

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 there are impacts that cannot be alleviated without imposing a project alternative, their implications, and the reason why the project is being proposed, notwithstanding their effect, is described. With implementation of the proposed project, three significant impacts associated with transportation that cannot be avoided would occur. Each significant unavoidable impact is discussed below.

- **Air Quality Plan Consistency:** The project would exceed the Bay Area Air Quality Management District’s significance thresholds during operation. As such, this impact would remain significant and unavoidable after mitigation.
- **Freeway Traffic and Cumulative Freeway Traffic:** The project will contribute funding toward the I-80 Express Lanes project for the segment south of Redwood Parkway in Vallejo, if and when the project is programmed for funding by the MTC and the STA, through traffic impact fees administered by Solano County or the City of Vallejo. Because the funding and construction of the express lanes cannot be assured, this impact remains significant and unavoidable after mitigation.
- **Intersection Operations and Cumulative Intersection Operations:** The Project would mitigate the Phase 1, 2 and 3 impacts identified above as follows:
 - **Phase 1 (Option a):** Contribute a proportional share toward the widening of the westbound leg of Redwood Street at Fairgrounds Drive to provide space for a dedicated right-turn lane onto Fairgrounds Drive, and re-time signal accordingly. Widening would take place west of the I-80 bridge structure. The project’s proportional share of the need for this improvement is 11 percent.
 - **Phase 1 (Option b):** Allocate mitigation funds equivalent to that described in Option (a) toward the ultimate improvements at the Fairgrounds Drive/Redwood Parkway interchange, to be held in a dedicated fund until those improvements are constructed.
 - **Event Management Plan** to ensure that the summer weekend late morning peak hour trips do not exceed the current trip generation.
 - For summer weekends, May - October (when Six Flags Discovery Kingdom is open), the following Exposition Hall and general Fairgrounds event management plan should be followed:

1. When Banquet Seating, Assembly Seating, or Trade Show events with estimated attendance at 75 percent or higher occupancy are scheduled on weekend days starting by 1 p.m., all other events on-site should have start times staggered by a minimum of two (2) hours (later than the Exposition Hall event start time). End times for those events should also be staggered by at least two (2) hours.
 2. When Banquet, Assembly or Trade Show events with estimated attendance from 50 percent to 75 percent occupancy are scheduled on weekend days starting by 1 p.m., all other events on-site should have start times staggered by at least one (1) hour (later than the Exposition Hall event start time). End times should also be staggered by at least one (1) hour.
 3. Non-seated concert events with estimated attendance at 50 percent or higher occupancy should not be scheduled to start before 1 p.m. on weekend days.
 4. When non-seated concert events with estimated attendance below 50 percent are scheduled for weekend days starting by 1 p.m., all other events should have start times staggered by at least two (2) hours (later than the concert). End times should also be staggered by two 2 hours.
 5. In addition to the above guidelines, when multiple venues including the Exposition Hall are scheduled on summer Saturdays and Sundays, all events should be staggered by a minimum of one (1) hour.
- **Phase 2:** Contribute funds toward the construction of the Redwood Parkway/Fairgrounds Drive improvement project at the two interchanges, at a level proportional to the full project's share of total future traffic at 2035, and considering other sources of potential traffic growth not modeled in this analysis, in particular that of Six Flags Discovery Kingdom. The project's share of total 2035 traffic, as modeled in this analysis – without any Six Flags Discovery Kingdom traffic growth—is as follows:
- At Fairgrounds Drive/SR-37 Ramps: 23 percent
 - At Redwood Street/I-80 Ramps: 10 percent

The above proportions may be subject to reduction if growth plans for Six Flags Discovery Kingdom are proposed and approved.

The mitigation is tied to the Project's proportional share of total future traffic because the Redwood Parkway/Fairgrounds Drive Improvement Project's purpose, as defined by Caltrans and the STA, is to:

- Relieve existing congestion and improve traffic flow on the local roadway network for approved redevelopment and planned land uses in the area;
- Improve the existing interchanges and intersection operations;
- Improve the safety of the local roadway network by reducing congestion.

Thus, the project is not designed solely to serve traffic growth, but also to address existing deficiencies.

In addition to the above Phase 2 mitigation, the retiming of intersection #8, Columbus Parkway/Admiral Callaghan Lane, is required.

