

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 less than significant level. 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, are described. With implementation of the Proposed Project, eight impacts related to air quality, population and housing, and transportation that cannot be avoided would occur. Each significant unavoidable impact is discussed below.

- **Construction air emissions:** Daily emissions from demolition and construction activities would exceed SCAQMD thresholds. Mitigation is proposed that would require implementation of construction air pollution control measures; however, these measures would not fully reduce this impact to a less than significant level.
- **Operational air emissions:** Daily emissions from mobile and area sources during project operation would exceed SCAQMD thresholds. Mitigation is proposed that would require implementation of operational air pollution control measures; however, these measures would not fully reduce this impact to a level of less than significant.
- **Cumulative air emissions:** Because construction and operational emissions would exceed SCAQMD thresholds, the Proposed Project would have a significant cumulative impact. No mitigation is available to reduce this impact to a less than significant level.
- **Inconsistency with the Air Quality Management Plan:** Population growth and vehicle trips associated with the Proposed Project would exceed the projections contained in the AQMP prepared by the SCAQMD. No mitigation is available that can reduce this impact to a less than significant level.
- **Growth inducement:** Population growth attributable to the Proposed Project would exceed population and housing projections from the SCAG for the City of San Bernardino. No mitigation is available to reduce this impact to a less than significant level.
- **Inconsistencies with SCAG Regional Growth Policies:** Because this is a residential project in an outlying area and has more units than were used to develop the SCAG projections, it is not consistent with a number of SCAG regional growth policies.

- **Freeway Congestion:** The project will contribute to cumulatively considerable congestion on the I-215 Freeway in the vicinity of the project until substantial freeway improvements are made in the future.

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 result in the development of 980 units on 404 acres in an outlying but somewhat suburbanizing area (e.g., development to the west along Campus Parkway). The residential units included in the Proposed Project would be expected to result in direct population growth of 3,283 new residents. The Proposed Project is expected to create only a few new jobs at the clubhouse.

Section 4.10 of the DEIR examined the project's contributions to local as well as regional housing and population growth and found it to be in excess of that outlined in the City's General Plan that was used for estimating growth impacts by SCAG. Although by itself the project would only incrementally increase growth, it would contribute to an overall cumulative increase that may not have been anticipated in regional planning efforts. Therefore, the project is considered somewhat growth inducing. This increase will be offset somewhat by the fact that the project is in an area that is not planned for additional suburban development, so its actual influence on area-wide growth will likely be limited.

The project site is not currently served by infrastructure although roads and utilities are generally adjacent or nearby to the site. However, the Proposed Project would require the extension of roadways and utility systems into areas not presently served; therefore, the Proposed Project could be considered to be removing a barrier to potential growth through the extension of urban infrastructure.

The Riverside-Corona Feeder supplies several southern California Counties, including San Bernardino. The supplier connects to the Santa Ana River watershed and supplies over 400,000 acre-feet of ground water per year. New wet year water will come from local runoff, including regulated releases from Seven Oaks Reservoir and the State Water Project. The R-C Feeder is a multiple benefit regional water supply project. The water will be stored in San Bernardino Valley and Chino groundwater basins. Stored water will be delivered to consumers through a new groundwater pumping capacity. The new pumping and delivery capacity will enable water to be stored safely by providing the means to control local water tables.

The water supply assessment proposes the UHSP will connect to reservoirs, similar to the Riverside-Corona Feeder. The reservoirs will include a common inlet/outlet pipe with flexible connections, isolation valves and an altitude valve to prevent overflow. To improve mixing in the tank, each inlet/outlet pipeline would have two check valves, forcing water to travel a greater distance from inlet to outlet in a circular motion. The reservoirs would have separate overflow pipes and drain pipes that would discharge to a concrete gutter. The gutter would convey storm flows, reservoir overflows and drainage along the access road to the downstream development storm drain.

Because of its size and intensity, as well as its destination potential, the Proposed Project may be a catalyst for future unrelated projects. This may include new development projects or redevelopment of existing properties. Note that no such projects have been identified at the time of this writing, and it would be speculative to identify any potential locations or types of projects.

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 that "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 one of two options:

1. The "list approach" - 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; or
2. The "summary of projections" method - 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

The Proposed Project’s cumulative impacts were analyzed based on a summary of projections contained in the City of San Bernardino General Plan. The main reason for this decision is that the general area is used for flood control and much of the areas to the north are in the national forest. A review of development applications indicate there are few projects proposed in this area at this time. However, the project may be more influenced by, and may exert more influence over, overall growth in the City rather than just projects in the immediate area. Therefore, the following methodology was used for each resource area listed below.

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. Would the project by itself cause a significant effect? If so, is the effect cumulatively considerable? If yes, proceed to the next question. If no, the project would not have a cumulatively considerable contribution.
3. If the effect is cumulatively considerable, can it 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.

General Plan Buildout Projections

The City’s total planning area encompasses 45,231 acres, or 71 square miles. This includes 38,402 acres, or 60 square miles, of incorporated City and 6,829 acres, or 11 square miles, of unincorporated lands within the City’s Sphere of Influence. The General Plan and the General Plan EIR created a set of projections based upon the land use categories and theoretical build-out densities (units, population, square footage, jobs) for each category. This contributed to the General Plan process by identifying the ultimate future levels of services and sizes/capacities of infrastructure that would be needed at the City developed.

