7 mgd. The expansion is scheduled to be completed by 2009. With these capital improvements, the FSSD will have the capacity to accommodate the 2020 needs of its service area.

Storm Drainage

Stormwater drainage facilities are designed primarily to convey runoff that occurs during storm events. To a lesser extent, the drainage systems also help other activities that generate runoff during drier months of the year. FSSD and the City of Suisun City provide stormwater drainage facilities within the city limits. Collective, the FSSD and City stormwater drainage systems serve an area of 41 square miles. The drainage system encompasses seven pump stations to maintain flow of stormwater to the natural creek system and Suisun marsh.

Project Site Storm Drainage Facilities

A drainage ditch bisects the project site in a north to south direction. The ditch drains a portion of the Quail Glen subdivision to the north and enters the project site via a culvert under Petersen Road. The drainage ditch leaves the project site via culvert under SR-12 and ultimately empties in Hill Slough, approximately 0.5 mile to the south.

Solid Waste

The Solano Garbage Company provides contract waste hauling services to residences and businesses in the City of Suisun City.

Landfills

The California Integrated Waste Management Board (CIWMB) Solid Waste Information System indicates that most of Suisun City’s solid waste from the City of Suisun City is disposed of at the Potrero Hills Sanitary Landfill, with small amounts being disposed of at the Hay Road Landfill. These two landfills are summarized in Table 4.10-13. The most recent figures reported to the CIWMB indicate that the City of Suisun City landfills more than 20,000 cubic tons of solid waste annually.

Table 4.10-13: Landfill Summary

Name	Location	Daily Permitted Capacity (tons/day)	Maximum Permitted Capacity	Remaining Capacity	Closure Date
Potrero Hills Landfill	Suisun City	4,330	21.5 million cubic yards	8.2 million cubic yards	2011
Hay Road Landfill Inc. (B+J Landfill)	Vacaville	2,400	28.2 million cubic yards	22.4 million cubic yards	2070

Source: California Integrated Waste Management Board, 2007.

Landfill Expansion Plans

Republic Services, Inc., the owner and operator of the Potrero Hills Sanitary Landfill, has proposed expanding the capacity of the facility from 21.5 million cubic yards to 83 million cubic yards. The increased capacity is expected to add 35 years to the operational life of the landfill, which has an anticipated closure date of 2011. The Solano County Board of Supervisors approved the expansion plans in September 2005.

Opponents of the proposed expansion filed suit against the Environmental Impact Report (EIR) certified by the Board of Supervisors for the project. In February 2007, Solano County Superior Court found that certain environmental impacts were not adequately considered in the environmental document and ordered the County to vacate its certification of the final EIR and the County’s approval of the project. At the time of this writing, the Court has yet to approve the repaired EIR, and the expansion plans are still on hold.

Should the Potrero Hills expansion not be implemented, it is possible that City of Suisun City waste streams that are transported to Potrero Hills facility could be shifted to the Hay Road Facility, which has substantially more capacity (at 38.1 percent of its total capacity).

Waste Diversion

Waste diversion is a measurement of how much solid waste is diverted from landfills by waste prevention or recycling activities. Table 4.10-14 summarizes the waste diversion rates for Suisun City from 2000 through 2005, the most recent year for which information is available. As of 2000, the State requires that each jurisdiction achieve a diversion rate of at least 50 percent. The City of Suisun City has achieved a 50-percent or greater diversion rate since 1998.

Table 4.10-14: City of Suisun City Waste Diversion Rates (Percent)

2000	2001	2002	2003	2004	2005
71	65	60	57	55	57*

Notes:
* Preliminary rate; subject to change
Source: California Integrated Waste Management Board, 2007.

Recycling Programs

Solano Garbage Company provides pick-up commercial facilities for the following recyclable materials:

- Corrugated cardboard
- White paper
- Colored paper
- Bottles and cans
- Newspapers

Energy

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

Electricity

PG&E provides electricity to all or part of 47 counties in California, comprising most of the northern and central portions of the State. PG&E obtains 40 percent of electricity from its own generation sources and the remaining 60 percent from outside sources. PG&E-owned generating capacity includes nuclear, fossil fuel-fired, and hydroelectric facilities. Outside suppliers to PG&E include the State Department of Water Resources, irrigation districts, renewable energy suppliers, and other fossil fuel-fired suppliers. PG&E operates approximately 158,700 circuit miles of transmission and distribution lines. PG&E 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 2006, PG&E delivered 84,310 gigawatt hours of electricity to its customers. Commercial customers accounted for largest segment of demand, with 40 percent of the total.

Natural Gas

PG&E provides natural gas to all or part of 38 counties in California, comprising most of the northern and central portions of the State. PG&E obtains approximately 62 percent of its natural gas supplies from western Canada, 32 percent from the southwestern United States, and the balance from in-state sources. PG&E operates approximately 47,000 miles of transmission and distribution pipelines.

In 2006, PG&E delivered 836 billion cubic feet (Bcf) of natural gas to its customers. Commercial customers accounted for the smallest segment of demand, with 12 percent of the total.

4.10.3 - Regulatory Setting

State

California Building Standards Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by State agencies without change from building standards contained in national model codes
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes, which have been adopted to address particular California concerns

The California Fire Code is a component of the California Building Standards Code and contains fire safety-related building standards.

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code §10610-10656) requires that all urban water suppliers prepare urban water management plans and update them every 5 years.

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 939, the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. The legislation required each local jurisdiction in the State to set diversion requirements of 25 percent in 1995 and 50 percent in 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.

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 assure California utility customers safe, reliable utility service at reasonable rates, protect utility customers from fraud, and promote a healthy California economy.

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 set a goal of reducing growth in electricity use by 478 gigawatt-hours per year (GWh/y) and growth in natural gas use by 8.8 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 163.2 GWh/y of electricity savings and 0.5 million therms. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), indoor and outdoor lighting, and illuminated signs.

Local**City of Suisun City General Plan**

The City of Suisun City General Plan establishes the following policies that relate to public services and utilities:

- New development that is additive (not replacement housing or commercial development resulting from Redevelopment Agency activities) will be expected and required to fully fund the need for additional facilities that such development generates, as calculated by the CIP. The City and the Redevelopment Agency shall jointly determine which specific development projects are to be considered to be “additive” and which are “replacement” for the purpose of fulfilling this policy. (Chapter II - Central Issues, Policy 13)
- All proposed development projects shall be reviewed for specific and cumulative impacts on public facilities and services, as well as other potential environmental impacts. (Chapter II - Central Issues, Policy 14)
- All proposed development projects must demonstrate that the public facilities impacts will be mitigated either of three ways:
 - Payment of development impact fees that will provide a proportionate share of the facilities needed as a result of the proposed development; the level of fees to be paid shall be established by the CIP and updated on at least a biannual basis.
 - Construction or provision of the needed facilities at a stage in the development of the project where the additional facilities and services will be needed, as determined by the City.
 - Entering into an assessment district or equivalent financing mechanism to the satisfaction of the City that will provide the funding for the necessary facilities at the time they are needed. (Chapter II - Central Issues, Policy 15)
- Prior to issuance of construction permits, the project developer shall demonstrate that the necessary facility or equipment will be provided in a timely manner, as described above. If the CIP has not scheduled the necessary facilities for construction or purchase at the proper time to fulfill this requirement, the developer may elect to construct the facility or purchase the equipment ahead of the CIP schedule. A binding commitment for this purpose that is satisfactory to the City shall be executed prior to issuance of permits. (Chapter II - Central Issues, Policy 16)
- Suisun will require that all development connect to the regional sewer system. Standards for trunk lines and connections to individual properties will be governed by the Suisun City Subdivision Ordinance. (Chapter VIII - Community Facilities and Services, Policy 4)
- The City will require that new developments contain drainage features and facilities which channel run-off away from adjacent properties, control erosion, and assure that water quality will not be adversely affected. The City will encourage development designs which

incorporate natural features into the drainage system provided water quality and erosion concerns are addressed. Drainage standards will be governed by the Development Guidelines and the Subdivision Ordinance. (Chapter VIII - Community Facilities and Services, Policy 5)

4.10.4 - Methodology

Inquiries were made with the Fire Department and the Police Department regarding existing staffing levels and services and potential impacts from the implementation of the proposed project. The FSSD was contacted regarding potential impacts to potable water and wastewater. Other information was provided by published documents (e.g., the PG&E 10k Annual Report) and agency websites (e.g., the California Integrated Waste Management Board). Project plans were reviewed to determine the size and location of utility connections.

4.10.5 - Impacts and Mitigation Measures

This section discusses potential public service and utility impacts associated with the development of the project. Mitigation measures are provided where appropriate.

Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether impacts to public services are significant environmental effects, the following questions are analyzed and evaluated:

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
 - Fire Protection?
 - Police Protection?
 - Schools? (Refer to Section 7, Effects Found Not To Be Significant.)
 - Parks? (Refer to Section 7, Effects Found Not To Be Significant.)
 - Other public facilities? (Refer to Section 7, Effects Found Not To Be Significant.)

To determine whether impacts to utilities and services are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

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

- 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?
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- 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?
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- Comply with federal, state, and local statutes and regulations related to solid waste?

Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate. Note that analysis of the proposed project's impacts on schools, parks, and other public facilities is contained in Section 7, Effects Found Not To Be Significant.

Fire Protection

Impact PSU-1: The proposed project would not result in the need for new or expanded fire protection facilities.

Impact Analysis

The proposed project would develop 227,019 square feet of commercial retail uses on the project site. This type of development would be expected to attract consumers throughout the Suisun City area and, as with any large commercial retail center, generate calls for emergency medical services and, to a lesser extent, fire response. The structures of the proposed project would be designed in accordance with the applicable standards of the California Building Standards Code, and the additions to the Uniform Fire Code outlined in Title 15 Buildings and Construction, of the City of Suisun City Code. These standards include provisions relating to fire suppression systems (e.g., fire water and sprinklers), building access, electrical wiring, and other measures related to fire safety. Compliance with these standards would ensure that the structures meet adopted fire safety standards and do not pose a health and safety risk to occupants. The Fire Department will review all project fire safety features to ensure that they meet applicable standards.

The Fire Department has expressed concerns regarding response times, staffing, and the need for new fire stations and apparatus.

The Fire Department noted that response times are increasing throughout the City because of new development at the edges of the city limits and increased traffic on local roadways. The proposed

project is located in Zone 5, which had an average response time of 4.43 minutes in 2005. This average response time is consistent with the Fire Department's adopted goal of 5 minutes or less for 90 percent of calls. In addition, the project site is 1.4 miles from the fire station on Pintail Drive, and the development of the proposed project would not require the construction of a new fire station because of distance-related concerns.

The Fire Department has indicated that staffing levels are one of its primary concerns with the proposed project. The Fire Department indicated that "stacked calls" (i.e., multiple calls in a short period) present staffing challenges because it has only one staffed engine. The Fire Department noted that it is in the midst of recruiting efforts to reach a staffing level that would allow two fully staffed engines on duty. However, Fire Department staffing levels are ultimately determined by the Suisun City Council and do not cause direct or indirect physical changes to the environment. Staffing levels are unrelated to environmental thresholds of significance established by the CEQA Guideline; therefore, analysis of the significance of staffing levels is outside the scope of the review in this Draft EIR.

The development of the proposed project would not directly result in the construction or expansion of new fire facilities; therefore, no environmental impacts would occur. The proposed project would provide development fees to the Fire Department at the time building permits are sought. These fees are one-time payments and can only be used to fund capital improvements to Fire Department facilities. Such capital improvements may include new fire stations; however, these decisions are made at the discretion of the Suisun City Council. Any capital improvements to Fire Department facilities are independent of the proposed project and would be analyzed in a separate environmental review process.

In addition, the City of Suisun City indicated that the Fire Department would need a new ladder truck to reach the upper portions of the proposed Wal-Mart Supercenter, as well as the upper portions of other planned development projects in Suisun City (e.g., Gentry-Suisun). As a condition of project approval, the City will require the project applicant to provide a "fair-share" fee payment to finance the acquisition of a new ladder truck.

For these reasons, the proposed project would not have a significant impact on fire protection or emergency medical services. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Police Protection

Impact PSU-2: **The proposed project would not result in the need for new or expanded police facilities.**

Impact Analysis

The proposed project would contain a Wal-Mart Supercenter and would be expected to attract consumers several thousand customers on a daily basis. As with any large commercial retail center, law enforcement would be expected to respond on a regular basis to calls for service. The Suisun City Police Department indicated that it expects that most calls for service associated with the proposed project would concern shoplifting, check fraud, identity theft, noise complaints, traffic collisions, and vehicle burglaries.

Wal-Mart Stores, Inc.'s corporate practice is to provide onsite security at all of its stores, including at the proposed project, which will operate 24 hours per day. Onsite security personnel would reduce the calls for service by acting as a first line of defense against property-related crimes and would be able to resolve minor incidents that do not warrant a Police Department response.

The development of the proposed project would not directly result in the construction or expansion of new police facilities; therefore, no environmental impacts would occur. The proposed project would provide development fees to the City of Suisun City at the time building permits are sought. These fees are one-time payments and can only be used to fund capital improvements to Police Department facilities. Any capital improvements to Fire Department facilities are independent of the proposed project and would be analyzed in a separate environmental review process.

Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant.

Potable Water

Impact PSU-3: **Implementation of the proposed project would not result in the need for new or expanded potable water facilities or have a negative impact on water supplies.**

Impact Analysis

The proposed project would connect to the City of Suisun City's potable water system by means of an existing 12-inch water line that runs under Walters Road and an existing 6-inch water line that runs under Petersen Road. The two points of connection would provide system redundancy.

Potable Water Supply

Implementation of the proposed project would result in potable water usage above the current undeveloped condition. Robert Karn & Associates, the project engineer, indicated that the proposed project would be estimated to demand approximately 22 acre-feet of water annually. This figure includes both domestic water use and irrigation. Water demand by project use is provided below:

- Wal-Mart Supercenter: 8.40 acre-feet per year
- Sit-Down Restaurant: 11.20 acre-feet per year
- Gas Station: 2.25 acre-feet per year

Table 4.10-15 provides a summary of future water supplies and projected demand, as presented in the SSWA Urban Water Management Plan. As shown in the table, adequate supplies are projected to be available through 2030, the planning horizon of the Urban Water Management Plan. The proposed project’s estimated demand is accounted for in these demand figures.

Table 4.10-15: Suisun City Future Water Supply/Demand Comparison

Year	Water Supplies (acre-feet)	Water Demand (acre-feet)
2005	5,041	5,041
2010	5,710	5,709
2020	6,323	6,323
2030	6,699	6,669

Source: Michael Brandman Associates, 2007.

As discussed previously, water supply for the City of Suisun City comes primarily from the Solano Project through the SSWA. The firm yield of the Solano Project is approximately 207,350 acre-feet per year, which also represents the Solano Project’s total amount of contracted water. The firm yield was calculated conservatively using the driest hydrologic period on record, which results in a very dependable water supply. Additionally, there are no legal, environmental, climatic, or quality constraints on Solano Project water supplies. As shown in Tables 4.10–10, 4.10–11, and 4.10–12, the SSWA expects to be able to deliver adequate water supplies under General Plan buildout conditions from existing entitlements and resources even through multiple dry years. The assumption that SSWA would be able to supply water through buildout of the City is based on the reliability of Solano Project water, water conservation methods imposed during times of drought as outlined in Solano County Drought Contingency Plan of 1993, and the Solano Project Drought Measures Agreement.

Suisun City also has entitlements for water from the State Water Project that it is not currently using because of a lack of conveyance and treatment facilities. There are no firm plans to construct the necessary facilities, and projected water supplies under 2030 buildout conditions do not rely on this source; however, it is conceivable that these entitlements could be used in the future.

SSWA has available treatment capacity to serve the proposed project's short-term water supply needs. However, long-term treatment capacity at the Cement Hill Water Treatment Plant is currently a constraint to achieving the total supplies necessary to serve buildout. The treatment plant has a maximum daily capacity of 8.5 mgd, which is adequate to serve existing demand and a portion of future demand; however, treatment capacity will ultimately need to be expanded to 11.08 mgd to meet anticipated demand from buildout. In July 2007, the SSWA Board of Directors approved moving forward with a plan to develop new treatment capacity at the Cement Hill and Gregory Hill water treatment plants that would bring total treatment capacity to 13.0 mgd. At the time of this writing, SSWA's consultant is preparing a rate study to identify funding necessary for the project. Because SSWA has identified necessary capacity increases and can finance capacity improvements through rate increases or other assessments on users, it is reasonable to conclude that adequate treatment capacity will be provided by the time existing capacity is exhausted. Note that the proposed treatment capacity improvements are independent of the proposed project and will be analyzed under a separate environmental review process.

In summary, the water requirements of the proposed project are relatively small and have been anticipated by the SSWA Urban Water Management Plan. SSWA has adequate water supplies and treatment capacity to serve the short-term needs of the proposed project and existing customers. Therefore, the development of the proposed project would not necessitate the development of new or expanded potable water facilities or the acquisition of additional water entitlements. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Wastewater

Impact PSU-4: Implementation of the proposed project would not result in the need for new or expanded water treatment facilities or have a negative impact on existing facility capacity.

Impact Analysis

The proposed project would be served by the Fairfield-Suisun Sewer District. The proposed project would convey flows via an 8-inch sanitary sewer line that would connect to a 39-inch sanitary sewer line that runs under Petersen Road. The 39-inch line would have adequate capacity to accept flows from the proposed project.

Project Wastewater Generation

As the project site is currently undeveloped, implementation of the proposed project would require wastewater treatment over and above the pre-developed condition. No project specific wastewater generation rates were available for the proposed project. Typically, wastewater generation can be up to 70 to 90 percent of consumption. Using a conservative estimate of 90 percent, project wastewater generation rates are provided below:

- Wal-Mart Supercenter: 7.6 acre-feet per year (7,500 gallons per day)
- Gas Station: 2.0 acre-feet per year (2,000 gallons per day)
- Sit-Down Restaurant: 10.0 acre-feet per year (10,000 gallons per day)

In total, the project would generate 19.6 acre-feet of wastewater on an annual basis, which translates to a daily average of 19,500 gallons.

Treatment Capacity

The current average daily flow to the FSSD treatment plant is 16 mgd and the maximum daily flow is 34 mgd. Using the estimates above, wastewater generated by the proposed project would be 0.12 percent of the current average daily flow and 0.06 percent of the maximum daily flow. These would represent insignificant contributions to the current capacity of the FSSD treatment plant. The FSSD provided a letter indicated that the proposed project would not have an adverse impact on its ability to provide wastewater service to the project site or other portions of the service area.

As previously mentioned, the FSSD has identified necessary capacity improvements necessary to treat wastewater generated by planned growth in its service area. The FSSD's capital improvement plans include upsizing the treatment capacity to 23.7 mgd. These improvement plans are underway and would occur irrespective of the proposed project. Therefore, adequate, long-term wastewater treatment will be available for the proposed project, and impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Storm Drainage

Impact PSU-5: The proposed project would not result in the need for offsite storm drainage facilities.

Impact Analysis

Development of the project site would result in the removal of the drainage ditch that crosses the project site. In its place, storm drain piping, ranging from 30 to 36 inches in diameter, would be installed that would accept flows from the existing culvert under Petersen Road and divert them east and then south to reconnect with the existing culvert under SR-12. The proposed project's storm drains and piping would release flows into the 30- and 36-inch pipes. Project drainage facilities would include retention features that would ensure that runoff would not be released into the storm drain system in excess of 85 percent of the pre-development condition of the project site.

Project drainage facilities would implement standard stormwater quality Best Management Practices (BMPs), which may include, but are not limited to, oil/water separators, bioswales, sand filters, and media filters. BMPs also require that an operations and maintenance plan and a 5-year water quality monitoring plan be prepared and implemented. The operations and maintenance plan would identify routine upkeep activities to ensure that the BMPs properly function and do not create odors or vector control problems.

The provision of these onsite drainage facilities would ensure that runoff from the proposed project would not inundate downstream water bodies and create a need for offsite drainage facilities. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Solid Waste

Impact PSU-6: Development of the proposed project would not result in the need for additional landfill capacity.

Impact Analysis

Solid waste would be generated by short-term construction activities and long-term operational activities. Short-term construction waste generation is summarized in Table 4.10-16. The estimate of 442 tons was calculated using an average of 3.89 pounds of debris per square foot of non-residential construction, provided by the U.S. Environmental Protection Agency.

Table 4.10-16: Construction Waste Generation

Nonresidential Construction Waste Generation Rate	Calculation	Total
3.89 pounds/square foot	(3.89 pounds/square foot) x (227,000 square feet)	883,000 pounds (442 tons)
Notes: 1 ton = 2,000 pounds Source: U.S. Environmental Protection Agency, 1998.		

The 442 tons of construction waste estimated to occur because of development of the proposed project would be spread out over the length of construction activities and would not occur all at once. The actual volumes of construction waste disposed of at any one time is not expected to be more than 1 or 2 tons of debris and would not pose a significant impact to landfill capacity.

Long-term operational solid waste generation estimates were calculated by using a standard commercial waste generation rate provided by the California Integrated Waste Management Board. As shown in Table 4.10-17, the proposed project is expected to generate 545 tons of solid waste annually.

Table 4.10-17: Estimated Solid Waste Generation

Project Area	Solid Waste Generation Rate	Estimated Annual Solid Waste Generation
227,000 square feet	4.8 pounds/square foot/year	1.1 million pounds (545 tons)
Notes: 1 ton = 2,000 pounds Source: California Integrated Waste Management Board, 2006.		

As shown in Table 4.10-13, the City of Suisun City is served by landfills that have adequate capacity. In addition to the recycling and waste reduction programs in which all tenants would be required to participate, the proposed Wal-Mart Supercenter would implement additional waste reduction programs.

Waste Reduction

The Wal-Mart Supercenter would be equipped to accept the following materials for recycling:

- Aluminum
- Plastic (including bottles, bags, garment bags, shrink wrap, and bubble pack)
- Glass
- Cardboard
- Vegetable oil
- Single-use cameras
- Electronic waste
- Silver (from photo processing)

The provision of these onsite recycling facilities would provide additional diversion of project-generated waste from landfills. Impacts to solid waste would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Energy

Impact PSU-7: Development of the proposed project would not result in significant environmental impacts from the need for new or expanded energy supplies, generation facilities, or transmission facilities.

Impact Analysis

PG&E would serve the proposed project with electricity and natural gas. Table 4.10-18 provides an estimate of the proposed project's annual energy consumption. These figures were derived from consumption rates provided by the California Energy Commission for a similar commercial retail project in Bakersfield. Note that these consumption figures are considered upward estimates and likely overstate actual energy consumption.

Table 4.10-18: Estimated Energy Consumption

Energy Source	Annual Consumption Rate	Estimated Annual Consumption
Electricity	15.7 kWh/square foot	3.6 million kWh
Natural Gas	1.2 kBtu/square foot	272,423,000 Btu
Notes: kWh = kilowatt hour kBtu = 1,000 British thermal units Source: California Energy Commission, 2007.		

PG&E provided a "will serve" letter, dated April 30, 2007, indicating that it can serve the proposed project with electricity and natural gas service.

The proposed project would connect to a 4-inch existing gas line and electrical lines located under Petersen Road. All electrical connections would be located underground.

The proposed project's structures would be designed in accordance with Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. 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. (A complete listing of the 2005 Title 24 requirements is provided in Section 6.5 of this Draft EIR). The

incorporation of the 2005 Title 24 standards into the project would ensure that the project would not result in the inefficient, wasteful, or unnecessary consumption of energy.

In addition, the Wal-Mart Supercenter would contain a number of energy efficiency measures that are above and beyond 2005 Title 24 standards. These include:

- T-8 fluorescent lamps and electronic ballasts, which are the most energy-efficient lighting systems available and reduces the energy load of a single store by approximately 15 to 20 percent compared with conventional lighting.
- Light Emitting Diode (LED) lighting in all internally illuminated building signage. LED technology is more than 70 percent more energy-efficient than fluorescent illumination and provides an extended life span of 12 to 20+ years.
- LED lighting in frozen food cases and other refrigerated cases with doors. This lighting is motion activated and turns itself off whenever it is not needed. This lighting utilizes 50 percent less energy as traditional lighting, lasts three to four times longer, and contains no mercury.
- Daylight harvesting systems (e.g., skylights, electronic dimming ballasts, computer-controlled daylight sensors) that automatically and continuously dim all of the lights as the daylight contribution increases.
- Nighttime lighting dimming, in which illumination is reduced to 65 percent during the late-night hours.
- Super-high-efficiency packaged heating, ventilation, and air conditioning (HVAC) units that have a weighted Energy Efficiency Ratio of 11.25. This ratio is 10 percent higher than the industry standard, weighted average.
- An energy management system that is monitored and controlled from corporate headquarters in Bentonville, Arkansas. This energy management system enables corporate headquarters to monitor energy usage, analyze refrigeration temperatures, and observe HVAC and lighting performance. It also allows corporate headquarters to adjust lighting, temperature, or refrigeration set points from a central location.
- Refrigeration waste-heat recapture systems that are used to heat water in the kitchen preparation areas. On average, waste heat accounts for 70 percent of the hot water heating needs.
- A white membrane roof with a high solar reflectivity that lowers the cooling load by approximately 8 percent.

- Occupancy sensors in non-sales areas that automatically turn off the lights when the space is unoccupied.
- Actively dehumidifying the store, which allows for the climate control system to be set at a higher indoor temperature and results in better refrigeration system efficiency.

When implemented in a Supercenter prototype, these additional energy efficiency features have been found to exceed the 2005 Title 24 standards by 9 percent.

In summary, the proposed project incorporates energy efficiency measures that exceed minimum State standards, and, therefore, would not result in the inefficient, unnecessary, or wasteful use of energy. Currently, there are no additional significance criteria beyond the 2005 Title 24 standards to evaluate the potential impacts from a proposed project's energy use. Based on the State standards, impacts would be less than significant.

Additional discussion of energy conservation is provided in Section 6, Other CEQA Considerations.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

4.11 - Transportation

4.11.1 - Introduction

This section describes the existing transportation setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Final Transportation, Circulation, and Parking Impact Study prepared in August 2007 by Kimley-Horn and Associates, Inc. (KHA), included in this EIR as Appendix J.

4.11.2 - Environmental Setting

Roadway Network

The City of Suisun City is located in central Solano County. The primary regional roadway serving the City is State Route 12 (SR-12), which interchanges with Interstate 80 (I-80) to the west. Below is a description of the local roadway network.

Local Roadways

The project site is a roughly triangular piece of land bounded by Petersen Road (north), Walters Road (east), and SR-12 (south). Access to the project site would be from Petersen Road and Walters Road. Streets near the project and in the surrounding area, which may be affected by the project, are discussed in the following paragraphs.

State Route 12

SR-12 is a four-lane divided expressway providing access to I-80. The posted speed limit is 50 miles per hour (mph). In the vicinity of the project site, SR-12 is referred to as Rio Vista Road. A Class I Bikeway runs along the north side of the east-west roadway from Walters Road and extends east to Lambie Road.

Walters Road

Walters Road is a north-south principal arterial providing access to Air Base Parkway in the City of Fairfield and SR-12. The divided roadway has a posted speed limit of 45 mph.

Petersen Road

Petersen Road is a two-lane east-west roadway with a speed limit of 45 mph providing secondary access to Travis Air Force Base.

Marina Boulevard

Marina Boulevard is a two-lane arterial north of SR-12 and a two-lane collector south of SR-12. The posted speed limit is 25 mph, and the roadway provides access to residential and commercial uses.

Lawler Ranch Parkway

Lawler Ranch Parkway is a two-lane collector providing access from residential uses to SR-12, where it intersects with Walters Road and Emperor Drive. The posted speed limit on the roadway is 25 mph.

Bella Vista Drive

Bella Vista Drive is a two-lane collector roadway providing access for residential uses to Walters Road. The posted speed limit on Bella Vista Drive is 25 mph east of Walters Road and 35 mph west of Walters Road.

Emperor Drive

Emperor Drive is a two-lane collector providing north-south access for residential uses to SR-12. The posted speed limit on the roadway is 25 mph.

Fulmar Drive

Fulmar Drive is a two-lane, north-south collector providing access to and from residential uses. The posted speed limit on the roadway is 25 mph.

Montebello Drive

Montebello Drive is a two-lane collector roadway providing access to residential uses. The posted speed limit is 25 mph.

Pintail Drive

Pintail Drive is an east-west residential collector providing access to Sunset Avenue and Walters Road. The posted speed limit on Pintail Drive is 25 mph.

Sunset Avenue

Sunset Avenue is a four-lane, north-south arterial providing access to SR-12 and into the City of Fairfield. The posted speed limit is 35 mph on the divided roadway.

Woodlark Drive

Woodlark Drive is a north-south, two-lane collector providing access to SR-12 from residential areas. The speed limit on this roadway is 25 mph.

Air Base Parkway

Air Base Parkway is a major four-lane arterial providing east-west access to I-80 and Travis Air Force Base. Air Base Parkway leads to the main access at the base. The posted speed limit on the roadway is 45 mph.

Tabor Avenue

Tabor Avenue is a two-lane, east-west arterial with a posted speed limit of 40 mph providing access to Walters Road and into the City of Fairfield.

Existing Roadway Performance

This section assesses existing vehicular traffic on roadways and at intersections, using both level-of-service calculations and signal warrant tests. These terms are described below.

Level of Service Standards

Level of Service (LOS) is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or at an intersection during a specific time interval. It ranges from LOS A (very little delay) to LOS F (long delays and congestion). LOS for signalized and unsignalized intersections are described below.

Signalized Intersections

Intersection LOS is measured as the average control delay in seconds per vehicle. Control delay is the portion of the total delay experienced by drivers at intersections that is attributable to traffic signal operation. It includes the delay for decelerating to a stop at a signal, moving slowly in a queue of vehicles, stopped delay, and acceleration after the signal turns green. To evaluate signalized intersections, the operations method of the Highway Capacity Manual, Transportation Research Board, National Research Council, 2000 (HCM2000) was utilized.

Unsignalized Intersections

To evaluate unsignalized intersections, the operations method of the HCM2000 was also utilized. This methodology determines the LOS based on delay. The delay is reported for the worst approach when the intersection is controlled with one-or two-way stop signs. The delay is an average for all approaches when the intersection is controlled with all-way stop signs.

Table 4.11-1 relates the operational characteristics associated with each level of service category for both signalized and unsignalized intersections.

Table 4.11-1: Level of Service Definitions for Signalized and Unsignalized Intersections

Level of Service	Description	Signalized Intersection Control Delay (seconds/vehicle)	Unsignalized Intersection Control Delay (seconds/vehicle)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream. At signalized intersections, turning movements are easily made and all queues clear in a single signal cycle.	≤ 10	0–10
B	Stable traffic. Traffic flows smoothly with few delays. An occasional approach phase is fully utilized. Drivers begin to feel somewhat restricted within platoons of vehicles.	> 10–20	> 10–15

Table 4.11-1 (Cont.): Level of Service Definitions for Signalized and Unsignalized Intersections

Level of Service	Description	Signalized Intersection Control Delay (seconds/vehicle)	Unsignalized Intersection Control Delay (seconds/vehicle)
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays. Major approach phases are fully utilized. Backups may develop behind turning vehicles.	> 20–35	> 15–25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours. Queues may develop but dissipate rapidly, without excessive delays.	> 35–55	> 25–35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55–80	> 35–50
F	Forced or breakdown flow that causes reduced capacity. Traffic demand exceeds the capacity. Stop-and-go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50
Source: Transportation Research Board, 2000.			

Traffic Signal Warrants

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times, they are needed to offer side-street traffic an opportunity to access a major road where high volumes or high vehicle speeds impede crossing or turn movements. However, signals do not increase the capacity of an intersection. In fact, they often slightly reduce the number of total vehicles that can pass through an intersection in a given period. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

Tests for determining whether a traffic signal should be considered for installation have been developed. These tests, called “warrants,” consider criteria such as traffic volume, pedestrian volume, presence of schoolchildren, and accident history. There are eleven warrants used in the State of California in deciding whether to install a traffic signal. Usually, two or more warrants must be met before a signal is installed. Warrant #3 is for Peak-Hour Volumes. An intersection meets Warrant #3 when peak hourly volumes on the major street and the minor street exceed specified values for any 1 hour of an average day. When an intersection meets Warrant #3, there is a strong indication that a detailed signal warrant analysis covering all possible warrants is appropriate, as described in the 2006 Manual of Uniform Traffic Control Devices (MUTCD) and the California supplement to the 2006 MUTCD. In areas with populations of less than 10,000 or at locations where

speeds on an uncontrolled intersection approach are greater than 40 miles per hour, a rural peak-hour warrant is used for evaluation. At all other locations, an urban warrant is used for evaluation.

It is possible that an unsignalized intersection will not meet signal warrants, even though one or more movements may experience LOS F operations. Although vehicles stopped on minor streets may experience long delays of one minute or more, there would not be an overall benefit if the higher numbers of vehicles on the major street were stopped in favor of the few vehicles on the minor street. The signal warrant analysis balances major street and minor street delays, and it may indicate that there is overall benefit if drivers for some turn movements from the minor street continue to experience long (LOS E or F) delays.

Intersection Operation Analysis

The study intersections and their existing operation conditions are described below.

Study Intersections

The proposed project would generate new vehicular trips that would increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the project, 18 intersections were selected by the City of Suisun City for evaluation. These intersections, as well as and their respective traffic controls and the agency that has jurisdiction over them, are summarized in Table 4.11-2. The locations of the intersections are shown in Exhibit 4.11-1. The existing lane geometry and traffic controls for these intersections are shown in Exhibit 4.11-2.

Table 4.11-2: Study Intersections

Intersection	Traffic Control	Jurisdiction
SR-12/Marina Boulevard	Signal	Caltrans
Pintail Drive/Sunset Avenue	Signal	Suisun City
SR-12/Sunset Avenue	Signal	Caltrans
Pintail Drive/Emperor Drive	Stop Sign	Suisun City
SR-12/Emperor Drive	Signal	Caltrans
Pintail Drive/Woodlark Drive	Stop Sign	Suisun City
SR-12/Woodlark Drive	Stop Sign	Caltrans
Pintail Drive/Fulmar Drive	Stop Sign	Suisun City
Petersen Road/Fulmar Drive	Stop Sign	Suisun City
Air Base Parkway/Walters Road	Signal	Fairfield
Tabor Avenue/Walters Road	Signal	Fairfield
Bella Vista Drive/Walters Road	Signal	Suisun City
Pintail Drive/Walters Road	Stop Sign	Suisun City
Montebello Drive/Walters Road	Signal	Suisun City

Table 4.11-2 (Cont.): Study Intersections

Intersection	Traffic Control	Jurisdiction
Petersen Road/Walters Road	Signal	Suisun City
Main Driveway/Walters Road (future)	—	Suisun City
South Driveway/Walters Road (future)	—	Suisun City
SR-12/Walters Road	Signal	Suisun City
Source: Kimley-Horn and Associates, Inc., 2007.		

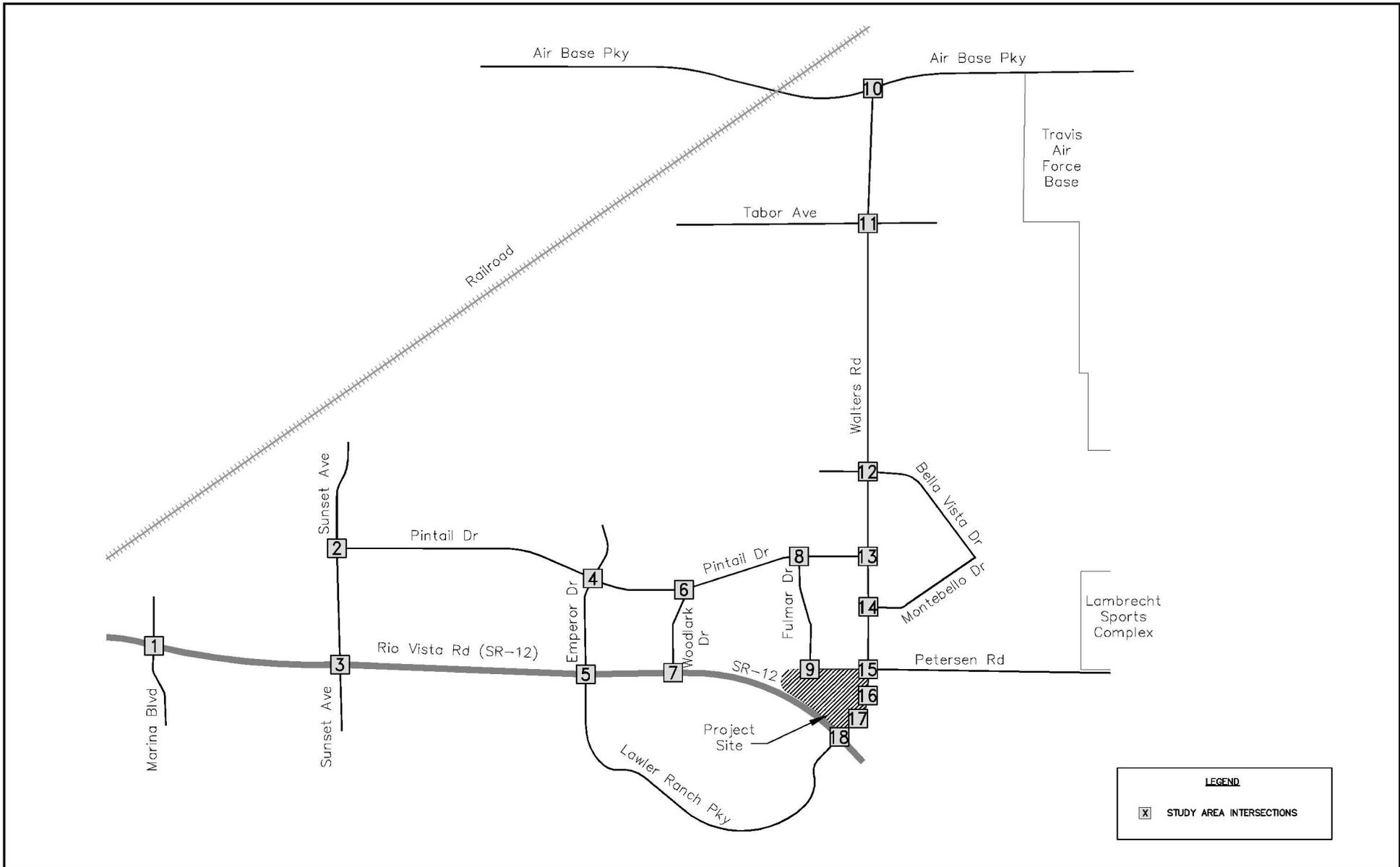
Existing Levels of Service

Traffic operations were evaluated at signalized and unsignalized intersections under existing traffic conditions during the weekday morning (7 a.m. to 9 a.m.) and afternoon (4 p.m. to 6 p.m.) peak commute hours. These commute periods represent the times of highest traffic volumes in Suisun City. For two-way, stop-controlled intersections, the worst approach delay and LOS are reported. All Suisun City intersections are to operate at a minimum LOS C, Caltrans intersections along SR-12 are to operate at a minimum LOS C, and Fairfield intersections on Walters Road are to operate at a minimum LOS D.

Results of the analysis are presented in Table 4.11-3, along with the minimum jurisdictional standard for acceptable levels of service. All intersections currently satisfy operational standards except the intersection of SR-12/Marina Boulevard. This intersection currently experiences significant delay, particularly in the morning peak hour.

Table 4.11-3: Existing Levels of Service at Study Intersections

	Intersection	Criteria	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1	SR-12/Marina Boulevard	C	F	126.1	D	41.5
2	Pintail Drive/Sunset Avenue	C	C	25.4	C	20.1
3	SR-12/Sunset Avenue	C	C	28.7	C	27.1
4	Pintail Drive/Emperor Drive	C	B	10.7	B	13.1
5	SR-12/Emperor Drive	C	C	24.1	C	20.1
6	Pintail Drive/Woodlark Drive	C	A	9.0	A	9.2
7	SR-12/Woodlark Drive	C	C	16.0	B	12.1
8	Pintail Drive/Fulmar Drive	C	A	7.7	A	7.9
9	Petersen Road/Fulmar Drive	C	A	7.0	A	6.9
10	Air Base Parkway/Walters Road	D	C	33.2	D	36.9
11	Tabor Avenue/Walters Road	D	C	21.7	B	15.5



Source: Kimley-Horn and Associates, Inc., 2007.

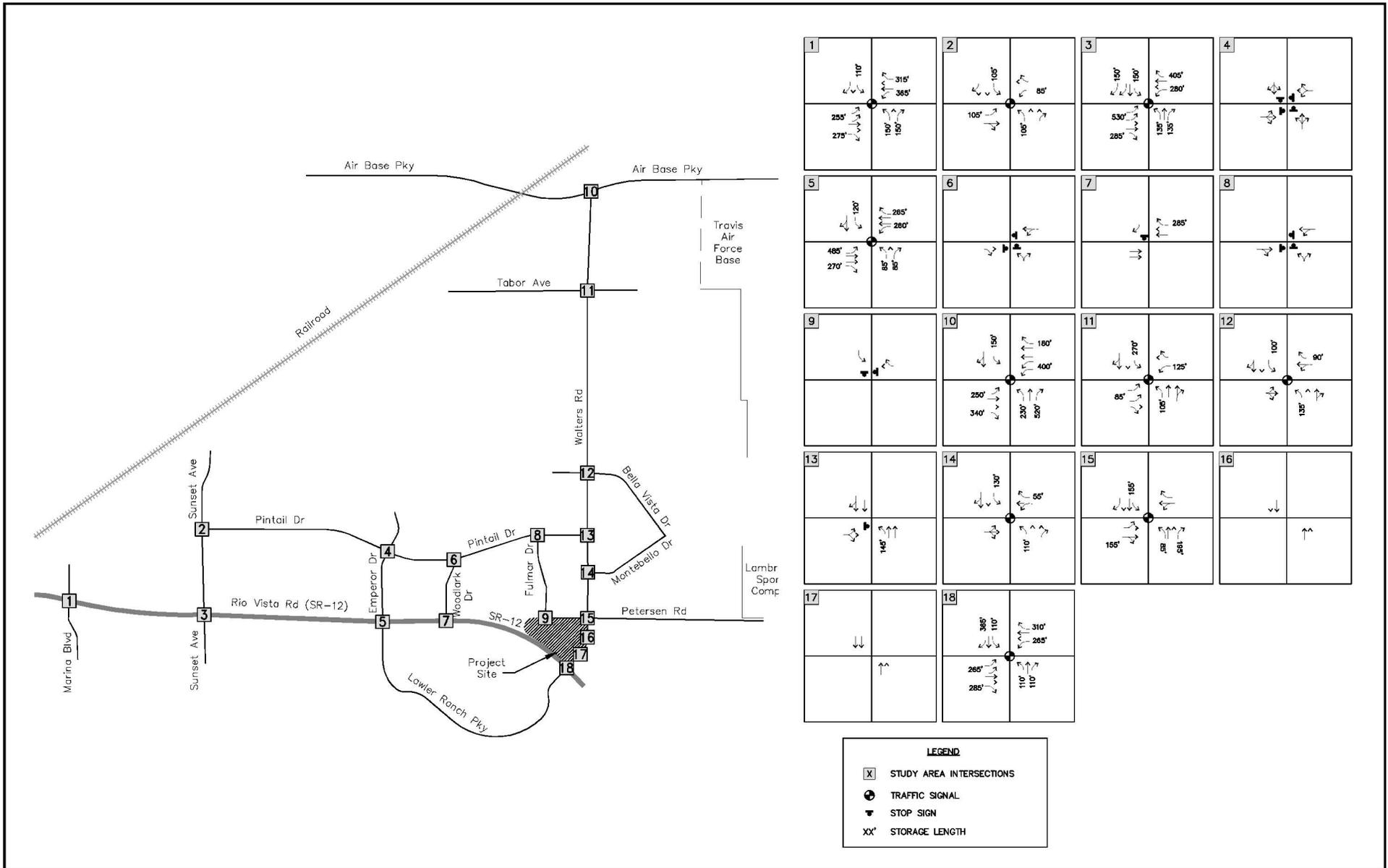


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Michael Brandman Associates

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Exhibit 4.11-1 Study Intersections



Source: Kimley-Horn and Associates, Inc., 2007.



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Michael Brandman Associates

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Exhibit 4.11-2 Existing Lane Configurations and Traffic Control

Table 4.11-3 (Cont.): Existing Levels of Service at Study Intersections

	Intersection	Criteria	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
12	Bella Vista Drive/Walters Road	C	C	21.5	B	17.6
13	Pintail Drive/Walters Road	C	C	17.2	C	29.4
14	Montebello Drive/Walters Road	C	B	18.9	B	14.3
15	Petersen Road/Walters Road	C	A	6.8	A	5.0
16	Main Driveway/Walters Road	C	A	0.2	A	9.4
17	South Driveway/Walters Road	C	A	—	A	—
18	SR-12/Walters Road	C	C	23.9	C	26.4

Notes:
Bold denotes deficient intersection operation; delay is measured in seconds.
 Source: Kimley-Horn and Associates Inc., 2007.

Weekday intersection turning movement volumes were collected at project study area intersections in July 2006. Volumes were collected during the morning and afternoon peak hours of the weekday over a period of a several days. Because the traffic counts were not all collected on the same day, the volumes did not always balance between intersections, due to typical fluctuations in daily traffic. As a result, traffic volumes at intersections were manually adjusted using a conservative approach by balancing to the higher volume between intersections on Walters Road and SR-12.

