CHAPTER 10.0 AIR QUALITY

This section addresses project impacts on ambient air quality, and the exposure of sensitive receptors to pollutant concentrations. Air pollutants of concern for western Placer County area include ozone (O_3), and particulate matter 10 and 2.5 microns in size (PM_{10} and $PM_{2.5}$). This section analyzes the type and quantity of emissions that would be generated by construction and operation of the proposed project.

10.1 ENVIRONMENTAL SETTING

10.1.1 CLIMATE AND TOPOGRAPHY

Air quality is affected by the rate, amount, and location of pollutant emissions and the associated meteorological conditions that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, direction, and air temperature, in combination with surface topography (i.e., geographic features such as mountains and valleys) determine the effect of pollutant emissions on local air quality.

The proposed project is located in the western part of Placer County, which lies within the Sacramento Valley Air Basin (Sacramento Valley). The climate of the Sacramento Valley is Mediterranean in character, with mild, rainy winter weather from November through March and warm to hot, dry weather from May through September. The geographic features giving shape to the Sacramento Valley are the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. These mountain ranges channel winds through the Sacramento Valley but also inhibit dispersion of pollutant emissions.

The Sacramento Valley is subject to eight unique wind patterns. The predominant annual and summer wind pattern is the Full Sea Breeze, commonly referred to as Delta Breezes (California Air Resources Board [CARB], 2007b). These cool winds originate from the Pacific Ocean and flow through a sea-level gap in the Coast Range. In the winter season (December-February), northerly winds predominate (CARB, 2007b). Wind direction in the Sacramento Valley is influenced by the predominant wind flow pattern associated with the season.

The vertical and horizontal movement of air is an important atmospheric component involved in the dispersion and subsequent dilution of air pollutants. Without movement, air pollutants can collect and concentrate in a single area, increasing associated health hazards. For instance, in the winter months, the Sacramento Valley typically experiences calm atmospheric conditions. These calm conditions result in stagnation of Valley air and increased air pollution. As a result, persistent inversions occur frequently in

the Sacramento Valley, especially during late fall and early spring and act to restrict vertical dispersion of pollutants released near ground level.

10.2 AIR QUALITY STANDARDS AND EXISTING CONDITIONS

10.2.1 CRITERIA AIR POLLUTANTS

Criteria Air Pollutants (CAPs) are common pollutants that have been identified as being detrimental to human health. CAPs are used as indicators of regional air quality. The U.S. Environmental Protection Agency (EPA) has designated six CAPs: ozone (O_3), carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead (Pb). The CAPs of concern in the project region are discussed below:

OZONE

Photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X) resulting from the incomplete combustion of fossil fuels are the largest source of ground-level O₃. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. As a photochemical pollutant, O₃ is formed only during daylight hours under appropriate conditions, but is destroyed throughout the day and night. O₃ is considered a regional pollutant, as the reactions forming it take place over time and are often most noticeable downwind from the sources of the emissions.

PARTICULATE MATTER

Particle pollution is a mixture of microscopic solids and liquid droplets suspended in air. This pollution, also known as particulate matter, is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores). The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers (μ m) in diameter pose the greatest problems, because they can get deep into lungs and the bloodstream. Exposure to such particles can affect both lungs and heart. Larger particles are of less concern, although they can irritate eyes, nose, and throat.

10.2.2 CALIFORNIA AMBIENT AIR QUALITY STANDARDS

The established maximum concentrations for each of the CAPs are known as the California Ambient Air Quality Standards (CAAQS). Concentrations above these time-averaged limits are anticipated to cause adverse health affects to sensitive receptors. For some of the CAPs, more than one averaging time standard has been identified in order to address the typical exposures found in the environment. The CARB has established violation criteria for each CAP. For example, in order to constitute a violation, the CAAQS for O_3 must be exceeded on one day more than three days in three consecutive years. On the

other hand, if the CO CAAQS is exceeded on one day in any given year, for a violation has occurred. Refer to **Table 10-1** for the violation criteria and the various averaging times for each CAP of concern.

Pollutant	Averaging	Stand		
	Time	parts per million	parts per million microgram per cubic meter	
	1 hour	0.09	180	If exceeded
O ₃	8 hours	0.07	137	N/A
PM ₁₀	Annual arithmetic mean	N/A	20	N/A
	24 hours	N/A	50	N/A
PM _{2.5}	Annual arithmetic mean	N/A	12	N/A
	24 hours	N/A	N/A	N/A

TABLE 10-1 CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Source: CARB, 2007a; AES, 2007

10.2.3 AIR QUALITY MONITORING

The Placer County Air Pollution Control District (PCAPCD) and CARB collect ambient air quality data through a network of air monitoring stations in and around Placer County. **Table 10-2** provides a summary of the air quality data collected from a PCAPCD monitoring site near the project site over the past three years for those pollutants for which the area is in non-attainment. The table was prepared using O_3 , $PM_{2.5}$, and PM_{10} data from the North Sunrise Boulevard monitoring station in Roseville south of the project site.