One of the key assumptions about these buildout numbers is that both residential and nonresidential development (e.g., commercial, office, industrial) would not occur at their maximum levels, but at levels more typical for San Bernardino and that account for parking, streets, setbacks, and easements. Dwelling unit projections were estimated by multiplying the number of acres by the maximum density for each land use designation but were then reduced by the more likely or typical buildout factor (85 percent). Building square footage for the non-residential land use designations were calculated by multiplying the acres for each land use designation by the maximum Floor Area Ratio

(FAR) but then reduced by a typical buildout factor of 60 percent for commercial land uses and 70 percent for industrial land uses.

Assuming buildout of the plan at the adjusted level, the land use plan accommodates a total of 95,664 units, which includes 82,714 dwelling units in the incorporated City and 12,950 dwelling units in the City’s sphere of influence (Table LU-3, City General Plan 2005). Based on a factor of 3.340 persons per household, the projected population at buildout for the entire planning area would be approximately 319,241 people, which includes 276,264 persons in the City and 42,976 persons in the City’s sphere of influence. The change in these figures is summarized in Table 6-1.

Table 6-1: General Plan Buildout Projections

Current (2007)		Buildout (2030)		Average Annual Change (2007 – 2030)	
Housing	Population	Housing	Population	Housing	Population
59,146	205,010	82,714	276,264	+1.7%	+1.5%
Source: Table LU-3 from City General Plan (2005) and Calif. Dept. of Finance figures for San Bernardino 2007.					

Within the City and its sphere of influence area, the land use plan also provides for a total of 3,995 acres of commercial and office uses, including 257 acres of mixed use development (i.e., a mix of commercial, office, and higher density residential uses), and 6,065 acres of light and general industrial uses. At buildout, the land use plan for the total planning area could generate approximately 355,629 jobs using the adjusted intensity factors (FARs). Furthermore, according to the City of San Bernardino General Plan, total buildout of the City would create a significant impact to air, traffic, noise, and population. These significant impacts are without the proposed UHSP and required an overriding consideration by the City Mayor and Common Council.

6.3.3 - Geographic Scope

Table 6-2 below lists the geographic scope, or study area, considered in this cumulative analysis by environmental issue, per CEQA Guidelines Section 15130 (b).

Table 6-2: Geographic Scope of Cumulative Analysis by Resource

Resource	Cumulative Analysis Study Area
Aesthetics, Light, and Glare	The University District Specific Plan area for views and glare, and the northern portion of the City for nighttime lighting levels.
Air Quality and Greenhouse Gas Emissions	The South Coast Air Basin for criteria pollutants, California, the U.S., and the world for greenhouse gas emissions and global climate change influences

Table 6 2: Geographic Scope of Cumulative Analysis by Resource (Cont.)

Resource	Cumulative Analysis Study Area
Biological Resources	The foothills and canyons of this western portion of the San Bernardino Mountains down to the Cajon Creek to the Santa Ana River
Cultural Resources	The City of San Bernardino and this portion of San Bernardino County as a whole
Geology, Soils, and Seismicity	The City of San Bernardino and this portion of San Bernardino County as a whole
Hazards and Hazardous Materials	The City of San Bernardino and this portion of San Bernardino County as a whole
Hydrology and Water Quality	The canyons that drain this western portion of the San Bernardino Mountain foothills down to the Cajon Creek and eventually to the Santa Ana River
Land Use and Planning	The University District Specific Plan area.
Noise	The University District Specific Plan area.
Population and Housing	The City in relation to the San Bernardino Associated Governments (SANBAG) area as well as the entire SCAG area.
Public Services and Recreation	The City as a whole.
Transportation and Circulation	The City as a whole and this portion of the SANBAG area
Agriculture and Mineral Resources	The City as a whole and the Southern California region in general.
Utility Systems	The University District Specific Plan area in particular but the City as a whole in terms of system limits.
Source: Michael Brandman Associates and City staff, 2007.	

6.3.4 - Cumulative Impact Analysis

Aesthetics, Light, and Glare

The analysis area for evaluation of cumulative impacts to aesthetics resources includes views of the southwestern portion of the San Bernardino Mountains to the north. Views of the site from surrounding areas are somewhat limited by the Kendall Hills to the southwest and Badger Hill immediately south of the site. The slopes with elevations above 2,000 feet are readily visible from downtown San Bernardino and other locations in this portion of the San Bernardino Valley where views are not blocked to the north. Views of the site from the I-215 Freeway are effectively blocked by the low Kendall Hills (along the north side of Kendall Drive west of University Parkway). Development of the project as proposed will not require grading above 1,900 feet elevation other than the one reservoir pad, which means no manufactured slopes will be visible at a distance away from this project. Similarly, planned structures are residential in nature and generally one to three stories in height. Since views of the site are restricted on an area-wide basis, so too would be glare from reflections off windows or direct views of night lighting such as streetlights. The project does not

contain any lighted athletic fields so there will be no glare from this potential source. For these reasons, the project will not have cumulative impacts relative to views or glare.

This area is essentially vacant at present and bounded by national forest land on the north. Nighttime lighting levels are very low at present, although there is considerable spillover from night lighting at the CSUSB to the south. If the Proposed Project is built, it will contribute to an overall increase in ambient nighttime light levels referred to as “sky glow” by the International Dark Sky Association, the most prominent group that monitors this urban and suburban development impact (www.darksbies.org). The development standards of the Specific Plan limit the installation of lighting fixtures to the degree required for public safety by police and fire personnel. In addition, lighting levels will be relatively low, in terms of urban development, since the project is all residential and will have no commercial or institutional facilities that are lighted at night (e.g., shopping center). Potential impacts would be reduced further by review of proposed lighting plans during subsequent development review of the project as specific maps or buildings are proposed.

Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Within the City and surrounding vacant areas, approved and additional development would result in additional lighting and surfaces that will create glare. The General Plan estimates the City will grow by 23,568 units from now until buildout, which will disturb thousands of acres of land (Table LU-3, City General Plan 2005), but a relatively small amount of this planned growth will occur in the foothills and areas surrounding the Proposed Project site.

While the Proposed Project will incrementally contribute to an increase in sky glow, this area is planned for residential development and its contributions to ambient lighting levels is considered to be not cumulatively considerable.

Air Quality

The analysis area for evaluation of cumulative impacts to air quality includes the South Coast Air Basin (SCAB), which is identical to the boundaries of the SCAQMD. The SCAB includes the counties of Orange, Los Angeles, Imperial, and Ventura, Riverside, and San Bernardino (including the City of San Bernardino).

Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Within the project region, and the SCAB, approved and additional development will result in additional excavation activities and further intensification of land use, which could potentially lead to impacts to air quality in the area. Within the City of San Bernardino, the total residential units will increase from 59,146 units at present to 82,714 units at buildout (+23,568 units or 1.5 percent average annual growth). Construction and operation of these additional land uses would emit substantial quantities of criteria pollutants that would likely exceed SCAQMD’s daily significance thresholds.

Potentially significant impacts were not found for exposure of construction workers or the public to substantial amounts of toxic air pollutants, creation of carbon monoxide hot spots that would exceed federal or State concentration standards, exposure of sensitive receptors to substantial pollutant concentrations, or generation of objectionable odors that would affect a substantial number of people. Significant, unavoidable impacts were found concerning construction and operational emissions that exceed SCQMD thresholds, inconsistency with the projections contained in the Air Quality Management Plan, and emissions representing only an incremental contribution of global greenhouse gases. The Proposed Project would develop 980 residential units in this vacant outlying area of the City. This represents 4.2 percent of the growth expected in the City from now until buildout (see Table 6-1).

When taken into account with all residential and commercial buildout anticipated in the General Plan, the Proposed Project would result in a significant cumulative effect. Therefore, this effect would be cumulatively considerable without mitigation applied, since the effect of this project by itself is a potentially significant impact. However, according to the City of San Bernardino General Plan Environmental Impact Report (2005 EIR), air quality would be significant after buildout during long term and short term construction, and contributing to cumulatively considerable net increase of criteria pollutants for which the project region is in a state of non-attainment. Therefore, project-level emissions would be cumulatively significant and unavoidable due to the City's significant and unavoidable buildout projections for regional air quality.

Mitigation in the form of extensive air pollution control measures is proposed, but it would not reduce project construction and operation emissions below SCQMD thresholds; however, it would prevent project greenhouse gas emissions from being cumulatively considerable.

Biological Resources

The analysis area for evaluation of cumulative impacts to biological resources includes this western portion of the San Bernardino Mountains, its foothills along the southern slope of the mountains, as well as the canyons that drain these slopes, down to Cajon Creek and ultimately to the Santa Ana River southwest of the project area. The project will develop 160 acres of alluvial fan terrace area covered by disturbed grassland and remnants of native scrub vegetation. Some of these lands overlap critical habitat for the California gnatcatcher and San Bernardino kangaroo rat. However, neither of these species were found on the project site. Conversely, the project would preserve 235 acres of land comprising the foothills and canyons of middle and upper Badger Canyon, which is a major drainage in this portion of the foothills. With mitigation, potential impacts to listed animal species were reduced to less than significant levels. With the preservation of Badger Creek and its feeder canyons, potential regional impacts from this project on biological resources are not considered to be cumulatively considerable.

Cultural Resources

The analysis area for evaluation of cumulative impacts to cultural resources includes the entire City as outlined in the San Bernardino General Plan. The project vicinity represents an area with prehistoric settlement by several Native American groups prior to Spanish and Mexican settlement, and then American settlement during the mid-nineteenth century. The project site and surrounding areas are largely vacant at present. The site appears to contain remnants of a small residential “camp” and homestead but this area will remain in permanent open space so there are no impacts in this regard.

Development of the project site will contribute to the incremental loss of vacant lands that may contain cultural artifacts or resources. Potentially significant impacts were found for historic, archaeological, and paleontological resources, and for human remains, due to the possibility of encountering an unanticipated find during excavation. Mitigation measures are proposed to reduce the potentially significant impact to less than significant levels. 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 this portion of San Bernardino County, due to the presence of several branches of the San Andreas Fault that cross the site. The various geotechnical investigations evaluated subsurface soil and groundwater conditions at the project site. The existing documents contained the results of extensive field explorations, laboratory testing, engineering analyses, and design recommendations for previous development projects at or near the project site. From these documents, geotechnical conclusions and preliminary recommendations for planning of the proposed development were developed.

Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Within the City and surrounding vacant areas, approved and additional development would result in additional excavation activities and further intensification of land use that could potentially impact geology, soils, and seismicity in the area. The General Plan estimates the City will grow by 23,568 units from now until buildout, which will disturb thousands of acres of land (Table LU-3, City General Plan 2005).