Because most schools in the project study area were not in session in July, traffic counts did not reflect school traffic. Therefore, traffic counts were manually adjusted upward to include the expected effects of school traffic. As part of the adjustment process, the Fairfield-Suisun Unified School District (FSUSD) was contacted to obtain current enrollment numbers, and the FSUSD Attendance Area map was used to determine where the students live in relation to the schools. The Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region was referenced to determine the number of expected primary trips to the high schools, middle schools, and elementary schools. The school trips were added to the balanced existing turning-movement volumes in the existing conditions. Adjusted existing volumes are provided in Exhibit 4.11-3.

Existing Traffic Signal Warrants

Two intersections that meet the criteria for Traffic Warrant #3 under existing conditions are identified below.

- SR-12/Woodlark Drive
- Pintail Drive/Walters Road

Vehicle Queuing

As congestion increases, it is common for traffic at signals and stop signs to form lines of stopped (or queued) vehicles. Vehicle queues that extend out of the turn pockets can interfere with through-traffic movements and create a potential increase in rear-end collisions. Queue lengths were determined for each lane and measure the distance that vehicles would back up in each direction approaching an intersection. The 95th percentile queue is calculated by using 95th percentile traffic to account for fluctuations in traffic and represents a condition where 95 percent of the time during the peak period, traffic volumes and related queuing would be at, or less than, what is determined by the analysis. Average queuing is generally less. A typical vehicle length of 25 feet is assumed for the purposes of queuing analysis. Table 4.11-4 summarizes existing deficient queuing movements in the project vicinity.

Table 4.11-4: Existing Deficient Queuing Movements

Intersection	Movement	Storage Capacity (feet)	95 th Percentile Queue
SR-12/Marina Boulevard	Eastbound left turn	255	442
SR-12/Sunset Boulevard	Westbound left turn	365	391
	Southbound left turn	150	181
SR-12/Emperor Drive	Northbound left turn	85	339
Air Base Parkway/ Walters Road	Westbound left turn	400	444
	Northbound left turn	230	261
Source: Kimley-Horn and Associates Inc., 2007.			

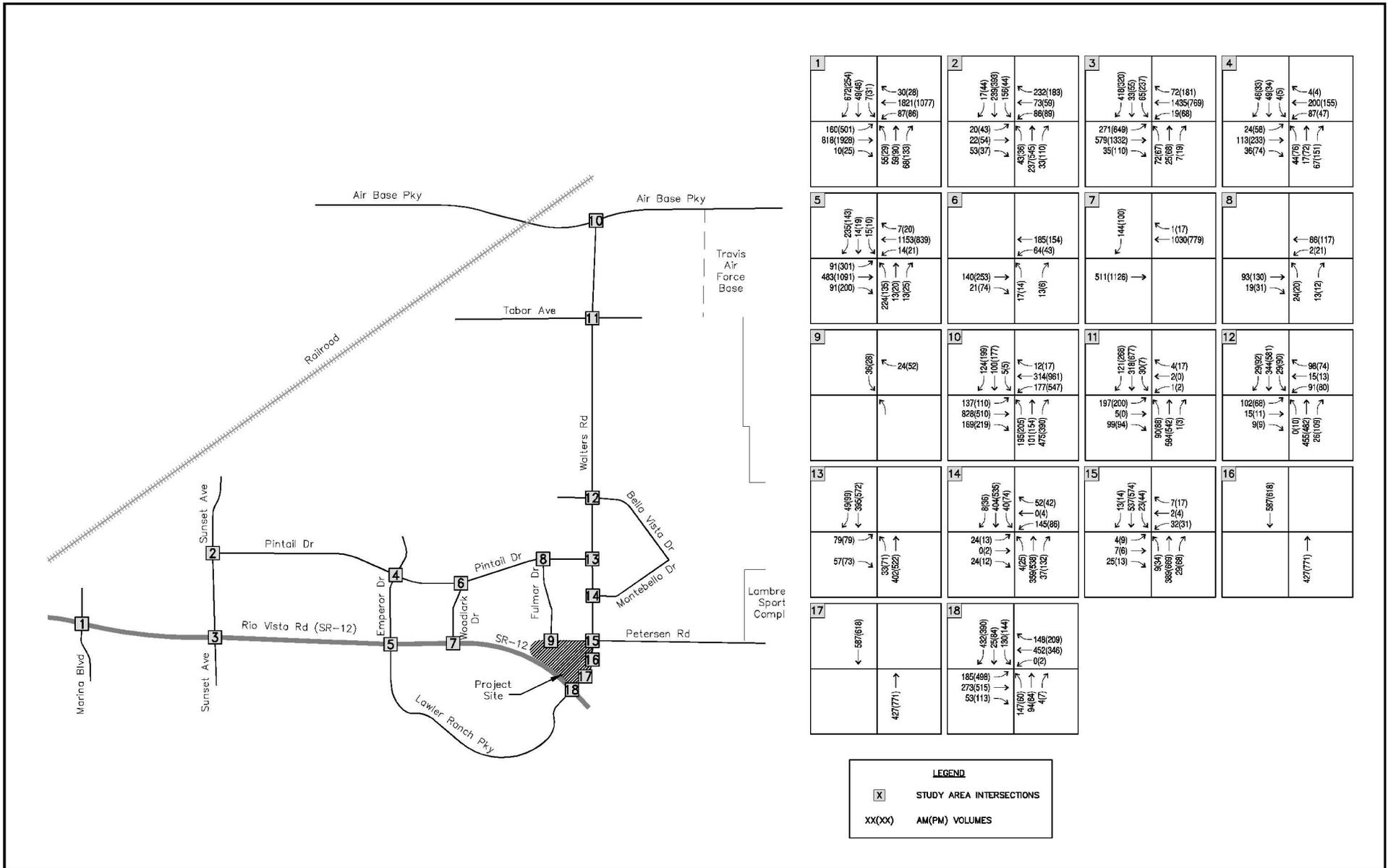
Parking

Currently, the project site is an undeveloped parcel of land with no designated parking on the site. There is sufficient space on the south side of Petersen Road adjacent to the project site to park a vehicle, though it is not designated parking.

Public Transportation

Suisun City is served by local bus service and regional passenger rail service.

Fairfield/Suisun Transit System (FST) operates ten bus routes in the cities of Fairfield and Suisun City. Route 6 operates buses traveling in both directions along the designated route in the adjacent neighborhoods. Route 6 passes directly adjacent to the project site, connects to the Solano Mall, and provides convenient connections to other local transit routes. Route 6 principally circulates through the neighborhoods in southeastern Suisun City that are located close to the project site; however, there are currently no designated bus stops adjacent to the project site. Transit serving the project area operates on a frequency of 30 minutes during the weekday and 60 minutes on Saturday and weekdays after 6:00 p.m. Sunday service is not provided.



Source: Kimley-Horn and Associates, Inc., 2007.



Not to scale

Michael Brandman Associates

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Exhibit 4.11-3 Existing Peak Hour Turning Movements

Amtrak California's Capitol Corridor trains serve the Fairfield-Suisun area 7 days a week with service between Auburn and Oakland. Trains stop at the Suisun-Fairfield station, located at SR-12 and Main Street, 32 times a day on weekdays (16 trains in each direction) and 22 times a day on the weekends (11 trains in each direction).

Bicycle and Pedestrian System

The three types of bikeways are summarized below.

- Class I: Dedicated bicycle/pedestrian path
- Class II: Striped bicycle lane and corresponding signs for bicycle-only use
- Class III: Signed routes shared by either vehicles or pedestrians

Two bicycle facilities are in the project vicinity:

- Central County Bikeway on the north side of SR-12 between Marina Boulevard and Walters Road - Class I
- Walters Road from SR-12 to East Tabor Avenue - Class II

In the project vicinity, sidewalks are present on the east side of Walters Road and the north side of Petersen Road. Sidewalks are also located throughout the residential neighborhoods immediately north of the project site.

Travis Air Force Base

Travis Air Force Base is located 0.75 mile northeast of the project site. The Air Base is home to the 60th Air Mobility Wing, and it serves as the home base for the Wing's reserve counterpart, the 349th Air Mobility Wing (Associate). The 60th Air Mobility Wing is the largest air mobility organization in the United States Air Force, with an all-jet fleet of C-5 Galaxy cargo aircraft, C-17 Globemaster III cargo aircraft and KC-10 Extender refueling aircraft. The Air Base handles more cargo and passengers than any other military air terminal in the United States.

4.11.3 - Regulatory Setting

State

Caltrans

As specified in Caltrans' Guide for the Preparation of Traffic Impact Studies, LOS C or better is used as the criteria for satisfactory operation at intersections on State highway facilities. Impacts are considered significant if the project causes LOS to fall below C. In addition, intersections currently operating at less than LOS C are expected to maintain the existing measure of effectiveness (i.e., delay per vehicle at intersections).

State Aeronautics Act

The State Aeronautics Act requires each county to establish an Airport Land Use Commission to regulate land use around airports, in order to protect public safety and ensure that land uses near airports do not interfere with aviation operations. The Solano County Airport Land Use Commission regulates land use around Travis Air Force Base by recommending to cities that projects in their jurisdictions comply with the Travis Air Force Base Land Use Compatibility Plan. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission.

Local

City of Suisun

City of Suisun City General Plan

The City of Suisun City General Plan establishes the following policies that relate to transportation:

- New development that is additive (not replacement housing or commercial development resulting from Redevelopment Agency activities) will be expected and required to fully fund the need for additional facilities that such development generates, as calculated by the Capital Improvement Program (CIP). The City and the Redevelopment Agency shall jointly determine which specific development projects are to be considered to be “additive” and which are “replacement” for the purpose of fulfilling this policy. (Chapter II - Central Issues, Policy 13)
- All proposed development projects shall be reviewed for specific and cumulative impacts on public facilities and services, as well as other potential environmental impacts. (Chapter II - Central Issues, Policy 14)
- All proposed development projects must demonstrate that the public facilities impacts will be mitigated at least one of three ways:
 - Payment of development impact fees that will provide a proportionate share of the facilities needed as a result of the proposed development; the level of fees to be paid shall be established by the CIP and updated on at least a biannual basis.
 - Construction or provision of the needed facilities at a stage in the development of the project where the additional facilities and services will be needed, as determined by the City.
 - Entering into an assessment district or equivalent financing mechanism to the satisfaction of the City that will provide the funding for the necessary facilities at the time they are needed. (Chapter II - Central Issues, Policy 15)
- Prior to issuance of construction permits, the project developer shall demonstrate that the necessary facility or equipment will be provided in a timely manner, as described above. If the CIP has not scheduled the necessary facilities for construction or purchase at the proper time to fulfill this requirement, the developer may elect to construct the facility or purchase the equipment ahead of the CIP schedule. A binding commitment for this purpose that is

- satisfactory to the City shall be executed prior to issuance of permits. (Chapter II - Central Issues, Policy 16)
- Construct Route 12 to a four-lane expressway standard to Walters Road. Add an additional two lanes when conditions on any segment east of Sunset Avenue fall below Level-of-Service “E.” Provide for the long-term possibility of a grade separation at Sunset Avenue. (Chapter V - Circulation and Transportation Element, Objective 1)
 - Complete the arterial street system as shown in Table V-2 and the Circulation Map to coincide with traffic increases, such that a Level-of-Service “C” or better can be maintained, and continue to implement traffic mitigation measures to achieve these levels of service, including the adoption of a Capital Improvement Program, the charging of traffic mitigation fees, the implementation of subdivision street standards, the adoption of a bicycle circulation plan, the support of Fairfield-Suisun City intercity bus service, and the rehabilitation of the depot as a multi-modal transportation center. (Chapter V - Circulation and Transportation Element, Objective 2)
 - Arterial streets and traffic signals should be funded in large part through an Off-Site Improvement Program (OSSIP) fee levied against new development, with participation in the cost by adjacent property owners where applicable. In determining the amount of the fee, and the portion of the traffic improvement costs that should be borne [for] each new development project, the City will consider the amount of traffic projected to be generated by the project in relation to existing traffic volumes and road capacities. Small projects, to be defined by the City, may be exempt from this policy. (Chapter V - Circulation and Transportation Element, Policy 4)
 - The spacing of access points to adjoining properties along arterial and collectors shall be controlled through the City’s Site Plan and Architectural Review process, such that adequate access separation is maintained for safety and proper traffic flow. (Chapter V - Circulation and Transportation Element, Policy 8)
 - Complete the collector street system shown in Table V-3 and the Circulation Map as development occur adjacent to these proposed streets and as needed to maintain the goal of Level-of-Service “C.” (Chapter V - Circulation and Transportation Element, Objective 3)
 - Provide signals at appropriate intersections in a timely manner, to prevent the deterioration of service levels. (Chapter V - Circulation and Transportation Element, Objective 4)
 - Except on Route 12, signals shall be provided prior to meeting Caltrans warrants, if necessary to prevent deterioration of service levels. (Chapter V - Circulation and Transportation Element, Policy 18)
 - All proposed traffic signals are to be funded through the OSSIP fee program, to ensure their construction when needed and to avoid deterioration of service levels while waiting for the

adjacent property owner to develop or other funding to become available. (Chapter V - Circulation and Transportation Element, Policy 19)

- Provide residents with a variety of public transit options, better fixed route connections and more frequent service, and provide a more cost-effective operation of the transit system. (Chapter V - Circulation and Transportation Element, Objective 8)
- Pursue the expansion of the City's fixed route bus service as new neighborhoods reach sufficient size and density to support expanded bus service. Ensure that transit service in Suisun City is adequate to meet the needs of the City's growing population. (Chapter V - Circulation and Transportation Element, Policy 29)
- The City shall provide for adequate emergency vehicle access in new developments. The City's subdivision standards are currently adequate to provide sufficient road widths for emergency access. (Chapter IX - Noise and Safety, Policy 17)

Parking Requirements

Off-street parking requirements are established by Suisun City Zoning Ordinance Chapter 18.52. The applicable parking requirements for the proposed project are listed below.

- Commercial retail: 1 space per 250 square feet of gross floor area
- Restaurant: 1 space per 100 square feet of gross floor area
- Gas station: 3 spaces minimum plus 1 space per 250 square feet of gross floor area (for convenience store)

City of Fairfield

Intersection Operations

The City of Fairfield General Plan establishes LOS D or better as the minimum performance standard for satisfactory intersection operations on arterial streets.

Solano County Transportation Authority

The Solano County Transportation Authority sets forth various goals, objectives, and policies that would apply to projects in the County. Applicable goals, objectives, and policies from the Solano Comprehensive Transportation Plan, dated June 2005, that are applicable to the proposed project.

Arterials, Highways, and Freeways Element

Goal: Develop a balanced transportation system that reduces congestion and improves access and travel choices through the enhancement of roads.

Objective A - Preserve the System: Preserve the physical and operational condition of existing roadway facilities as a means of protecting past transportation investments and maintaining an effective system.

- Policy 1: Encourage member jurisdictions and Caltrans to maintain level of service (LOS) E or better conditions during the a.m. and p.m. peak hours on roadways of countywide significance.
- Policy 2: Prepare long-term corridor plans to upgrade and widen roadways of countywide significance to provide adequate peak hour and peak period traffic operations.
- Policy 3: Develop a list of priority projects for arterials, highways and freeway for STIP, SHOPP, and federal reauthorization funds.
- Policy 4: Focus countywide funds to enhance and improve roadways of countywide significance.
- Policy 5: Update the roadways of countywide significance and the list of priority projects every two years.

Objective B - Serve Highway Needs: Develop a plan and implementation program for the highway system that serves current and future needs.

- Policy 2: Implement the SR 12 Major Investment Study and conduct major investments studies for SR 113 and SR 29.
- Policy 3: Prepare long-term corridor plans for all roadways of countywide significance that are not on the state highway system.
- Policy 4: Support improvements to roadways of regional significance based on the need to improve transportation system efficiency balanced with quality urban design and, where appropriate, design roadways with consideration for safety, transit, bikeway, and pedestrian facilities.
- Policy 5: Give priority to improvements of highways and roadways that also serve as major transit corridors.

Transit Element

Goal: To develop a comprehensive transit system for buses, rail, and ferries to meet future demand.

Objective A- Convenient Public Transit: Provide intercity public transit services with convenient access to developed areas of the county.

- Policy 1: Provide intercity service coverage with convenient access for the County's population.
- Policy 2: Provide basic non-commute oriented intercity services seven days a week.
- Policy 3: Provide hours-of-service weekday service coverage as needed.
- Policy 4: Meet ADA requirements for fully accessible intercity services.

Objective B - New Service: Provide improved and new services to maximize usage and minimize traffic congestion.

- Policy 1: Maximize intercity patronage.
- Policy 2: Provide reliable service.
- Policy 3: Provide competitive travel times to automobile travel.
- Policy 10: Set priorities for new intercity transit and countywide paratransit services.

Objective C - Efficient Transit: Provide efficient transit services to maximize ridership and cost effectiveness.

- Policy 3: Balance service supply with passenger demands.
- Policy 4: Coordinate intercity services with other regional providers.

Solano County Airport Land Use Commission

The Solano County Airport Land Use commission regulates land use around Travis Air Force Base, recommending to cities that projects in their jurisdiction comply with the Travis Air Force Base Land Use Compatibility Plan to ensure that new and existing development does not create hazards to aviation. In certain circumstances, local governments have the ability to override the decisions of the Airport Land Use Commission.

The Solano County Airport Land Use Commission adopted the Travis Air Force Base Land Use Compatibility Plan on June 13, 2002. The plan identifies land use compatibility policies applicable to future development near Travis Air Force Base. The policies are designed to ensure that future land uses in the surrounding area will be compatible with potential aircraft activity at the Base. The project site is located within Zone C of the plan.

4.11.4 - Methodology

Analysis in this section was based on the information in the Final Transportation, Circulation, and Parking Impact Study prepared by Kimley-Horn and Associates, Inc.

The traffic study was prepared based on discussions with, and criteria set forth by, the City of Suisun City and Caltrans. Both agencies identified the intersections that are evaluated in the Transportation, Circulation, and Parking Impact Study. The study addresses the traffic and transportation effects of the proposed development in order to assist the project applicant and the City with project planning and determining conditions of approval for the project.

Based on Suisun City requirements, traffic analysis to determine LOS was completed using Traffix software at all intersections. Traffix software is based on the methodology contained in the Highway Capacity Manual 2000. A significant impact would occur if levels of service at the study

intersections drop below the established thresholds. Mitigation may be required when traffic from the project causes the intersection to operate below acceptable levels of traffic operation.

Analysis Scenarios

- Near-term conditions (2008) without project: based on traffic volumes and traffic added by approved (but not completed) developments assumed to occur at the time the project is constructed. The scenario also includes pending projects determined by the City to have a high likelihood of being completed based on progress towards approval, as well as roadway projects to be in place at the same time the project is anticipated to be completed.
- Near-term conditions with project: based on existing traffic volumes, traffic added by approved and pending (but not completed) developments, and traffic generated by the proposed project. The scenario includes roadway projects anticipated to be in place at the same time the project is to be completed.
- Long-term (2030) conditions without the project: based on future-year traffic forecasts from Solano Transportation Authority (STA).
- Long-term conditions with the project: based on STA traffic forecasts and traffic generated by the proposed project.

Significance of impacts regarding LOS was determined using the following criteria:

- As specified by Caltrans, LOS C or better is used as the criteria for satisfactory intersection operation. Impacts are considered significant if the project caused LOS to fall below C. In addition, intersections operating at an LOS of C are expected to maintain the existing measure of effectiveness.
- As specified by the City of Fairfield, LOS D or better is used as the criteria for satisfactory operation at intersections on arterial streets. A significant impact would occur if levels of service at the study intersections drop below the established thresholds.
- As specified by the City of Suisun City, LOS C or better is used as the criteria for satisfactory operation at intersections on arterial streets. A significant impact would occur if levels of service at the study intersections drop below the established thresholds.

Intersection Peak-Hour Level of Service

Traffic operations were evaluated at signalized and unsignalized intersections under existing traffic conditions. For two-way, stop-controlled intersections, the worst approach delay and LOS are reported. As noted previously, all Suisun City intersections are to operate at a minimum LOS C, Caltrans intersections along SR-12 are to operate at a minimum LOS C, and Fairfield intersections on Walters Road are to operate at a minimum LOS D.

Traffic Signal Warrants

For this study, data was available for the AM and PM peak-hour periods; therefore, KHA checked the traffic volumes at the unsignalized intersections against the peak-hour warrant in the 2000 Manual on Uniform Traffic Control Devices (MUTCD). The criteria for Warrant #3 are met when traffic volumes on the major and minor approaches exceed specified thresholds for at least 1 hour of the day. The warrant applies to traffic conditions during a 1-hour peak that are high enough that minor street traffic experiences excessive delay in entering and crossing the street. Warrants were evaluated in the existing, near- and long-term scenarios.

Vehicle Queuing

The effects of vehicle queuing were analyzed and a significant impact was assumed to occur if the queue increases by one or more vehicles (a vehicle is 25 feet long), and the vehicle queue exceeds the turn-pocket length.

4.11.5 - Impacts and Mitigation Measures

This section discusses potential transportation impacts associated with the development of the project. Mitigation measures are provided where appropriate.

Thresholds of Significance

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

- Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?
- Result in inadequate parking capacity?
- Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?

The City of Suisun City, the City of Fairfield, and Caltrans have established performance standards for intersection operations, which are summarized below:

- **Suisun City:** LOS C or better is used as the criteria for satisfactory operation at intersections on arterial streets. A significant impact would occur if levels of service at the study intersections drop below the established thresholds.
- **Fairfield:** LOS D or better is used as the criteria for satisfactory operation at intersections on arterial streets. A significant impact would occur if levels of service at the study intersections drop below the established thresholds.
- **Caltrans:** LOS C or better is used as the criteria for satisfactory intersection operation. Impacts are considered significant if the project caused LOS to fall below C. In addition, intersections operating at an LOS of C are expected to maintain the existing measure of effectiveness.

Project Impacts and Mitigation Measures

Analysis of Intersection Operation Impacts

Impacts TRANS-1 and TRANS-2 analyze the proposed project's impacts on intersection operations. Both impacts rely on the same projections of planned improvements to the roadway network, traffic volumes generated from approved and pending projects, and the proposed project's trip generation rates. The projections are summarized below. Note that near-term conditions represent 2008 and long-term conditions represent 2030.

Planned and Proposed Transportation Improvements

Planned and proposed transportation improvements in the vicinity of the project site were considered for this transportation analysis. Although citywide transportation improvements are planned for the City of Suisun City at approximately the same time as the completion of the proposed project (2008), there are no improvements at the study intersections. In addition, no improvements are planned for Caltrans (e.g., SR-12) or Fairfield intersections in the near-term. Planned roadway geometry and traffic control planned for the local roadway network under near-term conditions are provided in Exhibit 4.11-4. The improvements are anticipated to be in place before, or at approximately the same time as, the proposed opening year of the proposed project.

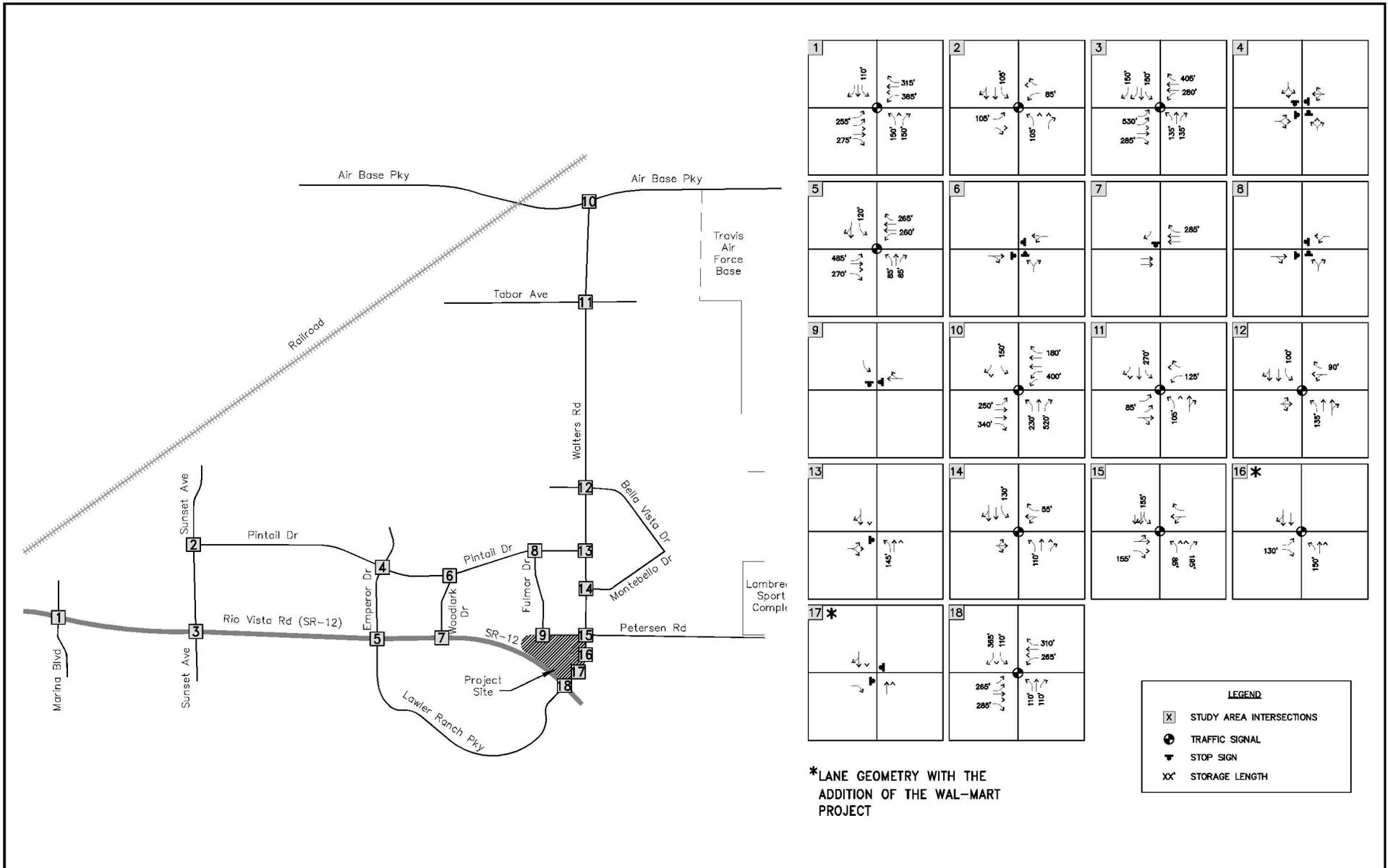
Approved and Pending Development Projects

Several development projects in the vicinity of the project site are in various stages of planning or development. These projects will ultimately be developed at roughly the same time or following the proposed project. In order to analyze transportation impacts caused by the proposed project and future transportation conditions in the surrounding area as accurately as possible, these projects are considered in this transportation analysis. Information on nearby approved and pending projects was provided by the cities of Suisun City and Fairfield.

All of the projects are approved for construction or are pending for approval but are not completed or fully occupied. Approved and pending projects included in this study are listed in Table 4.11-5 and their locations are shown in Exhibit 4.11-5. Traffic volumes generated by the approved and pending projects are shown in Exhibit 4.11-6.

Table 4.11-5: Approved and Pending Development Projects

Project	Size	Location
Suisun-Gentry	480,000 square feet retail 232 dwelling units	SR-12 and Pennsylvania Avenue
Amberwood Homes (Blossom Manor)	28 dwelling units	Blossom Road between Railroad Avenue and Sarah Way
Peterson Ranch Homes	548 dwelling units	Between East Tabor Avenue and Bella Vista Drive, and between Travis Air Force Base and Walters Road
Breezewood Village Apartments	80 dwelling units	Worley Road between Railroad Avenue and Philip Way
McCoy Creek Mixed Use	19 single-family homes 10 live-work units 6,818 square feet office	South side of SR-12 between McCoy Creek Drive and Suisun Marsh, and between Grizzly Island Road and Crescent Elementary School
Courtyards at Sunset Homes	69 dwelling units	North side of Railroad Avenue, west of Sunset Avenue
Cottonwood Creek Apartments	120 dwelling units	North side of Railroad Avenue, west of Sunset Avenue
Almond Tree Place Condominiums	61 dwelling units	Railroad Avenue between Humphrey Drive and Olive Avenue
Blossom Courtyards Homes	75 dwelling units	Southeast corner of Blossom Avenue and Railroad Avenue
Suisun Mixed-Use Village (Hoffman Mixed Use)	125 single-family homes 125 condominiums City park and fire station 60,000 square feet retail 90,000 square feet light industrial	Between SR-12 and Railroad Avenue, and west of Marina Boulevard
Stoneyard Masonry	4,000 square feet	Near the corner of Petersen Road and Walters Road, between the Bonfaire Market and Macedonia Church
Suisun Seafood Store	9,000 square feet	303 Lawler Center Drive
Main Street West Development (Project 1)	17,956 square feet retail 16,500 square feet office	Southeast corner of Main Street and Solano Street
Main Street West Development (Project 2)	5,437 square feet retail 5,142 square feet office	Northeast corner of Main Street and Solano Street
Goldridge Homes	1,458 dwelling units	Peabody Road near Joseph Gerevas Drive



Source: Kimley-Horn and Associates, Inc., 2007.



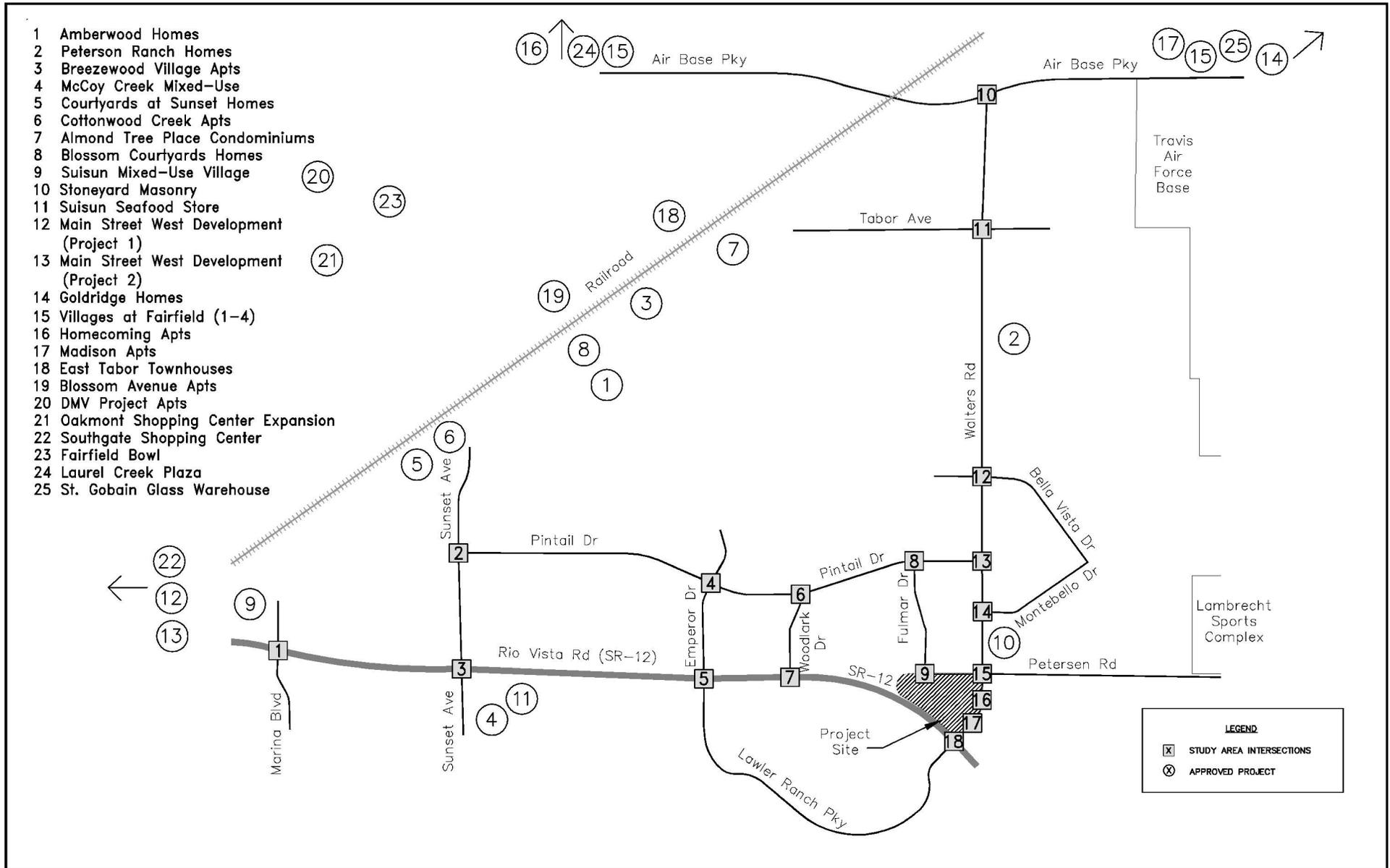
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Exhibit 4.11-4 Near-Term Lane Geometry and Traffic Control

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT



- 1 Amberwood Homes
- 2 Peterson Ranch Homes
- 3 Breezewood Village Apts
- 4 McCoy Creek Mixed-Use
- 5 Courtyards at Sunset Homes
- 6 Cottonwood Creek Apts
- 7 Almond Tree Place Condominiums
- 8 Blossom Courtyards Homes
- 9 Suisun Mixed-Use Village
- 10 Stoneyard Masonry
- 11 Suisun Seafood Store
- 12 Main Street West Development (Project 1)
- 13 Main Street West Development (Project 2)
- 14 Goldridge Homes
- 15 Villages at Fairfield (1-4)
- 16 Homecoming Apts
- 17 Madison Apts
- 18 East Tabor Townhouses
- 19 Blossom Avenue Apts
- 20 DMV Project Apts
- 21 Oakmont Shopping Center Expansion
- 22 Southgate Shopping Center
- 23 Fairfield Bowl
- 24 Laurel Creek Plaza
- 25 St. Gobain Glass Warehouse

Source: Kimley-Horn and Associates, Inc., 2007.

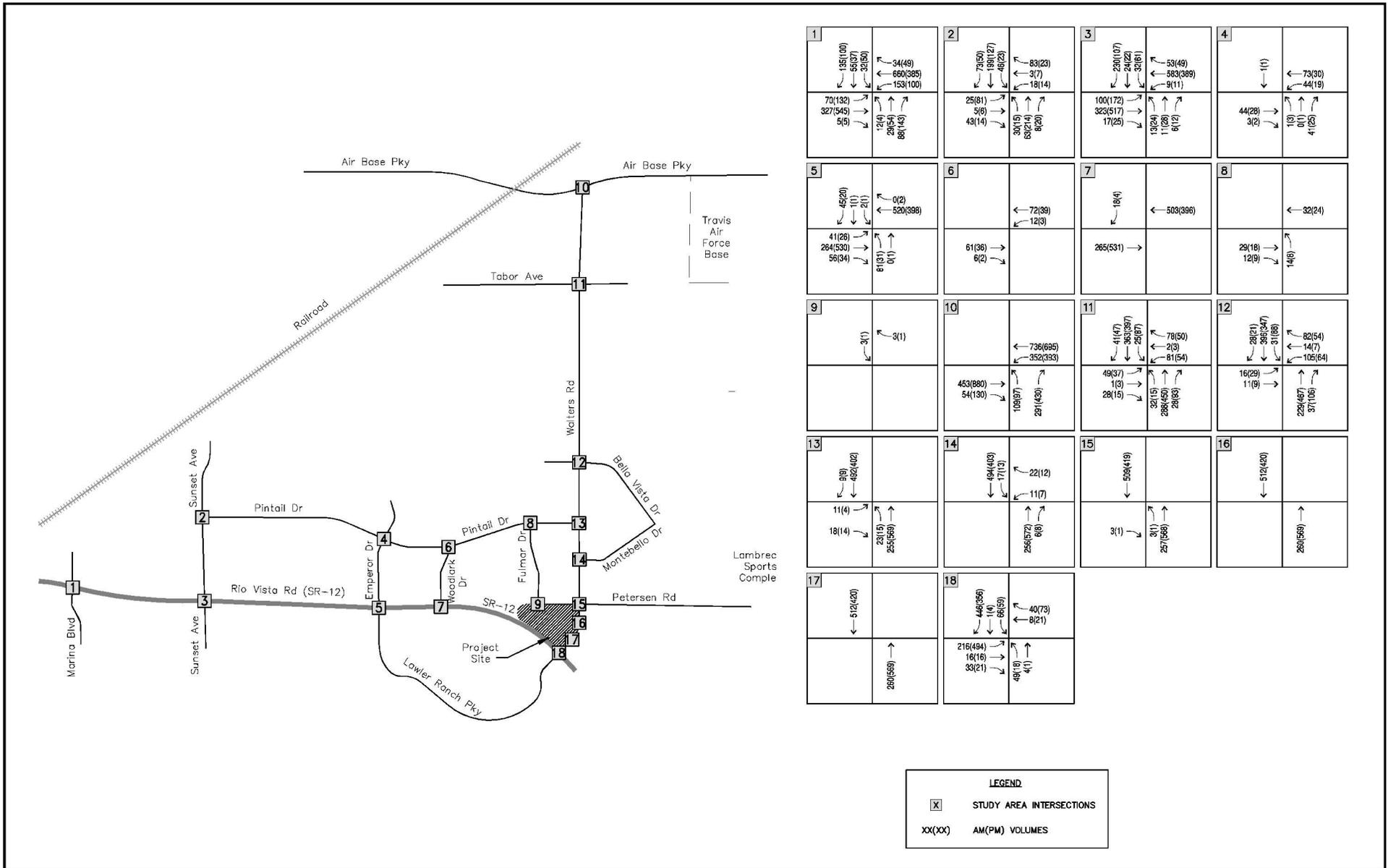


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Exhibit 4.11-5 Approved and Pending Projects



Source: Kimley-Horn and Associates, Inc., 2007.



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Exhibit 4.11-6 Approved Project Trip Volumes

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT

Table 4.11-5 (Cont.): Approved and Pending Development Projects

Project	Size	Location
Villages at Fairfield (1 through 4)	204 dwelling units 305 dwelling units 899 dwelling units 295 dwelling units (apartments) 79 dwelling units	Cement Hill Road, between Clay Bank Road and Peabody Road
Homecoming Apartments	628 dwelling units	Cement Hill Road near Clay Bank Road
Madison Apartments	221 dwelling units	Near Vanden Road and Peabody Road
East Tabor Townhouses	94 dwelling units	East Tabor Avenue south of Clay Bank Road
Blossom Avenue Apartments	92 dwelling units	Blossom Road north of Railroad Avenue
DMV Project Apartments	22 dwelling units	Pacific Avenue
Oakmont Shopping Center Expansion	40,000 square feet retail	North Texas Street south of East Tabor Avenue
Southgate Shopping Center	17,500 square feet retail	Pennsylvania Avenue and SR-12
Fairfield Bowl	8,500 square feet	North Texas Street, north of East Tabor Avenue
Laurel Creek Plaza	100,000 square feet retail	Clay Bank Road, north of Air Base Parkway
St. Gobain Glass Warehouse	1,100 square feet light industrial	Huntington Drive near Peabody Road
Source: Kimley-Horn and Associates, Inc., 2007.		

Project Trip Generation

Trip generation for the proposed project was calculated based on rates contained in the Institute of Transportation Engineers’ (ITE) publication, Trip Generation 7th Edition, a standard reference used by jurisdictions throughout the country to estimate trip generation potential of proposed developments.

A trip is defined in Trip Generation as a single or one-directional vehicle movement with either the origin or destination at the project site. A trip can be either “to” or “from” the site. In addition, a single customer visit to a site is counted as two trips (i.e., one to and one from the site).

Trip generation calculations were prepared with ITE methodology based on gross floor area of the building. This includes the sum of the floor area in square feet “including any cellars, basements, mezzanines, penthouses, corridors, lobbies, stores, and offices that are within the principal outside faces of exterior walls.” ITE specifies that “unroofed areas and unenclosed roofed-over spaces, except those contained within the principle out-side faces of exterior walls, should be excluded from the area calculations.”

Excluding the areas does not suggest that they do not generate trips to or from the project site; rather, it is a statement that the ITE methodology already incorporates these trips in the base trip generation rates reported by ITE. Adding the unroofed-over areas or unenclosed roofed-over spaces would double-count trip generation contributed by those areas. Therefore, the square footage associated with the drive-through, seasonal garden sales area, and other incidental outside areas was not included in the square footage calculation.

For purposes of determining the worst-case impacts of traffic on the surrounding street network, the trips generated by a proposed development are typically estimated between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. on weekdays. The weekday peak hour of adjacent street traffic represents the time period when the project uses generally contribute to the greatest amount of congestion, with the weekday afternoon peak hour commonly the greatest congestion period that triggers project mitigation. For this reason, this evaluation focused on the weekday morning and afternoon peak hours.

The proposed Wal-Mart Supercenter is most appropriately classified as Free-Standing Discount Superstore (ITE Land Use 813). This use is defined by ITE as being "...similar to the free-standing discount stores described in Land Use 815, with the exception that they also contain a full service grocery department under the same roof that shares entrances and exits with the discount store area." ITE advises that only the interior building square footage should be used when calculating trip generation. Accordingly, the 14,089 square feet of garden center uses were excluded, and the figure of 200,831 square feet was used to calculate the Wal-Mart Supercenter trip generation.

Free-Standing Discount Store (Land Use 815) is characterized by ITE as being "a free-standing store that offers a variety of customer services, centralized cashiering, and a wide range of products that typically maintain long store hours seven days a week." The major difference between ITE Land Use 813 and Land Use 815 is that Free-Standing Discount Superstores have a full service grocery department.

According to ITE, superstores have a higher average trip rate than discount stores in the morning peak hour, and discount stores have a higher average rate than superstores in the afternoon peak hour. However, it should be noted that the trip generation rates for superstores are based on a smaller data sample. Therefore, to be conservative, trip generation for the AM peak was based on ITE Land Use 813 and trip generation for the PM peak was based on ITE Land Use 815. Table 4.11-6 summarizes the trip generation rates by ITE code.

Table 4.11-6: ITE Trip Generation Rates

ITE Code	Unit	Trip Generation Per Unit		
		Daily	AM	PM
813 - Free-Standing Discount Super Store	1,000 square feet	49.21	1.84	3.87
815 - Free-Standing Discount Store	1,000 square feet	56.02	0.84	5.06
932 - Sit-Down Restaurant	1,000 square feet	127.15	11.52	10.92
946 - Gasoline Station	Fueling position	152.84	10.64	13.33

Source: Institute of Transportation Engineers, 2003.

Using the per-unit trip generation rates shown in Table 4.11-6, trip generation was calculated for the proposed project on the basis of square footage (Wal-Mart Supercenter and sit-down restaurant) or numbers of pumps (gas station). The proposed project's trip generation projections are summarized in Table 4.11-7.

Table 4.11-7: Project Trip Generation

Land Use (ITE Code)	Size	Trips							
		AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
Free-Standing Discount Superstore (813 - AM; 815 - PM)	200,831 square feet	1.84	188	181	369	5.06	508	508	1,016
Internal Capture (5% - PM only)		—	—	—	—	—	-25	-25	—
Pass-by (17% - PM only)		—	—	—	—	—	-83	-83	—
Subtotal					369	Subtotal			800
Sit-Down Restaurant (932)	8,000 square feet	11.52	48	44	92	10.92	53	34	87
Internal Capture (41% - PM only)		—	—	—	—	—	-22	-14	—
Pass-by (43% - PM only)		—	—	—	—	—	-13	-9	—
Subtotal					92	Subtotal			29
Gasoline Station with Convenience Store and Car Wash (946)	12 pumps	10.64	65	63	128	13.33	80	80	160
Internal Capture (31% - PM only)		—	—	—	—	—	-25	-25	—
Pass-by (62% - AM; 56% - PM)		—	-40	-39	—	—	-31	-31	—
Subtotal					49	Subtotal			48
AM Total					510	PM Total			877

Source: Kimley-Horn and Associates, Inc., 2007.