- **Phase 3:** Adjust signal timing of intersection #1, Fairgrounds Drive/Whitney Lane.

Because the full funding and construction of the Fairgrounds Drive/Redwood Parkway Interchange improvements cannot be assured, the impacts at intersections #2, #3, and #15 remain 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. Also 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 include up to 50 multi-family dwelling units within the proposed EMU and EC areas subordinate to the commercial uses and would not substantially induce population growth. Analysis by the Goodwin Consulting Group indicates that the Fair of the Future would generate approximately 65 permanent employee equivalent positions (Goodwin Consulting Group, Inc. 2011). These positions would be a mix of entry-level and higher-paying positions, and based on industry averages, it is estimated that approximately 60 percent would be full-time and 40 percent would be part-time. The Goodwin Consulting Group estimates that the proposed EC area would generate the equivalent of 190 permanent employee equivalent positions, while the EMU area is anticipated to employ 405 persons at the retail uses and 218 persons at the restaurant uses.

Data provided by the California Employment Development Department indicates that, as of September 2011, the City of Vallejo had an unemployment rate of 13.6 percent or 8,800 unemployed persons and Solano County had an unemployment rate of 11.0 percent or 23,500 unemployed persons. Given the nature of the job opportunities and the availability of labor, it would be expected that the proposed project's employment opportunities could be readily filled from the local labor

force and would not result in indirect population growth. For these reasons, the proposed project would not induce substantial population growth.

The development site includes the existing Solano County Fairgrounds and is surrounded by developed land uses, such as Six Flags Discovery Kingdom, the Courtyard by Marriott Hotel, Gateway Plaza, Newell Mobile Homes, and urban infrastructure (e.g., potable water, electricity, roadways) that exist close to the project site. As such, no major infrastructure expansions would be required, and development of the proposed project would not remove a physical barrier to growth through the extension of urban infrastructure to unserved areas. For these reasons, the proposed project would not indirectly induce substantial population growth..

6.3 - Mandatory Findings of Significance

Public Resources Code Section 21083 requires lead agencies to make a finding of a “significant effect on the environment” if one or more of the following conditions exist:

- 1) A proposed project has the potential to degrade the quality of environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare, or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.
- 2) The possible effects of a project are individually limited but cumulatively considerable.
- 3) The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.

Finding No. 1: The proposed project would not have the potential to significantly affect biological or cultural resources.

As discussed in Section 3.3, Biological Resources, all project-related impacts on biological resources can be mitigated to a level of less than significant. This pertains to impacts on special-status species, riparian habitat, wetlands, and wildlife corridors and nursery sites.

As discussed in Section 3.4, Cultural Resources, all project impacts on cultural resources can be mitigated to a level of less than significant. This pertains to impacts on historic resources, archaeological resources, paleontological resources, and burial sites.

Finding No. 2: The proposed project would have cumulatively considerable impacts on transportation.

Cumulative effects from project implementation are addressed in Section 4.0. As discussed in that section, the proposed project would result in cumulatively considerable impacts on transportation.

Finding No. 3: The proposed project would not cause substantial adverse effects on human beings.

In the context of the proposed project, air quality, hazards and hazardous materials, and noise are the three environmental issue areas that have the potential to cause substantial adverse effects on human beings. Each is discussed below.

6.3.1 - Air Quality

The proposed project's construction-generated emissions could exceed the Bay Area Air Quality Management District's emissions thresholds. However, mitigation is proposed to reduce emissions. Therefore, such emissions would not cause adverse effects on human beings.

The proposed project's operational air emissions would exceed emissions thresholds for volatile organic compounds and nitrogen oxides, which are both ozone precursors. Project emissions could cumulatively combine with other emissions in the Basin and contribute to an exceedance of the ozone ambient air quality standard. Therefore, human health could adversely be affected by operational emissions on a cumulative basis.

The proposed project would not create any CO hotspots. The project would not result in significant emissions of toxic air contaminants. Therefore, such emissions would not cause adverse effects on human beings.