Potentially significant project-level impacts were found concerning exposure of persons or structures to seismic hazards due to the presence of several faults onsite. Potentially significant impacts were also found concerning substantial erosion or loss of topsoil during site construction. The Proposed Project would develop 980 residential units in this portion of the City. The General Plan identifies areas in the City where additional growth will occur that contain various geotechnical constraints, including faults and soil erosion. However, only a small amount of this growth will occur proximate to the San Andreas Fault Zone. The City’s General Plan, Development Code, development review process, and uniform building code all require detailed geotechnical studies for proposed development which identify impacts and appropriate mitigation for suspected geotechnical hazards, similar to the process applied to the USHP project.

Implementation of the UHSP project and future development under the General Plan, consistent with development guidelines from required geotechnical studies, will help reduce potential earth-related cumulative impacts to less than significant levels. Therefore, the Proposed Project will not make a substantial contribution to cumulatively considerable impacts relative to geology, soils, and seismicity.

Hazards and Hazardous Materials

The analysis area for evaluation of cumulative impacts to hazards and hazardous materials includes the University District subarea identified in the San Bernardino General Plan as well as the City as a whole. Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Citywide, approved and additional development will result in additional excavation activities and further intensification of land use that could potentially impact hazards and hazardous materials in the area. Development of the City is expected to increase housing by 23,568 units from now until buildout, with some of that land being vacant while other lands have been developed.

Development of the Proposed Project would result in an increased demand for fire protection services, resulting in the need for additional fire protection facilities and personnel to cover the Proposed Project. Potentially significant impacts were not found concerning: (1) location on a site that would create a potential hazard to the public and the environment; (2) exposure of sensitive receptors to hazardous emissions, materials, substances, or waste; or (3) impeding the implementation of or physically interfering with an adopted emergency response or evacuation plan. The Proposed Project would develop 980 residential units in an outlying vacant area, but residential development in general does not generate significant amounts of hazardous materials. Growth of industrial and to a lesser degree commercial uses in the City would generate more risk and potential impacts relative to hazardous materials on a cumulative basis. With implementation of best management practices and by following regulations, the Proposed Project would not make a substantial contribution to a cumulatively considerable impact relative to hazardous materials.

Hydrology and Water Quality

The analysis area for evaluation of cumulative impacts to hydrology and water quality includes the University District sub-area, identified in the San Bernardino General Plan as well as the City as a whole. The project site is currently vacant and does not consume potable water. The Preliminary Hydrology Report was prepared to present an initial analysis of the Proposed Project's effects on the local and regional drainage basin and to serve as a background for subsequent reports, such as a Stormwater Control Plan and a SWPPP, that are required during the development process. These and other subsequent documents will detail the design recommendations for the control of stormwater for the project site and be used to meet local and regional regulatory requirements.

Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Citywide, approved and additional development will result in

additional excavation activities and further intensification of land use, which could potentially impact hydrology and water quality in the area. The total residential units are expected to increase from 59,146 at present to 82,714 at buildout, representing an increase of 23,568 units.

Potentially significant impacts were not found concerning the creation of additional impervious surface coverage and alteration of existing drainage patterns, potentially leading to downstream flooding or substantial erosion or siltation on- or offsite. Potentially significant impacts were found relating to adverse impacts to water quality during construction, adverse impacts to water quality from land use activities associated with the Proposed Project, substantial depletion of groundwater supplies or substantial interference with groundwater recharge, and creation of runoff water that could exceed the capacity of existing or planned stormwater drainage systems. The Proposed Project would develop 980 residential units in this University District subarea. When taken into account with all residential and commercial buildout anticipated in the General Plan, the Proposed Project would result in a significant cumulative effect. However, the design of the project will incorporate water retention basins and bio-swales to increase infiltration of water as the new project is built.

The Proposed Project would cause a net increase in potable water demand by almost a million gallons per day in relation to existing demand on the project site. The City's WSA has indicated that this demand is accounted for in their long-term water supply planning and would not require the development of additional supplies. Unfortunately, City staff indicate that reclaimed water is not and will not be available to the project area at a cost effective rate due to its elevation (i.e., too high), and there is no infrastructure in place or planned to provide reclaimed water to the project site. Even with the ongoing uncertainty of imported water for Southern California and the City's General Plan goal of using recycled water whenever practical, this impact is considered less than significant due to the design and location of the project relative to water and reclaimed water. Furthermore, with the design of the project and recommended mitigation measures, the EIR concluded that water-related impacts of the Proposed Project would be reduced to less than significant levels. Therefore, the project will not have a cumulatively considerable impact regarding hydrology and water quality.

Land Use

The analysis area for evaluation of cumulative impacts to land use includes the University District subarea and the City as a whole, as identified in the San Bernardino General Plan. The project site and its surroundings are vacant. The General Plan designation for the project site is Residential Low (RL) in the steeper areas and Residential Suburban (RS) in the flatter portions of the site – these designations would allow from 750 to 966 residential units to be built on the site, depending on how units were placed or clustered in hillside areas (see Section 4.8, *Land Use*, and 4.10, *Population and Housing*, for more information on potential buildout estimates). In addition, the City approved the Paradise Hills Specific Plan which would allow 504 units to be built on the site.

Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Within the City, approved and additional residential and

commercial development will result in additional excavation activities and further intensification of land use. Total residential units will increase from 59,146 units at present to 82,714 units at buildout.