Internal Capture

Internal trips were considered in determining total project traffic. These trips represent traffic that travels from one project component to another within the proposed development. The Draft Transportation, Circulation, and Parking Impact Study calculated the potential for trips internally captured (linked) within the development between the retail, restaurant, and gas station uses. Internal capture adjustments were applied to the trip generation forecasts to reflect internal trips. Calculations for internal capture were prepared in accordance with the methodology and using average rates found in ITE Trip Generation Handbook, 2nd Edition. The following internal capture rates were used in the analysis:

Discount Superstore

- Morning peak-hour internal capture rate - None
- Afternoon peak-hour internal capture rate - 5 percent

High-Turnover (Sit-Down) Restaurant

- Morning peak-hour internal capture rate - None
- Afternoon peak-hour internal capture rate - 41 percent

Gasoline Station

- Morning peak-hour internal capture rate - None
- Afternoon peak-hour internal capture rate - 31 percent

Project Trip Pass-By

The proposed project would attract “pass-by” trips, which are trips already on the road that would likely stop as they pass by the site. These are not new vehicle trips but are considered existing trips. Pass-by trips were calculated from data published in ITE’s Trip Generation Handbook, 2nd Edition. To be consistent with the trip generation assumptions noted earlier for the discount store, weekday PM pass-by reductions were based on Free-Standing Discount Store (Land Use 815), that is, 17 percent. Using a weekday afternoon peak-hour pass-by based on Land Use 815 was considered to be conservative because, according to ITE, the Free-Standing Discount Superstore has a higher (i.e., 28 percent) average weekday PM pass-by rate. Although pass-by trips are expected in the morning peak hour, the analysis assumed no morning peak-hour pass-by would occur because data was unavailable from ITE. The following pass-by rates were used in the analysis:

Discount Superstore

- Morning peak-hour pass-by rate - None
- Afternoon peak-hour pass-by rate - 17 percent

High-Turnover (Sit-Down) Restaurant

- Morning peak-hour pass-by rate - None
- Afternoon peak-hour pass-by rate - 43 percent

Gasoline Station

- Morning peak-hour pass-by rate - 62 percent
- Afternoon peak-hour pass-by rate - 56 percent

Project Trip Distribution and Assignment

Project trip distribution and assignment were determined by reviewing existing traffic volumes at study intersections and evaluating the proximity of the proposed project’s commercial retail uses to the surrounding population centers and other competing commercial uses. Because of the nature of the development, most customers and employees of the proposed project are expected to travel from locations in Suisun City. The nearby community of Fairfield already has similar commercial retail facilities and, therefore, few drivers are expected to travel from outlying areas to the proposed project. Truck trips serving the project would likely arrive from locations outside of Suisun City and would use SR-12. A project traffic distribution is shown in Exhibit 4.11-7 that is based on the (1) geographic location of the project in relation to existing traffic patterns (as noted in turning movement counts), (2) the likely employee and customer base for the site, (3) major connections to principal arterials and freeways, and (4) potential access limitations.

Based on the assumed trip distribution, new vehicle trips generated by the proposed project were assigned to the street network (Exhibit 4.11-8). Note that the volumes shown in Exhibit 4.11-8 are only related to the proposed project. Exhibit 4.11-9 shows the pass-by trips expected at the project driveways. Total project vehicle trips, included project-generated trips, and pass-by trips are shown in Exhibit 4.11-10.

Near-Term - Intersection Operations

Impact TRANS-1: Traffic from the proposed project would contribute to existing deficient intersection operations under near-term conditions.

Impact Analysis

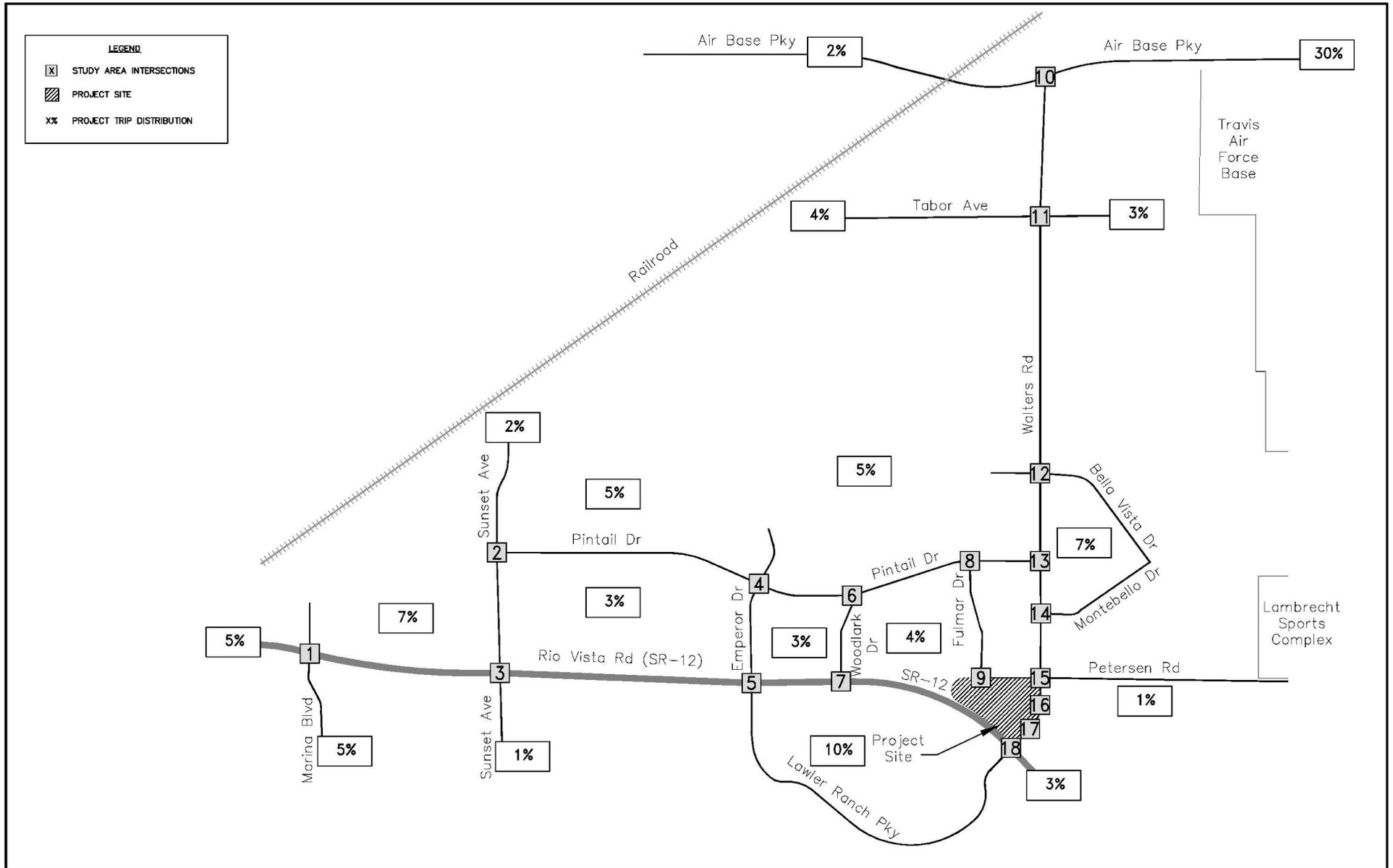
Near-term intersection operations (Year 2008) were evaluated under “without project” and “with project” scenarios. Table 4.11-8 provides a comparison of each scenario. Exhibit 4.11-11 depicts the near-term without project trip volumes, and Exhibit 4.11-12 depicts the near-term with project trip volumes.

Table 4.11-8: Near-Term Intersection Operations

	Intersection	Criteria	Without Project				With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	SR-12/Marina Boulevard	C	F	209.6	F	138.6	F	213.4	F	150.9

Table 4.11-8 (Cont.): Near-Term Intersection Operations

	Intersection	Criteria	Without Project				With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
2	Pintail Drive/ Sunset Avenue	C	C	27.0	C	21.1	C	27.1	C	21.3
3	SR-12/Sunset Avenue	C	E	56.5	D	37.7	E	58.4	D	39.6
4	Pintail Drive/ Emperor Drive	C	B	11.5	B	15.3	B	12.1	C	17.7
5	SR-12/Emperor Drive	C	C	33.6	C	24.9	D	35.8	C	26.6
6	Pintail Drive/ Woodlark Drive	C	A	9.1	A	9.4	A	9.6	B	10.4
7	SR-12/Woodlark Drive	C	C	24.5	B	15.1	D	26.3	C	16.0
8	Pintail Drive/ Fulmar Drive	C	A	7.8	A	8.0	A	8.1	A	8.6
9	Petersen Road/ Fulmar Drive	C	A	7.1	A	6.9	A	7.4	A	7.9
10	Air Base Parkway/ Walters Road	D	F	117.3	F	156.7	F	142.3	F	200.1
11	Tabor Avenue/ Walters Road	D	C	23.2	C	20.2	C	23.7	C	21.6
12	Bella Vista Drive/ Walters Road	C	C	25.0	C	23.3	C	25.5	C	24.5
13	Pintail Drive/ Walters Road	C	F	36.5	F	325.1	F	193.2	F	557.0
14	Montebello Drive/ Walters Road	C	C	20.6	B	15.1	C	21.7	B	16.1
15	Petersen Road/ Walters Road	C	A	6.3	A	4.8	A	6.9	A	5.7
16	Main Driveway/ Walters Road	C	A	3.1	B	11.8	B	11.2	B	17.3
17	South Driveway/ Walters Road	C	A	13.1	A	0.0	B	14.2	B	13.7
18	SR-12/Walters Road	C	E	42.5	E	62.4	E	55.3	F	94.7
<p>Notes: Bold denotes deficient intersection operation. Source: Kimley-Horn and Associates Inc., 2007.</p>										



Source: Kimley-Horn and Associates, Inc., 2007.

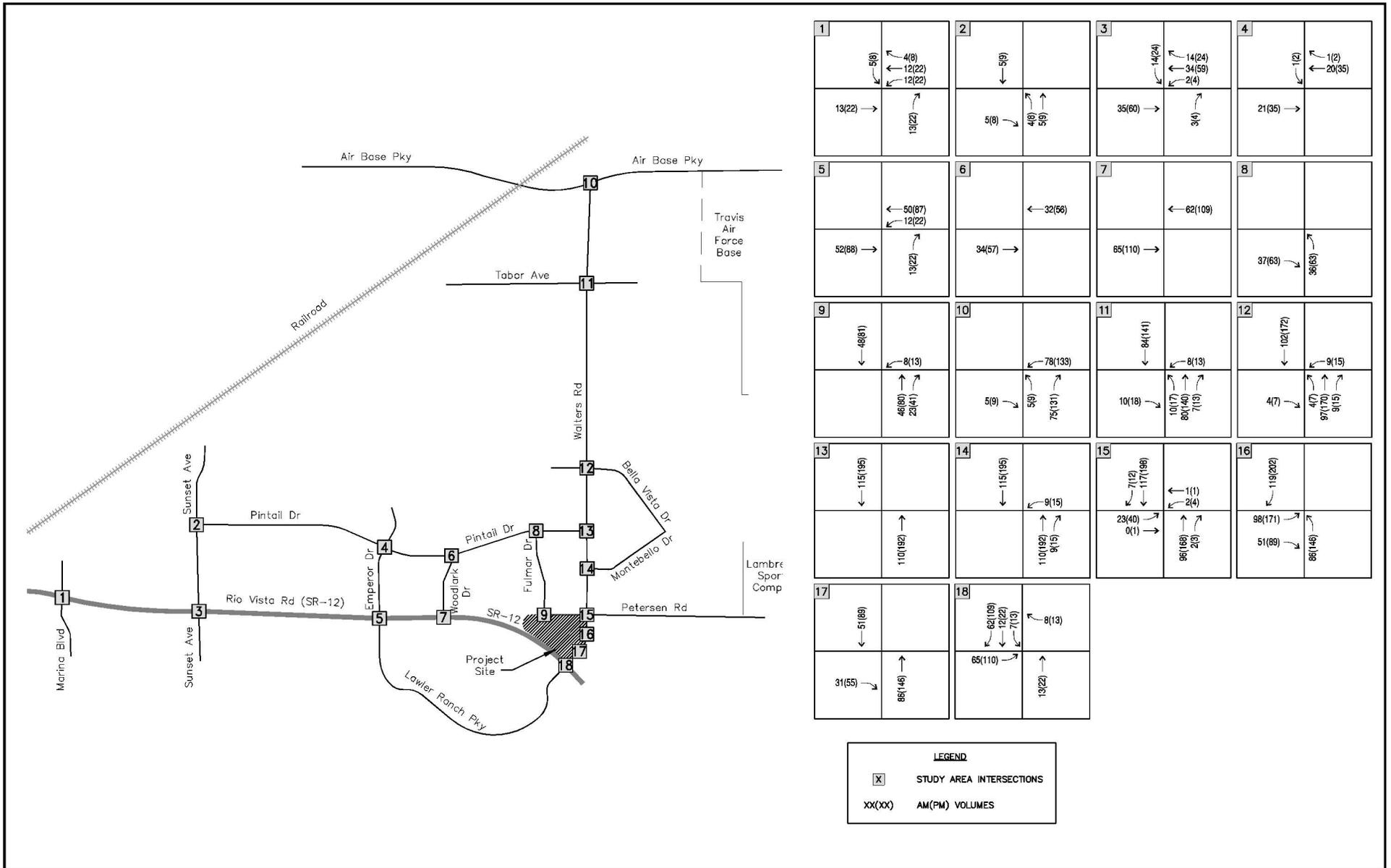


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Exhibit 4.11-7 Project Trip Distribution



Source: Kimley-Horn and Associates, Inc., 2007.

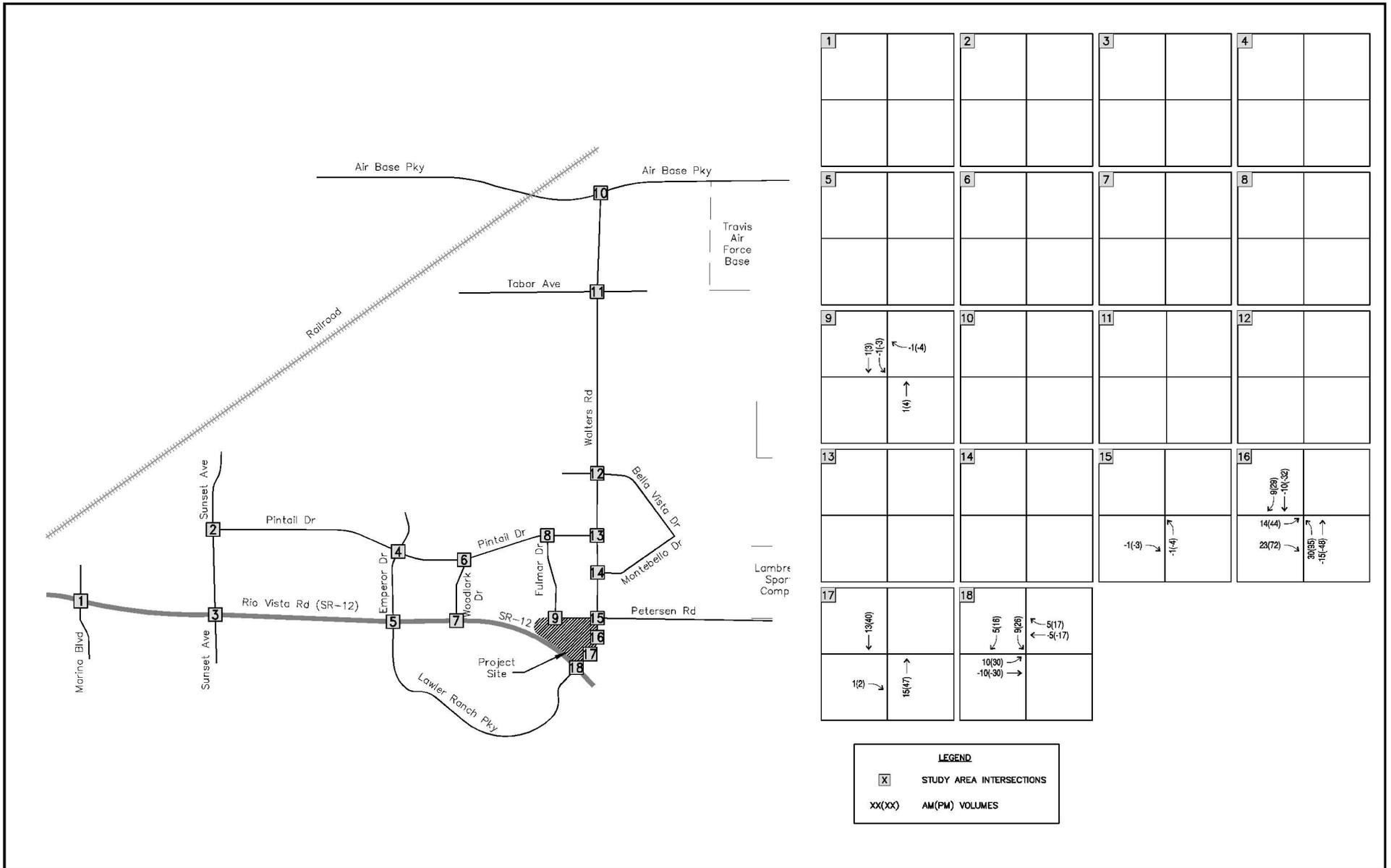


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Exhibit 4.11-8 Project-Generated Trip Volumes



Source: Kimley-Horn and Associates, Inc., 2007.

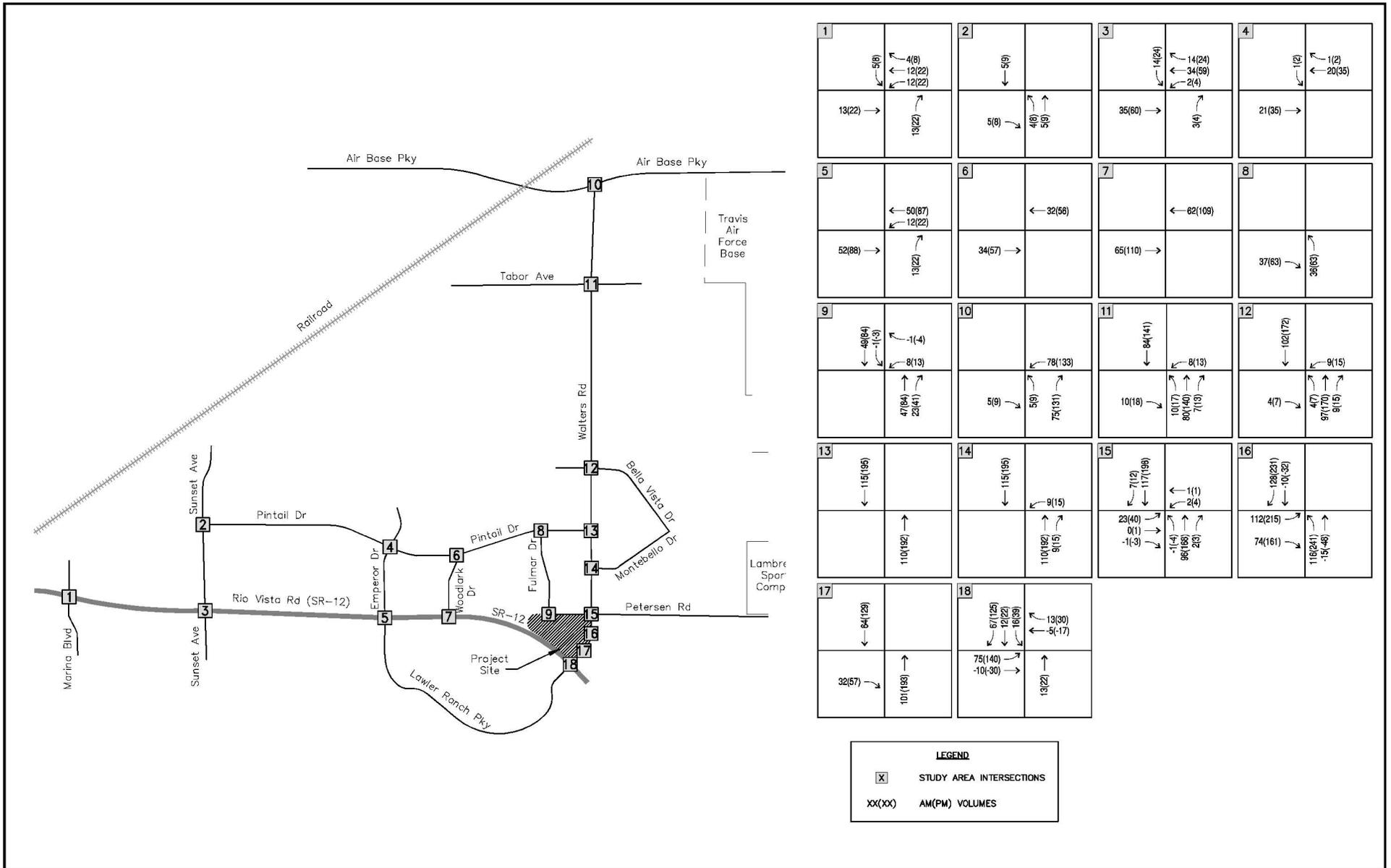


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Exhibit 4.11-9 Project Pass-By Trips



Source: Kimley-Horn and Associates, Inc., 2007.

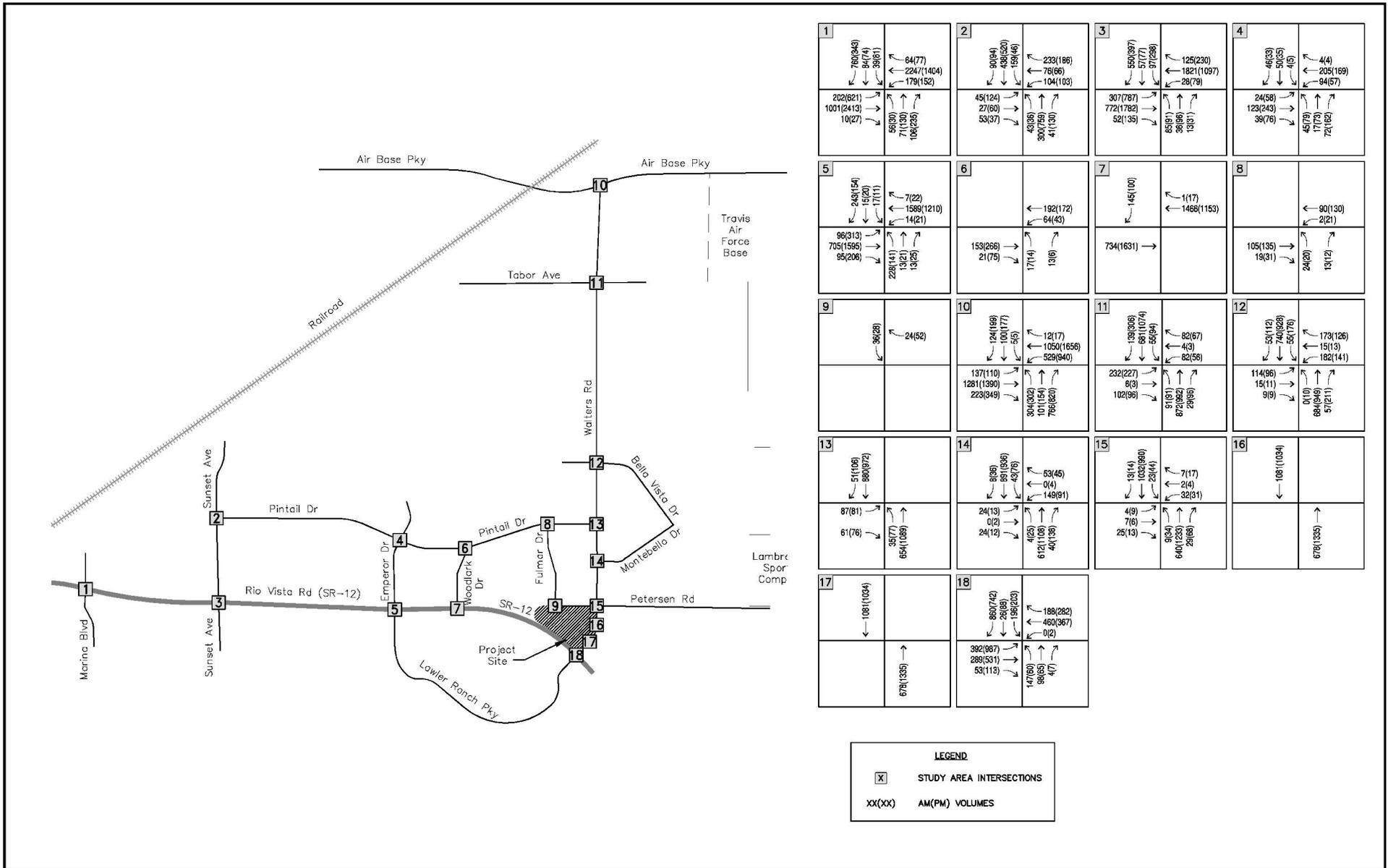


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Exhibit 4.11-10 Total Project Trip Volumes



Source: Kimley-Horn and Associates, Inc., 2007.

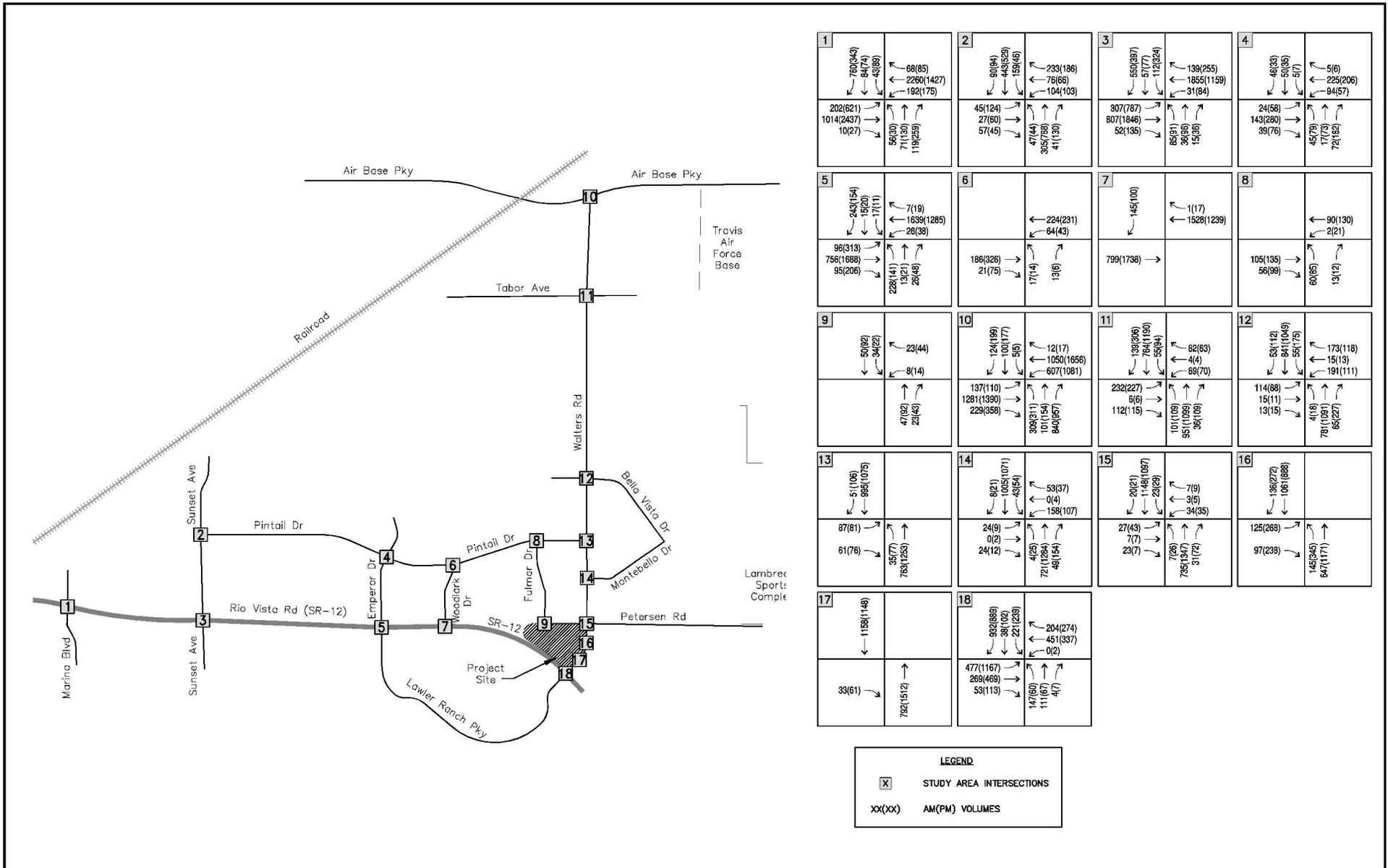


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Exhibit 4.11-11 Near-Term Without Project Volumes



Source: Kimley-Horn and Associates, Inc., 2007.



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Exhibit 4.11-12 Near-Term With Project Volumes

As shown in Table 4.11-8, under the near-term without project scenario, six intersections are expected to operate at a deficient LOS. With the addition of traffic generated by the proposed project, an additional intersection would operate at a deficient LOS. The seven intersections that operate at deficient LOS under the with project scenario are listed below.

- SR-12/Marina Boulevard
- SR-12/Sunset Avenue
- SR-12/Emperor Drive
- SR-12/Woodlark Drive
- Air Base Parkway/Walters Road
- Pintail Drive/Walters Road
- SR-12/Walters Road

Mitigation is proposed that would require the project applicant to provide improvements to these seven intersections. Table 4.11-9 provides a summary of the mitigated LOS at the study intersections. As shown in the table, after the implementation of mitigation, all project-impacted intersections would experience improvement. Three intersections—SR-12/Emperor Drive, SR-12/Woodlark Drive, and Pintail Drive/Walters Road—would be improved from unacceptable to acceptable LOS. The remaining four intersections—SR-12/Marina Boulevard, SR-12/Sunset Avenue, Air Base Parkway/Walters Road, and SR-12/Walters Road—would still operate at unacceptable LOS, but they would experience improvement relative to the near-term without project scenario and, therefore, would not be considered a significant impact.

The City of Suisun City does not currently have an agreement with Caltrans or the City of Fairfield to finance roadway improvements necessary to mitigate development-related impacts. The Gentry-Suisun Draft Environmental Impact Report proposed a mitigation measure (4.5-1) that would require the City to create a Capital Improvement Program (CIP) to collect traffic mitigation fees from new development projects and fund the installation of necessary roadway improvements. Because it is possible that the proposed project may be considered for approval prior to the Gentry-Suisun project, that mitigation measure is restated in this EIR as Mitigation Measure TRANS-1H. With the establishment of a CIP, a mechanism would be in place to collect fees and finance roadway improvements; therefore, the implementation of necessary improvements would be considered to have a higher degree of certainty. However, because the City of Fairfield and Caltrans have jurisdiction over several roadways where improvements would be required to bring intersection operations to acceptable levels, the City of Suisun City cannot assure that the improvements would be in place by the time of project opening. Therefore, there is the possibility that the impact will not be fully mitigated, and a significant impact would occur. For this reason, the residual significance of this impact is significant and unavoidable.

Table 4.11-9: Near-Term Intersection Operations After Mitigation

	Intersection	Criteria	Unmitigated With Project				Mitigated With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	SR-12/Marina Boulevard	C	F	213.4	F	150.9	F	150.9	F	103.1
2	Pintail Drive/Sunset Avenue	C	C	27.1	C	21.3	C	26.8	C	21.2
3	SR-12/Sunset Avenue	C	E	58.4	D	39.6	D	54.1	C	33.8
4	Pintail Drive/Emperor Drive	C	B	12.1	C	17.7	B	11.7	C	15.9
5	SR-12/Emperor Drive	C	D	35.8	C	26.6	C	25.3	C	24.3
6	Pintail Drive/Woodlark Drive	C	A	9.6	B	10.4	A	9.6	B	10.4
7	SR-12/Woodlark Drive	C	D	26.3	C	16.0	C	15.9	B	12.4
8	Pintail Drive/Fulmar Drive	C	A	8.1	A	8.6	A	8.1	A	8.6
9	Petersen Road/Fulmar Drive	C	A	7.4	A	7.9	A	7.4	A	7.9
10	Air Base Parkway/Walters Road	D	F	142.3	F	200.1	E	72.0	F	124.7
11	Tabor Avenue/Walters Road	D	C	23.7	C	21.6	C	23.7	C	21.7
12	Bella Vista Drive/Walters Road	C	C	25.5	C	24.5	C	25.5	C	24.4
13	Pintail Drive/Walters Road	C	F	193.2	F	557.0	B	10.0	B	10.8
14	Montebello Drive/Walters Road	C	C	21.7	B	16.1	C	21.7	B	15.7
15	Petersen Road/Walters Road	C	A	6.9	A	5.7	A	6.9	A	5.7
16	Main Driveway/Walters Road	C	B	11.2	B	17.3	A	9.1	B	16.6
17	South Driveway/Walters Road	C	B	14.2	B	13.7	B	14.0	B	13.6
18	SR-12/Walters Road	C	E	55.3	F	94.7	D	36.1	D	38.0

Notes:
Bold denotes deficient intersection operation.
 Source: Kimley-Horn and Associates Inc., 2007.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- MM TRANS-1a** Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for modifying the existing signal phasing at the intersection of SR-12 and Marina Boulevard. The existing split phasing in the northbound-southbound direction shall be modified to protected phasing. The project applicant shall provide the full cost of this modification.
- MM TRANS-1b** Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for improvements to the intersection of SR-12 and Sunset Avenue. The improvements shall consist of re-striping the existing northbound through lane to a left-shared through lane and optimizing the signal timing. The eastbound right-turn lane should be restriped to a through shared-right lane that will turn into the drop right-turn lane at SR-12/Lawler Center Drive. The striping for the drop lane at Lawler Center Drive should be a dashed line for the first 270 feet (instead of the solid line that currently exists), and the remaining 270 feet should be a solid line. The project applicant shall provide the full cost of this improvement.
- MM TRANS-1c** Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for improvements to the intersection of SR-12 and Emperor Drive. The improvements shall consist of re-striping the westbound right-turn lane to a shared through-right lane. The project applicant shall provide the full cost of this improvement.
- MM TRANS-1d** Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for improvements to the intersection of SR-12 and Woodlark Drive. The improvements shall consist of the installation of a westbound auxiliary lane on SR-12 for southbound traffic turning right on SR-12 from Woodlark Drive. The auxiliary lane shall extend from Woodlark Drive to Emperor Drive. The project applicant shall provide the full cost of this improvement.
- MM TRANS-1e** Prior to the issuance of building permits, the applicant shall provide the City of Fairfield with payments for improvements to the intersection of Air Base Parkway and Walters Road. The improvements shall consist of the re-striping the existing northbound through lane to a through shared-right lane. The project applicant shall provide the full cost of this improvement.
- MM TRANS-1f** Prior to the issuance of building permits, the applicant shall provide the City of Suisun City with fair-share payments for improvements to the intersection of Pintail Drive and Walters Road. The improvements shall consist of the installation of a traffic signal, the placement of the signal indications where they can clearly be seen by approaching vehicles, and the installation of OPTICOM signal pre-emption. The

project applicant shall provide 15 percent of the cost of this improvement, which was calculated on the basis of Caltrans methodology for calculating equitable share.

MM TRANS-1g Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for improvements to the intersection of SR-12 and Walters Road. The improvements shall consist of the installation of a second southbound right-turn bay and the modification of the existing northbound-southbound signal phasing to split from permitted. The project applicant shall provide the full cost of this improvement.

MM TRANS-1h Within 90 days of approval of the proposed project, the City of Suisun City shall establish a CIP to assess development projects their fair-share costs for necessary transportation improvements. If the City cannot collect sufficient funds from new development projects to cover the full cost of necessary improvements, the City shall make up the shortfall from other sources, including, but not limited to, the City's General Fund as augmented by revenues derived from the proposed project or federal, State, or regional funds made available to the Solano Transportation Authority. If the City has not collected sufficient funds to fully finance CIP transportation projects 5 years after the issuance of the proposed project's building permits, the City shall take one of the following actions: (1) reimburse the project applicant for some or all of the funds collected; (2) spend the funds collected on the highest priority improvements, reimbursing the project applicant for any unspent funds; or (3) identify a credible strategy by which the remaining necessary funds needed for all identified improvements can be obtained within a reasonable period of time. If the City exercises the third option, it must obtain all necessary funding within an additional two-year period, after which the City must exercise one of the first two options.

Associated with the establishment of a CIP, the City of Suisun City shall enter into reciprocal agreements with the City of Fairfield and Caltrans to collect fees from development projects to fund necessary transportation improvements to facilities under each respective agency's jurisdiction.

Consistent with General Plan Policy 16 in Chapter II, if the CIP has not scheduled the necessary facilities for construction or purchase at the proper time to fulfill this requirement, the project applicant may elect to construct the facility or purchase the equipment ahead of the CIP schedule. A binding commitment for this purpose that is satisfactory to the City shall be executed prior to issuance of permits.

Level of Significance After Mitigation

Significant unavoidable impact.

Long-Term - Intersection Operations

Impact TRANS-2: Traffic generated by the proposed project would contribute to deficient intersection operations under long-term conditions.

Impact Analysis

Similar to the near-term analysis, long-term (2030) intersection operations were evaluated under without project and with project scenarios. Table 4.11-10 provides a comparison of each scenario. Lane geometry and traffic controls for long-term conditions are shown in Exhibit 4.11-13. Exhibit 4.11-14 depicts the long-term without project trip volumes. Exhibit 4.11-15 depicts the long-term with project trip volumes. Long-term turning movement volumes were calculated by adding the incremental difference in bi-directional roadway segment (i.e., link) volumes to the existing 2006 link volumes, and then performing an adjustment to generate future-year turning movement volumes. Because the adjustment process results in volume imbalances between intersections, traffic volumes were manually adjusted using a conservative approach by balancing to the higher volume between intersections.

Table 4.11-10: Long-Term Intersection Operations

	Intersection	Criteria	Without Project				With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	SR-12/Marina Boulevard	C	F	325.0	F	239.0	F	327.6	F	250.0
2	Pintail Drive/Sunset Avenue	C	C	27.7	C	21.0	C	27.8	C	21.1
3	SR-12/Sunset Avenue	C	F	146.2	E	67.1	F	148.5	E	73.7
4	Pintail Drive/Emperor Drive	C	B	11.1	B	14.0	B	11.7	C	15.7
5	SR-12/Emperor Drive	C	F	151.0	F	80.1	F	155.1	F	91.6
6	Pintail Drive/Woodlark Drive	C	A	9.1	A	9.5	A	9.5	B	10.5
7	SR-12/Woodlark Drive	C	F	157.6	C	19.8	F	179.9	C	22.0
8	Pintail Drive/Fulmar Drive	C	A	7.8	A	8.1	A	8.1	A	8.6
9	Petersen Road/Fulmar Drive	C	A	7.0	A	6.9	A	7.4	A	7.7
10	Air Base Parkway/Walters Road	D	F	282.3	F	317.5	F	293.8	F	336.2
11	Tabor Avenue/Walters Road	D	C	30.7	C	34.6	C	31.8	D	39.7

Table 4.11-10 (Cont.): Long-Term Intersection Operations

	Intersection	Criteria	Without Project				With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
12	Bella Vista Drive/ Walters Road	C	C	26.5	C	33.9	C	27.4	D	42.7
13	Pintail Drive/ Walters Road	C	F	309.3	F	Over-flow	F	520.8	F	Over-flow
14	Montebello Drive/ Walters Road	C	C	22.4	B	16.1	C	24.2	B	17.8
15	Petersen Road/ Walters Road	C	A	6.6	A	5.8	A	7.2	A	7.0
16	Main Driveway/ Walters Road	C	A	0.3	B	12.7	A	10.9	B	16.9
17	South Driveway/ Walters Road	C	A	0.0	A	0.0	C	16.2	B	14.7
18	SR-12/Walters Road	C	F	132.2	E	66.4	F	154.3	F	93.2

Notes:

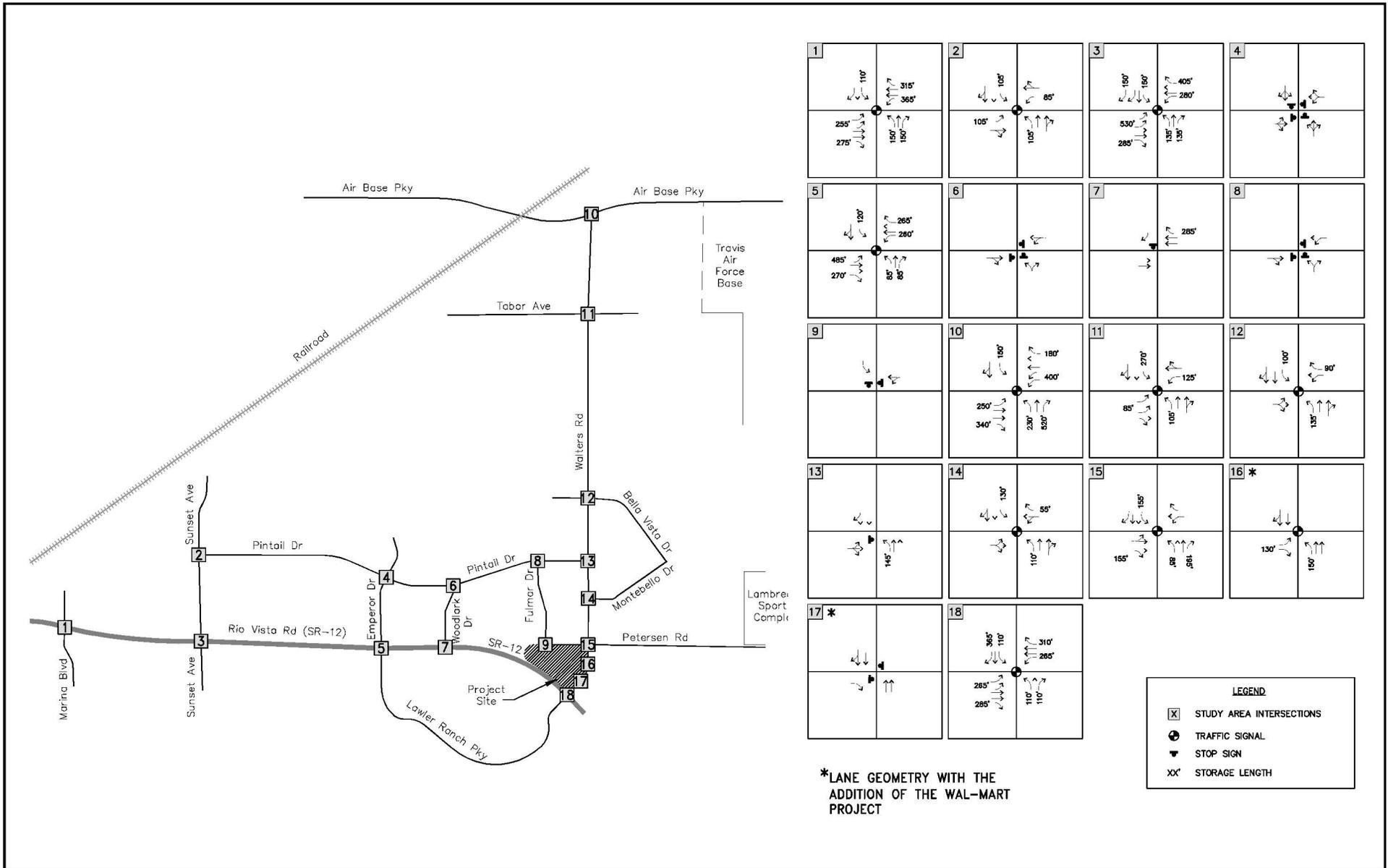
Bold denotes deficient intersection operation; overflow indicates that demand exceeds capacity

Source: Kimley-Horn and Associates Inc., 2007.

As shown in Table 4.11-10, under the long-term without project scenario, seven intersections are expected to operate at a deficient LOS. With the addition of traffic generated by the proposed project, an additional intersection would operate at a deficient LOS. The eight intersections that would operate at deficient LOS under the with project scenario are listed below:

- SR-12/Marina Boulevard
- SR-12/Sunset Avenue
- SR-12/Emperor Drive
- SR-12/Woodlark Drive
- Air Base Parkway/Walters Road
- Bella Vista Drive/Walters Road
- Pintail Drive/Walters Road
- SR-12/Walters Road

Mitigation is proposed that would require the project applicant to provide improvements to the eight intersections listed above. Table 4.11-11 provides a summary of the mitigated LOS at the intersections that would be significantly impacted by project-generated trips. As shown in the table, after the implementation of mitigation, all project-impacted intersections would experience



Source: Kimley-Horn and Associates, Inc., 2007.