CAAQS DESIGNATIONS

As shown in **Table 10-3**, Placer County is in non-attainment under the CAAQS for eight- and one-hour ozone standards, as well as PM_{10} and $PM_{2.5}$. Placer County is in attainment or unclassifiable for all other pollutants.

ODORS

Operation of the existing casino and associated facilities does not generate any perceptible odors. The onsite wastewater treatment plant (WWTP) uses a membrane bioreactor system (MBR) that is completely aerated except for the headworks, which are covered and scrubbed. The MBR system does not require a grit tank or primary system, which typically generate odors. Existing odor generators in the vicinity of the project site are shown in **Figure 4-4** and include Inviro-Tech, a privately owned septage dewatering facility, and the Western Regional Sanitary Landfill and Materials Recovery Facility. Inviro-Tech is

located north of Athens Road and east of the landfill and utilizes enclosed tanks and a small concrete containment structure to separate solids from septage. Wastewater from Inviro-Tech is discharged to the sewer system for treatment at the Roseville Regional Wastewater Treatment Plant and bio-solids are disposed at the neighboring landfill. The process uses chemical treatment, and odor from the facility is negligible. The Western Regional Sanitary Landfill and Materials Recovery Facility, located on the corner of Athens Avenue and Fiddyment Road, is the closest existing significant odor source in the area of the proposed project. Although no formal odor study of this facility has been conducted, it is generally acknowledged that such a facility is a traditional source of odors, dependent upon atmospheric conditions and activity levels at the facility.

Dellutert	Monitoring Data by Year						
Pollutant	Standard	2004	2005	2006			
Ozone:	parts per million						
Highest 1 Hour Average	0.00	0.106	0.118	0.121			
Days over State Standards	0.09	5	13	16			
Highest 8 Hour Average	0.08	0.85	0.106	0.97			
Days over National Standard	0.00	1	9	9			
Highest 8 Hour Average	0.07	ND	ND	ND			
Days over State Standard	0.01	ND	ND	ND			
Particulate Matter (PM _{2.5}):	mi	crograms	per cubic me	eter			
Highest Annual Average	12	9.4	10.7	10.5			
Over State Standard	12	No	No	No			
Particulate Matter (PM _{2.5}):	mi	crograms	per cubic me	ter			
Highest Annual Average	15	9.4	10.7	10.5			
Over National Standard	10	No	No	No			
Highest 24 Hour Average	35 ¹	32.0	51.0	45.0			
Days over National Standard	00	0	0	0			
Particulate Matter (PM ₁₀):		microgra	ms per cubi	c meter			
Highest Annual Average	20	22.1	19.6	22.4			
Over State Standard	20	Yes	Yes	Yes			
Highest 24 Hour Average	50	43	58	55			
Days over State Standard	50	0	1	1			
Highest 24 Hour Average	150	43	55	54			
Days over National Standard	150	0	0	0			

TABLE 10-2 AIR QUALITY DATA SUMMARY (2004-2006) FOR THE PROJECT AREA

¹ National 24 Hour Average changed from 65 ug/m³ to 35 ug/m³ in late 2006 Source: CARB, 2007b, *Summaries of Air Quality Data*.

Criteria Air Pollutants	CAAQS
Eight-Hour O_3	Non-attainment
One-Hour O_3	Non-attainment
PM ₁₀	Non-attainment
PM _{2.5}	Non-attainment
СО	Attainment
NO _X	Attainment
SO _X	Attainment
Pb	Attainment

 TABLE 10-3
 SACRAMENTO VALLEY AIR BASIN CAAQS ATTAINMENT STATUS

Source: CARB, 2007b.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are less pervasive in the urban atmosphere than the CAPs, but are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

TACs have been regulated under federal air quality law since the 1977 federal Clean Air Act Amendments. The most recent federal Clean Air Act Amendments (1990) reflect a technology-based approach for reducing TACs. The first phase involves requiring facilities to install Maximum Achievable Control Technology (MACT). The MACT standards vary depending on the type of emitting source. The U.S. EPA has established MACT standards for over 20 facilities or activities, such as perchloroethylene dry cleaning and petroleum refineries. The second phase of control involves determining the residual health risk represented by TAC emissions sources after implementation of MACT standards.