The University Hills project would increase the intensity of development on the project site by 95 percent compared to the PHSP (980 vs. 504 units). However, it is estimated that approximately 750 to 966 units could be built on the UHSP project site under the RL and RS designations of the General Plan, depending on how units were actually clustered in hillside areas. Development under the UHSP would represent an increase of 1.5 to 31 percent over that allowed under the General Plan. Section 4.10, Population and Housing, of the EIR concluded that the Project would have significant population and housing impacts because it was not consistent with SCAG growth projections, however, it does not appear the Project would make significant contributions to cumulative land use impacts related to growth.

The project will intensify the land use designated by the General Plan by up to 31 percent. When combined with other projects anticipated in the General Plan, it is not anticipated that this potential amount of change would result in cumulatively considerable land use impacts. Other projects that would occur under General Plan buildout would not physically divide an established community, and they would be required to demonstrate compatibility with surrounding land uses and comply with the City of San Bernardino General Plan and Development Code. Fulfillment of these requirements would ensure that no significant impacts on land use occur from other projects that would occur under buildout.

Noise

The analysis area for evaluation of cumulative noise impacts encompasses the ambient noise environment around the project site as well as roadways that would experience increases in traffic volumes from project-generated trips. The cumulative noise impact analysis is guided by evaluating increases in ambient noise levels in the project vicinity relative to existing conditions. Construction noise would result in temporary increases in ambient noise levels, and mitigation is proposed that would require implementation of noise control measures during construction activities. Because construction would be temporary, ambient noise levels would not experience a permanent increase and, therefore, no cumulatively considerable increase would occur. The Proposed Project would result in construction and operational vibration. Construction and operational vibration would not exceed significance thresholds at the nearest land uses (the residences south of Planning Areas 18 and 20 off of North I Street) and, therefore, would not be cumulatively considerable. Project residential units would not be exposed to substantial vibration from vehicular activities due to the nature of the project (i.e., suburban residential). Therefore, project residents would not be exposed to significant sources of vibration or noise, and impacts would not be cumulatively considerable. Vehicular trips generated by the Proposed Project would not cause ambient noise levels along any affected roadway segments to exceed acceptable noise standards under opening year or buildout conditions. Therefore, the Proposed Project would not have a cumulatively considerable impact related to increased ambient noise levels on nearby roadways. Onsite noise associated with the Proposed Project would not result

in ambient noise levels increasing to unacceptable levels at any surrounding land uses. Therefore, the Proposed Project would not have a cumulative considerable impact related to increased ambient noise levels at surrounding land uses. Onsite noise associated with the Proposed Project may expose project residents to unacceptable levels. Mitigation is proposed that would require the installation of various structural noise attenuation measures to ensure that interior residential noise levels are within acceptable standards to reduce impacts to a less than significant level. Therefore, the Proposed Project would not have a cumulative considerable impact related to exposure of project residents to unacceptable noise levels. In summary, the Proposed Project would not result in increases in ambient noise that would be cumulatively considerable.

According to the City of San Bernardino General Plan Environmental Impact Report (2005 EIR), noise impacts would be significant after buildout until the San Bernardino Airport Master Plan has been adopted by the San Bernardino International Airport Authority (SBIAA) and corresponding noise contours have been established the extent of impact to parkland near the airport cannot be determined. Parkland is designated as a sensitive use in the General Plan and should the noise contour exceed the limitations established by the General Plan no foreseeable mitigation could be accomplished if the park were to remain in use. Under those circumstances, the impact would be considered a significant adverse and unavoidable impact. The proposed UHSP is approximately 7.5 miles from the San Bernardino International Airport and is therefore outside the five (5) mile noise contour and will not impacted be impacted.

Population and Housing

The analysis area for evaluation of cumulative impacts to population and housing encompasses the SANBAG area and the entire Southern California region as monitored by SCAG.

Cumulative impact analysis is guided by the population growth assumptions included in the City of San Bernardino General Plan and SANBAG's projections. The City of San Bernardino General Plan anticipates significant growth in San Bernardino between 2005 and 2030. The California Department of Finance estimated San Bernardino's population to be 200,280 in 2005. The General Plan projected a five-year increment for the City's population; the projected 2007 population for the City is 205,010. According to SCAG the City's population for the year 2010 will be 207,021. The average annual increase in the City's population is 1.5 percent. The average annual increase in the City's 2007 population in combination with a 1.5 percent annual increase would make the total population 214,466 by the year 2010. The Proposed Project is anticipated to open in 2010. SCAG anticipates that the City's population would be 207,021 persons that year, indicating that actual growth has occurred at a much lower rate than anticipated. The Proposed Project's residential uses would directly add an estimated 3,283 residents to the City's population over approximately a 5-year period or through 2015. The Proposed Project would not create substantial new employment opportunities because this is a residential project.

For the purposes of providing a worst-case scenario analysis, it is assumed that all of the 3,283 new residents of the project would also be new residents to the City. SANBAG's forecast for population growth in San Bernardino is the same as that contained in the General Plan. Based on the existing population (205,010) and accounting for expected population growth between 2010 and 2015 (1.5 percent annually)¹, the City's estimated population in 2010 without the Proposed Project would be 207,021 residents. The addition of the 3,283 new residents associated with the Proposed Project would bring the population to 210,304, exceeding the City and SCAG's 2010 population projection of 207,021 persons by two (2) percent. With the addition of population growth induced by the Proposed Project, the City's 2015 population is estimated to be 212,143 persons, which would slightly exceed the SANBAG's 2015 projection (208,860) by two (2) percent. Although the slight addition of population from the proposed project is projected to exceed SANBAG's 2010 projections by two (2) percent, the Proposed Project would not represent a cumulatively considerable growth-inducing impact relative to population and housing.