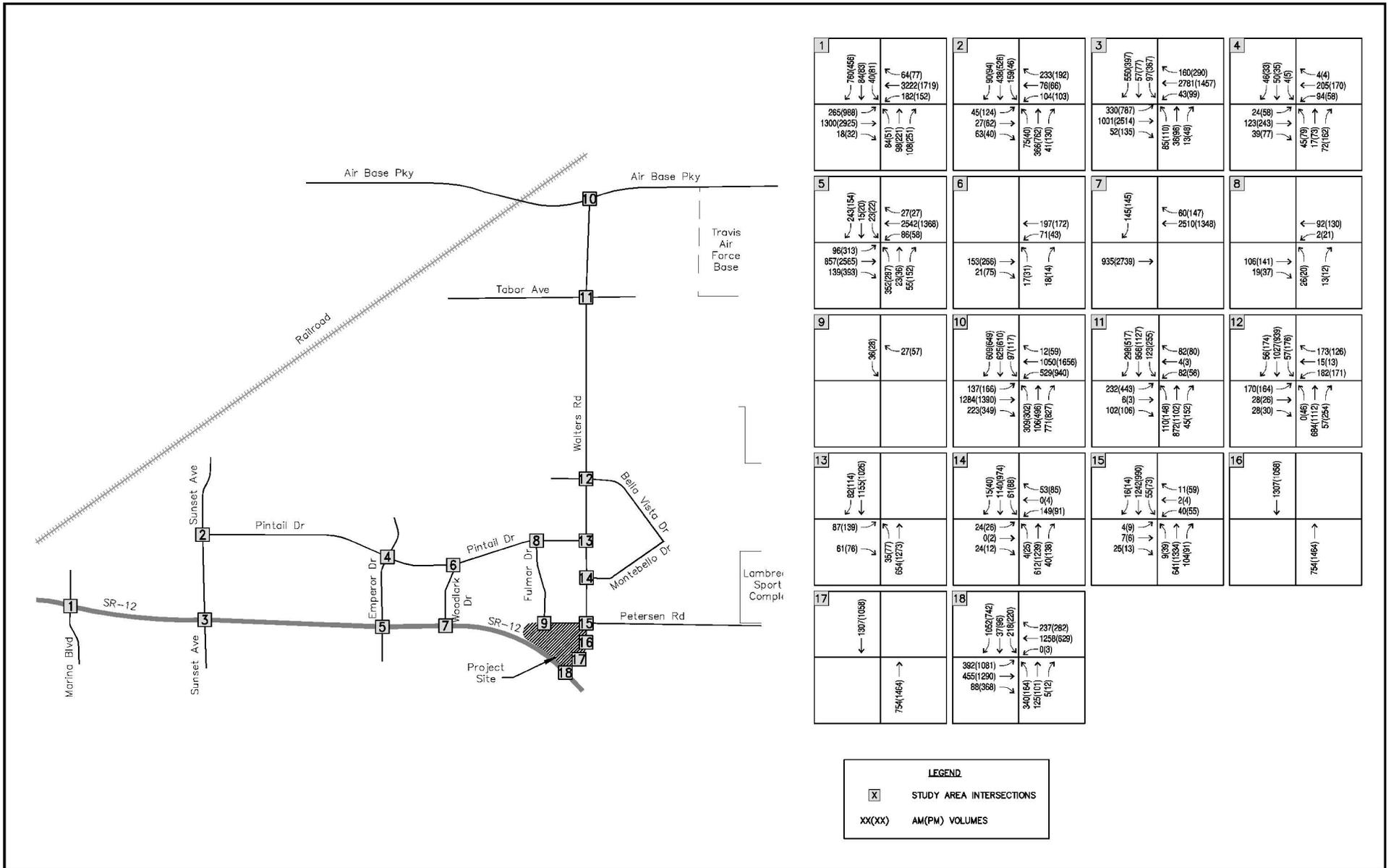
Not to scale

Michael Brandman Associates

30040001 • 04/2007 | 4.11-13_long_term_lane_geom_traff_control.cdr

Exhibit 4.11-13 Long-Term Lane Geometry and Traffic Control

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: Kimley-Horn and Associates, Inc., 2007.



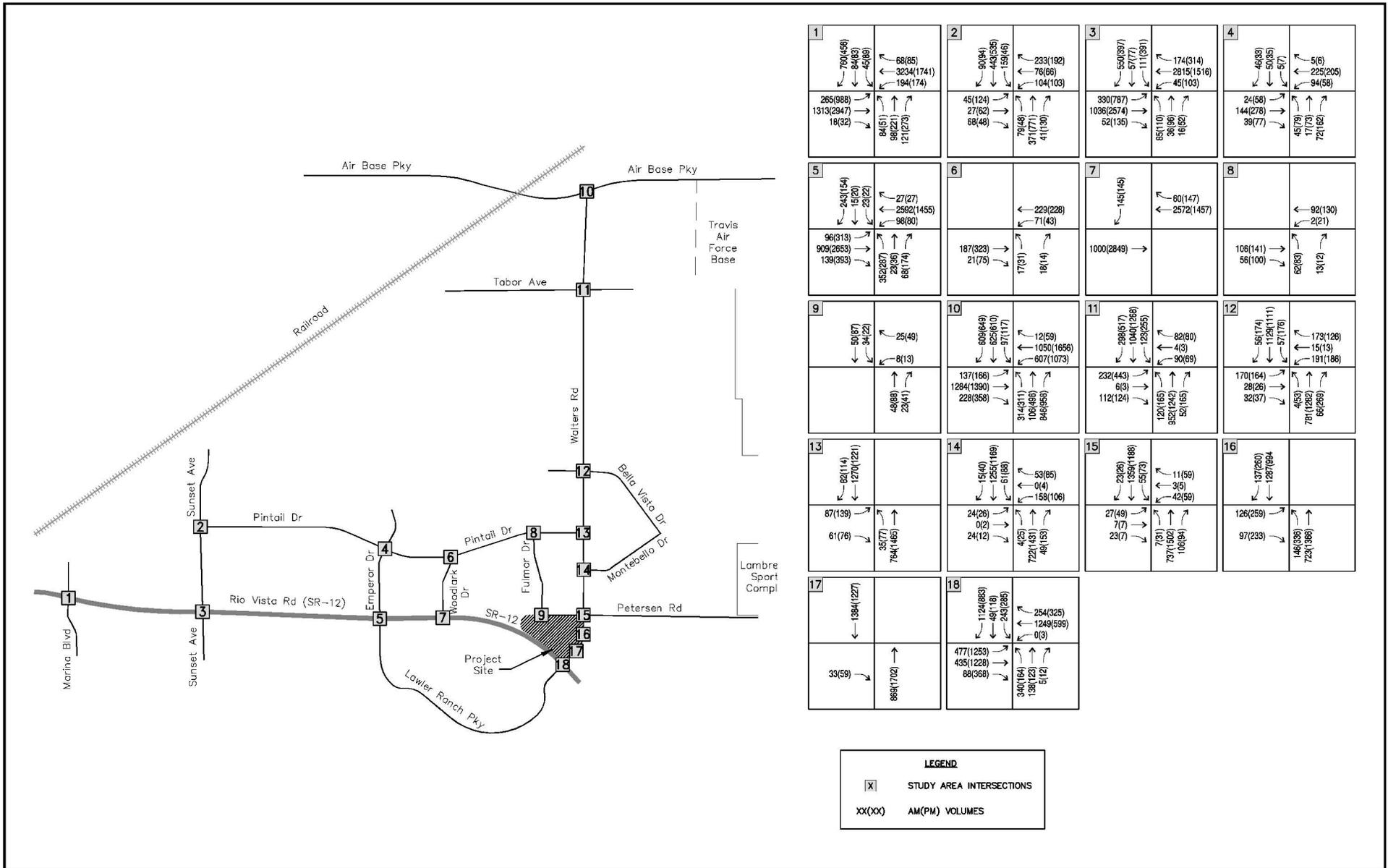
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Michael Brandman Associates

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Exhibit 4.11-14 Long-Term Without Project Volumes

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT



Source: Kimley-Horn and Associates, Inc., 2007.



Not to scale

Michael Brandman Associates

30040001 • 04/2007 | 4.11-15_long_term_with_proj_vol.cdr

Exhibit 4.11-15 Long-Term With Project Volumes

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT

improvement. Two intersections—Bella Vista Drive/Walters Road and Pintail Drive/Walters Road—would be improved from unacceptable to acceptable LOS. The remaining six intersections—SR-12/Marina Boulevard, SR-12/Sunset Avenue, SR-12/Emperor Drive, SR-12/Woodlark Drive, Air Base Parkway/Walters Road, and SR-12/Walters Road—would still operate at unacceptable LOS, but they would experience improvement relative to the near-term without project scenario and, therefore, would not be considered a significant impact.

As discussed previously, the City of Suisun City does not currently have an agreement with Caltrans or the City of Fairfield to finance roadway improvements necessary to mitigate development-related impacts. MM TRANS-1h proposes a CIP to collect traffic mitigation fees from new development projects and to fund the installation of necessary roadway improvements. With the establishment of a CIP, a mechanism would be in place to collect fees and finance roadway improvements; therefore, the implementation of necessary improvements would be considered to have a higher degree of certainty. However, because the City of Fairfield or Caltrans have jurisdiction over several roadways where improvements would be required to bring intersection operations to acceptable levels, the City of Suisun City cannot assure that the improvements would be in place by the time of project opening. Therefore, it is possible that the impact will not be fully mitigated and a significant impact would occur. For this reason, the residual significance of this impact is significant and unavoidable.

Table 4.11-11: Long-Term Intersection Operations After Mitigation

	Intersection	Criteria	Unmitigated With Project				Mitigated With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	SR-12/Marina Boulevard	C	F	327.6	F	250.0	F	307.2	F	178.9
2	Pintail Drive/Sunset Avenue	C	C	27.8	C	21.1	C	27.8	C	21.1
3	SR-12/Sunset Avenue	C	F	148.5	E	73.7	F	143.6	D	44.9
4	Pintail Drive/Emperor Drive	C	B	11.7	C	15.7	B	11.7	C	15.9
5	SR-12/Emperor Drive	C	F	155.1	F	91.6	F	115.3	E	77.6
6	Pintail Drive/Woodlark Drive	C	A	9.5	B	10.5	A	9.5	B	10.5
7	SR-12/Woodlark Drive	C	F	179.9	C	22.0	D	33.3	B	14.7
8	Pintail Drive/Fulmar Drive	C	A	8.1	A	8.6	A	8.0	A	8.6
9	Petersen Road/Fulmar Drive	C	A	7.4	A	7.7	A	7.4	A	7.7

Table 4.11-11 (Cont.): Long-Term Intersection Operations After Mitigation

	Intersection	Criteria	Unmitigated With Project				Mitigated With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
10	Air Base Parkway/ Walters Road	D	F	293.8	F	336.2	F	276.5	F	302.8
11	Tabor Avenue/ Walters Road	D	C	31.8	D	39.7	C	31.8	D	40.1
12	Bella Vista Drive/ Walters Road	C	C	27.4	D	42.7	C	27.4	C	34.4
13	Pintail Drive/ Walters Road	C	F	520.8	F	Over- flow	A	9.4	B	13.1
14	Montebello Drive/ Walters Road	C	C	24.2	B	17.8	C	24.2	B	17.9
15	Petersen Road/ Walters Road	C	A	7.2	A	7.0	A	7.2	A	7.1
16	Main Driveway/ Walters Road	C	A	10.9	B	16.9	A	8.7	A	7.1
17	South Driveway/ Walters Road	C	C	16.2	B	14.7	C	16.0	B	14.8
18	SR-12/Walters Road	C	F	154.3	F	93.2	F	94.2	D	43.6
Notes: Bold denotes deficient intersection operation; overflow indicates that demand exceeds capacity Source: Kimley-Horn and Associates Inc., 2007.										

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-2a Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for improvements to the intersection of SR-12 and Sunset Avenue. The improvements shall consist of re-striping the existing eastbound right-turn lane to a through-shared right lane that will become a drop right-turn lane at Lawler Center Drive. The project applicant shall provide the full cost of this improvement.

MM TRANS-2b Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for improvements to the intersection of SR-12 and Emperor Drive. The improvements shall consist of modifying the existing northbound-southbound signal phasing from permitted to split phasing and re-striping the northbound through lane to a left shared-through lane. The project applicant shall provide the full cost of this improvement.

- MM TRANS-2c** Prior to the issuance of building permits, the applicant shall provide the City of Fairfield with fair-share improvements for improvements to the intersection of Air Base Parkway and Walters Road. The improvements shall consist of the installation of a second northbound free right-turn lane beginning at the Walters Court intersection, passing through the Air Base Parkway/Walters Road intersection, and transitioning back into the eastbound Air Base Parkway 1,500 feet past the intersection. The project applicant shall provide 4 percent of the cost of this improvement, which was calculated on the basis of Caltrans methodology for calculating equitable share.
- MM TRANS-2d** Prior to the issuance of building permits, the applicant shall provide the City of Suisun City with payments for improvements to the intersection of Walters Road and Bella Vista Drive. The improvements shall consist of optimizing the existing signal timing. The project applicant shall provide the full cost of this improvement.
- MM TRANS-2e** Prior to the issuance of building permits, the applicant shall provide Caltrans with payments for improvements to the intersection of SR-12 and Walters Road. The improvements shall consist of re-striping the existing northbound approach from one left, one through, and one right-turn lane to two left-turn lanes, one through lane, and one right-turn lane. Split signal phasing shall be provided on the northbound and southbound approaches. The project applicant shall provide the full cost of this improvement.

Level of Significance After Mitigation
Significant unavoidable impact.

Queuing

Impact TRANS-3: The proposed project would contribute to deficient queuing.

Impact Analysis

A queue is a line of vehicles waiting to make a turn movement. Deficient queuing occurs when a 95th percentile vehicle queue exceeds available storage capacity. Because the proposed project would generate a significant number of trips, queuing impacts were assessed at the study intersections to determine if project-generated trips would cause 95th percentile queues to exceed available storage.

Near-Term Queuing

Table 4.11-12 summarizes the queuing movements where 95th percentile queues would exceed available storage capacity under near-term conditions. Project-related increases in vehicle queuing would be fewer than two vehicles at most movements; in most cases, the inadequate queue storages would be the result of pre-existing deficiencies created by other planned development projects.

Table 4.11-12: Near-Term Project Queuing Impacts

Intersection	Movement	Storage Capacity (feet)	95 th Percentile Queue	
			No Project	With Project
SR-12/Marina Boulevard	Eastbound left turn	255	575	575
	Westbound left turn	365	366	396
SR-12/Sunset Avenue	Eastbound left turn	530	641	641
	Southbound left turn	150	234	249
SR-12/Emperor Drive	Northbound left turn	85	381	381
SR-12/Walters Road	Eastbound left turn	265	712	902
	Northbound left turn	110	113	146
	Southbound left turn	110	175	241
	Southbound right turn	365	690	814
Pintail Drive/Sunset Avenue	Eastbound left turn	105	179	179
Air Base Parkway/ Walters Road	Westbound left turn	400	800	925
	Northbound left turn	230	352	322
Bella Vista Drive/ Walters Road	Southbound left turn	100	161	188
Main Driveway/Walters Road	Northbound left turn	150	—	191
Notes: Bold denotes queuing movement substantially increased by project-generated trips; for all others, the proposed project would not significantly increase queuing movement length. Source: Kimley-Horn and Associates Inc., 2007.				

Mitigation is proposed that would require the project applicant to finance improvements that would mitigate for the proposed project’s contribution to deficient queuing. Table 4.11-13 summarizes queuing at the project-affected movements after the implementation of mitigation. The implementation of these mitigation measures would ensure that 95th percentile queues do not exceed available storage capacity.

Table 4.11-13: Near-Term Mitigated Queuing Impacts

Intersection	Movement	With Project, Unmitigated		With Project, Mitigated	
		Storage Capacity (feet)	95 th Percentile Queue	Storage Capacity (feet)	95 th Percentile Queue
SR-12/Marina Boulevard	Westbound left turn	365	396	425	936

Table 4.11-13 (Cont.): Near-Term Mitigated Queuing Impacts

Intersection	Movement	With Project, Unmitigated		With Project, Mitigated	
		Storage Capacity (feet)	95 th Percentile Queue	Storage Capacity (feet)	95 th Percentile Queue
SR-12/Walters Road	Eastbound left turn	265	902	1,100	940
	Southbound left turn	110	241	300	252
	Southbound right turn	365	814	365	238
Air Base Parkway/ Walters Road	Westbound left turn	400	925	750	925*
Bella Vista Drive/ Walters Road	Southbound left turn	100	188	200	152
Main Driveway/ Walters Road	Northbound left turn	150	191	200	190
<p>Notes: Only queuing movements substantially affected by project-generated trips are shown * Movement has split timing; therefore, blocking of turn pockets may not occur because all approach movements move at the same time Source: Kimley-Horn and Associates Inc., 2007.</p>					

Long-Term Queuing

Table 4.11-14 summarizes the queuing movements where 95th percentile queues would exceed available storage capacity under long-term conditions. Project-related increases in vehicle queuing would be fewer than two vehicles at most movements, and, in most cases, the inadequate queue storages would be the result of pre-existing deficiencies created by other planned development projects.

Table 4.11-14: Long-Term Project Queuing Impacts

Intersection	Movement	Storage Capacity (feet)	95 th Percentile Queue	
			No Project	With Project
SR-12/Marina Boulevard	Eastbound left turn	255	911	911
	Westbound left turn	365	373	399
	Northbound right turn	150	83	80
SR-12/Sunset Avenue	Eastbound left turn	530	499	614
	Southbound left turn	150	112	301
SR-12/Emperor Drive	Northbound left turn	85	589	589

Table 4.11-14 (Cont.): Long-Term Project Queuing Impacts

Intersection	Movement	Storage Capacity (feet)	95 th Percentile Queue	
			No Project	With Project
SR-12/Walters Road	Eastbound left turn	265	784	902
	Northbound left turn	110	397	404
	Southbound left turn	110	245	271
	Southbound right turn	365	1,385	1,513
Pintail Drive/Sunset Avenue	Eastbound left turn	105	167	168
Air Base Parkway/ Walters Road	Westbound left turn	400	800	918
	Northbound left turn	230	312	288
	Southbound left turn	150	263	263
Tabor Avenue/Walters Road	Eastbound left turn	85	196	196
Bella Vista Drive/ Walters Road	Southbound left turn	100	188	188
Main Driveway/Walters Road	Northbound left turn	150	—	191
Notes: Bold denotes movement substantially increased by project-generated trips; for all others, the proposed project would not significantly increase queuing movement length. Source: Kimley-Horn and Associates Inc., 2007.				

Mitigation is proposed that would require the project applicant to finance improvements that would mitigate for the proposed project’s contribution to deficient queuing. Table 4.11-15 summarizes queuing at the project-affected movements after the implementation of mitigation. The implementation of these mitigation measures would ensure that 95th percentile queues do not exceed available storage capacity.

Table 4.11-15: Long-Term Mitigated Queuing Impacts

Intersection	Movement	With Project, Unmitigated		With Project, Mitigated	
		Storage Capacity (feet)	95 th Percentile Queue	Storage Capacity (feet)	95 th Percentile Queue
SR-12/Marina Boulevard	Westbound left turn	365	399	425	379
SR-12/Walters Road	Eastbound left turn	265	902	1,100	1,101
	Southbound left turn	110	271	300	295
	Southbound right turn	365	1,513	365	704*

Table 4.11-15 (Cont.): Long-Term Mitigated Queuing Impacts

Intersection	Movement	With Project, Unmitigated		With Project, Mitigated	
		Storage Capacity (feet)	95 th Percentile Queue	Storage Capacity (feet)	95 th Percentile Queue
Air Base Parkway/ Walters Road	Westbound left turn	400	918	950	918
Bella Vista Drive/ Walters Road	Southbound left turn	100	188	200	188
Main Driveway/ Walters Road	Northbound left turn	150	191	200	191
Notes: Only queuing movements substantially affected by project-generated trips are shown * Movement has split timing; therefore, blocking of turn pockets may not occur because all approach movements move at the same time Source: Kimley-Horn and Associates Inc., 2007.					

As discussed previously, the City of Suisun City does not currently have an agreement with Caltrans or the City of Fairfield to finance roadway improvements necessary to mitigate development-related impacts. Mitigation Measure TRANS-1H proposes a CIP to collect traffic mitigation fees from new development projects and fund the installation of necessary roadway improvements. With the establishment of a CIP, a mechanism would be in place to collect fees and finance roadway improvements; therefore, the implementation of necessary improvements would be considered to have a higher degree of certainty. However, because the City of Fairfield and Caltrans have jurisdiction over several roadways where improvements would be required to bring queuing to acceptable levels, the City of Suisun City cannot assure that the improvements would be in place by the time of project opening. Therefore, it is possible that the impact will not be fully mitigated and a significant impact would occur. For this reason, the residual significance of this impact is significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-3a Prior to the issuance of building permits, the applicant shall provide fair-share payments to Caltrans for queuing improvements to the intersection of SR-12 and Marina Boulevard. The existing westbound left-turn pocket shall be extended to 425 feet. The proposed project’s pro-rata share for this improvement would be 15 percent, based on Caltrans methodology for calculating equitable share.

MM TRANS-3b Prior to the issuance of building permits, the applicant shall provide the City of Fairfield with improvements for queuing improvements to the intersection of Air Base Parkway and Walters Road. The improvements shall consist of the extension of

the existing westbound left-turn pocket to a minimum of 750 feet and the optimization of signal timing to provide more time for the westbound left-turn movement. The project applicant shall provide the full cost of these improvements.

MM TRANS-3c Prior to the issuance of building permits, the applicant shall provide Caltrans with fair-share improvements for queuing improvements to the intersection of SR-12 and Walters Road. The improvements shall consist of (1) the installation of an additional eastbound left turn (for a triple eastbound left) at the intersection, (2) the installation of an additional northbound through lane on Walters Road between SR-12 and Petersen Road, (3) the extension of the existing southbound left-turn pocket to a minimum of 250 feet, and (4) the extension of the existing eastbound left-turn pocket to a minimum of 650 feet. The project applicant shall provide 17 percent of the cost of these improvements, based on Caltrans methodology for calculating equitable share.

MM TRANS-3d Prior to the issuance of building permits, the applicant shall provide the City of Suisun City with fair-share improvements for queuing improvements to the intersection of Bella Vista Drive and Walters Road. The improvements shall consist of extending the existing southbound left-turn pocket 100 feet to a total length of 200 feet. The project applicant shall provide 86 percent of the cost of these improvements, based on Caltrans methodology for calculating equitable share.

Level of Significance After Mitigation

Significant unavoidable impact.

Aviation Hazards

Impact TRANS-4: The proposed project would not alter air traffic patterns or create hazards to aviation.

Impact Analysis

The proposed project consists of a commercial retail development and does not contain any aviation-related components. In addition, the Travis Air Force Base Land Use Compatibility Plan Figure 2C indicates that the project site is within Zone C of Travis Air Force Base. The Travis Air Force Base Land Use Compatibility Plan prohibits land uses that would create glare or distracting lights; sources of dust, steam, or smoke; sources of electrical interference with aircraft communications or navigation; or any land use (e.g., landfills) that may attract an increased number of birds. The proposed project's commercial uses would not contain any of these characteristics. Therefore, the proposed project would not alter air traffic patterns or create hazards to aviation. Impacts would be less than significant. Note that aviation hazards are also analyzed in Impact HAZ-3 in Section 4.6, Hazards and Hazardous Materials, and consistency with the Travis Air Force Base Land Use Compatibility Plan is analyzed in Impact LU-4 in Section 4.8, Land Use.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Safety Hazards

Impact TRANS-5: The proposed project would not contain any design features or operational characteristics that would create safety hazards.

Impact Analysis

This impact assesses potential safety impacts created by design features or operational characteristics. Each is discussed separately.

Design Features

The proposed project's internal circulation system meets all applicable code requirements and design standards for roadway width, visibility, location of access points, and other safety requirements. The proposed project does not propose any roadway features that may create obstructions to large vehicles (e.g., fire engines), such as round-a-bouts, low-hanging vegetation, or hairpin turns. The City would inspect all project roadways prior to issuance of occupancy permits to ensure that they meet applicable safety standards. Impacts would be less than significant.

Operational Characteristics

Tractor-trailers would regularly access the three components of the proposed project. On the basis of data collected at other Wal-Mart Supercenters, it is expected that up to 10 truck deliveries per hour could be made during the daytime and up to five per hour during nighttime hours. The restaurant and gas station would receive substantially fewer truck deliveries than the proposed Wal-Mart Supercenter. Truck deliveries to the Wal-Mart Supercenter and restaurant would use Petersen Road; deliveries to the gas station would use Walters Road. Both Walters Road and Petersen Road are suitable for truck use, and no truck movements would occur on residential streets. Therefore, no potential safety hazards would be created by truck movements associated with the proposed project. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Emergency Access

Impact TRANS-6: The proposed project would provide adequate emergency access.

Impact Analysis

Access to the project site would occur from five points: three on Walters Road and two on Petersen Road. The main access point would be a signalized point located on Walters Road. This point would provide two inbound and two outbound traffic lanes, and a 150-foot, northbound left-turn lane. The two other Walters Road access points would be right-in, right-out, with one serving the gas station and the other serving the Wal-Mart Supercenter loading docks. The two Petersen Road access points would be unsignalized full points, with one serving the restaurant and the other serving the Wal-Mart Supercenter loading docks. The four unsignalized access points would be controlled with stop signs on the driveway approaches. All five points would have a minimum width of 30 feet, which would be accessible for emergency response vehicles such as fire engines. Because the proposed project would have five access points, including one full signalized point, and would be readily accessible from two major roadways (SR-12 and Walters Road), it would have adequate emergency access. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Parking

Impact TRANS-7: The proposed project would provide adequate off-street parking capacity.

Impact Analysis

An analysis of the proposed project’s off-street parking with the City of Suisun City’s parking requirements in provided in Table 4.11-16. As shown in the table, the proposed project would exceed the City’s minimum requirements by six spaces.

Table 4.11-16: City of Suisun City Guidelines and Proposed Parking

Project Component	Gross Square Footage	Required Off-Street Parking	
		Ratio	Minimum Spaces
Wal-Mart Supercenter	227,019	1 space/250 square feet of gross floor area	908
Restaurant	8,000	1 space/100 square feet of gross floor area	80

Table 4.11-16 (Cont.): City of Suisun City Guidelines and Proposed Parking

Project Component	Gross Square Footage	Required Off-Street Parking	
		Ratio	Minimum Spaces
Gas Station	4,100	3 spaces + 1 space/250 square feet of gross floor area	20
Total Off-Street Spaces Required		1,008 spaces	
Total Off-Street Spaces Provided		1,014 spaces	
Surplus Parking		6 spaces	
Source: Michael Brandman Associates, 2007.			

In addition, the Zoning Code requires that any building with 10,000 square feet or more in gross floor area provide at least one off-street loading space, plus one additional loading space for each additional 20,000 square feet of gross floor area. This requirement would only apply to the Wal-Mart Supercenter because it is the only building greater than 10,000 square feet. On the basis of the building square footage of 227,019, the Wal-Mart Supercenter would be required to provide 12 off-street loading spaces. These spaces would be provided in the loading areas in the rear of the store, where the truck doors and loading areas are located.

Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Bicycle, Pedestrian, and Transit Services

Impact TRANS-8: The proposed project may not have adequate access to public transportation.

Impact Analysis

This impact analyzes impacts to public transportation, bicycles, and pedestrians. Each topic is discussed below.

Public Transportation

FST Route 6 passes directly adjacent to the project site on Walters Road. The proposed Wal-Mart Supercenter would attract customers who would use FST bus service; however, the project site plan does not identify an FST bus stop on the project site. Because no bus facilities have been identified, this would be a significant impact. Mitigation is proposed that would require the project applicant to

install an enhanced bus stop within the project or on the project frontage. The provision of this bus stop would ensure that the project site is adequately served by public transportation. Impacts would be less than significant.

Bicycles

Existing Class I and Class II bicycle facilities are present north and west of the project site. The Central County Bikeway exists on the north side of Petersen Road and SR-12 and extends west to Marina Boulevard. Designated bicycle lanes exist on both sides of Walters Road.

Development of the proposed project would result in roadway improvements to Walters Road, including additional turning lanes at SR-12. These improvements would be required to maintain the Class II bicycle facilities on the roadway. The proposed project would not impair access to the Central County Bikeway. Therefore, the proposed project would not impair access to existing bicycle facilities in the project vicinity.

In addition, the proposed project would provide amenities such as bicycle racks. Impacts on bicycles would be less than significant.

Pedestrians

The proposed project would implement half-width improvements to Walters Road and Petersen Road that would include curb, gutter, sidewalks, and street lighting. Internal sidewalks and designated crosswalks would link the pedestrian facilities on Walters Road and Petersen Road with the Wal-Mart Supercenter entrance, the sit-down restaurant, and the fuel station. Designated crossing areas would also be located in front of the Wal-Mart Supercenter to alert drivers of the potential of crossing pedestrians. These improvements would ensure that adequate pedestrian access and safety are provided. Note that no pedestrian facilities would be provided on the SR-12 frontage because of safety concerns. Impacts on pedestrian access would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-8 Prior to the issuance of occupancy permits, the applicant shall install a bus stop suitable for use by FST buses within the project or along the project frontage. The bus stop shall include a shelter, trash receptacles, lighting, and landscaping, and it shall be designed in accordance with FST standards.

Level of Significance After Mitigation

Less than significant impact.

4.12 - Urban Decay

4.12.1 - Introduction

This section describes the existing urban decay setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Final Retail Market Impact Analysis, prepared in September 2007 by Bay Area Economics, and included in this EIR as Appendix K.

4.12.2 - Environmental Setting

Urban Decay Overview

The California Environmental Quality Act (CEQA) requires that significant effects on the environment be analyzed, disclosed, and mitigated, if feasible, prior to the approval of discretionary land use approvals. The CEQA Guidelines require that both direct and reasonably foreseeable indirect physical changes be evaluated during the environmental review process. Ordinarily, CEQA forbids agencies from treating social or economic impacts as significant impacts on the environment. However, an agency may take such social or economic considerations into account in three circumstances: (1) where they speak to the feasibility of mitigation measures or project alternatives, (2) where they shed insight on whether detected physical impacts are significant, and (3) where those social or economic effects of a project actually lead to reasonably foreseeable physical changes. This urban decay analysis is concerned with this last situation, where social or economic effects of a project may lead to physical changes—either directly or indirectly. A direct physical change is caused by and immediately related to the project. Examples of direct physical changes are construction-related dust, noise, and traffic. An indirect physical change is not immediately related to the project but is caused indirectly by the project. An example of an indirect physical change would be the construction of a new sewage treatment plant that provides additional wastewater treatment capacity that may facilitate population growth and may lead to an increase in air pollution.

In the context of CEQA, urban decay is considered an indirect physical impact. The development of new commercial retail space in a retail market has the potential to result in the closure of competing business, which, in turn, may result in vacant storefronts that meet the California Health and Safety Code definition of blight.

For the purpose of this analysis, urban decay is defined as physical deterioration that is so prevalent and substantial it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Physical deterioration includes, but is not limited to, abnormally high business vacancies, abandoned buildings and commercial sites, boarded doors and windows, parked trucks and long-term unauthorized use of properties and parking lots, extensive gang or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees or shrubbery, and uncontrolled weed growth or homeless encampments.

Recent California court decisions (*Bakersfield Citizens for Local Control v. City of Bakersfield; Panama 99 Properties, LLC, and Castle & Cooke Commercial-CA, Inc.*; as well as *Anderson First Coalition, et al. v. City of Anderson, et al. and FHK Companies, et al.*) have made clear that for large retail developments, an economic impact analysis should be undertaken to assess the possibility of urban decay and deterioration and indirect physical impacts on the environment.

Background

In February 2003, the City of Bakersfield certified two Environmental Impact Reports (EIRs) for two retail projects proposed in the City: the Panama Lane project at the northeastern corner of Panama Lane and Highway 99 and the Gosford Village project at the southwestern corner of Pacheco Road and Gosford Road. At the time of their certification, both projects were anticipated to include 24-hour Wal-Mart Supercenter stores, in addition to other anchor and inline retail tenants, including but not limited to Lowe's Home Improvement Warehouse (at Panama Lane) and Sam's Club and Kohl's (at Gosford Village).

The Panama Lane and Gosford Village projects are located approximately 4.5 miles apart. Shortly after the certification of the two project EIRs, a local community group called Bakersfield Citizens for Local Control (BCLC) filed lawsuits seeking to invalidate the projects' entitlements, based on alleged violations of the California Environmental Quality Act (CEQA). While BCLC's CEQA lawsuit mounted various claims attacking the adequacy of the two EIRs, one of the central allegations concerned the two EIRs' alleged failure to analyze whether the introduction of the two retail centers into the Bakersfield market—coupled with other past, present, and reasonably foreseeable retail projects—could oversaturate the market and thereby cause a ripple of store closures and consequent long-term vacancies that would eventually result in general deterioration and urban decay of other retail buildings.

Subsequent to Superior Court hearings held in late 2003 and early 2004, the Court of Appeal of the State of California, Fifth Appellate District, issued its decision, entitled, *Bakersfield Citizens for Local Control v. City of Bakersfield (2004) 124 Cal. App.4th 1184*. This appellate decision concluded that the EIRs for both projects were inadequate, and that “the EIRs must analyze whether the shopping centers, individually and/or cumulatively, indirectly could trigger the downward spiral of retail closures and consequent long-term vacancies that ultimately result in decay.” The Court also ruled that “each EIR must analyze the cumulative impacts resulting from construction and operation of the proposed shopping center in conjunction with all other past, present, or reasonably foreseeable retail projects that are or will be located within the proposed project's market area. This includes, but is not limited to, analysis of the combined adverse impacts resulting from construction and operation of Gosford and Panama.”

Both cases indicate that to fully satisfy the requirements of an EIR, the economic analysis must start with the economic impacts and follow the causal chain to assess the likelihood of new retail space causing existing space to become vacant and, following that outcome, determine the potential for

urban decay and physical deterioration of existing retail centers and nodes. Bay Area Economics (BAE) was retained to prepare a retail market impact analysis of the existing conditions of the Fairfield-Suisun retail market and evaluate the expected effects of the development of the proposed project. The findings of the retail market impact analysis are contained herein.

Trade Area Setting

Definition of the Trade Area

The Trade Area has been defined as the area from which the proposed project is likely to draw most of its customers. This area's boundaries are based on the transportation network as well as the assumed presence of the recently approved Wal-Mart Supercenter on North Texas Street in Fairfield. Most of Fairfield's residential areas are closer to the North Texas Street site, and while the two cities have a long common border, the Union Pacific rail line serves as an effective barrier, with limited crossings between the two cities. The Wal-Mart Supercenter closest to the Cordelia area of Fairfield is the newly opened (September 2007) store in American Canyon, approximately 10 miles to the west. It is projected that many Cordelia residents would patronize that store instead of the North Texas Street store. To the south of Suisun City is Suisun Bay and to the east is a sparsely populated agricultural area extending toward Rio Vista, approximately 20 miles away. While the proposed project may attract some shoppers from Rio Vista, especially those who use State Route 12 (SR-12) to commute to jobs in the Fairfield-Suisun area or locations further south on Interstates 80 and 680 (I-80; I-680), Rio Vista is slightly closer to a possible Wal-Mart Supercenter site approximately 14 miles to the south in Oakley. For these reasons, the Trade Area has been defined as Suisun City or, more accurately, the Suisun City Sphere of Influence, which consists of a slightly larger land area but few additional residents. The Trade Area boundaries are shown in Exhibit 4.12-1.

For the purposes of disclosure, an urban decay analysis was recently prepared for another development project in Suisun City known as the Gentry-Suisun project. This project, as analyzed, consists of 480,000 square feet of commercial uses and 232 dwelling units, located at the intersection of SR-12 and Pennsylvania Avenue on the west side of Suisun City, adjacent to the Fairfield city limits. Because of the proposed Gentry-Suisun project's size and location (e.g., proximity to I-80), its urban decay analysis considered retail impacts on businesses in both Suisun City and Fairfield. The proposed Walters Road West project is a much smaller project located on the east side of Suisun City, 1.8 miles from the Fairfield city limits. Given these characteristics, Fairfield was excluded from the proposed project's Trade Area. However, the analysis acknowledges that the Walters Road Project, while drawing most of its customers from the Trade Area, will recapture sales currently "leaking" to retail outlets outside the Trade Area; impacts on these outlets are considered in the analysis, along with impacts resulting from the limited sales captured from outside the Trade Areas. The cumulative impacts analysis also looks at impacts on retail outlets outside the Walters Road Trade Area, as defined here.

Demographic and Economic Overview

The Trade Area (Suisun City Sphere of Influence) and surrounding areas are undergoing moderate population growth, outpacing the State as a whole. Based on estimates from the Association of Bay Area Governments (ABAG), the Trade Area gained 2,510 persons from 2000 to 2006, with additional growth of 2,039 persons expected by 2009, the assumed opening date for the proposed project, when the Trade Area population is projected to reach 31,189. Fairfield is showing a similar rate of growth, reaching an estimated population of 116,879 in 2009. Solano County has grown at a slightly slower rate, with a projected population of 457,315 in 2009. Population trends for the Trade Area, Fairfield, Solano County, and California are summarized in Table 4.12-1.

Table 4.12-1: Population Trends (2000–2010)

Area	Population					Average Annual Change 2005–2010
	2000	2005	2006	2009	2010	
Trade Area	26,640	28,500	29,150	31,189	31,900	2.3%
Fairfield	96,545	106,600	109,082	116,879	119,600	2.3%
Solano County	394,542	423,800	431,941	457,315	466,100	1.9%
California	33,873,086	36,728,196	37,172,015	38,729,602	39,246,767	1.3%

Source: Bay Area Economics, 2007.

As shown in Table 4.12-2, ABAG projects somewhat slower long-term growth; by 2030, the Trade Area population is projected to reach 38,600, with Fairfield reaching 147,500 and Solano County reaching 581,800.

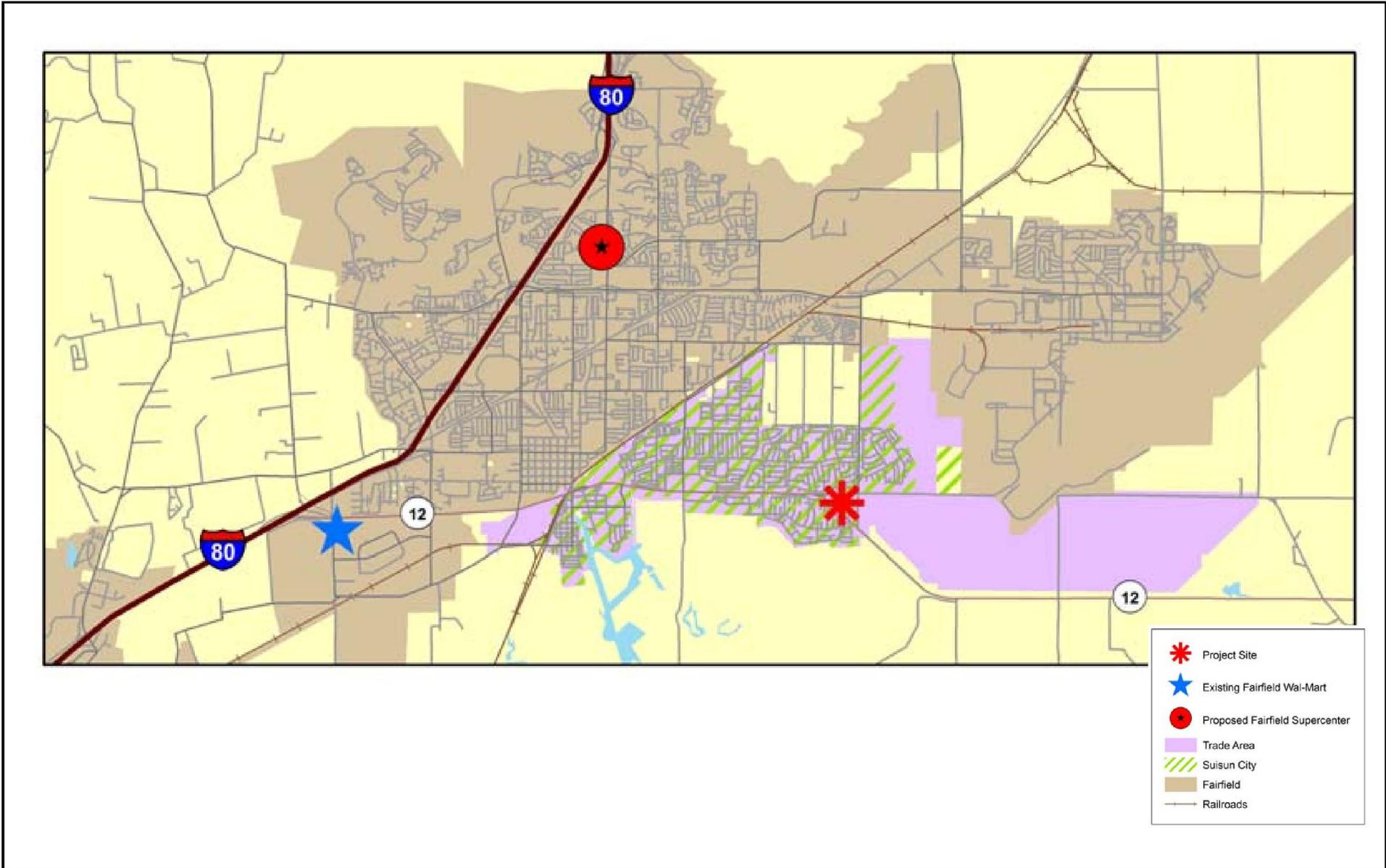
Table 4.12-2: Population Projections

Area	Population			Average Annual Change 2010–2030
	2010	2020	2030	
Trade Area	31,900	35,400	38,600	1.0%
Fairfield	119,600	136,800	147,500	1.1%
Solano County	466,100	532,400	581,800	1.1%

Source: Bay Area Economics, 2007.

Household Trends

As shown in Table 4.12-3, the rates of household growth in the Trade Area, Fairfield, and Solano County mirror the respective population growth rates. The Trade Area contains an estimated 8,942 households as of 2006, with an increase to 9,512 households projected by 2009, the assumed opening year for the proposed project.



Source: Bay Area Economics, 2007.



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Exhibit 4.12-1 Trade Area Boundaries

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Table 4.12-3: Household Trends (2000–2010)

Area	2000		2005		2006		2009		2010		Average Annual Change (2000-2010)	
	Households	PPH	Households	PPH								
Trade Area	8,158	3.25	8,760	3.24	8,942	3.25	9,512	3.27	9,710	3.27	2.1%	0.2%
Fairfield	30,995	2.98	34,490	2.96	35,261	2.97	37,678	2.99	38,520	2.99	2.2%	0.2%
Solano County	130,403	2.90	141,100	2.89	143,667	2.89	151,651	2.91	154,410	2.91	1.8%	0.1%

Notes:
PPH = Persons Per Household
Source: Bay Area Economics, 2007.

Household incomes and resulting consumer buying power are key factors in assessing the potential for additional retail development. The Trade Area and Fairfield show income levels similar to the County and California (Table 4.12-4). In 2000, the Trade Area had a mean household income of \$71,500, with Fairfield at \$66,500, Solano County at \$69,300, and the State at \$65,628. (State figures are based on 1999 data from the 2000 Census.) Incomes in the Trade Area and Fairfield are projected to grow gradually over the next several years, with the Trade Area reaching \$75,300 in 2009. These increases may add to the purchasing power of area residents.

Table 4.12-4: Mean Household Income

Area	2000	2005	2006	2009	2010	Average Annual Change (2005–2010)
Trade Area	\$71,500	\$73,500	\$73,900	\$75,300	\$75,700	0.6%
Fairfield	\$66,500	\$70,400	\$71,300	\$73,900	\$74,800	1.2%
Solano County	\$69,300	\$73,400	\$74,300	\$77,000	\$77,900	1.2%
California	\$65,628	—	—	—	—	—

Source: Bay Area Economics, 2007.

Labor Force Trends

Employment levels are an indicator of regional buying power: unemployed workers and their households will have reduced incomes and lower expenditures, and high unemployment indicates a declining or uncertain economy, leading to reduced consumer confidence and expenditures overall. Growth in the employed labor force of an area can indicate increased buying power. As shown in Exhibit 4.12-2, Solano County has shown long-term growth in the number of employed residents, with almost no decline during the recession of the early part of the decade; as of June 2006, the employed labor force stood at 201,100 persons. Unemployment since the beginning of 2000 has ranged between 4.5 percent and 6.4 percent, with unemployment as of June 2006 at 5.1 percent. Suisun City has shown sustained but slight growth in the estimated number of employed residents, with 13,900 employed residents at an unemployment rate of 5.3 percent as of June 2006. Using the

rule of thumb of 5 percent unemployment as a stabilized labor market, Solano County has shown a relatively stable and healthy economy in recent years.

Summary of Demographic and Economic Overview

The Trade Area, which consists of Suisun City and some surrounding unincorporated areas, is undergoing gradual population and household growth. It is estimated the Trade Area will have 31,189 persons and 9,512 households by 2009. Long-term growth will continue to be gradual, with the Trade Area projected to have a population of 38,600 in 2030.

The Trade Area exhibited a 2006 mean household income estimate of \$73,900 (all incomes in constant 2000 dollars), with modest growth to \$75,300 by 2010.

Solano County and Suisun City have shown long-term growth in the number of employed residents; the June 2006 Solano County and Suisun City employed labor force numbers are 201,100 persons and 13,900 persons, respectively. Using the rule of thumb of 5 percent unemployment as a stabilized labor market, Solano County and Suisun City have shown a relatively stable and healthy economy in recent years, with current unemployment at 5.1 percent countywide and 5.3 percent in Suisun City.

The gradual population, household, and income growth, and the stable and growing economy all indicate that retail sales are likely to be stable or growing over the short and long term, with likely increases in purchasing power in the Trade Area and Solano County.