6.3.2 - Hazards and Hazardous Materials

The primary hazards of concern with the proposed project are the four Recognized Environmental Constraints identified in the Phase 1 Environmental Site Assessment prepared for the project site and discussed in detail in Section 3.7, Hazards and Hazardous Materials. Mitigation is proposed requiring the project applicant to conduct a soil investigation, conduct a groundwater investigation, complete limited soil sampling, and complete a lead and asbestos survey prior to renovation or demolition of the existing fair buildings. Therefore, no adverse hazards and hazardous materials impacts on human beings would occur.

6.3.3 - Noise

With incorporation of mitigation, construction activities associated with the proposed project would not expose nearby land uses to excessive noise levels. Accordingly, construction noise would not have adverse effects on human beings.

As discussed in Impact NOI-1 in Section 3.10, Noise, the proposed project's onsite and transportation-related offsite noise levels would be less than significant. With mitigation, project-related noise would not exceed acceptable standards; therefore, it can be presumed that no adverse impacts on human beings would occur.

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 (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—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. Thereafter, the State Resources Agency created Appendix F of 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 will not result in the wasteful, inefficient, and unnecessary consumption of energy, will not cause the need for additional natural gas or electrical energy-producing facilities, and, therefore, will not create a significant impact on energy resources.

6.4.1 - Regulatory Setting

Federal and state agencies regulate energy use and consumption through various means and programs. At the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. At the state level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields. The CEC collects and analyzes energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and adopts and enforces appliance and building energy efficiency standards. California is exempt under federal law from setting state fuel economy standards for new on-road motor vehicles. Some of the more relevant federal and state energy-related laws and plans are discussed below.

Federal Energy Policy and Conservation Act

The Federal Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel

economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the United States Department of Transportation, 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; rather, compliance is determined on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The Corporate Average Fuel Economy (CAFE) program, which is administered by United States Environmental Protection Agency, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The United States Environmental Protection Agency calculates a CAFE value for each manufacturer, based on city and highway fuel economy test results and vehicle sales. On the basis of the information generated under the CAFE program, the United States Department of Transportation is authorized to assess penalties for noncompliance. In the course of its over 30-year history, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) such as ABAG were required to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process for specific projects would then address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a decision criterion, along with cost and other values that determine the best transportation solution.

The Transportation Equity Act for the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system

through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators, encouraging urban designs that reduce vehicle miles traveled, and accommodating pedestrian and bicycle access.

Title 24, Energy Efficiency Standards

Title 24, which was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, provides energy efficiency standards for residential and nonresidential buildings. According to the CEC, since the energy efficiency standards went into effect in 1978, it is estimated that California residential and nonresidential consumers have reduced their utility bills by at least \$15.8 billion. The CEC further estimates that by 2011, residential and nonresidential consumers will save an additional \$43 billion in energy costs.

In 2005, the CEC adopted new energy efficiency standards. All projects that apply for a building permit on or after October 2005 must adhere to the new 2005 standards. A copy of the 2005 Energy Efficiency Standards may be reviewed online at www.energy.ca.gov/title24/2005standards/index/html. The 2005 Energy Efficiency Standards may also be reviewed at the Energy Efficiency Division, California Energy Commission, 1516 Ninth Street, MS-29, Sacramento, CA 95814-5512.

Because the adoption of Title 24 post-dates the adoption of AB 1575, it has generally been the presumption throughout the State that compliance with Title 24 (as well as compliance with the federal and State regulations discussed above) ensures that projects will not result in the inefficient, wasteful, and unnecessary consumption of energy. As is the case with other uniform building codes, Title 24 is designed to provide certainty and uniformity throughout the State while ensuring that the efficient and non-wasteful consumption of energy is carried out through design features. Large infrastructure transportation projects that cannot adhere to Title 24 design-build performance standards may, depending on the circumstances, undertake a more involved assessment of energy conservation measures in accordance with some of the factors set forth in Appendix F of the CEQA Guidelines. As an example, pursuant to the California Department of Transportation CEQA implementation procedures and FHWA Technical Advisory 6640.8A, a detailed energy study is generally only required for large-scale infrastructure projects. However, for the vast majority of residential and nonresidential projects, adherence to Title 24 is deemed necessary to ensure that no significant impacts occur from the inefficient, wasteful, and unnecessary consumption of energy. As

a further example, the adoption of federal vehicle fuel standards, which have been continually improved since their original adoption in 1975, have also protected against the inefficient, wasteful, and unnecessary use of energy.