Public Services and Recreation

The analysis area for evaluation of cumulative impacts to public services and recreation includes the entire City of San Bernardino. The City of San Bernardino Parks and Community Services Department owns and maintains 52 park sites totaling 540 acres. Of these sites, 10 are dedicated community parks, 19 are neighborhood parks, 3 are special use parks, and 17 are pocket or mini-parks.

Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Within the subareas that constitute the City, approved and additional residential and commercial development will result in a further intensification of land use and continue to place demands on public services and recreation resources compared with existing conditions. Within the City, residential development will increase the housing stock from 59,146 units to 82,714 units (+72 percent), and substantial development will also occur in the Sphere of Influence area (a total of 95,664 units at buildout [Table LU-3, CSB General Plan 2005]).

Among public services and recreation resources, potentially significant impacts were found only for fire protection and emergency medical services, and trails. Potentially significant impacts were found regarding fire protection and emergency medical services that were due to the location of the project relative to existing police and fire facilities. Other projects that would occur under buildout could include mixed use projects with multistory buildings and both residential and commercial uses combined. Therefore, when considered with other projects associated with buildout, the Proposed Project would result in cumulative impacts for fire protection and emergency medical services. Since impacts for these resources are potentially significant for the Proposed Project separately, there would be a cumulatively considerable impact regarding fire protection and emergency medical services.

¹ The annual population growth rate between 2000 and 2007 was 1.5 percent, as calculated from population estimates provided by the California Department of Finance.

However, the same types of mitigations that would reduce these project specific impacts to less than significant would be developed for other projects associated with buildout (i.e., dedication of sites for new police and fire facilities). After mitigation, therefore, no cumulatively considerable impacts to fire protection and emergency medical services would occur. An incremental increase in impacts to local and regional trails was also found associated with increased numbers of residents and trail users in outlying areas. Other projects that would occur during buildout would also increase numbers of residents and new employees and create additional use of the Foothill Trail and other trails beyond that anticipated for the Proposed Project. The project is installing the section of trail within its boundaries, so the Proposed Project is not expected to result in cumulative impacts to trails.

Transportation

The analysis area for evaluation of cumulative impacts to transportation includes the University District subarea identified in the San Bernardino General Plan, as well as the City as a whole. The Traffic Impact Analysis analyzed the traffic impacts of the Proposed Project and looked at traffic impacts at opening year and at buildout of the project. Section 4.12, *Transportation and Circulation*, examined project-level traffic impacts and found several intersections that would exceed the General Plan threshold of LOS C at peak hour and therefore concluded impacts would be significant. This section also found significant impacts related to cumulative traffic and congestion on the I-215 Freeway in the vicinity of the Proposed Project.

Cumulative impact analysis is guided by buildout assumptions identified in the Land Use Section of the San Bernardino General Plan. Within the University District subarea, approved and additional development will result in additional excavation activities and further intensification of land use that could potentially impact transportation in San Bernardino. Based on the analysis in Section 4.12, it appears the Proposed Project will contribute to cumulatively considerable traffic impacts even with implementation of all feasible project specific mitigation.

A number of roadway improvements would be implemented in conjunction with the Proposed Project that would help reduce cumulative traffic impacts, as outlined in Section 4.7.12 of the EIR.

Potentially significant impacts were not found concerning the creation of inadequate access for emergency services or conflicts with the General Plan. Potentially significant impacts were found for congestion during peak hours along this portion of the I-215 Freeway.

When taken into account with all residential and commercial buildout anticipated in the General Plan, the Proposed Project would result in a significant cumulative effect on area traffic. Therefore, this effect would be cumulatively considerable without mitigation applied, since the effect of this project by itself is a potentially significant impact. With implementation of project mitigation measures MM TRANS-1 through MM TRANS-8, project impacts will not make substantial contributions to cumulatively considerable degradation of intersection performance but will contribute to ongoing freeway congestion.

However, according to the City of San Bernardino Environmental Impact Report (2005 EIR), the City does not cooperate with the regional transportation agencies toward mitigating impacts to regional transportation facilities. However, potential traffic impacts to the freeway mainline segments and ramps were evaluated and mitigation measures were suggested to reduce impacts. However, the City stated that improvements to the freeway system are the responsibility of the existing regional transportation agencies and not the City of San Bernardino. Without the authority to implement the mitigation measures, the impact to freeway segments would remain significant and unavoidable requiring a statement of overriding considerations. Therefore, project-level traffic would be cumulatively significant and unavoidable due to the City's significant and unavoidable buildout projections.

Agricultural and Mineral Resources

The analysis area for evaluation of cumulative impacts to the entire City and this portion of the San Bernardino Valley.

The project, when combined with other projects anticipated in the General Plan, would not result in cumulative impacts. Other projects that would occur under General Plan buildout may affect the availability of existing or historical agricultural land or areas with identified mineral resources. Future development would also be required to comply with the City of San Bernardino General Plan. Fulfillment of these requirements would ensure that no significant impacts on these specialized land uses will occur from other projects that would occur under buildout.