Retail Market Conditions

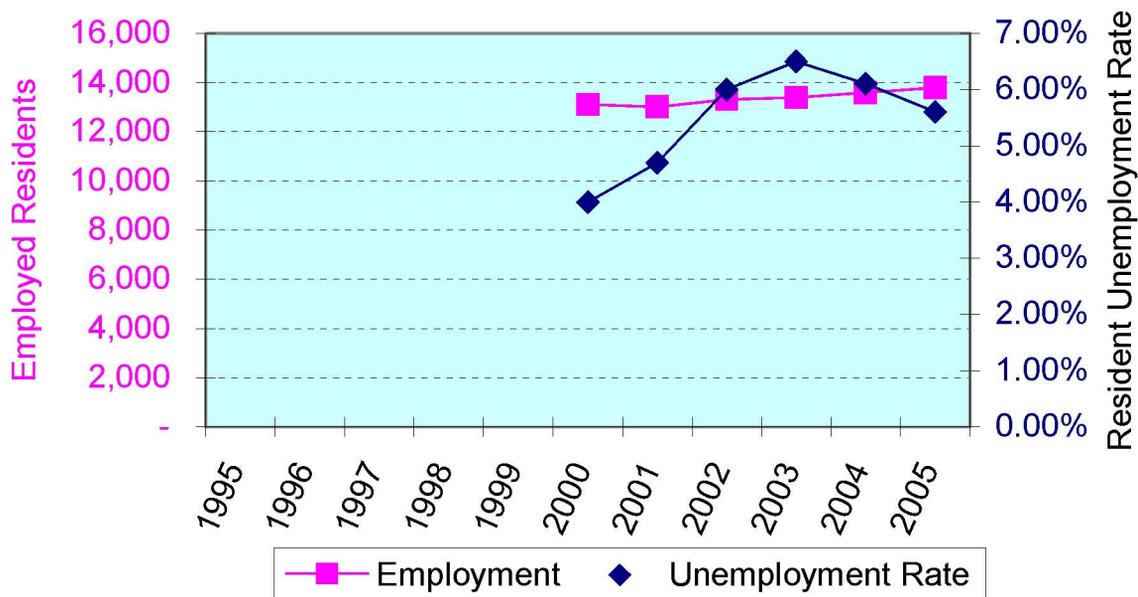
This section examines retail trends in Suisun City, nearby Solano County cities, and Solano County as a whole. For comparative purposes, data from the State of California are also presented. The analysis focuses on general merchandise stores and food stores, the two major store types most likely to be affected by a Wal-Mart Supercenter entering the market, with additional analysis of restaurants, service stations, and overall retail sales. Summing up this analysis is a leakage and supportable square footage analysis for the Trade Area, focusing on the store categories above.

Overall Retail Sales

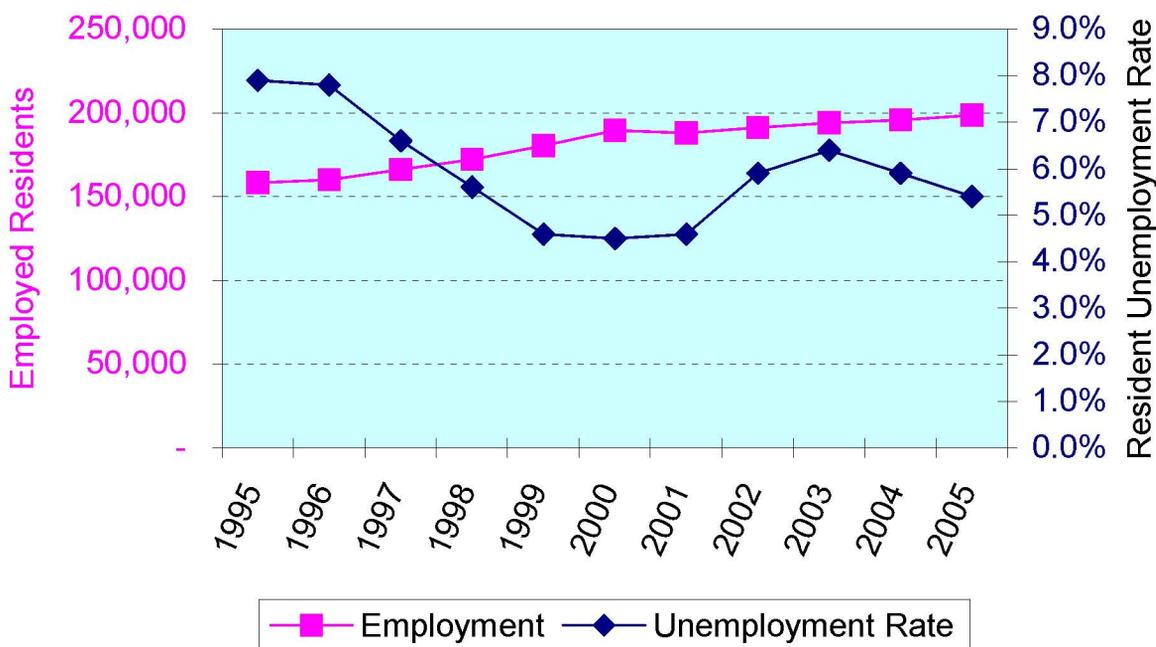
As shown in Exhibits 4.12-3a and 4.12-3b, over the last decade, Suisun City's taxable retail sales¹ have grown modestly, outpacing population growth somewhat. Taxable retail sales in 1995 were approximately \$60.5 million (all sales here presented in constant 2005 dollars unless otherwise noted), and grew to approximately \$81.9 million in the most recent four quarters available, for an increase of approximately 36 percent, while population grew only about 12 percent. With the exception of 1998, taxable retail sales have increased every year, including the early part of this decade through the national and regional recession. Taxable retail sales growth has been similar in

¹ Most food items, prescription drugs, and certain other items are exempt from sales tax, so the reported taxable sales data excludes these non-taxable sales.

Suisun City



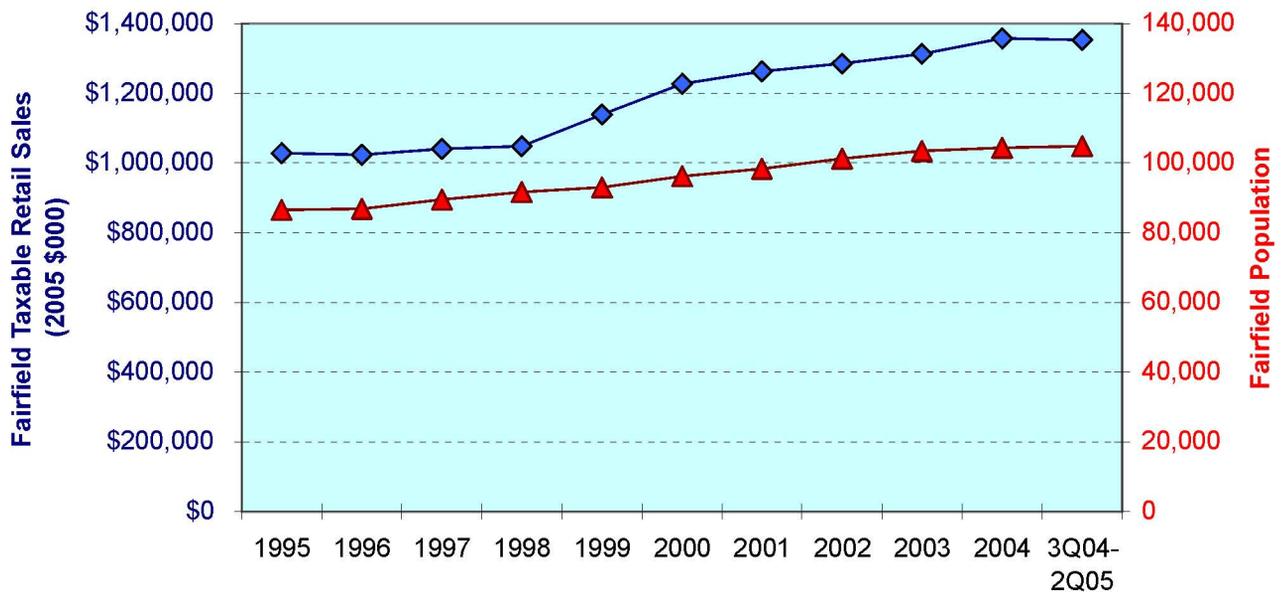
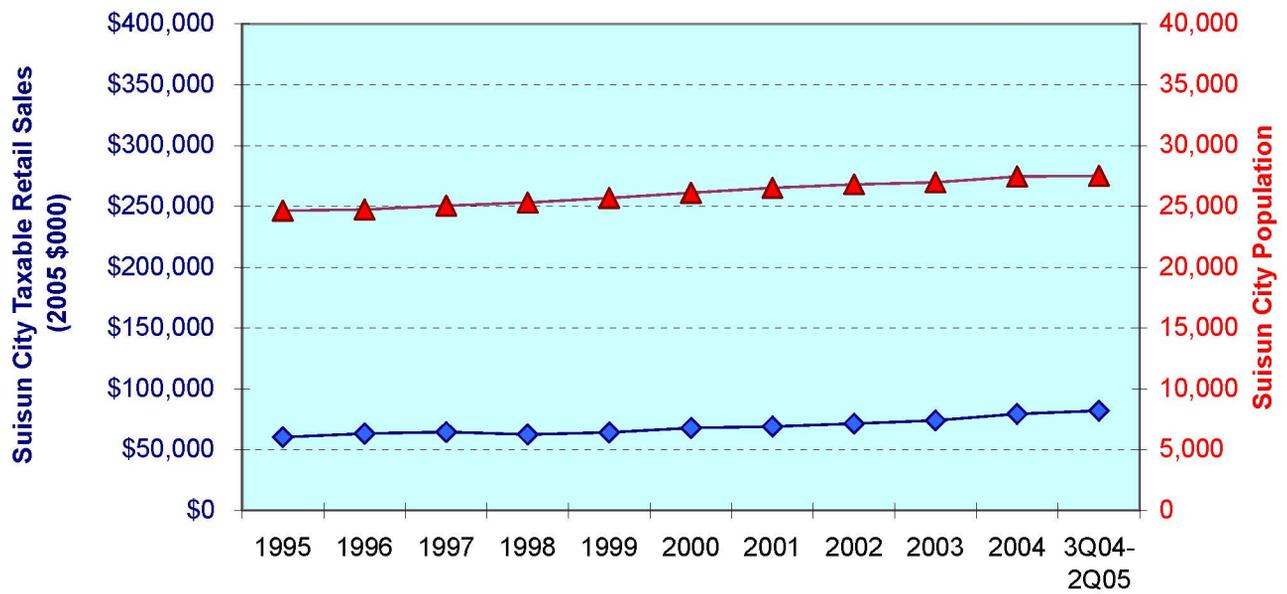
Solano County



Source: Bay Area Economics, 2007.



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◆ Total Taxable Retail Sales ▲ Population

Source: Bay Area Economics, 2007.

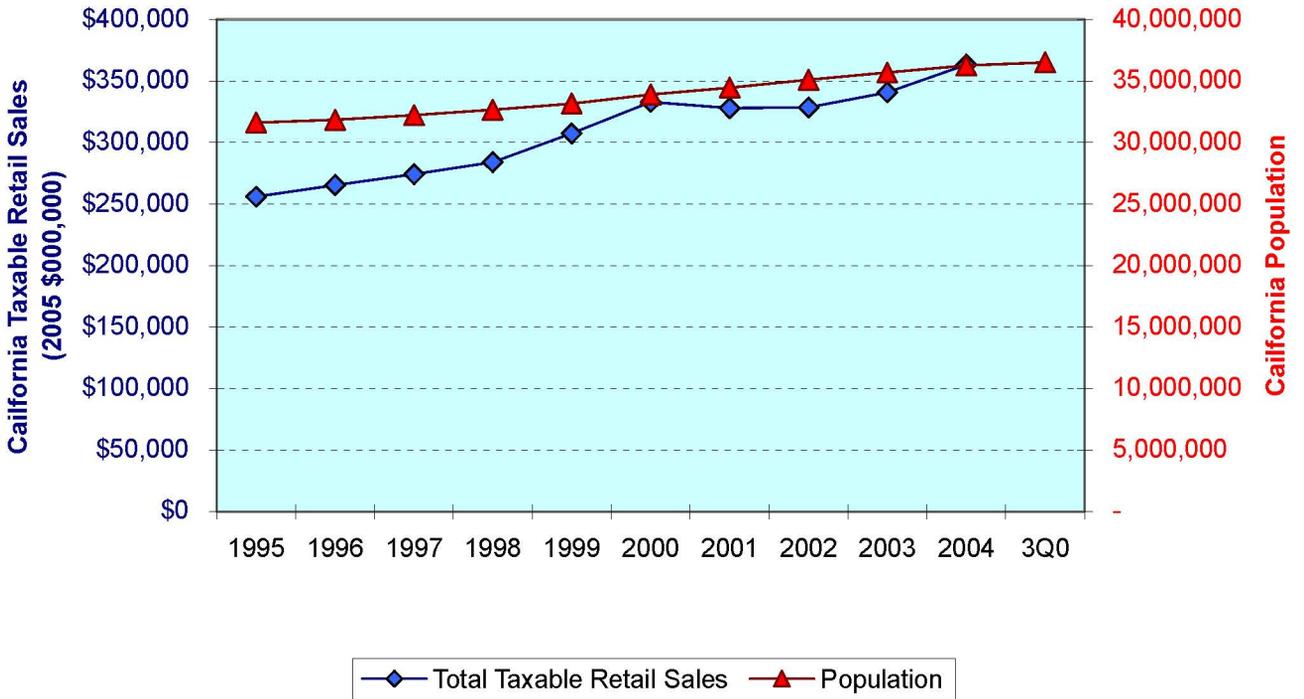
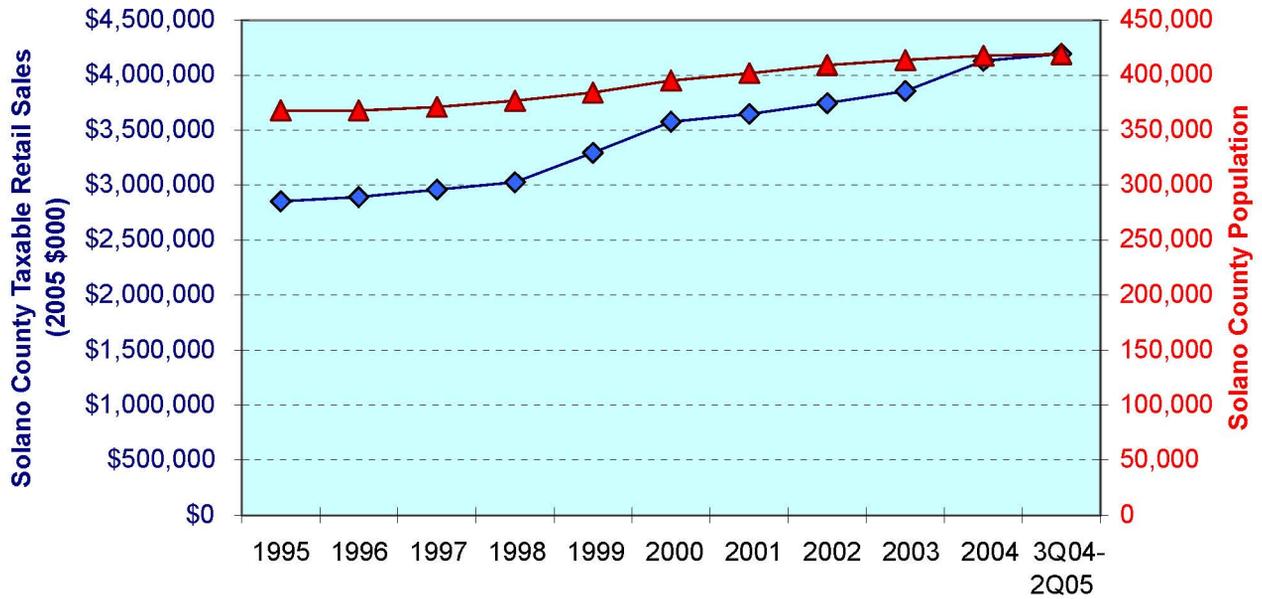


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Exhibit 4.12-3a Taxable Retail Sales and Population - 1995 2Q to 2005

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Source: Bay Area Economics, 2007.



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Exhibit 4.12-3b Taxable Retail Sales and Population - 1995 2Q to 2005

Fairfield, albeit from a far higher base. In 1995, taxable sales in Fairfield were \$1.02 billion; in the most recent four quarters available, they had increased 30 percent to \$1.35 billion, while population had increased 21 percent.

Regionally, Solano County has shown relatively strong growth, with a 47-percent increase in taxable retail sales to \$367 billion over the 10-year study period, even though population only increased 14 percent. This is likely an indicator of increased purchasing power for the County’s residents, based on rising incomes. Solano County’s trends are mirrored statewide, where taxable retail sales increased 44 percent while population only grew 15 percent.

Per Capita Taxable Retail Sales

Per capita retail sales are an indicator of the relative strength of a city as a retail destination; other factors being equal, higher per capita sales relative to the region point toward attraction of shoppers from outside the City. As shown in Exhibit 4.12-4, Table 4.12-5, and Table 4.12-6, Suisun City’s performance in overall per capita taxable retail sales and in most major store categories is very poor compared with the County and the State, while Fairfield is a strong performer overall and in most categories.

Overall, annual per capita taxable retail sales in Suisun City for the most recent annual period available are only \$2,875, compared with \$12,693 for Fairfield. By comparison, for all of Solano County, per capita taxable retail sales are \$9,892, close to the statewide figure of \$10,068. These data are a strong indicator that Suisun City residents are shopping outside their City, while Fairfield is capturing sales from beyond its borders, with much of that capture likely from Suisun City. In fact, Suisun City and Fairfield combined show total per capita taxable sales of \$10,622, closer to the figures countywide and statewide.

**Table 4.12-5: Comparative Total Taxable Retail Sales: 3rd Quarter 2004–2nd Quarter 2005
(Thousands of Dollars)**

Category	Suisun City	Fairfield	Solano County	California	Fairfield/Suisun City Combined
Apparel Stores	1,325	64,141	245,140	18,049,994	65,466
General Merchandise Stores	2,696	279,534	765,315	56,167,279	282,230
Food Stores	14,832	63,349	237,597	20,851,517	78,181
Eating and Drinking Establishments	16,375	118,962	416,459	45,550,302	135,337
Home Furnishings and Appliances	2,261	56,121	165,914	17,226,244	58,382
Building Materials and Farm Implements	6,939	98,693	445,513	37,995,529	105,632

**Table 4.12-5 (Cont.): Comparative Total Taxable Retail Sales: 3rd Quarter 2004–
2nd Quarter 2005 (Thousands of Dollars)**

Category	Suisun City	Fairfield	Solano County	California	Fairfield/Suisun City Combined
Auto Dealers and Auto Supplies	2,235	329,919	936,739	74,197,774	332,153
Service Stations	28,435	96,326	390,164	35,370,748	124,761
Other Retail Sales	6,831	246,070	589,198	61,923,883	252,902
Total	81,929	1,353,115	4,192,039	367,333,270	1,435,044

Source: Bay Area Economics, 2007.

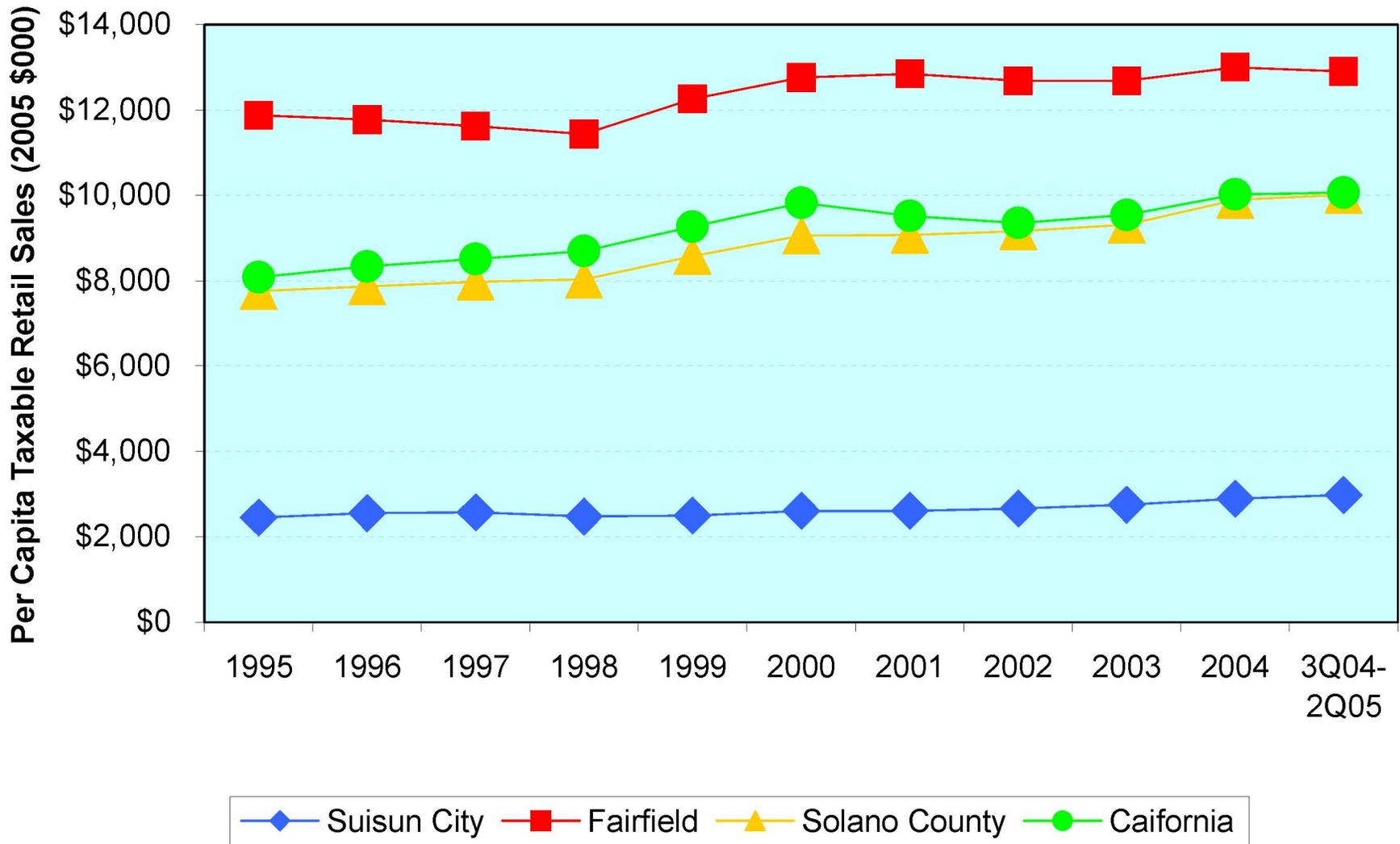
**Table 4.12-6: Comparative Per Capital Taxable Retail Sales: 3rd Quarter 2004–2nd Quarter 2005
(Dollars)**

Category	Suisun City	Fairfield	Solano County	California	Fairfield/Suisun City Combined
Apparel Stores	46	602	578	495	485
General Merchandise Stores	95	2,622	1,806	1,539	2,089
Food Stores	520	594	561	571	579
Eating and Drinking Establishments	575	1,116	983	1,248	1,002
Home Furnishings and Appliances	79	526	391	472	432
Building Materials and Farm Implements	243	926	1,051	1,041	782
Auto Dealers and Auto Supplies	78	3,095	2,210	2,034	2,459
Service Stations	998	904	921	969	923
Other Retail Sales	240	2,308	1,390	1,697	1,872
Total	2,875	12,693	9,892	10,068	10,622
Population	28,500	106,600	423,800	36,486,606	135,100

Source: Bay Area Economics, 2007.

General Merchandise Store Sales

Suisun City's weakness as a retail destination is extremely pronounced in general merchandise sales, as shown in the tables above. Estimated taxable sales for general merchandise stores (effectively, the only store is the Rite-Aid in the Sunset Center) are \$1.2 million, with annual per capita taxable sales of only \$43. Fairfield, on the other hand, has total taxable general merchandise sales of nearly \$280



Source: Bay Area Economics, 2007.



Not to scale

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Exhibit 4.12-4 Comparison of Per Capita Total Taxable Retail Sales

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million, or \$2,622 per capita. Even combining Fairfield and Suisun City, annual general merchandise per capita taxable sales are \$2,078, well above the countywide level of \$1,806. This indicates that Fairfield is a strong retail destination for this type of store, likely due to the presence of the only traditional regional mall in the County as well as a full complement of discount general merchandise outlets (e.g., Wal-Mart, Target, and K-Mart).

Food Stores

For this traditionally convenience-good category, Suisun City has per capita sales closer to the countywide benchmark than for most other categories, indicating that residents are less likely to shop at food stores outside Suisun City. Annual per capita taxable food store sales for Suisun City are \$520, compared with \$561 countywide. While Suisun City shoppers are likely doing most of their everyday grocery shopping in the City, some shoppers may be going to preferred stores in Fairfield, drawn by lower prices (e.g., Food Maxx) or unique items (e.g., Trader Joe's). In fact, Fairfield shows per capita taxable food store sales above the County benchmark, indicating additional capture from outside its boundaries. It also should be noted that these data include the recently closed Albertson's. While some or most of its shoppers may switch to the Raley's in Suisun City, it is likely that overall and per capita food store sales in Suisun City will decline as a result of this significant store closure.

Restaurant Sales

As shown in the tables above, Suisun City underperforms the County and Fairfield, with annual per capita taxable sales in eating and drinking places of only \$575, compared with \$983 countywide and \$1,116 in Fairfield. Statewide performance is higher, at \$1,248.

Other Retail Categories

For most of the remaining major retail categories, Suisun City shows per capita sales well below countywide benchmarks. With the exception of service stations, per capita taxable sales in each category are less than a third of those countywide. For service stations, Suisun City is slightly higher, at \$998 per capita taxable sales compared with \$921 for Solano County.

Existing Retail Nodes

As indicated by the published retail sales data, there is a limited amount of retail space in the Trade Area. Exhibit 4.12-5 maps the existing competing retail nodes in the Trade Area and shows other major planned projects in the Trade Area and the locations of the existing and planned Wal-Marts in Fairfield. (Not shown are other retail nodes in Fairfield.)

Significant retail nodes and centers in the Trade Area include Heritage Park and Sunset Center and some surrounding retail at the intersection of SR-12 and Sunset Avenue, the Marina Shopping Center, and downtown Suisun City.

Heritage Park Shopping Center

This is the largest and most modern shopping center in the Trade Area, located approximately 1.8 miles from the project site at the northwestern corner of the intersection of SR-12 and Sunset Avenue,

with access from Sunset Avenue. The center encompasses 164,299 square feet of space. Heritage Park is anchored by a 60,000-square-foot Raley's; other major tenants include Ace Hardware, Hollywood Video, and American Home Furnishings. Minor tenants include a range of retail and commercial uses, including restaurants, apparel and home furnishings stores, financial institutions, medical and veterinary offices, and personal services. The only vacant space as of late July 2006 was a single, small space adjacent to Ace Hardware. This center opened in 1989 and is the newest and largest major retail center in the Trade Area.

Sunset Center

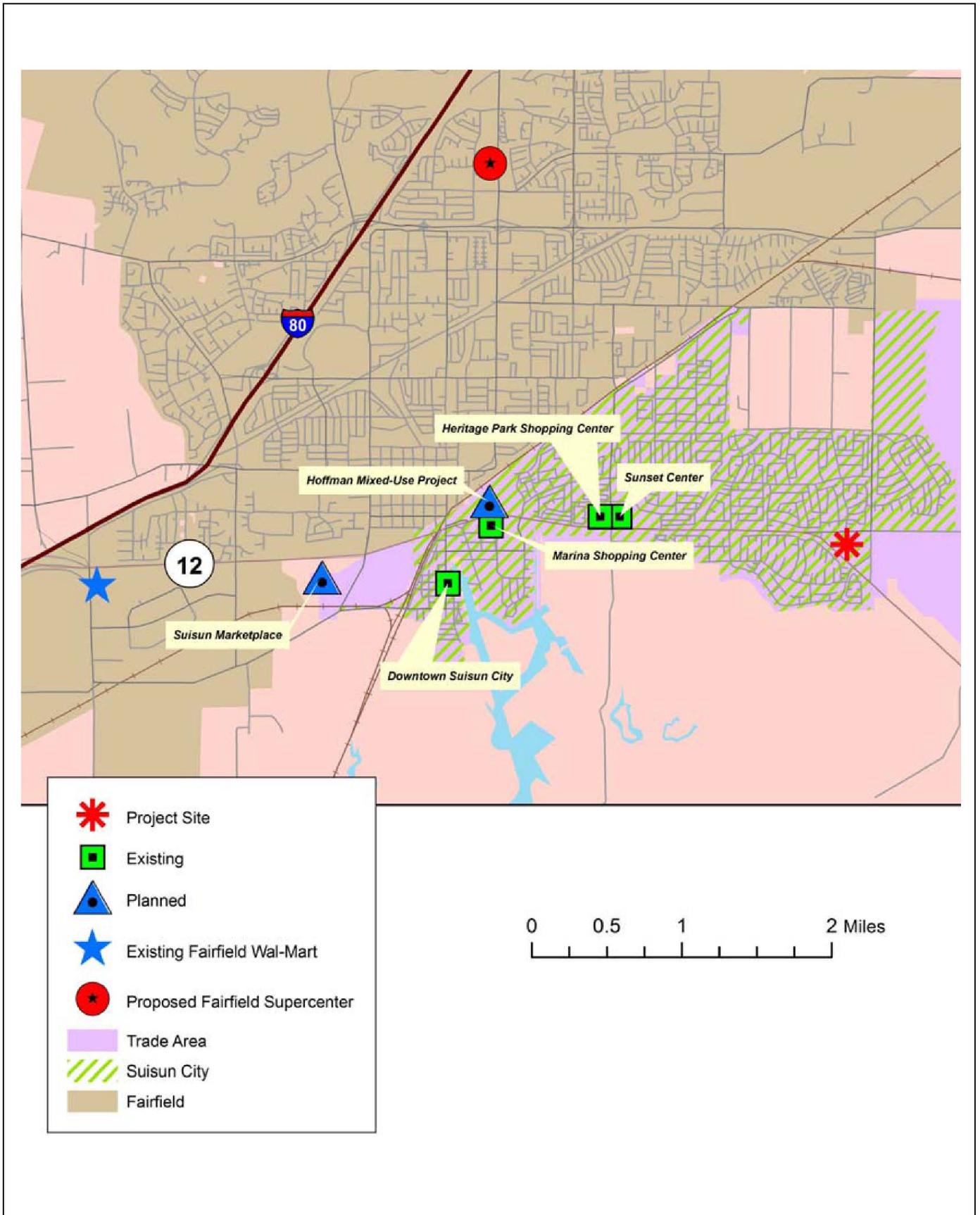
This center is at the northeast corner of SR-12 and Sunset Avenue, directly across Sunset Avenue to the east of the Heritage Park Shopping Center, and approximately 1.7 miles from the project site. Primary access is from Sunset Avenue with limited access directly from SR-12 westbound. The largest space in this center, at 29,072 square feet, was vacated by Albertson's at the end of July 2006. The co-anchor of the center is a Rite-Aid drug store in an 18,043-square-foot space. The main building of the center is 98,279 square feet, including the two large spaces already mentioned, with the remainder occupied by small tenants, mostly independent retail or restaurant businesses, none occupying a space larger than 3,000 square feet. To the front of the center are several freestanding pads under separate ownership occupied primarily by fast-food franchises. As of July 2006, the center was fully occupied, although the closure of Albertson's had just been announced. This center opened in 1981, and while well maintained and in good condition overall, it suffers from a somewhat dated appearance.

Marina Shopping Center

This is an older and smaller center of several buildings, located 2.7 miles from the project site between SR-12 and Lotz Way to the east of Main Street. An exit from eastbound SR-12 leads directly into the center's parking lot, and additional access is available from Lotz Way to the south, and from there to Main Street and SR-12 westbound. The center consists of approximately 100,000 square feet in eight single-story buildings. It has no single large anchor tenant, although several tenants occupy more than one unit. The largest stores are a furniture store, a uniform store, and a liquor/convenience store. The center has a mix of small, independent retail and other outlets, including several churches, and it effectively acts as an incubator space for small retail and service establishments. A site visit in late July, 2006 showed up to six small, vacant units scattered throughout the center among over 40 tenants; management reported vacancy at 3 percent. The center is well maintained but has a very dated appearance and is slightly run down. The age of the center and its layout preclude the capture of a large tenant.

Downtown Suisun City

Downtown Suisun City extends along Main Street south from SR-12, roughly from Lotz Way south to Morgan Street. It is approximately 3.3 miles from the project site. There are a number of historic structures intermingled with somewhat newer buildings, with tenants including a mix of independent



Source: Bay Area Economics, 2007.

restaurants, bars, convenience stores, and small specialty shops. A limited number of storefronts were vacant, with one vacant restaurant exhibiting signs of deterioration. However, most of the properties are maintained, and the waterfront to the east of much of Main Street provides an amenity unlike anything available at the aforementioned shopping centers. The downtown provides a unique experience for visitors but also suffers from poor highway visibility and access (compared with the other centers), with access solely from the north on Main Street.

Other Retail Nodes

Other existing retail in the Trade Area is generally near the above nodes; for instance, there are several fast food restaurants clustered across SR-12 from the Heritage Park Shopping Center and the Sunset Center.

4.12.3 - Regulatory Setting

State

California State Health and Safety Code

California State Health and Safety Code Section 33031(a) and 33031(b) define economic and physical conditions that constitute “blight.”

Economic conditions that constitute blight include:

- Depreciated or stagnant property values or impaired investments, including those caused by hazardous wastes.
- Abnormally high business vacancies, abnormally low lease rates, high turnover rates, abandoned buildings, or excessive vacant lots within an area developed for urban uses and served by utilities.
- A lack of necessary commercial facilities that are normally found in neighborhoods, including grocery stores, drug stores, banks, and other lending institutions.
- Residential overcrowding or an excess of bars, liquor stores, or other businesses that cater exclusively to adults, which has led to problems of public safety and welfare.
- A high crime rate that constitutes a serious threat to the public safety and welfare.

Physical conditions that constitute blight include:

- Buildings in which it is unsafe or unhealthy for persons to live or work. These conditions can be caused by serious building code violations, dilapidation and deterioration, defective design or physical construction, faulty or inadequate utilities, or other similar factors.
- Factors that prevent or substantially hinder the economically viable use or capacity of buildings or lots. This condition can be caused by a substandard design, inadequate size given present standards and market conditions, lack of parking, or other similar factors.

- Adjacent or nearby uses that are incompatible with each other and which prevent the economic development of those parcels or other portions of the project area.
- The existence of subdivided lots of irregular form and shape and inadequate size for proper usefulness and development that are in multiple ownership.

Local

The City of Suisun City General Plan and Zoning: Land Use Designations

The project site is designated for General Commercial by City of Suisun City General Plan and zoned General Commercial (GC) by the Suisun City Zoning Ordinance. The general commercial district is established to allow for the provision of community-wide retail, office, institutional, and service uses, which are dependent upon location at or near major arterial street intersections, especially along SR-12 and Sunset Avenue.

4.12.4 - Impacts and Mitigation Measures

This section discusses potential urban decay impacts associated with the development of the project. Mitigation measures are provided where appropriate.

Methodology

BAE prepared a Retail Market Impact Analysis in January 2007 that provided analysis of the proposed project's retail sales impacts. The study assessed the proposed project's through retail leakage analysis.

Retail leakage analysis compares actual retail sales in an area with some benchmark that provides a measure of the potential sales generated by that area's residents. If sales levels are below the predicted level, the area may be able to support increased sales. This increase in sales could take the form of increased sales in existing outlets or in new outlets.

A lower-than-predicted sales volume implies that consumers are traveling outside the area to shop; thus, the sales are "leaking" out of the study area. Conversely, if the area shows more sales than would be expected from the area's characteristics, there are sales "injections" into the study area. Often, an injection of sales indicates that the study area is serving as the regional shopping destination for a broader area. Conversely, if an area shows substantial leakage, it may be due to the presence of a region-serving retail node outside the study area capturing those "leaked" sales. In such a case, the study area itself may not have sufficient population to support the region-serving retail, so those sales cannot expect to be captured within the study area.

There are a number of factors that can be used to predict sales levels, with the two most important factors being the number of persons in the area and the disposable income available to that population. Additional factors influencing retail spending in an area include household type, age of population, number of workers in the area (i.e., daytime population), tenure patterns (owner vs.

renter), and cultural factors. For the leakage analysis here, Solano County as a whole has been used as a benchmark. Suisun City and Fairfield are both fairly consistent with the County's household size, tenure, and income levels; the two cities, like much of the County, consist of suburban-style residential communities. Solano County itself is a large enough area with enough types of retail available that most potential sales generated by residents are likely captured within the County, and with its position between two larger urban nodes, the inner Bay Area and Sacramento, it is likely not a major attractor of sales. In fact, as shown in Table 4.12-5 and Table 4.12-6, above, overall per capita sales are on par with the State, with Solano County and the State showing annual per capita taxable sales of \$9,892 and \$10,068, respectively.

For purposes of this analysis, it is assumed that the project will be fully developed and occupied in late 2009 or early 2010. The analysis assumes occupancy in 2009 and uses 2009 data as a benchmark, and it estimates sales in the center and impacts based on the 2009 calendar year. This assumption is conservative; by using the slightly lower projected Trade Area population and thus lower spending potential of 2009 rather than 2010, the assumed impacts on, and capture from, existing stores are greater. The analysis assumes that this will be a fully functioning center from its opening date, with all of the project's outlets achieving a level of revenue reflective of appropriate benchmarks for each sector represented in the project, with adjustments for location or other factors as needed. This is considered a reasonable and defensible basis upon which to evaluate the potential economic impacts of the proposed project.

Thresholds of Significance

Although CEQA is not directly concerned with the purely socio-economic effects of projects, such effects can lead to significant effects on the physical environment where the socio-economic impacts indirectly cause either of the following physical consequences:

- A "chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake" (see *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1204); or
- Physical deterioration to properties or structures that is so prevalent and substantial that it impairs the proper utilization of the properties or structures, and/or the health, safety and welfare of the surrounding community.

For purposes of this analysis, physical deterioration includes, but is not limited to, abnormally high business vacancies, abandoned buildings and commercial sites, boarded doors and windows, parked trucks and long-term unauthorized use of properties and parking lots, extensive or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees and shrubbery, and uncontrolled weed growth or homeless encampments. Urban decay is defined as physical deterioration that is so prevalent and substantial it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community.

The following criteria were used as a threshold trigger for detailed analysis of potential impacts relating to urban decay:

- Any sales diversion of any category above 3 percent was deemed potentially significant from a sales impact perspective
- For those categories of retail sales that were determined to potentially experience a greater than 3 percent sales diversion, an assessment was undertaken to determine the likelihood of potential store closure, the subsequent possibility of a long term vacancy, and the subsequent possibility of urban decay occurring.

The 3-percent sales diversion figure is representative of industry trends, particularly during recessionary periods, as documented by Retail Maxim's "Perspectives on Retail Real Estate and Finance," September-August 2006. This publication tracked retail sales by store type on a per-square-foot basis for three time periods: 1995 to 1999 (Late Boom), 2000 to 2003 (Recovery), and 2003 to 2005 (Transition). Retail is a dynamic industry with periodic fluctuations in sales performance, which are common and vary significantly by sector. Sales declines of up to 5 and 6 percent on an annual basis were common during recessionary periods (the Retail MAXIM Recovery period), while sales increases averaging 3 to 5 percent were common for prosperous periods (the Retail MAXIM Late Boom period).

Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Year 2009 Retail Conditions

Using the most recent published taxable sales data as a baseline, the leakage of retail sales from the Trade Area was estimated. Analysis results are shown in Table 4.12-7. For 2009, the estimated year of project completion, the Trade Area shows significant leakage in all major retail categories except service stations, with total net retail taxable sales leakage of slightly more than \$236 million annually. Much is in categories that, given the limited direct competition within the Trade Area, the proposed project may be able to capture, due to the broad array of goods available at a Wal-Mart Supercenter, thus shifting the store mix slightly from what might be expected from County and statewide data.

Table 4.12-7: 2009 Leakage Analysis

Category	2006 Per Capita Total Retail Sales (2005 dollars)		Estimated 2009 Taxable Retail Sales (2005 dollars)		
	Trade Area	Solano County	Estimated Sales	Potential Sales	Injection/ (Leakage)
Apparel Stores	46	578	1,450,274	18,040,768	(16,590,494)

Table 4.12-7 (Cont.): 2009 Leakage Analysis

Category	2006 Per Capita Total Retail Sales (2005 dollars)		Estimated 2009 Taxable Retail Sales (2005 dollars)		
	Trade Area	Solano County	Estimated Sales	Potential Sales	Injection/ (Leakage)
General Merchandise Stores	251	1,954	7,837,863	60,948,133	(53,110,270)
Food Stores	1,145	1,752	35,710,463	54,642,595	(18,932,132)
Eating and Drinking Establishments	575	983	17,920,062	30,648,772	(12,728,710)
Home Furnishings and Appliances	79	391	2,474,286	12,210,193	(9,735,907)
Building Materials and Farm Implements	243	1,051	7,594,146	32,786,904	(25,192,758)
Auto Dealers and Auto Supplies	78	2,210	2,445,554	68,938,073	(66,492,519)
Service Stations	998	921	31,118,094	28,713,595	2,404,499
Other Retail Sales	240	1,390	7,475,960	43,361,263	(35,885,303)
Total	—	—	—	—	(236,263,594)

Notes:
 Estimated sales are based on continued per capita performance at existing levels times projected 2009 Suisun City population. Potential sales are based on countywide per capita sales multiplied by 2009 Suisun City population. County per capita retail sales have been assumed as the baseline against which to compare Trade Area. Sales are assumed to be “leaking” from Trade Area if that area has per capita sales below County benchmark.
 Source: Bay Area Economics, 2007.

Capture of Leakage by Proposed Project

In Table 4.12-8, the proposed project’s potential capture of leakage in each major retail category in 2009 was estimated. As noted above, the lack of nearby competitive retail in several categories is expected to lead to a capture of sales in store categories other than general merchandise and food. The total estimated supportable square footage is 179,232 square feet. This figure represents the estimated retail square footage and excludes non-retail areas such as loading areas, store offices, and employee break areas. Factoring out the restaurant capture, which totals 7,072 square feet, the remaining 172,160 square feet of capture is attributable to the Wal-Mart Supercenter.

Table 4.12-8: 2009 Capture of Sales Leakage by Proposed Project

Category	Sales Injection (Leakage)	Project Capture (percent)	Captured Additional Sales	Average Sales Per Square Foot	Additional Supportable Square Feet
Apparel Stores	(\$16,590,494)	10	\$1,659,049	\$300	5,530

Table 4.12-8 (Cont.): 2009 Capture of Sales Leakage by Proposed Project

Category	Sales Injection (Leakage)	Project Capture (percent)	Captured Additional Sales	Average Sales Per Square Foot	Additional Supportable Square Feet
General Merchandise Stores	(\$53,110,270)	67	\$35,583,881	\$300	118,613
Food Stores	(\$18,932,132)	80	\$15,145,706	\$500	30,291
Eating and Drinking Establishments	(\$12,728,710)	25	\$3,182,177	\$450	7,072
Home Furnishings and Appliances	(\$9,735,907)	10	\$973,591	\$300	3,245
Building Materials and Farm Implements	(\$25,192,759)	3	\$755,783	\$300	2,519
Auto Dealers and Auto Supplies	(\$66,492,519)	—	—	—	—
Service Stations	\$2,404,500	—	—	\$1,000	—
Other Retail Sales	(\$35,885,303)	10	\$3,588,530	\$300	11,962
Total Additional Sales/Square Feet	(\$236,263,594)	—	\$60,888,718	—	179,232
Notes: Sales amounts rounded to nearest thousand dollars. Source: Bay Area Economics, 2007.					

Apparel Stores

Capture of leakage in this category is conservatively estimated at 10 percent; currently, there are virtually no options for buying apparel in Suisun City, especially mass-merchandise apparel. Some of the sales that are currently going to apparel stores outside the Trade Area should be captured by a Wal-Mart Supercenter, since it will carry a large variety of apparel items.

General Merchandise Stores

Leakage capture is estimated at 67 percent; much of this will likely consist of capture of sales currently going to the existing Fairfield Wal-Mart, which will close when the Wal-Mart Supercenter on North Texas Street opens. Since some buyers will still seek out different types of shopping, such as mall-type stores or warehouse clubs, the proposed Wal-Mart Supercenter cannot be expected to capture 100 percent of leakage, even if it is the only major general merchandise store in the Trade Area.

Food Stores

It is assumed that the Wal-Mart Supercenter would capture 80 percent of food store sales leakages. This is based on the convenience nature of food store sales; the Wal-Mart Supercenter will provide an

additional option within Suisun City that is a somewhat different market niche than the lone existing supermarket. Some of the leakages from Suisun City are likely to go to low-price competitors such as Food Maxx; the Wal-Mart Supercenter should recapture much of this by offering a more conveniently located, low-price alternative.

Eating and Drinking Places

The proposed project would provide an 8,000-square-foot, sit-down restaurant; in addition, the fuel station has the option of providing a fast-food outlet within a convenience store setting. Since any one outlet is constrained in terms of capturing leakage (i.e., while filling a certain restaurant niche, potential diners will still look for other types of dining in other niches), capture has been estimated at only 25 percent.

Home Furnishings and Appliances

The Wal-Mart Supercenter would offer a range of small home furnishings and appliances as well as electronics. Given the lack of available options for this kind of store in Suisun City, a general merchandise store should be able to capture some market share that would normally go to this store type. For this analysis, a 10-percent capture has been assumed.

Building Materials Outlets

The Wal-Mart Supercenter would compete most directly with the home improvement stores in this category through its large garden center. Based on Product Line Sales data from the 2002 Economic Census, approximately 6 percent of building improvement store sales is in garden center items. Using that figure, it was estimated that one-half of that proportion can be captured by the Wal-Mart Supercenter, for a capture of 3 percent of the leakage overall in this category.

Auto Dealers and Auto Supplies

No capture would be assumed in this category, even though the Wal-Mart Supercenter may sell some auto supplies.

Service Stations

There is no leakage in this category, so no capture would be assumed.

Other Retail Stores

This covers a broad array of store types. Given the high leakage in this category and the limited existing shopping opportunities in the Trade Area, it is assumed that the Wal-Mart Supercenter, with its broad inventory, can capture 10 percent of the sales in this category.