According to the CEC, reducing energy use has been a benefit to all. Building owners save money, Californians have a more secure and healthy economy, the environment is less negatively impacted, and our electrical system can operate in a more stable state. The 2005 Standards (for residential and nonresidential buildings) are expected to reduce the growth in electricity use by 479 gigawatt-hours per year (GWh/y) and reduce the growth in natural gas use by 8.9 million therms per year (therms/y). The savings attributable to new nonresidential buildings are 143 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. Table 6-1 provides a summary of the statewide electricity savings envisioned by the 2005 standards.

Table 6-1: Statewide Electricity Savings Projected From the 2005 Standards

Category	2001 Standard (GWh)	2005 Standard (GWh)	Savings (GWh)	Percent Reduction
Lighting	861.6	777.5	84.1	9.8
Heating	38.8	36.9	1.9	4.9
Cooling	537.5	501.5	35.9	6.7
Fans	424.7	403.6	21.1	5.0
Total	1,862.6	1,719.5	143.0	7.7
Notes: GWh = Gigawatt hours Source: California Energy Commission, 2005.				

Since the California 2000–2001 electricity crisis, the CEC has placed greater emphasis on demand reductions. Changes in 2001 (following the electricity crisis) reduced electricity demand for newly constructed residential and nonresidential buildings by about 110.3 megawatts (MW) each year. Newly constructed nonresidential buildings account for 44 MW of these savings. Like energy savings, demand savings accumulate each year. The 2005 Standards are expected to reduce electricity demand by another 180 MW each year. Table 6-2 provides a summary of the demand savings envisioned by the 2005 standards.

Table 6-2: Demand Savings Projected From the 2005 Standards

Category	2001 Standard (MW)	2005 Standard (MW)	Savings (MW)	Percent Reduction
Lighting	157.9	142.6	15.3	9.7
Heating	3.6	3.5	0.1	2.2
Cooling	276.7	253.1	23.6	8.5
Fans	79.7	74.6	5.0	6.3
Total	517.9	473.9	44.0	8.5
Notes: MW = Megawatts Source: California Energy Commission, 2005.				

In many parts of the world, the wasteful and poorly managed use of energy has led to oil spills, acid rain, smog, and other forms of environmental pollution that have ruined the natural beauty people seek to enjoy. California is not immune to these problems, but the CEC-adopted appliance standards, building standards, and utility programs that promote efficiency and conservation have gone a long way toward maintaining and improving environmental quality. Other benefits include reduced destruction of natural habitats, which, in turn, helps protect wildlife, plants, and natural systems.

Many experts believe that burning fossil fuel is a major contributor to global warming; carbon dioxide is being added to an atmosphere already containing 25 percent more than it did two centuries ago. Carbon dioxide and other greenhouse gases create an insulating layer around the Earth that leads to global climate change. CEC research shows that most of the sectors of the State’s economy face significant risk from climate change, including agriculture, forests, and the natural habitats of a number of indigenous plants and animals.

Scientists recommend that actions be taken to reduce emissions of carbon dioxide and other greenhouse gases. While adding scrubbers to power plants and catalytic converters to cars are steps in the right direction (both of which are currently enforced as part of existing regulatory schemes), the use of energy-efficient standards can be effective actions to limit the carbon dioxide that is emitted into the atmosphere. According to the CEC, using energy efficiently, in accordance with Title 24 Energy Efficiency standards, is a proven, far-reaching strategy that can and does present an important contribution to the significant reduction of greenhouse gases.

In fact, the National Academy of Sciences has urged the country to follow California’s lead on such efforts, and it has recommended that energy efficiency building codes modeled after Title 24 be adopted nationwide. The CEC’s Title 24 program has played a vital, if not the most important, role in maximizing energy efficiency and preventing the wasteful, inefficient, and unnecessary use of energy throughout the State.

The CEC’s 2005 Energy Efficiency Standards include the following:

- 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 for lighting requirements so that only specific 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 CO₂ 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 relocatables 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 methods 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 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 horsepower, electronically commutated motors for series fan boxes, improved 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 watts 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.

Pursuant to the California Building Standards Code and the Title 24 Energy Efficiency Standards, the City will review the design and construction components of the project's Title 24 compliance when specific building plans are submitted.