Utility Systems

The San Bernardino Planning area has experienced significant residential and commercial development over the last 25 years. Buildout conditions anticipated by the San Bernardino General Plan will result in further development resulting in increased demand on the City's utility systems and services. The Proposed Project's cumulative impacts to utility systems are discussed separately below.

Potable Water

The CSBMWD would supply potable water to the Proposed Project. The maximum consumption of potable water per capita per day for the City is 497 gallons per capita per day. The total amount of the UHSP population (3,283) compared to CSBMWD's capita rate (497) would total 1,632,000 gallons per capita per day. However, according to the water supply assessment, the completed University Hills project is expected to consume 987,900 gallons of water per day. Therefore, the proposed project would consume far less potable water than the City's maximum consumption capita rate. Additional development anticipated by the General Plan will further increase demand for potable water.

The Water Supply Assessment states that the increase in demand for potable water as a result of the Proposed Project is consistent with the demand projections contained in CSBMWD's 2005 Urban

Water Management Plan for the service area and would not require additional supplies. In addition, the San Bernardino General Plan includes policies that require water conservation methods and use of recycled water. The Proposed Project as well as other new development projects would be required to comply with these policies. However, because the Proposed Project would result in a significant increase in water demand, its impacts to potable water were found to be potentially significant; therefore, the cumulative impacts would be considerable without mitigation applied. The project has been designed, and mitigation measures have been included Section 4.14, *Utility Systems*. The Proposed Project is designed to minimize water use and provide for percolation of runoff back into the ground to the extent feasible. Furthermore, the Proposed Project will implement a number of water conservation measures and practices, including high efficient washers, re-circulating hot water systems, tankless hot water heaters, green roofs where feasible, evapotranspiration-based water controllers, water budgets for landscape irrigation, and high efficiency toilets and waterless urinals. These measures will help reduce the project's cumulative impacts to a less than significant level. A detailed discussion of the mitigation measures can be found in Section 4.14, *Utility Systems*.

Wastewater

In the City of San Bernardino, wastewater collection and treatment is provided by the Water Reclamation Plant (WRP) in the Rapid Infiltration and Extraction (RIX) facility.

Development contemplated by buildout of the City of San Bernardino General Plan is projected to generate approximately 33 million gallons per day (mgd) of wastewater for areas served by the City. The Proposed Project would generate an estimated half million mgd of wastewater on a daily basis, which is accounted for in the CSBMWD projections. The City performed a standard pre-review of the Proposed Project and determined that the existing wastewater collection and treatment systems have adequate capacity for wastewater generated by the Proposed Project.

The project, when combined with other projects anticipated in the General Plan, would not result in cumulative impacts. However, other projects that would occur under General Plan buildout may increase the amount of wastewater produced. However, future development would be required to comply with the City of San Bernardino General Plan. Therefore, because increased demand to wastewater collection and treatment facilities by the Proposed Project and other development in the City have to comply with the City's General Plan or are anticipated and planned for by the City utilities groups, the cumulative wastewater impacts of the Proposed Project would be less than significant.

Storm Drainage

The City of San Bernardino owns and maintains drainage facilities within the city limits that connect to larger regional facilities owned and maintained by the San Bernardino County Flood Control District (SBCFD). The City's drainage or flood protection system includes a network of channels, storm drains, street waterways, natural drainage courses, dams, basins, and levees. The design and construction of storm drain and flood control facilities is the responsibility of the City Public Works

Department, while the Public Services Department is responsible for their operation and maintenance. The project would also implement a green roof on the community center and numerous bioswales that would capture runoff from impervious surfaces. Through the implementation of these onsite features, there would be no need for offsite water treatment or flood control improvements in downstream waterways.

The project, when combined with other projects anticipated in the General Plan, would not result in cumulative impacts. However, other projects that would occur under General Plan buildout may increase the amount of storm water produced and increase chances of flooding. However, other projects in the planning area would be required to provide adequate storm drainage facilities. Furthermore, future development would be required to comply with the City of San Bernardino General Plan. Therefore, because increased storm drainage produced by the Proposed Project and other development in the City have to comply with the City's General Plan or are anticipated and planned for by the City utilities groups, the cumulative storm drainage impacts of the Proposed Project would be less than significant.

Solid Waste

The Proposed Project is estimated to generate 16,330 pounds/day of solid waste during short-term construction activities and 2,980.3 tons/year of solid waste annually during long-term operational activities (Table 4.14-1 in the DEIR). Other anticipated development will further increase demand on solid waste facilities. The regional landfill capacity would be able to accommodate solid waste generated by the Proposed Project. In addition, the San Bernardino General Plan includes waste reduction policies that, when implemented, would reduce the generation of solid waste from Proposed Project and other development in San Bernardino.

The project, when combined with other projects anticipated in the General Plan, would not result in cumulative impacts. However, other projects that would occur under General Plan buildout may increase the amount of solid waste produced in the City. However, other projects in the planning area would be required to provide adequate assessment of local solid waste facilities to conclude the future project would not significantly increase demands. Furthermore, future development would be required to comply with the City of San Bernardino General Plan. Therefore, because increased solid waste generated by the Proposed Project and other developments in the City have to comply with the City's General Plan, or are anticipated and planned for by the City utilities groups, the cumulative solid waste impacts of the Proposed Project would be less than significant.