Resulting Capture of Sales Leakage

Applying the previous captures to the estimated leakage indicates the proposed project could capture approximately \$60.9 million of the total \$236 million in sales leakage from the Trade Area, or slightly over 25 percent of the total leakage.

Estimate of Supportable Square Footage in Proposed Project

Converting the above capture of leakage into supportable store space requires making assumptions regarding sales per square foot. With the exception of eating and drinking places and service stations (where there is no leakage and thus no capture), the assumption is that all the capture will be due to the Wal-Mart Supercenter. Based on Wal-Mart Stores Inc.'s most recent Annual Report, it was estimated that nationally, Wal-Mart (including conventional Wal-Mart discount stores, Wal-Mart Supercenters, and Neighborhood Markets, but excluding Sam's Clubs) generated \$440 per square foot in sales in 2005. This figure is used as a starting point for calculating supportable square feet. For eating and drinking places, a separate estimate of \$450 per square foot is used. Using these benchmarks yielded a preliminary estimate of supportable square footage of approximately 138,000 square feet, based on 2009 population estimates derived from ABAG for the Trade Area. However, this meant that the project would have to capture sales from over 70,000 square feet of existing general merchandise and food store space in the Trade Area (assuming no sales from outside the Trade Area). Even allowing some capture from outside the Trade Area, this is not realistic, since the only significant spaces in this category are the Raley's (60,000 square feet) and the Rite-Aid (18,000 square feet), and the capture for general merchandise would have to be several times the size of the Rite-Aid. Additionally, some shoppers will continue to patronize other stores because of convenience, availability of desired items, or other consumer preferences. The presence of the proposed Fairfield Wal-Mart Supercenter and its location as well as the presence of other regional competitors preclude extensive capture from outside the Trade Area. Furthermore, while the Fairfield Wal-Mart Supercenter is sited in the midst of populated Fairfield, the project site is near the southeastern edge of Suisun City, with few residents to the east, and growth in that direction is constrained by wetlands and Travis Air Force Base. In summary, the overall sales in this center are constrained by the location of competition and the location of the proposed project itself. As a result, an iterative process has been used to determine a more realistic estimate of sales per square foot. With little sales to capture in most categories, and the constraints of capture from outside the Trade Area, sales per square foot have been adjusted downward. In addition, the estimated performance has been broken into grocery and non-grocery components. The estimated annual sales per square foot for non-grocery items are assumed to be \$300; for the supermarket portion of the store, sales are estimated at \$500 per square foot. This is in keeping with other data sources that indicate that the supermarket portions of these stores may generate higher sales volumes. Combining the two figures as a weighted average, annual sales at the proposed Wal-Mart Supercenter are estimated at \$342 per square foot.

Estimated Sales at Project Opening

The performance of the Wal-Mart Supercenter and the other uses results are shown in Table 4.12-9. The Wal-Mart Supercenter is estimated to have sales of approximately \$73.5 million annually, with the restaurant component generating \$3.6 million in annual sales and the service station generating \$4.1 million, for a total project sales projection of \$81.2 million annually. As the Trade Area's population increases in later years, project sales also should increase.

Table 4.12-9: Estimated Project Sales at Opening (2009)

Category	Square Feet	Sales Per Square Foot	Estimated Project Sales
Apparel Stores	5,530	\$300	\$1,659,049
General Merchandise Stores	146,292	\$300	\$43,887,747
Food Stores	45,370	\$500	\$22,685,000
Eating and Drinking Establishments	8,000	\$450	\$3,600,000
Home Furnishings and Appliances	3,245	\$300	\$973,591
Building Materials and Farm Implements	2,519	\$300	\$755,783
Auto Dealers and Auto Supplies	—	—	—
Service Stations	4,100	\$1,000	\$4,100,000
Other Retail Sales	11,962	\$300	\$3,588,530
Total	227,019	—	\$81,249,700

Source: Bay Area Economics, 2007.

Capture of Sales from Existing Outlets

Table 4.12-10 takes the proposed project’s estimated sales, factors out capture from leakage and limited capture from outside the Trade Area, and arrives at an estimate of sales captured from existing outlets in 2009, i.e., sales that would otherwise have occurred at the existing outlets in 2009. The analysis indicates an estimated capture of \$13.4 million from existing outlets, with \$9.3 million attributable to the Wal-Mart Supercenter. The entire \$4.1 million in service station sales will be captured from existing outlets, since there was no leakage in this category, and no sales are assumed to come from outside the Trade Area.

Table 4.12-10: Capture From Leakage, Outside Trade Area and Existing Outlets (2009)

Category	Estimated Project Sales	Capture From Leakage	Capture From Outside Trade Area		Capture From 2009 Existing Outlets
			Percent	Dollars	
Apparel Stores	\$1,659,049	\$1,659,049	—	—	—
General Merchandise Stores	\$43,887,747	\$35,583,881	15	\$6,583,162	\$1,720,704
Food Stores	\$22,685,000	\$15,145,706	—	—	\$7,539,294
Eating and Drinking Establishments	\$3,600,000	\$3,182,177	10	\$360,000	\$57,823
Home Furnishings and Appliances	\$973,591	\$973,591	—	—	—

Table 4.12-10 (Cont.): Capture From Leakage, Outside Trade Area and Existing Outlets (2009)

Category	Estimated Project Sales	Capture From Leakage	Capture From Outside Trade Area		Capture From 2009 Existing Outlets
			Percent	Dollars	
Building Materials and Farm Implements	\$755,783	\$755,783	—	—	—
Auto Dealers and Auto Supplies	—	—	—	—	—
Service Stations	\$4,100,000	—	—	—	\$4,100,000
Other Retail Sales	\$3,588,530	\$3,588,530	—	—	—
Total	\$81,249,700	—	—	—	\$13,417,821
Wal-Mart Supercenter Only	\$73,549,700	—	—	—	\$9,259,998
Notes: Sales amounts rounded to nearest thousand dollars. Source: Bay Area Economics, 2007.					

Summary of Retail Sales Trends and Leakage/Capture Analysis

Over the last decade, Suisun City's taxable retail sales have grown modestly, outpacing population growth somewhat. Taxable retail sales totaled approximately \$81.9 million in the most recent four quarters reported. Taxable retail sales have shown sustained growth, even in the early part of this decade, through the national and regional recession. Taxable retail sales growth has been similar in Fairfield, albeit from a far higher base. In Fairfield, taxable retail sales totaled \$1.35 billion for the most recent four quarters reported. Regionally, Solano County has shown relatively strong growth, with a 47-percent increase in taxable retail sales to \$367 billion over the 10-year study period, even though population only increased 14 percent. This increase in sales over and above the population increase is likely an indicator of increased purchasing power for the County's residents, based on rising incomes.

Suisun City's performance in overall per capita taxable retail sales and in most major store categories is very poor relative to the County and the State, while Fairfield is a strong performer overall and in most categories. These low per capita sales are a strong indicator that Suisun City residents are shopping outside their City, while Fairfield is capturing sales from beyond its borders, with much of that capture likely from Suisun City. Suisun City and Fairfield combined show total per capita taxable sales close to the figures countywide and statewide.

Suisun City's weakness as a retail destination is extremely pronounced in general merchandise sales. The only significant general merchandise store in the City is the Rite-Aid in the Sunset Center. In contrast, Fairfield has extremely high taxable general merchandise sales; even with the two cities

combined, annual general merchandise per capita taxable sales are well above the countywide levels, indicating Fairfield's strength as a retail destination for this type of store. This is due to the presence of the only traditional regional mall in the County as well as a full complement of discount general merchandise outlets.

For food stores, Suisun City per capita sales are slightly below but close to the countywide benchmark, indicating that residents likely do most of their food store shopping within the City. Some shoppers may be going to preferred stores in Fairfield, drawn by lower prices or unique items. The most recent published data include the recently closed Albertson's, and this closure is likely to lead to a decline in overall and per capita food store sales in Suisun City.

With the exception of service stations, Suisun City shows per capita sales well below countywide benchmarks for the remaining major retail categories. In most of these remaining categories, per capita taxable sales are less than one-third of those countywide. For service stations, Suisun City is outperforming the County by a small margin.

Key components of the demand for new retail space in the Trade Area are capture of sales from Trade Area residents that are currently occurring elsewhere (leakage), and population and income growth. It was conservatively assumed that no increase in sales from income growth, so the estimates here for retail sales potential will be based on leakage and population growth only.

In 2009, the assumed timing of project completion, the Trade Area shows significant leakage in all major retail categories except service stations, with total net retail taxable sales leakage slightly over \$236 million annually (in 2005 dollars). Much of this is in categories that, given the limited direct competition within the Trade Area, the proposed project may be able to capture because of the broad array of goods available at a Wal-Mart Supercenter, thus shifting the store mix slightly from what might be expected from County and statewide data.

The proposed project's potential capture of leakage was estimated for each major retail category in 2009. The lack of nearby competitive retail in several categories is expected to lead to a capture of sales in store categories other than general merchandise and food. Most of the capture will be in the general merchandise store and food store categories, with limited capture in apparel stores, eating and drinking places, home furnishings and appliances stores, building materials outlets, and the other retail stores category as delimited by the State Board of Equalization. No leakage is presumed from auto dealers and auto supplies or service stations. Since some buyers will still seek out different types of shopping, such as mall-type stores or warehouse clubs, the proposed Wal-Mart Supercenter is only estimated to capture two-thirds of the leakage in general merchandise stores, even though it is the only major general merchandise store in the Trade Area. The supermarket component is estimated to have a higher capture of 80 percent from food stores, since this is a more locally oriented type of retail. For the restaurant, any one outlet of a particular type is constrained in terms of capturing the overall leakage, so capture has been estimated at only 25 percent. Based on these factors, it was

estimated that the proposed project could capture approximately \$60.9 million of the total \$236 million in sales leakage from the Trade Area, or slightly over 25 percent of the total leakage.

Because of the constraints of the Trade Area that are due to limited population, site access, and the presumed presence of the North Texas Street Wal-Mart Supercenter (which will capture most sales from Fairfield), it is estimated that the proposed project would perform below Wal-Mart companywide averages, with sales per square foot in 2009 of \$342 per square foot (2005 dollars). Overall, the proposed Wal-Mart Supercenter in 2009 is estimated to have sales of approximately \$73.5 million annually, with the restaurant component generating \$3.6 million in annual sales and the service station generating \$4.1 million, for a total project sales projection of \$81.2 million annually. The analysis indicates an estimated capture of \$13.4 million from existing outlets, with \$9.3 million attributable to the Wal-Mart Supercenter. The entire \$4.1 million in service station sales will be captured from existing outlets, since there was no leakage in this category, and no sales are assumed to come from outside the Trade Area.

Store Closures and Long-Term Vacancies

Impact UD-1: The proposed project would not significantly change the dynamic of the local retail market and, therefore, would not result in store closures and long-term vacancies.

Impact Analysis

This impact assesses the potential for the proposed project causing long-term vacancies in existing retail space. *The Bakersfield Citizens for Local Control v. City of Bakersfield, Panama 99 Properties LLC, and Castle & Cooke Commercial-CA, Inc.* decision requires that EIRs assess whether a new retail development “could cause a ripple of store closures and consequent long-term vacancies that would eventually result in general deterioration and decay within and outside the market area” of the proposed development. Further, “[t]hese effects include, but are not limited to, physical decay and deterioration resulting from store closures in the same market area or in established areas of the community (i.e., the ‘traditional downtown area’) due to competitive pressures, followed by an inability to easily re-lease the vacated premises.”

Multiple store closures and long-term vacancies are indicators of urban decay. These indicators suggest that a particular market is not economically healthy enough to support businesses that would fill a high percentage of available business space. The Heritage Park Shopping Center and Sunset Center are the two retail centers that would be affected by the proposed project. Each is discussed below.

Heritage Park Shopping Center

Heritage Parking Shopping Center contains a 60,000-square-foot Raley’s that would be competitive with the proposed Wal-Mart Supercenter. This shopping center is the newest and largest major retail center in Suisun City and had only one vacant space, a single small storefront space, in July 2006. Both center management and Raley’s declined to be interviewed about potential impacts from the proposed project.

Sunset Center

Sunset Center contains an 18,043-square-foot Rite-Aid store that would be competitive with the proposed Wal-Mart Supercenter. This center formerly contained a 29,072-square-foot Albertson’s that closed in July 2006. At the time of this writing, the former Albertson’s space was vacant. When contacted in 2006, center management was unsure of the future of the Albertson’s space; Albertson’s has a long-term lease and will continue to pay rent for their closed store. They also stated that, since the Albertson’s had been performing poorly for an extended period, the complete closure may have less of an impact on other tenants than might be expected. They also believe that the Rite-Aid would see some loss of business to the Wal-Mart Supercenter. Rite-Aid was also contacted and confirmed that it expected some loss of sales to the Wal-Mart Supercenter.

Project Retail Sales Analysis

Trade Area growth in population will be gradual, while growth in retail space such as big-box retail stores is “lumpy,” with any new major store opening typically adding a large amount of square footage to the Trade Area all at once. As a result, any new addition of retail is likely to have a negative short-term impact on sales at existing stores, with the impact decreasing over time as population growth continues (assuming no more new stores are opened). The analysis below focuses on sales in the first year of operation at the proposed project, assuming that all components of the project are open in 2009. Impacts in 2015 are also assessed.

2009 Impacts

The estimated net change in sales from 2006 levels in existing outlets is calculated in Table 4.12-11. The three major store categories where sales are estimated to be below current levels following the opening of the proposed project are general merchandise stores, food stores, and service stations. Detailed discussion of estimated impacts by specific store type and specific stores follows.

Table 4.12-11: Net Change in Sales at Existing Outlets in Trade Area (2006–2009)

Category	2006	2009				Change in Sales (2006–2009)	
	Sales in Existing Outlets	Capture from Existing Outlets (2009 dollars)	Before Sales In Existing Outlets	Percent Capture From Existing	After Sales in Existing Outlets)	Dollars	Percent
Apparel Stores	\$1,355,461	\$0	\$1,450,274	—	\$1,450,274	\$94,813	7
General Merchandise Stores	\$7,325,458	\$1,720,704	\$7,837,863	22	\$6,117,159	(\$1,208,299)	-16
Food Stores	\$33,375,869	\$7,539,294	\$35,710,463	21	\$28,171,169	(\$5,204,701)	-16

Table 4.12-11 (Cont.): Net Change in Sales at Existing Outlets in Trade Area (2006–2009)

Category	2006	2009				Change in Sales (2006–2009)	
	Sales in Existing Outlets	Capture from Existing Outlets (2009 dollars)	Before Sales In Existing Outlets	Percent Capture From Existing	After Sales in Existing Outlets)	Dollars	Percent
Eating and Drinking Establishments	\$16,748,527	\$57,823	\$17,920,062	—	\$17,862,239	\$1,113,712	7
Home Furnishings and Appliances	\$2,312,528	—	\$2,474,286	—	\$2,474,286	\$161,758	7
Building Materials and Farm Implements	\$7,097,674	—	\$7,594,146	—	\$7,594,146	\$496,472	7
Auto Dealers and Auto Supplies	\$2,285,674	—	\$2,445,554	—	\$2,445,554	\$159,880	7
Service Stations	\$29,083,730	\$4,100,000	\$31,118,094	13	\$27,018,094	(\$2,065,636)	-7
Other Retail Sales	\$6,987,215	—	\$7,475,960	—	\$7,475,960	\$488,745	7
Total	\$106,572,135	\$13,417,820	\$114,026,701	12	\$100,608,880	—	—
Wal-Mart Supercenter Only	\$9,259,998	—	—	—	—	—	—

Source: Bay Area Economics, 2007.

The proposed project would also recapture sales to Suisun City residents that are currently occurring outside of the Trade Area, most notably in Fairfield, and, as a result, it will have an impact on retail outlets outside the Trade Area. Assuming these sales mostly occur in Fairfield, the extent of this capture is relatively small compared with total retail sales in Fairfield, with population growth in Fairfield compensating for the lost sales from Suisun City residents over the next several years. In 2009, only general merchandise and food stores show an estimated loss of sales from current levels, and by 2015, growth in Fairfield indicates that all store types should have sales above current levels, even with the proposed project in place.

While the Wal-Mart Supercenter sells a broad range of goods and, thus, likely competes to some extent with a broad variety of outlets and is assumed to capture some sales from the Trade Area that would go to other types of outlets if they existed in the Trade Area, the key competitors for the Wal-Mart Supercenter are in the general merchandise and food store categories, whose impacts are discussed below. The impacts of the restaurant and service station components are also discussed. For other sectors, the analysis indicates that, even if the proposed project takes some sales from existing outlets in 2009, sales will still be above the 2006 baseline.

In 2009, the proposed project would capture 16 percent of the 2006 level of sales from general merchandise stores and food stores, and 7 percent from service stations, for a total capture of slightly below \$8.5 million.

Sales in general merchandise stores are estimated to decline by \$1.2 million in 2009 from current levels. Since the Rite-Aid is the only significant competitor in the general merchandise category, most of the sales loss would be expected to occur at that store. Note that actual sales data for this store were not available; therefore, it was assumed to perform at average company-wide levels.

A similar situation exists with respect to food stores, where Raley’s is the lone major competitor following the closure of Albertson’s. The loss of sales is estimated at \$5.2 million of existing sales in this category. However, the analysis is based on an estimate that Raley’s has effectively captured \$4.6 million in sales from Albertson’s, so the estimated loss of sales for food stores prior to the Albertson’s closure is significantly lower than 16 percent or \$5.2 million.

Smaller stores in the food or general merchandise categories may also experience lost business. Because of their size, a 16-percent loss may be significant enough to cause closure.

Growth in sales in eating and drinking places means that the existing outlets are estimated to show no net loss in sales from existing levels.

For service stations, the overall loss is \$2.1 million. Assuming seven outlets (based on most recent State Board of Equalization data), the loss per outlet would be approximately \$295,000 annually. Most of these outlets are clustered along SR-12 to the west of the project site, so losses are unlikely to be focused on any one particular outlet.

2015 Impacts

As the population of the Trade Area continues to increase, the impacts on existing outlets will be lessened (Table 4.12-12). By 2015, the annual losses for general merchandise stores are estimated to decline to 10 percent of current sales, or \$0.7 million. The losses for food stores are estimated to decline to 9 percent of current sales, or \$2.8 million, less than Raley’s gain from the closure of Albertson’s. For all other sectors, a net gain from current sales levels is estimated.

Table 4.12-12: Net Change in Sales at Existing Outlets in Trade Area (2006–2015)

Category	2006	2015				Change in Sales (2006–2015)	
	Sales (\$) in Existing Outlets	Capture from Existing Outlets (2006 dollars)	Before Sales (\$) In Existing Outlets	Percent Capture From Existing	After Sales (\$) in Existing Outlets	Dollars	Percent
Apparel Stores	1,355,461	—	1,571,684	—	1,571,684	216,223	16

Table 4.12-12 (Cont.): Net Change in Sales at Existing Outlets in Trade Area (2006–2015)

Category	2006	2015				Change in Sales (2006–2015)	
	Sales (\$) in Existing Outlets	Capture from Existing Outlets (2006 dollars)	Before Sales (\$) In Existing Outlets	Percent Capture From Existing	After Sales (\$) in Existing Outlets	Dollars	Percent
General Merchandise Stores	7,325,458	1,864,753	8,494,013	22	6,629,260	(696,198)	-10
Food Stores	33,375,869	8,170,449	38,699,979	21	30,529,530	(2,846,340)	-9
Eating and Drinking Establishments	16,748,527	62,663	19,420,247	—	19,357,584	2,609,057	16
Home Furnishings and Appliances	2,312,528	—	2,681,422	—	2,681,422	368,894	16
Building Materials and Farm Implements	7,097,674	—	8,229,893	—	8,229,893	1,132,219	16
Auto Dealers and Auto Supplies	2,285,674	—	2,650,284	—	2,650,284	364,610	16
Service Stations	29,083,730	4,443,233	33,723,158	13	29,279,925	196,195	1
Other Retail Sales	6,987,215	—	8,101,813	—	8,101,813	1,114,599	16
Total	106,572,135	14,541,099	123,572,493	12	109,031,394	—	—
Wal-Mart Supercenter Only	10,035,202	—	—	—	—	—	—

Source: Bay Area Economics, 2007.

Potential for Store Closures and Long-Term Vacancies

As discussed above, the existing businesses most likely to be impacted by the proposed project would be the Raley's Heritage Park Shopping Center, the Rite-Aid in Sunset Center, and the seven service stations in the western portion of Suisun City. Projected impacts on these businesses are summarized for 2009 and 2015 conditions in Table 4.12-13. All three retail sectors are projected to experience a 3-percent or more loss in sales in Year 2009, and the grocery and general merchandise would continue to experience a 3-percent or greater loss in sales in Year 2015; service stations would not experience any lost sales by 2015. Eating and drinking places would experience sales growth in 2009 and 2015, and the existing outlets are projected to show no net loss in sales from existing levels.

Table 4.12-13: Impacts on Existing Businesses

Existing Business	Lost Sales to Proposed Project			
	2009		2015	
	Dollars	Percent Loss	Dollars	Percent Loss
Raley's	- 5,204,701	- 16	- 2,846,340	- 9
Rite Aid	- 1,208,299	- 16	- 696,198	- 10
Service stations (7)	- 2,065,636	- 7	No loss	No loss

Source: Bay Area Economics, 2007.

The Raley's is projected to experience the most lost business, with \$5.2 million in lost sales in 2009 and \$2.8 million in 2015. These sales would be 16 percent in 2009 and 9 percent in 2015 and would exceed the 3-percent threshold. However, these losses would still allow a sustainable level of business and would decrease over time. The Raley's was estimated to have captured \$4.6 million in sales from the Albertson's that closed in 2006 and, moreover, would not be expected to experience a net decline from levels prior to the closure of Albertson's. Raley's is also located on the west side of Suisun City and would be 1.8 miles from the proposed project. Raley's would remain the most convenient supermarket for many residents of the City, which may reduce the projected loss. In addition, Raley's is the only existing supermarket in Suisun City, and some customers may prefer Raley's to Wal-Mart because of long-standing loyalty. Therefore, the development of the proposed Wal-Mart Supercenter would not be expected to result in Raley's closure.

Rite Aid is projected to experience \$1.2 million in lost sales in 2009 and \$700,000 in lost sales in 2015. These sales would be 16 percent in 2009 and 10 percent in 2015 and would exceed the 3-percent threshold. However, these losses would still allow a sustainable level of business and would decrease over time. As with Raley's, the Rite Aid store is located on the west side of the City and would remain the most convenient general merchandise store for many residents. In addition, because it is the only existing general merchandise store in Suisun City, some customers may prefer Rite Aid to Wal-Mart because of long-standing loyalty. Therefore, the development of the proposed Wal-Mart Supercenter would not be expected to result in closure of the Rite Aid.

Smaller stores in the food or general merchandise categories may also experience lost business. Because of their size, a 16-percent loss may be significant enough to cause closure. However, overall demand indicates any vacancies would be short-term, and since these smaller stores are not major anchors, a short-term vacancy would likely not lead to urban decay for any commercial retail center, as vacancy and turnover are part of the normal retail landscape. Therefore, the development of the Wal-Mart Supercenter would not be expected to result in physical deterioration of commercial centers from closure of small stores.

The seven existing service stations would experience total loss of \$2.1 million in 2009, which would translate to a 7 percent loss in business. The individual loss for each station would be approximately

\$295,000 in 2009; however, this loss would still allow a sustainable level of business. No lost business is projected in 2015. Most of the gas stations are clustered along SR-12 in the west side of the City and would remain the most convenient stations for many residents and passing motorists. Therefore, the development of the 12-pump gas station as part of the proposed project would not be expected to result in the closure of any existing service stations.

In summary, the proposed project would not be expected to result in the closure of any existing businesses and, therefore, would not have the potential to create long-term store vacancies. Impacts would be less than significant.

Travis Air Force Base Commissary

For the purposes of disclosure, concerns have been raised about the proposed project's potential to divert retail sales from the Travis Air Force Base commissary.

The Travis Air Force Base commissary is operated by the Defense Commissary Agency and is one of 23 commissaries in California. Commissaries are intended to provide benefits to military personnel by retailing goods at cost. Personnel in all uniformed branches of the military can shop in the commissary on any U.S. military installation around the world. Retired military personnel have commissary privileges, as do reservists and members of the National Guard. Immediate family members of service personnel also are eligible commissary shoppers. The nearest commissaries to the Travis Air Force Base commissary are located at McClellan Air Force Base, 48 miles to the east near Sacramento, and Beale Air Force Base, 78 miles to the northeast near Marysville.

Commissaries are required by federal law to sell products at cost, with a 5-percent surcharge to fund the development of new stores and renovations to existing stores. Commissary employees' salaries are tax-funded. The Defense Commissary Agency's Price Comparison Study indicates that commissary patrons save an average of more than 30 percent on their grocery bills, which translates to more than \$2,700 per year for a family of four that regularly shops at a commissary. Customers receive substantial additional savings through special sales and coupons. Annual sales for Defense Commissary Agency commissaries exceed \$5 billion.

It is unlikely that the development of the proposed project would result in any significant retail impacts on the Travis Air Force Base Commissary. As previously discussed in this section, the proposed project is expected to cater primarily to customers living in Suisun City. The Travis Air Force Base Commissary is located outside of the Trade Area and, therefore, is not considered a major retailer for Suisun City.

In addition, the Travis Air Force Base Commissary can only be patronized by active duty, reserve, and retired military personnel and their families. The 2000 Census indicated that 18.2 percent of the Suisun City population were "civilian veterans" or persons over the age 18 who had served in the military. Even when factoring in family members, this represents a relatively small percentage of the

population that would be eligible to shop at the commissary. Moreover, not everyone who is eligible to shop at the commissary does so, and actual percentage of Suisun City residents who patronize the commissary is likely a fairly small number.

Assuming a worst-case scenario of the Suisun City Wal-Mart Supercenter diverting substantial sales from the commissary, it would not result in urban decay because the commissary would remain open. As previously described, the commissary is subsidized by government enterprise intended to provide at-cost goods and services to military personnel. The commissary is a unique government enterprise intended to fulfill a specific purpose and does not seek to compete with Wal-Mart or any other private retailer. Supporting this, Nancy O’Neill, a representative of the Defense Commissary Agency, indicated in a phone interview in July 2007 that “it is safe to say” that the commissary would not close even if it experienced lost sales to the Suisun City Wal-Mart Supercenter.

However, in the highly unlikely event of the commissary closing, it would not contribute to urban decay because it is located within the grounds of a national defense installation. Facilities within military installations serve various mission-related purposes and are occupied for non-market reasons. Moreover, Travis Air Force Base is a secure, patrolled government facility that can only be accessed by authorized personnel. As such, the potential for unauthorized individuals vandalizing, establishing an encampment within an empty building, or otherwise causing urban decay is not considered probable. For these reasons, it is reasonable to conclude that no urban decay would occur at Travis Air Force Base as a result of the development of the proposed project.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Physical Deterioration of Property or Structures

Impact UD-2: Development of the proposed project would not result in the closure of competing businesses, causing the physical deterioration of properties or structures they once occupied.

Impact Analysis

Heritage Park Shopping Center and the Sunset Center house the two businesses—Raley’s and Rite Aid, respectively—that would be most impacted by the proposed project.

The Heritage Park Shopping Center opened in 1989 and is characterized as a well-maintained, modern-looking retail center. Heritage Park had only one vacancy in July 2006, a small storefront. Although the Raley’s located in Heritage Park is projected to experience the most lost sales of any

business in Suisun City, the lost sales would not be large enough to result in closure of the store. In addition, the Suisun City Redevelopment Agency indicated that Raley's is aware of the proposed Wal-Mart Supercenter and is in the process of instituting measures to enhance its competitiveness. This suggests that Raley's does not anticipate closing and, therefore, would not create a vacant storefront susceptible to physical deterioration. For these reasons, Heritage Park would not be expected to experience physical deterioration as a result of the proposed project.

Sunset Center opened in the early 1980s and is characterized as having a well maintained albeit dated appearance. Albertson's vacated the center in July 2006, and its former space remains vacant. The size of the former Albertson's space makes it functionally obsolete as a modern, full-service supermarket; therefore, finding a new supermarket tenant would be problematic, even without the development of the proposed Wal-Mart Supercenter. Accordingly, it would be likely that the space would be tenanted by a use other than a supermarket. The vacant space is an existing condition that pre-dates the proposed project. While the development of the proposed project may influence the re-tenancing of the former Albertson's space, it is not responsible for the existing vacancy or the constraints of the space that may make it unattractive for certain tenants such as supermarkets. Moreover, Sunset Center is well maintained and does not exhibit any physical deterioration, and it would be expected that the center would continue to be well maintained. Therefore, Sunset Center would not expect to experience physical deterioration as a result of the proposed project.

The Marina Shopping Center and downtown Suisun City are tenanted by businesses that are focused on market segments different from those of the proposed project and would not be expected to experience store closures as a result of the proposed project. Therefore, these retail areas would not be expected to experience physical deterioration as a result of the proposed project.

The Suisun City Redevelopment Agency indicated that it does not expect the development of the proposed project to result in physical deterioration of existing retail centers or the downtown area. The Agency believes that property management for Heritage Park and Sunset Center, respectively, will maintain their properties to ensure that no physical deterioration occurs. The Agency indicated that it does not have any existing or planned redevelopment activities for either retail center because it does not consider them to be underutilized or blighted. The Agency is currently engaged in redevelopment activities in the downtown area, but it believes that downtown businesses would not directly compete with the proposed project and, therefore, would not be susceptible to closure. In addition, the Agency notes that Suisun City is under-retailed and that there is substantial leakage of retail dollars to retailers located outside of the City. The Agency believes that the development of the proposed Wal-Mart Supercenter would attract consumers from outside of the City who would also patronize other local businesses such as restaurants. Overall, the Agency believes that the proposed project would serve a substantial, unmet retail demand in the City and would not cause store closures and subsequent physical deterioration in the City.

Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Regional Impacts

Impact UD-3: The proposed project, in conjunction with other planned commercial retail projects, would not result in significant regional urban decay impacts.

Impact Analysis

The proposed project, in conjunction with other planned or approved commercial retail projects in the Fairfield-Suisun area, has the cumulative potential to result in the closure of competing businesses and result in urban decay conditions. A particular concern is that large retailers that dominate sales in their merchandise lines will displace older, smaller retail stores and shopping centers, leaving long-term vacancies that deteriorate and encourage graffiti or other unsightly conditions. In the Trade Area and nearby, there are several retail projects currently being developed or under consideration that may result in cumulative impacts. These projects are discussed below.

This analysis assumes that the North Texas Street Supercenter has been approved and will open prior to the Walters Road project, and that the existing Wal-Mart on Chadbourne Road will be closed. Thus, the impacts of this relocation and expansion of the Fairfield Wal-Mart have already been taken into account, primarily in narrowing the definition of the Trade Area to consist solely of Suisun City. In addition, the closure of the Chadbourne Road store and the opening of the North Texas Street store have been taken into account, primarily in narrowing the definition of the Trade Area to consist solely of Suisun City. Wal-Mart has stated their intention to close the Chadbourne store when the Fairfield Wal-Mart Supercenter is open, as noted in the Draft EIR market impact analyses for both the North Texas Street project and the Gentry-Suisun project. Should the development of the North Texas Street Wal-Mart Supercenter not occur and the Chadbourne Road store remain open, this could significantly affect sales performance at the proposed Walters Road West Wal-Mart Supercenter, because the two Wal-Mart stores would be close to each other. The primary effect would likely be poor sales performance at one or both of the Wal-Marts, as the Suisun City location would still be unlikely to attract many additional shoppers from Fairfield, while the Suisun City populace would split their shopping between the two outlets.

There are other proposed projects in Fairfield, the largest of which is the 111,000-square-foot Laurel Creek Plaza portion of the Villages at Fairfield, located on the northeastern corner of Air Base Parkway and Clay Bank Road. This center as proposed is community-serving, with the major anchors planned as a supermarket and a drug store. Because of its location and local focus, it is

unlikely to draw a significant number of customers from the Trade Area, thus limiting any cumulative impacts.

The largest proposed project in the Trade Area is the Gentry-Suisun project, which is a mixed-use project slated to include a major power center (the “Suisun Marketplace”) on 71.3 acres on the southwestern corner of SR-12 and Pennsylvania Avenue. This project is being positioned as a region-serving center, with a primary market area covering Suisun City and Fairfield. As such, it would compete primarily on a regional level and not with the local-serving retailers found in Suisun City; its location closer to the I-80 corridor makes the site more suitable for this type of use than the Walters Road site. It is estimated that if both projects were open and fully tenanted and were operating at stabilized sales levels, Trade Area retail sales in existing outlets would decline from 2006 levels by 10 percent in 2009, decreasing to only a 1-percent loss in 2015 as the Trade Area population continues to grow. While there may be short-term losses in sales, over the next several years these losses would abate to an insubstantial level, limiting long-term impacts. Outside the Trade Area, the focus of impacts is likely to be in Fairfield; other retail nodes are distant enough that the impacts on any particular retail node should not be substantial. Because of Fairfield’s retail sales at a much higher level than Suisun City, the cumulative impacts are estimated as a loss of only 5 percent for existing Fairfield outlets in 2009. By 2015, even with both projects in place, retail sales in existing outlets should recover and increase to 8 percent above current levels. Overall, the analysis indicates that the cumulative impacts of the Suisun Marketplace in combination with the Walters Road West project should not result in long-term store closures within in the Trade Area or beyond.

Another large project in planning stages is the Hoffman Mixed-Use Project, located north of SR-12 and west of Marina Boulevard, and south of the Union Pacific rail line. This site has high visibility and good access to SR-12. This project is currently in the conceptual planning stage, with a plan calling for 60,000 square feet of retail, along with light industrial and residential uses. Planning for this project is preliminary and tenant mix is unknown, and the parcel is currently vacant.

Another project of note is the Suisun Seafood Store, an 8,970-square-foot market recently opened on Lawler Center Drive to the south of SR-12, across from the Sunset Center behind a row of fast-food franchises. This market will add an additional competitor in the food store category, but, as planned, it is highly specialized and should not be directly competitive with the proposed project. This project was still under construction at the time of the baseline economic analysis and so has been retained here in the cumulative impacts analysis.

Finally, the City, in the ongoing process of developing the downtown area, is undertaking the Main Street West Development, which encompasses projects on several parcels to be completed in phases. There are three parcels with retail components in process, including one under construction, one in plan review, and one awaiting construction drawings to complete the application. These projects total 27,453 square feet of space, much of it either definitely planned or tentatively set to be restaurant space. These projects are part of the City’s efforts to create a shopping, dining, and entertainment

destination in the “Old Town” area of the City. As the purpose is to create more of a regional draw with a distinct flavor, they will compete in a limited way with the restaurant uses for the Walters Road project, which is more likely to include a national franchise restaurant. As shown in Tables 4.12-11 and 4.12-12, above, restaurant sales demand in the Trade Area is great enough to absorb more restaurant space than is planned at Walters Road. The Main Street West project is likely to be positioned to attract visitors from outside the Trade Area with impacts on local-serving restaurants lessened as a result of this focus.

The cumulative analysis for the Walters Road West Trade Area assumes all these projects and the Walters Road West project are approved and constructed by 2009. As such, it represents a worst-case analysis, because some of these projects may not be completed by that date (e.g., the Hoffman Mixed-Use project, which is only in the conceptual planning stage), and, over time, projected increases in population will lessen any impacts. It is estimated that if all these projects were open and fully tenanted and were operating at stabilized sales levels, Trade Area retail sales in existing outlets would decline from 2006 levels by 11 percent in 2009, decreasing to only a 2-percent loss in 2015 as the Trade Area population continues to grow. Thus, while there may be short-term losses in sales, over the next several years these losses would abate to an insubstantial level, limiting long-term impacts.

Outside the Trade Area, the focus of impacts is likely to be in Fairfield; other retail nodes are distant enough that the impacts on any particular retail node should not be substantial. To the extent that these sales are captured from outside Fairfield, the impacts within Fairfield that are assumed here would be lessened. Even though the capture from outside the Walters Road West Trade Area (but assumed to be limited to Fairfield) is estimated at approximately \$270 million, Fairfield’s overall retail sales are at a much higher level than those of Suisun City, so the cumulative impacts would amount to a loss of only 11 percent for existing outlets in 2009. By 2015, even with both projects in place, retail sales in existing outlets in Fairfield are estimated to recover and increase to 2 percent above current levels.

Cumulative Retail Impact Summary

The proposed project’s primary component is a Wal-Mart Supercenter whose potential cumulative retail impact would be limited to the food and general merchandise sectors. Other planned or approved commercial retail projects in the Fairfield-Suisun area would either occupy different retail sectors than the proposed project or be local- or niche-serving and not have the potential for cumulative impacts. In addition, there is uncertainty about the end uses for some large projects (e.g., the Hoffman Mixed-Use project and the revised Gentry-Suisun project) that makes it difficult to assess their regional impact. However, while there may be short-term impacts that could lead to closures of existing stores as they faced competition from all of these projects, long-term projected population growth in Suisun City and Fairfield should, within a few years, increase retail demand leading to the absorption of these vacancies. For these reasons, the proposed project would not have a significant regional impact. Impacts would be less than significant.

Urban Decay

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

SECTION 5: ALTERNATIVES TO THE PROPOSED PROJECT

5.1 - Introduction

In accordance with CEQA Guidelines Section 15126.6, this Environmental Impact Report (EIR) contains a comparative impact assessment of alternatives to the proposed project. The primary purpose of this section is to provide decision makers and the public with a reasonable degree of feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the project's significant adverse environmental effects. The CEQA Guidelines establish that rule of reason should be used to determine the range of alternatives and stipulate that an EIR need only analyze those alternatives necessary to foster informed decision making and public participation. Important considerations for these alternatives analyses are noted below (as stated in CEQA Guidelines Section 15126.6):

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
 - Failure to meet most of the basic project objectives;
 - Infeasibility; or
 - Inability to avoid significant environmental effects.

5.1.1 - Significant Unavoidable Impacts of the Proposed Project

This EIR has identified 10 significant unavoidable impacts of the proposed project: (1) alteration of the visual character of the project site, (2) operational emissions, (3) cumulative air quality impacts, (4) greenhouse gas emissions, (5) construction noise, (6) stationary noise, (7) vehicular noise, (8) near-term intersection operations, (9) long-term intersection operations, and (10) queuing.

5.1.2 - Project Objectives

As stated in Section 3, Project Description, the objectives of the proposed project are to:

- Enhance the commercial retail offerings in the Fairfield-Suisun region
- Provide regional commercial retail activities that will compliment existing local retail activities located in the Fairfield-Suisun region
- Provide commercial development that creates new job opportunities for local residents
- Promote economic growth and development that is consistent with the policies of the City of Suisun City General Plan

- Design a project consistent with the City of Suisun City's General Plan and Zoning Ordinance
- Enhance the City's position to better serve the regional and community retail needs in the larger Solano County community
- Generate sales tax and property tax revenues to accrue to the various agencies that are involved with the project area
- Begin and continue to address the City's existing structural budget deficit of approximately \$800,000, which, if not corrected, will result in the continuation of service reductions and staff layoffs
- Pay for its fair share of impacts and positively contribute to the local economy
- Provide a retail development that meets the currently unmet demand of regional consumers and future demand from planned residential development in the area
- Expand and provide new retail options close to local consumers by providing 24-hour shopping opportunities in a safe and secure environment
- Minimize travel lengths and utilize existing infrastructure to the maximum extent possible by developing a regional commercial center on undeveloped land surrounded by existing urban uses on three sides
- Provide a fair return on the costs and investments made in the land and project by private development entities
- Ensure that commercial development has sufficient onsite parking to minimize impacts to the surrounding residential areas and ensure that adequate parking is provided for customers and employees
- Develop an architectural design that softens the scale and mass of the buildings with features designed to blend with the surrounding area
- Provide landscaping to soften the design and create a pleasant, attractive appearance that complements the surrounding area

5.1.3 - Selection of Alternatives

The evaluation of alternatives in this EIR follows standard CEQA practice for identifying and selecting alternatives. For land development projects, the standard practice is to evaluate a "no project" alternative, a reduced density alternative, and, if one exists, an alternative location for the project. Other alternatives, such as modifying project design or project uses, can also be evaluated but are dependent on project-specific constraints and conditions that dictate feasibility.

The three alternatives to the proposed project analyzed in this section are listed below.

- **No Project Alternative:** The project site would remain in its existing condition and no development would occur.
- **Reduced Density Alternative Option 1:** The project site would be developed as a 150,000-square-foot retail center anchored by a 75,000-square-foot grocery store with smaller, complementary, inline retail shops and restaurants, and stand-alone outparcels.
- **Reduced Density Alternative Option 2:** The Wal-Mart Supercenter would be reduced to 180,000 square feet and the restaurant and gas station would be eliminated.

In addition, the alternatives that were initially considered but ultimately rejected from further consideration are discussed at the end of this section.

5.2 - Alternative 1: No Project Alternative

This EIR describes the current environmental conditions at the project site. (See Section 4, Environmental Impact Analysis.) Under the No Project Alternative, the project site would remain unchanged, and no development would occur. The project site would remain undeveloped for the foreseeable future.

5.2.1 - Impact Analysis

The project site would remain in its existing condition, and no changes in land use intensity would occur. When compared with the No Project Alternative, the proposed project would result in potentially significant impacts on aesthetics, light, and glare; air quality; biological resources; cultural resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; noise; and transportation. The proposed project would have significant unavoidable impacts associated with visual character, operational air emissions, cumulative air quality impacts, greenhouse gas emissions, construction noise, stationary noise, vehicular noise, near-term intersection operations, long-term intersection operations, and queuing impacts; all other potentially significant impacts could be mitigated to a level of less than significant. This alternative would avoid the 10 aforementioned significant unavoidable impacts.

5.2.2 - Conclusions

The No Project Alternative would have less impact on all environmental topical areas compared with the proposed project. However, the No Project Alternative does not meet any of the objectives of the proposed project.

5.3 - Alternative 2: Reduced Density Alternative Option 1

The Reduced Density Alternative Option 1 would result in the development of a 150,000-square-foot commercial retail center on the project site in accordance with the City of Suisun City General Plan

designation of General Commercial. The retail center would be anchored by a 75,000-square-foot grocery store, with 75,000 square feet of smaller, complementary, inline food and retail such as coffee shops, quick-serve restaurants, novelties, pet supplies, casual dining, and electronics stores. The retail center would occupy all 20.8 acres of the project site. The grocery store would be located where the Wal-Mart Supercenter would be located but would be attached to other in-line shops. Outparcels would be located along State Route (SR-12) and Walters Road for tenants such as quick-serve restaurants. The main parking area would be located in the center of the project site, with additional parking around the outparcels. Access to this alternative would occur at the same location as the proposed project.

Table 5-1 provides a summary of this alternative. This alternative would result in a 33 percent reduction in square footage relative to the proposed project.

Table 5-1: Reduced Density Alternative Option 1 Summary

Component	Square Feet
Grocery store	75,000
Inline food and retail	75,000
Total	150,000
Net Change Relative to Proposed Project	(77,019)

5.3.1 - Impact Analysis

Reduced Density Alternative Option 1 would result in elimination of the restaurant and gas station. Because this alternative would have a development footprint and operational characteristics similar to the proposed project, it can be assumed that all topical areas found to be less than significant for the proposed project in Section 4, Environmental Impact Analysis, would also be less than significant for this alternative. These topical areas are land use, public services and utilities, and urban decay, and are not re-analyzed under this alternative. Topical impacts assessed in this section include aesthetics, light, and glare; air quality; biological resources; cultural resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; noise; and transportation.

Aesthetics, Light, and Glare

Reduced Density Alternative Option 1 would result in the development of commercial uses and infrastructure on the project site. The development of this alternative would have a significant unavoidable impact on visual character similar to the proposed project. New sources of light similar in scale and intensity to the proposed project would be introduced to the project site under this alternative. As such, this potential impact would require the same mitigation measures identified in Impact AES-3, which would reduce light and glare impacts to a level of less than significant. Therefore, this alternative would have impacts on aesthetics, light, and glare that would be similar to the proposed project.

Air Quality

Under Reduced Density Alternative Option 1, construction emissions would be similar to the proposed project because of the size of the project site and construction activities that are similar to those of the proposed project. As such, with the implementation of the construction emissions measures identified in Impact AIR-2, construction emissions would be reduced to a level of less than significant. This alternative would reduce the commercial square footage by 33 percent to 150,000 square feet. This would be projected to result in 3,425 fewer daily trips, which represents a 39 percent reduction relative to the proposed project. However, this alternative would still generate 5,345 daily trips and would exceed the Bay Area Air Quality Management District (BAAQMD) daily emissions threshold of 3,000 trips per day. Mitigation measures similar to that identified in Impact AIR-4 would be implemented, but it would not bring emissions to within BAAQMD thresholds; therefore, this alternative would result in a significant unavoidable impact associated with operational emissions. Because project-level emissions would exceed BAAQMD thresholds, the project would also result in a significant and unavoidable cumulative air quality impact. Finally, although this alternative would generate fewer vehicular trips, be smaller, and, therefore, emit fewer greenhouse gases, it would still result in cumulatively considerable greenhouse gas emissions that would be considered significant and unavoidable. In summary, while this alternative would have significant unavoidable impacts similar to the proposed project, it would emit fewer air pollutants. Therefore, this alternative would have less impact on air quality than the proposed project.