Two principal laws provide the foundation for state regulation of TACs from stationary sources. In 1983, the State Legislature adopted Assembly Bill 1807, which established a process for identifying TACs and providing the authority for developing retrofit air toxics control measures on a statewide basis. The current list of TACs includes approximately 200 compounds, including all of the toxics identified under federal law plus additional compounds, such as particulate emissions from diesel-fueled engines, which was added in 1998. Air toxics from stationary sources in California are also regulated under Assembly Bill (AB) 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the regional air quality

management district or county air pollution control district. High-priority facilities are required to perform a health risk assessment, and if specific thresholds are violated, they are required to communicate the results to the public in the form of notices and public meetings. Depending on the risk level, emitting facilities can be required to implement varying levels of risk reduction measures.

The regulatory approach differs between stationary sources and mobile sources of TACs. The approach to regulation of TACs from mobile sources has been through establishment (by U.S. EPA and CARB) of emissions standards for motor vehicles (imposed on vehicle manufacturers) and through specifications for gasoline and diesel fuel sold in California (imposed on fuel refineries and retailers), rather than through air quality permits or regulations on how motor vehicles are used by the general public. Since 2004, grants from the Indian Gaming Special Distribution Fund have provided \$219,200 to the PCAPCD for ongoing programs to reduce motor vehicle emissions.

In the region surrounding the project site, ambient air quality is affected by a number of TAC sources. Major TAC sources in the region include the existing industries located along Industrial Avenue and the State Route (SR) 65 corridor as well as the Western Regional Sanitary Landfill. Individual emitters of TACs are required by AB 2588 to prepare Toxic Emission Inventory Plans and Reports, allowing the PCAPCD to identify and inventory toxic emissions.

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with greater associated exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The Sunset Industrial Area (SIA) is not zoned for residential development and no residential land uses currently exist in the immediate vicinity of the proposed project. Land uses surrounding the proposed project site are shown in **Figure 4-4**. The nearest residential communities include Lincoln Crossing, approximately 0.85 miles north of the project site, and Twelve Bridges, approximately one mile east of the project site. Two and one-half miles west of Fiddyment Road are several single-family ranch homes, which are presently surrounded by agricultural land. The nearest schools are Twelve Bridges Middle School and Whitney High School, located approximately one mile east-northeast and east-southeast of the project site, respectively. Twelve Bridges Elementary and Diamond Creek Elementary schools are both located approximately 2.5 miles from the project site. The nearest medical facilities include Sutter

Medical Plaza Lincoln and Kaiser Permanente's Lincoln Medical Offices, which are located approximately 1.25 and 1.3 miles from the project site, respectively.

GREENHOUSE GASES

Anthropogenic greenhouse gases (GHGs) are currently being examined by the scientific community for their potential to trap solar energy within the earth's atmosphere. The International Panel on Climate Change (IPCC) indicated that the earth's climate is changing and that human activity is a factor (IPCC, 2001). The IPCC has noted that anthropogenic GHGs are the main source of the earth's temperature increase. However, some noted scientists believe that a change to the earth's climate is part of a normal cyclical process (Michaels, 2004).

GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), and several chlorofluorocarbons. GHGs constitute a small percentage of the earth's atmosphere; however, their collective effect is to maintain the temperature of the earth's surface at approximately 60 degrees Fahrenheit ($^{\circ}$ F) warmer, on average, than it would be if no GHGs existed. Water vapor is the most abundant GHG; CO₂ is second. The IPCC estimates that CO₂ in the lower atmosphere has increased by 31 percent since 1750, and that the average temperature in the lower atmosphere has increased by approximately 1-1.4°F; however, the increase in temperature has not been correlated to the increase in CO₂. Some fossil records suggest CO₂ concentration in the geologic past was 15 times what it is today, while the ambient temperature was only 18°F above the present average temperature (Michaels, 2004).

GHG sources are both anthropogenic and natural. Some examples of anthropogenic sources are combustion of fossil fuel, evaporation of man-made chemicals, and agriculture. Natural sources include water vapor and naturally occurring N_2O , CO_2 , O_3 , and CH_4 . GHGs are in flux in the atmosphere; a large portion of GHGs is utilized by plant life through the passive exchange of gases due to a variation in osmotic pressure.