Energy

The Proposed Project in conjunction with other projects in the area would increase the demand for energy consumption. The Proposed Project is estimated to demand 16,327 kWh/day of electricity and 214,741 cubic feet/day of natural gas on a daily basis. The Southern California Edison Company and the Southern California Gas Company provided "will serve" letters (see Appendix A) indicating that

it has adequate existing infrastructure and electricity and natural gas supplies to serve the Proposed Project.

The Proposed Project and other new development would be required to comply with Title 24 energy efficiency standards to reduce consumption. In addition, the Clubhouse and High Density Development are being planned to comply with LEED Certification for energy efficiency and conservation. While the projected consumption of electricity and natural gas is substantial, LEED certification and conservation required for future build out of the City will reduce energy impacts and will be considered less than significant.

Furthermore, the project, when combined with other projects anticipated in the General Plan, would not result in cumulative impacts. However, other projects that would occur under General Plan buildout may increase the amount of energy consumed by the City. Other projects in the planning area would be required to provide adequate assessment of local and regional energy facilities to conclude the future project would not significantly increase demands on energy consumption. Furthermore, future development would be required to comply with the City of San Bernardino General Plan. Therefore, because increased consumption of energy by the Proposed Project and other developments in the City have to comply with the City's General Plan, or are already anticipated by local or regional energy facilities, the cumulative energy impacts of the Proposed Project would be less than significant. A detailed discussion of impacts and mitigation measure can be found in Section 4.14, *Utility Systems*.

Summary

The Proposed Project will make significant contributions to the following cumulatively considerable impacts:

- Long-term air quality in terms of criteria pollutants during occupancy; and
- Traffic congestion on local streets and the I-215 freeway;

6.4 - Energy Conservation

Public Resources Code Section 21100(b)(3) and CEQA Guidelines Section 15126.4 require an EIR 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 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. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the U.S. EPA 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. On 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. As set forth above, 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 the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on 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 thirty-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 SANBAG were 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 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 assistance to public agencies and fleet operators, and encouraging urban designs that reduce vehicle miles traveled and accommodate 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 ww.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 practice throughout the State that compliance with Title 24 (as well as compliance with the litany of 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 with respect to 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 6-3 provides a summary of the electricity savings envisioned by the 2005 standards.

Table 6-3: 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

GWh = Gigawatt hours
 Source: California Energy Commission, 2005.

Since the California 2000–2001 electricity crisis, the CEC has placed more and more 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 electric demand by another 180 MW each year. Table 6-4 provides a summary of the demand savings envisioned by the 2005 standards.

Table 6-4: 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 animals, 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 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 has recommended that nationwide energy efficiency building codes modeled after Title 24 be adopted. The CEC's Title 24 program has played a vital and perhaps one of the most important roles in maximizing energy efficiency and preventing the wasteful, inefficient, and unnecessary use of energy throughout the State.

The 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 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 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 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 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 Day Lighting 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, 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 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 nonroad diesel engines. The EPA has no formal fuel economy standards for nonroad (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affects fuel economy. In 1994, EPA adopted the first set of emission standards ("Tier 1") for all new nonroad diesel engines greater than 37 kilowatts (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. EPA has since adopted more stringent emission standards for NO_x, hydrocarbons, and particulate matter 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 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, 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 they also result in slight decreases in fuel economy.

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: 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.

Trip generation rates provided in the Traffic Impact Analysis prepared by Kunzman Associates were used to estimate vehicular fuel consumption associated with trips to and from the Proposed Project. Table 6-5 provides an estimate of the daily fuel consumed by vehicles traveling to and from the Proposed Project (6,822 gallons per day). These estimates were derived using the same assumptions used in the long-term vehicular air quality analysis in Section 4.2, *Air Quality*.

Table 6-5: Operations Fuel Consumption

Vehicle Type	Daily Trips/Vehicle Miles Traveled	Average Fuel Economy (miles per gallon)	Total Daily Fuel Consumption (gallons)
Total	6,140/122,800	18	6,822
Notes: Daily trips and vehicle miles traveled provided by URBEMIS Air Quality Modeling output – vehicle miles traveled based on assumed trip length of 20 miles Average fuel economy provided by the United States Department of Transportation, Bureau of Transportation Statistics. “Other” consists of urban buses, school buses, and motorhomes Source: Michael Brandman Associates, 2007.			

Building Energy Demand

Section 4.14 of the EIR estimated the Proposed Project would consume 5.96 million kWh/year of electricity and 78.4 million cubic feet/year of natural gas on an annual basis. These figures were derived from energy consumption rates provided by the California Energy Commission. Refer to Impact US-5 in Section 4.14, *Utility Systems*, for further discussion of the calculations used to arrive at these consumption estimates.

Edison and the Gas Company provided “will-serve” letters indicating that the electrical and natural gas loads of the Proposed Project are within the parameters of project load growth and, therefore, would be able to be served with electricity and natural gas. These letters are provided in Appendix A.

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. These energy conservation measures are listed below.

Energy Conservation Design Measures

- Extensive use of glass windows in all project components, particularly in upper floors, to promote natural day lighting of interior areas to reduce the need for lighting;
- Automated occupancy sensors in structures that automatically shut off lights when rooms are unoccupied;
- Participation in Edison and Gas Company energy efficiency rebate programs (e.g., air conditioning, gas heating, refrigeration, and lighting);

Other CEQA Considerations

- High-efficiency clothes washers and dishwashing machines;
- Re-circulating hot water systems to reduce the need to heat water; and
- Green roofs that capture stormwater runoff during the rainy season and keep building interiors cool during warmer months.