Biological Resources

Reduced Density Alternative Option 1 would result in an amount of acreage being disturbed by construction activities that is similar to the proposed project. As such, this alternative would have the potential to significantly impact special-status plant species, wildlife species, riparian areas, wetlands, and critical habitat and would require the same mitigation measures identified in Impacts BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, respectively. The implementation of mitigation measures would reduce impacts to a level of less than significant. Therefore, this alternative would have impacts on biological resources similar to the proposed project.

Cultural Resources

Reduced Density Alternative Option 1 would result in an amount of acreage being disturbed by construction activities as the proposed project. As such, this alternative would have the potential to significantly impact previously undiscovered buried cultural resources and require the same mitigation measures identified in Impacts CUL-1, CUL-2, CUL-3, and CUL-4. The implementation of mitigation measures would reduce impacts to a level of less than significant. Therefore, this alternative would have impacts on cultural resources similar to the proposed project.

Geology, Soils and Seismicity

Reduced Density Alternative Option 1 would result in the development of commercial uses on the project site, including an amount of acreage disturbed by construction activities similar to the proposed project. Mitigation measures similar to those identified in Impacts GEO-1 and GEO-4

would be implemented to require that the recommendations of the geotechnical report be adhered to during construction to ensure that seismic hazards are reduced to a level of less than significant. In addition, mitigation measures similar to that identified in Impact GEO-2 would be implemented to ensure that construction activities do not create erosion hazards. Therefore, this alternative would have geology, soils, and seismicity impacts similar to the proposed project.

Hazards and Hazardous Materials

Reduced Density Alternative Option 1 would result in the development of commercial uses on the project site. The Pacific Gas and Electric (PG&E) transformer located on the eastern portion of the project site would be removed. If removed improperly, there is the potential for exposure to polychlorinated biphenyls (PCBs). As such, mitigation measures similar to that identified in Impacts HAZ-1 and HAZ-2 would be implemented to reduce potentially significant hazardous materials to a level of less than significant. In addition, this alternative may also result in the use of hazardous materials during operations; therefore, it would require the implementation of mitigation measures similar to that identified in Impact HAZ-2. Therefore, this alternative would have hazardous materials impacts similar to the proposed project.

Hydrology and Water Quality

Reduced Density Alternative Option 1 would result in the development of commercial uses on the project site, including an amount of impervious surface similar to those of the proposed project. This would have the potential to create significant downstream drainage and water quality impacts. Mitigation measures similar to those identified in Impacts HYD-1, HYD-2, HYD-3, HYD-4, and HYD-5 would be implemented that would require the project to provide adequate onsite drainage facilities, water quality treatment controls, a final stormwater control plan, and verification of downstream conveyance capacity. With the implementation of mitigation measures, potential impacts would be reduced to a level of less than significant. Therefore, this alternative would have hydrology and water quality impacts similar to the proposed project.

Noise

Under Reduced Density Alternative Option 1, construction noise would be similar to the proposed project because of the size of the project site and construction activities that are similar to those of the proposed project. Even with the implementation of the construction noise control measures identified in Impact NOI-1, construction noise impacts would be significant and unavoidable. Stationary noise generated by this alternative would be substantial and would require mitigation measures similar to the proposed project. Although mitigation measures would be implemented, stationary noise would still be a significant and unavoidable impact of the proposed project because there is the potential that mitigation measures would not fully reduce noise at offsite receptors to acceptable levels. Project-generated vehicular noise would be less under this alternative because of the corresponding reduction in project square footage. Although mitigation measures would be implemented, vehicular noise would still be a significant and unavoidable impact of the proposed project because there is the potential that mitigation measures would not fully reduce noise at offsite receptors to acceptable

levels. In summary, while this alternative would have the same significant unavoidable noise impacts as the proposed project, it would generate fewer vehicular trips and, therefore, would have a lower contribution to the ambient noise environment. Therefore, this alternative would have fewer noise impacts than the proposed project.

Transportation

Reduced Density Alternative Option 1 would reduce the proposed project's square footage by 33 percent and, therefore, would be expected to have a substantial reduction in trip generation during the morning and afternoon peak periods. The replacement of the Wal-Mart Supercenter with a supermarket would be expected to reduce the number of peak-hour trips generated by the project anchor. The inline shops and restaurants would also have lower trip generation totals relative to the Wal-Mart Supercenter. The outparcels would contain trip-intensive land uses such as quick-serve restaurants, but they would not occupy enough square footage to result in a net increase relative to the trip reduction achieved from eliminating the Wal-Mart Supercenter. Trips generated by this alternative would contribute to deficient intersection operations under near-term and long-term conditions identified in Impacts TRANS-1 and TRANS-2, and deficient queuing movements identified in Impact TRANS-3. Similar to the proposed project, this alternative would require the applicant to contribute fair-share mitigation fees identified in those impacts to improve intersection and queuing operations to acceptable levels and reduce the impact to a level of less than significant. However, because the City of Suisun City cannot guarantee that the City of Fairfield or Caltrans will implement project-related intersection improvements on roadways under their respective jurisdiction, it is uncertain that the actual improvements will be in place when the project opens. Therefore, this alternative would have significant unavoidable impacts related to intersection operations and queuing. This alternative would also be required to implement bus stop improvements identified in Impact TRANS-8. In summary, while this alternative would have the same significant unavoidable impacts related to intersection operations and queuing as the proposed project, it would generate fewer vehicular trips and, therefore, would have a lower contribution to traffic. Therefore, this alternative would have fewer traffic impacts than the proposed project.

5.3.2 - Conclusions

The Reduced Density Alternative Option 1 would have fewer impacts on air quality, noise, and traffic relative to the proposed project; all other impacts would be similar to those of the proposed project. This alternative would satisfy nearly all of the project objectives with the exception of the objective of providing 24-hour shopping opportunities in a safe and secure environment. However, because it is smaller than the proposed project and would not contain a Wal-Mart Supercenter, this alternative would not be expected to generate the same amounts of employment opportunities and tax revenue as the proposed project and, therefore, would not satisfy several of the project objectives related to jobs and revenue as fully as the proposed project.

5.4 - Alternative 3: Reduced Density Alternative Option 2

The Reduced Density Alternative Option 2 consists of reducing the Wal-Mart Supercenter to 180,000 square feet (including garden center) and eliminating the restaurant and gas station. The reduced size of the Wal-Mart Supercenter would be consistent with the average square footage of a typical Supercenter. The reduction in building coverage would be offset with additional landscaping. All vehicular access points would remain.

The Reduced Density Project Option 2 components are summarized in Table 5-1. This alternative would result in a 21 percent reduction in square footage relative to the proposed project.

Table 5-2: Reduced Density Alternative Option 2 Summary

Component	Square Feet
Wal-Mart Supercenter	180,000
Total	180,000
Net Change Relative to Proposed Project	(47,019)

5.4.1 - Impact Analysis

The Reduced Density Alternative Option 2 would result in the development of a commercial project similar in nature to the proposed project, but with a smaller Wal-Mart Supercenter on the project site. Because the end uses would be identical and occupy the same footprint as the proposed project, it can be assumed that all topical areas found to be less than significant for the proposed project in Section 4, Environmental Impact Analysis, would also be less than significant for this alternative. These topical areas are land use, public services and utilities, and urban decay, and are not re-analyzed under this alternative. Topical impacts assessed in this section include aesthetics, light, and glare; air quality; biological resources; cultural resources; geology, soils, and seismicity; hazards and hazardous materials; hydrology and water quality; noise; and transportation.

Aesthetics, Light, and Glare

Reduced Density Alternative Option 2 would result in the development of commercial uses and infrastructure on the project site, albeit with a substantially smaller 180,000-square-foot Wal-Mart Supercenter. The development of this alternative would have a significant unavoidable impact on visual character that is similar to the proposed project. New sources of light similar in scale and intensity to the proposed project would be introduced to the project site under this alternative. As such, this potential impact would require the same mitigation measures identified in Impact AES-3, which would reduce light and glare impacts to a level of less than significant. Therefore, this alternative would have aesthetics, light, and glare impacts similar to the proposed project.

Air Quality

Under Reduced Density Alternative Option 2, construction emissions would be similar to the proposed project because of the size of the project site and construction activities that are similar to those of the proposed project. As such, with the implementation of the construction emissions mitigation measures identified in Impact AIR-2, construction emissions would be reduced to a level of less than significant. This alternative would reduce the Wal-Mart Supercenter by 21 percent to 180,000 square feet. This would be projected to result in 401 fewer daily trips, which represents a 4.5 percent reduction relative to the proposed project. However, this alternative would still generate 8,369 daily trips and would exceed the BAAQMD daily emissions threshold of 3,000 trips per day. Mitigation measures similar to that identified in Impact AIR-4 would be implemented, but it would not bring emissions to within BAAQMD thresholds; therefore, this alternative would result in a significant unavoidable impact associated with operational emissions. Because project-level emissions would exceed BAAQMD thresholds, the project would also result in a significant and unavoidable cumulative air quality impact. Finally, although this alternative would generate fewer vehicular trips, be smaller, and, therefore, emit fewer greenhouse gases, it would still result in cumulatively considerable greenhouse gas emissions that would be considered significant and unavoidable. In summary, while this alternative would have significant unavoidable impacts similar to the proposed project, it would emit fewer air pollutants. Therefore, this alternative would have less impact on air quality than the proposed project.

Biological Resources

Reduced Density Alternative Option 2 would result in an amount of acreage being disturbed by construction activities similar to the proposed project. As such, this alternative would have the potential to significantly impact special-status plant and wildlife species, riparian areas, and wetlands and would require the same mitigation measures identified in Impacts BIO-1, BIO-2, BIO-3, BIO-4, and BIO-5 respectively. The implementation of mitigation would reduce impacts to a level of less than significant. Therefore, this alternative would have impacts on biological resources similar to the proposed project.

Cultural Resources

Reduced Density Alternative Option 2 would result in an amount of acreage being disturbed by construction activities similar to the proposed project. As such, this alternative would have the potential to significantly impact previously undiscovered buried cultural resources and require the same mitigation measures identified in Impacts CUL-1, CUL-2, CUL-3, and CUL-4. The implementation of mitigation measures would reduce impacts to a level of less than significant. Therefore, this alternative would have impacts on cultural resources similar to the proposed project.

Geology, Soils, and Seismicity

Reduced Density Alternative Option 2 would result in the development of commercial uses on the project site, resulting in an amount of acreage being disturbed by construction activities similar to the proposed project. Mitigation measures similar to those identified in Impacts GEO-1 and GEO-4

would be implemented to require that the recommendations of the geotechnical report be adhered to during construction to ensure that seismic hazards are reduced to a level of less than significant. In addition, mitigation measures similar to that identified in Impact GEO-2 would be implemented to ensure that construction activities do not create erosion hazards. Therefore, this alternative would have geology, soils, and seismicity impacts similar to the proposed project.

Hazards and Hazardous Materials

Reduced Density Alternative Option 2 would result in the development of commercial uses on the project site. The PG&E transformer located on the eastern portion of the project site would be removed. If removed improperly, there is the potential for exposure to PCBs. As such, mitigation measures similar to that identified in Impacts HAZ-1 and HAZ-2 would be implemented to reduce potentially significant hazardous materials to a level of less than significant. In addition, this alternative may also result in the use of hazardous materials during operations; therefore, it would require the implementation of mitigation measures similar to that identified in Impact HAZ-2. Therefore, this alternative would have hazardous materials impacts similar to the proposed project.

Hydrology and Water Quality

Reduced Density Alternative Option 2 would result in the development of commercial uses on the project site, including an amount of impervious surface similar to the proposed project. This would have the potential to create significant downstream drainage and water quality impacts. Mitigation measures similar to those identified in Impacts HYD-1, HYD-2, HYD-3, HYD-4, and HYD-5 would be implemented that would require the project to provide adequate onsite drainage facilities, water quality treatment controls, a final stormwater control plan, and verification of downstream conveyance capacity. With the implementation of mitigation measures, potential impacts would be reduced to a level of less than significant. Therefore, this alternative would have hydrology and water quality impacts similar to the proposed project.

Noise

Under Reduced Density Alternative Option 2, construction noise would be similar to the proposed project because of the size of the project site and construction activities that are similar to those of the proposed project. Even with the implementation of the construction noise control mitigation measures identified in Impact NOI-1, construction noise would be significant and unavoidable. Stationary noise generated by this alternative would be substantial and would require mitigation measures similar to the proposed project. Project-generated vehicular noise would be less under this alternative than the proposed project because of the corresponding reduction in project square footage. Although mitigation measures would be implemented, vehicular noise would still be a significant and unavoidable impact because there is the potential that mitigation measures would not fully reduce noise at offsite receptors to acceptable levels. In summary, while this alternative would have the same significant unavoidable noise impacts as the proposed project, it would generate fewer vehicular trips and, therefore, have a lower impact to the ambient noise environment. Therefore, this alternative would have fewer noise impacts than the proposed project.

Transportation

Reduced Density Alternative Option 2 would reduce trip generation during the morning and afternoon peak periods by 178 and 121 trips, respectively. This alternative would contribute to deficient intersection operations under near-term and long-term conditions identified in Impacts TRANS-1 and TRANS-2 and deficient queuing movements identified in Impact TRANS-3. Similar to the proposed project, this alternative would require the applicant to contribute fair-share mitigation fees identified in those impacts to improve intersection and queuing operations to acceptable levels and reduce the impact to a level of less than significant. However, because the City of Suisun City cannot guarantee that the City of Fairfield or Caltrans will implement project-related intersection improvements on roadways under their respective jurisdiction, it is uncertain that the actual improvements will be in place when the project opens. Therefore, this alternative would have significant unavoidable impacts related to intersection operations and queuing. This alternative would also be required to implement bus stop improvements identified in Impact TRANS-8. In summary, while this alternative would have the same significant unavoidable impacts related to intersection operations and queuing as the proposed project, it would generate fewer vehicular trips and, therefore, would have a lower contribution to traffic. Therefore, this alternative would have fewer traffic impacts than the proposed project.

5.4.2 - Conclusions

The Reduced Density Alternative Option 2 would have fewer impacts on air quality, noise, and traffic than the proposed project. This alternative would have similar impacts on all other topical areas. While this alternative does meet the objectives of the proposed project, it does not fulfill them to the same degree because it would result in less Wal-Mart Supercenter square footage.

5.5 - Environmentally Superior Alternative

The qualitative environmental effects of each alternative in relation to the proposed project are summarized in Table 5-3.

Table 5-3 Summary of Alternatives

Environmental Topical Area	No Project Alternative	Reduced Density Alternative Option 1	Reduced Density Alternative Option 2
Aesthetics, Light, and Glare	Less Impact	Similar Impact	Similar Impact
Air Quality	Less Impact	Less Impact	Less Impact
Biological Resources	Less Impact	Similar Impact	Similar Impact
Cultural Resources	Less Impact	Similar Impact	Similar Impact
Geology, Soils, and Seismicity	Less Impact	Similar Impact	Similar Impact
Hazards and Hazardous Materials	Less Impact	Similar Impact	Similar Impact

Table 5-3 (Cont.): Summary of Alternatives

Environmental Topical Area	No Project Alternative	Reduced Density Alternative Option 1	Reduced Density Alternative Option 2
Hydrology and Water Quality	Less Impact	Similar Impact	Similar Impact
Land Use	Less Impact	Similar Impact	Similar Impact
Noise	Less Impact	Less Impact	Less Impact
Public Services and Utilities	Less Impact	Similar Impact	Similar Impact
Transportation	Less Impact	Less Impact	Less Impact
Urban Decay	Less Impact	Similar Impact	Similar Impact

CEQA Guidelines Section 15126(e)(2) requires an EIR to identify an “environmentally superior alternative.” If the No Project Alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives.

Each of the proposed alternatives would have fewer environmental impacts relative to the proposed project, with the No Project Alternative having the fewest. Therefore, the No Project Alternative is the environmentally superior alternative, as the project site would remain in its existing condition, thereby avoiding any potentially adverse environmental impacts.

As stated above, if the No Project Alternative is environmentally superior, the EIR must also identify another environmentally superior alternative among the remaining alternatives. Based on this review, the Reduced Density Alternative Option 1 would be the environmentally superior alternative because it would generate fewer vehicular trips than the Reduced Density Alternative Option 2, and, therefore, it would emit fewer air pollutants and greenhouse gas emissions, and have fewer impacts on noise and traffic.

5.6 - Alternatives Rejected from Further Consideration

The Alternative Location and Mixed-Use Alternative were initially considered but were rejected from further consideration for the reasons described below.

Alternative Location

For an alternative location to be feasible to support a project of this size and nature, it must meet the following criteria:

- The site must be along the SR-12 corridor in the Suisun City limits or in the Suisun City Sphere of Influence.
- The site must be a minimum of 20 acres.
- The site must be designated for commercial retail uses by the City of Suisun City General Plan.

- The site must either be undeveloped or contain small-scale, non-conforming uses that can be removed at relatively low cost (e.g., rural residential or agricultural structures).

Based on a review of the City of Suisun City General Plan's land use map and aerial photographs, the only site that meets these criteria is the 477.82-acre Gentry-Suisun site at SR-12 and Pennsylvania Avenue. The location of the Gentry-Suisun site is shown in Exhibit 5-1. Development at this site is analyzed in the Gentry-Suisun Draft Environmental Impact Report (April 2006), the Recirculated Draft EIR (September 2006), and the Second Partially Recirculated Draft EIR (August 2007). The initial project concept proposed a mixed-use development consisting of commercial and residential components on 87.82 acres anchored by a 227,000-square-foot Wal-Mart Supercenter. Since the circulation of the Gentry-Suisun EIR, the Wal-Mart Supercenter has been removed and the Gentry-Suisun project has been reduced in size. Because Wal-Mart Stores, Inc. withdrew from the Gentry-Suisun project and the project applicant subsequently revised its plans to replace the store with other uses, that site is not considered a feasible alternative location for the proposed project. For these reasons, the Alternative Location was rejected from further consideration.

Mixed-Use Alternative

A Mixed-Use Alternative was considered for the project site with the intent of reducing vehicular trip generation and, therefore, resulting in fewer air quality, noise, and traffic impacts. The Mixed-Use Alternative concept envisioned a 200,000-square-foot mixed-use project consisting of office, residential, and retail uses anchored by a smaller Wal-Mart store, as well as trip reduction features intended to promote public transit, bicycling, and walking. Mixed-use typically involves the clustering of retail, entertainment, office, and residential uses in multi-story buildings around a public plaza, with parking around the perimeter of the buildings. There were several reasons why this alternative is not considered feasible on the project site:

- Residential uses are not permitted by the Suisun City Zoning Ordinance in the General Commercial (CG) zoning district.
- Office uses are not permitted by the Suisun City Zoning Ordinance in the General Commercial (CG) zoning district.
- Bars, taverns, nightclubs, and other evening entertainment destinations are not permitted by the Suisun City Zoning Ordinance in the General Commercial (CG) zoning district.
- The General Commercial (CG) zoning district has a 35-foot height limit, restricting the multi-story structure aspect of the mixed-uses.
- The Suisun City Zoning Ordinance does not identify a Mixed Use zoning district or overlay that would allow a mixed-use development.
- The Travis Air Force Base Land Use Compatibility Plan prohibits rezoning any non-residential zoned site currently located in Zone C to a residential designation.

- The mixed-uses would encourage congregation on the project site and exceed the 300-person-per-any-individual-acre limit established in the Travis Air Force Base Land Use Compatibility Plan for Zone C.

For these reasons, the Mixed-Use Alternative was rejected from further consideration.



Legend

- Project Boundary
- Gentry Site

Source: Google Earth



Michael Brandman Associates
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**Exhibit 5-1
Gentry-Suisun Site Location**

CITY OF SUISUN CITY • WALTERS ROAD WEST PROJECT
ENVIRONMENTAL IMPACT REPORT

SECTION 6: OTHER CEQA CONSIDERATIONS

6.1 - Significant Unavoidable Impacts

CEQA Guidelines Section 15126.2(a)(b) requires an EIR to identify and focus on the significant environmental effects of the proposed project, including effects that cannot be avoided if the proposed project were implemented.

This section describes significant impacts, including those that can be mitigated but not reduced to a level of less than significant. Where impacts cannot be alleviated without imposing a project alternative, their implications and the reason why the project is being proposed are described. With implementation of the proposed project, 10 significant effects related to aesthetics, light, and glare; air quality; noise; and transportation that cannot be avoided would occur. Each significant unavoidable impact is discussed below.

Visual Character

Development of the proposed project would irreversibly and permanently alter the visual character of the project site. Mitigation measures are proposed; however, they would not fully mitigate the impact to a level of less than significant. This is a significant unavoidable impact of the proposed project.

Operational Emissions

Long-term operational emissions would exceed Bay Area Air Quality Management District (BAAQMD) thresholds for regional operational emissions. Mitigation measures are proposed; however, they would not fully mitigate the impact to a level of less than significant. This is a significant unavoidable impact of the proposed project.

Cumulative Air Quality

Because long-term operational emissions would exceed BAAQMD thresholds, the proposed project would have a significant cumulative air quality impact. No mitigation is available to reduce this impact to a level of less than significant. This is a significant unavoidable impact of the proposed project.

Greenhouse Gas Emissions

The proposed project would emit greenhouse gases (e.g., carbon dioxide) in substantial quantities. While there are no adopted thresholds at the time of this writing for greenhouse gas emissions, the size and intensity of the proposed project are substantial enough for its emissions to be considered a cumulatively significant contribution to global concentrations of greenhouse gases. Mitigation measures are proposed; however, they would not fully mitigate the impact to a level of less than significant.

Construction Noise

Construction noise may result in excessive noise levels at nearby residences. Mitigation measures are proposed; however, they would not fully mitigate the impact to a level of less than significant.

Stationary Noise

Stationary source noise from operation of the proposed project may exceed acceptable noise levels at nearby residences. Mitigation measures are proposed; however, they would not fully mitigate the impact to a level of less than significant.

Vehicular Noise

Vehicular noise from project-related trips may exceed acceptable noise levels at nearby residences. Mitigation measures are proposed; however, they would not fully mitigate the impact to a level of less than significant.

Near-Term Intersection Operations

Project-generated trips would contribute to deficient performance at seven intersections under Year 2008 conditions. Mitigation measures are proposed that would improve operations at all seven intersections to acceptable levels; however, because several of the intersection are under the jurisdiction of the City of Fairfield or Caltrans, the City of Suisun City cannot assure that the improvements would be in place by the time of project opening. Therefore, this impact is considered significant and unavoidable.

Long-Term Intersection Operations

Project-generated trips would contribute to deficient performance at eight intersections under Year 2030 conditions. Mitigation measures are proposed that would improve operations at all eight intersections to acceptable levels; however, because several of the intersection are under the jurisdiction of the City of Fairfield or Caltrans, the City of Suisun City cannot assure that the improvements would be in place by the time of project opening. Therefore, this impact is considered significant and unavoidable.

Queuing

Project-generated trips would contribute to excessive queuing at seven movements. Mitigation measures are proposed that would improve queuing at all seven movements to acceptable levels; however, because several of the intersections are under the jurisdiction of the City of Fairfield or Caltrans, the City of Suisun City cannot assure that the improvements would be in place by the time of project opening. Therefore, this impact is considered significant and unavoidable.

6.2 - Growth-Inducing Impacts

There are two types of growth-inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project's characteristics that may encourage and

facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines Section 15126.2(d)).

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth or by leading to the construction of additional developments in the same area. Included in this category are projects that remove physical obstacles to population growth, such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area. Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth or projects that indirectly induce growth may provide a catalyst for future unrelated development in an area, such as a new residential community that requires additional commercial uses to support residents.

The proposed project would result in the development of approximately 227,019 square feet of commercial uses onsite, which is currently undeveloped. The proposed project does not contain any residential uses and, therefore, would not directly induce population growth. Roadways and utility systems currently serve the project site and surrounding land uses; therefore, the proposed project would not remove a barrier to growth through the extension of urban infrastructure.

The proposed project would create an estimated 375 new jobs. Most, if not all, of these employment opportunities could be filled from the local workforce because these types of jobs would be entry-level and part-time, and would not have the potential to induce indirect population growth. The proposed project is not considered a catalyst for future unrelated projects because commercial retail is a “non-basic” industry (an industry that produces goods and services that are consumed locally) and not a “basic” industry (an industry that produces goods and services that are exported from the local economy). Basic industries (e.g., resource extraction, manufactured goods production, major governmental facilities) have the potential to serve as catalysts for future unrelated projects because they attract non-basic industries to support them. However, non-basic industries lack the potential to attract basic industries and have a limited potential to attract other non-basic industries. The proposed project’s potential to attract other non-basic industries is extremely limited because the project’s retail uses would serve existing demand in the Trade Area. In addition, the development of future unrelated projects in Suisun City is severely constrained by the lack of developable land. For these reasons, the proposed project would not serve as a catalyst for future unrelated projects.

Finally, the proposed project would not foster growth in excess of what is forecast in the local land use plans, or in projections made by regional planning agencies such as the Association of Bay Area Governments (ABAG). The proposed project is consistent with the City of Suisun City General Plan, which contemplates a commercial use on the project site. The land uses programmed into local land use plans (e.g., the City of Suisun City General Plan) are principal factors used in the regional growth projections prepared by ABAG. Therefore, the proposed project would not foster growth beyond what has already been anticipated in local land use plans and regional growth projections.

6.3 - Cumulative Impacts

6.3.1 - Background

CEQA Guidelines Section 15130 requires the consideration of cumulative impacts within an EIR when a project's incremental effect is cumulatively considerable. Cumulatively considerable means, "the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." In identifying projects that may contribute to cumulative impacts, the CEQA Guidelines allow the use of either a list of past, present, and reasonably foreseeable future projects, producing related or cumulative impacts, including those that are outside of the control of the lead agency. The CEQA Guidelines also allow the use of a summary of projections contained in an adopted General Plan or related planning document, which is designed to evaluate regional or area-wide conditions.

In accordance with CEQA Guidelines, Section 15130(b), "the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone." The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects that do not contribute to the cumulative impact.

6.3.2 - Approach

This section contains an evaluation of the impacts generated from the implementation of the proposed project when considered in conjunction with development forecasts based on the buildout of the City of Suisun City General Plan. The cumulative impact discussion follows a "list" approach as described above, and is organized by each of the environmental issues evaluated in Sections 4.1 through 4.12 of this Draft EIR. Thresholds of significance for impacts are those indicated in the relevant portions of Section 4, Environmental Impact Analysis. This analysis also relies on information contained within the City of Suisun City General Plan. The following methodology was used for each resource area.

1. Would the project, together with other foreseeable projects, create a significant cumulative effect? If yes, proceed to the next question. If no, the proposed project and other foreseeable projects would not have a significant cumulative effect.
2. Is the project's contribution to the significant cumulative effect cumulatively considerable? If yes, proceed to the next question. If no, the project would not have a cumulatively considerable contribution and the inquiry ends.
3. If the project's contribution is cumulatively considerable, can that contribution be mitigated to a less than cumulatively considerable level? If yes, the project would not have a cumulatively considerable impact. If no, the project would have a cumulative considerable

contribution to a significant cumulative impact, and the impact would be considered significant and unavoidable.

6.3.3 - Geographic Scope

Table 6-1 below lists the geographic scope, or study area, considered in this cumulative analysis by resource, per CEQA Guidelines Section 15130(b).

Table 6-1: Geographic Scope of Cumulative Analysis by Resource

Resource	Cumulative Analysis Study Area	Explanation for Study Area
Aesthetics, Light, and Glare	Views of the foothills to the west, Potrero Hills to the southeast, Suisun Marsh, Suisun Channel	Views with potential for impact from the project.
Air Quality	San Francisco Bay Area Air Basin	Federal boundary established for air quality analyses.
Biological Resources	Proposed project site and 6-acre undeveloped parcel to the west	Worst-case extent for potential impacts to biological resources.
Cultural Resources	Proposed project site	Worst-case extent for potential impacts to cultural resources.
Geology, Soils, and Seismicity	Area surrounding Suisun City	Worst-case extent for potential impacts from geologic hazards.
Hazards and Hazardous Materials	Proposed project site	Worst-case extent for potential hazards.
Hydrology and Water Quality	Proposed project site and Suisun City	Worst-case extent for potential impacts to hydrology and water quality.
Land Use	Proposed project site and all surrounding sites	Worst-case extent for potential impacts to land use.
Noise	Proposed project site	Worst-case extent for potential impacts to the noise environment.
Public Services and Utilities	Suisun City	Worst-case extent for potential impacts to public services and utilities.
Transportation	Roadways in Suisun City and Fairfield selected by City of Suisun City	Worst-case extent for potential impacts to traffic and transportation.
Urban Decay	Retail Trade Area of Suisun City (Sphere of Influence)	Worst-case extent for potential impacts of urban decay.
Source: Michael Brandman Associates, 2007.		

6.3.4 - Cumulative Impacts Analysis

The proposed project's cumulative impacts were considered in conjunction with other approved and pending projects in the Fairfield-Suisun area. Table 6-2 provides a list of the other projects considered in the cumulative analysis. Projects listed in Table 6-2 were identified by the City as reasonably foreseeable, approved, and pending projects.

Table 6-2: Cumulative Projects

Project	Size	Location
Gentry-Suisun	480,000 square feet retail 232 dwelling units	State Route 12 (SR-12) and Pennsylvania Avenue
Amberwood Homes (Blossom Manor)	28 dwelling units	Blossom Road between Railroad Avenue and Sarah Way
Peterson Ranch Homes	548 dwelling units	Between East Tabor Avenue and Bella Vista Drive, and between Travis Air Force Base and Walters Road
Breezewood Village Apartments	80 dwelling units	Worley Road between Railroad Avenue and Philip Way
McCoy Creek Mixed-Use	19 single-family homes 10 live-work units 6,818 square feet office	South side of SR-12 between McCoy Creek Drive and Suisun Marsh, and between Grizzly Island Road and Crescent Elementary School
Courtyards at Sunset Homes	69 dwelling units	North side of Railroad Avenue, west of Sunset Avenue
Cottonwood Creek Apartments	120 dwelling units	North side of Railroad Avenue, west of Sunset Avenue
Almond Tree Place Condominiums	61 dwelling units	Railroad Avenue between Humphrey Drive and Olive Avenue
Blossom Courtyards Homes	75 dwelling units	Southeastern corner of Blossom Avenue and Railroad Avenue
Suisun Mixed-Use Village (Hoffman Mixed-Use)	125 single-family homes 125 condominiums City park and fire station 60,000 square feet retail 90,000 square feet light industrial	Between SR-12 and Railroad Avenue, and west of Marina Boulevard
Stoneyard Masonry	4,000 square feet	Near the corner of Petersen Road and Walters Road, between the Bonfaire Market and Macedonia Church
Suisun Seafood Store	9,000 square feet	303 Lawler Center Drive
Main Street West Development (Project 1)	17,956 square feet retail 16,500 square feet office	Southeast corner of Main Street and Solano Street

Table 6-2 (Cont.): Cumulative Projects

Project	Size	Location
Main Street West Development (Project 2)	5,437 square feet retail 5,142 square feet office	Northeast corner of Main Street and Solano Street
Goldridge Homes	1,458 dwelling units	Peabody Road near Joseph Gerevas Drive
Villages at Fairfield (1 through 4)	295 dwelling units (apartments) 79 dwelling units	Cement Hill Road between Clay Bank Road and Peabody Road
Homecoming Apartments	628 dwelling units	Cement Hill Road near Clay Bank Road
Madison Apartments	221 dwelling units	Near Vanden Road and Peabody Road
East Tabor Townhouses	94 dwelling units	East Tabor Avenue south of Clay Bank Road
Blossom Avenue Apartments	92 dwelling units	Blossom Road north of Railroad Avenue
DMV Project Apartments	22 dwelling units	Pacific Avenue
Oakmont Shopping Center Expansion	40,000 square feet retail	North Texas Street south of East Tabor Avenue
Southgate Shopping Center	17,500 square feet retail	Pennsylvania Avenue and SR-12
Fairfield Bowl	8,500 square feet	North Texas Street north of East Tabor Avenue
Laurel Creek Plaza	100,000 square feet retail	Clay Bank Road, north of Air Base Parkway
St. Gobain Glass Warehouse	1,100 square feet light industrial	Huntington Drive near Peabody Road
Source: Michael Brandman Associates, 2007.		

Aesthetics, Light, and Glare

The analysis area for evaluation of cumulative impacts to aesthetics, light, and glare includes views of the foothills to the west of Suisun City and the Potrero Hills to the southeast, along with the land and water features of the Suisun Marsh and the Suisun Channel. The project site is undeveloped and mostly contains non-native grasslands. On the western side of the project site is State Route 12 (SR-12), adjacent to the Lawler Ranch subdivision, which contains detached, single-family residential uses developed in the early 2000s. A sound wall separates SR-12 from the Lawler Ranch subdivision. The north side of the project site is bounded by Petersen Road, and to the north is the Quail Glen subdivision, which contains detached, single-family residential uses developed in the 1980s. The residences abutting Petersen Road are protected with a 6-foot-high wooden fence. On the eastern side is Walters Road. On the east side of Walters Road is grazing land that is designated for Extensive Agriculture. SR-12 and its signalized intersection with Walters Road are immediately south of the project site. South of SR-12 is the Lawler Ranch subdivision and a small-lot, detached, single-family residential subdivision developed in the early 1990s.

Development of the proposed project would irreversibly and permanently change the visual character of the project site. While the existing visual character of the project site is considered marginal, the irreversible conversion of 20.8 acres of undeveloped land to urban development at the eastern fringe of Suisun City would represent a substantial alteration in the visual character of the project site and its surroundings. The proposed project contains a variety of design elements (e.g., architectural treatments, landscaping, signage) intended to create an aesthetically appealing commercial center to passing motorists and surrounding land uses. However, the development of the proposed project would be considered a substantial adverse impact on the project site and its surroundings because of the project site's location at the eastern edge of the urban envelope of Suisun City. Mitigation measures are proposed related to an operational aspect of the proposed project (overnight RV parking), but it would not be sufficient to address the conversion of the site from undeveloped land to urban use. Therefore, degradation of visual character is considered a significant and unavoidable impact of the project.

Other projects would irreversibly change the aesthetic appearance of their individual sites and introduce light and glare. When taken into account with the other projects, the proposed project would result in a significant cumulative effect. Table 6-2 indicates extensive development in the project vicinity. Therefore, this effect would be cumulatively considerable without mitigation measures applied, since the effect of this project by itself is a potentially significant impact. Mitigation measures in the form of management of overnight RV parking is proposed, but it would not be sufficient to reduce the impacts to a level that would not be cumulatively considerable. These other projects would comply with regulations regarding applicable design requirements and lighting ordinances to minimize impacts, but would likely have residual effects simply by virtue of changing open land to urban land, and the residual effects would combine to form a significant impact. Therefore, visual impacts from the proposed project would be significant and unavoidable and result in a cumulatively considerable impact.

Air Quality

The analysis area for evaluation of cumulative impacts to air quality includes the San Francisco Bay Area Air Basin (Air Basin), which is identical to the boundaries of the San Francisco Bay Area Air Quality Management District. The Air Basin consists of Napa, Marin, San Francisco, Contra Costa, Alameda, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the western portion of Solano County.

The proposed project would produce both short-term construction emissions and long-term operational emissions associated with vehicles. BAAQMD accounts for Air Basin-wide construction emissions in its regional emissions budget and indicates that implementation of standard construction mitigation measures would ensure that construction emissions are not significant for all projects in the Air Basin. Operational emissions would not exceed maximally exposed individual thresholds nor would they create any carbon monoxide hot spots at local intersections that would exceed ambient air quality standards. As discussed in Impact AIR-9, the proposed project would comply with the

greenhouse gas reduction strategies proposed by several State agencies. These strategies include programs to reduce emissions from off-road vehicles, increase transportation energy efficiency, and promote land use concepts that reduce the need for vehicle trips. In addition, Mitigation Measure AIR-4, which addresses O₃ precursors, would also reduce project-level emission of these greenhouse gases. Operational emissions from the proposed project would exceed BAAQMD thresholds.

Other projects in the region would be expected to generate operational emissions. Some of these projects would be below BAAQMD thresholds for ozone precursors and some of the projects would exceed the threshold. All of the projects could contribute to excessive ozone concentrations in the Air Basin. These projects would also emit CO₂, which at the project level would be insignificant but would contribute to cumulative emissions of greenhouse gases. The cumulative impact on air quality from the proposed project and other projects in the region would be significant because of contributions of ozone precursors and CO₂. Therefore, this effect would be cumulatively considerable without mitigation applied, since the effect of this project by itself is a potentially significant impact. Mitigation in the form of extensive air pollution control measures for operation and construction are proposed, but they would not reduce project operation emissions below BAAQMD thresholds. Therefore, project-level emissions would be significant and unavoidable and would result in a cumulatively considerable impact on regional air quality.

Biological Resources

The analysis area for evaluation of cumulative impacts to biological resources includes the proposed project site and a 6-acre undeveloped parcel to the west. The project site supports three habitat types: non-native annual grassland, drainage ditch, and seasonal wetland. With the exception of a lone cottonwood tree on the northern boundary, the project site lacks tree cover. The seasonal wetlands continue to support some native vernal pool flora. There are 12 special-status plant species, seven invertebrate species, and eight bird species with potential to occur on the project site.

Potentially significant impacts to biological resources include impacts to special-status species, riparian areas, wetlands, and critical habitat. Other projects would irreversibly alter the natural conditions of their sites and may result in potentially significant impacts on special-status species, riparian areas, wetlands, and critical habitat. When taken into account with other projects, the proposed project would result in a significant cumulative effect. Table 6-2 indicates extensive development in the project vicinity, which would contribute to this cumulative impact. Therefore, the project would be cumulatively considerable without mitigation measures. Mitigation measures for other projects in the form of compliance with federal and State laws, and for the proposed project as listed in Impacts BIO-1, BIO-2, BIO-3, BIO-4, and BIO-5 would ensure that potentially significant biological resources impacts are fully mitigated. Accordingly, the proposed project, in conjunction with other projects in the region, would not have a cumulatively considerable impact on biological resources.

Cultural Resources

The analysis area for evaluation of cumulative impacts to cultural resources includes the proposed project site. The project site is undeveloped and does not contain any recorded cultural resources. No structures exist on the project site, and a survey of the site found no evidence of prehistoric or historic resources.

Potentially significant impacts include subsurface construction activities encountering previously undiscovered cultural resources. Other projects would irreversibly alter the natural conditions of their sites and would result in a significant cumulative effect. Table 6-2 indicates extensive development in the project vicinity. Therefore, the effect of the proposed project would be cumulatively considerable without mitigation applied, since the project by itself would result in potentially significant impacts. Mitigation in the form of compliance with all applicable federal and State laws for the other projects and standard construction mitigation for the proposed project are proposed to reduce the potentially significant impact to less than significant. With implementation of these mitigation measures, impacts to cultural resources would not be cumulatively considerable.

Geology, Soils, and Seismicity

The analysis area for evaluation of cumulative impacts to geology, soils, and seismicity includes the general Suisun City area. The Suisun area is situated in the Great Valley Geomorphic Province of California, which is characterized as a relatively undeformed sedimentary basin bounded by highly deformed rock units of the Coastal Ranges to the west and by the gently sloping western foothills of the Sierra Nevada Mountain Range to the east. The Sacramento Valley, which forms the northern portion of the Great Valley Province, is composed of unconsolidated and recent-age alluvial sediments. The underlying bedrock is inferred to be composed of early tertiary marine deposits.

There are potentially significant impacts from the proposed project to geology, soils, and seismicity in the project area as listed in Impacts GEO-2 and GEO-3. Other projects would result in development on their sites and may result in potentially significant impacts related to seismic hazards, erosion, expansive soils, and unstable geologic units. The project, when combined with other projects, would result in cumulative impacts and is cumulatively considerable based on the nature of the potential impacts, as well as the potential for multiple, high-density, projects that are located near each other and are constructed simultaneously (representing a worst-case scenario). Projects with these potential effects would be required to comply with all applicable federal and State laws, including the California Building Standards Code and water quality control requirements. Compliance with these laws and regulations would ensure that potentially significant geology, soils, and seismicity impacts are mitigated. Accordingly, the proposed project, in conjunction with other projects in the region, would not have a cumulatively considerable impact on geology, soils, and seismicity.

Hazards and Hazardous Materials

The analysis area for evaluation of cumulative impacts from hazards and hazardous materials includes the proposed project site. The proposed project would result in the development of a commercial retail shopping center on a site that is currently undeveloped.

The Phase I Environmental Site Assessment of the project site did not find previous uses of the site were likely to represent sources of contamination, with the exception of the presence of a Pacific Gas and Electric Company (PG&E) transformer on the eastern portion of the project site. Removal of the transformer prior to construction could result in exposure to polychlorinated biphenyls (PCBs) and is considered a potentially significant impact. Other projects may be located on contaminated sites, may use significant quantities of hazardous materials, or may expose persons to wildland fire hazards. When taken into account with other projects, the proposed project would result in a significant cumulative effect. Table 6-2 indicates extensive development in the project vicinity. Therefore, this effect would be cumulatively considerable without mitigation measures applied, since the effect of this project by itself is a potentially significant impact. Mitigation measures for the other projects includes compliance with all applicable federal and State laws regarding site remediation and hazardous materials usage, handling, storage, and disposal. Also, projects located within wildland fire hazard areas would be required to implement fire reduction measures. Mitigation measures for the proposed project include appropriate removal and disposal of the transformer prior to construction. For these reasons, the proposed project, in conjunction with other projects in the region, would not have a cumulatively considerable impact on hazards and hazardous materials.

Hydrology and Water Quality

The analysis area for evaluation of cumulative impacts to hydrology and water quality includes the proposed project site and Suisun City. Implementation of the proposed project would result in the development of new commercial retail uses on the project site. This would result in the development of new impervious surfaces that would increase surface runoff.

Potentially significant impacts would result from the following: (1) violation of waste discharge requirements; (2) adverse impacts to water quality from substantial erosion or siltation on- or offsite, from substantial additional sources of polluted runoff, and from creation of additional impervious surface coverage and alteration of existing drainage patterns; and (3) creation of runoff water that may exceed the capacity of existing or planned stormwater drainage systems. Other projects will result in development on their sites that will increase surface runoff and may degrade water quality. When taken into account with other projects, the proposed project would result in a significant cumulative effect. Table 6-2 indicates extensive development in the project vicinity. Therefore, this effect would be cumulatively considerable without mitigation applied, since the effect of this project by itself is a potentially significant impact.

A Landscape Maintenance Plan (LMP) will be implemented to ensure that water pollution sources from stormwater are minimized, reducing project-level operational water quality impacts to less than

significant. Regarding the potential for downstream flooding, additional mitigation measures will be implemented to confirm the adequacy of offsite (Lawler Ranch subdivision) stormwater conveyance features and, if needed, development of features to retain drainage onsite, reducing this effect to less than significant. Stormwater runoff from these projects would be required either to be completely detained onsite or to be detained and released at a rate of no greater than the predevelopment condition to avoid exacerbating existing deficient downstream drainage conditions. These projects would also be subject to water quality control requirements, including those related to storm water pollution prevention plans (SWPPPs) and best management practices (BMPs). Compliance with these requirements will ensure that potentially significant hydrology and water quality impacts are sufficiently mitigated at the project level. With implementation of these mitigation measures, impacts to water quality and hydrology would not be cumulatively considerable.

From a cumulative perspective, however, the City acknowledges that, because of uncertainties inevitably associated with stormwater runoff, there is a danger that runoff from the project in conjunction with other existing and proposed development projects within the cumulative project area may contribute to existing impairments within the Hill Slough and Suisun Bay. This factor, in conjunction with the fact that water quality objectives, as promulgated by Regional Board's Basin Plan, are often based in part on economic considerations, may not necessarily represent the optimal water quality conditions for aquatic life. For this reason, the City concludes that the project could have a cumulatively considerable effect on the water quality of Hill Slough and Suisun Bay.

Land Use

The analysis area for evaluation of cumulative impacts to land use includes the proposed project site and all surrounding sites. The project site is designated for General Commercial uses by the City of Suisun City General Plan and zoned General Commercial (GC) by the Suisun City Zoning Ordinance. The uses proposed project would require Conditional Use Permits (CUPs) for alcohol sales, outdoor sales, the drive-thru pharmacy, and building height for the Wal-Mart Supercenter. The issuance of the CUPs would ensure that the proposed project is consistent with the Zoning Ordinance. The proposed project is located within Zone C of the Travis Air Force Base Land Use Compatibility Plan. The requirements of Zone C restrict the maximum intensity of any 1 acre of the project site to no more than 300 persons. The proposed project is consistent with this requirement.

All project-level impacts related to land use are less than significant and do not require mitigation. When combined with other projects, the proposed project would not result in cumulative effects. Other projects would also be required to demonstrate compatibility with surrounding land uses and comply with applicable land use plans and policies. Fulfillment of these requirements would ensure that no significant impacts on land use occur from these projects. Therefore, the proposed project, in conjunction with other projects in the region, would not result in cumulatively considerable impacts on land use.

Noise

The analysis area for evaluation of cumulative impacts to noise includes the proposed project site. The project site and surroundings are located in a semi-urban environment, with sensitive receptors (i.e., residences) to the north, west, and south. Sensitive receptors in the project vicinity include the Lawler Ranch subdivision to the south and west of the project site, the Quail Glen subdivision north of the project site, and residential areas located along roadways affected by project-related traffic. Traffic activity on SR-12 and Walters Road adjacent to the project site, are prominent noise sources in the project vicinity.