Carbon dioxide equivalent (CO₂e) is a method by which GHGs other than CO₂ are changed to CO₂-like emissions based on a heat-capturing ratio; CO₂ is used as the base and is given a value of one. CH₄ has the ability to capture 21 times more heat than CO₂; therefore, CH₄ is given a CO₂e value of 21. Emissions are multiplied by the CO₂e value to achieve one GHG emission value. Some CO₂e values are shown in **Table 10-4**. Sinks are sources that sequester CO₂; examples of sinks are trees and oceans. **Table 10-5** shows the 2010 projected global GHG emissions. California GHG emissions are estimated to be 542,446,751 tons per year (CARB, 2007a).

GHGs are relatively stable in the atmosphere and essentially uniformly dispersed throughout the troposphere and stratosphere; the climatic impact of GHG emissions does not depend on where the emissions occur. GHGs will continue to accumulate in the atmosphere as long as the total anthropogenic output of GHGs is greater than 12,566 million tons GHGs per year (Department of Energy [DOE], 2005).

Gas	CO₂e Value
CO ₂	1
CH ₄	21
N ₂ O	310
HFCs/PFCs	6,500
SF ₆	23,900

TABLE 10-4 GREENHOUSE GAS CO₂ EQUIVALENT

Source: BAAQMD, 2006; AES, 2007.

GLUBAL GREENHOUSE GAS EMISSIONS AND SINKS							
	Sources						
Gas	Natural	ıral Anthropogenic Total Si					
		million tons CO	⊃₂e				
CO ₂	848,779	33,467	882,246	861,345			
CH4	263	659	923	635			
NO ₂	10	8	18	14			

TABLE 10-5 GLOBAL GREENHOUSE GAS EMISSIONS AND SINKS

Source: Department of Energy/Energy Information Administration-0573, (2005); AES, 2007.

10.3 REGULATORY SETTING

The following text provides an overview of federal, state, and local laws, regulations, and policies relevant to air quality in the context of the proposed project.

10.3.1 FEDERAL

CLEAN AIR ACT

The Clean Air Act (CAA) was enacted for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity.

In 1971, the U.S. EPA developed primary and secondary National Ambient Air Quality Standards (NAAQS). Six pollutants of primary concern were designated: carbon monoxide (CO), ozone (O₃), suspended particulate matter (PM), sulfur dioxide (SO₂), oxides of nitrogen (NO_X), and lead (Pb). The primary NAAQS must "protect the public health with an adequate margin of safety" and the secondary standards must "protect the public welfare from known or anticipated adverse effects (aesthetics, crops, architecture, etc.)". The primary standards were established, with a margin of safety, considering long-

term exposures for the most sensitive groups in the general population. The EPA allows states the option to develop different (stricter) standards.

If an air basin is not in federal attainment (e.g. does not meet federal standards) for a particular pollutant, the basin is classified as a marginal, moderate, serious, severe, or extreme nonattainment area. Nonattainment areas must take steps towards attainment by a specific timeline. These steps include establishing a transportation control program and clean-fuel vehicle program, decreasing the emissions threshold for new stationary sources and for major existing sources, and increasing the stationary source emission offset ratio to at least 1.3:1.

A State Implementation Plan (SIP) is a series of documents that set forth a state's strategies for achieving federal air quality standards. The Code of Federal Regulations (CFR) Title 40, Chapter I, Part 52, Subpart F, §52.220 lists all of the items that are included in the California SIP. The SIP includes new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs detail control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products.

10.3.2 STATE

CALIFORNIA CLEAN AIR ACT

In 1988, the State legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. CCAA requirements include annual emission reductions, development and use of low emission vehicles, setting the CAAQS, and submittal of air quality attainment plans by air districts. The CARB is the state agency responsible for coordinating both state and federal air pollution control programs in California. California's State Implementation Plan (SIP) is comprised of the State's efforts to attain the National Ambient Air Quality Standards as well as plans developed at the regional or local level. Local Air Pollution Control Districts address attainment and maintenance of CAAQS as mandated by the CCAA. CARB also coordinates and approves local plans that eventually become part of the SIP for submittal to the U.S. EPA.

CALIFORNIA AIR RESOURCES BOARD

CARB is the state agency responsible for establishing CAAQS, and adopting and enforcing emission standards for various sources including mobile sources (except where federal law preempts their authority), fuels, consumer products, and TACs. CARB is responsible for providing technical support to California's 35 local air districts, overseeing local air district compliance with state and federal law, approving local air plans and submitting the SIP to the U.S. EPA. CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air districts, which are organized at the county or regional level.

10.3.3 PLACER COUNTY

PLACER COUNTY AIR POLLUTION CONTROL DISTRICT

The PCAPCD develops air quality plans to achieve and maintain air quality standards and other requirements set forth under federal and state laws.