6.4.2 - Energy Requirements of the Proposed Project

Short-term construction and long-term operational energy consumption are discussed below.

Short-Term Construction

The EPA regulates non-road diesel engines. The EPA has no formal fuel economy standards for non-road (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affects fuel economy. In 1994, EPA adopted the first set of emissions standards (Tier 1) for all new non-road diesel engines greater than 37 kilowatts (kw [50 horsepower (hp)]). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing nitrogen oxide (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 from new non-road diesel engines. This program includes the first set of standards for non-road 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 hp) from 2006 to 2008. These standards will further reduce non-road diesel engine emissions by 60 percent for NO_x and 40 percent for particulate matter (PM) from Tier 1 emission levels. In 2004, EPA issued the Clean Air Non-road Diesel Rule. This rule will cut emissions from non-road diesel engines by more than 90 percent: it took effect beginning in 2008 and will be fully phased in by 2014. These emission standards are intended to promote advanced clean technologies for non-road diesel engines that improve fuel combustion, but they also result in slight decreases in fuel economy.

Table 6-3 provides an estimate of the project construction fuel consumption. The construction assumptions contained in the tables are the same as those used in the construction air quality analysis.

Table 6-3: Construction Fuel Consumption

Activity	Fuel Consumption (gallons)
Demolition	229,841
Site preparation	440,532
Grading	598,010
Building	5,143,763
Paving	357,135
Painting	24,093
Total	6,793,375
Source: Michael Brandman Associates 2012 (Appendix B)	

As shown in Table 6-3, construction activities associated with the proposed project are estimated to consume approximately 6.8 million gallons of diesel. 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 other parts of the 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.

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. The fuel economy standard for new passenger cars has been 27.5 miles per gallon since 1990. The fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per

gallon since 1996. 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; rather, compliance is determined on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

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 3.2, Air Quality.

Table 6-4: Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Average Daily Vehicle Miles Traveled	Average Fuel Economy (miles per gallon)	Daily Consumption (gallons)
Passenger cars	52.0	104,151	21.6	4822
Light trucks	34.0	68,099	17.2	3959
Heavy duty trucks/other ¹	12.8	25,637	6.1	4203
Motorcycles	1.2	2,403	50.0	48
Total	100.0	200,290	—	13,032

Note:
¹ “Other” consists of medium duty vehicles, urban buses, school buses, and motor homes.
 Source of percent vehicle trips and average daily vehicle miles traveled: Michael Brandman Associates 2012.
 Source of average fuel economy: United States Department of Transportation, Bureau of Transportation Statistics.

As shown in Table 6-4, daily vehicular fuel consumption is estimated to be 13,032 gallons of fuel. The Entertainment Mixed Use portion of the project would serve residents living in the area; therefore, it can be reasoned that the proposed project’s trips would not be significantly greater than the average regional trip length. It is expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use in the region.

Project Energy Demand

The proposed project is estimated to demand 10.7 million kilowatt-hours of electricity. These figures were derived from energy consumption rate provided by the United States Energy Information Administration. Refer to Impact USS-5 in Section 3.12, Utilities and Service Systems for further discussion about the calculation used to arrive at this consumption estimate.

Energy Conservation Design Features and Mitigation Measures

Design Features

The Draft Specific Plan includes various sustainability features that would reduce energy demand. These features are listed below:

- Onsite water feature designed to capture runoff to be used onsite for irrigation purposes consistent with low impact development practices and the San Francisco Bay Area National Pollutant Discharge Elimination System (NPDES) stormwater quality permit.
- Design Guidelines that incorporate water-conserving measures.
- Wastewater flow reduction measures.
- Development standards and Design Guidelines intended to incorporate energy-conserving measures.
- Construction waste would be recycled.

Mitigation Measures

Mitigation Measures AIR-1, GHG-2a, and GHG-2b would directly and indirectly reduce energy consumption and are fully described within the Draft EIR's Executive Summary.

Title 24 Compliance

The proposed project's structures would be required to exceed the energy efficiency requirements of 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.

Conclusion

Collectively, these design features, mitigation measures, and mandatory requirements would ensure that the project would not result in the inefficient, unnecessary, or wasteful consumption of energy. Impacts would be less than significant.