The proposed project would create potentially significant impacts from substantial short-term construction noise, and from operational noise from both stationary and mobile sources. Other projects in the region may result in potentially significant construction noise impacts. When taken into account with other projects, the proposed project would result in a significant cumulative effect. Table 6-2 indicates extensive development in the project vicinity. Therefore, this effect would be cumulatively considerable without mitigation measures applied, since the effect of this project by itself is a potentially significant impact. Potentially significant construction noise impacts from these projects would be mitigated with standard noise control measures, as would operational impacts. However, noise impacts from construction and operation would still be significant and unavoidable and would result in a cumulatively considerable impact on the noise environment.

Public Services and Utilities

The analysis area for evaluation of cumulative impacts to public services and utilities includes the City of Suisun City. The cumulative impact of topics related to public services and utilities is discussed separately.

Fire Protection and Emergency Medical Services

The proposed project would develop a 227,019-square-foot commercial center, anchored by a Wal-Mart Supercenter. The proposed project would attract customers from the Suisun City area and inevitably increase demand for fire protection and emergency medical services provided by Suisun City Fire Department. The proposed project's structures are designed in accordance with the most recent versions of the California Building Standards Code and the Uniform Fire Code and incorporate fire suppression systems such as sprinklers, smoke detectors, and fire hydrants. Emergency access to the proposed project would be available at five locations, and all points would be able to accommodate large emergency vehicles such as fire engines. The Fire Department will review all project fire safety features to ensure that they are consistent with its standards. The proposed project would pay development fees to the City that would be used for capital improvements to Fire Department facilities.

Project-level impacts on fire protection and emergency medical services would be less than significant. Other projects would increase demand for fire protection and emergency medical services. The project, when combined with other projects, would not result in cumulative impacts

and is not cumulatively considerable. Approval of these projects would be contingent upon the provision of adequate fire protection and emergency medical services measures, and development fees to fund capital improvements for fire protection. Therefore, fire protection and emergency medical services impacts are not expected to be cumulatively considerable.

Police Protection

The proposed project's commercial uses would attract consumers for the Suisun City area and increase demands on the Suisun City Police Department. Because it includes a Wal-Mart Supercenter, the Police Department indicated that it expects that most calls for service associated with the proposed project would concern shoplifting, check fraud, identity theft, noise complaints, traffic collisions, and vehicle burglaries. The Wal-Mart Supercenter would provide onsite security that would reduce the calls for service by acting as a first line of defense against property-related crimes and resolving minor incidents that do not warrant a Police Department response. The proposed project would pay development fees to the City that would be used for capital improvements to Police Department facilities.

Project-level impacts on police protection would be less than significant. Other projects would result in increases in demand for law enforcement. The project, when combined with other projects, would not result in cumulative impacts and is not cumulatively considerable. Approval of these projects would be contingent upon the provision of adequate police protection measures and development fees to fund capital improvements to law enforcement facilities. Police protection impacts are not expected to be cumulatively considerable.

Potable Water

The proposed project is projected to demand 22 acre-feet of potable water on an annual basis. Suisun City's Urban Water Management Plan indicates that adequate water supplies will be available to meet the needs of future growth through 2030. Future water demand needs accounted for buildout of the City of Suisun City General Plan, with which the proposed project is consistent. Most of Suisun City's long-term water supply would be provided by the Solano Project. Suisun City receives most of its water supply from the Solano Project, and a lesser amount from the State Water Project. The City and its water purveyors have entitlements for additional water from the Solano Project. The Solano Project is considered a reliable source of long-term water supply because of its surface water storage capacity, existing infrastructure system, and its historic record of meeting its customers' water supply demands.

Project-level impacts on potable water supply would be less than significant. Other projects would result in increases in demand for potable water. The project, when combined with other projects, would not result in cumulative impacts and is not cumulatively considerable. As mentioned above, future water demand needs are accounted for in buildout described in the City of Suisun City General Plan; therefore, adequate long-term water supply would be available for the proposed project and

other planned growth in Suisun City. As such, there would not be a cumulatively considerable impact on potable water.

Wastewater

The Fairfield-Suisun Sewer District has adequate existing treatment capacity to treat wastewater generated by the proposed project and is in the process of expanding treatment capacity to accommodate wastewater generated by planned development in its service area through 2020. Therefore, long-term wastewater treatment capacity is expected to be adequate for the proposed project and other planned projects in the region.

Project-level impacts on wastewater would be less than significant. Other projects would result in increases in demand for wastewater treatment capacity. The project, when combined with other projects, would not result in cumulative impacts and is not cumulatively considerable. Future wastewater demand is covered through 2020 in the service area and is expected to be adequate for the project and other planned projects. As such, there would not be a cumulatively considerable impact on wastewater treatment needs.

Storm Drainage

The proposed project would implement storm drainage improvements on the project site, including rerouting the existing open drainage ditch into a 30- to 36-inch-diameter pipe and installing an onsite drainage system to capture runoff from buildings and paved surfaces. The onsite drainage facilities would include retention features that would ensure that runoff would not be released into the storm drain system in excess of 85 percent of the pre-development condition of the project site. This would ensure that runoff released from the proposed project would not inundate downstream water bodies and result in a need for offsite drainage facilities.

Project-level impacts on storm drainage would be less than significant. Other projects would result in potential impacts to storm drainage. The project, when combined with other projects, would not result in cumulative impacts and is not cumulatively considerable. Other projects in the region would be required to provide adequate storm drainage facilities to ensure that project-generated runoff does not exacerbate existing downstream drainage problems. Therefore, the proposed project, in conjunction with other projects, would not result in a cumulatively considerable impact on storm drainage.

Solid Waste

Adequate capacity is available at landfills in the region to serve the proposed project and other projects in the region. The Wal-Mart Supercenter would provide onsite recycling facilities for materials such as cardboard, aluminum, glass, plastic, vegetable oil, single-use cameras, and electronic waste. These recycling facilities would promote waste diversion and reduce the proposed project's cumulative contribution to waste generation.

Project-level impacts on landfill capacity would be less than significant. Other projects would result in potential impacts to landfill capacity. The project, when combined with other projects, would not result in cumulative impacts and is not cumulatively considerable. Other projects in the region would be required to comply with applicable waste diversion requirements. Therefore, the proposed project, in conjunction with other projects, would not result in a cumulatively considerable impact on solid waste.

Energy

The proposed project would be expected to demand 3.6 million kilowatt hours of electricity and 272,423,000 British thermal units (therms) of natural gas on an annual basis. PG&E provided a “will-serve” letter indicating that it has adequate electricity and natural gas supplies to serve the proposed project. The proposed project would comply with the 2005 Title 24 energy efficiency standards and would not result in inefficient, wasteful, or unnecessary consumption of energy. Moreover, the Wal-Mart Supercenter incorporates energy efficiency features that exceed the 2005 requirements by 9 percent and would reduce its cumulative increase in demand for energy.

Project-level impacts on energy demand would be less than significant. Other projects would result in increased energy demand. The project, when combined with other projects, would not result in cumulative impacts and is not cumulatively considerable. PG&E is expected to have adequate energy resources to serve other projects in the region, and these projects would also be required to comply with the 2005 Title 24 energy standards. Therefore, the proposed project, in conjunction with other projects, would not result in a cumulatively considerable impact on energy.

Transportation

The analysis area for evaluation of cumulative impacts to transportation includes roadways in Suisun City and Fairfield selected for analysis by the City of Suisun City. All intersections in the project vicinity operate at acceptable levels of service (LOS), except for the intersection of SR-12 and Marina Boulevard. The addition of project-generated trips to existing roadway volumes and trips generated by the projects listed in Table 6-2 would result in deficient intersection performance during near-term and long-term conditions. This is considered a potentially significant impact. Other projects listed in the table would potentially impact project area traffic as well. When taken into account with other projects, the proposed project would result in a significant cumulative effect. Table 6-2 indicates extensive development in the project vicinity. Therefore, this effect would be cumulatively considerable without mitigation applied, since the effect of this project by itself is a potentially significant impact. All deficient intersections can be improved to acceptable levels with the mitigation measures identified in Impacts TRANS-1 and TRANS-2. Project-generated trips would result in deficient queuing, but mitigation measures identified in Impact TRANS-3 would improve all deficient movements to acceptable levels. However, because several of the intersections are under the jurisdiction of the City of Fairfield or Caltrans, the City of Suisun City cannot assure that the improvements would be in place by the time of project opening. Therefore, these impacts are considered cumulatively considerable transportation-related impacts of the proposed project.

The proposed project would also provide adequate emergency access and onsite parking that would exceed the City's minimum parking requirements. The proposed project would be expected to attract customers who would rely on public transportation, and a mitigation measure is proposed in Impact TRANS-8 requiring the project applicant to provide an onsite enhanced bus stop for Fairfield-Suisun Transit bus service. Other projects would be required to mitigate for deficient intersection performance and queuing operations. These projects would also be required to provide adequate emergency access, parking, and alternative transportation facilities. Therefore, the proposed project, in conjunction with other projects in the region, would not create cumulatively considerable impacts on these transportation-related areas.

Urban Decay

The analysis area for evaluation of cumulative impacts from urban decay is the Fairfield-Suisun City area. The proposed project, in conjunction with other planned or approved commercial retail projects in the Fairfield-Suisun City area, have the cumulative potential to result in the closure of competing businesses and result in urban decay conditions. Of particular concern is that large retailers that dominate sales in their merchandise lines will displace older, smaller retail stores and shopping centers, leaving long-term vacancies that deteriorate and encourage graffiti or other unsightly conditions. As discussed in Impact UD-3, other planned and approved commercial retail projects in the Fairfield-Suisun City area would mostly be either local-serving or niche-serving and would not have the potential to cause regional store closures and physical deterioration. In addition, the retail market analysis of the Suisun City Trade Area found that the market is under-retailed with substantial leakage of local consumer dollars to neighboring markets (i.e., Fairfield). The proposed Wal-Mart Supercenter would be expected to capture a significant portion of leakage in the grocery and general merchandise sectors and cause only a small amount of lost business at the existing Raley's and Rite Aid in Suisun City.

The potential for urban decay from the project would be less than significant. Other planned or approved commercial retail projects in the Fairfield-Suisun area would either occupy different retail sectors than the proposed project or be local- or niche-serving and would not potentially contribute to cumulative impacts. The proposed project, in conjunction with other retail projects, would have a cumulatively considerable impact on urban decay.

6.4 - Energy Conservation

Public Resources Code Section 21100(b)(3) and CEQA Guidelines Section 15126.4 require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill 1575 (AB 1575), which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs; license thermal power plants of 50 megawatts or larger; develop energy technologies and renewable energy resources; plan for and direct State responses to energy emergencies; and, perhaps most importantly, to promote energy efficiency

through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code Section 21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary consumption of energy caused by a project. As a result, the State Resources Agency created Appendix F to the CEQA Guidelines. Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. For the reasons set forth below, this EIR concludes that the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy, would not cause the need for additional natural gas or electrical energy-producing facilities and, therefore, would not create a significant impact on energy resources.

6.4.1 - Energy Setting

The project site is located in Suisun City. Commercial and residential customers in Suisun City are served by Pacific Gas and Electric Company (PG&E) for electricity and natural gas.

Pacific Gas and Electric Company

PG&E provides electricity and natural gas to most of northern and central California. Electricity and natural gas are discussed separately.

Electricity

PG&E provides electricity to all or part of 47 counties in California, comprising most of the northern and central portions of the State. PG&E obtains 40 percent of electricity from its own generation sources and the remaining 60 percent from outside sources. PG&E's owned-generating capacity includes nuclear, fossil fuel-fired, and hydroelectric facilities. Outside suppliers to PG&E include the State Department of Water Resources, irrigation districts, renewable energy suppliers, and other fossil fuel-fired suppliers. PG&E operates approximately 158,700 circuit miles of transmission and distribution lines. PG&E 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 2006, PG&E delivered 84,310 gigawatt hours of electricity to its customers. Commercial customers accounted for largest segment of demand, with 40 percent of the total.

Natural Gas

PG&E provides natural gas to all or part of 38 counties in California, comprising most of the northern and central portions of the State. PG&E obtains approximately 62 percent of its natural gas supplies from western Canada, 32 percent from the southwestern United States, and the balance from in-state sources. PG&E operates approximately 47,000 miles of transmission and distribution pipelines.

In 2006, PG&E delivered 836 billion cubic feet (Bcf) of natural gas to its customers. Commercial customers accounted for 12 percent of the total.

6.4.2 - Project Energy Consumption

Short-term construction and long-term operational energy consumption are discussed below.

Short-Term Construction

The United States Environmental Protection Agency (EPA) regulates nonroad diesel engines. The EPA has no formal fuel economy standards for nonroad (e.g., construction) diesel engines, but it does regulate diesel emissions, which indirectly affects fuel economy. In 1994, the EPA adopted the first set of emission standards (Tier 1) for all new nonroad diesel engines greater than 37 kilowatts (kW) (50 horsepower). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing NO_x emissions from these engines by 30 percent. The EPA has since adopted more stringent emission standards for NO_x, hydrocarbons, and particulate matter (PM) from new nonroad diesel engines. This program includes the first set of standards for nonroad diesel engines less than 37 kW. It also phases in more stringent Tier 2 emission standards from 2001 to 2006 for all engine sizes and adds yet more stringent Tier 3 standards for engines between 37 and 560 kW (50 and 750 horsepower [hp]) from 2006 to 2008. These standards will further reduce nonroad diesel engine emissions by 60 percent for NO_x and 40 percent for PM from Tier 1 emission levels. In 2004, the EPA issued the Clean Air Nonroad Diesel Rule. This rule will cut emissions from nonroad diesel engines by more than 90 percent, and it will take effect beginning in 2008 and will be fully phased in by 2014. These emission standards are intended to promote advanced clean technologies for nonroad diesel engines that improve fuel combustion but may result in slight decreases in fuel economy.

Project construction is estimated to take 12 months. Table 6-3 provides an estimate of construction fuel consumption during the grading and paving phases based on information provided by the URBEMIS air quality computer model.

Table 6-3: Construction Fuel Consumption

Equipment	Quantity	Horse-power	Fuel Consumption Rate (gallons/day/vehicle/HP)	Load Factor	Duration (days)	Total Fuel Consumption (gallons)
Crawler Tractor	1.23	143	0.09187	0.575	40	371
Grader	0.25	174	0.08503	0.575	40	85
Off Highway Truck	0.74	417	0.18312	0.490	40	1,108
Rubber Tired Loader	0.49	165	0.15732	0.465	40	237
Scrapper	0.25	313	0.12499	0.660	40	258
Tractor/Loader/ Backhoe	0.49	79	0.08267	0.465	40	60
Other Construction Equipment	0.74	190	0.06038	0.620	325	1,711
Paver	0.25	132	0.07685	0.590	15	22
Roller	0.25	114	0.05438	0.430	15	10

Table 6-3 (Cont.): Construction Fuel Consumption

Equipment	Quantity	Horse-power	Fuel Consumption Rate (gallons/day/vehicle/HP)	Load Factor	Duration (days)	Total Fuel Consumption (gallons)
Total						3,862
Notes: Information provided by URBEMS Air Quality Modeling output. Source: Michael Brandman Associates, 2007.						

As shown in Table 6-3, project construction would be estimated to consume approximately 3,840 gallons of diesel fuel. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region or in the State.

Long-Term Operations

Transportation Energy Demand

Vehicle fuel efficiency is regulated at the Federal level. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model, but rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States.

Trip generation rates provided in the Traffic Study prepared by Kimley-Horn and Associates were used to estimate vehicular fuel consumption associated with trips to and from the proposed project. Table 6-4 provides an estimate of the daily fuel consumed by vehicles traveling to and from the proposed project. These estimates were derived using the same assumptions used in the long-term vehicular air quality analysis in Section 4.2, Air Quality.

Table 6-4: Operations Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Daily Trips	Daily Vehicle Miles Traveled	Average Fuel Economy (miles per gallon)	Total Daily Fuel Consumption (gallons)
Passenger Cars	52.5	6,631	41,598	21.6	1,926
Light / Med. Trucks	40.2	5,077	31,852	17.2	1,852
Heavy Trucks / Other	5.8	733	4,596	6.1	753
Motorcycles	1.5	189	1,189	50.0	24
Total	100.0	12,630	79,234	—	4,555

Notes:
 Daily trips and vehicle miles traveled provided by URBEMIS Air Quality Modeling output.
 Average fuel economy provided by the United States Department of Transportation, Bureau of Transportation Statistics.
 “Other” includes urban buses, school buses, and motor homes that account for 1.5 percent of daily trips.
 Source: Michael Brandman Associates, 2007.

As indicated in the Retail Impact Analysis prepared for the proposed project by Bay Area Economics, the proposed project would primarily serve customers living within the City of Suisun City. Most of the customers would be expected to live within a 3-mile radius of the project site. The project does not contain any unusual characteristics that would attract a significant number of customers from outside the 3-mile radius and, therefore, would not be expected to create longer than average trip lengths. As such, it is expected that fuel consumption associated with vehicle trips generated by the proposed project would not be any more inefficient, wasteful, or unnecessary than at other similar commercial retail centers in the region or in the State.

Nonetheless, the proposed project can promote transportation energy efficiency by providing opportunities for public transit and bicycle and pedestrian access. Those measures are discussed below.

Energy Efficiency Measures

The project vicinity is currently served by Fairfield-Suisun Transit (FST) bus service. Route 6 passes by the project site on Walters Road. The Central County Bike Trail, a Class I facility that extends from western Suisun City to Walters Road, is located north of the project site on the north side of Petersen Road. Class II bicycle facilities are located on Walters Road. A sidewalk is located on the east side of Walters Road.

Mitigation Measure TRANS-8 requires the project applicant to install an enhanced FST bus stop either in the proposed project or along the project frontage. This would allow public transportation to directly serve the proposed project. The project would also implement half-width improvements along Walters Road and Petersen Road. Half-width improvements would include shoulders, sidewalks, and street lighting. In addition, the intersection of Walters Road/Pintail Drive would be signalized, which would enhance pedestrian safety. The proposed project would not adversely impact the existing Central County Bike Trail or the Class II bicycle facilities on Walters Road. These

improvements would enhance bicycle and pedestrian safety and mobility in the project vicinity and increase the viability of these forms of energy efficient transportation.

Collectively, these project features would ensure that the proposed project would not result in the inefficient, wasteful, or unnecessary consumption of transportation energy.

Building Energy Demand

The proposed project would be expected to demand 3.6 million kilowatt hours of electricity and 272,423,000 therms of natural gas on an annual basis. These figures were derived from energy consumption rates provided by the California Energy Commission. Refer to Impact PSU-7 in Section 4.11, Public Services and Utilities, for further discussion of the calculations used to arrive at these consumption estimates.

PG&E provided a “will-serve” letter dated April 30, 2007 indicating that the electric and natural gas loads of the proposed project are within the parameters of projected load growth and, therefore, would be able to be served with electricity. The letter is provided in Appendix I, Public Service and Utility Letters.

Nonetheless, the proposed project can promote building energy efficiency through compliance with energy efficiency standards and the provision of energy efficiency measures that exceed required standards. This is discussed below.

Energy Efficiency Measures

Title 24, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California’s energy consumption, and provides energy efficiency standards for residential and nonresidential buildings. In 2005, the CEC updated the Title 24 standards with more stringent requirements. All projects that are pursuing building permits after October 2005 must adhere to the new 2005 Standards. The 2005 Standards (for residential and nonresidential buildings) are expected to reduce the growth in electricity use by 478 gigawatt-hours per year (GWh/y) and reduce the growth in natural gas use by 8.8 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 163.2 GWh/y of electricity savings and 0.5 million therms. Additional savings result from the application of the Standards on building alterations. In particular, requirements for cool roofs, lighting, and air distribution ducts are expected to save about 175 GWh/y of electricity. These savings are cumulative, doubling in two years, tripling in three, etc.

The 2005 Energy Efficiency Standards include the following measures:

- **Time Dependent Valuation (TDV).** Source energy was replaced with TDV energy. TDV energy values energy savings greater during periods of likely peak demand, such as hot summer weekday afternoons, and values energy savings less during off-peak periods. TDV

gives more credit to measures such as daylighting and thermal energy storage that are more effective during peak periods.

- **New Federal Standards.** Coincident with the 2005 Standards, new standards for water heaters and air conditioners took effect. These changes affect all residential buildings, but they also affect many nonresidential buildings that use water heaters and/or residential-size air conditioners.
- **New Lighting in Historic Buildings.** The exception to the Standards requirements for historic buildings has changed relative to lighting requirements so that only those historic or historic replica components are exempt.
- **Cool Roofs.** The nonresidential prescriptive standards require cool roofs (high-reflectance, high-emittance roof surfaces, or exceptionally high reflectance and low-emittance surfaces) in all low-slope applications. The cool roof requirements also apply to roof replacements for existing buildings.
- **Acceptance Requirements.** Basic “building commissioning,” at least on a component basis, is required for electrical and mechanical equipment that is prone to improper installation.
- **Demand Control Ventilation.** Controls that measure carbon dioxide concentrations and vary outside air ventilation are required for spaces such as conference rooms, dining rooms, lounges, and gyms.
- **T-bar Ceilings.** Placing insulation directly over suspended ceilings is not permitted as a means of compliance, except for limited applications.
- **Relocatable Public School Buildings.** Special compliance approaches are added for relocatable buildings so they can be moved anywhere statewide.
- **Duct Efficiency.** R-8 duct insulation and duct sealing with field verification is required for ducts in unconditioned spaces in new buildings. Duct sealing is also required in existing buildings when the air conditioner is replaced. Performance method may be used to substitute a high-efficiency air conditioner in lieu of duct sealing.
- **Indoor Lighting.** The lighting power limits for indoor lighting are reduced in response to advances in lighting technology.
- **Skylights for Daylighting in Buildings.** The prescriptive standards require that skylights with controls to shut off the electric lights are required for the top story of large, open spaces (spaces larger than 25,000 square feet with ceilings higher than 15 feet).
- **Thermal Breaks for Metal Building Roofs.** Continuous insulation or thermal blocks at the supports are required for metal building roofs.
- **Efficient Space Conditioning Systems.** A number of measures are required that improve the efficiency of heating, ventilation, and air conditioning (HVAC) systems, including variable-

speed drives for fan and pump motors greater than 10 hp, electronically commutated motors for series fan boxes, better controls, efficient cooling towers, and water cooled chillers for large systems.

- **Unconditioned Buildings.** New lighting standards—lighting controls and power limits—apply to unconditioned buildings, including warehouses and parking garages. Lighting power tradeoffs are not permitted between conditioned and unconditioned spaces.
- **Compliance Credits.** Procedures are added for gas cooling, underfloor ventilation.
- **Lighting Power Limits.** The Standards set limits on the power that can be used for outdoor lighting applications such as parking lots, driveways, pedestrian areas, sales canopies, and car lots. The limits vary by lighting zones or ambient lighting levels. Lighting power tradeoffs are not permitted between outdoor lighting and indoor lighting.
- **Shielding.** Luminaires in hardscape areas larger than 175 W are required to be cutoff luminaires, which will save energy by reducing glare.
- **Bi-level Controls.** In some areas, outdoor lighting controls are required, including the capability to reduce lighting levels to 50 percent.
- **Lighting Power Limits.** Lighting power limits (or alternative equipment efficiency requirements) apply to externally and internally illuminated signs used either indoors or outdoors.

The proposed project's structures would incorporate the applicable 2005 Title 24 standards listed above. In addition, the Wal-Mart Supercenter would contain a number of energy efficiency measures that are above and beyond 2005 Title 24 standards. These include:

- T-8 fluorescent lamps and electronic ballasts, which are the most energy-efficient lighting systems available and reduce the energy load of a single store by approximately 15 to 20 percent compared with conventional lighting.
- Light Emitting Diode (LED) lighting in all internally illuminated building signage. LED technology is 70 percent more energy-efficient than fluorescent illumination and provides an extended life span of 12 to 20+ years.
- LED lighting in frozen food cases and other refrigerated cases with doors. This lighting is motion activated and turns itself off whenever it is not needed. This lighting utilizes 50 percent less energy as traditional lighting, lasts three to four times longer, and contains no mercury.
- Daylight harvesting systems (e.g., skylights, electronic dimming ballasts, computer-controlled daylight sensors) that automatically and continuously dim all of the lights as the daylight contribution increases.

- Nighttime lighting dimming, in which illumination is reduced to 65 percent during the late-night hours.
- Super-high-efficiency packaged HVAC units that have a weighted Energy Efficiency Ratio of 11.25. This ratio is 10 percent higher than the industry standard, weighted average.
- An energy management system that is monitored and controlled from corporate headquarters in Bentonville, Arkansas. This energy management system enables corporate headquarters to monitor energy usage, analyze refrigeration temperatures, and observe HVAC and lighting performance. It also allows corporate headquarters to adjust lighting, temperature, or refrigeration set points from a central location.
- Refrigeration waste-heat recapture systems that are used to heat water in the kitchen preparation areas. On average, waste-heat accounts for 70 percent of the hot water heating needs.
- A white membrane roof with a high solar reflectivity that lowers the cooling load by approximately 8 percent.
- Occupancy sensors in non-sales areas that automatically turn off lights when the space is unoccupied.
- Actively dehumidifying the store, which allows for the climate control system to be set at a higher indoor temperature and results in better refrigeration system efficiency.

When implemented in a Supercenter prototype, these additional energy efficiency features have been found to exceed the 2005 Title 24 standards by 9 percent.

The sit-down restaurant and the gas station would also be subject to the 2005 Title 24 energy efficiency standards.

Accordingly, through compliance with the 2005 Title 24 energy efficiency standards and the incorporation of the standard Supercenter energy efficiency features, the proposed project would not result in the inefficient, wasteful, or unnecessary consumption of building energy.

SECTION 7: EFFECTS FOUND NOT TO BE SIGNIFICANT

7.1 - Introduction

This section is based on the Notice of Preparation (NOP), dated July 10, 2006, and contained in Appendix A of this Environmental Impact Report (EIR). The NOP was prepared to identify the potentially significant effects of the proposed project and was circulated for public review between July 10, 2006 and August 8, 2006. In the course of this evaluation, certain impacts were found to be less than significant because the proposed project's scope could not create such impacts. This section provides a brief description of effects found not to be significant or less than significant, based on the NOP comments or more detailed analysis conducted as part of the EIR preparation process. A number of impacts that are found to be less than significant are addressed in the various EIR topical sections (Sections 4.1 through 4.12) to provide more comprehensive discussion of why impacts are less than significant, in order to better inform decision makers and the public.

7.2 - Effects Found Not To Be Significant

7.2.1 - Aesthetics, Light, and Glare

Scenic Highways

The California Department of Transportation Scenic Highways Program indicates that the segment of State Route 12 (SR-12) within view of the project site is neither an Eligible nor Officially Designated Scenic Highway. This condition precludes the possibility of the proposed project adversely affecting views from a state scenic highway. No impacts would occur.

7.2.2 - Agriculture Resources

Loss of Important Farmland

The project site does not contain any active agricultural uses, nor has it been used as farmland during the past 10 years and, therefore, would not be eligible for an Important Farmland designation. This condition precludes the possibility of the proposed project resulting in the conversion of Important Farmland to non-agricultural use. No impacts would occur.

Conflicts with Williamson Act Contracts or Agricultural Zoning

The project site does not contain any active agricultural uses and, therefore, would not be eligible for a Williamson Act Contract. The project site is zoned General Commercial (CG) by the Suisun City Zoning Ordinance. This condition precludes the possibility of conflicts with a Williamson Act contract or with an agricultural zoning designation. No impacts would occur.

Conversion of Farmland to Non-Agricultural Use

Grazing land is located on the east side of Walters Road, across from the project site. This land is within unincorporated Solano County and is designated for Extensive Agricultural uses by the Solano County General Plan. This land is also within a restricted use area of the Travis Air Force Base

Airport Land Use Compatibility Plan, and neither the City of Suisun City nor the County of Solano anticipates developing urban uses on this land. This condition precludes the possibility of the proposed project creating environmental pressures to convert adjacent agricultural land to non-agricultural uses. No impacts would occur.

Geology, Soils, and Seismicity

Septic or Alternative Wastewater Disposal Systems

The proposed project would be served by the Fairfield-Suisun Sewer District. No septic or alternative wastewater systems would be installed by the proposed project. Therefore, no impacts would occur.

Hazards and Hazardous Materials

Exposure of Schools to Hazardous Materials

There are no schools located within 0.25 mile of the project site. The nearest school to the project site is Dan O. Root Elementary School, located approximately 0.5 mile to the north. This condition precludes the possibility of the proposed project exposing schools located within 0.25 mile of the project site to hazardous materials. Therefore, no impacts would occur.

Private Airstrips

There are no private airstrips in the project vicinity. This condition precludes the possibility of the proposed project exposing persons residing or working the project area to aviation hazards associated with private airstrips. Therefore, no impacts would occur.

Hydrology and Water Quality

Groundwater

The proposed project would connect to the City of Suisun City potable water system, which would accommodate the project's water demands for domestic potable, irrigation, and fire protection. The City receives its water from the Solano Water Authority, which has an adopted urban water management plan. For this reason, no new groundwater wells would be drilled onsite as part of the project and; therefore, it is reasonable to conclude that the project would not contribute to regional or local groundwater drawdown or the depletion of a known groundwater supply. In this context, no impact is expected.

The Soil Survey for Solano County classifies onsite soils as soil hydrologic group D, which is characterized by poor drainage and very slow soil permeability. As a result, these localized soil conditions generally preclude the potential for substantial groundwater recharge onsite. In this context, the proposed project would not interfere with groundwater recharge and no impact would occur.

100-Year Flood Hazards

The project does not involve the construction of residential housing. Flood Insurance Rate Map No. 0606310455B indicates that the project site is not within a 100-year flood hazard area and, therefore, the project would not expose persons or structures to 100-year flood hazards. The project would not

involve the alteration of a natural watercourse, nor would it place structures within a 100-year flood hazard area that could impede or redirect flood flows. Therefore, no impacts would occur.

Dam or Levee Failure

The project would be constructed downstream of several small, existing dam structures. In California, the Department of Water Resources, Division of Dam Safety is responsible for ensuring that all dams meeting certain criteria must satisfy stringent design criteria covering all possible conditions that could affect the dam, including earthquakes and flood events, without considering probability factors. Therefore, dams are designed to withstand the largest and strongest earthquake that could conceivably affect them. Similarly, dams are required to withstand the largest possible flood that could occur, which is referred to as the maximum probable flood. Since the project would not otherwise affect the structural integrity of an existing dam's structure or substantially add to the risk of dam failure, no impact is expected to occur.

The project site is not protected by an existing levee system, nor would the project be constructed close to an existing levee. Therefore, no impacts would occur.

Seiche, Tsunami, and Mudflow Hazards

Tsunamis originating in the Pacific Ocean would dissipate in the San Francisco Bay, thereby posing a negligible hazard to the project site because of its inland location. Seiches could occur in Hill Slough and Grizzly Bay; however, based on the shallow depths of these water bodies and the site's distance of over 1,000 feet from Hill Slough, the risk of a seiche of sufficient magnitude to affect the project site is low enough to be considered less than significant. Given the level topography of the project site and the substantial distance from any major topographic features, there is little risk of mudflow. Therefore, no impacts would occur.

Mineral Resources

Loss of Availability of Mineral Resources

The project site does not contain any known mineral resources, nor does it contain any mineral extraction activities. The project site is not designated as containing any minerals of regional or local importance. Therefore, no impacts would occur.

Population and Housing

Growth Inducement

The proposed project does not contain any residential uses and, therefore, would not induce direct population growth. The proposed project consists of approximately 227,000 square feet of commercial uses, including a Wal-Mart Supercenter, a sit-down restaurant, and a gas station with convenience store, all of which would create new employment opportunities. Wal-Mart Stores, Inc. indicates that a typical Supercenter employs 350 persons. The restaurant and gas station are projected to employ 25 persons, based on a standard commercial employment estimate of one employee per 500 gross square feet of building area. In total, the proposed project would create an estimated 375

jobs. Because of the nature of these types of employment opportunities (e.g., entry-level, part-time, etc.) most, if not all, of these positions would be expected to be filled from the local workforce and few, if any, people would move into the Fairfield-Suisun area to fill these positions. As such, the proposed project would not directly or indirectly induce substantial population growth. Impacts would be less than significant.

Displacement of Persons or Dwelling Units

The project site does not contain any dwelling units. This condition precludes the possibility of the proposed project displacing persons or dwelling units. Therefore, no impacts would occur.

Public Services and Utilities

Schools

The proposed project would not result in substantial direct or indirect population growth and, therefore, would not require the development of new or expansion of existing school facilities. Therefore, no impacts would occur.

Parks

The proposed project would not result in substantial direct or indirect population growth and, therefore, would not require the development of new or expansion of existing park facilities. Therefore, no impacts would occur.

Other Public Facilities

The proposed project would not result in substantial direct or indirect population growth and, therefore, would not require the development of new or expansion of public facilities such as libraries. Therefore, no impacts would occur.

Recreation

New or Expanded Recreation Facilities

The proposed project would not result in substantial direct or indirect population growth and, therefore, would not require the development of new or expansion of recreational facilities. No impacts would occur.

Deterioration of Recreational Facilities

The proposed project does not have any recreational facilities. This condition precludes the possibility of deterioration of project-related recreational facilities. Therefore, no impacts would occur.

SECTION 8: PERSONS AND ORGANIZATIONS CONSULTED

8.1 - Public Agencies

8.1.1 - Lead Agency

City of Suisun City

Office of the City Manager

City Manager Suzanne Bragdon

Community Development Department

Community Development Director Heather McCollister

Consulting Project Manager Ben Hulse

Assistant Planner John Kearns

Community Development Director (Former) Jake Raper, Jr.

Redevelopment Agency

Economic Development Director Jason Garben

Suisun City Fire Department

Chief Michael O'Brien

Sergeant Bob Szmurlo

Suisun City Police Department

Chief Ed W. Dadisho

8.1.2 - Federal Agencies

United States Fish and Wildlife Service

Endangered Species Consultant Harry Mossman

8.1.3 - State Agencies

California Department of Fish and Game

Regional Manager Robert W. Floerke

California Department of Transportation

District Branch Chief Timothy C. Sable

Governor's Office of Planning and Research, State Clearinghouse and Planning Unit

Program Analyst Scott Morgan

8.1.4 - Local Agencies

County of Solano

Airport Land Use Commission

Chairperson John Foster

Persons and Organizations Consulted

Department of Resource Management

Principal Planner Ron Glas

Mosquito Abatement District

Manager Jon A. Blegen

Fairfield-Suisun Sewer District

Senior Environmental Engineer Marcie Bodeaux, PE
Urban Runoff Program Manager Kevin A. Cullen, PE

Solano Transportation Authority

Assistant Executive Director..... Dan Christians

8.2 - Private Parties and Individuals

Pacific Gas and Electric Company

Senior Project Manager..... Larry Newson
Land Agent Donald Kennedy

Citizens Against the Dump

Spokesperson Dwight Acey

Private Citizens

Yoshiko Acey
Jean Cain
Mark and Mark Davis
Beth Garber
June Gudotti

George Guynn, Jr.
Rich Hanson
Peg Hanson
Les Hubbard
C. Hughes

Amy Liebert
Bernie and Jeannie Slack
Mr. and Mrs. Juan Torres

SECTION 9: LIST OF PREPARERS

9.1 - Lead Agency

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SECTION 10: REFERENCES

- Amtrak California. Accessed April 3, 2007. Capitol Corridor Train Schedule. Available online at: http://www.capitolcorridor.org/included/docs/schedules/060828_trains.pdf.
- Association of Bay Area Governments. Accessed April 12, 2007. Geographic Information Systems Mapping. Available online at: <http://www.abag.ca.gov>
- Bay Area Air Quality Management District. December 1999. BAAQMD CEQA Guidelines - Assessing the Air Quality Impacts of Projects and Plans.
- Bay Area Air Quality Management District. January 4, 2006. Bay Area 2005 Ozone Strategy.
- Bay Area Economics. September 2007. Final Retail Market Impact Analysis.
- Bay Area Regional Water Quality Control Board. 1995. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Bay Area Region. Fourth Edition.
- Bay Area Regional Water Quality Control Board. 2003. Fairfield-Suisun Areawide NPDES Municipal Stormwater Permit, Order No. R2-2003-0034, NPDES Permit No. CAS612005.
- Bodeaux, Marcie. Senior Environmental Engineer, Fairfield-Suisun Sewer District. Personal Communication: Letter. August 3, 2006.
- California Air Resources Board. Accessed April 10, 2007. Area Designation Maps / State and National. Available online at: <http://www.arb.ca.gov/desig/adm/adm.htm>.
- California Air Resources Board. Accessed July 12, 2007. Countywide Emissions Database. Available online at: http://www.arb.ca.gov/aqd/almanac/almanac06/textfiles/tableA_25.txt.
- California Data Exchange Center. February 2007. Tidal Data for Suisun Slough.
- California Department of Finance. May 2006. E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2006, with 2000 Benchmark.
- California Department of Transportation. 2004. Transportation- and Construction-Induced Vibration Guidance Manual.
- California Department of Transportation, Division of Aeronautics. January 2002. California Airport Land Use Planning Handbook.
- California Department of Transportation. Accessed on April 3, 2007. California Scenic Highway System. Available online at: <http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm>
- California Geological Survey. Accessed on April 10, 2007. Near-Source Maps. Available online at: http://www.consrv.ca.gov/CGS/rghm/near_source_zones.htm.

References

- California Integrated Waste Management. Accessed on February 13, 2007. Waste Stream Profiles. Available online at: <http://www.ciwmb.ca.gov/Profiles/>.
- Calwater. 1999. California Interagency Watershed Map of 1999 (CalWater Version 2.2.1).
- City of Fairfield. 2006. Engineering Standards and Specifications (Standards). Section 4 Storm Drainage.
- City of Fairfield. Accessed April 23, 2007. Fairfield Suisun Transit Route 6 Bus Schedule. Available online at: <http://www.ci.fairfield.ca.us/files/Route6.pdf>.
- City of Stockton. December 2006. Weston Ranch Towne Center Project, Draft Environmental Impact Report.
- City of Suisun City, 1992. City of Suisun City General Plan, Land Use Element and Map. Adopted May 1992.
- City of Suisun City. Accessed on February 9, 2007. Suisun City Police Department. Available online at: http://www.ci.suisun-city.ca.us/Pub_safety/Police/police.htm.
- City of Suisun City. Adopted May 1992. City of Suisun City General Plan.
- City of Suisun City. December 11, 1989. City of Suisun City Development Guidelines For Architecture and Site Planning.
- City of Suisun City. Last revised February 20, 2007. Suisun City Code.
- Consulting Engineers and Land Surveyors of California. 2007. 2007 California Environmental Quality Act Guidelines.
- County of Solano. Adopted 1977. County of Solano General Plan.
- Cunniff, Patrick. 1977. Environmental Noise Pollution.
- Dadisho, Ed. Chief, Suisun City Police Department. Personal Communication: Letter. August 10, 2006.
- Department of Water Resources. October 1, 2003. California Groundwater Bulletin 118. Sacramento River Hydrologic Region, Sacramento Valley Groundwater Basin, Solano Sub-basin.
- Environmental Sciences Associates. December 2006. Weston Ranch Towne Center Project, Draft Environmental Impact Report (SCH No. 2005012056).
- Federal Emergency Management Agency. 1982. Flood Map Number 0606310455B.
- Garben, Jason. Project Manager, Suisun City Redevelopment Agency. Personal Communication: Phone Interview. May 2, 2007.

- Guest, H. Brandon and Hamel Volunteer Fire Department. 1995. Available online at: <http://biology.about.com/library/blco.htm>, 1995.
- Huffman, Jennifer; Todorov, Kerana. Napa Valley Register. "Wal-Mart opens in AmCan after 3-year battle." September 18, 2007.
- Institute of Transportation Engineers. 2003. Trip Generation, 7th Edition.
- Kimley-Horn and Associates, Inc. August 2007. Final Transportation, Circulation, and Parking Impact Study.
- LSA Associates, Inc. March 2006. Fairfield Wal-Mart Supercenter Draft Environmental Impact Report (SCH No. 2004112064).
- Michael Brandman Associates. August 2007. Air Quality Analysis.
- Michael Brandman Associates. June 10, 2007. Final Hydrologic Study for Highway 12/Walters Road Commercial Project.
- Michael Brandman Associates. May 4, 2007. Walters Road West Project Global Climate Change Analysis.
- Michael Brandman Associates. October 6, 2006. Phase I Cultural Resources Assessment.
- National Resources Conservation Service. Accessed April 10, 2007. Soils. Available online at: <http://soils.usda.gov/>.
- Natural Resources Conservation Service. 1977. Soil Survey for Solano County, California.
- Newson, Larry. Senior Project Manager, Pacific Gas and Electric Company. Personal Communication: Letter. April 30, 2007.
- O'Brian, Michael. Fire Chief, Suisun City Fire Department. Personal Communication: Letter. August 10, 2006.
- O'Neill, Nancy. Public Affairs Officer, Defense Commissary Agency. Personal Communication: Phone Interview. July 23, 2007.
- Olberding Environmental, Inc. June 2006. U.S. Army Corps of Engineers Jurisdictional Delineation.
- Olberding Environmental, Inc. July 2007. Biological Resources Analysis.
- Pacific Gas and Electric Company. February 22, 2007. 10K Annual Report.
- Raney Planning & Management, Inc. April 2006. Gentry-Suisun Draft Environmental Impact Report (SCH No. 2004092077).

References

- Raney Planning & Management, Inc. September 2006. Gentry-Suisun Re-Circulated Draft Environmental Impact Report (SCH No. 2004092077).
- Raney Planning & Management, Inc. August 2007. Gentry-Suisun Second Partially Re-Circulated Draft Environmental Impact Report (SCH No. 2004092077).
- Rimpo, Tim, Jones & Stokes Associates. Personal Communication. July 3, 2007.
- Robert A. Karn and Associates. September 8, 2006. Preliminary Hydrologic and Hydraulic Calculations and Stormwater Control Plan for the Wal-Mart Store.
- San Francisco Bay Regional Water Quality Control Board. 2006. The 2006 303(d) Impaired Water Bodies List. Available online at:
<http://www.waterboards.ca.gov/rwqcb2/TMDL/303dlist.htm>.
- Sedway Group. March 2006. Economic Impact Analysis, Suisun City, California.
- Solano County Airport Land Use Commission. Adopted June 13, 2002. Travis Air Force Base Land Use Compatibility Plan.
- Solano County Water Agency. Accessed February 12, 2007. "Briefing Book." Available online at:
http://www.scwa2.com/briefing_book.html#FIGURE%201.
- Solano County Water Agency. January 8, 2004. Integrated Regional Water Resources Plan. Available online at: <http://www.scwa2.com/docs/irwrp.pdf>.
- Solano County Water Agency. June 1999. Solano County Hydrology Manual. Available online at:
<http://www.scwa2.com/hydrology%20manual.html>.
- Solano Irrigation District. November 2006. Cost of Service Analysis and Water Rate Recommendations. Available online at:
<http://www.sidwater.org/Web%20Site%20Attachments/DOC112206.pdf>.
- Solano Transportation Authority. Accessed January 18, 2007. Available online at:
<http://www.solanolinks.com/pdfs/Plans/2006%20Bikelinks%20Map.pdf>.
- South Coast Air Quality Management District. October 2006. Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds.
- State of California. 2007. California Building Standards Code.
- State Water Resources Control Board. 2006. Policy for the Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California. Resolution 2000-015, 2000.
- State Water Resources Control Board. September 2006. Revision of the Clean Water Act Section 303(d) List of Water Quality Limited Segments, Draft Staff Report. State Water Resources Control Board Division of Water Quality.

- Suisun Solano Water Authority. October 2006. Urban Water Management Plan.
- Taughner, Mike. Contra Costa Times. "Landfill's expansion a wetland quandary." November 26, 2006.
- Tholen, Greg. Senior Environmental Planner, Bay Area Air Quality Management District. Personal Communication: Phone Interview July 2007.
- Travis Air Force Base website. Accessed March 26, 2007. Available online at: <http://public.travis.amc.af.mil/>.
- TRC Lowney. December 18, 2006. Geotechnical Investigation.
- TRC Lowney. March 28, 2006. Phase I Environmental Site Assessment.
- U.S. Environmental Protection Agency. 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances.
- United States Environmental Protection Agency. Accessed January 4, 2007. "Asbestos and Vermiculite." Available online at: <http://www.epa.gov/asbestos/>.
- United States Environmental Protection Agency. Accessed January 4, 2007. "Lead in Paint, Dust, and Soil." Available online at: <http://www.epa.gov/lead/index.html>.
- United States Environmental Protection Agency. Accessed January 4, 2007. "Polychlorinated Biphenyls (PCBs)." Available online at: <http://www.epa.gov/opptintr/pcb/>.
- United States Environmental Protection Agency. Accessed January 5, 2007. "Radon (Rn)." Available online at: <http://www.epa.gov/radon/>.
- United States Environmental Protection Agency. Accessed March 6, 2007. Available online at: <http://www.epa.gov/air/urbanair/co/index.html>
- United States Environmental Protection Agency. June 1998. Characterization of Building Related Construction and Demolition Debris in the United States.
- United States Geologic Survey. 1980. Denverton 7.5' Quadrangle, California.
- Western Regional Climate Center. 2000. Western U.S. Precipitation Frequency Maps. Available online at: <http://www.wrcc.dri.edu/pcpnfreq.html>.