The 1994 Sacramento Area Regional Ozone Attainment Plan is the current federal ozone SIP for the Sacramento Valley Air Quality Maintenance Area that includes the western part of Placer County. This plan predicts attainment of the national eight-hour ozone standard by 2013 (Sacramento Metropolitan Air Quality Management District, 1994); later this year the PCAPCD will ask for an extension until 2019 to achieve ozone attainment (Chang, 2007). To attain the standard by 2019, the SIP relies heavily on local air district-administered stationary source control programs and on statewide mobile source control programs. With respect to the national carbon monoxide standard, the project area is subject to a maintenance plan, which demonstrates how the area will continue to maintain concentrations below the standard. In contrast to the ozone plan, the carbon monoxide plan relies almost exclusively on statewide mobile source control programs.

Pursuant to the state ozone planning requirements under the CCAA, the PCAPCD developed the 1991 Air Quality Attainment Plan. The plan was developed to reduce population exposure to unhealthful levels of ozone through tighter industry controls, cleaner cars and trucks, cleaner fuels, and increased commute alternatives. The Sacramento Regional Ozone Attainment Plan (1994) discussed these goals in relation to federal air quality requirements, and also served as the first triennial update under state air quality requirements. The most recent update was made in 2007 and in general, this update calls for a continuation of the strategies outlined in the earlier plan.

PLACER COUNTY GENERAL PLAN

The Placer County General Plan also puts a heavy emphasis on transportation control measures and coordinated efforts between the county and developers to mitigate sources of significant amounts of emissions. Goals presented in the Placer County General Plan indicate that the County will protect and improve air quality in Placer County, and will integrate air quality planning with the land use and transportation planning process. Policies aimed at achieving these goals include promotion of energy-efficient site and building design to reduce direct and indirect air pollutants, development of mitigation measures to reduce stationary and area source emissions, and encouraging transit and other alternative modes of transportation to reduce motor vehicle emissions. Applicable goals and policies from the Placer County General plan are included in **Table 4-2** of this document.

10.3.4 CLIMATE CHANGE REGULATIONS

Executive Order S-3-05, issued in 2005, warns that California is vulnerable to the impacts of climate change. It states that increased temperatures could reduce the snow pack in the Sierra Nevada, further

exacerbate California's air quality problems, and potentially cause a rise in sea levels. In response, the executive order established total GHG emissions targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050. The executive order directed the secretary of the California EPA to coordinate a multi-agency effort to reduce GHG emissions to the target levels.

GHG emissions are not addressed within the federal Clean Air Act. In 2006, California Assembly Bill 32 (AB 32) was signed by Governor Schwarzenegger, requiring that greenhouse gas emissions within the State be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in beginning in 2012. In order to effectively implement the cap, CARB is currently developing regulations to require reporting and verification of the statewide greenhouse gas emissions by significant source emitters of GHGs. Examples of significant source emitters are electrical plants, large planned developments (greater than 5,000 units), and manufacturing processes (Varenchik, 2007). Monitoring and enforcement of the program is the responsibility of CARB. The State of California is currently requesting that the U.S. EPA allow the State to establish vehicle emissions standards that are stricter than federal standards. This would allow the State to require a reduction in GHG emissions from vehicles within the State. Currently, there is no consistent or accepted means of determining whether a project will exceed state or federal thresholds for air quality with regard to GHG emissions.

At this time CARB has approved 44 early action measures and is considering expanding that number to 132. The implementation of the 44 early action measures has the potential to deliver 25 percent of the 2020 emissions reduction needed to meet AB 32 goals.

10.4 IMPACTS

SIGNIFICANCE CRITERIA

The following criteria have been used in this section to evaluate potential environmental impacts. An impact would be considered significant if it:

- Conflicts with or obstructs implementation of the applicable air quality plan;
- Violates any air district rule, air quality standard or causes a substantial contribution to an existing or projected air quality violation;
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Exposes sensitive receptors to substantial pollutant concentrations; or
- Creates objectionable odors affecting a substantial number of people.

SIGNIFICANCE THRESHOLDS

For evaluating project impacts, the PCAPCD uses a significance threshold of 82 pounds per day for ROG, NO_X , and PM_{10} (Chang, 2007). Operational impacts for CO are considered significant if any intersection in the project region would operate at a level of service (LOS) of E or F (University of California at Davis, 1993).

Methodology

Project-related air quality impacts fall into three categories: short-term impacts due to construction, nearterm and long-term impacts due to project operation. Short-term construction activities would result in the generation of PM_{10} from fugitive dust associated with grading and earth-moving activities. Operation of heavy equipment during construction activities would also result in ozone precursors (ROG and NO_X) and PM_{10} emissions. Operation of the proposed project would result in ROG, NO_X, and PM_{10} emissions primarily from vehicle emissions. However, area sources such as water heating units, kitchen ovens and stoves, and air heating and cooling units would also emit ROG, NO_X, and PM_{10} .

Short-term construction and near- and long-term operational emissions were estimated using URBEMIS 9.2.2, 2007 (URBEMIS) air quality program, which succeeds URBEMIS 8.7, 2002 as of September 2007. URBEMIS is a U.S. EPA and CARB-approved air quality computer program that estimates emission by land use. URBEMIS defaults were used where site-specific data was not available. Daily trip generation rates for vehicle emissions were based on information from the Traffic Impact Analysis prepared by MRO Engineers, Inc., 2008 (**Appendix F**). These rates are consistent with trip generation rates used for other California casino/hotel projects. GHG emissions were estimated using URBEMIS for CO₂ direct operational emissions. Indirect, N₂O, and CH₄ emissions were calculated using emission factors provided by California Climate Action Registry and are shown in Table 1 of **Appendix H**. GHG emissions were compared to an estimation of the Placer County GHG emissions, based on Placer County contributing 1.3 percent of California's economy (California Department of Finance, 1999). 2004 California GHG inventory is estimated to be 580,000,000 tons per year (California Energy Commission, 2006), Placer County GHG emissions are estimated to be 7,500,000 tons per year.

CONSTRUCTION IMPACTS

IMPACT 10.1:

SIGNIFICANCE: MITIGATION: RESIDUAL SIGNIFICANCE: Construction activity could result in significant emissions of PM_{10} , ROG and NO_X on a temporary basis. Potentially Significant Mitigation Measure 10.1 Less than Significant The project would be constructed over a period of approximately 24 months and would result in the generation of PM_{10} from fugitive dust associated with grading and earth-moving activities. Other criteria air pollutants of concern (NO_X and ROG) would be emitted from the operation of heavy equipment, construction machinery, and construction worker automobile trips (primarily gasoline operated). Diesel Particulate Matter (DPM) would also be emitted from heavy diesel equipment used in grading and construction activities.

PCAPCD emission thresholds are used to determine significance. URBEMIS output files for unmitigated and mitigated construction-related emissions are attached in **Appendix H**. **Table 10-6** shows the projected construction emission levels before and after proposed mitigation. Only PM_{10} emissions would exceed the PCAPCD threshold of 82 pounds per day during site grading; this would be considered a potentially significant impact. However, implementation of a dust control plan (Mitigation Measure 10.1) will serve to reduce these emissions to less than significant levels.

	Pollutants of Concern						
Source	ROG	NOx	PM ₁₀				
		pounds per day					
2008 Site Grading	5.02 (5.02)	37.84 (37.84)	133.24 (31.91)				
2009 Building	72.35 (48.77)	22.24 (20.04)	1.65 (0.78)				
2010 Building	67.66 (16.84)	15.65 (13.41)	1.33 (0.22)				
Maximum Emissions	72.35 (48.77)	37.84 (37.84)	133.24 (31.91)				
PCAPCD CEQA Thresholds	82	82	82				
Exceeds Thresholds	No (No)	No (No)	Yes (No)				

TABLE 10-6
ESTIMATED UNMITIGATED (MITIGATED) CONSTRUCTION EMISSIONS

Source: URBEMIS, 2007; AES, 2007

IMPACT 10.2:	Construction could result in odor emissions on a temporary
	basis.
SIGNIFICANCE:	Less than Significant
MITIGATION:	None Warranted

Construction odors generally consist of fuel exhaust emission from heavy equipment and vapors from paints and solvents. Given the nature of the surrounding area, including light industrial land uses, a railroad, a landfill, and a wastewater treatment plant, temporary and intermittent construction activities would not emit detectable odors beyond the project boundaries. The closest sensitive receptors to the project site are approximately 0.85 miles away. Therefore odor impacts would be less than significant.

OPERATIONAL IMPACTS

IMPACT 10.3:	Operational emissions could result in significant quantities of
	ROG, NO_X , and PM_{10} .
SIGNIFICANCE:	Less than Significant
MITIGATION:	None Warranted

Project operation would generate ozone precursors (NO_X and ROG) and PM_{10} primarily from mobile sources (i.e., emissions released from vehicles arriving and departing the casino/hotel). Unmitigated operational emissions associated with the proposed project would be less than the PCAPCD thresholds of 82 pounds per day for ROG, NO_X, and PM₁₀ (**Table 10-7**), and are therefore a less-than-significant impact.

	Pollutants of Concern						
Sources	ROG	NOx	PM ₁₀				
		pounds per day					
Area	4.23 (4.23)	6.90 (6.90)	0.02 (0.02)				
Mobile	44.87 (43.96)	48.09 (46.92)	65.22 (63.64)				
Total Operational Emissions	49.10 (48.09)	54.99 (52.45)	65.24 (63.66)				
PCAPCD CEQA Threshold	82	82	82				
Exceeds Thresholds	No (No)	No (No)	No (No)				

TABLE 10-7 ESTIMATED UNMITIGATED (MITIGATED) OPERATIONAL EMISSIONS

Source: URBEMIS 2007; AES, 2007

However, to further reduce operational emissions, the Tribe has agreed to several environmental commitments, the result of which will be to reduce operational emissions to the levels shown as the mitigated values in **Table 10-7**:

- The Tribe shall ensure that bus service is provided hourly, 6:10 a.m. to 7:10 p.m. Monday through Friday and 8:10 a.m to 5:10 p.m. Saturday and the Tribe shall provide safe and convenient transit stops (i.e. shelters, route information, benches, and lighting) with direct access to the project site.
- The Tribe shall place a minimum of 50 percent of the casino parking under cover. This will reduce hot vehicle starts, which reduces vehicles' emissions during startup.
- Buses shall not idle for more than 10 minutes at any location, except in the case of passenger boarding.

URBEMIS output files for unmitigated and mitigated operational related emissions are provided in **Appendix H**.

IMPACT 10.4:	Operation	of	the	proposed	d proje	ct could	cause	high
	concentratio	ons	of CC) due to	idling v	vehicles on	surrou	inding
	roadways.							
SIGNIFICANCE:	Less than Si	gnif	icant					
MITIGATION:	None Warra	intec	1					

Elevated concentrations of CO can occur at intersections that experience high traffic volumes. Elevated CO levels may have adverse effects on sensitive receptors. Emissions of CO may cause a violation of short-term standards ("hotspots") if implementation of the proposed project were to result in congestion of major roadways and intersections. However, the concern for CO is normally limited to major signalized intersections impacted by project-related traffic where the intersection level of service (LOS) is E or F. According to the traffic impact study (**Appendix F**) there is no major signalized intersection in the project study area that would operate at a LOS of E or F after implementation of traffic mitigation measures (**Chapter 9.0**); therefore, there would be a less than significant impact due to CO emissions from idling vehicles.

IMPACT 10.5:	Operation of the proposed project could increase exposure to
	toxic air contaminants.
SIGNIFICANCE:	Less than Significant
MITIGATION:	None Warranted

Operation of the proposed project would not contribute or generate a significant amount of additional toxic air contaminants above current levels. However, industrial facilities in the SIA may be permitted to handle, store, and use bulk quantities of hazardous materials. The PCAPCD, through its AB 2588 permitting authority, has classified the Western Regional Sanitary Landfill facility as a high-priority facility and therefore, it is required to prepare Health Risk Assessments. These assessments have concluded that under normal operating conditions, the facility emissions do not pose a health risk. No other facilities within one mile of the project site are considered PCAPCD high-priority facilities. The Rio Bravo Rocklin Biomass Power Plant is located at 3100 Thunder Valley Court, approximately 0.35 miles from the project site. Currently, Rio Bravo Rocklin is not considered a major emissions source by the PCAPCD and therefore, is not a high-priority facility. Therefore, impacts related to unexpected emissions of toxic air contaminants under breakdown conditions or accidental release are discussed in **Chapter 15.0** of this TEIR.

IMPACT 10.6:

SIGNIFICANCE: MITIGATION: RESIDUAL SIGNIFICANCE: Operation of the proposed project could increase emissions of greenhouse gases associated with global climate change. Significant Mitigation Measure 10.2 Less than Significant Emissions from operation of the proposed project are estimated to be 22,500 CO_2e tons per year or 0.30 percent of Placer County's estimated CO_2e emissions (**Appendix H**). This includes direct and indirect emissions sources, such as patron and employee vehicles, power plants providing electricity to the casino, boilers at the casino, etc. Although federal, state, or local thresholds have not been established for GHG emissions, the Tribe has agreed to implement Mitigation Measure 10.2 in addition to the environmental commitments discussed under Impact 10.3 to reduce GHG emissions associated with global climate change.

IMPACT 10.7:	Operation of the expanded WWTP could generate odors.
SIGNIFICANCE:	Less than Significant
MITIGATION:	None Warranted

As discussed in **Chapter 3.0**, three alternatives are available for wastewater treatment. If expansion of the onsite WWTP is chosen, objectionable odors could be generated. The existing WWTP uses a MBR system and objectionable odors are typically not perceivable beyond the boundaries of the WWTP (HydroScience, 2008). The expanded plant would be upgraded by adding process trains to the immersed MBR system to produce higher volumes of high-purity treated effluent. An upgraded ultraviolet (UV) disinfection system, recycled water diversion station, and improved biosolids handling and disposal would be implemented. The MBR system would not require a grit tank or a primary system, which are the typical sources of odors in non-MBR WWTPs. In order to convey increased wastewater flow to the WWTP, a new influent lift station would be required to replace the existing one. The influent lift station would be required to replace the increase in influent (HydroScience, 2008). Because the expanded WWTP would use an MBR system similar to the current system, which does not generate objectionable odors, and a new odor control system would be added to the proposed lift station, the expanded WWTP would not create objectionable odors at the nearest sensitive receptor (approximately 0.85 miles away); this impact is considered less than significant.

10.5 MITIGATION MEASURES

Mitigation Measure 10.1: Implement dust and emission control measures Mitigation Measure 10.1 applies to Impact 10.1.

Specific dust and emission control measures shall be included with Improvement Plans and distributed to all contractors. These measures shall include, but not be limited to, the following:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.

- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 mph.
- The Tribe shall not burn removed vegetation during infrastructure improvements.
- Construction equipment exhaust emissions shall not exceed PCAPCD Rule 202. If construction equipment is found to exceed opacity limits set forth in Rule 202, the responsible party will immediately be notified and the equipment must be repaired within 72 hours.
- The Tribe shall control emissions of ROG and NO_X where ever feasible and cost-effective by requiring all diesel-powered equipment be properly maintained and minimizing idling time to five minutes when construction equipment is not in use, unless per engine manufacturer's specifications or for safety reasons more time is required. Machinery engines shall be kept in good mechanical condition and use diesel-oxidizing catalysts to minimize exhaust emissions. Inclusion of this mitigation measure will insure a 20 percent NO_X and 45 percent PM reductions in the fleet average.
- The prime contractor shall submit to the PCAPCD a list of heavy-duty-off-road equipment that will be used.
- The prime contractor shall submit to the PCAPCD a timeline of construction.

Mitigation Measure 10.2: Reduce indirect GHG emissions

Mitigation Measure 10.2 applies to Impact 10.6.

The following measures would reduce the proposed project's indirect GHG emissions associated with global climate change:

• The Tribe shall install a photovoltaic cell array on the roof of the proposed parking garage. The array would allow for shaded parking of 555 cars on the ninth level of the garage, while producing approximately 1 megawatt (mW) of solar power. The installation of the photovoltaic cell array would reduce the demand on external electricity sources for the proposed project by approximately 1.4 million kilowatt hours (kWh) annually. External electricity could come in part

from sources that emit GHGs, therefore, the installation of the photovoltaic array would substantially reduce the indirect GHG emissions from the proposed project.

- The Tribe shall enroll in PG&E's ClimateSmart program, which would reduce the proposed project's indirect GHG emissions.
- The Tribe shall implement applicable water conservation measures, including use of low-flow faucets, toilets and showerheads, use of pressure washers and brooms instead of hoses for cleaning, and service of water to customers on request in restaurants. These water conservation measures indirectly conserve energy, through a reduction of electricity and fuels used to transport water from its source to the place of use. Voluntary towel re-use by guests in the hotel, use of garbage disposal on-demand, re-circulating cooling loop for water-cooled refrigeration and ice machines where possible, checking steam traps and ensuring return of steam condensate for boiler reuse, and limitation of boiler blow down in the central plant, would also result in both direct and indirect reductions in electricity and fuel usage.
- The Tribe shall use energy-efficient appliances wherever feasible. This would result in a direct reduction in electricity and fuel use.
- The Tribe shall plant trees and vegetation on the project site. The addition of photosynthesizing plants would reduce atmospheric CO₂, because plants use CO₂ for elemental carbon and energy production. Trees planted near buildings would provide shade to the building, thus reducing heat absorption, reducing air conditioning needs and saving energy.
- Recycling of appropriate materials shall be ensured by routing solid waste disposal through the Western Placer Waste Management Authority Materials Recovery Facility. Recycling waste materials conserves energy indirectly by reducing the processing of raw materials and reducing the energy needed for managing waste materials in landfills.